San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUG 0 5 2015

Mr. Ralph Braboy
Bakersfield City Wastewater #3
6901 McCutcheon Rd.
Bakersfield, CA 93313-9352

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-3103
Project # 1144289

Dear Mr. Braboy:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The application is to increase a flare's operating hours.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates 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 Authorities 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

AM:dt/ya

Enclosures

cc: Mike Tollstrup, 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

Facility Name:	Bakersfield City Wastewater #3	Date:	6/5/15
Mailing Address:	6901 McCutcheon Rd. Bakersfield, CA 93313-9352	Engineer:	David Torii
		Lead Engineer:	Rich Karrs
Contact Person:	Ralph Braboy		
Telephone:	661-326-3249		
Application #(s):	S-3103-19-3, '20-3 and '28-2		
Project #:	1144289		
Deemed Complete:	12/31/14		

I. Proposal

Bakersfield City Wastewater #3 (BCW) has requested Authority to Construct (ATC) permits for removing flare S-3103-28's annual operating hour limit thus authorizing it to operate 8760 hr/yr. The digester gas-incinerating flare is authorized to operate only when digester gas-fired IC engines S-3103-19 and '20 are shutdown for service or due to mechanical problems. The flare is currently authorized to operate 3000 hours per year.

The flare is in a specific limiting condition (SLC) plan shared with IC engines S-3103-19 and '20. The flare's annual PE2 emissions are less than the current SLC's limits for NOx, CO and VOC but are greater than the SLC's limits for SOx and PM10; therefore, the SLC's SOx and PM10 emission limits will be increased to match the engine's annual PE2 for SOx and PM10.

BCW received their Title V Permit on 9/30/12. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. BCW must apply to administratively amend their Title V permit.

II. Applicable Rules

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)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92) – not applicable; direct-fired
Rule 4311	Flares (6/15/06)
Rule 4701	Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702	Stationary Internal Combustion Engines – Phase 2 (1/18/07)

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 8101 Ashe Road in Bakersfield. 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

Flare

Excess digester gas is routed to the flare in case both the digester gas IC engines are inoperative. The flare is downstream of the SulfaTreat system for removal of H2S from the digester gas. The flare achieves a high VOC destruction efficiency throughout the operating range.

Engines

Based on the Plant 3 projected power demands and digester gas production, two 848 kW cogeneration engines are used for power production to produce a total of approximately 1.7 MW of power. The two units are fueled primarily with digester gas, but the design provides flexibility to blend up to 50% natural gas as supplemental fuel in the future.

V. Equipment Listing

Pre-Project Equipment Description (see PTOs in Appendix A):

S-3103-19-2: 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER AND SULFATREAT FUEL GAS DRY SULFUR SCRUBBING SYSTEM SHARED WITH UNITS S-3103-13, '-14, '-15, '-16, '-17, '-18, '-20, AND '-28

S-3103-20-2: 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER

S-3103-28-1: 16.5 MMBTU/HR FLARE INDUSTRIES ENCLOSED FLARE

Proposed ATCs:

S-3103-19-3: MODIFICATION OF 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER AND SULFATREAT FUEL GAS DRY SULFUR SCRUBBING

SYSTEM SHARED WITH UNITS S-3103-13, '-14, '-15, '-16, '-17, '-18, '-20, AND '-28: **REVISE SPECIFIC LIMITING CONDITION (SLC) PLAN FOR UNITS S-3103-19, '20, AND '28**

S-3103-20-3: MODIFICATION OF 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER: **REVISE SPECIFIC LIMITING CONDITION (SLC) PLAN FOR UNITS S-3103-19, -'20, AND '28**

S-3103-28-2: MODIFICATION OF 16.5 MMBTU/HR FLARE INDUSTRIES ENCLOSED FLARE: **REMOVE CONDITION LIMITING ANNUAL NUMBER OF HOURS OF OPERATION AND REVISE SPECIFIC LIMITING CONDITION (SLC) PLAN FOR UNITS S-3103-19, '20, AND '28**

Post Project Equipment Description:

S-3103-19-3: 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER AND SULFATREAT FUEL GAS DRY SULFUR SCRUBBING SYSTEM SHARED WITH UNITS S-3103-13, '-14, '-15, '-16, '-17, '-18, '-20, AND '-28

S-3103-20-3: 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER

S-3103-28-2: 16.5 MMBTU/HR FLARE INDUSTRIES ENCLOSED FLARE

VI. Emission Control Technology Evaluation

Flare

- The enclosed ground flare utilizes a special burner for high-destruction efficiency and low NO_x and CO emissions along with smokeless combustion in a fully-enclosed stack.

Engines

- The digester gas-fired cogeneration engines are lean-burn units, equipped with turbochargers and intercoolers, with engine design limiting NO_X emissions to 0.6 g/hp-hr and CO emissions to 2.5 g/hp-hr.
- Each engine is equipped with a turbocharger, which reduces the NO_X emission rate from the engine by approximately 10% by increasing the efficiency and promoting more complete burning of the fuel.

VII. General Calculations

A. Assumptions

- The SLC's NOx, CO and VOC annual emission limits will not change.

- The SLC's SOx and PM10 annual PE2 emission limits will increase to: 867 lb-SOx and 2,891 lb-PM10, respectively
- The flare is only being allowed to operate when both of the cogeneration engines are down.
- Flare annual pre-project operating hour limit: 3,000 hr/yr
- Flare annual post-project operating hour limit: 8,760 hr/yr
- The total annual operating hours of proposed cogeneration engines S-3103-19 and -20 are limited to a combined total of 17,196 hr/yr. For ease of calculation, each IC engine is assessed 8,598 hr/yr but either engine could operate 8,760 hours/year provided the total operating hours between the two engines does not exceed 17,196 hr/yr.

B. Emission Factors

Enclosed Ground Flare (S-3103-28)		
	lb/MMBtu	Source
NO_X	0.06	PTO
SO_X	0.006	
PM10	0.020	
CO	0.25	
VOC	0.0020	
1,175 bhp Digester Gas Fired Cogeneration IC Engine Emission Factors (S-3103-19 and -20)		
	g/hp-hr	Source
NO_X	0.6	PTO
SO_X	0.0185	
PM10	0.04	
CO	2.5	
VOC	0.25	

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Daily Pre-Project Emissions (S-3103-19 and -20)					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hr/day)	Conversion (g/lb)	PE1 Total (lb/day)
NO_X	0.6	1,175	24	453.6	37.3
SO_X	0.0185	1,175	24	453.6	1.2
PM10	0.04	1,175	24	453.6	2.5
CO	2.5	1,175	24	453.6	155.4
VOC	0.25	1,175	24	453.6	15.5

Annual Pre-Project Emissions S-3103-19 and -20					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hr/yr)	Conversion (g/lb)	PE1 Total (lb/yr)
NO_X	0.6	1,175	8,598	453.6	13,363
SO_X	0.0185	1,175	8,598	453.6	412
PM10	0.04	1,175	8,598	453.6	891
CO	2.5	1,175	8,598	453.6	55,680
VOC	0.25	1,175	8,598	453.6	5,568

Daily Pre-Project Emissions (S-3103-28)				
Pollutant	Emissions Factor (lb/MMBtu)	Rating (MMBtu)	Daily Hours of Operation (hr/day)	PE1 Total (lb/day)
NO_X	0.06	16.5	24	23.8
SO_X	0.006	16.5	24	2.4
PM10	0.020	16.5	24	7.9
CO	0.25	16.5	24	99.0
VOC	0.0020	16.5	24	0.8
Annual Pre-Project Emissions S-3103-28				
Pollutant	Emissions Factor (lb/MMBtu)	Rating (MMBtu)	Annual Hours of Operation (hr/yr)	PE1 Total (lb/yr)
NO_X	0.06	16.5	3,000	2,970
SO_X	0.006	16.5	3,000	297
PM10	0.020	16.5	3,000	990
CO	0.25	16.5	3,000	12,375
VOC	0.0020	16.5	3,000	99

Daily PE1 (lb/day)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-3103-19	37.3	1.2	2.5	155.4	15.5
S-3109-20	37.3	1.2	2.5	155.4	15.5
S-3109-28	23.8	2.4	7.9	99.0	0.8
Total:	98.4	4.8	12.9	409.8	31.8

Permit units S-3103-19, -20, and -28 are combined into a Specific Limiting Condition (SLC)[1]. The flare (-28) will only operate when both engines (-19 and -20) are not in operation. As seen in the table below, the greatest annual potential emissions from this SLC will occur when both engines operate.

[1] Specific Limiting Condition (SLC) is defined in Rule 2201 Section 3.38 as permit terms or conditions, which can be enforced in a practical manner, contained in Authorities to Construct and Permits to Operate and established pursuant to New Source Review provisions that restrict the total overall permitted emissions from two or more emissions units.

Annual PE1 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-3103-19 and S-3103-20	13,363 + 13,363 = 26,726	412 + 412 = 824	891 + 891 = 1,782	55,680 + 55,680 = 111,360	5,568 + 5,568 = 11,136
S-3109-28	~~2,970~~	~~297~~	~~990~~	~~12,375~~	~~99~~
Total:	26,726	824	1,782	111,360	11,136

Therefore, the annual PE1 for the units in the SLC are the following:

Annual PE1 (lb/year) in SLC for S-3103-19, -20, and -28					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-3103-19	26,726	824	1,782	111,360	11,136
S-3109-20					
S-3109-28					

2. Post Project Potential to Emit (PE2)

Daily Post-Project Emissions (S-3103-19 and -20)					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hr/day)	Conversion (g/lb)	PE2 Total (lb/day)
NO_X	0.6	1,175	24	453.6	37.3
SO_X	0.0185	1,175	24	453.6	1.2
PM10	0.04	1,175	24	453.6	2.5
CO	2.5	1,175	24	453.6	155.4
VOC	0.25	1,175	24	453.6	15.5

Annual Post-Project Emissions (S-3103-19 and -20) that will be assessed to the SLC for S-3103-19, -20, and -28					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hr/yr)	Conversion (g/lb)	PE2 Total (lb/yr)
NO_X	0.6	1,175	8,598	453.6	13,363
SO_X	0.0185	1,175	8,598	453.6	412
PM10	0.04	1,175	8,598	453.6	891
CO	2.5	1,175	8,598	453.6	55,680
VOC	0.25	1,175	8,598	453.6	5,568

Daily Post-Project Emissions (S-3103-28)				
Pollutant	Emissions Factor (lb/MMBtu)	Rating (MMBtu)	Daily Hours of Operation (hr/day)	PE2 Total (lb/day)
NO_X	0.06	16.5	24	23.8
SO_X	0.006	16.5	24	2.4
PM10	0.020	16.5	24	7.9
CO	0.25	16.5	24	99.0
VOC	0.0020	16.5	24	0.8
Annual Post-Project Emissions S-3103-28				
Pollutant	Emissions Factor (lb/MMBtu)	Rating (MMBtu)	Annual Hours of Operation (hr/yr)	PE2 Total (lb/yr)
NO_X	0.06	16.5	8,760	8,672
SO_X	0.006	16.5	8,760	867
PM10	0.020	16.5	8,760	2,891
CO	0.25	16.5	8,760	36,135
VOC	0.0020	16.5	8,760	289

Daily PE2 (lb/day)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-3103-19	37.3	1.2	2.5	155.4	15.5
S-3109-20	37.3	1.2	2.5	155.4	15.5
S-3109-28	23.8	2.4	7.9	99.0	0.8
Total:	98.4	4.8	12.9	409.8	31.8

Current SLC Total PE2 (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Total:	26,726	824	1,782	111,360	11,136

This project will revise the SLC to accommodate the full time operation of engine S-3103-28; therefore the SLC's SOx and PM10 SLC limits will be increased as shown below.

Annual PE2 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-3103-28-2	8,672	**867**	**2,891**	36,135	289
Current SLC Limits	26,726	824	1,782	111,360	11,136
Proposed SLC Limits	26,726	**867**	**2,891**	111,360	11,136

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.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM10	CO	VOC
S-3103-10-0	583	10	53	38	22
S-3103-12-0	0	0	0	0	0
S-3103-22-0	1,745	2	8	94	36
S-3103-23-0	1,745	2	8	94	36
S-3103-24-0	1,209	1	7	109	27
S-3103-25-0	798	1	4	31	2
S-3103-26-0	0	0	0	0	0
S-3103-27-0	0	0	0	0	0
ATC S-3103-19-1 ATC S-3103-20-1 ATC S-3103-28-1	26,726	824	1,782	111,360	11,136
Post-Project SSPE (SSPE1)	32,806	840	1,862	111,726	11,259

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.

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO_X	SO_X	PM10	CO	VOC
S-3103-10-0	583	10	53	38	22
S-3103-12-0	0	0	0	0	0
S-3103-22-0	1,745	2	8	94	36
S-3103-23-0	1,745	2	8	94	36
S-3103-24-0	1,209	1	7	109	27
S-3103-25-0	798	1	4	31	2
S-3103-26-0	0	0	0	0	0
S-3103-27-0	0	0	0	0	0
ATC S-3103-19-1 ATC S-3103-20-1 ATC S-3103-28-1	26,726	867	2,891	111,360	11,136
Post-Project SSPE (SSPE2)	32,806	883	2,971	111,726	11,259

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Rule 2201 Major Source Determination (lb/year)						
	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC
SSPE1	35,106	1,222	2,372	2,372	116,442	12,855
SSPE2	35,106	1,265	3,481	3,481	116,442	12,855
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

This source is an existing Major Source for NOx emissions and will remain a Major Source for NOx. No change to the other pollutants' Major Source status is proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	17.6	6.4	0.6	58.2	1.2	1.2
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	n	n	n	n	n	n

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

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to determine the amount of offsets required. The facility is above the offset threshold for NOx only; therefore, BE calculations are only required for NOx.

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, provided that if the unit has a Specific Limiting Condition (SLC), all units combined under the SLC have an average combined annual Actual Emissions during the two consecutive years immediately prior to filing of an application for an Authority to Construct equal to or greater than 80% of the units' pre-project SLC limit,
- Any Fully-Offset Emissions Unit, located at a Major Source, provided that if the unit has a SLC, all units under the SLC also qualify as Fully Offset Emissions Units, or
- Any Clean Emissions Unit, located at a Major Source, provided that if the unit has a SLC, all units under the SLC also qualify as Clean Emissions Units.
- otherwise,

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

a. BE NO_X

- Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% (or at least 85% for lean-burn, internal combustion engines) or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application. If the units are part of an SLC plan, **all** units under the SLC must also qualify as Clean Emissions Units.

This project's engines and flare comprise an SLC plan; therefore, they must all be Clean Emissions Units in order for the BE to equal PE1.

The flare's 0.06 lb/MMBtu NOx emission limit meets the requirements for achieved-in-practice BACT of current BACT guideline 1.4.4 [Digester Gas-Fired Flare]. Therefore, its BE=PE1.

The engines are lean burn and have a minimum control efficiency of at least 85% as shown in Appendix B.

Therefore, all units under the SLC are Clean Emission Units and BE = PE1

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, 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	26,726	50,000	n

Since the SB 288 Major Modification Threshold is not surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

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

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

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

The project's combined total emission increases are compared to the Federal Major Modification Thresholds in the following table.

The PAE = the flare's PE2

The BAE is based on Emission Inventory data for calendar year 2013. Flare Emission Inventory data is not available for other years.

Emission Increase = PAE – BAE = 26,726 lb – 1,025 lb = 25,701 lb-NOx/yr

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO_x*	25,701	0	Y

Since there is an increase in NO_x emissions, this project constitutes a Federal Major Modification, and no further analysis is required.

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)

I. Project Emissions Increase - New Major Source Determination

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

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

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units	13.4	5.6	0.4	55.7	1.4	1.4
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	n	n	n	n	n	n

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

VIII. Compliance

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.

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

As discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

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

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

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

AIPE = PE2 – HAPE

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

IC Engines:

For IC engines S-3103-19 and '20:

PE2 = PE1 and EF2 = EF1; therefore their AIPE is zero. Therefore BACT is not triggered

Flare:

Flare S-3103-28's operating hours will be increased from 3,000 hr/yr to 8760 hr/yr. It is assumed that pre-project the flare didn't operate every day. Therefore, the AIPE is calculated assuming its PE1 equals zero. Also, EF1 = EF2; therefore:

AIPE = PE2

AIPE (S-3103-28)	
Pollutant	PE2 lb/day
NO_X	23.8
SO_X	2.4
PM10	7.9
CO	99.0
VOC	0.8

As demonstrated above, the flare's AIPE is greater than 2.0 lb/day for NOx, SOx, PM_{10}, and CO emissions. BACT is triggered for NO_X, SO_X and PM_{10} since the PEs are greater than 2 lbs/day. However, BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lbs/year.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute a Federal Major Modification for NO_X emissions. Therefore BACT is triggered for NO_X for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT Guideline 1.4.4 applies to the digester gas fired emergency flare. [Digester Gas-Fired Flare] (See Appendix C)

3. Top-Down BACT Analysis

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

NO_X: Enclosed flare with NO_x emissions ≤ 0.06 lb/MMBtu
SO_X: The use of scrubbed digester gas with H_2S content no greater than 20 ppmv
PM10: Smokeless combustion, natural gas pilot

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

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

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	32,806	883	2,971	111,726	11,259
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	yes	No	No	No	No

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for NO_X and the SSPE2 is greater than the offset thresholds. Therefore offset calculations will be required for this project.

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

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

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

For units under an SLC the PE and BE are the SLC limit.

As calculated in Section VII.C.6 above, the BE for the SLC is equal to the PE1.

Also, there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

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

PE2 (NO_X) = 32,806 lb/year
BE (NO_X) = 32,806 lb/year
ICCE = 0 lb/year

Offsets Required (lb/year) = ([32,806 – 32,806] + 0) x DOR
= 0 lb NO_X/year

As demonstrated in the calculation above, the amount of offsets is zero. Therefore, offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
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 a Federal Major Modification. Therefore, public noticing for 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	32,806	32,806	20,000 lb/year	No
SO_X	840	883	54,750 lb/year	No
PM_{10}	1,862	2,971	29,200 lb/year	No
CO	111,726	111,726	200,000 lb/year	No
VOC	11,259	11,259	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	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	32,806	32,806	0	20,000 lb/year	No
SO_x	840	883	43	20,000 lb/year	No
PM_{10}	1,862	2,971	1,109	20,000 lb/year	No
CO	111,726	111,726	0	20,000 lb/year	No
VOC	11,259	11,259	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 constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project for triggering a Title V significant 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.

Proposed Rule 2201 (DEL) Conditions:

Engines S-3103-19-3 and '20-3:

- Emission rates shall not exceed any of the following: NOx (as NO2): 0.6 g/bhp-hr, PM10: 0.04 g/bhp-hr, CO: 2.5 g/bhp-hr, or VOC (as methane): 0.25 g/bhp-hr. [District Rules 2201 and 4702] Y

Flare S-3103-28-2:

- The flare's emissions rates shall not exceed any of the following: 0.06 lb-NOx/MMBtu; 0.006 lb-SOx (as SO2)/MMBtu; 0.020 lb-PM10/MMBtu; 0.25 lb-CO/MMBtu; or 0.0020 lb-VOC/MMBtu. [District Rules 2201 and 4311]

E. Compliance Assurance

1. Source Testing

The digester gas-fired cogeneration engines were initially source tested for NO_x, CO, and VOC to demonstrate compliance with Rule 2201 BACT requirements and emissions limits. Biennial testing to demonstrate ongoing compliance is required per the following condition:

- Source testing to measure NOx, CO, and VOC emissions from this unit while firing digester gas shall be conducted not less than once every 24 months. [District Rule 4702]

The flare is also required to be source tested for NOx and VOC to demonstrate compliance with Rule 4311 requirements and emissions limits. The following condition will be added to the flare ATC:

- Source testing to measure NOx and VOC emissions from this unit shall be conducted at least once every 12 months. [District Rules 2201 and 4311]

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201 for the engines. The flare is required to be monitored per Rule 4311. The following conditions will be included to the flare ATC:

- The operator of a flare subject to flare monitoring requirements pursuant to Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO as specified in Rule 4311 Section 6.2.3 within 30 days following the end of each 12 month period. [District Rule 4311]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following conditions are listed on the engine permits:

- {3785} The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]

- {3788} The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]

- Record of H2S content of effluent gas shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2201]

- The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201]

- {3795} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702]

The following recordkeeping conditions will be included on the flare ATC:

- Permittee shall maintain records of the time and date of operation, duration of flare operation, amount of gas burned, and the purpose of the operation. [District Rules 1070, 2201, and 4311]

- The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201]

- Permittee shall maintain onsite a copy of the source test results. [District Rule 4311]

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

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201 for the engines. However, there are certain reporting requirements from Rule 4311 that apply to the flare. The following conditions will be added to the flare ATC:

- The operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Rule 4311 Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. [District Rule 4311]

- The operator of a flare subject to flare monitoring requirements pursuant to Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO as specified in Rule 4311 Section 6.2.3 within 30 days following the end of each 12 month period. [District Rule 4311]

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to **Appendix E** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source and this project does constitute a Title I modification, therefore this requirement is applicable. BCW's compliance certification is included in Appendix F.

H. Alternate Siting Analysis

Since the project will provide a flare to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

A minor permit modifications is not a Federal Major Modifications. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

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. However, no subparts of 40 CFR Part 60 apply to reciprocating IC engines. Therefore, the cogeneration engines are not subject to NSPS.
40 CFR 60.18 refers to control devices such as the flare. This section contains requirements for control devices used to comply with applicable subparts of parts 60 and 61. The requirements only apply to facilities covered by subparts referring to this section. None of the new equipment is covered by subparts which require external control devices and refer to this subpart. Therefore, the enclosed ground level flare is not subject to NSPS.

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. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to waste water treatment operations.

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). As the IC engine is fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, 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 E**), 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:

RMR Summary			
Categories	**Emergency Flare (Unit 28-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	**0.00***	0.00	>1
Acute Hazard Index	N/A	N/A	0.00
Chronic Hazard Index	N/A	N/A	0.00
Maximum Individual Cancer Risk	N/A	N/A	1.01E-06
T-BACT Required?	No		
Special Permit Conditions?	No		

*The prioritization score for this unit was determined to be insignificant (less than 0.05); therefore, the effective prioritization score is considered to be 0.00.

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.

Rule 4201 Particulate Matter Concentration

The subject equipment is currently in compliance with the requirements of this rule and this project is not expected to affect compliance. Continued compliance with this rule is expected.

Rule 4311 Flares

The subject equipment is currently in compliance with the requirements of this rule and this project is not expected to affect compliance. Continued compliance with this rule is expected.

Rule 4701 Stationary Internal Combustion Engines – Phase 1

The requirements of Rule 4702 are equivalent or more stringent than the requirements of this Rule. Since the IC engines are subject to both Rules 4701 and 4702, compliance with Rule 4702 is sufficient to demonstrate compliance with this Rule.

Rule 4702 Stationary Internal Combustion Engines – Phase 2

The subject equipment is currently in compliance with the requirements of this rule and this project is not expected to affect compliance. Continued compliance with this rule is expected.

Rule 4801 Sulfur Compounds (12/17/92)

The subject equipment is currently in compliance with the requirements of this rule and this project is not expected to affect compliance. Continued compliance with this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

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

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.

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

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The

District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

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

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-3103-19-3, '20-3 and '28-2 subject to the permit conditions on the attached draft ATCs in **Appendix G.**

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-3103-19-3	3020-10 F	1175 BHP	$749
S-3103-20-3	3020-10 F	1175 BHP	$749
S-3103-28-2	3020-02 H	16.6 MMBtu/hr	$1030

Appendixes

A: Current PTOs
B: Clean Emission Unit Determination
C: BACT Guideline and BACT Analysis
D: BACT Cost Estimate
E: HRA and AAQA Summary
F: Compliance Certification
G: Draft ATCs

APPENDIX A
Current PTOs

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3103-19-2 **EXPIRATION DATE:** 01/31/2017

EQUIPMENT DESCRIPTION:
1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER AND SULFATREAT FUEL GAS DRY SULFUR SCRUBBING SYSTEM SHARED WITH UNITS S-3103-13, '-14, '-15, '-16, '-17, '-18, '-20, AND '-28

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. Total annual operating hours of digester gas fired cogeneration engines S-3103-19 and '-20 shall not exceed 17,196 hours per calendar year. [District Rule 2201]
6. Engine shall operate according to the manufacturer's specifications. [District Rule 4701]
7. Total sulfur content of digester gas combusted in this unit shall not exceed 20 ppmvd. [District Rule 2201]
8. Emission rates shall not exceed any of the following: NOx (as NO2): 0.6 g/bhp-hr, PM10: 0.04 g/bhp-hr, CO: 2.5 g/bhp-hr, or VOC (as methane): 0.25 g/bhp-hr. [District Rules 2201 and 4702]
9. Combined annual emissions from permit units S-3103-19, '-20 and '-28 shall not exceed any one of the following: 26,726 lb-NOx/yr; 824 lb-SOx/yr; 1,782 lb-PM10/yr; 111,360 lb-CO/yr; 11,136 lb-VOC/yr. [District Rule 2201]
10. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
11. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702]
13. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
14. Source testing to measure NOx, CO, and VOC emissions from this unit while firing digester gas shall be conducted not less than once every 24 months. [District Rule 4702]
15. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702]
16. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702]
17. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702]
18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
19. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
20. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702]
21. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]
22. All vessel hatches and openings shall remain closed during operation of SulfaTreat H2S scrubber. [District Rules 2201 and 4102]
23. No components (i.e., valves, flanges, etc.) associated with the SulfaTreat unit shall be the source of any leak greater than 10,000 ppmv (as methane) when measured at a distance no greater than 1 cm from the potential source per EPA Method 21. [District Rule 2201]
24. Influent and effluent gas streams of SulfaTreat system shall be sampled at least monthly for H2S content of effluent gas to determine when recharging is required. [District Rule 2201]
25. During recharging of the H2S scrubber, untreated vapors shall not be introduced into the fuel system or vented to the atmosphere. [District Rule 2201]
26. The following test method shall be used for fuel gas sulfur content - ASTM D3246 or double GC for H2S and mercaptans. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

27. Record of H2S content of effluent gas shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2201]
28. The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201]
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3103-20-2 **EXPIRATION DATE:** 01/31/2017

EQUIPMENT DESCRIPTION:
1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. Total annual operating hours of digester gas fired cogeneration engines S-3103-19 and '-20 shall not exceed 17,196 hours per calendar year. [District Rule 2201]
6. Engine shall operate according to the manufacturer's specifications. [District Rule 4701]
7. Total sulfur content of digester gas combusted in this unit shall not exceed 20 ppmvd. [District Rule 2201]
8. Emission rates shall not exceed any of the following: NOx (as NO2): 0.6 g/bhp-hr, PM10: 0.04 g/bhp-hr, CO: 2.5 g/bhp-hr, or VOC (as methane): 0.25 g/bhp-hr. [District Rules 2201 and 4702]
9. Combined annual emissions from permit units S-3103-19, '-20 and '-28 shall not exceed any one of the following: 26,726 lb-NOx/yr; 824 lb-SOx/yr; 1,782 lb-PM10/yr; 111,360 lb-CO/yr; 11,136 lb-VOC/yr. [District Rule 2201]
10. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
11. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702]
13. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
14. Source testing to measure NOx, CO, and VOC emissions from this unit while firing digester gas shall be conducted not less than once every 24 months. [District Rule 4702]
15. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702]
16. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702]
17. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702]
18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
19. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
20. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702]
21. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]
22. The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201]
23. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3103-28-1 **EXPIRATION DATE:** 01/31/2017

EQUIPMENT DESCRIPTION:
16.5 MMBTU/HR FLARE INDUSTRIES ENCLOSED FLARE

PERMIT UNIT REQUIREMENTS

1. Flare shall be equipped with a non-resettable, totalizing flare gas volume flow meter. [District Rules 2201 and 4311]
2. Flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311]
3. If the flare uses a flow-sensing automatic ignition system and does not use a continuous flame pilot, the flare shall use purge gas for purging. [District Rule 4311]
4. A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311]
5. The flare's emissions rates shall not exceed any of the following: 0.06 lb-NOx/MMBtu; 0.006 lb-SOx (as SO2)/MMBtu; 0.020 lb-PM10/MMBtu; 0.25 lb-CO/MMBtu; or 0.0020 lb-VOC/MMBtu. [District Rules 2201 and 4311]
6. Combined annual emissions from permit units S-3103-19, '-20 and '-28 shall not exceed any one of the following: 26,726 lb-NOx/yr; 824 lb-SOx/yr; 1,782 lb-PM10/yr; 111,360 lb-CO/yr; 11,136 lb-VOC/yr. [District Rule 2201]
7. The flare shall only operate when both engines S-3103-19 and '-20 are shutdown for service or due to mechanical problems. [District Rule 2201]
8. The flare shall not operate more than 3,000 hours per calendar year. [District Rule 2201]
9. Hydrogen sulfide (H2S) content of digester gas combusted shall not exceed 20 ppmv. [District Rule 2201]
10. Sampling facilities shall be provided to allow for fuel gas sampling at inlet to flare. [District Rule 1081]
11. Source testing to measure NOx and VOC emissions from this unit shall be conducted within 60 days of initial start-up and at least once every 12 months thereafter. [District Rules 2201 and 4311]
12. The results of the source test shall be submitted to the District within 45 days thereafter. [District Rules 1081, 2201, 4311]
13. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 30 days prior to testing. [District Rules 1081 and 4311]
14. VOC emissions for source test purposes, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". [District Rule 4311]
15. NOx and O2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100 [District Rule 4311]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

16. NOx emissions for source test purposes, in pounds per million Btu, shall be determined by using EPA Method 19 [District Rule 4311]
17. Prior to startup under the terms of the Authority to Construct and as required thereafter, the permittee shall submit a flare minimization plan (FMP) that complies with the requirements of Rule 4311 Section 6.5 to the APCO for approval. [District Rule 4311]
18. A copy of approved flare minimization plan pursuant to Rule 4311 Section 6.5 shall be maintained and made readily available to the APCO, ARB, and EPA upon request for a minimum of 5 years. [District Rule 4311]
19. Copies of compliance determination pursuant to 40 CFR 60.18 shall be made readily available to the APCO, ARB, and EPA upon request for a minimum of 5 years. [40 CFR 60.18, District Rule 4311]
20. Copies of monitoring data collected pursuant to Rule 4311 Section 5.10 shall be made readily available to the APCO, ARB, and EPA upon request for a minimum of 5 years. [District Rule 4311]
21. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Rule 4311 Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. [District Rule 4311]
22. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO as specified in Rule 4311 Section 6.2.3 within 30 days following the end of each 12 month period. [District Rule 4311]
23. Permittee shall maintain records of the time and date of operation, duration of flare operation, amount of gas burned, and the purpose of the operation. [District Rules 1070, 2201, and 4311]
24. The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201]
25. Permittee shall maintain onsite a copy of the source test results. [District Rule 4311]
26. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070]

APPENDIX B
Clean Emission Unit Determination

Clean Emission Unit Determination for IC Engines S-3103-19 and '20

Per footnote "b" of Table 3.2-1 of AP-42 "To convert from (lb/MMBtu) to (lb/10^6 scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from

(lb/MMBtu) to (lb/hp-hr) use the following equation:

lb/hp-hr = (lb/MMBtu)(MMBtu/hr)(1/operating HP)"

Uncontrolled NOx emission factor per AP-42 Table 2.2.2: 4.08 lb/MMBtu

Heating value of fuel gas = 550 BTU/scf

Fuel Consumption 14,273 SCFH

(4.08 lb-NOx/MMBtu)(550 Btu/scf)(14,273 scf/hr)(1/1175 hp)(MM/1 E^5)(453.6 g/lb) = 12.4 g/hp-hr

Permitted NOx limit: 0.6 g/hp-hr

[(12.4 g/hp-hr – 0.6 g/hp-hr)/(12.4 g/hp-hr)](100%) = 95% control efficiency

APPENDIX C
BACT Guideline and BACT Analysis

Best Available Control Technology (BACT) Guideline 1.4.4
Last Update: 5/16/2006

Digester Gas-Fired Flare

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	operating in accordance with the manufacturers' specifications in order to minimize CO emissions		
NOx	enclosed flare and NOx emissions <= 0.06 lb/MMBtu	Ultra Low-NOx flare with NOx emissions <= 0.03 lb/MMBtu	
PM10	smokeless combustion and a LPG or natural gas fired pilot		
SOx	LPG or natural gas fired pilot	1. Dry absorption of H2S from the fuel gas 2. Wet absorption of H2S from the fuel gas 3. Influent fuel H2S reduction by addition of chemicals to the digester gas sludge 4. Water scrubbing of H2S from the fuel gas	
VOC	enclosed flare and VOC emissions =< 0.068 lb/MMBtu		

Top Down BACT Analysis for the Digester Gas Fired Emergency Flare

1. BACT Analysis for NO_X Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 1.4.4 identifies top-down BACT for NO_X emissions from digester gas fired flare as follows:

1) Ultra low NO_x flare with NO_x emission ≤ 0.03 lb/MMBtu (Technologically Feasible BACT)
2) Enclosed flare and NOx emissions ≤ 0.06 lb/MMBtu (Achieved in Practice BACT)

No control alternatives identified as Alternate Basic Equipment for this class and category of source are listed.

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

1) Ultra low NO_x flare with NO_x emission ≤ 0.03 lb/MMBtu
2) Enclosed flare and NOx emissions ≤ 0.06 lb/MMBtu

d. Step 4 - Cost Effectiveness Analysis

The following capital cost estimate for an ultra-low-NOx flare was provided by the applicant (see cost estimate in Appendix D).

Total Capital Cost = $391,888

Pursuant to District Policy APR 1305, section X. (11/09/99), the annual cost of the ultra low-NOx flare will be calculated as follows. The cost will be spread over the expected life of the system, which is estimated at 10 years and using the capital recovery equation (Equation 1). A 10% interest rate is assumed in the equation and the assumption will be made that the equation has no salvage value at the end of the ten-year cycle.

Equation 1: $ACI = [P \times i(I+1)^n]/[(I+1)^n-1]$

Where:

ACI	=	Annualized Capital Investment
P	=	Present Value
I	=	Interest Rate (10%)
N	=	Equipment Life (10 years)

$ACI = [\$391,888 \times 0.1(1.1)^{10}]/[(1.1)^{10}-1]$ = **$63,778/year**

(C). Cost Effectiveness of an ultra low-NOx flare:

Emissions Controlled:

Emission Reduction = Permitted Emissions – Emissions (w/ tech feas BACT) (ton/year)

Permitted Emissions:

0.06 lb/MMBtu(16.5 MMBtu/hr)(8760 hr/yr)(ton/2000) = 4.34 ton/yr

Tech Feasible Emissions:

0.03 lb/MMBtu(16.5 MMBtu/hr)(8760 hr/yr)(ton/2000) = 2.17 ton/yr

Cost Effectiveness = Annualized Capital Investment ($/year)
÷ Annual Emission Reduction (ton/year)
= $63,778/year ÷ (4.34 ton/yr – 2.17 ton/yr) = **$29,391/ton-VOC-year**

The cost effectiveness of utilizing an ultra low-NOx flare is greater than the NOx cost effectiveness threshold of $24,500/ton. Therefore, this NOx control option is not cost effective and is being removed from consideration at this time.

Step 5 - Select BACT

1) Enclosed flare and NOx emissions ≤ 0.06 lb/MMBtu (Achieved in Practice BACT)

2. BACT Analysis for SO_X Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 1.4.4 identifies top-down BACT for SO_X emissions from digester gas fired flare as follows:

1) 99% control; dry adsorption of hydrogen sulfide from fuel gas. (technologically feasible BACT)
2) 90% control; wet absorption of hydrogen sulfide from fuel gas. (technologically feasible BACT)
3) 80% control; water scrubbing of hydrogen sulfide from fuel gas. (achieved in practice BACT)

No control alternatives identified as alternate basic equipment for this class and category of source are listed.

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

1) 99% control; dry adsorption of hydrogen sulfide from fuel gas.
2) 90% control; wet absorption of hydrogen sulfide from fuel gas.
3) 80% control; water scrubbing of hydrogen sulfide from fuel gas.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the highest ranking control technology; a Sulfa-treat system to treat all digester gas being used as fuel gas. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for SO_X emissions from the digester gas flare is dry adsorption of hydrogen sulfide from fuel gas. The applicant has proposed a flare with H_2S content of fuel gas being scrubbed $\geq$ 99%; therefore BACT for SO_X emissions is satisfied.

3. BACT Analysis for PM10 Emissions:

Particulate matter (PM10) emissions occur from the reaction of various elements in the fuel gas including fuel sulfur.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 1.4.4 identifies BACT for PM10 emissions from digester gas fired flare as follows:

1) Smokeless combustion and a LPG or natural gas fired pilot. (achieved in practice BACT)

No technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

No ranking needs to be done because the applicant has proposed a smokeless ground level enclosed flare with natural gas pilot.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control achieved in practice in the ranking list from Step 3. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM10 emissions from the digester gas flare is Smokeless combustion and a LPG or natural gas fired pilot. The applicant has proposed to install a enclosed ground level flare with smokeless combustion and natural gas pilot; therefore BACT for PM10 emissions is satisfied.

APPENDIX D
BACT Cost Estimate

BAKERSFIELD
PUBLIC WORKS DEPARTMENT
NICK FIDLER • DIRECTOR • CITY ENGINEER
WASTEWATER DIVISION

December 11, 2014

Homero Ramirez
San Joaquin Valley
Air Pollution Control District
Southern Region Office
34946 Flyover Court
Bakersfield, CA 93308

RE: Notice of Incomplete Application
Facility Number: S-3103
Project Number: S-1144289

Dear Mr. Ramirez,

Enclosed for your review, as requested, is a preliminary cost estimate to upgrade to an ultra-low NOx flare that achieves NOx emission of 0.03 lb/MMBtu or less.

Additionally, the invoice enclosed with the District's letter dated December 1, 2014 is being processed for payment.

If you have any questions please contact Evette Roldan at 661-326-3249.

Very Truly Yours,
Nick Fidler
Public Works Director

By: Ralph Braboy
Ralph Braboy
Wastewater Manager

6901 McCutchen Road
Bakersfield • California • 93313
www.bakersfieldcity.us
(661) 326-3249
Fax (661) 852-2125

City of Bakersfield - Ultra-low Nox Flare Capital Cost

12/11/2014

Equipment Cost		
Ultra-low NOx Flare	$275,000	John Zink ZULE flare price quotation, 12/10/2014
Optional Equipment	$28,000	John Zink ZULE flare price quotation, 12/10/2014
Tax, 7.25%	$21,968	
Freight	$20,000	estimated
Installtion Cost		
Boom truck rental	$4,000	16 hr @ $250/hr
Operator wages	$1,200	16 hr @ $75/hr
Helpers (2 people)	$1,120	16 hr @ $35/hr
Electrician	$2,600	40 hr @ $65/hr
Instrumentation Engineer	$2,600	40 hr @ $65/hr
Interconnection piping & equipment	$30,000	estimated
Pipe fitters	$2,600	40 hr @ $65/hr
Helpers (2 people)	$2,800	40 hr @ $35/hr
Total capital cost	**$391,888**	

JOHN ZINK.
JOHN ZINK COMPANY LLC
A Koch Chemical Technology Group, LLC Company

December 10, 2014

Via Email: Vamsi.Seeta@parsons.com

PARSONS Enviroment & Infrastructure, Inc.
100 W Walnut St.
Pasadena, CA 91124

Attention: Vamsi Seeta, PE

Subject: Proposal for **Zink Ultra Low Emission (ZULE®) Flare** System
Bakersfield Digester
John Zink Proposal BF-201412-49992

Dear Vamsi,

Thank you for your recent interest in John Zink Company services and products. We appreciate the opportunity to assist you with the flare portion of your project. To satisfy your digester gas flare requirements per your recent request, John Zink Company is pleased to offer a budget quote for our **Zink Ultra Low Emission (ZULE®) Flare System.**

For over 80 years, the John Zink brand has provided quality, innovative technology, and worldwide service in the combustion industry. John Zink has supplied over 700 flare systems for the biogas industry and we possess the expertise and resources to ensure a successful flare project and reliable flare performance.

John Zink offers a range of features and options as listed in the following "Equipment Description" section. Our intent is to supply the safest, most reliable and economical system available that will also allow you to customize your system to meet your specific needs. After reviewing the proposal, please let us know if there are any additional options you would like to pursue.

We look forward to working with you on this project, and if you require any additional information please do not hesitate to contact me at 918.234.2791 or our local sales representative, Jack Bermingham, at 562.818.5496.

Sincerely,
JOHN ZINK COMPANY, LLC

Aron J. Katz, P.E.
Applications Engineer
Biogas Flare Division

DESIGN CRITERIA

Flare Gas Stream

Type:	Digester Gas
Composition:	60% CH_4 (design); Balance CO_2, air, inerts
Flow Rate:	500 SCFM (maximum)
Temperature:	100°F
Waste Heat Release:	16.4 MM BTU/hr (maximum)

NOTE: *Base System is designed for Hydrogen Sulfide concentrations of 1,000 ppm or less.*

Mechanical

Design Wind Speed:	110 mph
Ambient Temperature:	32°F to 120°F
Electrical Area Classification:	non-hazardous
Elevation:	550 feet above MSL

NOTE: *Heat Tracing and insulating (by others) is recommend for protection against freezing.*

Process

Smokeless Capacity:	100%
Operating Temperature:	1400 °F to 1800 °F (2000 °F shutdown)
Retention Time:	0.7 seconds at 1800 °F (minimum)
Required Inlet Pressure at Flare:	**15" H_2O (minimum)**
Ambient Pressure:	14.47psia

Combustion Air Blower

Capacity:	4,300 SCFM (maximum)
Quantity:	One
Pressure Requirement:	-5" H_2O blower suction (maximum) +15" H_2O blower discharge (maximum)

Utilities

Pilot Gas (intermittent):	50 SCFH of natural gas at 10-15 psig
Compressed Air:	100 PSIG (regulated)
Electricity:	**480 V, 3 ph, 60 Hz for blower control;** transformer provided for 120 V control system components
Auxiliary Fuel:	none (pilot only)

Expected Flue Gas

Operating Temperature	1600°F	1800°F
CO_2 Volume %	5.2	6.2
H_2O Volume %	7.0	8.0
N_2 Volume %	73.9	73.1
O_2 Volume %	13.9	12.7

Guaranteed Emission Range (Design Flow)[1]

Operating Temperature	1600°F	1800°F
Overall Total VOC Destruction Efficiency[2]	99.9%	99.9%
NOx, lb / MMBTU[3]	0.025	0.025
CO, lb / MMBTU[4]	0.06	0.05

[1] Expected emission rates at lower operating temperatures are available upon request.
[2] Typical sulphur containing compounds are expected to have greater than 98% oxidation efficiency.
[3] Excludes NOx from fixed nitrogen.
[4] Excludes CO contribution present in biogas.

NOTE: *Guaranteed emissions are based on field tests of operating units and the higher heating value (HHV) of the biogas. Destruction efficiency, NOx, and CO emissions shown are valid for combustion of biogas only.*

SCOPE OF SUPPLY

Item 1, Enclosed Flare (ZTOF)

- One (1) 5'-0" diameter x 40'-0" overall height, A-36 carbon steel flare stack enclosure.
- Two (2) 1" layers of A.P. Green (or equal) ceramic fiber refractory on Inconel pins and keepers providing optimal temperature protection. The 1" surface layer of 8 lb density refractory (2300 °F surface temperature rating) is overlapped horizontally for additional protection. This layer is backed with an additional 1" layer of 6 lb density refractory (2300 °F surface rating temperature).
- One (1) proprietary Biogas Burner for biogas applications with anti-flashback tip for high temperature corrosion resistance and maximum flame stability through the full range of design flow rates.
- One (1) Tru-Lite™ igniter assembly for use during start-up cycles. This externally mounted pilot provides simple operation and can be removed for maintenance without entering the stack.
- Two (2) bolted blade combustion air dampers with opposed blade design, providing air turndown control. Galvanized finish and stainless steel press-fit bearings ensure smooth, long term operation. A special, proprietary lower burner chamber design minimizes direct radiation on the damper for maximum service life.
- Two (2) 4" diameter NPT couplings with plug provided as sample ports at 90º apart located one-half stack diameter from the flare top for accurate emission testing.
  NOTE: *These ports can be accessed by use of a temporary device such as power-lift vehicle or permanent ladder and platform equipment (refer to the recommended optional equipment section for ladder and platform selection).*
- One (1) stainless steel rain cap consisting of overlapping tabs to provide weather protection at the refractory and flare shell interface.
- Four (4) thermocouple connections at various elevations for temperature monitoring.
- Exterior protection using SSPC-SP-6 sandblast and *Sherwin Williams* Zinc Clad II primer coating system, 4 mils DFT, for superior corrosion protection at shell temperatures to 750 °F.
- One (1) AISC designed continuous base plate for high wind stability.
- Two (2) lifting lugs to assist in erection.
- Thermocouple conduit mounting brackets.
- Inlet pre-mixing chamber including static mixer assembly

Miscellaneous Accessories

- Four (4) operating manuals (three (3) hard copies, one (1) electronic copy on CD) with essential operating instructions, appropriate vendor literature on instrumentation, and drawings.
- 500 ft of thermocouple extension wire.

Item 2, Automatic Ignition and Control Station

Control Station Assembly

- One (1) self-supporting steel rack with electrical panels attached to the front side and pilot gas piping and instrumentation attached to the rear side.
- One (1) NEMA 4 weatherproof Flare Control Panel with the following 120V items:
  - One (1) Allen Bradley CompactLogix programmable logic controller for safe, overall system operation and control.

  - One (1) operator interface touch screen display for all set point changes, status, alarms, and shut down indications.
  - One (1) temperature switch for high temperature shutdown.
  - One (1) flame scanner relay.
- One (1) combustion air blower VFD
- One (1) Pilot Gas Control System including a pressure regulator, fail-closed shutdown valve, manual block valve, and pressure indicator.
- The control station assembly is completely piped and wired in a *UL* approved shop and functionally tested simulating actual operations.

Stack Mounted Controls (shipped loose for field installation by others)

- One (1) combustion air damper to control the operating temperature. As part of the automatic temperature control feature, the damper is equipped with automatically controlled louvers.
- One (1) Ignition Panel Assembly including a transformer, pilot spark electrode, and ignition wire. The NEMA 4 enclosure is stack mounted for easy access to the pilot assembly.
- One (1) self-checking, ultraviolet flame scanner.
- One (1) high temperature shutdown thermocouple.
- One (1) burner thermocouples to indicate and shut down upon burn back.
- Three (3) temperature monitoring thermocouples with location dependent on specific flow conditions. The operating thermocouple can be selected either automatically based on the flow rate or manually from the touch screen display.

Item 3, Inlet Flame Arrester

- One (1) 6" diameter, eccentric *Enardo* Flame Arrester with aluminum housing, housing drain, and removable aluminum internals mounted at the flare inlet. Internal elements can be cleaned without removing the flame arrester body from the pipe.

Item 4, Automatic Block Valve

- One (1) automatic block valve assembly consisting of a 6" diameter, high performance butterfly valve and fail-closed pneumatic actuator. The valve has a carbon steel wafer body, 316 stainless steel disk and shaft, and PTFE seal. The pneumatic actuator includes a three-way solenoid valve, speed control valve, position indicator, and auxiliary switches. Pneumatic actuation is achieved using either nitrogen cylinders (not included) or 100 psig compressed air (if available).

Item 5, Flow Meter

- Two (2) thermal mass flow meter assemblies with 316 stainless steel probe for ¾" NPT mounting. One to be mounted in the digester gas piping and one to be mounted in the combustion air piping.

Item 6, Chart Recorder

- One (1) *Yokogawa FX-1006* digital paperless chart recorder to measure flow and temperature. This recorder is capable of recording up to six (6) inputs and complete with flash memory drive for data storage.

ADDITIONAL PRICING

Item 7, Automatic Telephone Dialer

- One (1) panel mounted automatic dialer with eight universal inputs. The autodialer is capable of communicating via phone, pager or computer for alarm notification. This unit also comes complete with a 10 hour battery backup.

Item 8, Access Ladder

- One (1) galvanized, safety ladder providing access to thermocouples. Equipment includes a ladder, safety rails, a safety harness, and personnel protection screening behind the ladder and around the thermocouple ports. A lockable gate is available for an additional price.

Item 9, Service Platform

- One (1) galvanized, 150° service platform, designed per *OSHA* requirements, providing access to the stack sample ports. A continuous band of personnel protection screening around the sample ports is included with this option. A 360° service platform is available for an additional price.

Item 10, Control Panel Weather Hood

- One (1) fabricated steel hood designed to limit control panel exposure to the elements. It provides approximately 4' of overhang to the front and 2' to the rear. The hood is painted to match the rest of the control panel rack and comes with a fluorescent light assembly for enhanced visibility of the panel components at night.

Item 11, Flare Foundation Template

- One (1) enclosed flare base plate foundation template constructed of 1/4" carbon steel plate to assist in setting and installing the anchor bolts in the field. The template is shipped prior to the flare, so that it can be utilized at the time the flare foundation is formed.

Item 12, *Underwriters Laboratories* Classification

- John Zink Company is dedicated to ensuring the highest level of quality and safety standards in its products. This performance level is reflected in all products and provides the opportunity to apply the *UL* listing symbol for Industrial Control Panels on motor starters and a *UL* classification symbol on Flare Control Panels. This option is provided for applications requiring *Underwriters Laboratories* Certification.

BUDGET PRICE ITEMS 1 THRU 6 **$275,000**
(does not include shipping, taxes, or field services)

Recommended Optional Equipment Pricing

7. One (1) Automatic Telephone Dialer	$3,000
8. One (1) Access Ladder	$7,000
9. One (1) Service Platform	$10,000
10. One (1) Control Panel Weather Hood	$2,500
11. One (1) Flare Foundation Template	$3,000
12. *Underwriters Laboratories* Classification	$2,500

John Zink Field Service for start-up, training, or testing assistance is available per the attached rate sheet.

PAYMENT AND TERMS SUMMARY

This is a budgetary proposal and is intended only as an estimate to facilitate your planning processes and does not constitute a commitment or offer to sell goods or services at the prices and terms referenced herein. Any firm offer or binding quotation will be the subject of a formal proposal at a future date.

The shipping terms are EX WORKS point of manufacture. The price does not include any shipping and handling, customs, duties, or any taxes other than John Zink's contributions for unemployment insurance, old age retirement benefits, pensions, and annuities.

The price is based on the following terms of payment:
- 15% of order price due upon issuance of the order
- 50% of order price due upon issuance of general arrangement drawings
- 35% of order price due upon notification of availability for shipment*

*This payment is required in full prior to shipment or secure with a bank letter of credit. Payment is required in United States currency. A guaranteed form of payment acceptable to John Zink, such as, corporate or personal guarantees, payment by a confirmed, irrevocable letter of credit, or by three-party check may be required by John Zink.

DELIVERY SCHEDULE

Based on a release to purchase major materials at the time an order is accepted, John Zink offers the following delivery schedule:

- Initial general arrangement drawing submittal: 6-8 weeks after acceptance of the order
- Completion of fabrication: 12-14 weeks after drawing approval

Drawing approval within one (1) week of drawing submittal. An improved schedule may be arranged based on specific project requirements. Waiving drawing approval will improve the schedule by 2 – 3 weeks.

Shipping will be via common carrier. Portions of the unit will be shipped loose to reduce shipping costs and damage to the unit.

OTHER CONDITIONS

Title of Goods

Title to the goods and services subject of this order shall pass to the Buyer only when John Zink Company receives payment in full therefor. The Buyer shall cooperate, if requested, in proper filings and other procedures necessary to assure that John Zink Company shall retain perfected security interest in the goods and services.

Changes to the Scope of Work

Price is based on the inquiry design information. In the event of a process change, John Zink reserves the right to alter the equipment design in order to maintain safe engineering practices. If additions or deletions to the scope of work are required after an order is received, John Zink will submit a price summary to the customer for approval. Equipment dimensions, sizes, and sub-venders offered in this quotation shall be subject to change after the design is finalized.

Design changes after receipt of the order will result in a reschedule of the equipment ship date. Late drawing approval will result in a reschedule of the equipment ship date which will be based on John Zink's production forecast upon receipt of drawing approval, and will not necessarily be a day-for-day tradeoff.

Field Service

Start-up and training services are not included unless specifically noted above. If field service is requested, it shall be performed according to the terms of the attached John Zink Technical Assistance Agreement.

GENERAL SCOPE OF WORK

John Zink will furnish the labor, materials, and equipment necessary to fabricate the system offered.

For the purpose of clarification, the supplies to be delivered will include general bolts, nuts, washers, gaskets, and similar fasteners associated with the assembly of the system supplied by John Zink.

The following items are not included in the supplies to be delivered:

- Detailed fabrication drawing. Customer approval drawings include the necessary dimensions, nozzle placements, structural details, and other data required to assemble the system.
- All civil works. John Zink will supply the data necessary to design such civil works by providing loading information for the system.
- Erection of system or installation of piping or instruments. John Zink, if requested, can supply turnkey installations.
- The supply or installation of fireproofing materials, personnel protection, lightning protection, heat tracing, external insulation, electrical/thermocouple wire, conduit, piping, finish paint, and other miscellaneous hardware unless specifically noted.
- Permits, licenses, and approval by and from authorities to install, test, and operate the system.
- Preparation of drawings, forms and/or data for approval by state or local agencies of the design of the system, unless otherwise noted.
- Compliance with state, local, or municipal codes, except as specifically identified. The system will be designed to applicable national codes and standards. However, John Zink has numerous similar systems operating in many of the states and is knowledgeable in coordinating with the respective regulatory authorities and, if requested, can comply with the agreed upon local requirement.
- Field alignment for rotating equipment, if applicable, by others.

CLARIFICATIONS

- A minimum undisturbed distance is required for proper installation and performance of the flow meter. A distance of approximately ten pipe diameters of straight pipe is required before the flow meter and approximately five pipe diameters of straight pipe after the flow meter.

ATTACHMENTS

- Technical Assistance Agreement
- "Typical" System P&ID – For general purposes only. Does not depict exact scope of equipment.
- "Typical" Flare Layout – For general purposes only. Does not depict exact scope of equipment.

APPENDIX E
HRA and AAQA Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	David Torii – Permit Services
From:	Kyle Melching – Technical Services
Date:	April 27, 2015
Facility Name:	Bakersfield City Wastewater #3
Location:	8101 Ashe Road, Bakersfield
Application #(s):	S-3103-28-2
Project #:	S-1144289

A. RMR SUMMARY

RMR Summary			
Categories	**Digester Gas Flare (Unit 28-2)**	**Project Totals**	**Facility Totals**
Prioritization Score	**0.00**	0.00	>1
Acute Hazard Index	0.00	0.00	0.00
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk	7.98E-08	7.98E-08	1.09E-06
T-BACT Required?	No		
Special Permit Conditions?	No		

Proposed Permit Conditions

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

Unit # 28-2

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

B. RMR REPORT

I. Project Description

Technical Services received a request on April 13, 2015, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for a 16.5 MMBtu/hr digester gas flare which proposes to operate full time.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District emission factors for Natural Gas Fired external combustion and the 1996 speciation of Pt Loma Waste Water Treatment Plant Raw Gas by the SDAPCD. The previous RMR evaluated this unit as an emergency flare with a max operation time of 200 hours per year for project S-1085480. However, for project S-1114745 the project engineer combined the SLC to combine permit units -19, -20, and -28 to allow 3,000 hours of operation per year for unit -28 without requiring an RMR. This RMR analysis will consider the total increase in hours of operation from the 28-0 modification. Therefore, the total annual increase in hours of operation is 8,560 hr/yr. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed 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 for the project. AERMOD was used with 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.

The following parameters were used for the review:

Analysis Parameters (Unit 28-2)			
Source Type	Point	**Nearest Receptor (m)**	1126
Stack Height (m)	9.14	**Closest Receptor Type**	Residence
Stack Diameter (m)	0.762	**Project Location**	Rural
Stack Exit Velocity (m/s)	31.05	**Digester Gas Usage (mmscf/hr)**	0.017
Stack Exit Temperature (K)	1033	**Digester Gas Usage (mmscf/yr)**	141.2

Technical Services also performed modeling for criteria pollutants CO, NOX, SOX, and PM_{10}; as well as the RMR. The emission rates used for criteria pollutant modeling were 4.13 lb/hr and 35,353 lb/yr CO, 0.99 lb/hr and 8,474 lb/yr NOX, 0.10 lb/hr and 856 lb/yr SOX, and 0.33 lb/hr and 2,825 lb/yr PM_{10}.

The results from the Criteria Pollutant Modeling for the flare are as follows:

Criteria Pollutant Modeling Results*

Values are in $\mu g/m^3$

	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[1]	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	X	X	X	Pass[2]	Pass[2]

[1]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. *Conclusion*

The criteria modeling runs indicate the emissions from the project will not cause or significantly contribute to a violation of a State or National AAQS.

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **7.98E-08**; 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 this permit unit.

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

APPENDIX F
Compliance Certification

BAKERSFIELD
PUBLIC WORKS DEPARTMENT
NICK FIDLER • DIRECTOR • CITY ENGINEER
WASTEWATER DIVISION

June 4, 2015

David Torii
San Joaquin Valley
Air Pollution Control District
Southern Region Office
34946 Flyover Court
Bakersfield, CA 93308

RE: Flare Permit Modification Application

Mr. Torii,

This letter is in response to your email dated April 13, 2015 and subsequent phone-call on June 2, 2015.

In addition to the units being considered under the on-going permit modification, Bakersfield City Wastewater #3 also has the following permitted units: -10-1, -22-1, -23-1, -24-1, -25-1, -26-1, and -27-1; all of which are operating in full compliance.

Units -19-2, 20-2, and -28-1, being considered for this permit modification, recently underwent source testing. The results indicated that the flare (-28-1) exceeded its 0.06 lb-NOx/MMBTU, 0.006lb-SOx/MMBTU, and 20 ppm H_2S limits. All other permit conditions for the units are being met.

The City has a set course to bring the flare unit back into full compliance. The corrective actions include replacing the media in both of the scrubber tanks with SulfaTreat media and having the flare unit assessed and adjusted accordingly by the flare manufacturer.

At this time the City is on schedule to be in full compliance with all applicable emission limitation and standards.

If you have any questions or need anything else to proceed please contact Evette Roldan at 661-326-3249.

Very Truly Yours,
NICK FIDLER
Public Works Director

By: Ralph Braboy
RALPH BRABOY
Wastewater Manager

CC: Zachary Meyer, City of Bakersfield; Vamsi Seeta, Parsons Environmental & Infrastructure

6901 McCutchen Road
Bakersfield • California • 93313
www.bakersfieldcity.us
(661) 326-3249
Fax (661) 852-2125

APPENDIX G
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3103-19-3

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BAKERSFIELD CITY WASTEWATER #3
MAILING ADDRESS: 6901 MCCUTCHEN RD.
BAKERSFIELD, CA 93313

LOCATION: 6901 MCCUTCHEN ROAD
BAKERSFIELD, CA 93313

EQUIPMENT DESCRIPTION:
MODIFICATION OF 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER AND SULFATREAT FUEL GAS DRY SULFUR SCRUBBING SYSTEM SHARED WITH UNITS S-3103-13, '-14, '-15, '-16, '-17, '-18, '-20, AND '-28: REVISE SPECIFIC LIMITING CONDITION (SLC) PLAN FOR UNITS S-3103-19, '20, AND '28

CONDITIONS

1. ATCs S-3103-19-3, '20-3 and '28-2 shall be implemented concurrently. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (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

Arnaud Marjollet, Director of Permit Services

S-3103-19-3 : Jun 5 2019 11:35AM – TORID : Joint Inspection NOT Required

7. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit

8. Total annual operating hours of digester gas fired cogeneration engines S-3103-19 and '-20 shall not exceed 17,196 hours per calendar year. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Engine shall operate according to the manufacturer's specifications. [District Rule 4701] Federally Enforceable Through Title V Permit

10. Total sulfur content of digester gas combusted in this unit shall not exceed 20 ppmvd. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Emission rates shall not exceed any of the following: NOx (as NO2): 0.6 g/bhp-hr, PM10: 0.04 g/bhp-hr, CO: 2.5 g/bhp-hr, or VOC (as methane): 0.25 g/bhp-hr. [District Rules 2201 and 4702] Federally Enforceable Through Title V Permit

12. Combined annual emissions from permit units S-3103-19, '-20 and '-28 shall not exceed any one of the following: 26,726 lb-NOx/yr; 867 lb-SOx/yr; 2,991 lb-PM10/yr; 111,360 lb-CO/yr; 11,136 lb-VOC/yr. [District Rule 2201] Federally Enforceable Through Title V Permit

13. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702] Federally Enforceable Through Title V Permit

14. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4702] Federally Enforceable Through Title V Permit

15. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702] Federally Enforceable Through Title V Permit

16. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702] Federally Enforceable Through Title V Permit

17. Source testing to measure NOx, CO, and VOC emissions from this unit while firing digester gas shall be conducted not less than once every 24 months. [District Rule 4702] Federally Enforceable Through Title V Permit

18. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702] Federally Enforceable Through Title V Permit

19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702] Federally Enforceable Through Title V Permit

21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

23. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702] Federally Enforceable Through Title V Permit

24. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702] Federally Enforceable Through Title V Permit

25. All vessel hatches and openings shall remain closed during operation of SulfaTreat H2S scrubber. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

26. No components (i.e., valves, flanges, etc.) associated with the SulfaTreat unit shall be the source of any leak greater than 10,000 ppmv (as methane) when measured at a distance no greater than 1 cm from the potential source per EPA Method 21. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Influent and effluent gas streams of SulfaTreat system shall be sampled at least monthly for H2S content of effluent gas to determine when recharging is required. [District Rule 2201] Federally Enforceable Through Title V Permit

28. During recharging of the H2S scrubber, untreated vapors shall not be introduced into the fuel system or vented to the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit

29. The following test method shall be used for fuel gas sulfur content - ASTM D3246 or double GC for H2S and mercaptans. [District Rule 2201] Federally Enforceable Through Title V Permit

30. Record of H2S content of effluent gas shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2201] Federally Enforceable Through Title V Permit

31. The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201] Federally Enforceable Through Title V Permit

32. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-3103-20-3

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BAKERSFIELD CITY WASTEWATER #3
MAILING ADDRESS: 6901 MCCUTCHEN RD.
BAKERSFIELD, CA 93313

LOCATION: 6901 MCCUTCHEN ROAD
BAKERSFIELD, CA 93313

EQUIPMENT DESCRIPTION:
MODIFICATION OF 1,175 BHP JENBACHER MODEL JMS316 DIGESTER GAS-FIRED IC ENGINE COGENERATION SYSTEM WITH TURBOCHARGER AND AIR TO FUEL RATIO CONTROLLER: REVISE SPECIFIC LIMITING CONDITION (SLC) PLAN FOR UNITS S-3103-19, -'20, AND '28

CONDITIONS

1. ATCs S-3103-19-3, '20-3 and '28-2 shall be implemented concurrently. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
7. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit

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

DRAFT

Arnaud Marjollet, Director of Permit Services

S-3103-20-3 : Jun 5 2015 11:46AM -- TORIO : Joint Inspection NOT Required

8. Total annual operating hours of digester gas fired cogeneration engines S-3103-19 and '-20 shall not exceed 17,196 hours per calendar year. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Engine shall operate according to the manufacturer's specifications. [District Rule 4701] Federally Enforceable Through Title V Permit

10. Total sulfur content of digester gas combusted in this unit shall not exceed 20 ppmvd. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Emission rates shall not exceed any of the following: NOx (as NO2): 0.6 g/bhp-hr, PM10: 0.04 g/bhp-hr, CO: 2.5 g/bhp-hr, or VOC (as methane): 0.25 g/bhp-hr. [District Rules 2201 and 4702] Federally Enforceable Through Title V Permit

12. Combined annual emissions from permit units S-3103-19, '-20 and '-28 shall not exceed any one of the following: 26,726 lb-NOx/yr; 867 lb-SOx/yr; 2,991 lb-PM10/yr; 111,360 lb-CO/yr; 11,136 lb-VOC/yr. [District Rule 2201] Federally Enforceable Through Title V Permit

13. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702] Federally Enforceable Through Title V Permit

14. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4702] Federally Enforceable Through Title V Permit

15. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702] Federally Enforceable Through Title V Permit

16. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702] Federally Enforceable Through Title V Permit

17. Source testing to measure NOx, CO, and VOC emissions from this unit while firing digester gas shall be conducted not less than once every 24 months. [District Rule 4702] Federally Enforceable Through Title V Permit

18. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702] Federally Enforceable Through Title V Permit

19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702] Federally Enforceable Through Title V Permit

21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

23. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702] Federally Enforceable Through Title V Permit

24. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702] Federally Enforceable Through Title V Permit

25. The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201] Federally Enforceable Through Title V Permit

26. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3103-28-2

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BAKERSFIELD CITY WASTEWATER #3
MAILING ADDRESS: 6901 MCCUTCHEN RD.
BAKERSFIELD, CA 93313

LOCATION: 6901 MCCUTCHEN ROAD
BAKERSFIELD, CA 93313

EQUIPMENT DESCRIPTION:
MODIFICATION OF 16.5 MMBTU/HR FLARE INDUSTRIES ENCLOSED FLARE: REMOVE CONDITION LIMITING ANNUAL NUMBER OF HOURS OF OPERATION AND REVISE SPECIFIC LIMITING CONDITION (SLC) PLAN FOR UNITS S-3103-19, '20, AND '28

CONDITIONS

1. ATCs S-3103-19-3, '20-3 and '28-2 shall be implemented concurrently. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
4. Flare shall be equipped with a non-resettable, totalizing flare gas volume flow meter. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit
5. Flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit
6. If the flare uses a flow-sensing automatic ignition system and does not use a continuous flame pilot, the flare shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit

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

Arnaud Marjollet, Director of Permit Services

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

7. A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit

8. The flare's emissions rates shall not exceed any of the following: 0.06 lb-NOx/MMBtu; 0.006 lb-SOx (as SO2)/MMBtu; 0.020 lb-PM10/MMBtu; 0.25 lb-CO/MMBtu; or 0.0020 lb-VOC/MMBtu. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit

9. Combined annual emissions from permit units S-3103-19, '-20 and '-28 shall not exceed any one of the following: 26,726 lb-NOx/yr; 867 lb-SOx/yr; 2,991 lb-PM10/yr; 111,360 lb-CO/yr; 11,136 lb-VOC/yr. [District Rule 2201] Federally Enforceable Through Title V Permit

10. The flare shall only operate when both engines S-3103-19 and '-20 are shutdown for service or due to mechanical problems. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Hydrogen sulfide (H2S) content of digester gas combusted shall not exceed 20 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Sampling facilities shall be provided to allow for fuel gas sampling at inlet to flare. [District Rule 1081] Federally Enforceable Through Title V Permit

13. Source testing to measure NOx and VOC emissions from this unit shall be conducted at least once every 12 months. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit

14. The results of the source test shall be submitted to the District within 45 days thereafter. [District Rules 1081, 2201, 4311] Federally Enforceable Through Title V Permit

15. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 30 days prior to testing. [District Rules 1081 and 4311] Federally Enforceable Through Title V Permit

16. VOC emissions for source test purposes, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". [District Rule 4311] Federally Enforceable Through Title V Permit

17. NOx and O2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100 [District Rule 4311] Federally Enforceable Through Title V Permit

18. NOx emissions for source test purposes, in pounds per million Btu, shall be determined by using EPA Method 19 [District Rule 4311] Federally Enforceable Through Title V Permit

19. Prior to startup under the terms of the Authority to Construct and as required thereafter, the permittee shall submit a flare minimization plan (FMP) that complies with the requirements of Rule 4311 Section 6.5 to the APCO for approval. [District Rule 4311] Federally Enforceable Through Title V Permit

20. A copy of approved flare minimization plan pursuant to Rule 4311 Section 6.5 shall be maintained and made readily available to the APCO, ARB, and EPA upon request for a minimum of 5 years. [District Rule 4311] Federally Enforceable Through Title V Permit

21. Copies of compliance determination pursuant to 40 CFR 60.18 shall be made readily available to the APCO, ARB, and EPA upon request for a minimum of 5 years. [40 CFR 60.18, District Rule 4311] Federally Enforceable Through Title V Permit

22. Copies of monitoring data collected pursuant to Rule 4311 Section 5.10 shall be made readily available to the APCO, ARB, and EPA upon request for a minimum of 5 years. [District Rule 4311] Federally Enforceable Through Title V Permit

23. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Rule 4311 Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. [District Rule 4311] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

24. The operator of a flare subject to flare monitoring requirements pursuant to Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO as specified in Rule 4311 Section 6.2.3 within 30 days following the end of each 12 month period. [District Rule 4311] Federally Enforceable Through Title V Permit

25. Permittee shall maintain records of the time and date of operation, duration of flare operation, amount of gas burned, and the purpose of the operation. [District Rules 1070, 2201, and 4311] Federally Enforceable Through Title V Permit

26. The permittee shall maintain all necessary records in order to show compliance with the annual shared emission limit from permit units S-3103-19, '-20 and '-28. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Permittee shall maintain onsite a copy of the source test results. [District Rule 4311] Federally Enforceable Through Title V Permit

28. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit