San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

DEC 2 1 2016

Mr. David Sawyer
Covanta Mendota LP
PO Box 39
Mariposa, CA 95338

Re: Notice of Preliminary Decision – ATC / Certificate of Conformity
District Facility # C-825
Project # C-1152808

Dear Mr. Sawyer:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the modification of a biomass and natural gas-fired circulating fluidized bed boiler to install a sodium bicarbonate injection system, with an optional activated carbon system, for compliance with MACT regulation - Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, at 400 Guillen Parkway in Mendota.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

for Arnaud Marjollet
Director of Permit Services

Enclosures

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

Seyed Sadredin
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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

30 MW Biomass Power Plant

Facility Name:	Covanta Mendota LP	Date:	December 2, 2016
Mailing Address:	PO Box 550 Delano, CA 93216	Engineer:	Carlos Garcia
		Lead Engineer:	Jerry Sandhu
Contact Person:	David Sawyer		
Telephone:	(559) 210-2050		
Fax:	n/a		
E-Mail:	dsawyer@covanta.com		
Application #:	C-825-5-19		
Project #:	C-1152808		
Deemed Complete:	December 23, 2015		

I. Proposal

The primary business of Covanta Mendota LP is the production of power utilizing a 30 MW biomass and natural gas-fired circulating fluidized bed boiler. Covanta Mendota LP has submitted an Authority to Construct (ATC) application for the following:

- Applicant is applying to install a sodium bicarbonate injection system, with the option of adding activated carbon that will be fed into the flue gas stream to mainly neutralize HCl to reduce these emissions. This project is being proposed to solely comply with the federal Maximum Achievable Control Technology (MACT) standards of 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories) Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). The MACT requirements include emission limits for mercury (Hg), CO and PM, along with testing (stack and fuel analysis), and work practices.
- This project is being submitted solely to comply with a federal rule, and per Rule 2201, section 4.2.3 and 4.6.8, this project is exempt from BACT and offsets. Additionally, per the District's Draft Major Modification policy under Case 3, this project is not a Federal Major Modification.

Federal MACT will require control of hydrogen chloride (HCl), mercury (Hg), and carbon monoxide (CO) and have additional emission limits for particulate matter (PM) or total selected metals (TSM), as well as an Energy Assessment, along with various monitoring, testing and recordkeeping requirements. Control of the HCl and Hg emissions will be achieved through sodium bicarbonate injection, and an option to add activated carbon, upstream of the existing

baghouse and the existing boiler limestone injection system. The minimum reagent flow rates will be set during stack testing and continuously monitored.

Covanta stopped operating the biomass boiler on January 14, 2016, and currently, this unit is permitted as a dormant emissions unit (see Appendix B for current PTO).

Covanta Mendota LP received their Title V Permit on November 30, 2001. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct (see Appendix A for the draft ATC). Covanta Mendota LP must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 1080	Stack Monitoring (12/17/92)
Rule 2080	Conditional Approval (12/17/92)
Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99) • 40 CFR Part 60, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04) • Subpart DDDDD — National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters • Subpart JJJJJJ — National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. *Not applicable —This subpart only applies to area sources of hazardous air pollutants.*
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase 2 (8/21/03) – *Not applicable – This rule does not apply to solid fuel fired units per Section 4.1.1.*
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase 3 (10/16/08) *Not applicable – This rule does not apply to solid fuel fired units per Section 4.1.1.*
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08) *Not applicable – This rule does not apply to solid fuel fired units per Section 4.1.1.*
Rule 4351	Boilers, Steam Generators and Process Heaters – Phase 1 (8/21/03) *Not applicable – This rule does not apply to solid fuel fired units per Section 4.1.2.*

Rule 4352	Solid Fuel Fired Boilers, Steam Generators, and Process Heaters (12/15/11)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

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

III. Project Location

The facility is located at 400 Guillen Pkwy in Mendota, 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

Covanta Mendota LP operates an electrical generation facility with a 317 MMBtu/hr biomass circulating fluidized bed boiler that produces electrical power. The circulating fluidized bed boiler burns biomass consisting of agricultural waste products, saw mill residues, forest residues, orchard and vineyard prunings, etc., supplemented by natural gas. The resulting heat generates steam which powers a turbine. The turbine spins an electrical generator which produces up to 30 MW of electrical energy for the power grid.

Ammonia is injected into the hot exhaust gases for selective noncatalytic reduction (SNCR) of NOx emissions. The emissions of particulate matter are controlled by a baghouse, which exhausts through a vertical, cylindrical stack.

Fuel receiving[1]:

Biomass fuel is received at either of the two truck tippers that lift the entire truck and trailer to a 55° angle for unloading.

Truck tipper #1 is equipped with a reclaim hopper and a drag conveyor and it can be loaded by either hydraulically tipping a truck to discharge into the hopper or by using a front end loader which can add biomass fuel to the hopper via an adjacent ramp. The hydraulic system on tipper #1 is powered by two 60 hp electric motors.

Truck tipper #2 is fully open and is equipped with water sprays and uses batch loading to move fuel to the storage yard. The hydraulic system on tipper #2 is powered by two 60 hp electric motors.

Sand silo and the limestone silo:

The sand silo and the limestone silo are used in conjunction with the main boiler. Sand and limestone are fed directly to the dip leg between the recirculating cyclone and the combustor.

[1] The following descriptions were provided from project C1062960.

The two silos are identical and each provides 1,315 yd^3 of storage. Both silos are pneumatically loaded by a 600 cfm fan which is mounted on the delivery truck. Each silo is controlled with a DCE Dalamatic model DLM-V20/10W bin vent filter.

Fly ash silo:

The fly ash collection system and the fly ash silo are used in conjunction with the boiler baghouse. Fly ash is collected below the baghouse in an enclosed screw conveyor which transports the material to a surge bin that feeds an inclined drag conveyor that transports the fly ash to the storage silo. The silos provide 3,947 ft^3 of storage and it is fully enclosed. The fly ash is stored in the silo until it is discharged into a pug-mill with a screw mixer that mixes the fly ash with water before it is loaded into trucks for off-site disposal.

Bottom sand discharge units:

The bottom sand discharge units are used in conjunction with the fluidized bed combustor. Sand is rejected from the boiler through a sand dip leg and conveyor. The pile of sand is then removed with a skip loader, which places it in a storage bin. The sand is then removed from the bin with a front-end loader which moves it to storage in the fuel yard.

V. Equipment Listing

Pre-Project Equipment Description:

C-825-5-18: 30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE AND THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS

Proposed Modification:

C-825-5-19: MODIFICATION OF 30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE AND THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS: INSTALL SODIUM BICARBONATE REAGENT FEEDER SYSTEM INCLUDING BULK BAG UNLOADER AND VOLUMETRIC FEEDER AND OPTIONAL POWDERED ACTIVATED CARBON INJECTION SYSTEM TO MEET BOILER MACT REQUIREMENTS OF 40 CFR 63 SUBPART DDDDD

Post Project Equipment Description:

C-825-5-19: 30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE, THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS, A SODIUM BICARBONATE REAGENT FEEDER SYSTEM INCLUDING BULK BAG UNLOADER AND VOLUMETRIC FEEDER WITH AN OPTIONAL ACTIVATED CARBON INJECTION SYSTEM

VI. Emission Control Technology Evaluation

The facility proposes to install a sodium bicarbonate ($NaHCO_3$) storage, conveying and injection system for the Boiler MACT regulations. These federal MACT regulations (40 CFR Part 63, Subpart DDDDD) will require control of HCl, Hg and CO and have additional emission limits for PM or TSM, CO, HCl and Hg, as well as an Energy Assessment, along with various monitoring and recordkeeping requirements. Subpart DDDDD went into effect in January 2016.

The limestone reacts with the SO2 in the fluidized bed, converting it to a solid that is captured in the baghouse. Control of the HCl and Hg emissions will be achieved through sodium bicarbonate injection into the cooled flue gas entering upstream of the existing baghouse and the existing boiler limestone injection system. The minimum reagent flow rates will be established during the stack testing and continuously monitored. The sodium bicarbonate injection system will consist of a super sack unloader with a variable frequency drive motorized screw feeder. A hoist and trolley will be used to load and unload bulk bags of the reagent. A pneumatic transport system will be used to convey the sodium bicarbonate to the inlet of the fabric filter. The pneumatic transport system will consist of a blower, an eductor and a two inch conveying line. The sodium bicarbonate injection system will be designed to accept an admixture of sodium bicarbonate and powdered activated carbon, if the addition of powdered activated carbon is required to further control Hg emissions[2] and meet the MACT Hg emission limit. If required to meet the MACT DDDDD limits, the powdered activated carbon may be supplied as an admixture or if supplied separately, be fed into the sodium bicarbonate injection system from a separate storage system.

VII. General Calculations

A. Assumptions

- The equipment will be assumed to operate 24 hr/day, 7 day/week, and 365 day/yr. Currently, the circulating fluidized boiler is permitted as a dormant emissions unit.

[2] The facility anticipates that the Hg emissions will be below the MACT DDDDD limit. However, this is based on only one source test for Hg in 2011. The optional activated carbon injection will be added to the boiler if further Hg emissions reductions are needed.

- To streamline emission calculations, PM2.5 emissions are assumed to be equal to PM10 emissions. Only if needed to determine if a project is a Federal major modification for PM2.5 will specific PM2.5 emission calculations be performed.
- No change in any criteria pollutants are proposed or expected as a result of this project.
- For combustion sources, assume all PM is equal to PM10.

B. Emission Factors

The daily and hourly emission factors are taken from current permit conditions. The proposed modification to install a sodium bicarbonate and optional activated carbon injection system is for the control of HCl and Hg emissions. No changes in current permitted emissions are proposed for the following criteria pollutants: NOx, SOx, PM10, CO or VOC.

Emission Factors C-825-5			
	lb/hr	**lb/day**	**Source**
NO_X	27.8	667.2	Permit Condition
SO_X	10.3	247.2	Permit Condition
Filterable PM_{10}	7.62	--	Permit Condition
Total PM_{10}	14.3	340.1	Permit Condition
CO	38.7	928.8	Permit Condition
VOC	9.7	232.8	Permit Condition

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The daily potential to emit for the biomass boiler is taken from the current permit to operate and summarized in the table below.

As an example, NOx yearly emissions are calculated as follows:
PE1 = (667.2 lb-NOx/day) * (365 day/year)
= 243,528 lb-NOx/year

PE1		
	Daily Emissions (lb/day)	**Annual Emissions (lb/year)**
NO_X	667.2	243,528
SO_X	247.2	90,228
PM_{10}	340.1	124,137
CO	928.8	339,012
VOC	232.8	84,972

2. Post Project Potential to Emit (PE2)

The proposed modification to install a sodium bicarbonate and an optional activated carbon injection system will be used to control HCl and Hg emissions. No changes in emissions are proposed for the following criteria pollutants: NOx, SOx, PM10, CO or VOC. Therefore, the daily potential to emit for the biomass boiler is taken from current permit to operate, and summarized in the table below.

PE2		
	Daily Emissions (lb/day)	**Annual Emissions (lb/year)**
NO_X	667.2	243,528
SO_X	247.2	90,228
PM_{10}	340.1	124,137
CO	928.8	339,012
VOC	232.8	84,972

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.

Facility emissions are already above the Offset and Major Source Thresholds for NOx, PM10, CO and VOC emissions; therefore, SSPE calculations are not necessary, but are shown for reference.

SSPE1 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
C-825-1-3*	251	0	24	67	24
C-825-3-9*	0	0	41,683	0	0
C-825-4-9*	0	0	23,652	0	0
C-825-5-18	243,528	90,228	124,137	339,012	84,972
C-825-8-3*	188	20	4	96	6
C-825-9-9**	0	0	0	0	194
C-825-11-4*	0	0	73,357	0	0
SSPE1	**243,967**	**90,248**	**262,857**	**339,175**	**85,196**

* Emissions for these units are taken from project C-1131422
**Emissions for C-825-9-9 are taken from the emission calculations in project C-1140009

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.

The SSPE2 is presented in the following table.

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
C-825-1-3*	251	0	24	67	24
C-825-3-9*	0	0	41,683	0	0
C-825-4-9*	0	0	23,652	0	0
C-825-5-19	243,528	90,228	124,137	339,012	84,972
C-825-8-3*	188	20	4	96	6
C-825-9-9**	0	0	0	0	194
C-825-11-4*	0	0	73,357	0	0
SSPE2	**243,967**	**90,248**	**262,857**	**339,175**	**85,196**

* Emissions for these units are taken from project C-1131422
**Emissions for C-825-9-9 are taken from the emission calculations in project C-1140009

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

This source is an existing Major Source for NOx, PM10, CO and VOC emissions and will remain a Major Source for NOx, PM10, CO and VOC. No change in any criteria pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii)[3]. Therefore the PSD Major Source threshold is 100 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO2	**VOC**	**SO2**	**CO**	**PM**	**PM10**
Estimated Facility PE before Project Increase	121.98	42.60	45.12	169.59	131.43	131.43
PSD Major Source Thresholds	100	100	100	100	100	100
PSD Major Source ? (Y/N)	Y	N	N	Y	Y	Y

As shown above, the facility is an existing PSD major source for at least one pollutant.

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,

[3] The biomass boiler fits into the category 40 CFR 52.21 (b)(1)(iii)(a) for fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input. The natural gas-fired utilization for this unit is up to 25% annual Btu input.

- 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.

This project is being proposed to solely comply with the federal Maximum Achievable Control Technology (MACT) standards of 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories) Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). Pursuant to Rule 2201, Section 4.6.8, this unit is exempt from providing offsets. Therefore, BE calculations do not need to be calculated because offsets are not required.

7. SB 288 Major Modification

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

Since this facility is a major source for NOx, PM10, CO and VOC (and not for SOx), the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	**Project PE2 (lb/year)**	**Threshold (lb/year)**	**SB 288 Major Modification Calculation Required?**
NO_x	243,528	50,000	Yes
PM_{10}	124,137	30,000	Yes
VOC	84,972	50,000	Yes

Since the project's PE2 surpasses the SB 288 Major Modification Thresholds for (NOx, PM10 and VOC pollutants), the Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

NEI = PE2 – BAE

Where: PE2 = the sum of all the PE2s for each permit unit in this project
BAE = for units that are fully offset, the BAE = the PE1 for every unit,

otherwise, the BAE is the actual annual emissions averaged over the baseline period for every unit.

The baseline period is the two year period preceding the application (or another time period within the previous 5 or 10 yrs (5 yrs for electric utility steam generating unit) determined by the District to be more representative of normal operation. The applicant has not supplied the historical operating and emissions data for the unit in this project, however, the historical operating emissions will be taken from the facility's emissions inventory data that has been provided to the District. The BAE two year period for the 2013 and 2014 calendar year was chosen as representative of normal operation and is provided in Appendix C.

The BAE is used to calculate the NEI and make the SB 288 Major Modification determination in the following table.

SB 288 Major Modification Calculation and Determination					
Pollutant	**PE2 (lb/year)**	**BAE (lb/yr)**	**NEI (lb/yr)**	**Thresholds (lb/yr)**	**SB 288 Major Modification?**
NO_x	243,528	161,040	85,488	50,000	Yes
PM_{10}	124,137	124,383	-246	30,000	No
VOC	84,972	203	84,769	50,000	Yes

As demonstrated in the preceding table, this project does constitute a SB 288 Major Modification.

8. Federal Major Modification

District Policy APR 1105 "Implementation of Rule 2201 for SB288 Major Modifications and Federal Modifications" provides guidance on Federal Modifications to existing emission units solely to comply with applicable regulations, such as Subpart DDDDD. The guidance, in Case #3, states the no detailed calculations shall be required if the modification meets the following criteria:

- Modifications to existing emission units are solely for District, State, or Federal rule compliance,
- There are no changes in the capacity of the unit, and
- The modification will not allow the emission unit to operate at a higher utilization rate.

The proposed modification in this project is solely to comply with a Federal rule (Subpart DDDDD). Additionally, there are no changes in capacity, and the project will not allow a higher utilization rate. Therefore, this project is not considered a Federal Major Modification, and no further calculations are necessary.

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

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

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

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be an existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no futher PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO_2	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	121.764	45.114	169.506	62.069	62.069
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	Y	Y	Y	Y	Y

As demonstrated in the table above, because the post-project potential to emit from all new and modified emission units is greater than at least one PSD significant emission increase threshold, further analysis is required to determine if the project will result in an increase greater than the PSD significant emission increase thresholds, see step b. below for further analysis.

b. Evaluation of Calculated Emission Increases vs PSD Significant Emission Increase Thresholds

In this step, the emission increase for each subject pollutant is compared to the PSD significant emission increase threshold, and if the emission increase for each subject pollutant is below their threshold, no futher analysis is required.

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

Emission Increase = PAE – BAE - UBC

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

Since this project does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of PAE that the emission units could have accommodated during the baseline period.

The project's combined total emission increases are calculated in Appendix D and compared to the PSD significant emission increase thresholds in the following table. As stated previously, no change in current permitted emissions are proposed for this project.

PSD Significant Emission Increase Determination: Emission Increase (tons/year)					
	NO_2	**SO_2**	**CO**	**PM**	**PM_{10}**
Emission Increases (only)	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

As shown in the table above, the emission increases from the project, for all new and modified emission units, does not exceed any of the PSD significant emission increase thresholds. Therefore the project does not result in a PSD major modification and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance Determination

District Rule 1080 Stack Monitoring

This rule grants the APCO the authority to request the installation, use, maintenance, and inspection of continuous monitoring equipment. Therefore, the following conditions from the current permit will be placed on the ATC as follows:

- Permittee shall operate a Continuous Emissions Monitoring (CEM) system to monitor and record NOx concentrations and O2 concentrations, as well as the NOx emission rate whenever the boiler is operating. The CEM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The CEM system must also comply with 40 CFR 60 Appendix B, Performance Specifications 2, 3 and 6, and 40 CFR 60 Appendix F, Quality Assurance Procedures. Per Section 5.1.1 of Appendix F, at least once each calendar year, a Relative Accuracy Test Audit (RATA) must be conducted. Per Sections 5.1.2 and 5.1.3 of Appendix F, a Cylinder Gas Audit (CGA) and a Relative Accuracy Audit (RAA) must be conducted once each calendar quarter, except in the quarter where a RATA is performed. [District Rules 1080 and 4352, 5.4; 40 CFR 60.7(c), 40 CFR 60.13, and 40 CFR 60.48b]
- Permittee shall operate a Continuous Opacity Monitoring (COM) system to monitor and record opacity whenever the boiler is operating. The COM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The COM system must also satisfy Performance Specification 1 of 40 CFR 60 Appendix B. [District Rule 1080; 40 CFR 60.7(c), 40 CFR 60.13, 40 CFR 60.48b, and 40 CFR 64.3(a) and (d)]
- The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080][4]
- Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080][4]
- A quarterly CEM and COM report shall be submitted to the District which includes the following: hours of operation, the date and time of each exceedance of emissions limits (including startup, shutdown, malfunctions or any other reason), the quantity of excess emissions, any conversion factors used to calculate excess emissions, the nature and cause of each malfunction, any corrective action taken and any preventive measures adopted, hours of CEM (and COM) down time, and the cause of all CEM (and COM)

[4] Condition 31 from the current PTO is outdated. Therefore, PTO condition #31 was updated and replaced with these two conditions.

down time. [District Rules 1080 and 4352, 5.4; 40 CFR 60.49b(h) and 40 CFR 64.3(d)(i)]
- Quarterly reports shall be submitted to the District within 30 days after the end of each calendar quarter. [District Rules 1080 and 4352, 5.4]

District Rule 1081 – Source Sampling

The purpose of this rule is to ensure that there are adequate and safe facilities for use in sampling to determine compliance. This rule also specifies methods and procedures for source testing, sample collection, and compliance determination.

- Source test reports shall be submitted to the District within 60 days after completion of source testing. [District Rules 1070 and 1081, 7.3]
- Permittee shall perform annual source tests for PM10, CO, SOx as SO2, VOC, and NOx as NO2. The District must be notified 30 days prior to any compliance source testing. A pretest plan outlining source test methods, approved contractor, test date, and operating parameters must be submitted to the District for approval at least 15 days prior to source sampling. [District Rules 1081, 7.1, 2201, and 4352, 6.2]

Rule 2080 Conditional Approval

While the equipment is dormant, the established source testing will not be required. Whenever the operator designates the equipment as active, the established source testing requirements will resume.

Nothing in this evaluation shall be construed to shield a unit that has operated out of compliance with any District, state or federal requirements. A unit designated as a DEU is subject to enforcement action for any and all violations.

The following existing PTO conditions will be placed on the ATC for this project to ensure compliance.

- {edited 4561} While dormant, a blank flange will be installed on the natural gas line and the flange will be locked; no fuel deliveries will be allowed by contract; the fuel yard will be maintained as empty. [District Rule 2080]
- {4562} Permittee shall submit written notification to the District upon designating the unit as dormant or active. [District Rule 2080]
- {modified 4560} While dormant, normal source testing and the requirements of conditions 67 and 68 shall not be required. [District Rule 2080]
- {modified 4563} Upon recommencing operation of this unit, normal source testing and the requirements of conditions 67 and 68 shall resume. The requirements of conditions 67 and 68 shall be completed within 180 days of recommencing operation of this unit. [District Rule 2080]
- {4564} Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080]

- {4565} Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070]

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

As demonstrated in VII.C.7 of this evaluation, this project is a SB288 Major Modification for NOx, VOC, and PM10. Therefore, based on the above-listed criteria BACT is triggered for these three pollutants.

However, this project is being proposed to solely comply with 40 CFR Part 63 Subpart DDDDD, and Rule 2201, section 4.2.3 states that BACT shall not be required for the following:

4.2.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from Best Available Control Technology for all air pollutants, provided all of the following conditions are met:

4.2.3.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.2.3.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.2.3.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.2.3.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM10, or 50 tons per year of CO.

4.2.3.5 The project shall not constitute a Federal Major Modification.

Since each of the above-listed criteria are met, although BACT is triggered, BACT is not required for any pollutant.

B. Offsets

Rule 2201, section 4.6.8 states that offsets shall not be required for the following:

4.6.8 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met:

4.6.8.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.6.8.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.6.8.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.6.8.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NOx, or 25 tons per year of VOC, or 15 tons per year of SOx, or 15 tons per year of PM-10, or 50 tons per year of CO.

Since each of the above-listed criteria are met, Offsets are not required for any pollutant.

C. Public Notification

1. Applicability

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

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project is an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project. Therefore, public noticing is not required for this project for PE > 100 lb/day.

c. Offset Threshold

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

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	243,967	243,967	20,000 lb/year	No
SO_X	90,248	90,248	54,750 lb/year	No
PM_{10}	262,857	262,857	29,200 lb/year	No
CO	339,175	339,175	200,000 lb/year	No
VOC	85,196	85,196	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	**SSPE2 (lb/year)**	**SSPE1 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
NO_x	243,967	243,967	0	20,000 lb/year	No
SO_x	90,248	90,248	0	20,000 lb/year	No
PM_{10}	262,857	262,857	0	20,000 lb/year	No
CO	339,175	339,175	0	20,000 lb/year	No
VOC	85,196	85,196	0	20,000 lb/year	No

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

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project does constitute a Title V significant modification (SB288). Therefore, public noticing for Title V significant modifications (SB288) is required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project because it is considered a SB288 Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

For this fluidized biomass boiler, the DELs are stated in the form of emission factors, types of fuel used, the maximum boiler MMBtu/hr rating, and the maximum operational time of 24 hours per day.

Proposed Rule 2201 (DEL) Conditions:

- Boiler fuels shall be limited to the following: saw mill residues (bark, sawdust, chips and shavings); forest residues; orchard and vineyard prunings including chipped whole tree wastes and materials listed in Appendix A to the Title V Permit, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division); clean unpainted urban wood waste; unpainted paper waste; nut shells; stone fruit pits; onion and garlic skins; and natural gas. [District Rule 2201]
- Natural gas shall be used only for startup and combustion stabilization (fuel not to exceed 25% annual BTU heat input). [District Rule 2201]
- The permittee shall project and use the proper mix of fuels to ensure that all emissions are offset as required with credits from the use of creditable fuels. [District Rule 2201]
- The permittee shall curtail operation proportionately and notify the District whenever, due to changes in the quantity or quality of wastes supplied, the emissions exceed the offsets. [District Rule 2201]
- All stack emissions shall be completely offset with creditable biomass on an annual basis. Emission offsets shall be calculated using the formula EC = (1/DF) x Sum (A(i) x EF(i)), where: EC = Emission Credit (lb/yr), DF = Distance Factor, A(i) = Amount from each source (ton/yr), and EF(i) = Emission Factor for each source. [District Rule 2201]
- Distance Factor (DF) shall be 1.2 for sources within a 15 mile radius and 2.0 for sources outside the 15 mile radius. [District Rule 2201 and 40 CFR 60.43b(c)]
- Open-burning emission factors used to determine the quantity of offsets available from the diversion of biomass from open-burning are listed in Appendix A, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division). A copy of Appendix A shall be retained on site and made available for District inspection upon request. [District Rules 2201 and 2520, 9.4.2]
- Particulate matter (PM-10) emissions, except for periods of startup and shutdown as defined in District Rule 4352, shall not exceed any of the following: 0.010 gr/dscf @ 12% CO2 of filterable particulate, 7.62 lb/hr of filterable particulate, or 14.3 lb/hr of filterable and condensable particulate. [District Rule 2201]
- Baghouse shall be operated whenever the biomass combustor is operating. [District Rule 2201 and 40 CFR 64.3(a)]
- Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

District Rule 4352 requires PM10, CO, SOx as SO2, VOC, and NOx as NO2 emission testing not less than once every 12 months among other requirements. The District Source Test Policy (APR 1705) requires annual testing for all pollutants controlled by catalysts. The control equipment will include a NSCR system and ammonia slip as an indicator of how well the NSCR system is performing. Additionally, the unit has a CEMS to measure NOx and O2, as well as a COMS to measure opacity.

Therefore, source testing for PM10, CO, SOx as SO2, VOC, and NOx as NO2 will be required at least once every 12 months. Conditions for source test requirements for Rule 2201 compliance are listed under the discussion for Rule 4352.

2. Monitoring

Monitoring is required to demonstrate ongoing compliance with the DEL requirements. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201 and 40 CFR 64.3(a)]
- Pressure drop across the baghouse shall be maintained between 4 and 9 inches water column. [District Rule 2201 and 40 CFR 64.3(b)]
- Replacement bags numbering at least 10% of the total number of bags shall be maintained on the premises. [District Rule 2201]
- The baghouse shall be equipped with multiple compartments having fire detection systems. [District Rule 2201]
- The dust collection system shall be thoroughly inspected quarterly for tears, scuffs, abrasions, holes or any evidence of particulate matter leaks and shall be repaired as needed. [District Rules 1070, 2201, and 2520, 9.3.2]
- Permittee shall ensure that the flow of injected sorbent (limestone, sodium bicarbonate) or carbon is not interrupted by operating an opacity meter, triboelectric monitoring system, or other system (approved by the District in writing) that alerts the permittee that an absence of flow of sorbent or carbon is present. [District Rule 2201]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. Recordkeeping conditions for Rule 2201 compliance are listed under the discussion for Rule 4352, in addition to the following condition listed on the ATC:

- Verification of all emission related data is the responsibility of the Permittee. Such verification shall be provided to the District upon request. [District Rule 2201 and 40 CFR 60.43b(c)]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

40 CFR Part 60 Subpart Section 60.49b paragraph (h) requires that the owner submit quarterly excess emission reports for any calendar quarter during which there are excess emissions. It also requires quarterly reports stating that there have been no excess emissions during periods when there have been no excess emissions. Such reporting, listed under Rule 4001 discussion, will be required and will satisfy the reporting requirements for Rule 2201. No additional reporting is required.

F. Ambient Air Quality Analysis (AAQA)

An AAQA is conducted by the Technical Services group, for any project which has an increase in emissions and triggers public notification requirements. However, there is no increase in emissions proposed for any pollutant. Therefore, an AAQA is not required.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII. C. 9. above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
   a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
   b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and

5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modification. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application.

The following condition will be added on the ATC to ensure compliance with this rule:

- {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520]

The following existing PTO conditions will be placed on the ATC for this project to ensure compliance.

- For pollutants whose emission rates are not monitored by a CEMS (i.e. SOx, CO, PM10, and VOC), compliance with the hourly and daily emission limits shall be determined by using emission factors derived from the most recent source test. Compliance with the hourly emission rates shall be deemed compliance with the daily emission rates. [District Rule 2520, 9.1]

- Records of dust collector maintenance, inspection, and repair shall be maintained for five years and provided to the District upon request. The record shall include identification of the equipment, date of inspection, corrective action taken and identification of the individual performing the inspection. [District Rule 2520, 9.4.1, 9.4.2]
- Daily records of creditable biomass received shall be used to determine annual offset compliance. [District Rule 2520, 9.4.1]

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. The subparts of 40 CFR Part 60 that apply are from subpart A (General Provisions) and Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) and apply to the fluidized bed boiler operation. These requirements were previously incorporated into the permit for this unit.

40 CFR Part 60, Subpart A, Section 14, defines the meaning of modification to which the the standards are applicable. §60.14, paragraph (e)(5) states that the following will not be considered as a modification: *"the addition or use of any system or device whose primary funtion is the reduction of air pollutants, except when an emission control system is removed or replaced by a system which the Administrator determines to be less environmentally beneficial".*

No newly constructed or reconstructed units are proposed in this project, nor is the unit being modified (as defined above). Since the permittee is retrofitting the boilers for compliance with regulations pertaining to 40 CFR 63 Subpart DDDDD, the requirements of these sections do not apply to the unit.

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

This new source performance standard (NSPS) is intended to regulate emissions of NOx, SOx, and PM from boilers with heat input ratings in excess of 100 MMBtu/hr for which construction is commenced after June 19, 1984. This boiler first received an Authority to Construct permit in 1985, so it commenced construction after June 19, 1984. Furthermore, this boiler has a heat input rating of 317 MMBtu/hr from all fuels, which exceeds the applicability floor of 100 MMBtu/hr for this Subpart.

However, revised NSPS requirements apply to affected facilities that commence construction, reconstruction, or modification after the effective date of the revision. This unit has not been modified, as defined in 40 CFR 60.14 based on an increase in emissions on a kg/hr basis, since original construction commenced. Therefore, the revised NSPS standard does not apply to the unit and will not be further discussed, other than the following conditions will be carried over from the current permit to the ATC for this project.

- Distance Factor (DF) shall be 1.2 for sources within a 15 mile radius and 2.0 for sources outside the 15 mile radius. [District Rule 2201 and 40 CFR 60.43b(c)]
- Emissions shall not exceed any of the following limits: 247.2 lb-SOx/day, 667.2 lb-NOx/day, 928.8 lb-CO/day, 232.8 lb-VOC/day or 340.1 lb-PM10/day. [District Rules 2201, 4301, 5.2, and 4352, 5.1; and 40 CFR 60.44b(i) and (h)]
- Verification of all emission related data is the responsibility of the Permittee. Such verification shall be provided to the District upon request. [District Rule 2201 and 40 CFR 60.43b(c)]
- Source testing for SOx shall be conducted using EPA Method 5 or 8 or a continuous emissions analyzer in accordance with EPA Method 6C. Source testing for NOx shall be conducted using EPA Method 7E or CARB Method 100. Source testing for CO shall be conducted using EPA Method using a measurement span value of 2 times the concentration of the applicable emission limit. Source testing for hydrocarbons shall be conducted using EPA Method 18 or CARB Method 100. Source testing for particulate matter (PM) shall be conducted using EPA Method 5 and EPA Method 202. As an alternative to EPA Method 5, determination of the "front-half" fraction or filterable PM10 may be conducted using EPA Method 201A. Source testing for stack gas velocity shall be conducted using EPA Method 2. Source testing for moisture content shall be conducted using EPA Method 4. [District Rules 2201, 2520, 9.3.2, 4352, 6.3.1; 40 CFR 60.46b(d) and 40 CFR 60.48a]

- Emissions during annual source tests shall not exceed any of the following limits: 27.8 lb-NOx/hr, 38.7 lb-CO/hr, 10.3 lb-SOx/hr, 9.7 lb-VOC/hr, 7.62 lb-filterable-PM10/hr and 14.3 lb-total-PM10/hr. [District Rules 2201, 4301, 5.2, and 4352, 5.1; 40 CFR 60.43b(c) and 40 CFR 60.44b(d) and (l)]
- Compliance with the daily NOx emission limit shall be based on a block 24-hour averaging period using CEM system data. [District Rule 4352, 5.2 and 40 CFR 60.44b(i)]
- Permittee shall operate a Continuous Emissions Monitoring (CEM) system to monitor and record NOx concentrations and O2 concentrations, as well as the NOx emission rate whenever the boiler is operating. The CEM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The CEM system must also comply with 40 CFR 60 Appendix B, Performance Specifications 2, 3 and 6, and 40 CFR 60 Appendix F, Quality Assurance Procedures. Per Section 5.1.1 of Appendix F, at least once each calendar year, a Relative Accuracy Test Audit (RATA) must be conducted. Per Sections 5.1.2 and 5.1.3 of Appendix F, a Cylinder Gas Audit (CGA) and a Relative Accuracy Audit (RAA) must be conducted once each calendar quarter, except in the quarter where a RATA is performed. [District Rules 1080 and 4352, 5.4; 40 CFR 60.7(c), 40 CFR 60.13, and 40 CFR 60.48b]
- Permittee shall operate a Continuous Opacity Monitoring (COM) system to monitor and record opacity whenever the boiler is operating. The COM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The COM system must also satisfy Performance Specification 1 of 40 CFR 60 Appendix B. [District Rule 1080; 40 CFR 60.7(c), 40 CFR 60.13, 40 CFR 60.48b, and 40 CFR 64.3(a) and (d)]
- A quarterly CEM and COM report shall be submitted to the District which includes the following: hours of operation, the date and time of each exceedance of emissions limits (including startup, shutdown, malfunctions or any other reason), the quantity of excess emissions, any conversion factors used to calculate excess emissions, the nature and cause of each malfunction, any corrective action taken and any preventive measures adopted, hours of CEM (and COM) down time, and the cause of all CEM (and COM) down time. [District Rules 1080 and 4352, 5.4; 40 CFR 60.49b(h), and 40 CFR 64.3(d)(i)]
- In cases of CEMS breakdown, malfunction, repairs, calibration checks, and adjustments, emission data shall be obtained as described in paragraph f of 40 CFR 60.48b. [40 CFR 60.48b(f)]
- All quarterly NOx (CEM) and opacity (COM) reports required by this permit may be submitted to the District electronically in lieu of a written submittal. [40 CFR 60.49b(v)]
- Visible emissions from the baghouse serving solid fuel-fired boiler shall not equal or exceed 20% opacity for a period or periods aggregating more than three minutes in one hour as determined by the continuous opacity monitor (COM). [District Rules 2201 and 4101; 40 CFR 60.43b(f) and 40 CFR 64.3(b)]
- The permittee shall record and maintain records of the amount of wood and natural gas fuel combusted each day, and calculate the annual capacity factor individually for wood and natural gas on a 12-month rolling average with a capacity factor calculated at the end of each month. [40 CFR 60.49b(d)]

- The following CEMS records shall be kept for each steam generating unit operating day: (1) Calendar date, (2) Average hourly NOx emission rate, (3) The 24-hour average NOx emission rate (lb-NOx/hr) calculated at the end of each steam generating unit operating day from the measured NOx emissions rate for the preceding 24 hours. (4) Identification of daily NOx limit exceedances including reason for exceedance and the corrective actions taken, (5) Identification of daily CEMS interruptions including reason for interruption and the corrective actions taken, (6) Identification of data exclusions and the reasons for the exclusion, (7) Identification of times that the pollutant concentration exceeded the full span of the CEMS, (8) Description of modifications to the CEMS, and (9) Results of daily CEMS drift tests and other tests required under Appendix F, Procedure 1. A report containing these records shall be submitted to the District upon request. [40 CFR 60.49b(g) and 40 CFR 60.49b(i)]
- The permittee shall maintain a record of the opacity readings made by the COM. [40 CFR 60.49b(f)]

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

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

This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

Per §63.2, a "major source" is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence. Since the emissions of facility C-825 are greater than 10 tons/year for HCl, it is a major source of HAP. Thus Subpart DDDDD applies to facility C-825.

Per §63.7495(b), compliance with this subpart is required for existing boilers or process heater no later than January 31, 2016, except as provided in §63.6(i), which may potentially allow for an extension of compliance with the emission standards.

§63.7499 lists the several subcategories of boilers and process heaters. This facility's boiler fit into category "(e) Fluidized bed units designed to burin biomass/bio-based solid."

Per §63.7500, the permittee must meet each applicable emission limit and work practice standard in Table 2 through 3, and 11 through 13 to this subpart that applies to the boiler.

Table 1 (Emission Limits for New or Reconstructed Boilers and Process Heaters) applies to new or reconstructed boilers and process heaters. The subject boiler is an existing boiler that is neither new nor reconstructed unit, thus this table does not apply.

Table 2 (Emission Limits for Existing Boilers and Process Heaters) applies to the subject boiler. By the applicable date (which is January 31, 2016 for the subject unit), the subject boiler's emissions shall be limited to following (except during startup and shutdown): HCl emission limits of 0.022 lb/MMBtu[5] and mercury emission limits of 0.0000057 lb/MMBtu.[6] The facility will install the sodium bicarbonate system, with an optional activated carbon system to comply with these limits.

Covanta's biomass boiler does not have a CO CEMS. Therefore, Subpart DDDDD requires a CO emissions limit of 470 ppm by volume on a dry basis corrected to 3 percent oxygen[7]. Currently the CO emissions are limited by permit condition to 38.7 lb/hr (equivalent to 134 ppmv, see Appendix F) which is more restrictive and complies with the MACT CO limit of 470 ppm.

Filterable PM shall not exceed 0.11 lb/MMBtu (or TSM (total selected metals) shall not exceed 0.0012 lb/MMBtu). Finally, the facility is installing a sodium bicarbonate injection system, with the option of adding activated carbon to control emissions from HCl.

Compliance with the Subpart DDDDD emission limits are expected.

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5 The boiler MACT limit of 0.022 lb-HCl/MMBtu is equivalent to 16.7 ppm-HCl @ 7% O2 [0.022 lb-HCl/MMBtu = (0.022 lb/MMBtu)(379.5 dscf/lb-mol)(1E6)/(36.5 lb-HCl/lb-mole)(9240 dscf/MMBtu F-factor for wood at 68 F)(20.9/(20.9-7)) = 16.5 ppm-HCl @ 7% O2].

6 The boiler MACT limit of 5.7E-6 lb-Hg/MMBtu is equivalent to 6.6 µg/dscm @ 7% O2 [5.7E-6 lb/MMBtu)(453.6 g/lb)(1E6 µg/g)(35.3 dscf/dscm)/(9240 dscf/MMBtu F-factor for wood at 68 F)(20.9/(20.9-7))) = 6.6 µg/dscm @ 7% O2].

7 Source test results in Appendix G indicate CO emissions test results in 2013. The test resulted in emissions of 4.2 ppm-CO for the boiler. Therefore, compliance is expected.

Table 2 to Subpart DDDDD of Part 63—Emission Limits for Existing Boilers and Process Heaters As stated in §63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]			
If your boiler or process heater is in this subcategory . . .	**For the following pollutants . . .**	**The emissions must not exceed the following emission limits, except during startup and shutdown . . .**	**Using this specified sampling volume or test run duration . . .**
1. Units in all subcategories designed to burn solid fuel	a. HCl	2.2E-02 lb per MMBtu of heat input	For M26A, Collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.7E-06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784[b] collect a minimum of 3 dscm.
9. Fluidized bed units designed to burn biomass/bio-based solid	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-01 lb per MMBtu of heat input; or (1.2E-03 lb per MMBtu of heat input)	Collect a minimum of 1 dscm per run.

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

- HCl emissions from this unit shall not exceed 0.022 lb/MMBtu except during periods of startup and shutdown. HCl emissions shall be determined annually according to the procedures in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 2]

- Mercury emissions from this unit shall not exceed 0.0000057 lb/MMBtu except during periods of startup and shutdown. Mercury emissions shall be determined annually according to the procedures in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 2]

- CO emissions shall not exceed 470 ppmvd corrected to 3% O2, except during periods of startup and shutdown. [40 CFR 63.7500, Table 2]

- Filterable PM shall not exceed 0.11 lb/MMBtu except during periods of startup and shutdown, or total selected metals (TSM) as defined in 40 CFR 63 Subpart DDDDD shall not exceed 0.0012 lb/MMBtu except during periods of startup and shutdown. Filterable PM or TSM emissions shall be determined annually according to the procedures in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 2]

Per Table 3 (Work Practice Standards), per item #3 of Table 3, the permittee of an existing boiler without a continuous oxygen trim system and with a heat capacity of 10 MMBtu/hr or greater must conduct a tune-up of the boiler annually as specified in §63.7540.

Additionally, per item #4 of Table 3, the permittee of an existing boiler must have a one-time energy assessment performed by a qualified energy assessor. The energy assessment must include the following items with extent of the evaluation for items a. through e. appropriate for the on-site technical hours listed in 40 CFR 63.7575: a) A visual inspection of the boiler or process heater system; b) An evaluation of operating characteristics of the boiler, specification of energy using systems, operating and maintenance procedures, and unusual operating constraints; c) An inventory of major energy use systems consuming energy from the boiler and which are under the control of the boiler owner/operator; d) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage; e) A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified; f) A list of cost effective energy conservation measures that are within the facility's control; g) A list of energy savings potential of the energy conservation measures identified; and h) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those improvements.

Per items #5 and #6 of Table 3, an existing or new boiler subject to emission limits in Table 1 or 2 or 11 through 14 to this startup during startup, the permittee must operate continuous monitoring systems (CMS) during startup and shutdown. Additionally, natural gas is the clean fuel used for startup and shutdown of the boiler.

Table 3 to Subpart DDDDD of Part 63—Work Practice Standards As stated in §63.7500, you must comply with the following applicable work practice standards:	
If your unit is . . .	**You must meet the following . . .**
3. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater	Conduct a tune-up of the boiler or process heater annually as specified in §63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions under this subpart. Units in all other subcategories will conduct this tune-up as a work practice for dioxins/furans.
4. An existing boiler or process heater located at a major source facility, not including limited use units	Must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in §63.7575:
	a. A visual inspection of the boiler or process heater system.
	b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
	c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.
	d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
	e. A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified.
	f. A list of cost-effective energy conservation measures that are within the facility's control.
	g. A list of the energy savings potential of the energy conservation measures identified.
	h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.
5. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 13 to this subpart during startup	You must operate all CMS during startup. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, and liquefied petroleum gas.
	You must comply with all applicable emission limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of startup, as specified in §63.7535(b). You must keep records during periods of startup. You must provide reports concerning activities and periods of startup, as specified in §63.7555.
6. An existing or new boiler or process heater subject to emission limits in Tables 1	You must operate all CMS during shutdown. While firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases during shutdown, you must vent emissions to the main stack(s) and

Table 3 to Subpart DDDDD of Part 63—Work Practice Standards As stated in §63.7500, you must comply with the following applicable work practice standards:	
If your unit is . . .	**You must meet the following . . .**
or 2 or 11 through 13 to this subpart during shutdown	operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR.
	You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in §63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in §63.7555.

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

- By January 31, 2016, and annually thereafter, the permittee shall perform a tune-up of the boiler as specified in 40 CFR 63.7540. [40 CFR 63.7500, Table 3]

- By January 31, 2016, permittee shall have a one-time energy assessment performed by a qualified energy assessor. An energy assessment that has been completed on or after January 1, 2008 that meets or is amended to meet the energy assessment requirements in this table satisfies the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes this unit also satisfies this requirement. The energy assessment must include the following items with extent of the evaluation for items a through e appropriate for the on-site technical hours listed in 40 CFR 63.7575: a) A visual inspection of the boiler or process heater system; b) An evaluation of operating characteristics of the boiler, specification of energy using systems, operating and maintenance procedures, and unusual operating constraints; c) An inventory of major energy use systems consuming energy from the boiler and which are under the control of the boiler owner/operator; d) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage; e) A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified; f) A list of cost effective energy conservation measures that are within the facility's control; g) A list of energy savings potential of the energy conservation measures identified; and h) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those improvements. [40 CFR 63.7500, Table 3]

- Permittee shall operate all continuous monitoring systems during startup and shutdown of the boiler. [40 CFR 63.7500, Table 3]

- Permittee shall comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. Permittee shall collect monitoring data during periods of startup and shutdown, as specified in §63.7535(b). Permittee shall keep records during periods of startup and shutdown and shall provide reports concerning activities and periods of startup and shutdown, as specified in §63.7555. [40 CFR 63.7500, Table 3]

- Permittee shall vent emissions to the main stack(s) upon firing the unit on biomass and shall engage all of the applicable control devices except limestone injection in fluidized bed combustion boiler, dry scrubber, fabric filter, selective non-catalytic reduction, and selective catalytic reduction. Those systems shall be started as expeditiously as possible. Permittee shall collect monitoring data during periods of startup as specified in 40 CFR 63.7535(b). Permittee shall keep records during periods of startup. Permittee shall provide reports concerning activities and periods of startup, as specified in 40 CFR 63.7555. [40 CFR 63.7500, Table 3]

Table 4 (Operating Limits for Boilers and Process Heaters) specifies the operating limits the permittee must meet depending on the control equipment utilized to meet the emission requirements in this section. The permittee has identified the following control equipment listed in the table below:

Table 4 to Subpart DDDDD of Part 63—Operating Limits for Boilers and Process Heaters As stated in §63.7500, you must comply with the applicable operating limits:	
When complying with a Table 1, 2, 11, 12, or 13 numerical emission limit using . . .	**You must meet these operating limits . . .**
3. Fabric filter control on units not using a PM CPMS	a. Maintain opacity to less than or equal to 10 percent opacity (daily block average); or
	b. Install and operate a bag leak detection system according to §63.7525 and operate the fabric filter such that the bag leak detection system alert is not activated more than 5 percent of the operating time during each 6-month period.
5. Dry scrubber or carbon injection control on a boiler not using a mercury CEMS	Maintain the minimum sorbent or carbon injection rate as defined in §63.7575 of this subpart.
6. Any other add-on air pollution control type on units not using a PM CPMS	This option is for boilers and process heaters that operate dry control systems. Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (daily block average).
7. Fuel analysis	Maintain the fuel type or fuel mixture such that the applicable emission rates calculated according to §63.7530(c)(1), (2) and/or (3) is less than the applicable emission limits.
8. Performance testing	For boilers and process heaters that demonstrate compliance with a performance test, maintain the operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the most recent performance test.
10. SO_2 CEMS	For boilers or process heaters subject to an HCl emission limit that demonstrate compliance with an SO_2 CEMS, maintain the 30-day rolling average SO_2 emission rate at or below the highest hourly average SO_2 concentration measured during the most recent HCl performance test, as specified in Table 8.

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

- Opacity from the boiler shall not exceed 10% on a daily block average. [40 CFR 63.7500, Table 4]

- Permittee shall maintain the minimum sorbent (limestone, sodium bicarbonate) or carbon injection rate as defined in §63.7575 of 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 4]

- For boilers that demonstrate compliance with a performance test, the permittee shall maintain the operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the most recent performance test. [40 CFR 63.7500, Table 4]

Table 5 (Performance Testing Requirements), Table 6 (Fuel Analysis Requirements), Table 7 (Establishing Operating Limits), and Table 8 (Demonstrating Continuous Compliance) specifies test methods and procedures for demonstrating compliance with the requirements of the subpart. The following conditions will be listed on the ATC to ensure compliance:

- Filterable PM, TSM, HCl, mercury, and CO emissions shall be source tested using the methods and procedures specified in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 5]

Table 9 (Reporting Requirements) requires a compliance report to be submitted. The following conditions will be listed on the ATC to ensure compliance:

- Reports required by 40 CFR 63 Subpart DDDDD shall be submitted electronically or by hard copy to EPA as described in 40 CFR 63.7550 and to SJVUAPCD. [40 CFR 63.7500, Table 9]

Table 10 (Applicable of General Provisions to Subpart DDDDD) and Table 11 (Toxic Equivalency Factors for Dioxins/Furans) are for reference purposes.

Tables 12 and 13 list alternative emission limits for new, reconstructed, and existing units. The applicant has not proposed any alternative emissions limits.

Therefore, compliance with this subpart is expected.

40 CFR Part 64 Compliance Assurance Monitoring (CAM)

The CAM rule requires facilities to monitor the performance of their emission control equipment. CAM section 64.1 defines the key terms in the CAM rule.

Except for certain exemptions enumerated in subpart (b), CAM Section 64.2(a) requirements apply to a pollutant specific emissions unit at a Major Source if the unit satisfies all of the following criteria:

1) the unit must have an emission limit for the pollutant; and

2) the unit must have add-on controls for the pollutant that enable it to achieve the emission limit; and

3) the unit must have a pre-control potential to emit for that pollutant greater than the Major Source threshold.

CAM is required only for NOx and PM10 emissions from this unit. The boiler has a baghouse for PM10 control, and an ammonia injection system for control of NOx. There are no add-on controls for any other pollutant. Therefore, CAM is not applicable to CO, VOC, or SOx. In addition, the boiler is equipped with a continuous emissions monitor (CEM) for NOx; therefore, the boiler is exempt from any CAM requirements for NOx. The following conditions to satisfy CAM for PM10 will be listed on the ATC to ensure compliance:

- Permittee shall operate a Continuous Opacity Monitoring (COM) system to monitor and record opacity whenever the boiler is operating. The COM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The COM system must also satisfy Performance Specification 1 of 40 CFR 60 Appendix B. [District Rule 1080 and 40 CFR 60.7(c), 40 CFR 60.13, 40 CFR 60.48b, and 40 CFR 64.3(a) and (d)]
- Baghouse shall be operated whenever the biomass combustor is operating. [District Rule 2201 and 40 CFR 64.3(a)]
- The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201 and 40 CFR 64.3(a)]
- Visible emissions from the baghouse serving solid fuel-fired boiler shall not equal or exceed 20% opacity for a period or periods aggregating more than three minutes in one hour as determined by the continuous opacity monitor (COM). [District Rule 2201 and District Rule 4101, 40 CFR 60.43b(f), and 40 CFR 64.3(b)]
- Pressure drop across the baghouse shall be maintained between 4 and 9 inches water column. [District Rule 2201 and 40 CFR 64.3(b)]
- Pressure drop across baghouse shall be observed and recorded at least once per day during operation of this unit. [District Rule 2520, 9.3.2 and 40 CFR 64.3(b)]
- Upon detecting any excursion from the acceptable range of baghouse differential pressure readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. If the daily average baghouse differential pressure reading is not within the acceptable established range for two consecutive days, permittee shall notify the APCO of such exceedance within 96 hours. [40 CFR 64.7]
- The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR 64.7. [40 CFR 64.7]
- If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR 64.8. [40 CFR 64.7(d)(2) and 40 CFR 64.8]
- The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR 64.9. [40 CFR 64.9]

- A quarterly CEM and COM report shall be submitted to the District which includes the following: hours of operation, the date and time of each exceedance of emissions limits (including startup, shutdown, malfunctions or any other reason), the quantity of excess emissions, any conversion factors used to calculate excess emissions, the nature and cause of each malfunction, any corrective action taken and any preventive measures adopted, hours of CEM (and COM) down time, and the cause of all CEM (and COM) down time. [District Rules 1080 and 4352, 5.4; 40 CFR 60.49b(h), and 40 CFR 64.3(d)(i)]

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). Visible emissions are not expected to exceed Ringelmann 1 or 20% opacity and will be determined in compliance by a continuous opacity monitor. Also, based on past inspections of the facility continued compliance is expected. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Visible emissions from the baghouse serving solid fuel-fired boiler shall not equal or exceed 20% opacity for a period or periods aggregating more than three minutes in one hour as determined by the continuous opacity monitor (COM). [District Rules 2201 and 4101, 40 CFR 60.43b(f), and 40 CFR 64.3(b)]

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. This project will not result in the increase in emissions. Continued compliance is expected with the following condition listed on the ATC. Therefore, compliance with this rule is expected.

- Ammonia slip shall not exceed 25 ppmv at 3% O2. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

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

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

Rule 4201 Particulate Matter Concentration

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf.

This project will not result in the increase in emissions. Continued compliance is expected with the following condition listed on the ATC.

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

Rule 4202 Particulate Matter Emission Rate

The purpose of this rule is to prohibit particulate matter (PM) emissions from any source operation from exceeding the allowable hourly emission rate (E) as calculated using the following applicable formulas:

$E = 3.59\ P^{0.62}$ (when, P = process weight rate ≤ 30 tons/hr)
$E = 17.31\ P^{0.16}$ (when, P = process weight rate > 30 tons/hr)

There are no proposed changes to the PM10 emissions for this project; therefore, continued compliance is expected with the following condition:

- Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation E = 3.59 x P^0.62 if P is less than or equal to 30 tons per hour, or E = 17.31 x P^0.16 if P is greater than 30 ton per hour. [District Rule 4202]

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as PM in Rule 1020, and as measured by EPA Method 5, which measures filterable, not total, PM) for fuel burning equipment. This rule also limits combustion contaminants to ≤ 0.1 gr/scf.

The rule defines fuel burning equipment as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer."

District Rule 4301 Limits			
Pollutant	NO_2	Combustion Contaminants*	SO_2
C-825-5 (lb/hr)	27.8	10	10.3
Rule Limit (lb/hr)	140	10	200

*Per Rule 1020, Definitions, combustion contaminants are "particulate matter discharged into the atmosphere from the burning of any kind of material containing carbon in a free or combined state.

Under previous permitting actions for biomass boilers, specifically C-799-3 and C-1820-1, the District has interpreted "combustion contaminants" as total PM (filterable and condensable) minus any ammonium chlorides or ammonium sulfates collected in the condensable fraction of the condensable PM catch. Reason is these ammonium salts have their origin in the ammonia injection used for NOx control and not in the "burning of any kind of material containing carbon."

Therefore, the following condition is taken from the current PTO and placed on the ATC:

- Emissions during annual source tests shall not exceed any of the following limits: 27.8 lb-NOx/hr, 38.7 lb-CO/hr, 10.3 lb-SOx/hr, 9.7 lb-VOC/hr, 7.62 lb-filterable-PM10/hr and 14.3 lb-total-PM10/hr. [District Rules 2201; 4301, 5.2; and 4352, 5.1; and 40 CFR 60.43b(c); and 40 CFR 60.44b(d) and (l)]
- Emissions of combustion contaminants from the biomass boiler shall not exceed 10 lb/hr. Combustion contaminants are defined as total PM (filterable plus condensable) minus the ammonium salts (e.g. ammonium chloride, ammonium sulfate, ammonium bisulfate, etc.) present in the condensable PM fraction. Compliance with this emission limit shall be demonstrated annually by source test conducted according to EPA Methods 5 and 202 (or other APCO approved methods). Ammonium salts in the condensable PM fraction shall be determined by analysis of the condensable PM fraction by ion chromatography (or other APCO approved method). [District Rules 1020, 3.12, 2520, 9.3, and 4301, 5.2.3]

Previous source tests, including the most recent on June 18, 2013 (see Appendix G), indicate compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

Rule 4352 Solid Fuel Fired Boilers, Steam Generators and Process Heaters and Process Heaters

The purpose of this rule is to limit emissions of oxides of nitrogen (NO_X) and carbon monoxide (CO) from solid fuel fired boilers, steam generators and process heaters.

This rule applies to any boiler, steam generator or process heater fired on solid fuel. Heat may be supplied by liquid or gaseous fuels for start-ups, shutdowns, and during other flame stabilization periods, as deemed necessary by the owner/operator.

Section 3.17 defines "shutdown" as the period of time during which a furnace is allowed to cool from its operating temperature profile corresponding to its previous steady state load to an ambient temperature, or hot standby condition, not to exceed 12 hours.

Section 3.20 defines "start-up" as the period of time during which a furnace is heated to the operating temperature from a shutdown temperature.

Section 5.1 specifies NOx and CO emission limits in Table 1, effective on or after January 1, 2013. The boilers will comply with the rule emission limits for boilers fueled on biomass of 90 ppmv-NOx corrected to 3% O2 and 400 ppmv-CO corrected to 3% O2 as shown in the table below:

Rule 4352 Table 1 – NOx and CO Emission Limits		
	NOx	CO
Limit for Biomass Fuel	90 ppmv corrected to 3% O2	400 ppmv corrected to 3% O2
C-825-5	0.1 lb-NOx/MMBtu (equivalent to 65 ppm @ 3% O2)	149 ppmvd @ 3% O2

The rule requirements limit emissions to 90 ppmv-NO_X @ 3% O_2 and 400 ppmv-CO @ 3% O_2. The unit is limited to 27.8 lb-NO_X/hr (667.2 lb-NO_X/day ÷ 24 hr/day) and 38.7 lb-CO/hr (928.8 lb-CO/day ÷ 24 hr/day) and the maximum heat input of the unit is 317 MMBtu/hr. This corresponds to a NO_X emissions limit of 65 ppmv and a CO emissions limit of 149 ppmv (see Appendix F for conversion calculations). Therefore, the unit is in compliance with these emissions limits, and the following conditions will be listed on the ATC to ensure compliance:

- Emissions shall not exceed any of the following limits: 247.2 lb-SOx/day, 667.2 lb-NOx/day, 928.8 lb-CO/day, 232.8 lb-VOC/day or 340.1 lb-PM10/day. [District Rules 2201, 4301, 5.2, and 4352, 5.1; 40 CFR 60.44b(i) and (h)]
- Emissions during annual source tests shall not exceed any of the following limits: 27.8 lb-NOx/hr, 38.7 lb-CO/hr, 10.3 lb-SOx/hr, 9.7 lb-VOC/hr, 7.62 lb-filterable-PM10/hr and 14.3 lb-total-PM10/hr. [District Rules 2201, 4301, 5.2, and 4352, 5.1; and 40 CFR 60.43b(c); and 40 CFR 60.44b(d) and (l)].

Section 5.2 states that all NO_X and CO emission limits shall be based on a 24-hour averaging period. A violation of the emission limits as measured by the test methods listed in Section 6.4 will constitute a violation of this rule. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Compliance with the daily NOx emission limit shall be based on a block 24-hour averaging period using CEM system data. [District Rule 4352, 5.2 and 40 CFR 60.44b(i)]

Section 5.3 lists startup and shutdown provisions. The permit has a shutdown limit of 12 hours that will comply with the rule requirement of 12 hours in Section 5.3.1. Startup limit of 96 hours on the permit will comply with the rule requirements of 96 hours in Section 5.3.2, and if curing of the refractory is required after any furnace modifications, start-up time may be extended to no longer than 192 hours. In compliance with Section 5.3.3, the emission control system shall be in operation, and emissions shall be minimized insofar as technologically feasible during startup and shutdown. The applicable emission limits of Section 5.1 shall not apply during start-up or shutdown provided an operator complies with the requirements specified below. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- Start-up operation is defined as the period of time during which a unit is heated to the operating temperature and pressure from a shutdown status. Shutdown operation is defined as the period of time during which a unit is taken from operational to nonoperational status by allowing it to cool down from its operating temperature and pressure to an ambient temperature. [District Rule 4352, 3.15, 3.18, and 5.3]

- The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown. [District Rule 4352, 5.3.3]
- The duration of each start-up shall not exceed 96 hours. The duration of each shut down shall not exceed twelve (12) hours. [District Rule 4352, 5.3.1 and 5.3.2]

Pursuant to Section 5.4, requires the use of a Continuous Emissions Monitoring (CEM) system to monitor and record NOx concentrations and emission rate, and CO2 or O2 concentrations. Continuous Emission Monitoring systems shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7 (c) and 60.13. CEMs must also satisfy the Performance Specifications of 40 CFR 60 Appendix B and the Relative Accuracy Test Audit of Appendix F. The unit is equipped with CEM systems that monitor NOx and O2 concentrations in compliance with the requirements. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- Permittee shall operate a Continuous Emissions Monitoring (CEM) system to monitor and record NOx concentrations and O2 concentrations, as well as the NOx emission rate whenever the boiler is operating. The CEM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The CEM system must also comply with 40 CFR 60 Appendix B, Performance Specifications 2, 3 and 6, and 40 CFR 60 Appendix F, Quality Assurance Procedures. Per Section 5.1.1 of Appendix F, at least once each calendar year, a Relative Accuracy Test Audit (RATA) must be conducted. Per Sections 5.1.2 and 5.1.3 of Appendix F, a Cylinder Gas Audit (CGA) and a Relative Accuracy Audit (RAA) must be conducted once each calendar quarter, except in the quarter where a RATA is performed. [District Rules 1080 and 4352, 5.4 and 40 CFR 60.7(c), 40 CFR 60.13, and 40 CFR 60.48b]
- The continuous monitoring equipment must be linked to a data acquisition system that is accessible via modem. [District Rules 1080 and 4352, 5.4]
- Permittee shall operate a Continuous Opacity Monitoring (COM) system to monitor and record opacity whenever the boiler is operating. The COM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The COM system must also satisfy Performance Specification 1 of 40 CFR 60 Appendix B. [District Rule 1080 and 40 CFR 60.7(c), 40 CFR 60.13, 40 CFR 60.48b, and 40 CFR 64.3(a) and (d)]
- A quarterly CEM and COM report shall be submitted to the District which includes the following: hours of operation, the date and time of each exceedance of emissions limits (including startup, shutdown, malfunctions or any other reason), the quantity of excess emissions, any conversion factors used to calculate excess emissions, the nature and cause of each malfunction, any corrective action taken and any preventive measures adopted, hours of CEM (and COM) down time, and the cause of all CEM (and COM) down time. [District Rules 1080 and 4352, 5.4; 40 CFR 60.49b(h), and 40 CFR 64.3(d)(i)]
- Quarterly reports shall be submitted to the District within 30 days after the end of each calendar quarter. [District Rules 1080 and 4352, 5.4]

Section 6.1.1 and 6.1.1.1 states that except for municipal solid waste (MSW) fired units, the owner/operator of any unit subject to the requirements of this rule shall maintain an operating log for each unit that includes on a monthly basis recordkeeping for the type and quantity of

fuel used. Section 6.1.2 requires the higher heating value (hhv) of each fuel be determined by section 6.3, or as certified by a third party fuel supplier. Section 6.1.2 requires this information be maintained for five years, and made available to the APCO, ARB or EPA upon request. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Daily records for each load of creditable biomass received shall be maintained which include the date, weigh ticket number, supplier name, fuel type, tons received, the offset ratio for the load of biomass, and the amount of offset credit (in pounds of pollutant) attributable to each load of biomass. Records shall include certifications that any creditable biomass for which offset credit is claimed has historically been open burned in the San Joaquin Valley air basin. [District Rules 2201 and 4352, 6.1]
- Permittee shall record the type, mass, and geographic origin of all creditable biomass received on a daily basis. [District Rules 2201 and 4352, 6.1.1]
- Permittee shall record on a monthly basis the higher heating value of all fuels used. [District Rule 4352, 6.1.1]
- All records required by this permit shall be retained on site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2520, 9.4.2 and 4352, 6.1.2]

Section 6.2.1 states that each unit subject to the requirements of this rule shall be tested at least once every 12 months to determine compliance with the applicable requirements of section 5.0. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Permittee shall perform annual source tests for PM10, CO, SOx as SO2, VOC, and NOx as NO2. The District must be notified 30 days prior to any compliance source testing. A pretest plan outlining source test methods, approved contractor, test date, and operating parameters must be submitted to the District for approval at least 15 days prior to source sampling. [District Rules 1081, 7.1, 2201, and 4352, 6.2.1]

Section 6.2.2 and 6.2.3 states all emission measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate, and no compliance determination shall be established within two hours after a period in which fuel flow to the unit is zero, or is shut off for 30 minutes or longer.

- All emissions measurements during a source test shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No compliance determination shall be established within two hours after a period in which fuel flow to the unit is zero, or is shut off for 30 minutes or longer. [District Rule 4352, 6.2.2, 6.2.3]

Section 6.3.1 states that compliance with the requirements of section 5.0 shall be determined in accordance with the following source test procedures:

- Oxides of nitrogen (ppmv) - EPA Method 7E, or ARB Method 100
- Carbon monoxide (ppmv) - EPA Method 10, or ARB Method 100.
- Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.
- NO_X emission rate (Heat input basis) - EPA Method 19.

- Stack gas velocities - EPA Method 2.
- Stack gas moisture content - EPA Method 4.
- Solid fuel higher heating value (hhv) - ASTM Method D 2015-85, or
- Solid fuel higher heating value (hhv) - ASTM Method E 711.
- ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels.

Therefore, the following conditions will be listed on the ATC to ensure compliance:

- Source testing for SOx shall be conducted using EPA Method 5 or 8 or a continuous emissions analyzer in accordance with EPA Method 6C. Source testing for NOx shall be conducted using EPA Method 7E or CARB Method 100. Source testing for CO shall be conducted using EPA Method 10 or CARB Method 100. Source testing for hydrocarbons shall be conducted using EPA Method 18 or CARB Method 100. Source testing for particulate matter (PM) shall be conducted using EPA Method 5 and EPA Method 202. As an alternative to EPA Method 5, determination of the "front-half" fraction or filterable PM10 may be conducted using EPA Method 201A. Source testing for stack gas velocity shall be conducted using EPA Method 2. Source testing for moisture content shall be conducted using EPA Method 4. [District Rules 2201; 2520, 9.3.2; 4352, 6.3.1; 40 CFR 60.46b(d), and 40 CFR 60.48a]
- The higher heating value of all solids fuels shall be certified by a third-party supplier or determined by ASTM Methods D 5865-10 or E 711-87, or other test method(s) with prior written approval of the APCO, ARB, and EPA. [District Rule 4352, 6.3]

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

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

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

  The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) do not trigger Best

Available Control Technology (BACT) and do not trigger Toxic Best Available Control Technology (T-BACT) requirements.

Issuance of permits for emissions units not subject to BACT or T-BACT requirements is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

Indemnification Agreement/Letter of Credit Determination

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

The proposed project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue ATC C-825-5-19 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
C-825-5-19	3020-08F	30,000 kW electrical generation	$8,941.00

Appendixes

A: Draft ATC
B: Current PTO
C: Covanta's Baseline Actual Emissions (BAE)
D: PSD Significant Emission Increase Calculations
E: Quarterly Net Emissions Change (QNEC)
F: NOx and CO lb/hr to ppmv Conversion Calculations
G: Source Test (June 18, 2013) Information

APPENDIX A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-825-5-19

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: COVANTA MENDOTA LP
MAILING ADDRESS: P O BOX 39
MARIPOSA, CA 95338

LOCATION: 400 GUILLEN PARKWAY
CORRESPONDENCE TO DELANO PLANT
MENDOTA, CA 93640

EQUIPMENT DESCRIPTION:
MODIFICATION OF 30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE AND THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS: INSTALL SODIUM BICARBONATE REAGENT FEEDER SYSTEM INCLUDING BULK BAG UNLOADER AND VOLUMETRIC FEEDER AND OPTIONAL POWDERED ACTIVATED CARBON INJECTION SYSTEM TO MEET BOILER MACT REQUIREMENTS OF 40 CFR 63 SUBPART DDDDD

CONDITIONS

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. While dormant, a blank flange will be installed on the natural gas line and the flange will be locked; no fuel deliveries will be allowed by contract; the fuel yard will be maintained as empty. [District Rule 2080] Federally Enforceable Through Title V Permit
3. Permittee shall submit written notification to the District upon designating the unit as dormant or active. [District Rule 2080] Federally Enforceable Through Title V Permit
4. While dormant, normal source testing and the requirements of conditions 67 and 68 shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

5. Upon recommencing operation of this unit, normal source testing and the requirements of conditions 67 and 68 shall resume. The requirements of conditions 67 and 68 shall be completed within 180 days of recommencing operation of this unit. [District Rule 2080] Federally Enforceable Through Title V Permit

6. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080] Federally Enforceable Through Title V Permit

7. Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

9. Ammonia slip shall not exceed 25 ppmv at 3% O2. [District Rule 4102]

10. Boiler fuels shall be limited to the following: saw mill residues (bark, sawdust, chips and shavings); forest residues; orchard and vineyard prunings including chipped whole tree wastes and materials listed in Appendix A to the Title V Permit, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division); clean unpainted urban wood waste; unpainted paper waste; nut shells; stone fruit pits; onion and garlic skins; and natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Natural gas shall be used only for startup and combustion stabilization (fuel not to exceed 25% annual BTU heat input). [District Rule 2201] Federally Enforceable Through Title V Permit

12. The permittee shall project and use the proper mix of fuels to ensure that all emissions are offset as required with credits from the use of creditable fuels. [District Rule 2201] Federally Enforceable Through Title V Permit

13. The permittee shall curtail operation proportionately and notify the District whenever, due to changes in the quantity or quality of wastes supplied, the emissions exceed the offsets. [District Rule 2201] Federally Enforceable Through Title V Permit

14. All stack emissions shall be completely offset with creditable biomass on an annual basis. Emission offsets shall be calculated using the formula EC = (1/DF) x Sum (A(i) x EF(i)), where: EC = Emission Credit (lb/yr), DF = Distance Factor, A(i) = Amount from each source (ton/yr), and EF(i) = Emission Factor for each source. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Distance Factor (DF) shall be 1.2 for sources within a 15 mile radius and 2.0 for sources outside the 15 mile radius. [District Rule 2201 and 40 CFR 60.43b(c)] Federally Enforceable Through Title V Permit

16. Open-burning emission factors used to determine the quantity of offsets available from the diversion of biomass from open-burning are listed in Appendix A, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division). A copy of Appendix A shall be retained on site and made available for District inspection upon request. [District Rules 2201 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

17. Particulate matter (PM-10) emissions, except for periods of startup and shutdown as defined in District Rule 4352, shall not exceed any of the following: 0.010 gr/dscf @ 12% CO2 of filterable particulate, 7.62 lb/hr of filterable particulate, or 14.3 lb/hr of filterable and condensable particulate. [District Rule 2201] Federally Enforceable Through Title V Permit

18. Emissions shall not exceed any of the following limits: 247.2 lb-SOx/day, 667.2 lb-NOx/day, 928.8 lb-CO/day, 232.8 lb-VOC/day or 340.1 lb-PM10/day. [District Rules 2201, 4301, 5.2, and 4352, 5.1; 40 CFR 60.44b(i) and (h)] Federally Enforceable Through Title V Permit

19. For pollutants whose emission rates are not monitored by a CEMS (i.e. SOx, CO, PM10, and VOC), compliance with the hourly and daily emission limits shall be determined by using emission factors derived from the most recent source test. Compliance with the hourly emission rates shall be deemed compliance with the daily emission rates. [District Rule 2520, 9.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. Start-up operation is defined as the period of time during which a unit is heated to the operating temperature and pressure from a shutdown status. Shutdown operation is defined as the period of time during which a unit is taken from operational to nonoperational status by allowing it to cool down from its operating temperature and pressure to an ambient temperature. [District Rule 4352, 3.15, 3.18, and 5.3] Federally Enforceable Through Title V Permit

21. The duration of each start-up shall not exceed 96 hours. The duration of each shut down shall not exceed twelve (12) hours. [District Rule 4352, 5.3.1 and 5.3.2] Federally Enforceable Through Title V Permit

22. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown. [District Rule 4352, 5.3.3] Federally Enforceable Through Title V Permit

23. Verification of all emission related data is the responsibility of the Permittee. Such verification shall be provided to the District upon request. [District Rule 2201 and 40 CFR 60.43b(c)] Federally Enforceable Through Title V Permit

24. Permittee shall perform annual source tests for PM10, CO, SOx as SO2, VOC, and NOx as NO2. The District must be notified 30 days prior to any compliance source testing. A pretest plan outlining source test methods, approved contractor, test date, and operating parameters must be submitted to the District for approval at least 15 days prior to source sampling. [District Rules 1081, 7.1, 2201, and 4352, 6.2] Federally Enforceable Through Title V Permit

25. Emissions of combustion contaminants from the biomass boiler shall not exceed 10 lb/hr. Combustion contaminants are defined as total PM (filterable plus condensable) minus the ammonium salts (e.g. ammonium chloride, ammonium sulfate, ammonium bisulfate, etc.) present in the condensable PM fraction. Compliance with this emission limit shall be demonstrated annually by source test conducted according to EPA Methods 5 and 202 (or other methods approved by the APCO, ARB, and EPA). Ammonium salts in the condensable PM fraction shall be determined by analysis of the condensable PM fraction by ion chromatography (or other method approved by the APCO, ARB, and EPA). [District Rules 1020, 3.12, 2520, 9.3, and 4301, 5.2.3] Federally Enforceable Through Title V Permit

26. Source testing for SOx shall be conducted using EPA Method 5 or 8 or a continuous emissions analyzer in accordance with EPA Method 6C. Source testing for NOx shall be conducted using EPA Method 7E or CARB Method 100. Source testing for CO shall be conducted using EPA Method 10 or CARB Method 100. Source testing for hydrocarbons shall be conducted using EPA Method 18 or CARB Method 100. Source testing for particulate matter (PM) shall be conducted using EPA Method 5 and EPA Method 202. As an alternative to EPA Method 5, determination of the "front-half" fraction or filterable PM10 may be conducted using EPA Method 201A. Source testing for stack gas velocity shall be conducted using EPA Method 2. Source testing for moisture content shall be conducted using EPA Method 4. [District Rules 2201, 2520, 9.3.2, and 4352, 6.3.1; 40 CFR 60.46b(d) and 40 CFR 60.48a] Federally Enforceable Through Title V Permit

27. All emissions measurements during a source test shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No compliance determination shall be established within two hours after a period in which fuel flow to the unit is zero, or is shut off for 30 minutes or longer. [District Rule 4352, 6.2.2, 6.2.3] Federally Enforceable Through Title V Permit

28. Source test reports shall be submitted to the District within 60 days after completion of source testing. [District Rules 1070 and 1081, 7.3] Federally Enforceable Through Title V Permit

29. Emissions during annual source tests shall not exceed any of the following limits: 27.8 lb-NOx/hr, 38.7 lb-CO/hr, 10.3 lb-SOx/hr, 9.7 lb-VOC/hr, 7.62 lb-filterable-PM10/hr and 14.3 lb-total-PM10/hr. [District Rules 2201, 4301, 5.2, and 4352, 5.1; 40 CFR 60.43b(c) and 40 CFR 60.44b(d) and (l)] Federally Enforceable Through Title V Permit

30. Compliance with the daily NOx emission limit shall be based on a block 24-hour averaging period using CEM system data. [District Rule 4352, 5.2 and 40 CFR 60.44b(i)] Federally Enforceable Through Title V Permit

31. Permittee shall operate a Continuous Emissions Monitoring (CEM) system to monitor and record NOx concentrations and O2 concentrations, as well as the NOx emission rate whenever the boiler is operating. The CEM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The CEM system must also comply with 40 CFR 60 Appendix B, Performance Specifications 2, 3 and 6, and 40 CFR 60 Appendix F, Quality Assurance Procedures. Per Section 5.1.1 of Appendix F, at least once each calendar year, a Relative Accuracy Test Audit (RATA) must be conducted. Per Sections 5.1.2 and 5.1.3 of Appendix F, a Cylinder Gas Audit (CGA) and a Relative Accuracy Audit (RAA) must be conducted once each calendar quarter, except in the quarter where a RATA is performed. [District Rules 1080 and 4352, 5.4; 40 CFR 60.7(c), 40 CFR 60.13, and 40 CFR 60.48b] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. Permittee shall operate a Continuous Opacity Monitoring (COM) system to monitor and record opacity whenever the boiler is operating. The COM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The COM system must also satisfy Performance Specification 1 of 40 CFR 60 Appendix B. [District Rule 1080; 40 CFR 60.7(c), 40 CFR 60.13, 40 CFR 60.48b, and 40 CFR 64.3(a) and (d)] Federally Enforceable Through Title V Permit

33. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit

34. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit

35. A quarterly CEM and COM report shall be submitted to the District which includes the following: hours of operation, the date and time of each exceedance of emissions limits (including startup, shutdown, malfunctions or any other reason), the quantity of excess emissions, any conversion factors used to calculate excess emissions, the nature and cause of each malfunction, any corrective action taken and any preventive measures adopted, hours of CEM (and COM) down time, and the cause of all CEM (and COM) down time. [District Rules 1080 and 4352, 5.4; 40 CFR 60.49b(h) and 40 CFR 64.3(d)(i)] Federally Enforceable Through Title V Permit

36. Quarterly reports shall be submitted to the District within 30 days after the end of each calendar quarter. [District Rules 1080 and 4352, 5.4] Federally Enforceable Through Title V Permit

37. In cases of CEMS breakdown, malfunction, repairs, calibration checks, and adjustments, emission data shall be obtained as described in paragraph f of 40 CFR 60.48b. [40 CFR 60.48b(f)] Federally Enforceable Through Title V Permit

38. All quarterly NOx (CEM) and opacity (COM) reports required by this permit may be submitted to the District electronically in lieu of a written submittal. [40 CFR 60.49b(v)] Federally Enforceable Through Title V Permit

39. Baghouse shall be operated whenever the biomass combustor is operating. [District Rule 2201 and 40 CFR 64.3(a)] Federally Enforceable Through Title V Permit

40. The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201 and 40 CFR 64.3(a)] Federally Enforceable Through Title V Permit

41. Visible emissions from the baghouse serving solid fuel-fired boiler shall not equal or exceed 20% opacity for a period or periods aggregating more than three minutes in one hour as determined by the continuous opacity monitor (COM). [District Rules 2201 and 4101; 40 CFR 60.43b(f) and 40 CFR 64.3(b)] Federally Enforceable Through Title V Permit

42. Pressure drop across the baghouse shall be maintained between 4 and 9 inches water column. [District Rule 2201 and 40 CFR 64.3(b)] Federally Enforceable Through Title V Permit

43. Pressure drop across baghouse shall be observed and recorded at least once per day during operation of this unit. [District Rule 2520, 9.3.2 and 40 CFR 64.3(b)] Federally Enforceable Through Title V Permit

44. Upon detecting any excursion from the acceptable range of baghouse differential pressure readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. If the daily average baghouse differential pressure reading is not within the acceptable established range for two consecutive days, permittee shall notify the APCO of such exceedance within 96 hours. [40 CFR 64.7] Federally Enforceable Through Title V Permit

45. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR 64.7. [40 CFR 64.7] Federally Enforceable Through Title V Permit

46. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR 64.8. [40 CFR 64.7(d)(2) and 40 CFR 64.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

47. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR 64.9. [40 CFR 64.9] Federally Enforceable Through Title V Permit

48. Replacement bags numbering at least 10% of the total number of bags shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit

49. The baghouse shall be equipped with multiple compartments having fire detection systems. [District Rule 2201] Federally Enforceable Through Title V Permit

50. The dust collection system shall be thoroughly inspected quarterly for tears, scuffs, abrasions, holes or any evidence of particulate matter leaks and shall be repaired as needed. [District Rules 1070, 2201, and 2520, 9.3.2] Federally Enforceable Through Title V Permit

51. Records of dust collector maintenance, inspection, and repair shall be maintained for five years and provided to the District upon request. The record shall include identification of the equipment, date of inspection, corrective action taken and identification of the individual performing the inspection. [District Rule 2520, 9.4.1, 9.4.2] Federally Enforceable Through Title V Permit

52. Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit

53. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation E = 3.59 x P^0.62 if P is less than or equal to 30 tons per hour, or E = 17.31 x P^0.16 if P is greater than 30 ton per hour. [District Rule 4202] Federally Enforceable Through Title V Permit

54. Permittee shall record the type, mass, and geographic origin of all creditable biomass received on a daily basis. [District Rules 2201 and 4352, 6.1.1] Federally Enforceable Through Title V Permit

55. Permittee shall record on a monthly basis the higher heating value of all fuels used. [District Rule 4352, 6.1.1] Federally Enforceable Through Title V Permit

56. The higher heating value of all solids fuels shall be certified by a third-party supplier or determined by ASTM Methods D 5865-10 or E 711-87, or other test method(s) with prior written approval of the APCO, ARB, and EPA. [District Rule 4352, 6.3] Federally Enforceable Through Title V Permit

57. Daily records for each load of creditable biomass received shall be maintained which include the date, weigh ticket number, supplier name, fuel type, tons received, the offset ratio for the load of biomass, and the amount of offset credit (in pounds of pollutant) attributable to each load of biomass. Records shall include certifications that any creditable biomass for which offset credit is claimed has historically been open burned in the San Joaquin Valley air basin. [District Rules 2201 and 4352, 6.1] Federally Enforceable Through Title V Permit

58. Daily records of creditable biomass received shall be used to determine annual offset compliance. [District Rule 2520, 9.4.1] Federally Enforceable Through Title V Permit

59. The permittee shall record and maintain records of the amount of wood and natural gas fuel combusted each day, and calculate the annual capacity factor individually for wood and natural gas on a 12-month rolling average with a capacity factor calculated at the end of each month. [40 CFR 60.49b(d)] Federally Enforceable Through Title V Permit

60. The following CEMS records shall be kept for each steam generating unit operating day: (1) Calendar date, (2) Average hourly NOx emission rate, (3) The 24-hour average NOx emission rate (lb-NOx/hr) calculated at the end of each steam generating unit operating day from the measured NOx emissions rate for the preceding 24 hours. (4) Identification of daily NOx limit exceedances including reason for exceedance and the corrective actions taken, (5) Identification of daily CEMS interruptions including reason for interruption and the corrective actions taken, (6) Identification of data exclusions and the reasons for the exclusion, (7) Identification of times that the pollutant concentration exceeded the full span of the CEMS, (8) Description of modifications to the CEMS, and (9) Results of daily CEMS drift tests and other tests required under Appendix F, Procedure 1. A report containing these records shall be submitted to the District upon request. [40 CFR 60.49b(g) and 40 CFR 60.49b(i)] Federally Enforceable Through Title V Permit

61. The permittee shall maintain a record of the opacity readings made by the COM. [40 CFR 60.49b(f)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

62. All records required by this permit shall be retained on site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2520, 9.4.2 and 4352, 6.1.2] Federally Enforceable Through Title V Permit

63. HCl emissions from this unit shall not exceed 0.022 lb/MMBtu except during periods of startup and shutdown. HCl emissions shall be determined annually according to the procedures in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 2] Federally Enforceable Through Title V Permit

64. Mercury emissions from this unit shall not exceed 0.0000057 lb/MMBtu except during periods of startup and shutdown. Mercury emissions shall be determined annually according to the procedures in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 2] Federally Enforceable Through Title V Permit

65. CO emissions shall not exceed 470 ppmvd corrected to 3% O2, except during periods of startup and shutdown. [40 CFR 63.7500, Table 2] Federally Enforceable Through Title V Permit

66. Filterable PM shall not exceed 0.11 lb/MMBtu except during periods of startup and shutdown, or total selected metals (TSM) as defined in 40 CFR 63 Subpart DDDDD shall not exceed 0.0012 lb/MMBtu except during periods of startup and shutdown. Filterable PM or TSM emissions shall be determined annually according to the procedures in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 2] Federally Enforceable Through Title V Permit

67. By January 31, 2016, and annually thereafter, the permittee shall perform a tune-up of the boiler as specified in 40 CFR 63.7540. [40 CFR 63.7500, Table 3] Federally Enforceable Through Title V Permit

68. By January 31, 2016, permittee shall have a one-time energy assessment performed by a qualified energy assessor. An energy assessment that has been completed on or after January 1, 2008 that meets or is amended to meet the energy assessment requirements in this table satisfies the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes this unit also satisfies this requirement. The energy assessment must include the following items with extent of the evaluation for items a through e appropriate for the on-site technical hours listed in 40 CFR 63.7575: a) A visual inspection of the boiler or process heater system; b) An evaluation of operating characteristics of the boiler, specification of energy using systems, operating and maintenance procedures, and unusual operating constraints; c) An inventory of major energy use systems consuming energy from the boiler and which are under the control of the boiler owner/operator; d) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage; e) A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified; f) A list of cost effective energy conservation measures that are within the facility's control; g) A list of energy savings potential of the energy conservation measures identified; and h) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those improvements. [40 CFR 63.7500, Table 3] Federally Enforceable Through Title V Permit

69. Permittee shall operate all continuous monitoring systems during startup and shutdown of the boiler. [40 CFR 63.7500, Table 3] Federally Enforceable Through Title V Permit

70. Permittee shall comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. Permittee shall collect monitoring data during periods of startup and shutdown, as specified in §63.7535(b). Permittee shall keep records during periods of startup and shutdown and shall provide reports concerning activities and periods of startup and shutdown, as specified in §63.7555. [40 CFR 63.7500, Table 3] Federally Enforceable Through Title V Permit

71. Permittee shall vent emissions to the main stack upon firing the unit on biomass and shall engage all of the applicable control devices except limestone injection in fluidized bed combustion boiler, dry sorbent and carbon injection, fabric filter, and selective non-catalytic reduction. Those systems shall be started as expeditiously as possible. Permittee shall collect monitoring data during periods of startup as specified in 40 CFR 63.7535(b). Permittee shall keep records during periods of startup. Permittee shall provide reports concerning activities and periods of startup, as specified in 40 CFR 63.7555. [40 CFR 63.7500, Table 3] Federally Enforceable Through Title V Permit

72. Opacity from the boiler shall not exceed 10% on a daily block average. [40 CFR 63.7500, Table 4] Federally Enforceable Through Title V Permit

73. Permittee shall maintain the minimum sorbent (limestone, sodium bicarbonate) or carbon injection rate as defined in §63.7575 of 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

74. Permittee shall ensure that the flow of injected sorbent (limestone, sodium bicarbonate) or carbon is not interrupted by operating an opacity meter, triboelectric monitoring system, or other system (approved by the District in writing) that alerts the permittee that an absence of flow of sorbent or carbon is present. [District Rule 2201] Federally Enforceable Through Title V Permit

75. For boilers that demonstrate compliance with a performance test, the permittee shall maintain the operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the most recent performance test. [40 CFR 63.7500, Table 4] Federally Enforceable Through Title V Permit

76. Filterable PM, TSM, HCl, mercury, and CO emissions shall be source tested using the methods and procedures specified in 40 CFR 63 Subpart DDDDD. [40 CFR 63.7500, Table 5] Federally Enforceable Through Title V Permit

77. Reports required by 40 CFR 63 Subpart DDDDD shall be submitted electronically or by hard copy to EPA as described in 40 CFR 63.7550 and to SJVUAPCD. [40 CFR 63.7500, Table 9] Federally Enforceable Through Title V Permit

APPENDIX B
Current PTO

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-825-5-18 **EXPIRATION DATE:** 11/30/2016

EQUIPMENT DESCRIPTION:
30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE AND THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS

PERMIT UNIT REQUIREMENTS

1. While dormant, a blank flange will be installed on the natural gas line and the flange will be locked; no fuel deliveries will be allowed by contract; the fuel yard will be maintained as empty. [District Rule 2080] Federally Enforceable Through Title V Permit
2. Permittee shall submit written notification to the District upon designating the unit as dormant or active. [District Rule 2080] Federally Enforceable Through Title V Permit
3. While dormant, normal source testing shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
4. Upon recommencing operation of this unit, normal source testing shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit
5. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080] Federally Enforceable Through Title V Permit
6. Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
7. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
8. Ammonia slip shall not exceed 25 ppmv at 3% O2. [District Rule 4102]
9. Boiler fuels shall be limited to the following: saw mill residues (bark, sawdust, chips and shavings); forest residues; orchard and vineyard prunings including chipped whole tree wastes and materials listed in Appendix A to the Title V Permit, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division); clean unpainted urban wood waste; unpainted paper waste; nut shells; stone fruit pits; onion and garlic skins; and natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
10. Natural gas shall be used only for startup and combustion stabilization (fuel not to exceed 25% annual BTU heat input). [District Rule 2201] Federally Enforceable Through Title V Permit
11. The permittee shall project and use the proper mix of fuels to ensure that all emissions are offset as required with credits from the use of creditable fuels. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. The permittee shall curtail operation proportionately and notify the District whenever, due to changes in the quantity or quality of wastes supplied, the emissions exceed the offsets. [District Rule 2201] Federally Enforceable Through Title V Permit

13. All stack emissions shall be completely offset with creditable biomass on an annual basis. Emission offsets shall be calculated using the formula EC = (1/DF) x Sum (A(i) x EF(i)), where: EC = Emission Credit (lb/yr), DF = Distance Factor, A(i) = Amount from each source (ton/yr), and EF(i) = Emission Factor for each source. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Distance Factor (DF) shall be 1.2 for sources within a 15 mile radius and 2.0 for sources outside the 15 mile radius. [District Rule 2201 and 40 CFR 60.43b(c)] Federally Enforceable Through Title V Permit

15. Open-burning emission factors used to determine the quantity of offsets available from the diversion of biomass from open-burning are listed in Appendix A, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division). A copy of Appendix A shall be retained on site and made available for District inspection upon request. [District Rule 2201 and District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. Particulate matter (PM-10) emissions, except for periods of startup and shutdown as defined in District Rule 4352, shall not exceed any of the following: 0.010 gr/dscf @ 12% CO2 of filterable particulate, 7.62 lb/hr of filterable particulate, or 14.3 lb/hr of filterable and condensable particulate. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Emissions shall not exceed any of the following limits: 247.2 lb-SOx/day, 667.2 lb-NOx/day, 928.8 lb-CO/day, 232.8 lb-VOC/day or 340.1 lb-PM10/day. [District Rule 2201 and District Rules 4301, 5.2 and 4352, 5.1; and 40 CFR 60.44b(i) and (h)] Federally Enforceable Through Title V Permit

18. For pollutants whose emission rates are not monitored by a CEMS (i.e. SOx, CO, PM10, and VOC), compliance with the hourly and daily emission limits shall be determined by using emission factors derived from the most recent source test. Compliance with the hourly emission rates shall be deemed compliance with the daily emission rates. [District Rule 2520, 9.1] Federally Enforceable Through Title V Permit

19. Start-up operation is defined as the period of time during which a unit is heated to the operating temperature and pressure from a shutdown status. Shutdown operation is defined as the period of time during which a unit is taken from operational to nonoperational status by allowing it to cool down from its operating temperature and pressure to an ambient temperature. [District Rule 4352, 3.15, 3.18, and 5.3] Federally Enforceable Through Title V Permit

20. The duration of each start-up shall not exceed 96 hours. The duration of each shut down shall not exceed twelve (12) hours. [District Rule 4352, 5.3.1 and 5.3.2] Federally Enforceable Through Title V Permit

21. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown. [District Rule 4352, 5.3.3] Federally Enforceable Through Title V Permit

22. Verification of all emission related data is the responsibility of the Permittee. Such verification shall be provided to the District upon request. [District Rule 2201 and 40 CFR 60.43b(c)] Federally Enforceable Through Title V Permit

23. Permittee shall perform annual source tests for PM10, CO, SOx as SO2, VOC, and NOx as NO2. The District must be notified 30 days prior to any compliance source testing. A pretest plan outlining source test methods, approved contractor, test date, and operating parameters must be submitted to the District for approval at least 15 days prior to source sampling. [District Rules 1081, 7.1; 2201; and 4352, 6.2] Federally Enforceable Through Title V Permit

24. Source testing for SOx shall be conducted using EPA Method 5 or 8 or a continuous emissions analyzer in accordance with EPA Method 6C. Source testing for NOx shall be conducted using EPA Method 7E or CARB Method 100. Source testing for CO shall be conducted using EPA Method 10 or CARB Method 100. Source testing for hydrocarbons shall be conducted using EPA Method 18 or CARB Method 100. Source testing for particulate matter (PM) shall be conducted using EPA Method 5 and EPA Method 202. As an alternative to EPA Method 5, determination of the "front-half" fraction or filterable PM10 may be conducted using EPA Method 201A. Source testing for stack gas velocity shall be conducted using EPA Method 2. Source testing for moisture content shall be conducted using EPA Method 4. [District Rules 2201; 2520, 9.3.2; 4352, 6.3.1; 40 CFR 60.46b(d), and 40 CFR 60.48a] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

25. All emissions measurements during a source test shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No compliance determination shall be established within two hours after a period in which fuel flow to the unit is zero, or is shut off for 30 minutes or longer. [District Rule 4352, 6.2.2, 6.2.3] Federally Enforceable Through Title V Permit

26. Source test reports shall be submitted to the District within 60 days after completion of source testing. [District Rules 1070 and 1081, 7.3] Federally Enforceable Through Title V Permit

27. Emissions during annual source tests shall not exceed any of the following limits: 27.8 lb-NOx/hr, 38.7 lb-CO/hr, 10.3 lb-SOx/hr, 9.7 lb-VOC/hr, 7.62 lb-filterable-PM10/hr and 14.3 lb-total-PM10/hr. [District Rules 2201; 4301, 5.2; and 4352, 5.1; and 40 CFR 60.43b(c); and 40 CFR 60.44b(d) and (l)] Federally Enforceable Through Title V Permit

28. Compliance with the daily NOx emission limit shall be based on a block 24-hour averaging period using CEM system data. [District Rule 4352, 5.2 and 40 CFR 60.44b(i)] Federally Enforceable Through Title V Permit

29. Permittee shall operate a Continuous Emissions Monitoring (CEM) system to monitor and record NOx concentrations and O2 concentrations, as well as the NOx emission rate whenever the boiler is operating. The CEM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The CEM system must also comply with 40 CFR 60 Appendix B, Performance Specifications 2, 3 and 6, and 40 CFR 60 Appendix F, Quality Assurance Procedures. Per Section 5.1.1 of Appendix F, at least once each calendar year, a Relative Accuracy Test Audit (RATA) must be conducted. Per Sections 5.1.2 and 5.1.3 of Appendix F, a Cylinder Gas Audit (CGA) and a Relative Accuracy Audit (RAA) must be conducted once each calendar quarter, except in the quarter where a RATA is performed. [District Rules 1080 and 4352, 5.4 and 40 CFR 60.7(c), 40 CFR 60.13, and 40 CFR 60.48b] Federally Enforceable Through Title V Permit

30. The continuous monitoring equipment must be linked to a data acquisition system that is accessible via modem. [District Rules 1080 and 4352, 5.4] Federally Enforceable Through Title V Permit

31. Permittee shall operate a Continuous Opacity Monitoring (COM) system to monitor and record opacity whenever the boiler is operating. The COM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The COM system must also satisfy Performance Specification 1 of 40 CFR 60 Appendix B. [District Rule 1080 and 40 CFR 60.7(c), 40 CFR 60.13, 40 CFR 60.48b, and 40 CFR 64.3(a) and (d)] Federally Enforceable Through Title V Permit

32. A quarterly CEM and COM report shall be submitted to the District which includes the following: hours of operation, the date and time of each exceedance of emissions limits (including startup, shutdown, malfunctions or any other reason), the quantity of excess emissions, any conversion factors used to calculate excess emissions, the nature and cause of each malfunction, any corrective action taken and any preventive measures adopted, hours of CEM (and COM) down time, and the cause of all CEM (and COM) down time. [District Rules 1080 and 4352, 5.4; 40 CFR 60.49b(h), and 40 CFR 64.3(d)(i)] Federally Enforceable Through Title V Permit

33. Quarterly reports shall be submitted to the District within 30 days after the end of each calendar quarter. [District Rules 1080 and 4352, 5.4] Federally Enforceable Through Title V Permit

34. In cases of CEMS breakdown, malfunction, repairs, calibration checks, and adjustments, emission data shall be obtained as described in paragraph f of 40 CFR 60.48b. [40 CFR 60.48b(f)] Federally Enforceable Through Title V Permit

35. All quarterly NOx (CEM) and opacity (COM) reports required by this permit may be submitted to the District electronically in lieu of a written submittal. [40 CFR 60.49b(v)] Federally Enforceable Through Title V Permit

36. Baghouse shall be operated whenever the biomass combustor is operating. [District Rule 2201 and 40 CFR 64.3(a)] Federally Enforceable Through Title V Permit

37. The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201 and 40 CFR 64.3(a)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

38. Visible emissions from the baghouse serving solid fuel-fired boiler shall not equal or exceed 20% opacity for a period or periods aggregating more than three minutes in one hour as determined by the continuous opacity monitor (COM). [District Rule 2201 and District Rule 4101, 40 CFR 60.43b(f), and 40 CFR 64.3(b)] Federally Enforceable Through Title V Permit

39. Pressure drop across the baghouse shall be maintained between 4 and 9 inches water column. [District Rule 2201 and 40 CFR 64.3(b)] Federally Enforceable Through Title V Permit

40. Pressure drop across baghouse shall be observed and recorded at least once per day during operation of this unit. [District Rule 2520, 9.3.2 and 40 CFR 64.3(b)] Federally Enforceable Through Title V Permit

41. Upon detecting any excursion from the acceptable range of baghouse differential pressure readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. If the daily average baghouse differential pressure reading is not within the acceptable established range for two consecutive days, permittee shall notify the APCO of such exceedance within 96 hours. [40 CFR 64.7] Federally Enforceable Through Title V Permit

42. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR 64.7] Federally Enforceable Through Title V Permit

43. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR 64.7(d)(2) and 40 CFR 64.8] Federally Enforceable Through Title V Permit

44. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR 64.9] Federally Enforceable Through Title V Permit

45. Replacement bags numbering at least 10% of the total number of bags shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit

46. The baghouse shall be equipped with multiple compartments having fire detection systems. [District Rule 2201] Federally Enforceable Through Title V Permit

47. The dust collection system shall be thoroughly inspected quarterly for tears, scuffs, abrasions, holes or any evidence of particulate matter leaks and shall be repaired as needed. [District Rules 1070; 2201; and 2520, 9.3.2] Federally Enforceable Through Title V Permit

48. Records of dust collector maintenance, inspection, and repair shall be maintained for five years and provided to the District upon request. The record shall include identification of the equipment, date of inspection, corrective action taken and identification of the individual performing the inspection. [District Rule 2520, 9.4.1, 9.4.2] Federally Enforceable Through Title V Permit

49. Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit

50. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation E = 3.59 x P^0.62 if P is less than or equal to 30 tons per hour, or E = 17.31 x P^0.16 if P is greater than 30 ton per hour. [District Rule 4202] Federally Enforceable Through Title V Permit

51. Permittee shall record the type, mass, and geographic origin of all creditable biomass received on a daily basis. [District Rules 2201; and 4352, 6.1.1] Federally Enforceable Through Title V Permit

52. Permittee shall record on a monthly basis the higher heating value of all fuels used. [District Rule 4352, 6.1.1] Federally Enforceable Through Title V Permit

53. The higher heating value of all solids fuels shall be certified by a third-party supplier or determined by ASTM Methods D 5865-10 or E 711-87, or other test method(s) with prior written approval of the APCO, ARB, and EPA. [District Rule 4352, 6.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

54. Daily records for each load of creditable biomass received shall be maintained which include the date, weigh ticket number, supplier name, fuel type, tons received, the offset ratio for the load of biomass, and the amount of offset credit (in pounds of pollutant) attributable to each load of biomass. Records shall include certifications that any creditable biomass for which offset credit is claimed has historically been open burned in the San Joaquin Valley air basin. [District Rules 2201; and 4352, 6.1] Federally Enforceable Through Title V Permit

55. Daily records of creditable biomass received shall be used to determine annual offset compliance. [District Rule 2520, 9.4.1] Federally Enforceable Through Title V Permit

56. The permittee shall record and maintain records of the amount of wood and natural gas fuel combusted each day, and calculate the annual capacity factor individually for wood and natural gas on a 12-month rolling average with a capacity factor calculated at the end of each month. [40 CFR 60.49b(d)] Federally Enforceable Through Title V Permit

57. The following CEMS records shall be kept for each steam generating unit operating day: (1) Calendar date, (2) Average hourly NOx emission rate, (3) The 24-hour average NOx emission rate (lb-NOx/hr) calculated at the end of each steam generating unit operating day from the measured NOx emissions rate for the preceding 24 hours. (4) Identification of daily NOx limit exceedances including reason for exceedance and the corrective actions taken, (5) Identification of daily CEMS interruptions including reason for interruption and the corrective actions taken, (6) Identification of data exclusions and the reasons for the exclusion, (7) Identification of times that the pollutant concentration exceeded the full span of the CEMS, (8) Description of modifications to the CEMS, and (9) Results of daily CEMS drift tests and other tests required under Appendix F, Procedure 1. A report containing these records shall be submitted to the District upon request. [40 CFR 60.49b(g) and 40 CFR 60.49b(i)] Federally Enforceable Through Title V Permit

58. The permittee shall maintain a record of the opacity readings made by the COM. [40 CFR 60.49b(f)] Federally Enforceable Through Title V Permit

59. All records required by this permit shall be retained on site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2520, 9.4.2 and 4352, 6.1.2] Federally Enforceable Through Title V Permit

60. Emissions of combustion contaminants from the biomass boiler shall not exceed 10 lb/hr. Combustion contaminants are defined as total PM (filterable plus condensable) minus the ammonium salts (e.g. ammonium chloride, ammonium sulfate, ammonium bisulfate, etc.) present in the condensable PM fraction. Compliance with this emission limit shall be demonstrated annually by source test conducted according to EPA Methods 5 and 202 (or other methods approved by the APCO, ARB, and EPA). Ammonium salts in the condensable PM fraction shall be determined by analysis of the condensable PM fraction by ion chromatography (or other method approved by the APCO, ARB, and EPA). [District Rules 1020, 3.12; 2520, 9.3; 4301, 5.2.3] Federally Enforceable Through Title V Permit

APPENDIX C
Covanta's Baseline Actual Emissions (BAE)

C-825-5 Covanta Mendota, LP - Biomass and Natural Gas-Fired Circulating Fluidized Bed Boiler

Detailed Process Rate and Emission Factors

Year	PRDESC	Process Rate (NG: MMscf) (Wood: tons burned)	NOx Emission Factor (NG: lb/MMscf) (Wood: lb/ton)	NOx Emissions (tons/yr)	VOC Emission Factor (NG: lb/MMscf) (Wood: lb/ton)	VOC Emissions (tons/yr)	PM10 Emission Factor (NG: lb/MMscf) (Wood: lb/ton)	PM10 Emissions (tons/yr)	SOx Emission Factor (lb/unit)	SOx Emissions (tons/yr)	CO Emission factor (lb/unit)	CO Emissions (tons/yr)
2011	Boiler - NG	1.51	140	0.105699999	1.7	1.28E-03	3	2.26E-03	0.6	4.53E-04	40	3.02E-02
2011	Boiler - Wood	176979.7	0.86	76.10127234	0.001	0.088489852	0.67	59.28820055	0.33	29.201651	0.65	57.518404
2012	Boiler - NG	10.981	140	0.768669996	1.7	9.33E-03	3	1.65E-02	0.6	3.29E-03	40	2.20E-01
2012	Boiler - Wood	184823.5	0.86	79.474105	0.001	0.09241175	0.67	61.9158725	0.33	30.495878	0.65	60.067638
2013	Boiler - NG	8.79	140	0.615299997	1.7	7.47E-03	3	1.32E-02	0.6	2.64E-03	40	1.76E-01
2013	Boiler - Wood	185534.1	0.86	79.77966031	0.001	0.092767047	0.67	62.15392141	0.33	30.613125	0.65	60.29858
2014	Boiler - NG	11.545	140	0.808150005	1.7	9.81E-03	3	1.73E-02	0.6	3.46E-03	40	2.31E-01
2014	Boiler - Wood	185668	0.86	79.83721984	0.001	0.092833977	0.67	62.1987643	0.33	30.635212	0.65	60.342085
2015	Boiler - NG	2.813	140	0.196909997	1.7	2.39E-03	3	4.22E-03	0.6	0.0008439	40	0.05625
2015	Boiler - Wood	6413	0.86	2.75759	0.001	0.0032065	0.67	2.148355	0.33	1.058145	0.65	2.08422

C-825-5 Covanta Mendota, LP - Biomass and Natural Gas-Fired Circulating Fluidized Bed Boiler - Natural Gas and Wood

Year	PRDESC	NOx Emissions (tons/yr)	VOC Emissions (tons/yr)	PM10 Emissions (tons/yr) Natural Gas and Wood	SOx Emissions (tons/yr)	CO Emissions (tons/yr)
2011	Boiler - NG	0.105699999	1.28E-03	2.26E-03	4.53E-04	3.02E-02
2011	Boiler - Wood	76.10127234	0.088489852	59.28820055	29.20165102	57.51840352
2012	Boiler - NG	0.768669996	9.33E-03	1.65E-02	3.29E-03	2.20E-01
2012	Boiler - Wood	79.474105	0.09241175	61.9158725	30.4958775	60.0676375
2013	Boiler - NG	0.615299997	7.47E-03	1.32E-02	2.64E-03	1.76E-01
2013	Boiler - Wood	79.77966031	0.092767047	62.15392141	30.61312547	60.29858047
2014	Boiler - NG	0.808150005	9.81E-03	1.73E-02	3.46E-03	2.31E-01
2014	Boiler - Wood	79.83721984	0.092833977	62.1987643	30.63521227	60.34208477
2015	Boiler - NG	0.196909997	2.39E-03	4.22E-03	0.0008439	0.05625
2015	Boiler - Wood	2.75759	0.0032065	2.148355	1.058145	2.08422

C-825-5 Covanta Mendota, LP - Biomass and Natural Gas-Fired Circulating Fluidized Bed Boiler - Yearly Emissions Summary

Year	NOx Emissions (tons/yr)	VOC Emissions (tons/yr)	PM10 Emissions (tons/yr)	SOx Emissions (tons/yr)	CO Emissions (tons/yr)
2011	76.20697234	0.0898	59.2905	29.2021	57.5486
2012	80.242775	0.1017	61.9323	30.4992	60.2873
2013	80.39496031	0.1002	62.1671	30.6158	60.4744
2014	80.64536985	0.1026	62.2161	30.6387	60.5730
2015	2.954499997	0.0056	2.1526	1.0590	2.1405

APPENDIX D
PSD Significant Emission Increase Calculations

PSD Significant Emission Increase Calculations

For combustion sources, assume all PM is equal to PM10.

Emission Increase = PAE – BAE – UBC

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

The PAE was not provided by the applicant, therefore as discussed VII.C.9, the PAE is equal to PE2

The BAE is calculated based on historical emissions and operating records for any 24 month period, shown in Appendix C, within the previous 10 year period (5 years for electric utility steam generating units). Since this fluidized boiler is an electric utility steam generating unit, a 5 year period is used. Covanta stopped operating on January 14, 2016. Therefore, the BAE period under consideration was from 2011-2015, and the two year representative period was chosen from 2013 and 2014.

The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect at the time this application was deemed complete. Therefore, the BAE will be adjusted for PM10 because the historical emissions from the emissions inventory were over the permitted potential to emit level.

NOx
Emission Increase = PAE – BAE – UBC
= 243,528 lb/yr – 161,040 lb/yr – 82,488 lb/yr
= 0 lb/yr

SO2
Emission Increase = PAE – BAE – UBC
= 90,228 lb/yr – 61,255 lb/yr – 28,973 lb/yr
= 0 lb/yr

CO
Emission Increase = PAE – BAE – UBC
= 339,012 lb/yr – 121,047lb/yr – 217,965 lb/yr
= 0 lb/yr

PM and PM10
The BAE for 2013 and 2014 averaged to 124,383 lb/year which is over the unit's potential to emit of 124,137 lb-PM10/yr. Therefore, the BAE non-compliant emissions were adjusted to reflect the potential to emit.

Emission Increase = PAE – BAE – UBC
= 124,137 lb/yr – 124,137 lb/yr – 0 lb/yr
= 0 lb/yr

APPENDIX E
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

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

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

Example Calculation for NOx

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year
= 243,528 lb/year ÷ 4 qtr/year
= 60,882 lb PM_{10}/qtr

$PE1_{quarterly}$ = $PE1_{annual}$ ÷ 4 quarters/year
= 243,528 lb/year ÷ 4 qtr/year
= 60,882 lb PM_{10}/qtr

Quarterly NEC [QNEC]			
Pollutant	**PE2 (lb/qtr)**	**PE1 (lb/qtr)**	**QNEC (lb/qtr)**
NO_X	60,882	60,882	0
SO_X	22,557	22,557	0
PM_{10}	31,034.25	31,034.25	0
CO	84,753	84,753	0
VOC	21,243	21,243	0

APPENDIX F
NOx and CO lb/hr to ppmv Conversion Calculations

EXAMPLE CALCULATION FOR NOx AND CO CONVERSION

The current permitted level for C-825-5:

- CO emissions: 38.7 lb-CO/hr
- NOx emissions: 27.8 lb-NOx/hr
- maximum rated heat input: 317 MMBtu/hr
- Ideal gas law conversion factor: 379.5 ft^3/lb-mole
- F-factor for biomass as indicated from a June 18, 2013 source test (see Appendix G) report for C-825-5: 9,489 dscf/MMBtu

NOx Calculation:

$$\frac{27.8\ lb\cdot NOx}{hr}\times\frac{1\ lb\cdot mole}{46\ lb\cdot NO_2}\times\frac{379.5\ ft^3}{lb\cdot mol}\times\frac{1\ hr}{317\ MMBtu}\times\frac{1\ MMBtu}{9{,}489\ dscf}\times\frac{(20.9\%-3.0\%)}{20.9\%}=$$

6.5×10^{-5} scf NO_2/dscf exhaust = 65 ppmv NOx at 3% O_2

CO Calculation:

$$\frac{38.7\ lb\cdot CO}{hr}\times\frac{1\ lb\cdot mole}{28\ lb\cdot CO}\times\frac{379.5\ ft^3}{lb\cdot mol}\times\frac{1\ hr}{317\ MMBtu}\times\frac{1\ MMBtu}{9{,}489\ dscf}\times\frac{(20.9\%-3.0\%)}{20.9\%}=$$

1.49×10^{-4} scf CO/dscf exhaust = 149 ppmv CO at 3% O_2

APPENDIX G
Source Test (June 18, 2013) Information

SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL DISTRICT

MEMORANDUM

DATE: December 19, 2013
TO: Source Test File
FROM: John Copp

SUBJECT: Review of Source Test for Covanta Mendota, LP
June 18, 2013
PTO #C-825-5-14

AirKinetics, Inc. (AKI) was retained by Covanta Mendota, LP to conduct a compliance emission test of the effluent gasses from the 317 MMBtu/hr natural gas- and biomass-fired Gotaverken single drum boiler unit served by a thermal de-NOx system and a baghouse. The boiler unit was fired by biomass under a normal operating load. The source test measured NOx, CO, VOC, SOx, NH_3, CO_2, PM, and O_2. A fuel sample was taken for CHONS analysis, determination of fuel HHV and F-factor, and determination of fuel ash content.

District compliance staff found notification, reporting, and source test protocols employed during this test to be satisfactory.

The data and calculations included in the report submittal were evaluated to ensure accuracy. After errors were identified, a revised report was submitted to the District on May 20, 2013. Additional corrections were received on

A review of the report submitted by AKI on behalf of Covanta Mendota indicated that the boiler unit was successful in meeting the emission limitations specified in the permit.

PTO C-825-5-10 317 MMBtu/hr biomass-fired Gotaverken boiler w thermal de-NOx and baghouse

NOx	27.9 ppmvd	**20.6** lb/hr (limit 27.8)
CO	4.2 ppmvd	**1.90** lb/hr (limit 38.7)
VOC	4.3 ppmvd	**1.11** lb/hr (limit 9.7)
SOx	0.07 ppmvd	**0.08** lb/hr (limit 10.3)
NH_3	**< 1.9** ppmvd @ 3% O_2 (limit 25)	
PM	**0.0039** gr/dscf (limit 0.1)	
$F_{1/2}PM10$[1]	**0.0030** gr/dscf @12% CO_2 (limit 0.01)	**2.55** lb/hr (limit 7.62)
PM10[2]		**3.52** lb/hr (limit 14.3) **84.5** lb/day (limit 340.1)
Comb. Contaminants[2]		**3.52** lb/hr (limit 10)
O_2	10.1%	
CO_2	11.1%	

Fuel Analysis

- HHV 7,943 Btu/lb dry
- F-Factor 9,489 dscf/MMBtu @ 68 F
- CHONS 48.05% C, 5.92% H, 42.91% O, 0.28% N, 0.02 S
- Ash Wt.% 2.82%

[1] Total Particulate was collected using EPA Methods 5 & 202 and is reported here as PM10.
[2] Defined by the permit as total PM minus ammonium salts from the back half. Due to the low particulate levels measured, the salt correction was not actually performed.

TABLE 2-2

COMPLIANCE TEST RESULTS

Parameter	Units	Run 1	Run 2	Run 3	Average	Limit
Carbon Monoxide	ppmvd	4.77	4.75	3.20	4.24 ✓	
	lb/hr	2.17	2.11	1.44	1.90 ✓	38.7
	lb/day	52.0	50.5	34.5	45.7 ✓	928.8
	lb/MMBtu	0.00641	0.00627	0.00425	0.00565 ✓	
Nitrogen Oxides	ppmvd	28.4	27.9	27.3	27.9 ✓	
	lb/hr as NO_2	21.2	20.3	20.2	20.6 ✓	27.8
	lb/day as NO_2	509	487	485	494 ✓	667.2
	lb/MMBtu	0.0627	0.0605	0.0597	0.0610 ✓	
Sulfur Oxides	ppmvd	0.12	0.04	0.07	0.07 ✓	
	lb/hr as SO_2	0.12	0.04	0.07	0.08 ✓	10.3
	lb/day as SO_2	2.9	1.0	1.6	1.8 ✓	247.2
	lb/MMBtu	0.00035	0.00013	0.00020	0.00023 ✓	
Volatile Organic Compounds as Methane	ppmvd as CH_4	3.99	5.82	3.06	4.29 ✓	
	lb/hr as CH_4	1.04	1.50	0.78	1.11 ✓	9.7
	lb/day as CH_4	24.9	36.0	18.7	26.5 ✓	232.8
	lb/MMBtu	0.00308	0.00444	0.00231	0.00327 ✓	
Filterable Particulate report as PM_{10}	gr/dscf	0.00276	0.00302	0.00270	0.00283	
	gr/dscf @ 12% CO_2	0.00295	0.00326	0.00290	0.00304	0.01
	lb/hr	2.50 ✓	2.68 ✓	2.45 ✓	2.55 ✓	7.62
	lb/day	60.0	64.4	58.9	61.1	
	lb/MMBtu	0.00719	0.00791	0.00704	0.00738	
Total Particulate report as PM_{10}	gr/dscf	0.00410 ✓	0.00382 ✓	0.00380 ✓	0.00391 ✓	0.1
	gr/dscf @ 12% CO_2	0.00440	0.00413	0.00407	0.00420	
	lb/hr	3.72 ✓	3.40 ✓	3.45 ✓	3.52 ✓	14.3
	lb/day	89.3	81.5	82.7	84.5	340.1
	lb/MMBtu	0.0107	0.0100	0.00989	0.0102	
Combustion Contaminants[1]	lb/hr	3.72 ✓	3.40 ✓	3.45 ✓	3.52 ✓	10
Ammonia	ppmvd @ 3% O_2	<1.87	<1.83	<1.87	<1.85 ✓	25
Nitrous Oxide	ppm	<1.74	<1.74	<1.74	<1.74	
	lb/hr	<1.25	<1.23	<1.22	<1.23	
Methane	ppm	0.91	1.29	0.78	0.99	
	lb/hr	0.24	0.33	0.20	0.26	
Fuel Analysis	HHV As Rec'd Btu/lb				6533[2]	
	HHV Dry Btu/lb				7943	

[1] Combustion contaminants are defined as total particulate matter minus ammonium salts collected in the back half. Analysis for ammonium salts in the back half was not need to demonstrate compliance. Therefore, combustion contaminants have been reported as total particulate without the subtraction of ammonia salts.
[2] One composite sample collected.

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Date June 28 2013
HRI Project 002-FOP
HRI Series No. F264/13
Date Rec'd. 06/21/13
Cust. P.O.#

AirKinetics, Inc.
Thomas Cheng
1308 S Allec Street
Anaheim, CA 92805

Sample Identification
Composite 6/18/13
0858-1051-1330-1600
-

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	17.76	0.00	2.45
Ash	2.32	2.82	2.75
Volatile			
Fixed C			
Total			
Sulfur	0.013	0.016	0.016
Btu/lb (HHV)	6533	7943 ✓	7749
Btu/lb (LHV)	5899	7394	
MMF Btu/lb	6700	8193	
MAF Btu/lb		8174	
Ultimate (%)			
Moisture	17.76	0.00	2.45
Carbon	39.52	48.05	46.87
Hydrogen	4.87	5.92	5.78
Nitrogen	0.23	0.28	0.27
Sulfur	0.01	0.02	0.02
Ash	2.32	2.82	2.75
Oxygen*	35.29	42.91	41.86
Total	100.00	100.00	100.00
Chlorine**	<.005	<.005	<.005

Air Dry Loss (%) 15.69
Forms of Sulfur,as S,(%)

Sulfate		
Pyritic		
Organic		
Total	0.01	0.02

Water Soluble Alkalies (%)

Na20	
K20	

Lb. Alkali Oxide/MM Btu=
Lb. Ash/MM Btu= 3.55
Lb. SO2/MM Btu= 0.04
Lb. Cl/MM Btu=
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM Btu= 9,489 ✓

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.