



**NOV 05 2015**

Mr. Dan Martin  
E & J Gallo Winery  
18000 W River Rd  
Livingston, CA 95334

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)  
District Facility # N-1237  
Project # N-1152892**

Dear Mr. Martin:


Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. E&J Gallo is proposing the installation of a wastewater treatment anaerobic digester operation served by a biological sulfur scrubber, two activated carbon filters, and enclosed flare.

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

If you have any questions, please contact Mr. Nick Peirce, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

  
Arnaud Marjolle  
Director of Permit Services

Enclosures

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

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**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
New Digester and Waste Water Treatment Operation Served by a Scrubber and Activated  
Carbon Filters and an Emergency Digester Gas-Fired Flare

Facility Name: E & J Gallo Winery	Date: October 29, 2015
Mailing Address: 18000 W River Rd Livingston, CA 95334	Engineer: James Harader Lead Engineer: Nick Peirce
Contact Person: Dan Martin	
Telephone: (209) 394-6211	
E-Mail: Dan.Martin@ejgallo.com	
Application No: N-1237-661-3	
Project No: N-1152892	
Deemed Complete: August 25, 2015	

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**I. Proposal**

E & J Gallo Winery previously requested an Authority to Construct (ATC) permit, N-1237-661-0, to install a wastewater treatment anaerobic digester operation served by a biological sulfur scrubber, two activated carbon filters, and a full-time enclosed flare. The produced, treated digester gas will also be directed to two digester gas-fired engines listed in permits N-1237-605-0 and '606-0 which were processed in project N-1121959.

E & J Gallo Winery later determined that the two engines, N-1237-605 and '-606, are capable of processing all of the digester gas created by the anaerobic digester, even during periods of maintenance of the engines. Therefore, E & J Gallo Winery is proposing to permit the flare as an emergency flare. Since the previous Authority to Construct for the digester and full-time flare won't be implemented, the District will treat the anaerobic digester operation and emergency flare as a new operation for District Rule 2201 purposes. Additionally, the facility is requesting to extend the source test deadline from 60 days after startup to 180 days after startup.

E & J Gallo Winery has received their Title V Permit. 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. E & J Gallo Winery 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)  
Rule 4311 Flares (6/18/09)  
Rule 4801 Sulfur Compounds (12/17/92)  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
40 CFR 64 Compliance Assurance Monitoring  
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 18000 W River Rd in Livingston, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

## IV. Process Description

E & J Gallo Winery is proposing the operation of a wastewater treatment and energy recovery project called Livingston Water Innovation and Energy (L-WINE).

E & J Gallo Winery produces wine and beverages for commercial sale. The wastewater from the wine and beverage manufacturing operations is collected and transferred to an anaerobic digester, which generates a waste gas stream (commonly referred to as "biogas" or "digester gas") of which the primary constituents are methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S) as well as small amounts of non-methane organic compounds (NMOC). The facility will treat about 0.5 million gallons per day of winery waste water through a High Rate Anaerobic Reactor (HRAD) and a Membrane Biological Reactor (MBR) System. The project will also have a Low Rate Anaerobic Digester (LRAD) for pomace digestion. A dewatering system will send the effluent to the MBR system for processing.

Winery waste water is collected from drains in the winery and is a mix of process and storm water. This water is sent to a 700,000 gallon Equalization (EQ) Tank before treatment. After the EQ Tank, the waste water is sent to the HRAD and where 90% COD (Chemical Oxygen Demand) and BOD (Biological Oxygen Demand) is removed. This water is then sent to the MBR system comprised of an anoxic tank, aerobic tank (which receives air from the HRAD), and the membrane basin where permeate is discharged for vineyard irrigation and sludge is

recycled to the anoxic basin to increase treatment. The MBR system is for nitrogen removal as well as COD/BOD polishing.

The LRAD is a large digester with a much longer retention time than the HRAD. The digesters are fed with wastewater and pomace from the winery to produce 1 MW worth of Biogas. The HRAD and the LRAD both produce 1 MW worth of biogas independently. The waste gas from the digester is routed to a biological scrubber for H<sub>2</sub>S control and then to two activated carbon units for combustion in two digester gas-fired engines listed on permits N-1237-605 and '606 for electricity production. In the event of an emergency, where both engines are unable to operate, the digester gas will be routed to an enclosed emergency flare to incinerate the CH<sub>4</sub> present in the waste gas stream prior to discharge to the atmosphere.

## V. Equipment Listing

N-1237-661-3: DIGESTER GAS OPERATION COMPOSED OF A WASTE WATER TREATMENT SYSTEM WITH AN EQUALIZATION TANK, HIGH RATE ANAEROBIC DIGESTER, TWO LOW RATE ANAEROBIC DIGESTERS, AND MEMBRANE BIOLOGICAL REACTOR SYSTEM CONSISTING OF AN ANOXIC TANK, A PRE-AERATION TANK, AND TWO MEMBRANE BIOLOGICAL REACTORS WITH BIOGAS SENT TO ONE BIOLOGICAL SCRUBBER, TWO ACTIVATED CARBON FILTERS, THE DIGESTER GAS WILL BE ROUTED TO TWO IC ENGINES (PERMITS N-1237-605 AND '606), OR TO A 600 CFM (EQUIVALENT TO 32.4 MMBTU/HR) OVIVO GWE ENCLOSED EMERGENCY FLARE

## VI. Emission Control Technology Evaluation

### Anaerobic Digester

Inside the digester under anaerobic conditions, biological organisms digest organic wastes in the wastewater from the wine and beverage manufacturing process. This process generates waste gas, which primarily consists of methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>), and hydrogen sulfide (H<sub>2</sub>S).

A biological scrubber is used to remove hydrogen sulfide (H<sub>2</sub>S) from the digester gas stream followed by two activated carbon units prior to incineration in the IC engines or the enclosed emergency flare. The two activated carbon units will be installed in series and will be operated simultaneously or one at a time when one is being serviced. Due to the low concentrations of H<sub>2</sub>S present in the digester gas, it is not practical to establish the scrubber's maximum H<sub>2</sub>S removal efficiency. Instead, the applicant is proposing to limit the H<sub>2</sub>S concentration influent to the engines/flare to 40 ppmv. The proposed H<sub>2</sub>S concentration limit should be achievable utilizing the biological scrubber.

### Emergency Flare

The applicant is proposing to combust the CH<sub>4</sub> present in the digester gas in an enclosed flare during emergency situations where neither engine can operate. The flare is a commercially available unit that is designed specifically for this application. Digester gas combustion

generates NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO and VOC emissions. The emergency flare will not operate more than 200 hours/year for non-emergency purposes.

**VII. General Calculations**

**A. Assumptions**

- Operation schedule = 24 hr/day and 200 hours/year for non-emergency purposes (per applicant)
- Biogas F-factor = 9,800 dscf/MMBtu (per applicant)
- Biogas higher heating value = 900 Btu/scf (per applicant)
- Biogas percent methane = 79% (per gas analysis see Attachment B)
- Daily maximum flare gas flowrate = 600 scf/min x 60 min/hr x 24 hours/day = 864,000 scf/day
- Annual maximum flare gas flowrate = 600 scf/min x 60 min/hr x 200 hours/year = 7,200,000 scf/year
- Scrubber outlet biogas H<sub>2</sub>S concentration = 40 ppmv (per applicant)
- Ethanol wastewater concentrations will vary during the season. The highest concentration of ethanol that would be released to the wastewater operation is 2%. Wastewater sample data was not provided so assumptions of concentrations from similar operations were used.

**B. Emission Factors**

Waste Water Operation

For the wastewater operation, emission calculations have been accomplished by utilizing WATER9 software. District default pollution concentration values and emission factors were used.

Emergency Flare

The flare will only be fired on biogas fuel at all times.

Flare Emission Factors Biogas Fuel		
Pollutant	lb/MMBtu	Source
NO <sub>x</sub>	0.06	Per Manufacturer
SO <sub>x</sub>	0.0075	Mass balance equation below based 40 ppmv H <sub>2</sub> S in scrubber outlet
PM <sub>10</sub>	0.008	Per Manufacturer
CO	0.75	Per Applicant
VOC	0.019	Per Applicant

$$SO_x = \frac{\left( \frac{36,000 \text{ ft}^3 - \text{fuel}}{\text{hr}} \right) \left( \frac{40 \text{ ft}^3 - H_2S}{10^6 \text{ ft}^3 - \text{fuel}} \right) \left( \frac{34 \text{ lb} - H_2S}{\text{lb} - \text{mol}} \right)}{\left( \frac{379.5 \text{ ft}^3 - H_2S}{\text{lb} - \text{mol}} \right) \left( \frac{34 \text{ lb} - H_2S}{32 \text{ lb} - S} \right) \left( \frac{32 \text{ lb} - S}{64 \text{ lb} - SO_2} \right)}$$

SO<sub>x</sub> = 0.24 lb/hr

SO<sub>x</sub> = 0.24 lb/hr ÷ (36,000 scf/hr x 900 Btu/scf) x 1E6/MM = 0.0075 lb/MMBtu

**C. Calculations**

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

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

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

Digester and Waste Water Operation

Currently, the facility waste water is land applied through irrigation. After installation of the digester and waste water operation, the treated facility waste water will continue to be land applied through irrigation. Therefore, there is no increase in emissions from the land application irrigation water as a result of this project.

The digester gas production operation is fully enclosed. Therefore, there are no emissions assessed to the digester gas production operation.

The potential to emit calculations summary for the Waste Water Operation is included in Attachment C.

Waste Water Operation Potential to Emit (lb/day)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Waste Water Treatment	0	0	0	0	0.0001 → 0.0

Waste Water Operation Potential to Emit (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Waste Water Treatment	0	0	0	0	0.05 → 0

Flare

The following equation will be used to calculate PE2 from the flare:

- PE2 = EF (lb/MMBtu) x Heat Input (MMBtu/day or MMBtu/year)

Daily Heat Input = 864,000 scf/day x 900 Btu/dscf x MMBtu/10<sup>6</sup> scf  
 Daily Heat Input = 777.6 MMBtu/day

Annual Heat Input = 7,200,000 scf/year x 900 Btu/dscf x MMBtu/10<sup>6</sup> scf  
 Annual Heat Input = 6,480 MMBtu/year

Daily Post-Project Emissions – Flare (Biogas Fuel)				
Pollutant	Emission Factors		Heat input	PE2 Total
NO <sub>x</sub>	0.06 lb/MMBtu	x	777.6 MMBtu/day	= 46.7 (lb/day)
SO <sub>x</sub>	0.0075 lb/MMBtu	x	777.6 MMBtu/day	= 5.8 (lb/day)
PM <sub>10</sub>	0.008 lb/MMBtu	x	777.6 MMBtu/day	= 6.2 (lb/day)
CO	0.75 lb/MMBtu	x	777.6 MMBtu/day	= 583.2 (lb/day)
VOC	0.019 lb/MMBtu	x	777.6 MMBtu/day	= 14.8 (lb/day)

Annual Post-Project Emissions – Flare (Biogas Fuel)				
Pollutant	Emission Factors		Heat input	PE2 Total
NO <sub>x</sub>	0.06 lb/MMBtu	x	6,480 MMBtu/year	= 389 (lb/year)
SO <sub>x</sub>	0.0075 lb/MMBtu	x	6,480 MMBtu/year	= 49 (lb/year)
PM <sub>10</sub>	0.008 lb/MMBtu	x	6,480 MMBtu/year	= 52 (lb/year)
CO	0.75 lb/MMBtu	x	6,480 MMBtu/year	= 4,860 (lb/year)
VOC	0.019 lb/MMBtu	x	6,480 MMBtu/year	= 123 (lb/year)

### 3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the Pre-Project Stationary Source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

The facility acknowledges that its VOC emissions are already well above the Offset and Major Source Thresholds; therefore, SSPE calculations for VOC are not necessary and permit units that only emit VOC are not included in the following table.

<b>Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-1237-1-2	0	0	0	0	-
N-1237-3-8	1,080	86	150	4,440	-
N-1237-4-13	12,994	3,760	6,570	194,472	-
N-1237-5-2	0	0	528	0	-
N-1237-6-3	0	0	73	0	-
N-1237-7-2	0	0	0	0	-
N-1237-8-2	0	0	0	0	-
N-1237-9-2	0	0	0	0	-
N-1237-10-2	0	0	0	0	-
N-1237-12-2	3,942	431	262	552	-
N-1237-17-2	0	0	657	0	-
N-1237-480-3	0	0	14	0	-
N-1237-596-0	0	0	99	0	-
N-1237-601-1	0	0	7	0	-
N-1237-603-1	0	0	115	0	-
N-1237-605-0	3,869	645	851	20,637	-
N-1237-606-0	3,869	645	851	20,637	-
N-1237-607-0	5,256	2,247	5,992	116,683	-
N-1237-694-0	0	0	165	0	-
N-1237-695-0	0	0	66	0	-
N-1237-696-0	0	0	36	0	-
N-1237-762-1	0	0	120	0	-
N-1237-763-0	0	0	32	0	-
N-1237-781-0	0	0	15	0	-
N-1237-782-0	0	0	15	0	-
<b>Total Permit Units</b>	<b>31,010</b>	<b>7,814</b>	<b>16,618</b>	<b>357,421</b>	<b>&gt; 20,000</b>
ERC N-2-2	19,838	0	0	0	-
ERC N-2-3	0	0	0	407,020	-
<b>Total ERC</b>	<b>19,838</b>	<b>0</b>	<b>0</b>	<b>407,020</b>	<b>-</b>
<b>Pre-Project SSPE (SSPE1)</b>	<b>50,848</b>	<b>7,814</b>	<b>16,618</b>	<b>764,441</b>	<b>&gt; 20,000</b>

**4. Post Project Stationary Source Potential to Emit (SSPE2)**

Pursuant to District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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 that have occurred at the source, and which have not been used on-site.



<b>Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-1237-1-2	0	0	0	0	-
N-1237-3-8	1,080	86	150	4,440	-
N-1237-4-13	12,994	3,760	6,570	194,472	-
N-1237-5-2	0	0	528	0	-
N-1237-6-3	0	0	73	0	-
N-1237-7-2	0	0	0	0	-
N-1237-8-2	0	0	0	0	-
N-1237-9-2	0	0	0	0	-
N-1237-10-2	0	0	0	0	-
N-1237-12-2	3,942	431	262	552	-
N-1237-17-2	0	0	657	0	-
N-1237-480-3	0	0	14	0	-
N-1237-596-0	0	0	99	0	-
N-1237-601-1	0	0	7	0	-
N-1237-603-1	0	0	115	0	-
N-1237-605-0	3,869	645	851	20,637	-
N-1237-606-0	3,869	645	851	20,637	-
N-1237-607-0	5,256	2,247	5,992	116,683	-
<b>N-1237-661-3</b>	<b>389</b>	<b>49</b>	<b>52</b>	<b>4,860</b>	-
N-1237-694-0	0	0	165	0	-
N-1237-695-0	0	0	66	0	-
N-1237-696-0	0	0	36	0	-
N-1237-762-1	0	0	120	0	-
N-1237-763-0	0	0	32	0	-
N-1237-781-0	0	0	15	0	-
N-1237-782-0	0	0	15	0	-
<b>Total Permit Units</b>	<b>31,339</b>	<b>7,863</b>	<b>16,670</b>	<b>362,281</b>	<b>&gt; 20,000</b>
ERC N-2-2	19,838	0	0	0	-
ERC N-2-3	0	0	0	407,020	-
<b>Total ERC</b>	<b>19,838</b>	<b>0</b>	<b>0</b>	<b>407,020</b>	<b>-</b>
<b>Post-Project SSPE (SSPE2)</b>	<b>51,237</b>	<b>7,863</b>	<b>16,670</b>	<b>769,301</b>	<b>&gt; 20,000</b>

**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

<b>Major Source Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1	31,010	7,814	16,618	357,421	> 20,000
SSPE2	31,339	7,863	16,670	362,281	> 20,000
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	Yes	Yes

This source is an existing Major Source for NO<sub>x</sub>, CO, and VOC emissions and will remain a Major Source for NO<sub>x</sub>, CO, and VOC.

**Rule 2410 Major Source Determination:**

Pursuant to the application review for District Project N-1143697, the facility is an existing Major Source for PSD emissions.

**6. Baseline Emissions (BE)**

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

Pursuant to District Rule 2201, BE = Pre-project Potential to Emit for:

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

otherwise,

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

BE = PE1 = 0 for all pollutants, since these are new emission units.

**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."

As discussed in Section VII.C.5 above, the facility is not a Major Source for SO<sub>x</sub> or PM<sub>10</sub>; therefore, the project does not constitute a SB 288 Major Modification for SO<sub>x</sub> or PM<sub>10</sub>. Additionally, there is no SB288 Major Modification Threshold for CO emissions; therefore, the project cannot trigger an SB288 Major Modification for CO.

As discussed in Section VII.C.5 above, the facility is an existing Major Source for NO<sub>x</sub> and VOC; however, the project by itself would need to be a significant increase in order to trigger a SB 288 Major Modification.

Pursuant to the District's Draft Policy, *Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB288 Major Modifications and Federal Major Modifications*, the determination of whether various new or modified emission units are part of the same project is to be performed on a case by case basis. In general, to be part of the same project, the new and modified emission units must be part of a coordinated effort by the facility for a common purpose and occur within a reasonable amount of time. For this project, the installation of the two biogas-fired engines (District Project N-1121959) are part of a coordinated effort and will be considered to be part of the same project for the purposes of determining whether the project triggers an SB288 Major Modification.

<b>SB 288 Major Modification Determination For NO<sub>x</sub></b>	
Unit	PE NO <sub>x</sub> (lb/year)
N-1237-605-0 (District Project N-1121959)	3,869
N-1237-606-0 (District Project N-1121959)	3,869
N-1237-661-3	389
<b>Total</b>	<b>8,127</b>
SB 288 Major Modification Threshold	50,000
<b>SB 288 Major Modification?</b>	<b>No</b>

<b>SB 288 Major Modification Determination For VOC</b>	
Unit	PE VOC (lb/year)
N-1237-605-0 (District Project N-1121959)	2,580
N-1237-606-0 (District Project N-1121959)	2,580
N-1237-661-3	123
<b>Total</b>	<b>5,283</b>
SB 288 Major Modification Threshold	50,000
<b>SB 288 Major Modification?</b>	<b>No</b>

As shown in the above, this project does not trigger an SB288 Modification.

## 8. Federal Major Modification

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

Since this facility is not a Major Source for SO<sub>x</sub> or PM<sub>10</sub>, this project does not constitute a Federal Major Modification for SO<sub>x</sub> or PM<sub>10</sub>. Additionally, since the facility is not a major source for PM<sub>10</sub> (140,000 lb/year), it is not a major source for PM<sub>2.5</sub> (200,000 lb/year). There is no Federal Major Modification threshold for CO emissions. Therefore, the project cannot trigger a Federal Major Modification for CO emissions.

### NO<sub>x</sub> and VOC

District Rule 2201 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal major modifications if they meet the criteria of the "Less-Than-Significant Emissions Increase" exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
NO <sub>x</sub>	0
VOC	0

The Net Emissions Increases (NEI) for purposes of determination of a "Less-Than-Significant Emissions Increase" exclusion will be calculated below to determine if this project qualifies for such an exclusion.

Pursuant to the District's Draft Policy, *Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB288 Major Modifications and Federal Major Modifications*, the determination of whether various new or modified emission units are part of the same project is to be performed on a case by case basis. In general, to be part of the same project, the new and modified emission units must be part of a coordinated effort by the facility for a common purpose and occur within a reasonable amount of time. For this project, the installation of the two biogas-fired engines (District Project N-1121959) are part of a coordinated effort and will be considered to be part of the same project for the purposes of determining whether the project triggers a Federal Major Modification.

Net Emission Increase for New Units (NEI<sub>N</sub>)

Per 40 CFR 51.165 (a)(2)(ii)(D) for new emissions units in this project,

$$NEI_N = PE_{2N} - BAE$$

Since this is a new unit, BAE for this unit is zero and,

$$NEI_N = PE_{2N}$$

where PE<sub>2N</sub> is the Post Project Potential to Emit for the new emission unit.

Net Emissions Increase (NEI)		
Permit	NOx (lb/year)	VOC (lb/year)
N-1237-605-0 (engine)	3,869	2,580
N-1237-606-0 (engine)	3,869	2,580
N-1237-661-3 (emergency flare)	389	123

\* Calculated emission increases from new or modified emission units that are less than or equal to 0.5 lb/day are rounded to 0 (consistent with District Policy APR-1130 Increases Maximum Daily Permitted Emissions Less Than or Equal to 0.5 lb/day). This calculation is performed on an emission unit by emission unit basis. New or modified emission units with emission increases that round to 0 shall not constitute a Federal Major Modification.

As shown above, the two engines triggers a Federal Major Modification for NOx and VOC emissions from units N-1237-605-0 and '-606-0. These units were processed in District Project N-1121959 and the Federal Major Modification requirements for these units were satisfied in that project.

The emergency flare in this District project triggers a Federal Major Modification for NOx and VOC emissions.

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

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

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>
- Greenhouse gases (GHG): CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, PFCs, and SF<sub>6</sub>

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

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

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

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

### **I. Project Location Relative to Class 1 Area**

As demonstrated in the “PSD Major Source Determination” Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

### **II. Significance of Project Emission Increase Determination**

#### **a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds**

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

<b>PSD Significant Emission Increase Determination: Potential to Emit (tons/year)</b>						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from Engines (From District Project N-1121959)	3.9	0.6	20.6	0.9	0.9	9,806
Total PE From Emergency Flare	0.2	0.0	2.4	0.0	.0	374*
<b>Total PE from New and Modified Units</b>	<b>4.1</b>	<b>0.6</b>	<b>23.0</b>	<b>0.9</b>	<b>0.9</b>	<b>10,180</b>
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

\*See Appendix D for GHG Calculations for the emergency flare.

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

### 10. Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 – PE1, where:

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

<b>Quarterly NEC [QNEC]</b>			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	389	0	97.25
SO <sub>x</sub>	49	0	12.25
PM <sub>10</sub>	52	0	13.0
CO	4,860	0	1,215.0
VOC	123	0	30.75

## VIII. Compliance

### Rule 2201 New and Modified Stationary Source Review Rule

#### A. Best Available Control Technology (BACT)

The increases in emissions are associated with the combustion of the digester gas (primarily methane and CO<sub>2</sub>) by the emergency flare. The emergency flare is used to control the digester gas that is generated by the digester system and therefore is an emission control device. In accordance with District definitions, an emission control device is not an emission unit. Per District Rule 2201, only emission units can trigger BACT. Therefore, BACT is not applicable to the emergency flare. Although the flare is not subject to BACT requirements, the flare has been tested and meets a NO<sub>x</sub> limit of 0.06 lb/MMBtu, which is a typical NO<sub>x</sub> emission level for a clean and properly operated flare.

#### B. Offsets

##### 1. Offset Applicability

Pursuant to District Rule 2201 Section 4.6.2. the following equipment is exempt from offsets:

*Emergency equipment that is used exclusively as emergency standby equipment for electric power generation or any other emergency equipment as approved by the APCO that does not operate more than 200 hours per year for non-emergency purposes and is not used pursuant to voluntary arrangements with a power supplier to curtail power. Equipment exempted by this section shall maintain a written record of hours of operation and shall have permit conditions limiting non-emergency operation*

The proposed emergency flare qualifies for the above exemption. Therefore, offsets are not required for the emergency flare. Post-project emissions from the waste water operation were equal to 0 lb-VOC/year; therefore, no offsets are required for the waste water operation. Offsets are not required for this project.

#### C. Public Notification

##### 1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed,
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project that triggers a TV Significant 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 VII.C.8, this project is a Federal Major Modification for NOx and VOC; therefore, public noticing for Major Modification purposes is required.

**b. PE > 100 lb/day**

The PE2 for each new unit is compared to the daily PE Public Notice thresholds in the following table:

<b>PE &gt; 100 lb/day Public Notice Thresholds</b>			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO <sub>x</sub>	46.7	100 lb/day	No
SO <sub>x</sub>	5.8	100 lb/day	No
PM <sub>10</sub>	6.2	100 lb/day	No
CO	583.2	100 lb/day	Yes
VOC	14.8	100 lb/day	No

As shown in the previous table, public noticing for PE > 100 lb/day purposes is required.

**c. Offset Threshold**

The following table compares pollutant will trigger public noticing requirements. As seen the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<b>Offset Threshold</b>				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	50,848	51,237	20,000 lb/year	No
SO <sub>x</sub>	7,814	7,863	54,750 lb/year	No
PM <sub>10</sub>	16,618	16,670	29,200 lb/year	No
CO	764,441	769,301	200,000 lb/year	No
VOC	> 20,000	> 20,000	20,000 lb/year	No

The facility is already above the offset thresholds for NOx, CO, and VOC. No other offset thresholds were surpassed in 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 Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e.  $SSIPE = SSPE2 - SSPE1$ . The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	51,237	50,848	389	20,000 lb/year	No
SO <sub>x</sub>	7,863	7,814	49	20,000 lb/year	No
PM <sub>10</sub>	16,670	16,618	52	20,000 lb/year	No
CO	769,301	764,441	4,860	20,000 lb/year	No
VOC	> 20,000	> 20,000	123	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 Modifications**

This project is a Title V Significant Modification; therefore, public noticing is required for this purpose.

**2. Public Notice Action**

As discussed above, public noticing is required for this project. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), US Environmental Protection Agency (USEPA) 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.

- *The flare shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. Operation of the flare for maintenance, testing, and required regulatory purposes shall not exceed 200 hours per year. [District Rules 2201 and 4311]*

- *An emergency is defined as any situation or a condition arising from a sudden and reasonably unforeseeable and unpreventable event beyond the control of the operator. Examples include, but are not unlimited to, not preventable equipment failure, natural disaster, act of war or terrorism, or external power curtailment, excluding a power curtailment due to an interruptible power service agreement from a utility. A flaring event due to improperly designed equipment, lack of preventative maintenance, careless or improper operation, operator error, or willful misconduct does not qualify as an emergency. An emergency situation requires immediate corrective action to restore safe operation. A planned flaring event shall not be considered as an emergency. [District Rules 2201 and 4311]*
- *Emissions from the emergency flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu; 0.008 lb-PM10/MMBtu; 0.75 lb-CO/MMBtu; or 0.019 lb-VOC/MMBtu. [District Rule 2201]*
- *The sulfur content of the biogas being incinerated by the flare shall not exceed 40 ppmv (as H<sub>2</sub>S). [District Rule 2201]*

## **E. Compliance Assurance**

### **1. Source Testing**

The emergency flare is subject to District Rule 4311; however, source testing is not required by District Rule 4311 for emergency flares. Pursuant to District Policy APR 1725, an initial source test will be required for NO<sub>x</sub>, CO, and VOC emissions from the flare. The NO<sub>x</sub>, CO, and VOC test methods outlined in District Rule 4311 will be required. A discussion of these test methods is included in The District Rule 4311 Section of this evaluation.

The following conditions will be placed on the permit to ensure compliance with the assumptions made for Rule 2201. Source testing will be required within 180 days of initial start-up.

- *Source testing to measure NO<sub>x</sub>, CO and VOC emissions from the digester-fired flare shall be conducted within 180 days of initial start-up. [District Rule 2201]*
- *Operator shall determine digester gas fuel higher heating value within 180 days of initial start-up using ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201]*

### **2. Monitoring**

The following conditions will be placed on the permit to ensure compliance with the assumptions made for Rule 2201.

- *The sulfur content of the digester gas combusted in this flare shall be monitored and recorded weekly. After eight (8) consecutive weekly tests show compliance, the digester gas sulfur content monitoring frequency may be reduced to once every calendar quarter. If quarterly monitoring shows a violation of the digester gas sulfur content limit of this permit, then weekly monitoring shall resume and continue until eight consecutive weeks of monitoring show compliance with the gas sulfur content limit. Once compliance with the gas sulfur content limit is shown for eight consecutive weeks, then the monitoring frequency may return to quarterly. Monitoring of the sulfur content of the digester gas shall not be required if the flare does not operate during that period. Records of the results of monitoring of the digester gas sulfur content shall be maintained. [District Rule 2201]*
- *Monitoring of the digester gas sulfur content shall be performed using a Testo 350 XL portable emission monitor; District-approved in-line H<sub>2</sub>S monitors; gas detection tubes calibrated for H<sub>2</sub>S; District-approved source test methods, including EPA Method 11 or EPA Method 15, ASTM Method D1072, D4084, and D5504; or an alternative method approved by the District. Prior to utilization of in-line monitors to demonstrate compliance with the digester gas sulfur content limit of this permit, the permittee shall submit details of the proposed monitoring system, including the make, model, and detection limits, to the District and obtain District approval for the proposed monitor(s). [District Rule 2201]*
- *Sampling ports for biogas testing shall be provided in accordance with District requirements. [District Rule 1081]*

### **3. Recordkeeping**

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition will be placed on the permit to ensure compliance:

- *The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation of the flare. [District Rules 1070 and 2201]*
- *The permittee shall maintain records of: (1) the name of the sampler, and the date and time of biogas sampling for H<sub>2</sub>S, (2) the name of the tester, and the date and time of biogas testing for H<sub>2</sub>S, (3) test results showing the biogas concentration (in ppmv) of H<sub>2</sub>S. [District Rule 1081]*
- *All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4311]*

#### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

#### **F. Ambient Air Quality Analysis (AAQA)**

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

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

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

#### **G. Compliance Certification**

Section 4.15.2 of this Rule requires the owner of a new Major Source or federal major modification to demonstrate to the satisfaction of the District that all other major Stationary Sources owned by such person (or by entity controlling, controlled by, or under common control with such person) in California which are subject to emission limitations are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project does constitute a federal major modification, therefore this requirement is applicable. The facility's compliance certification is included in Attachment E.

#### **H. Alternate Siting Analysis**

The current project occurs at an existing facility. The applicant proposes to install an anaerobic digester operation served by a flare.

Since the project will produce digester gas to be fired in IC engines to produce electricity 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 2520 Federally Mandated Operating Permits**

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."

As discussed earlier in this evaluation, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

#### **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 digester operations and biogas-fired flares.

#### **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 digester operations and biogas-fired flares.

#### **Rule 4101 Visible Emissions**

Rule 4101 states that 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. The District requires flares to operate without any visible emissions, which is equivalent to a limit of Ringelmann ¼ or 5% opacity.

The following condition will be included in the permit to ensure compliance:

- *Visible emissions from the flare serving the anaerobic digesters shall not equal or exceed Ringelmann 1/4 or 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District Rules 2201 and 4101]*

#### **Rule 4102 Nuisance**

Section 4.0 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 and the following condition will be included in the permit to ensure compliance:

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

**California Health & Safety Code 41700 (Health Risk Assessment)**

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

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

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
N-1237-661-3	4.54E-10	No

The following special condition will be included on the Authority to construct permit:

- *The flare shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. Operation of the flare for maintenance, testing, and required regulatory purposes shall not exceed 200 hours per year. [District Rules 2201 and 4311]*

**Rule 4201 Particulate Matter Concentration**

Section 3.0 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

Particulate matter calculations were performed for each piece of equipment by the following equation:

F-Factor for digester gas: 9,800 dscf/MMBtu  
 PM<sub>10</sub> Emission Factor: 0.008 lb-PM<sub>10</sub>/MMBtu  
 Percentage of PM as PM<sub>10</sub> in Exhaust: 100%

$$GL = \left( \frac{0.008 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left( \frac{9,800 \text{ ft}^3}{\text{MMBtu}} \right)$$

$$GL = 0.006 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Since the particulate matter concentration is ≤ 0.1 grains per dscf, compliance with Rule 4201 is expected.

Therefore, the following condition will be listed on the permits to ensure compliance:

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

**Rule 4301 Fuel Burning Equipment**

This rule specifies maximum emission rates in lb/hr for SO<sub>2</sub>, NO<sub>2</sub>, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter. As shown below, the maximum hourly emission rates are below the Rule 4301 limits.

District Rule 4301 Limits			
Unit	NO <sub>2</sub>	Total PM	SO <sub>2</sub>
N-1237-661-0 (Digester Gas)	1.95	0.26	0.24
<b>Rule 4301 Limit</b>	<b>140 lb/hr</b>	<b>10 lb/hr</b>	<b>200 lb/hr</b>

As shown above, compliance with this rule is expected.

**Rule 4311 Flares**

Rule 4311 limits the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>), and sulfur oxides (SO<sub>x</sub>) from the operation of flares.

Section 5.1 states flares permitted to operate only during an emergency are not subject to the requirements of Section 5.6 and 5.7. This flare is an emergency flare; therefore, the requirements of Section 5.6 and 5.7 are not applicable to this flare.

Section 5.2 requires that the flame be present at all times when combustible gases are vented through the flare.

The following condition will be included in the permit to ensure compliance:

- *A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311]*

Section 5.3 requires that the flare outlet be equipped with an automatic ignition system, or 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.



The following condition will be included in the permit to ensure compliance:

- *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]*

Section 5.4 requires that except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated.

The following condition will be included in the permit to ensure compliance:

- *Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311]*

Section 5.5 requires flares that use flow-sensitive automatic ignition systems and which do not use a continuous pilot flame to use purge gas for purging.

The following condition will be listed on the permit to ensure compliance:

- *If the flare is equipped with 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]*

As stated earlier, sections 5.6 and 5.7 do not apply to emergency flares.

Section 5.8 states that effective on and after July 1, 2011, flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. The facility submitted an FMP on June 29, 2010 and a revised FMP on June 29, 2011.

The following condition will be included in the permit to ensure compliance:

- *Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5 of District Rule 4311, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined in District Rule 4311 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311]*

Section 5.9 sites Petroleum Refinery SO<sub>2</sub> Performance Targets. The flare does not serve a petroleum refinery; therefore, Section 5.9 is not applicable.

Section 5.10 states the operator of a flare subject to flare minimization requirements pursuant to Section 5.8 must monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator must maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 are not be required to monitor vent gas flow to the flare.

The following condition will be listed included in the permit to ensure compliance:

- *The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311]*

Section 5.11 states that the operator of a petroleum refinery or a flare with a flaring capacity equal to or greater than 50 MMBtu/hr shall monitor the flare pursuant to Sections 6.6, 6.7, 6.8, 6.9, and 6.10. The flare is not part of petroleum refinery; therefore, Section 5.11 is not applicable.

Section 6.1 states that the records listed in Sections 6.1.1 through 6.1.7 shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request.

The following condition will be included in the permit to ensure compliance:

- *All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4311]*

Section 6.1.1 requires the operator of flares that are subject to Section 5.6 to make available to the APCO upon request the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5).

The flare is not subject to Section 5.6; therefore, Section 6.1.1 is not applicable.

Section 6.1.2 requires the operator of flares that are subject to Section 5.7 to make available to the APCO upon request a copy of the source testing result conducted pursuant to Section 6.4.2.

The flare is not subject to Section 5.7; therefore, Section 6.1.2 is not applicable.

Section 6.1.3 requires the operator of flares that are used during an emergency, to maintain a record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation.

The following condition will be included in the permit to ensure compliance:

- *Permittee shall maintain records of the following when the flare is used during an emergency: duration of flare operation, amount of gas burned, and the nature of the emergency situation. [District Rule 4311]*

Section 6.1.4 applies only to operators claiming an exemption pursuant to Section 4.3. This project is not claiming an exemption pursuant to Section 4.3; therefore, Section 6.1.4 is not applicable.

Section 6.1.5 requires the operator to keep a copy of the approved flare minimization plan pursuant to Section 6.5. Section 6.1.6 requires the operator to keep a copy of the annual reports submitted to the APCO pursuant to Section 6.2.

The following condition will be included in the permit to ensure compliance:

- *Permittee shall maintain the following records: a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2 of District Rule 4311. [District Rule 4311]*

Section 6.1.7 requires operators to keep records of monitoring data pursuant to Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10. This flare is not subject to sections 6.6, 6.7, 6.8, 6.9, and 6.10. Records of monitoring data for Section 5.10 (vent gas flow) will be required.

The following condition will be listed on the permit to ensure compliance:

- *The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311]*

Section 6.2 applies to flares subject to a flare minimization plan.

Section 6.2.1 states the operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time.

The following condition will be listed on the permit to ensure compliance:

- *The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311]*

Section 6.2.2 states 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 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. The report shall include, but is not limited to all of the following:

- 6.2.2.1 The results of an investigation to determine the primary cause and contributing factors of the flaring event;
- 6.2.2.2 Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented;
- 6.2.2.3 If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and
- 6.2.2.4 The date, time, and duration of the flaring event.

The following condition will be listed on the permit to ensure compliance:

- *The operator shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 of Rule 4311 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. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311]*

Section 6.2.3 states 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 within 30 days following the end of each 12 month period. The report shall include the following:

- 6.2.3.1 The total volumetric flow of vent gas in standard cubic feet for each day.
- 6.2.3.2 Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6.
- 6.2.3.3 If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.11, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month.
- 6.2.3.4 If the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month.
- 6.2.3.5 For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow.
- 6.2.3.6 Flare monitoring system downtime periods, including dates and times.
- 6.2.3.7 For each day and for each month provide calculated sulfur dioxide emissions.
- 6.2.3.8 A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5.

The flare is not subject to Sections 6.6, 6.7, 6.8, 6.9, and 6.10.

The following condition will be listed on the permit to ensure compliance:

- *The operator of a flare subject to flare monitoring requirements pursuant to Section 5.10 of Rule 4311 shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; a flow verification report which shall include flow verification testing pursuant to Section 6.3.5 of Rule 4311. [District Rule 4311]*

Section 6.3 lists test methods to be used to demonstrate compliance with this rule. Alternate equivalent test methods may be used provided the test methods have been approved by the APCO and EPA. This flare is not subject to the flare testing requirements of Sections 6.4.1 and 6.4.2; however, an initial test of the flare will be required for District Rule 2201 and the District Rule 4311 test methods will be utilized for the initial test.

Section 6.3.1 states for VOC, 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". The VOC concentration in ppmv shall be converted to pounds per million Btu (lb/MMBtu) by using the following equation:

$$\text{VOC in lb/MMBtu} = [(\text{ppmvd dry}) \times (\text{F, dscf/MMBtu})] / [(1.135 \times 10^6) \times (20.9 - \%O_2)]$$

Where: F = As determined by EPA Method 19

Section 6.3.2 states NOx emissions in pounds per million BTU shall be determined by using EPA Method 19.

Section 6.3.3 states NOx and O2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100.

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

- *For source test purposes, NOx emissions from the flare shall be determined using EPA Method 19 on a heat input basis, or EPA Method 3A, EPA Method 7E, or ARB Method 100 on a ppmv basis. [District Rules 2201 and 4311]*
- *For source test purposes, VOC emissions from the flare shall be determined using EPA Method 25 or 25a. [District Rules 2201 and 4311]*
- *Stack gas oxygen (O2) shall be determined using EPA Method 3A, EPA Method 7E, or ARB Method 100. [District Rules 2201 and 4311]*

Section 6.3.4 applies to flares subject to vent gas composition monitoring requirements pursuant to Section 6.6. The flare in this project is not subject to Section 6.6.

Section 6.3.5 applies to flares subject to vent gas flow verification requirements pursuant to Section 6.2.3.8. For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA:

- 6.3.5.1 EPA Methods 1 and 2;
- 6.3.5.2 A verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10.
- 6.3.5.3 Tracer gas dilution or velocity.
- 6.3.5.4 Other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter.

The following condition will be listed on the permit to ensure compliance:

- *For purposes of the flow verification report required by Section 6.2.3.8 of Rule 4311, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA: EPA Methods 1 and 2; a verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10 of Rule 4311; tracer gas dilution or velocity; other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter. [District Rule 4311]*

Section 6.4 applies only to flares subject to Section 5.6 and 5.7. This flare is not subject to the requirements of 5.6 and 5.7; therefore Section 6.4 is not applicable.

Section 6.5 applies to flares operated at a petroleum refinery or any flare that has a flaring capacity of greater than or equal to 5.0 MMBtu/hr subject to a flare minimization plan.

Section 6.5.1 states by July 1, 2010, the operator of a petroleum refinery flare or any flare that has a flaring capacity of greater than or equal to 5.0 MMBtu per hour shall submit a flare minimization plan (FMP) to the APCO for approval. The FMP shall include, but not be limited to:

- 6.5.1.1 A description and technical specifications for each flare and associated knock-out pots, surge drums, water seals and flare gas recovery systems.
- 6.5.1.2 Detailed process flow diagrams of all upstream equipment and process units venting to each flare, identifying the type and location of all control equipment.
- 6.5.1.3 A description of equipment, processes, or procedures the operator plans to install or implement to eliminate or minimize flaring and planned date of installation or implementation.
- 6.5.1.4 An evaluation of prevention measures to reduce flaring that has occurred or may be expected to occur during planned major maintenance activities, including startup and shutdown.

- 6.5.1.5 An evaluation of preventative measures to reduce flaring that may be expected to occur due to issues of gas quantity and quality. The evaluation shall include an audit of the vent gas recovery capacity of each flare system, the storage capacity available for excess vent gases, and the scrubbing capacity available for vent gases including any limitations associated with scrubbing vent gases for use as a fuel; and shall determine the feasibility of reducing flaring through the recovery, treatment and use of the gas or other means.
- 6.5.1.6 An evaluation of preventative measures to reduce flaring caused by the recurrent failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. The evaluation shall determine the adequacy of existing maintenance schedules and protocols for such equipment. For purposes of this section, a failure is recurrent if it occurs more than twice during any five year period as a result of the same cause as identified in accordance with Section 6.2.2.
- 6.5.1.7 Any other information requested by the APCO as necessary for determination of compliance with applicable provisions of this rule.

The following condition will be listed on the permit to ensure compliance:

- *The operator shall submit a flare minimization plan to the District for approval that includes all of the data required under Section 6.5 of Rule 4311 prior to installing the equipment authorized by this Authority to Construct. [District Rule 4311]*

Section 6.5.2 states every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan.

The following condition will be listed on the permit to ensure compliance:

- *Every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan. [District Rule 4311]*

Section 6.5.3 states an updated FMP shall be submitted by the operator pursuant to Section 6.5 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if:

- 6.5.3.1 The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and
- 6.5.3.2 The ATC is deemed complete after June 18, 2009, and
- 6.5.3.3 The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions.

The following condition will be listed on the permit to ensure compliance:

- *An updated FMP shall be submitted by the operator pursuant to Section 6.5 of Rule 4311 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if: (1) The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and (2) The ATC is deemed complete after June 18, 2009, and (3) The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions. [District Rule 4311]*

Sections 6.6 through 6.9 applies to flares operated at a petroleum refinery or any flare that has a flaring capacity of greater than or equal to 50 MMBtu/hr. The flare does not fall under either category; therefore, Sections 6.6 through 6.9 are not applicable.

Section 6.10 applies to flares operated at a petroleum refinery. The flare is not operated at a petroleum refinery; therefore, Section 6.10 is not applicable.

Therefore, compliance with the requirements of this section is expected.

#### **Rule 4801 Sulfur Compounds**

Rule 4801 requires that sulfur compound emissions (as SO<sub>2</sub>) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = (n \times R \times T) \div P$$

$$n = \text{moles SO}_2$$

$$T (\text{standard temperature}) = 60 \text{ }^\circ\text{F or } 520 \text{ }^\circ\text{R}$$

$$R (\text{universal gas constant}) = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{ }^\circ\text{R}}$$

F-Factor for Digester gas: 9,800 dscf/MMBtu

$$\frac{0.0075 \text{ lb-SO}_x}{\text{MMBtu}} \times \frac{\text{MMBtu}}{9,800 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{ }^\circ\text{R}} \times \frac{520 \text{ }^\circ\text{R}}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 4.5 \frac{\text{parts}}{\text{million}}$$

Since the SO<sub>x</sub> concentration is ≤ 2,000 ppmv, the flare is expected to comply with Rule 4801.

#### **40 CFR Part 64 – Compliance Assurance Monitoring (CAM)**

Except for back-up utility units that are exempt under paragraph (b)(2), Section 64.2 states that the requirements of this subpart shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a Part 70 or 71 permit if the unit satisfies all of the following criteria:

- 1) the unit must have an emission limit for the pollutant;
- 2) the unit must have add-on controls for the pollutant; these are devices such as flue gas recirculation (FGR), baghouses, catalytic oxidizers, etc; and



- 3) the unit must have a pre-control potential to emit of greater than the major source thresholds.

Pollutant	Major Source Threshold (lb/year)
VOC	20,000
NO <sub>x</sub>	20,000
CO	200,000
PM <sub>10</sub>	140,000
SO <sub>x</sub>	140,000

Uncontrolled VOC emissions from the wastewater and digester system are negligible; therefore, CAM is not triggered for these units.

The permit for the flare contains emission limits for NO<sub>x</sub>, CO, VOC, PM<sub>10</sub> and SO<sub>x</sub> emissions. However, the flare is not equipped with any add on control devices. Therefore, the CAM requirements of 40 CFR 64 are not applicable.

#### **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)**

The California Environmental Quality Act (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 San Joaquin Valley Unified Air Pollution Control District (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.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The County of Merced (County) is the public agency having principal responsibility for approving the project. As such, the County served as the Lead Agency (CCR §15367). In approving the project, the Lead Agency prepared and adopted a Mitigated Negative Declaration. The Lead agency filed a Notice of Determination, stating that the environmental document was adopted pursuant to the provisions of CEQA and concluding that the project would not have a significant effect on the environment.

The District is a Responsible Agency for the project because of its discretionary approval

power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CCR §15381). As a Responsible Agency the District complies with CEQA by considering the environmental document prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project (CCR §15096).

The District has considered the Lead Agency's environmental document. Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be below the District's thresholds of significance for criteria pollutants. Thus, the District finds that through a combination of project design elements, compliance with applicable District rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have a less than significant impact on air quality. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct N-1237-661-3 subject to the permit conditions on the attached draft Authority to Construct in Attachment A.

**X. Billing Information**

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-1237-661-3	3020-02-H	32.4 MMBtu/hr flare	\$1030.00

Attachments

- A: Draft Authority to Construct Permit
- B: Gas Analysis
- C: Digester Operation Flow Diagram and Waste Water Emission Calculations
- D: Greenhouse Gas Emission Calculations for Emergency Flare
- E: Compliance Certification
- F: Health Risk Assessment and Ambient Air Quality Analysis

# Attachment A

Draft Authority to Construct

Conditions for N-1237-661-3

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Y
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Y
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Y
5. Visible emissions from the flare serving the anaerobic digesters shall not equal or exceed Ringelmann 1/4 or 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District Rules 2201 and 4101] Y
6. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N
7. The anaerobic digester system and its associated piping shall be maintained leak free. [District Rule 2201] Y
8. This flare shall only be fired on biogas collected from the anaerobic digester system. [District Rule 2201] Y
9. The flare shall be operated only for maintenance, testing, required regulatory purposes, and during periods where both engines, permits N-1237-605 and N-1237-606, cannot be operated due to an emergency, as defined in this permit. Operation of the flare for maintenance, testing, and required regulatory purposes shall not exceed 200 hours per year. [District Rule 2201 and 4311] Y
10. An emergency is defined as any situation or a condition arising from a sudden and reasonably unforeseeable and unpreventable event beyond the control of the operator. Examples include, but are not unlimited to, not preventable equipment failure, natural disaster, act of war or terrorism, or external power curtailment, excluding a power curtailment due to an interruptible power service agreement from a utility. A flaring event due to improperly designed equipment, lack of preventative maintenance, careless or improper operation, operator error, or willful misconduct does not qualify as an emergency. An emergency situation requires immediate corrective action to restore safe operation. A planned flaring event shall not be considered as an emergency. [District Rules 2201 and 4311] Y
11. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu (as NO<sub>2</sub>); 0.008 lb-PM<sub>10</sub>/MMBtu; 0.75 lb-CO/MMBtu; or 0.019 lb-VOC/MMBtu. [District Rule 2201] Y
12. The sulfur content of the biogas being incinerated by the flare shall not exceed 40 ppmv (as H<sub>2</sub>S). [District Rule 2201] Y
13. Source testing to measure NO<sub>x</sub>, CO and VOC emissions from the digester-fired flare shall be conducted within 180 days of initial start-up. [District Rule 2201] Y
14. For source test purposes, NO<sub>x</sub> emissions from the flare shall be determined using EPA Method 19 on a heat input basis, or EPA Method 3A, EPA Method 7E, or ARB Method 100 on a ppmv basis. [District Rules 2201 and 4311] Y
15. For source test purposes, CO emissions from the flare shall be determined using EPA Method 10 or 10B, ARB Methods 1 through 5 with 10, or ARB Method 100. [District Rule 2201] Y
16. For source test purposes, VOC emissions from the flare shall be determined using EPA Method 18 or 25 or 25a. [District Rules 2201 and 4311] Y
17. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3A, EPA Method 7E, or ARB Method 100. [District Rules 2201 and 4311] Y
18. Operator shall determine digester gas fuel higher heating value within 180 days of initial start-up using ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201] Y
19. 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] Y
20. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Y
21. Sampling ports for biogas testing shall be provided in accordance with District requirements. [District Rule 1081] Y

22. The sulfur content of the digester gas combusted in this flare shall be monitored and recorded weekly. After eight (8) consecutive weekly tests show compliance, the digester gas sulfur content monitoring frequency may be reduced to once every calendar quarter. If quarterly monitoring shows a violation of the digester gas sulfur content limit of this permit, then weekly monitoring shall resume and continue until eight consecutive weeks of monitoring show compliance with the gas sulfur content limit. Once compliance with the gas sulfur content limit is shown for eight consecutive weeks, then the monitoring frequency may return to quarterly. Monitoring of the sulfur content of the digester gas shall not be required if the flare does not operate during that period. Records of the results of monitoring of the digester gas sulfur content shall be maintained. [District Rule 2201] Y
23. Monitoring of the digester gas sulfur content shall be performed using a Testo 350 XL portable emission monitor; District-approved in-line H<sub>2</sub>S monitors; gas detection tubes calibrated for H<sub>2</sub>S; District-approved source test methods, including EPA Method 11 or EPA Method 15, ASTM Method D1072, D4084, and D5504; or an alternative method approved by the District. Prior to utilization of in-line monitors to demonstrate compliance with the digester gas sulfur content limit of this permit, the permittee shall submit details of the proposed monitoring system, including the make, model, and detection limits, to the District and obtain District approval for the proposed monitor(s). [District Rule 2201] Y
24. Biogas sampling shall be conducted using the methods and procedures approved by the District. The District shall be notified each time the biogas sampling frequency changes. [District Rule 1081] Y
25. A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Y
26. 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] Y
27. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311] Y
28. If the flare is equipped with 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] Y
29. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5 of District Rule 4311, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311] Y
30. The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311] Y
31. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311] Y
32. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in 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. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311] Y
33. The operator of a flare subject to flare monitoring requirements pursuant to Section 5.10 of Rule 4311 shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; a flow verification report which shall include flow verification testing pursuant to Section 6.3.5 of Rule 4311. [District Rule 4311] Y
34. For purposes of the flow verification report required by Section 6.2.3.8 of Rule 4311, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB,

- and EPA: EPA Methods 1 and 2; a verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10 of Rule 4311; tracer gas dilution or velocity; other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter. [District Rule 4311] Y
35. The operator shall submit a flare minimization plan to the District for approval that includes all of the data required under Section 6.5 of Rule 4311 prior to installing the equipment authorized by this Authority to Construct. [District Rule 4311] Y
  36. Every five years after the initial FMP submittal, the operator shall submit an updated FMP for each flare to the APCO for approval. The current FMP shall remain in effect until the updated FMP is approved by the APCO. If the operator fails to submit an updated FMP as required by this section, the existing FMP shall no longer be considered an approved plan. [District Rule 4311] Y
  37. An updated FMP shall be submitted by the operator pursuant to Section 6.5 of Rule 4311 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if: (1) The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and (2) The ATC is deemed complete after June 18, 2009, and (3) The modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions. [District Rule 4311] Y
  38. The anaerobic digester system and its associated piping shall be inspected for leaks at least annually. Any leak detected on the basis of sight, smell, or sound, shall be recorded and a corrective action shall be taken to eliminate the leak. [District Rule 2201] Y
  39. Records of leak inspections shall contain at least an identification of a person performing an inspection, date and time of the inspection, leak location, and corrective action taken to eliminate leaks. The records shall be maintained, kept, and made available for District inspection upon request. [District Rule 2201] Y
  40. The permittee shall maintain records of: (1) the name of the sampler, and the date and time of biogas sampling for H<sub>2</sub>S, (2) the name of the tester, and the date and time of biogas testing for H<sub>2</sub>S, (3) test results showing the biogas concentration (in ppmv) of H<sub>2</sub>S. [District Rule 1081] Y
  41. Permittee shall maintain the following records: a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2 of District Rule 4311. [District Rule 4311] Y
  42. Permittee shall maintain records of the following when the flare is used during an emergency: duration of flare operation, amount of gas burned, and the nature of the emergency situation. [District Rule 4311] Y
  43. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation of the flare. [District Rule 2201] N
  44. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4311] Y

# Attachment B

## Gas Analysis



**ZALCO LABORATORIES, INC.**  
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Best Environmental Services  
 6261 Southfront Road  
 Livermore CA 94551

Laboratory No: 1108298-01  
 Date Received: 08/18/11  
 Date Analyzed: 08/20/11

Attention: Bobby Arfour

Sample Description: RI/Inlet Digester Gas  
 Sampled: 08/17/2001 @ 09:05 AM by Client

Chromatographic Analysis, ASTM D-1945-03, ASTM D-3388-02, EPA 210.6-04, EPA 2261-00

Constituent:	Mole %	Weight %	GPM	GPM Fractions	CHONS%
Oxygen	0.235	0.35			Carbon, C 54.20
Nitrogen	1.984	2.56			Hydrogen, H 14.61
Carbon Dioxide	19.200	38.89			Oxygen, O 28.63
Carbon Monoxide	0.000	0.00			Nitrogen, N 2.56
Hydrogen Sulfide	0.000	0.00			Sulfur, S 0.00
Methane	78.524	57.98			
Ethane	0.000	0.00			
Propane	0.000	0.00	0.00	(C3...C3) = 0.00	
IsoButane	0.000	0.00	0.00		
n-Butane	0.000	0.00	0.00	(C3...C4) = 0.00	
IsoPentane	0.000	0.00	0.00		
n-Pentane	0.000	0.00	0.00	(C3...C5) = 0.00	
Hexanes	0.056	0.22	0.02	(C3...C6+) = 0.02	
Totals:	100.00	100.00	0.02	0.02	100.00

Flammable Gases:	78.581	
Gas Properties calculated @ STP: degrees F.	60	
Measurement Base Pressure @ STP: psia	14.696	H/C Ratio: 0.27

Dry *783-86 @ 68°F* Saturated

Gas State	Btu / Cu. Ft	Btu / lb	Btu / Cu. Ft
Gross, Ideal Gas	795.30	13899.12	781.95
Net, Ideal Gas	716.60	12515.71	704.13
Gross, Real Gas	797.79		783.91
Net, Real Gas	718.40		705.90

Relative Gas Density, [Air=1] Ideal:	0.7502	"F" Factor, DSCF/MMBtu @ 60F	8737.6	9703.4
Specific Gravity, [Air=1] Real gas:	0.7516	"F" Factor, DSCF/MMBtu @ 68F	8870.6	9851.2
Real Gas Density, Lb/Cu.Ft.:	0.0574	"F" Factor, DSCF/MMBtu @ 70F	8904.4	9888.6
Specific Volume, Cu.Ft./Lb.:	17.4218	"FC" Factor, DSCF CO2/MMBtu @ 60F	1233.0	1369.3
Relative Liquid Density @ 60F/60F:	0.4088	"FC" Factor, DSCF CO2/MMBtu @ 68F	1251.8	1390.2
Compressibility, %:	0.9975			
Fuel kg per kg-mole Molecular wt avg	21.727			

GPM: Gallons per 1000 cubic feet

*Robert Cortez, Laboratory Director*  
 206



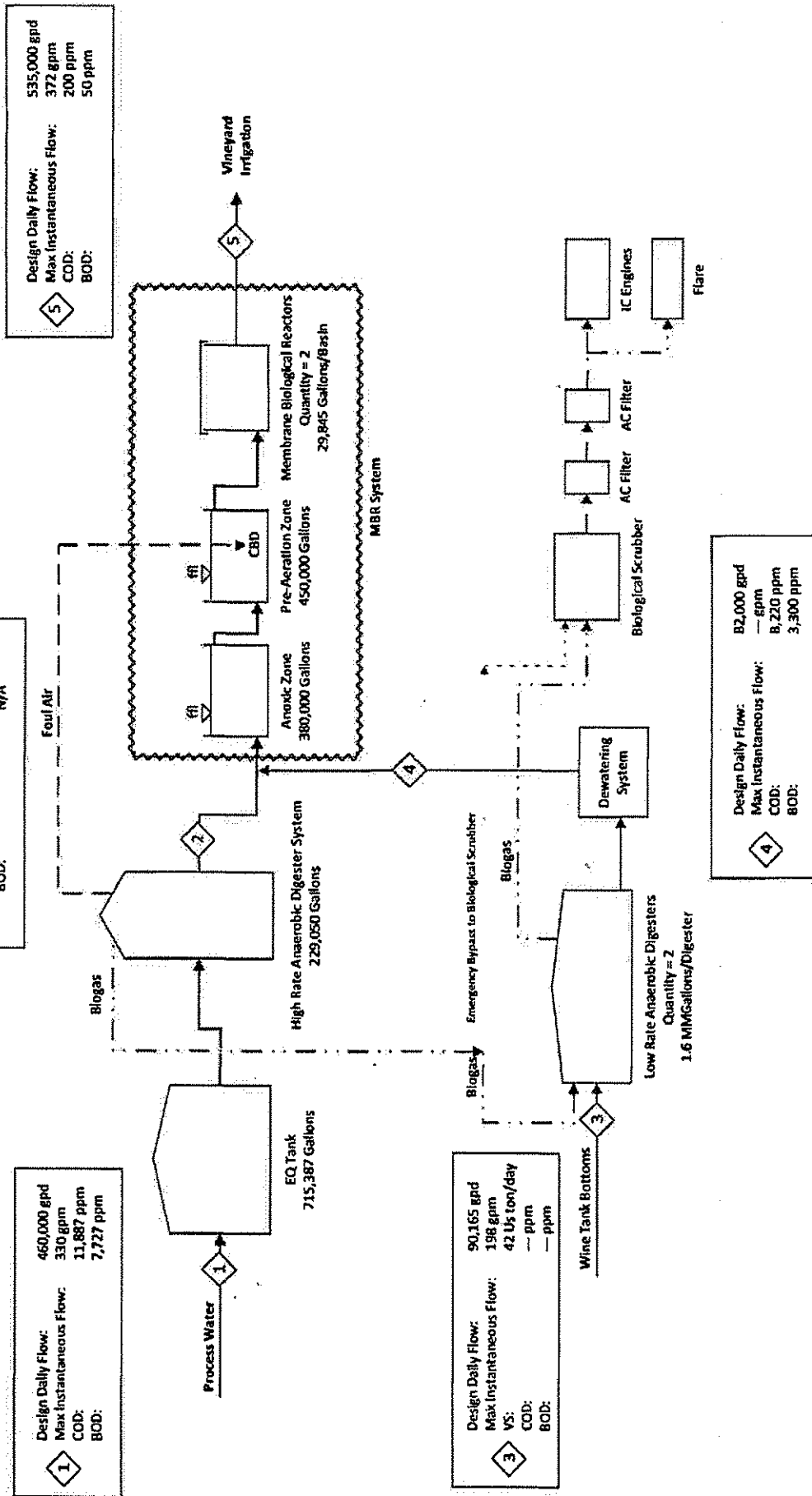
# Attachment C

## Digester Operation Flow Diagram and Waste Water Emission Calculations

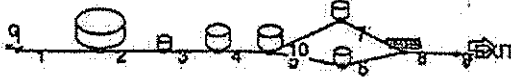
# Livingston Water Innovation and Energy

## Process Flow Diagram

February 15, 2013  
 Note: All flow and Concentration values correspond to Max Harvest conditions.



14:28:21 02-21-2013



No.	Name	Type	flow (l/s)
1	default hard piped	hard piped, no headspace	
2	def.equalization	equalization	21.9
3	def.storage tank	storage tank	21.9
4	def.storage tank	storage tank	21.9
5	def.storage tank	storage tank	10.95
6	def.storage tank	storage tank	10.95
7	def.storage tank	storage tank	10.95
8	def.landreatment	landreatment	21.9
9	def.system exit st	system exit stream	21.9
10	def.divert flow	divert flow	10.95

SUMMARY FOR EMISSIONS AT UNIT 2 def.equalization equalization  
02-21-2013 14:27:28

COMPOUND NAME	conc in (ppmw)	fe air	fe bio	conc out (ppmw)	emissions (g/s)
CHLOROFORM	5.5e-3	6.976e-17	0.61199	2.134e-3	8.402e-21
ETHANOL	2.00e+2	1.73e-16	0.08817	1.824e+2	7.577e-16
CELLULOSE	1.495e+3	1.894e-16	0.	1.495e+3	6.202e-15
ACETIC ACID	1.0e+1	7.207e-17	0.62011	3.799e+0	1.578e-17
Total rate for all compounds					6.975e-15

SUMMARY FOR EMISSIONS AT UNIT 3 def.storage tank storage tank  
02-21-2013 14:27:28

COMPOUND NAME	conc in (ppmw)	fe air	fe bio	conc out (ppmw)	emissions (g/s)
CHLOROFORM	2.134e-3	0.0028	0.	2.133e-3	1.328e-8
ETHANOL	1.824e+2	2.31e-9	0.	1.824e+2	9.225e-9
CELLULOSE	1.495e+3	2.031e-13	0.	1.495e+3	6.65e-11
ACETIC ACID	3.799e+0	6.561e-10	0.	3.799e+0	5.458e-11
Total rate for all compounds					2.263e-8

SUMMARY FOR EMISSIONS AT UNIT 4 def.storage tank storage tank  
02-21-2013 14:27:28

COMPOUND NAME	conc in (ppmw)	fe air	fe bio	conc out (ppmw)	emissions (g/s)
CHLOROFORM	2.133e-3	0.00352	0.	2.126e-3	1.645e-7
ETHANOL	1.824e+2	2.436e-8	0.	1.824e+2	9.729e-8
CELLULOSE	1.495e+3	1.958e-10	0.	1.495e+3	6.412e-9
ACETIC ACID	3.799e+0	3.378e-8	0.	3.799e+0	2.81e-9
Total rate for all compounds					2.71e-7

SUMMARY FOR EMISSIONS AT UNIT 5 def.storage tank storage tank  
02-21-2013 14:27:28

COMPOUND NAME	conc in (ppmw)	fe air	fe bio	conc out (ppmw)	emissions (g/s)
CHLOROFORM	2.126e-3	0.00389	0.	1.059e-3	1.813e-7
ETHANOL	1.824e+2	2.688e-8	0.	9.118e+1	1.074e-7
CELLULOSE	1.495e+3	2.179e-10	0.	7.475e+2	7.133e-9
ACETIC ACID	3.799e+0	3.754e-8	0.	1.899e+0	3.123e-9
Total rate for all compounds					2.989e-7

SUMMARY FOR EMISSIONS AT UNIT 6 def. storage tank storage tank  
02-21-2013 14:27:28

COMPOUND NAME	conc in (ppmw)	fe air	fe bio	conc out (ppmw)	emissions (g/s)
CHLOROFORM	2.118e-3	0.00099	0.	2.116e-3	2.296e-8
ETHANOL	1.824e+2	7.095e-9	0.	1.824e+2	1.417e-8
CELLULOSE	1.495e+3	4.419e-11	0.	1.495e+3	7.234e-10
ACETIC ACID	3.799e+0	7.858e-9	0.	3.799e+0	3.269e-10
Total rate for all compounds					3.818e-8

SUMMARY FOR EMISSIONS AT UNIT 7 def. storage tank storage tank  
02-21-2013 14:27:28

COMPOUND NAME	conc in (ppmw)	fe air	fe bio	conc out (ppmw)	emissions (g/s)
CHLOROFORM	2.118e-3	0.00099	0.	2.116e-3	2.296e-8
ETHANOL	1.824e+2	7.095e-9	0.	1.824e+2	1.417e-8
CELLULOSE	1.495e+3	4.419e-11	0.	1.495e+3	7.234e-10
ACETIC ACID	3.799e+0	7.858e-9	0.	3.799e+0	3.269e-10
Total rate for all compounds					3.818e-8

SUMMARY FOR EMISSIONS AT UNIT 8 def. landtreatment landtreatment  
02-21-2013 14:27:28

COMPOUND NAME	conc in (ppmw)	fe air	fe bio	conc out (ppmw)	emissions (g/s)
CHLOROFORM	2.116e-3	0.99837	0.00001	3.438e-6	4.626e-5
ETHANOL	1.824e+2	0.99824	0.00014	2.964e-1	3.987e+0
CELLULOSE	1.495e+3	8.241e-5	0.00472	1.488e+3	2.698e-3
ACETIC ACID	3.799e+0	0.98241	0.00064	6.44e-2	8.173e-2
Total rate for all compounds					4.071e+0

WASTEWATER TREATMENT SUMMARY II 02-21-2013 14:27:16

Project \\South1\shared\PER\ENG\KlevannD\Projects\Wastewater\EJGallo 1123806

COMPOUND	RATE (g/s)	Fraction Air	RATE (lb/day)	LOADING ppmw
CHLOROFORM	4.67E-05	.38738	.00888	.006
ETHANOL	3.99E+00	.91022	758.717	200.
CELLULOSE	2.70E-03	.00008	.51349	1495.
ACETIC ACID	8.17E-02	.37321	15.5544	10.

TOTAL EMISSIONS ALL COMPOUNDS	4.07E+00 g/s	air emissions
TOTAL EMISSIONS ALL COMPOUNDS	128.39 Mg/yr	air emissions
TOTAL LOADING	1177.54 Mg/yr	in waste
TOTAL WATER FLOW	21.9	l/s

# Attachment D

## Greenhouse Gas Emission Calculations for Emergency Flare

## Greenhouse Gas Emissions Calculations for Emergency Flare

The District has evaluated potential greenhouse gas emissions from the flare rated at 600 scfm (32.4 MMBtu/hr).

### Basis and Assumptions

- The flare is fired with digester gas at a rate of 32.4 MMBtu/hour (HHV)
- The flare operates 200 hours per year for maintenance and testing
- Emission factors and global warming potentials (GWP) are taken from EPA 40 CFR Part 98, Subpart A, Tables C-1 and C-2:

CO<sub>2</sub> 52.07 kg/MMBtu (114.79 lb/MMBtu)  
CH<sub>4</sub>  $3.2 \times 10^{-3}$  kg/MMBtu (0.00705 lb/MMBtu)  
N<sub>2</sub>O  $6.3 \times 10^{-4}$  kg/MMBtu (0.00139 lb/MMBtu)

GWP for CH<sub>4</sub> = 21 lb-CO<sub>2</sub>(eq) per lb-CH<sub>4</sub>  
GWP for N<sub>2</sub>O = 310 lb-CO<sub>2</sub>(eq) per lb-N<sub>2</sub>O

### Calculations

#### *Hourly Emissions*

CO<sub>2</sub> Emissions = 32.4 MMBtu/hr x 114.79 lb/MMBtu = 3,719.2 lb-CO<sub>2</sub>(eq)/hour

CH<sub>4</sub> Emissions = 32.4 MMBtu/hr x 0.00705 lb/MMBtu x 21 lb-CO<sub>2</sub>(eq) per lb-CH<sub>4</sub>

= 4.8 lb-CO<sub>2</sub>(eq)/hour

N<sub>2</sub>O Emissions = 32.4 MMBtu/hr x 0.00139 lb/MMBtu x 310 lb-CO<sub>2</sub>(eq) per lb-N<sub>2</sub>O

= 13.96 lb-CO<sub>2</sub>(eq)/hour

Total = 3,719.2 + 4.8 + 13.96 = 3,737.96 lb-CO<sub>2</sub>e/hour

#### *Annual Emissions*

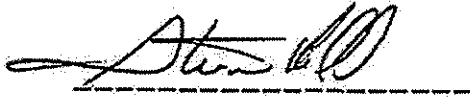
3737.96 lb-CO<sub>2</sub>e/hour x 200 hr/year ÷ 2,000 lb/short ton = 374 short tons-CO<sub>2</sub>e/year



**Attachment E**  
Compliance Certification

N-1237  
E&J Gallo Winery-Livingston  
Compliance Certification Statement  
For Federal Major Permit Modifications  
Compliance with District Rule 2201, Section 4.15.2

"I certify under penalty of law that all major stationary sources (Title V facilities) operated under my control in California are compliant with all applicable air emissions limitations and standards. The facilities included in this certification statement include the E&J Gallo Winery-Fresno, the E&J Gallo Winery-Livingston, and the E&J Gallo Winery-Modesto."



Mr. Steve Kidd  
Vice President of Operations

11/02/12

Date

# Attachment F

## Health Risk Assessment and Ambient Air Quality Analysis

## San Joaquin Valley Air Pollution Control District Revised Risk Management Review

To: James Harader – Permit Services  
 From: Kyle Melching – Technical Services  
 Date: September 21, 2015  
 Facility Name: E & J Gallo  
 Location: 18000 W. River Rd.  
 Application #(s): N-1237-661-3  
 Project #: N-1152892

### A. RMR SUMMARY

RMR Summary			
Categories	Digester-Fired Flare (Unit 661-3)	Project Totals	Facility Totals
Prioritization Score	0.03	0.03	>1
Acute Hazard Index	0.00	0.00	0.02
Chronic Hazard Index	0.00	0.00	0.
Maximum Individual Cancer Risk	4.54E-10	4.54E-10	5.89E-08
T-BACT Required?	No		
Special Permit Conditions?	Yes		

### Proposed Permit Conditions

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

#### Unit # 661-3

- {The flare shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the flare for maintenance, testing, and required regulatory purposes shall not exceed **200** hours per year. [District NSR Rule and District Rule 4701]N

**B. RMR REPORT**

**I. Project Description**

Technical Services received a request on September 17, 2015, to perform a Risk Management Review for a proposed installation of a digester operation served by a 28.7 MMBtu/hr emergency digester gas-fired flare. An ATC was originally issued for a full-time flare; however, the facility has decided not to implement it.

**II. Analysis**

Toxic emissions for this proposed unit were calculated using District approved Digester Gas Combustion emissions factors for flares. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. The prioritization score for this proposed unit was less than 1.0 (see RMR Summary Table). However, the facility prioritization was greater than 1.0, therefore, further analysis was necessary. The AERMOD model was used, with the parameters outlined below and meteorological data for 2009-2013 from Modesto to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP) and the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters (Unit 661-3)			
Source Type	Point	Nearest Receptor (m)	610
Stack Height (m)	13.34	Closest Receptor Type	Business
Stack Diameter (m)	1.14	Project Location	Rural
Stack Exit Velocity (m/s)	13.97	Digester Gas Usage (mmscf/hr)	0.029
Stack Exit Temperature (K)	1273	Digester Gas Usage (mmscf/yr)	5.54

In addition to the RMR, Technical Services performed modeling for criteria pollutants using AERMOD to determine if the project would contribute to or cause a violation of a CAAQS or NAAQS. The results of the modeling are presented below.

**Criteria Pollutant Modeling Results\***

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	NA	X	NA	X	X
NO <sub>x</sub>	NA	X	X	X	Pass
SO <sub>x</sub>	NA	NA	X	NA	Pass
PM <sub>10</sub>	X	X	X	NA	Pass <sup>1</sup>
PM <sub>2.5</sub>	X	X	X	NA	Pass <sup>1</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

### III. Conclusion

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

The acute and chronic hazard indices were less than 1.0 and the cancer risk associated with the project was less than one in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

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

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary
- E. AAQA reports