San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

JAN 26 2015

Mr. Stuart Welch
Mt. Poso Cogeneration Company, LLC
P O Box 81256
Bakersfield, CA 93380

Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)
District Facility # S-91
Project # S-1141955

Dear Mr. Welch:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project allows 49.9 MW atmospheric circulating fluidized bed combustor cogeneration power plant (S-91-3) to be fired on a fuel mixture containing creosote-treated railroad ties.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authority to Construct with a Certificate of Conformity. 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. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review

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Application #:	S-91-3-21		
Project #:	S-1141955		
Deemed Complete:	May 27, 2014		

I. Proposal

Mt. Poso Cogeneration Company, LLC (MPCC) operates a 49.9 MW atmospheric circulating fluidized bed combustor cogeneration power plant (S-91-3) that is authorized to be fired on coal, petroleum coke, tire derived material, and biomass fuel. The applicant requests to allow firing of the boiler on chipped creosote-treated railroad ties in a fuel mixture with biomass provided that the railroad ties do not exceed 50 percent of the biomass and railroad tie mixture. The applicant will be required to maintain records of the percentage of railroad ties in the fuel mixture whenever railroad ties are combusted.

Adding creosote-treated railroad ties to the list of authorized fuels is not expected to result in changes in emission rates for the criteria pollutants. Any changes in hazardous air pollutants are analyzed by the project's Health Risk Assessment, with results from that assessment found in Appendix C.

MPCC received their Title V Permit on April 28, 2000. 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. MPCC must apply to administratively amend their Title V permit.

II. Applicable Rule

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) – Subpart Da - Standards of Performance for Electric Utility Steam Generation Units for Which Construction is Commenced After September 18, 1978
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 II (8/21/03). ***Not applicable*** – *Solid fueled boilers are exempt per §4.1.1.*
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (10/16/08). ***Not applicable*** – *Solid fueled boilers are exempt per §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*** -- *Solid fueled boilers are exempt per §4.1.1.*
Rule 4351	Boilers, Steam Generators and Process Heaters – Phase I (8/21/03). ***Not applicable*** -- *Solid fueled boilers are exempt per §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 36157 Famoso Road in Bakersfield, 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

The 49.9 MW boiler is a fully circulating fluidized bed combustor manufactured by Pyropower. The unit has been in operation since 1989. Circulating fluidized combustion conditions ensure maximum fuel residence time resulting in fuel burn out with minimal levels of CO and

hydrocarbons. The combustor operates as a fully circulating fluidized bed and therefore does not experience detached plumes which may occur with bubbling bed combustors.

With this project, the applicant requests to modify its permit to allow up to 50% (by weight) of its biomass fuel and railroad tie mixture introduced into the combustor to be creosote-treated railroad ties. Trucks will deliver separate loads of chipped/ground railroad ties and other chipped/ground woody biomass fuel. MPCC will weigh and track the types and location of the loads within the facility. The railroad ties fuel will either go to its windrow yard for mixing, or they will be mixed with biomass and sent to the combustor directly for hot feed. Front end loaders will be used to handle and mix the materials, with compliance with the mixing ratios verified by monitoring the number of scoops and types of material mixed. Daily mixing records will be required by permit condition to verify compliance. Additionally, all fuel deliveries in and out of windrow yard will are tracked on the facility's fuel yard tracking system forms, allowing for historical data tracking and verification of correct fuel mixture into both the combustor hot feed and/or stack pile for reclaim.

According to the applicant, the desired stable mix of railroad tie fuel to non-railroad tie fuel is critical to ensure that the boiler combustion process can be properly managed. Improper mixing ratios can negatively affect boiler operation with potentially destructive swings in fuel heating value contents. The applicant states that railroad ties fuel mixtures above 50% can result in excessive boiler combustion temperature. Therefore, it is imperative that MPCC maintains a relatively steady-state mix ratio.

The boiler controls will remain unchanged. Ammonia and limestone/limecake injection are used to control NOx and SOx emissions, respectively. The ammonia injection system consists of two nozzles located at the inlet to each of the two cyclones (which collect bed material and ash). The temperature in this zone is approximately 1650 °F. The boiler is equipped with a superheater and an economizer to achieve optimum efficiency in production of steam (of which over 90% drives a steam turbine to produce electricity and between 5% and 10% of the steam is diverted to a nearby thermally enhanced oil recovery operation). Cyclones followed by a baghouse are utilized for particulate control.

V. Equipment Listing

Pre-Project Equipment Description:

S-91-3-19: 49.9 MW COAL/PETROLEUM COKE/BIOMASS AND TIRE DERIVED FUEL (TDF) FIRED ATMOSPHERIC CIRCULATING FLUIDIZED BED COMBUSTOR COGENERATION POWER PLANT

Proposed Modification:

S-91-3-21: MODIFICATION OF 49.9 MW COAL/PETROLEUM COKE/BIOMASS AND TIRE DERIVED FUEL (TDF) FIRED ATMOSPHERIC CIRCULATING FLUIDIZED BED COMBUSTOR COGENERATION POWER PLANT: ALLOW THE COMBUSTION OF CREOSOTE-TREATED RAILROAD TIES

Post Project Equipment Description:

S-91-3-21: 49.9 MW COAL/PETROLEUM COKE/BIOMASS/CREOSOTE-TREATED RAILROAD TIES AND TIRE DERIVED FUEL (TDF) FIRED ATMOSPHERIC CIRCULATING FLUIDIZED BED COMBUSTOR COGENERATION POWER PLANT

VI. Emission Control Technology Evaluation

Emissions from the combustor include NO_X, SO_X, PM_{10}, CO, and VOC. Ammonia, limestone, and limecake are injected to control NO_X and SO_X emissions. Limestone and limecake injection results in 96+% control of SO_X.

PM_{10} emissions are controlled by the cyclones downstream of the combustion zone followed by a baghouse. Control efficiency of PM_{10} is expected to exceed 99%.

NOx, SO2, CO, and stack exhaust low rate are monitored using a continuous emissions monitoring system.

VII. General Calculations

Allowing the combustion of creosote-treated railroad ties with the biomass fuel is not considered a Rule 2201 Modification as explained in Section VIII of this evaluation, so the project is not subject to the requirements for Rule 2201. Therefore, formal calculations for Rule 2201 are not necessary. The potential to emit values below are only presented to demonstrate compliance with prohibitory rules and to complete the District's Permit Administration Database.

A. Assumptions

Adding creosote-treated railroad ties to the list of authorized fuels is not expected to result in any change criteria pollutant emission rates.

B. Emission Factors

The emission limits from the current permit will remain unchanged. The limits are summarized in the table below.

Emission Limits for S-91-3 (Current Permit Limits)				
	Emission Concentration Limits	**Hourly Emissions (lb/hr)**	**Daily Emissions (lb/day)**	**Annual Emissions (lb/yr)**
NO_X	0.092 lb/MMBtu (3-hr avg), when power output exceeds 40 MW, and 65 ppmvd @ 3% O2 (24-hr avg), except during startups & shutdowns (SU/SD)	58.60 (3-hr avg) except during SU/SD. 140.0 (any hour)	1,406.4	463,084
SO_X	0.04 lb/MMBtu (3-hr avg) when power output exceeds 40 MW	25.0 (3-hr avg)	699.4	118,113
PM_{10}	0.012 lb/MMBtu, and 0.01 gr/dscf @ 12% CO2	7.92	190.0	69,350
CO	183 ppmvd @ 3% O2 (24-hr avg), except during SU/SD	50.30 (3-hr avg) except during SU/SD	1,207.2	371,312
VOC		6.25	149.9	54,714

C. Calculations

Pre- and Post-Project Potential to Emit

PE		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO_X	1,406.4	463,084
SO_X	699.4	118,113
PM_{10}	190.0	69,350
CO	1,207.2	371,312
VOC	149.9	54,714

Pre- and Post-Project Stationary Source Potential to Emit

SSPE (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-91-1-12	0	0	2,154	0	0
S-91-2-6	0	0	0	0	0
S-91-3-19	463,084	118,113	68,350	371,312	54,714
S-91-4-9	0	0	4	0	0
S-91-5-3	0	0	1,489	0	0
S-91-8-3	0	0	0	0	0
S-91-9-3	0	0	730	0	0
S-91-10-5	0	0	11,147	0	0
S-91-11-5	0	0	4,150	0	0
S-91-12-2	124	0	4	29	3
SSPE	463,208	118,113	88,028	371,341	54,717

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

The circulating fluidized bed combustor cogeneration power plant is currently authorized to be fired on coal, petroleum coke, tire derived material, and biomass fuel. This application is to allow the firing of the unit on chipped creosote-treated railroad ties in a mixture with biomass[1] with the already-approved fuels. As is explained below, adding creosote-treated railroad ties to the fuel mixture is a change that is not an NSR modification pursuant to section 3.25 of District Rule 2201, which defines a modification as follows:

3.25.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

The proposed modification does not result in a change in the hours of operation, production rate, or method of operation which necessitates a change in permit conditions.

3.25.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. Routine replacement shall not be considered to be a structural change.

The proposed modification does not constitute a structural change or addition to an existing emissions unit which necessitates a change in permit conditions.

[1] Per permit conditions, "biomass" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removal, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste.

3.25.1.3 An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.

The unit is currently subject to daily emissions limitations which will not change.

3.25.1.4 Addition of any new emissions unit which is subject to District permitting requirements.

The proposed modification does not result in the addition of any new emissions units.

3.25.1.5 A change in a permit term or condition proposed by an applicant to obtain an exemption from an applicable requirement to which the source would otherwise be subject.

The proposed modification does not exempt the unit from an applicable requirement to which the source would otherwise be subject.

As discussed above, the proposed modification S-91-3 does not meet any of the criteria for a modification. Therefore, it is not subject to the requirements of District Rule 2201.

Rule 2410 Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclasssified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO_2 (as a primary pollutant)
- SO_2 (as a primary pollutant)
- CO
- PM
- PM_{10}

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

The facility or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

Potential emissions listed in the table below are copied from the District's Permit Administration System (in lieu of calculations that were not required or performed as discussed in Section VII):

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	231.6	27.4	59.0	185.7	44.0	44.0
PSD Major Source Thresholds	100	100	100	100	100	100
PSD Major Source ? (Y/N)	Yes			Yes		

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

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a 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)					
	NO2	SO2	CO	PM	PM10
Total PE from New and Modified Units	231.6	59.0	185.7	44.0	44.0
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	Yes	Yes	Yes	Yes	Yes

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

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, does not impact the ability of the emission unit to operate at a higher utilization rate, and does not result in an annual increase in actual emissions, it can be concluded that PAE = BAE; therefore no emission increase is expected.

The project's combined total emission increases are compared to the PSD significant emission increase thresholds in the following table.

PSD Significant Emission Increase Determination: Emission Increase (tons/year)						
	NO_2	SO_2	CO	PM	PM_{10}	CO_2e
Emission Increases (only)	0	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	No	No	No	No	No	No

As shown in the table above, the project emission increase, 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 due to a significant emission increase and 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. The proposed modification is a Minor Modification to the Title V 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 modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment/minor modification application.

Rule 4001 New Source Performance Standards (NSPS)

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"*.

The unit has been in operation since 1989. The combustor is not newly constructed or reconstructed, nor is the unit being modified (as defined above). Since the modification to the combustor unit will not result in changes to air pollutants, the requirements of these sections do not apply to the unit. Therefore, it continues to be subject to 40 CFR Part 60 Subpart Da which applies to Industrial-Commercial-Industrial Steam Generators greater than 250 MMBtu/hr (post-9/18/78 construction, modification or, reconstruction).

Continued compliance with NSPS subpart Da is expected.

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

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

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

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. The applicant has conducted testing indicating that preliminarily states that this facility is a major source for HAPs (in particular HCl), so this subpart applies.

Per §60.7495(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. Therefore,

the facility will need to submit applications to comply with this subpart by the compliance dates.

Per Table 2 (Emission Limits for Existing Boilers and Process Heaters), by the applicable date (which is January 31, 2016 for this unit), the emission unit will be subject to HCl emission limits of 0.022 lb/MMBtu and mercury emission limits of 0.0000057 lb/MMBtu. Table 2 also limits CO and filterable PM emissions. The permittee shall submit an ATC application demonstrating compliance with the mentioned emissions limits. Compliance with this subpart will be ensured with the following condition:

- The permittee shall submit an Authority to Construct application to bring the emission unit into compliance with 40 CFR Part 63 Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). Compliance with this subpart is required no later than January 31, 2016, except as provided by Subpart 63.6(i). [40 CFR 63 Subpart DDDDD]

Per Table 3 (Work Practice Standards), 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.

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 will have to identify how the emission limits will be met.

Table 5 (Performance Testing Requirements) lists the requirements for performance testing. Table 6 (Fuel Analysis Requirements) lists the methods the permittee must conduct for fuel analyses for various pollutants. Compliance with these Tables will need to be addressed with an ATC application.

Therefore, compliance with this rule is expected.

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

This subpart applies to sources that own and operate an industrial, commercial, or institutional boiler that is located at, or is part of, an area source of hazardous air pollutants (HAP) as defined in Section 63.2. An *area source* is defined as any stationary source of hazardous air pollutants that is not a major source as defined in this part. *Major source* means 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.

As indicated in the discussion for Subpart DDDDD above, the facility has been determined to be a major source for HAPs. Therefore, Subpart JJJJJJ no longer applies. Subpart JJJJJJJ requirements will be removed from the current permit.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). The proposed modifications are not expected to jeopardize visible emissions compliance and based on past inspections of the facility, continued compliance is expected.

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix C), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-91-3-21	0.655 per million	No

Discussion of T-BACT

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

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix C of this report, the emissions increases for this project was determined to be less than significant.

The following conditions will better assure compliance:

- "Biomass" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removal, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Biomass does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid waste. [District Rules 2201 and Rule 4102]

- The sum of the combined coal, coke, and tire derived fuel throughput and 1/2 times the throughput of biomass and railroad tie material introduced into the combustor shall not exceed 1,400,000 lb/day and 58,333 lb/hr (on a dry basis). Solid fuel introduced into the combustor shall contain no more than 4.0% by weight sulfur. [District Rule 2201 and PSD ATC SJ 86-09]

- When railroad tie material is introduced into the combustor, the permittee shall maintain records of the ratio (by weight) of railroad tie material to the biomass that is introduced into the combustor. The ratio (by weight) of railroad tie material to biomass shall not exceed 1:1 in any one hour, based on daily fuel yard mixing records. [District Rule 4102]

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot. The following condition will remain on the permit to ensure compliance with this rule:

- Emission rate of PM-10 shall not exceed 7.92 lb/hr and 0.012 lb/MMBtu. Particulate Matter (PM) emissions shall not exceed 0.01 gr/dscf @ 12% CO2. [District Rules 2201, 4201, and 4301 and PSD ATC SJ 86-09]

Rule 4301 Fuel Burning Equipment

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. The following table summarizes the maximum lb/hr emissions limits of this rule:

District Rule 4301 Limits (lb/hr)			
Pollutant	**NO_2**	**Total PM**	**SO_2**
ATC S-91-3	140	7.92	25.0
Rule Limit (lb/hr)	140	10	200

Compliance with this rule is expected.

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

The purpose of this rule is to limit NOx and CO emissions 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.

Table 5.1 limits NOx and CO emissions to the following:

District Rule 4352 Limits (ppmv @ 3% O_2)		
Pollutant	**NO_x**	**CO**
Biomass	90	400
All Other Fuel	65	400
Current Permit Limits	65	183

As shown above, the current permit limits for NOx and CO comply with Table 5.1.

Section 5.2 states that all NOx and CO emission limits shall be based on a block 24-hour average. Compliance with this section is expected with the following conditions:

- NOx emissions shall not exceed 65 ppmv @ 3% O2 at any time, except during startup and shutdown (as defined in this permit), based on a block 24 hour (12 AM to 11:59 PM) averaging period. [District Rule 4352, 5.1]

- Except during periods of startup and shutdown (as defined in this permit) the emission rate of carbon monoxide shall not exceed 183 ppmv @ 3% O2. Compliance with the carbon monoxide emission limit shall be based on a block 24 hour (12 AM to 11:59 PM) average. [District Rules 2201 and 4352]

Section 5.3 has startup and shutdown provisions. Section 5.3.1 limits the duration of each shutdown to 12 hours. Section 5.3.2 limits the duration of each startup to 96 hours. If curing of the refractory is required after a modification to the unit is made, the duration of startup shall not exceed 192 hours. Continued compliance with these sections is expected with these conditions:

- Start-up period is defined as the period of time, not exceeding 96 hours except during refractory curing when 192 hours are allowed, during which a unit is heated to the operating temperature and pressure from a shutdown status or hot standby condition. [District Rule 4352]

- Shutdown period is defined as the period of time, not exceeding 12 hours, 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, or to a hot standby condition. [District Rule 4352]

Section 5.4 states that the owner/operator of any unit using ammonia injection as a NOx control technique, shall operate a Continuous Emissions Monitoring system (CEM) to monitor and record NOx concentrations, CO2 or O2 concentrations, as well as the NOx emission rate. Compliance with this rule is expected with the following condition:

- Permittee shall report the following emission exceedances to the District: SO2, NOx, and CO hourly emission rates on a three hour rolling average and daily emissions limitations. Excess emissions shall be defined as any consecutive 3-hour period during which the average emissions for CO, SO2, and NOx as measured by continuous monitoring system, exceeds the mass or concentration limit set for each pollutant. [District Rule 2201 and PSD ATC SJ 86-09]

- Operator shall operate and maintain in calibration a system which continuously measures and records control system operating parameters; elapsed time of operation; exhaust gas Opacity, NOx, SO2, and CO concentrations. [District Rules 1080, 4.0, 2201, and 2410]

- The continuous emissions monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix B; 40 CFR 60, Appendix F; and 40 CFR 51, Appendix P, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.5 and PSD ATC SJ 86-09]

- Operator shall operate and maintain in calibration a system which continuously measures and records stack gas volumetric flow rates meeting the performance specifications of 40 CFR Part 52, Appendix E. [PSD ATC SJ 86-09]

Continued compliance with Rule 4352 is expected.

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO_2) shall not exceed 0.2% by volume (or 2,000 ppmv). Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

Volume SO_2 = (n x R x T) ÷ P
n = moles SO_2
T (standard temperature) = 60 °F or 520 °R
R (universal gas constant) = $\frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$

$$\frac{0.04\,lb\cdot SO_x}{MMBtu}\times\frac{MMBtu}{8{,}578\,ft^3}\times\frac{1\,lb\cdot mol}{64\,lb\cdot S}\times\frac{10.73\,psi\cdot ft^3}{lb\cdot mol\cdot{}^\circ R}\times\frac{520^\circ R}{14.7\,psi}\times\frac{1{,}000{,}000\cdot parts}{million}=27.7\,\frac{parts\cdot SO_x}{million}$$

Since 27.7 ppmv is ≤ 2,000 ppmv, compliance with Rule 4801 is expected. The following condition will remain on the ATC to ensure compliance:

- SOx emissions (as SO2) shall not exceed 0.04 lb/MMBtu, based on a three hour rolling average, during any period in which the power output exceeds 40 MW. [District Rules 2201 and 4801 and PSD ATC SJ 86-09]

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) is exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant 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.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful EPA review period, issue ATC S-91-3-21 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-91-3-21	3020-08A-G	49,900 kW built before 3/17/99	$10,215.00

Appendices

A: Draft Authority to Construct
B: Current Permit to Operate
C: HRA Summary
D: Compliance Certification

Appendix A

Draft Authority to Construct

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

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PERMIT NO: S-91-3-21 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: MT POSO COGENERATION COMPANY, LLC
MAILING ADDRESS: P.O. BOX 81256
BAKERSFIELD, CA 93380-1256

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 18 **TOWNSHIP:** 27S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 49.9 MW COAL/PETROLEUM COKE/BIOMASS AND TIRE DERIVED FUEL (TDF) FIRED ATMOSPHERIC CIRCULATING FLUIDIZED BED COMBUSTOR COGENERATION POWER PLANT: ALLOW COMBUSTION OF CREOSOTE-TREATED RAILROAD TIES

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Biomass introduced into the combustor shall not contain more than 2% by weight non-biomass material (plastics, metal, painted and preservative-treated wood, roofing material, fiberglass, etc.). [District Rule 4102]
4. At least once per quarter, operator shall collect a representative sample of the biomass material combusted and determine the weight percent of non-biomass material contained in that sample. Prior to collecting the first quarterly sample, operator shall submit a sampling plan to the District's compliance division for approval and shall follow the approved plan for all subsequent sampling, unless a revised plan is submitted and approved. [District Rules 1081 and 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

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Arnaud Marjollet, Director of Permit Services
S-91-3-21 : Jan 20 2015 11:11AM – RAMIREZH : Joint Inspection NOT Required

5. Operation shall include Ahlstrom Pyroflow atmospheric fluidized bed combustor incorporating low temperature staged combustion and ammonia injection (NOx control), and pulverized limestone/lime cake injection (SOx control). [District Rule 2201] Federally Enforceable Through Title V Permit
6. Operation shall include enclosed gravimetric belt weigh feeder discharging to fuel feed chutes and enclosed limestone/lime cake volumetric feeder with air lock system. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Operation shall include four natural gas fired 62 MMBtu/hr Coen startup burners and two natural gas fired 23 MMBtu/hr Coen duct burners. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Operation shall include two fly ash recycle cyclones, air heater with two fly ash hoppers, economizer and ash handling system. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Operation shall include 1250 HP primary combustion air fan, 500 HP secondary combustion air fan and 150 HP multi-staged centrifugal fluidizing air blower. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Operation shall include 12 compartment fabric collector with 1750 HP induced draft fan, reverse air cleaning mechanism and 100 HP reverse air fan. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Fabric collector shall include a minimum of 134,230 sq. ft. of filtering area, fly ash hopper, with 8 KW electric heater, d.p. transmitter, capacitance type high level detector, vibrator and aeration pad. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Fly ash collected at fabric collector shall be discharged only to fly ash handling system. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Ash shall only be removed from combustion system by means authorized to Permit to Operate S-91-4. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Operation shall be equipped with the following indicators: combustion temperature, combustion air system pressure, primary and secondary fan air flow, ammonia injection flow, fuel use rate and limestone/lime cake use rate. The permittee shall operate and maintain instrumentation to continuously monitor and record levels of combustion temperature, consumption of fuel, ammonia, and limestone/lime cake in boiler. [District Rules 2201 and 2410] Federally Enforceable Through Title V Permit
15. Each fabric collector compartment shall be equipped with access door and differential pressure indicator. The differential pressure across each compartment shall be maintained between 2" and 9.5" water column. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Fabric collector inlet shall be equipped with operational pressure indicator and high temperature alarm which activates prior to high temperature failure. The pressure shall not exceed negative 35" water column. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Fabric collector shall be equipped with automatic cleaning mechanism. [District Rule 2201] Federally Enforceable Through Title V Permit
18. All combustor exhaust gas shall pass through fabric collector prior to being emitted to atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Unit shall be operated as a low temperature combustor with a peak temperature range of 1550 to 1750 deg F. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Unit shall be operated as a staged combustion device by introducing a substoichiometric amount of combustion air into primary combustion zone. [District Rule 2201] Federally Enforceable Through Title V Permit
21. There shall be no provisions for introduction of air into combustion system or exhaust system downstream of the combustion chamber except for air utilized for cyclone center pipe supports and cooling. [District Rule 2201] Federally Enforceable Through Title V Permit
22. The sum of the combined coal, coke, and tire derived fuel throughput and 1/2 times the throughput of biomass and railroad tie material introduced into the combustor shall not exceed 1,400,000 lbs/day and 58,333 lbs/hr (on a dry basis). Solid fuel introduced into the combustor shall contain no more than 4.0% by weight sulfur. [District Rule 2201 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

23. When railroad tie material is introduced into the combustor, the permittee shall maintain records of the ratio (by weight) of railroad tie material to the biomass that is introduced into the combustor. The ratio (by weight) of railroad tie material to biomass shall not exceed 1:1, based on daily fuel yard mixing records. [District Rule 4102] Federally Enforceable Through Title V Permit

24. Of the total fuel introduced into the combustor, no more than 154,000 lbs per day (on a dry basis) shall be TDF. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

25. "Biomass" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removal, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Biomass does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid waste. [District Rules 2201 and Rule 4102] Federally Enforceable Through Title V Permit

26. Wood waste includes clean, chipped wood products, plywood, wood products manufacturing wood materials, construction and demolition wood materials, and wood pallets, crates and boxes. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

27. Limestone/lime cake shall be introduced into combustor at a rate sufficient to maintain a minimum Ca/S molar ratio of 3, except when combusting biomass, railroad ties, and/or natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit

28. Ammonia breakthrough shall not result in ground level odors and exhaust stack concentrations, except during periods of start-up/shutdown, shall not exceed 20.0 ppmv based on an annual source test. [District Rule 4102]

29. Emissions rates from boiler exhaust shall not exceed the following: PM10: 190.0 lb/day, VOC: 149.9 lb/day, NOx (as NO2): 1406.4 lb/day nor 463,084 lbs/yr, SOx (as SO2): 699.4 lb/day nor 118,113 lb/yr, or CO: 1207.2 lb/day nor 371,312 lb/yr. [District Rules 2201 and 4301] Federally Enforceable Through Title V Permit

30. Emission rate of PM-10 shall not exceed 7.92 lb/hr and 0.012 lb/MMBtu. Particulate Matter (PM) emissions shall not exceed 0.01 gr/dscf @ 12% CO2. [District Rules 2201, 4201, and 4301 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

31. Emission rate of SOx (as SO2) shall not exceed 25.0 lb/hr, based on three hour rolling average. [District Rules 2201 and 4301 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

32. SOx emissions (as SO2) shall not exceed 0.04 lb/MMBtu, based on a three hour rolling average, during any period in which the power output exceeds 40 MW. [District Rules 2201 and 4801 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

33. Emission rate of oxides of nitrogen as NO2 shall not exceed 58.60 lb/hr, except during startup and shutdown as defined in this permit, based on three hour rolling average. [District Rules 2201 and 2410] Federally Enforceable Through Title V Permit

34. NOx emissions shall not exceed 0.092 lb/MMBtu, based on a three hour rolling average, during any period in which the power output exceeds 40 MW. [District Rule 2201 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

35. Emission rate of volatile organic compounds shall not exceed 6.25 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

36. Emission rate of carbon monoxide shall not exceed 50.30 lb/hr, except during startup and shutdown as defined in this permit, based on three hour rolling average. [District Rules 2201 and 2410] Federally Enforceable Through Title V Permit

37. NOx emissions shall not exceed 65 ppmv @ 3% O2 at any time, except during startup and shutdown (as defined in this permit), based on a block 24 hour (12 AM to 11:59 PM) averaging period. [District Rule 4352, 5.1] Federally Enforceable Through Title V Permit

38. Except during periods of startup and shutdown (as defined in this permit) the emission rate of carbon monoxide shall not exceed 183 ppmv @ 3% O2. Compliance with the carbon monoxide emission limit shall be based on a block 24 hour (12 AM to 11:59 PM) average. [District Rules 2201 and 4352] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

39. Nitrogen oxides (NOx) shall not exceed 140 lb/hr, calculated as NO2. [District Rule 4301] Federally Enforceable Through Title V Permit

40. Start-up period is defined as the period of time, not exceeding 96 hours except during refractory curing when 192 hours are allowed, during which a unit is heated to the operating temperature and pressure from a shutdown status or hot standby condition. [District Rule 4352] Federally Enforceable Through Title V Permit

41. Shutdown period is defined as the period of time, not exceeding 12 hours, 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, or to a hot standby condition. [District Rule 4352] Federally Enforceable Through Title V Permit

42. The main exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples using approved EPA test methods. [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit

43. Performance testing at maximum operating capacity shall be conducted annually for NOx, SOx, CO, PM-10, PM, VOCs, and NH3 at the maximum operating capacity using following test methods; for NOx EPA Methods 1-4 and 7 or ARB Method 100; for SOx EPA Methods 1-4 and 6 or 6C ARB Method 100; for CO EPA Method 1-4 and 10 or ARB Method 100; for PM(10) EPA Method 201A in combination with EPA Method 202; for PM EPA Methods 1-4 and 5; for VOCs EPA Method 25 or 18; and for NH3 BAAQMD ST1B. [District Rules 2410, 2520, and 4352] Federally Enforceable Through Title V Permit

44. The District and EPA must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

45. Performance testing shall be witnessed or authorized District personnel and EPA. Test results must be submitted to the District within 60 day of performance testing. [District Rule 1081, 7.2, 7.3 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

46. Permittee shall report the following emission exceedances to the District: SO2, NOx, and CO hourly emission rates on a three hour rolling average and daily emissions limitations. Excess emissions shall be defined as any consecutive 3-hour period during which the average emissions for CO, SO2, and NOx as measured by continuous monitoring system, exceeds the mass or concentration limit set for each pollutant. [District Rule 2201 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

47. At the time of performance testing fuel being burned shall be tested for sulfur, nitrogen, ash content and heating value. [District Rule 2201] Federally Enforceable Through Title V Permit

48. Operator shall operate and maintain in calibration a system which continuously measures and records control system operating parameters; elapsed time of operation; exhaust gas Opacity, NOx, SO2, and CO concentrations. [District Rules 1080, 4.0, 2201, and 2410] Federally Enforceable Through Title V Permit

49. The continuous emissions monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix B; 40 CFR 60, Appendix F; and 40 CFR 51, Appendix P, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.5 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

50. Operator shall operate and maintain in calibration a system which continuously measures and records stack gas volumetric flow rates meeting the performance specifications of 40 CFR Part 52, Appendix E. [PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

51. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

52. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEMs that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

53. Permittee shall submit a CEMs written report for each calendar quarter to the District and to EPA. The report is due on the 30th day following the end of the calendar quarter. [District Rule 1080, 8.0 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

54. Quarterly report shall include: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rules 1080, 8.0 and 2520, 9.6.1 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

55. Any violation of emission standards, as indicated by the CEM, shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

56. Operator shall notify the District no later than one hour after the detection of a breakdown of the CEM. The operator shall inform the District of the intent to shut down the CEM at least 24 hours prior to the event. [District Rules 1080 and 1100] Federally Enforceable Through Title V Permit

57. Permittee shall maintain an operating log containing type and quantity of fuel used and higher heating value of such fuels on daily basis. [District Rules 2520, 9.4.2 and 4352, 6.2] Federally Enforceable Through Title V Permit

58. Sulfur content of each type of fuel shall be measured and recorded at least every calender quarter using current ASTM Methods or shall be certified by supplier for each shipment. [District Rule 2520, 9.3.2 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

59. The differential pressure across each compartment of the fabric collectors shall be checked and the results recorded quarterly. If the differential pressure across each compartment of the fabric collectors is not between 2" and 9.5" water column, corrective action is required prior to further operation of the equipment. Corrective action means that the cause of the improper pressure differential is corrected before operation of the equipment is resumed. [District Rule 2520, 9.3.2 and 9.4.2] Federally Enforceable Through Title V Permit

60. The pressure at the fabric collector inlet shall be checked and the results recorded quarterly. If the pressure at the fabric collector inlet is greater than negative 35" water column, corrective action is required prior to further operation of the equipment. Corrective action means that the cause of the improper pressure is corrected before operation of the equipment is resumed. [District Rule 2520, 9.3.2 and 9.4.2] Federally Enforceable Through Title V Permit

61. Fabric collection system shall be completely inspected annually while in operation for evidence of particulate matter breakthrough and shall be repaired as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

62. Fabric collector filters shall be completely inspected annually while not in operation for tears, scuffs, abrasives or holes which might interfere with PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

63. The permittee shall submit an Authority to Construct application to bring the emission unit into compliance with 40 CFR Part 63 Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). Compliance with this subpart is required no later than January 31, 2016, except as provided by Subpart 63.6(i). [40 CFR 63 Subpart DDDDD]

64. Records of fabric collector filter maintenance, inspection, and repairs shall be maintained. The records shall include identification of equipment, date of inspection, corrective action taken, and identification of individual performing inspection. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

65. Permittee shall maintain monthly records of NOx, SOx, and CO to ensure that emissions limits on an annual rolling average are met. [District Rule 2201] Federally Enforceable Through Title V Permit

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Appendix B

Current Permit to Operate

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-91-3-19 **EXPIRATION DATE:** 08/31/2016

SECTION: 18 **TOWNSHIP:** 27S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
49.9 MW COAL/PETROLEUM COKE/BIOMASS AND TIRE DERIVED FUEL (TDF) FIRED ATMOSPHERIC CIRCULATING FLUIDIZED BED COMBUSTOR COGENERATION POWER PLANT

PERMIT UNIT REQUIREMENTS

1. Biomass introduced into the combustor shall not contain more than 2% by weight non-biomass material (plastics, metal, painted and preservative-treated wood, roofing material, fiberglass, etc.). [District Rule 4102]
2. At least once per quarter, operator shall collect a representative sample of the biomass material combusted and determine the weight percent of non-biomass material contained in that sample. Prior to collecting the first quarterly sample, operator shall submit a sampling plan to the District's compliance division for approval and shall follow the approved plan for all subsequent sampling, unless a revised plan is submitted and approved. [District Rules 1081 and 4102]
3. Operation shall include Ahlstrom Pyroflow atmospheric fluidized bed combustor incorporating low temperature staged combustion and ammonia injection (NOx control), and pulverized limestone/lime cake injection (SOx control). [District Rule 2201] Federally Enforceable Through Title V Permit
4. Operation shall include enclosed gravimetric belt weigh feeder discharging to fuel feed chutes and enclosed limestone/lime cake volumetric feeder with air lock system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Operation shall include four natural gas fired 62 MMBtu/hr Coen startup burners and two natural gas fired 23 MMBtu/hr Coen duct burners. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Operation shall include two fly ash recycle cyclones, air heater with two fly ash hoppers, economizer and ash handling system. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Operation shall include 1250 HP primary combustion air fan, 500 HP secondary combustion air fan and 150 HP multi-staged centrifugal fluidizing air blower. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Operation shall include 12 compartment fabric collector with 1750 HP induced draft fan, reverse air cleaning mechanism and 100 HP reverse air fan. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Fabric collector shall include a minimum of 134,230 sq. ft. of filtering area, fly ash hopper, with 8 KW electric heater, d.p. transmitter, capacitance type high level detector, vibrator and aeration pad. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fly ash collected at fabric collector shall be discharged only to fly ash handling system. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Ash shall only be removed from combustion system by means authorized to Permit to Operate S-91-4. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. Operation shall be equipped with the following indicators: combustion temperature, combustion air system pressure, primary and secondary fan air flow, ammonia injection flow, fuel use rate and limestone/lime cake use rate. The permittee shall operate and maintain instrumentation to continuously monitor and record levels of combustion temperature, consumption of fuel, ammonia, and limestone/lime cake in boiler. [District Rules 2201 and 2410] Federally Enforceable Through Title V Permit
13. Each fabric collector compartment shall be equipped with access door and differential pressure indicator. The differential pressure across each compartment shall be maintained between 2" and 9.5" water column. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Fabric collector inlet shall be equipped with operational pressure indicator and high temperature alarm which activates prior to high temperature failure. The pressure shall not exceed negative 35" water column. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Fabric collector shall be equipped with automatic cleaning mechanism. [District Rule 2201] Federally Enforceable Through Title V Permit
16. All combustor exhaust gas shall pass through fabric collector prior to being emitted to atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Unit shall be operated as a low temperature combustor with a peak temperature range of 1550 to 1750 deg F. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Unit shall be operated as a staged combustion device by introducing a substoichiometric amount of combustion air into primary combustion zone. [District Rule 2201] Federally Enforceable Through Title V Permit
19. There shall be no provisions for introduction of air into combustion system or exhaust system downstream of the combustion chamber except for air utilized for cyclone center pipe supports and cooling. [District Rule 2201] Federally Enforceable Through Title V Permit
20. The sum of the combined coal, coke, and tire derived fuel throughput and 1/2 times the throughput of biomass introduced into the combustor shall not exceed 1,400,000 lbs/day and 58,333 lbs/hr (on a dry basis). Solid fuel introduced into the combustor shall contain no more than 4.0% by weight sulfur. [District Rule 2201 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit
21. Of the total fuel introduced into the combustor, no more than 154,000 lbs per day (on a dry basis) shall be TDF. [District Rule 2201] Federally Enforceable Through Title V Permit
22. "Biomass" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removal, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Biomass does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid waste. [District Rules 2201 and Rule 4102] Federally Enforceable Through Title V Permit
23. Wood waste includes clean, chipped wood products, plywood, wood products manufacturing wood materials, construction and demolition wood materials, and wood pallets, crates and boxes. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
24. Limestone/lime cake shall be introduced into combustor at a rate sufficient to maintain a minimum Ca/S molar ratio of 3, except when combusting biomass and/or natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Ammonia breakthrough shall not result in ground level odors and exhaust stack concentrations, except during periods of start-up/shutdown, shall not exceed 20.0 ppmv based on an annual source test. [District Rule 4102]
26. Emissions rates from boiler exhaust shall not exceed the following: PM10: 190.0 lb/day, VOC: 149.9 lb/day, NOx (as NO2): 1406.4 lb/day nor 463,084 lbs/yr, SOx (as SO2): 699.4 lb/day nor 118,113 lb/yr, or CO: 1207.2 lb/day nor 371,312 lb/yr. [District Rules 2201 and 4301] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

27. Emission rate of PM-10 shall not exceed 7.92 lb/hr and 0.012 lb/MMBtu. Particulate Matter (PM) emissions shall not exceed 0.01 gr/dscf @ 12% CO2. [District Rules 2201, 4201, and 4301 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit
28. Emission rate of SOx (as SO2) shall not exceed 25.0 lb/hr, based on three hour rolling average. [District Rules 2201 and 4301 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit
29. SOx emissions (as SO2) shall not exceed 0.04 lb/MMBtu, based on a three hour rolling average, during any period in which the power output exceeds 40 MW. [District Rules 2201 and 4801 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit
30. Emission rate of oxides of nitrogen as NO2 shall not exceed 58.60 lb/hr, except during startup and shutdown as defined in this permit, based on three hour rolling average. [District Rules 2201 and 2410] Federally Enforceable Through Title V Permit
31. NOx emissions shall not exceed 0.092 lb/MMBtu, based on a three hour rolling average, during any period in which the power output exceeds 40 MW. [District Rule 2201 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit
32. Emission rate of volatile organic compounds shall not exceed 6.25 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Emission rate of carbon monoxide shall not exceed 50.30 lb/hr, except during startup and shutdown as defined in this permit, based on three hour rolling average. [District Rules 2201 and 2410] Federally Enforceable Through Title V Permit
34. NOx emissions shall not exceed 65 ppmv @ 3% O2 at any time, except during startup and shutdown (as defined in this permit), based on a block 24 hour (12 AM to 11:59 PM) averaging period. [District Rule 4352, 5.1] Federally Enforceable Through Title V Permit
35. Except during periods of startup and shutdown (as defined in this permit) the emission rate of carbon monoxide shall not exceed 183 ppmv @ 3% O2. Compliance with the carbon monoxide emission limit shall be based on a block 24 hour (12 AM to 11:59 PM) average. [District Rules 2201 and 4352] Federally Enforceable Through Title V Permit
36. Nitrogen oxides (NOx) shall not exceed 140 lb/hr, calculated as NO2. [District Rule 4301] Federally Enforceable Through Title V Permit
37. Start-up period is defined as the period of time, not exceeding 96 hours except during refractory curing when 192 hours are allowed, during which a unit is heated to the operating temperature and pressure from a shutdown status or hot standby condition. [District Rule 4352] Federally Enforceable Through Title V Permit
38. Shutdown period is defined as the period of time, not exceeding 12 hours, 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, or to a hot standby condition. [District Rule 4352] Federally Enforceable Through Title V Permit
39. The main exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples using approved EPA test methods. [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit
40. Performance testing at maximum operating capacity shall be conducted annually for NOx, SOx, CO, PM-10, PM, VOCs, and NH3 at the maximum operating capacity using following test methods; for NOx EPA Methods 1-4 and 7 or ARB Method 100; for SOx EPA Methods 1-4 and 6 or 6C ARB Method 100; for CO EPA Method 1-4 and 10 or ARB Method 100; for PM(10) EPA Method 201A in combination with EPA Method 202; for PM EPA Methods 1-4 and 5; for VOCs EPA Method 25 or 18; and for NH3 BAAQMD ST1B. [District Rules 2410, 2520, and 4352] Federally Enforceable Through Title V Permit
41. The District and EPA must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

42. Performance testing shall be witnessed or authorized District personnel and EPA. Test results must be submitted to the District within 60 day of performance testing. [District Rule 1081, 7.2, 7.3 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

43. Permittee shall report the following emission exceedences to the District: SO2, NOx, and CO hourly emission rates on a three hour rolling average and daily emissions limitations. Excess emissions shall be defined as any consecutive 3-hour period during which the average emissions for CO, SO2, and NOx as measured by continuous monitoring system, exceeds the mass or concentration limit set for each pollutant. [District Rule 2201 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

44. At the time of performance testing fuel being burned shall be tested for sulfur, nitrogen, ash content and heating value. [District Rule 2201] Federally Enforceable Through Title V Permit

45. Operator shall operate and maintain in calibration a system which continuously measures and records control system operating parameters; elapsed time of operation; exhaust gas Opacity, NOx, SO2, and CO concentrations. [District Rules 1080, 4.0, 2201, and 2410] Federally Enforceable Through Title V Permit

46. The continuous emissions monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix B; 40 CFR 60, Appendix F; and 40 CFR 51, Appendix P, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.5 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

47. Operator shall operate and maintain in calibration a system which continuously measures and records stack gas volumetric flow rates meeting the performance specifications of 40 CFR Part 52, Appendix E. [PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

48. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

49. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEMs that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

50. Permittee shall submit a CEMs written report for each calendar quarter to the District and to EPA. The report is due on the 30th day following the end of the calendar quarter. [District Rule 1080, 8.0 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

51. Quarterly report shall include: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rules 1080, 8.0 and 2520, 9.6.1 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

52. Any violation of emission standards, as indicated by the CEM, shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

53. Operator shall notify the District no later than one hour after the detection of a breakdown of the CEM. The operator shall inform the District of the intent to shut down the CEM at least 24 hours prior to the event. [District Rules 1080 and 1100] Federally Enforceable Through Title V Permit

54. March 21, 2012, and every two years thereafter, permittee shall conduct a performance tune-up of the boiler in accordance with 40 CFR 63.11223(b). Permittee shall submit a signed statement of the Notification of Compliance Status report that a tune-up of the boiler was completed. [40 CFR 63.11214(b)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

55. By March 21, 2014, the permittee shall conduct a one-time energy assessment as described in 40 CFR 63, Subpart JJJJJJ, Table 2. Permittee shall submit a signed statement in the Notification of Compliance Status report that the energy assessment was completed, and shall submit the energy assessment report upon request. [40 CFR 63.11214(c)] Federally Enforceable Through Title V Permit

56. 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. [40 CFR 63.11205(a) and 40 CFR 64] Federally Enforceable Through Title V Permit

57. By March 21, 2012, and every two years thereafter, permittee shall conduct a performance tune-up of the boiler in accordance with 40 CFR 63.11223(b). Permittee shall submit a signed statement of the Notification of Compliance Status report that a tune-up of the boiler was completed. [40 CFR 63.11214(b)] Federally Enforceable Through Title V Permit

58. Permittee shall maintain an operating log containing type and quantity of fuel used and higher heating value of such fuels on daily basis. [District Rules 2520, 9.4.2 and 4352, 6.2] Federally Enforceable Through Title V Permit

59. Sulfur content of each type of fuel shall be measured and recorded at least every calender quarter using current ASTM Methods or shall be certified by supplier for each shipment. [District Rule 2520, 9.3.2 and PSD ATC SJ 86-09] Federally Enforceable Through Title V Permit

60. The differential pressure across each compartment of the fabric collectors shall be checked and the results recorded quarterly. If the differential pressure across each compartment of the fabric collectors is not between 2" and 9.5" water column, corrective action is required prior to further operation of the equipment. Corrective action means that the cause of the improper pressure differential is corrected before operation of the equipment is resumed. [District Rule 2520, 9.3.2 and 9.4.2] Federally Enforceable Through Title V Permit

61. The pressure at the fabric collector inlet shall be checked and the results recorded quarterly. If the pressure at the fabric collector inlet is greater than negative 35" water column, corrective action is required prior to further operation of the equipment. Corrective action means that the cause of the improper pressure is corrected before operation of the equipment is resumed. [District Rule 2520, 9.3.2 and 9.4.2] Federally Enforceable Through Title V Permit

62. Fabric collection system shall be completely inspected annually while in operation for evidence of particulate matter breakthrough and shall be repaired as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

63. Fabric collector filters shall be completely inspected annually while not in operation for tears, scuffs, abrasives or holes which might interfere with PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

64. Records of fabric collector filter maintenance, inspection, and repairs shall be maintained. The records shall include identification of equipment, date of inspection, corrective action taken, and identification of individual performing inspection. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

65. Permittee shall maintain monthly records of NOx, SOx, and CO to ensure that emissions limits on an annual rolling average are met. [District Rule 2201] Federally Enforceable Through Title V Permit

Appendix C

HRA Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Homero Ramirez – Permit Services
From:	Cheryl Lawler – Technical Services
Date:	November 18, 2014
Facility Name:	Mt. Poso Cogeneration Company, LLC
Location:	36157 Famoso Road, Bakersfield
Application #(s):	S-91-3-21
Project #:	S-1141955

A. RMR SUMMARY

RMR Summary			
Categories	**Cogeneration Power Plant Modification (Unit 3-21)**	**Project Totals**	**Facility Totals**
Prioritization Score	1.36	1.36	>1
Acute Hazard Index	0.01	0.01	0.01
Chronic Hazard Index	0.13	0.13	0.13
Maximum Individual Cancer Risk	**6.55E-07**	6.55E-07	6.70E-07
T-BACT Required?	**No**		
Special Permit Conditions?	**Yes**		

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit 3-21

1. "Biomass" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removal, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Biomass does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid waste. [District Rule 2201 and Rule 4102] Y
2. MODIFIED - The sum of the combined coal, coke, and tire derived fuel throughput and 1/2 times the throughput of biomass and railroad tie material introduced into the combustor shall not exceed 1,400,000 lbs/day and 58,333 lbs/hr (on a dry basis). Solid fuel introduced into the combustor shall contain no more than 4.0% by weight sulfur. [District Rule 2201 and PSD ATC SJ 86-09]

3. When railroad tie material is introduced into the combustor, the permittee shall maintain records of the ratio (by weight) of railroad tie material to the biomass that is introduced into the combustor. The ratio (by weight) of railroad tie material to biomass shall not exceed 1:1 in any one hour, based on daily fuel yard mixing records. [District Rule 4102]

I. Project Description

Technical Services received a request on July 1, 2014, to perform a Risk Management Review (RMR) for the modification of a 49.9 MW coal/petroleum coke/biomass and tire derived fuel-fired atmospheric circulating fluidized bed combustor cogeneration power plant to allow up to 50% (by weight) of its total daily biomass fuel mixture to be replaced with chipped creosote-treated railroad ties. The potential emissions for the criteria pollutants are not expected to increase. However, the Hazardous Air Pollutants emitted would change as a result of the proposed change in fuel.

II. Analysis

Toxic emissions from the project were calculated using creosote-treated railroad ties fuel process rates calculated and provided by the processing engineer, along with "Woodland Biomass" March, 2012, source test data provided by the facility. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was greater than 1.0 (see RMR Summary Table). Therefore, a refined Health Risk Assessment was required and performed. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk using a worksite adjustment.

The following parameters were used for the review:

Analysis Parameters			
Source Type	Point	**Closest Receptor (m)**	152
Stack Height (m)	45.72	**Type of Receptor**	Business
Stack Diameter (m)	2.59	**Location Type**	Urban
Stack Gas Temperature (K)	422	**Stack Gas Velocity (m/sec)**	21.12

III. Conclusions

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **6.55E-07**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on Page 1 of this report must be included for the project.

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

Attachments

RMR Request Form & Attachments
Project Related Emails
Emissions Speciation Worksheet (based on Source Test Results)
Prioritization
Risk Results
Facility Summary

Appendix D

Compliance Certification

Application Emissions

Permit #: S-91-3-21	**Last Updated**
Facility: MT POSO COGENERATION COMPANY,	11/21/2014 RAMIREZH

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	463084.0	118113.0	68350.0	371312.0	54714.0
Daily Emis. Limit (lb/Day)	1406.4	699.4	190.0	1207.2	149.9
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					