



NOV 15 2017

Mr. Ted Bobak
Gallo Glass Company
PO Box 1230
Modesto, CA 95353

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1662
Project # N-1171407**

Dear Mr. Bobak:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the installation of two natural gas-fired annealing ovens.

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

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

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

Seyed Sadredin
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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

As-Built Revisions to Installation of Two Natural Gas-fired Lehrs Serving Glass Furnace #2

Facility Name:	Gallo Glass Company	Date:	October 10, 2017
Mailing Address:	PO Box 1230 Modesto, CA 95353	Engineer:	James Harader
Contact Person:	Ted Bobak	Lead Engineer:	Nick Peirce
Telephone:	(209) 497-2298		
Application #(s):	N-1662-17-1 and '-18-1		
Project #:	N-1171407		
Deemed Complete:	June 15, 2017		

I. Proposal

Gallo Glass Company was previously issued Authority to Construct permits, N-1662-17-0 and '-18-0, for two natural gas-fired lehrs with Eclipse RA0075 burners. After installation of the lehrs, it was discovered that Pennekamp BLEU (burner low emission unit) burners were installed. Both the Eclipse RA0075 burners and Pennekamp BLEU burner systems are guaranteed by the manufacturer to meet 60 ppm NO_x @ 3% O₂; however, the Pennekamp burners are rated for a higher CO emission rate of 0.084 lb/MMBtu (AP-42), compared to 20 ppm CO @ 3% O₂ (0.015 lb/MMBtu) for the Eclipse RA0075 burners. This project is for the re-permitting of the natural gas-fired lehrs with the Pennekamp BLEU burners, to match the as-built configuration of the plant. The natural gas-fired lehrs replaced existing electric lehrs.

Authorities to Construct N-1662-17-0 and '-18-0 will be cancelled upon the implementation of the Authorities to Construct issued in this project.

Gallo Glass Company has received a 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. Gallo Glass Company must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
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 4309	Dryers, Dehydrators, and Ovens (12/15/2005)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
40 CFR Part 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 605 S Santa Cruz Ave. 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

Hot formed glass exits the glass former at a temperature of approximately 1,000 °F. A lehr is a tunnel through which a belt, which contains the formed glass, passes. The tunnel is divided into hot zones at the upstream end and cool zones on the downstream end. Either the hot zones are heated electrically or with gas burners, which operate at temperatures as high as 1,150 °F. The hot zones essentially bake the formed glass to allow the glass to anneal before entering the cold zones. The unheated cold zones allow the glass to slowly cool to a temperature of approximately 250 °F to 300 °F. Recirculating fans blow high velocity air into each zone to convectively heat or cool the glass.

The 12-foot wide belt will feed the hot formed glass into each of the two new natural gas fired lehrs. Each lehr tunnel will be approximately 16 feet wide and 63 feet long. Each of the lehrs will contain five hot zones and four cold zones. Each of the lehrs will be equipped with ten 0.5 MMBtu/hr Pennekamp BLEU burners, for a total maximum heat input rating of 5.0 MMBtu/hr per lehr.

Operating Schedule

The equipment will operate 24 hr/day, 365 days/year.

V. Equipment Listing

- N-1662-17-1: 5.0 MMBTU/HR NATURAL GAS-FIRED LEHR WITH PENNEKAMP BLEU BURNERS, OR EQUIVALENT (LEHR SHOP #21 SERVING GLASS FURNACE #2)
- N-1662-18-1: 5.0 MMBTU/HR NATURAL GAS-FIRED LEHR WITH PENNEKAMP BLEU BURNERS, OR EQUIVALENT (LEHR SHOP #23 SERVING GLASS FURNACE #2)

VI. Emission Control Technology Evaluation

Each lehr is equipped with Pennekamp BLEU natural gas-fired burners. The burners operate in a high excess oxygen environment and are rated at 60 ppm NOx at 3% oxygen.

VII. General Calculations

A. Assumptions

- The lehrs will operate 24 hr/day, 365 days/year.
- The higher heating value of natural gas is 1,000 Btu/scf.
- The f-factor for natural gas is 8,578 scf/MMBtu.
- The only source of emissions in the lehr is the combustion of natural gas by the burners.
- All PM10 is assumed to be PM2.5
- All other assumptions will be stated as they are made.

B. Emission Factors

1. Pre-Project Emission Factors

The existing lehrs are electric and do not emit pollutants; therefore, no pre-project emission factors apply to this project.

2. Post-Project Emission Factors

The new natural gas-fired lehrs are identical. The following table lists the post-project emission factors for the lehrs.

Lehr Post-Project Emission Factors (EF2)		
Pollutant	EF2	Source
NO _x	0.073 lb/MMBtu (equivalent to 60 ppmvd @ 3% O ₂)	Manufacturer
*SO _x	0.00285 lb/MMBtu	District Policy APR 1720
PM ₁₀	0.0076 lb/MMBtu	AP-42 Table 1.4-2 (7/98)
CO	0.084 lb/MMBtu	AP-42 Table 1.4-1 (7/98)
VOC	0.0055 lb/MMBtu	AP-42 Table 1.4-2 (7/98)

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The existing lehrs are electric powered; therefore, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

The potential to emit for both of the identical lehrs is calculated as follows, and summarized in the table below:

$$\begin{aligned} PE2_{NOx} &= (0.073 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) \\ &= 8.8 \text{ lb NO}_x/\text{day} \end{aligned}$$

$$\begin{aligned} &= (0.073 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) * (365 \text{ day/year}) \\ &= 3,197 \text{ lb NO}_x/\text{year} \end{aligned}$$

$$\begin{aligned} PE2_{SOx} &= (0.00285 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) \\ &= 0.3 \text{ lb SO}_x/\text{day} \end{aligned}$$

$$\begin{aligned} &= (0.00285 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) * (365 \text{ day/year}) \\ &= 125 \text{ lb SO}_x/\text{year} \end{aligned}$$

$$\begin{aligned} PE2_{PM10} &= (0.0076 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) \\ &= 0.9 \text{ lb PM}_{10}/\text{day} \end{aligned}$$

$$\begin{aligned} &= (0.0076 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) * (365 \text{ day/year}) \\ &= 333 \text{ lb PM}_{10}/\text{year} \end{aligned}$$

$$\begin{aligned} PE2_{CO} &= (0.084 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) \\ &= 10.1 \text{ lb CO}/\text{day} \end{aligned}$$

$$\begin{aligned} &= (0.0385 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) * (365 \text{ day/year}) \\ &= 3,679 \text{ lb CO}/\text{year} \end{aligned}$$

$$\begin{aligned} PE2_{VOC} &= (0.0055 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) \\ &= 0.7 \text{ lb VOC}/\text{day} \end{aligned}$$

$$\begin{aligned} &= (0.0055 \text{ lb/MMBtu}) * (5 \text{ MMBtu/hr}) * (24 \text{ hr/day}) * (365 \text{ day/year}) \\ &= 241 \text{ lb VOC}/\text{year} \end{aligned}$$

PE2 (Each Lehr)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	8.8	3,197
SO _x	0.3	125
PM ₁₀	0.9	333
CO	10.1	3,679
VOC	0.7	241

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

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site. The following data was obtained from the application review for District Project N-1161175.

SSPE1 (lb/year)						
Permit Unit/ERC	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
ATC N-1662-1-18	246,787	180,345	86,238	61,229	7,593	3,797
ATC N-1662-2-20	204,035	149,103	71,299	51,080	31,390	3,139
ATC N-1662-3-19	204,035	149,103	71,299	50,622	1,570	3,139
ATC N-1662-4-20	302,684	221,192	105,770	74,744	46,567	4,657
N-1662-5-3	0	0	1,840	1,840	0	0
N-1662-6-6	0	0	27,156	27,156	0	0
N-1662-7-3	0	0	114	114	0	0
N-1662-8-7	1,199	1,552	11,570	11,570	1,890	78
N-1662-10-3	5,994	2	171	171	1,297	488
N-1662-11-3	5,994	2	171	171	1,297	488
N-1662-12-3	5,994	2	171	171	1,297	488
N-1662-14-4	0	0	49,618	9,712	0	0
N-1662-15-3	324	26	108	108	1,350	27
N-1662-16-0	0	0	5	5	0	0
ATC N-1662-19-0	0	0	0	0	0	37
N-1662-21-0	3,197	125	333	333	657	241
N-1662-22-0	3,197	125	333	333	657	241
N-1662-23-0	3,197	125	333	333	657	241
SSPE1_{Permit Unit}	986,637	701,702	426,529	289,692	96,222	17,061
ERC N-3-2	379,472	-	-	-	-	-
ERC N-54-2	85,737	-	-	-	-	-
ERC N-56-2	305,681	-	-	-	-	-
ERC N-107-2	326,978	-	-	-	-	-
ERC N-3-3	-	-	-	-	3,417	-
ERC N-56-3	-	-	-	-	2,044	-
ERC N-161-4	-	-	92,898	-	-	-
Total_{ERC}	1,097,868	0	92,898	0	5,461	0
SSPE1	2,084,505	701,702	519,427	289,692	101,683	17,061

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs that have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Permit Unit/ERC	SSPE2 (lb/year)					
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
ATC N-1662-1-18	246,787	180,345	86,238	61,229	7,593	3,797
ATC N-1662-2-20	204,035	149,103	71,299	51,080	31,390	3,139
ATC N-1662-3-19	204,035	149,103	71,299	50,622	1,570	3,139
ATC N-1662-4-20	302,684	221,192	105,770	74,744	46,567	4,657
N-1662-5-3	0	0	1,840	1,840	0	0
N-1662-6-6	0	0	27,156	27,156	0	0
N-1662-7-3	0	0	114	114	0	0
N-1662-8-7	1,199	1,552	11,570	11,570	1,890	78
N-1662-10-3	5,994	2	171	171	1,297	488
N-1662-11-3	5,994	2	171	171	1,297	488
N-1662-12-3	5,994	2	171	171	1,297	488
N-1662-14-4	0	0	49,618	9,712	0	0
N-1662-15-3	324	26	108	108	1,350	27
N-1662-16-0	0	0	5	5	0	0
ATC N-1662-17-1	3,197	125	333	333	3,679	241
ATC N-1662-18-1	3,197	125	333	333	3,679	241
ATC N-1662-19-0	0	0	0	0	0	37
N-1662-21-0	3,197	125	333	333	657	241
N-1662-22-0	3,197	125	333	333	657	241
N-1662-23-0	3,197	125	333	333	657	241
SSPE1^{Permit Unit}	993,031	701,952	427,195	290,358	103,580	17,543
ERC N-3-2	379,472	-	-	-	-	-
ERC N-54-2	85,737	-	-	-	-	-
ERC N-56-2	305,681	-	-	-	-	-
ERC N-107-2	326,978	-	-	-	-	-
ERC N-3-3	-	-	-	-	3,417	-
ERC N-56-3	-	-	-	-	2,044	-
ERC N-161-4	-	-	92,898	-	-	-
Total^{ERC}	1,097,868	0	92,898	0	5,461	0
SSPE2	2,090,899	701,952	520,093	290,358	109,041	17,543

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Rule 2201 Major Source Determination (lb/year)						
	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
SSPE1	2,084,505	701,702	519,427	289,692	101,683	17,061
SSPE2	2,090,899	701,952	520,093	290,358	109,041	17,543
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	Yes	Yes	Yes	Yes	No	No

As seen in the table above, the facility is an existing Major Source for NO_x, SO_x, PM₁₀ and PM_{2.5}, and will remain a Major Source for these pollutants.

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)	
	NO₂
Estimated Facility PE before Project Increase	496.5
PSD Major Source Thresholds	250
PSD Major Source ? (Y/N)	Y

As shown above, the facility is an existing PSD major source for NO_x. Thus, the facility is an existing PSD Major Source and no further analysis is required.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, $BE = PE1$ for:

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

otherwise,

$BE = \text{Historic Actual Emissions (HAE)}$, calculated pursuant to District Rule 2201.

Since the natural gas-fired lehrs are new units, BE is equal to zero.

7. SB 288 Major Modification

An SB 288 Major Modification is defined in 40 CFR Part 51.165 (in effect 12/19/02) 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."*

This facility is a Major Source for NO_x, SO_x, PM₁₀, and PM_{2.5}. There is no SB288 Major Modification threshold for PM_{2.5} emissions; therefore, an SB288 Modification cannot be triggered for PM_{2.5}.

SB288 calculations are required for NO_x, SO_x, and PM₁₀ to determine whether this project will trigger an SB288 Modification. A project triggers an SB288 Modification if the net emissions increase (NEI) exceeds the thresholds in District Rule 2201. The respective thresholds are 50,000 lb-NO_x/year, 80,000 lb-SO_x/year, and 30,000 lb-PM₁₀/year.

For existing units, NEI is equal to $PE2 - BAE$, where:

$BAE = \text{Baseline average annual emissions over a representative 2-years of operation.}$

Since the pre-project emissions for the existing lehrs are equal to zero, BAE is equal to zero for the lehrs. Therefore, for the natural gas-fired lehrs, the NEI is equal to PE2.

It was determined that the installation of the natural gas-fired lehrs is related to the previous project to expand glass furnace #2, District Project N-1141107. Therefore, Federal NSR considers the changes to the furnace and to the lehrs to be one project and the NEI from District Project N-1141107 will be included to determine whether the project triggers an SB288 Modification. The following formula will be used to determine the NEI:

$$NEI_{Total} = PE_{2, Lehrs} + NEI_{Project\ N-1141107, SB288\ Calculations}$$

Pollutant	PE _{2,Lehrs} (lb/year)	NEI _{Project N-1141107} (lb/year)	NEI _{Total} (lb/year)	SB288 Modification Threshold
NOx	6,394	112,021	118,415	50,000 lb/year
SOx	250	70,750	71,000	80,000 lb/year
PM10	666	58,158	58,158	30,000 lb/year

As shown in the table above, NEI_{Total} is greater than the SB288 Modification thresholds for NOx and PM10; therefore, this project triggers an SB288 Modification for NOx and PM10. District project N-1140117 was previously determined to trigger an SB288 Modification for NOx and PM10 and the SB288 requirements for the expansion of Glass Furnace #2 were addressed within that project; therefore, it is not necessary to re-examine the modifications proposed in District Project N-1140117.

8. Federal Major Modification

District Rule 2201, Section 3.17 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.

This facility is a Major Source for NOx, SOx, PM₁₀, and PM_{2.5} emissions. Therefore, Federal Major Modification calculations are required for these pollutants to determine whether this project will trigger an SB288 Modification. A project triggers a Federal Major Modification if the net emissions increase (NEI) exceeds the thresholds in the following table:

Pollutant	Federal Major Modification Threshold
NOx	0 lb/year
SOx	80,000 lb/year
PM10	30,000 lb/year
PM2.5	20,000 lb-direct PM2.5/year or 80,000 lb-SOx/year or 80,000 lb-NOx/year

The NEI is calculated as follows:

$$NEI = PAE - BAE$$

Where,

PAE = Projected Actual Emissions

BAE = Baseline Average Emissions (any 24-month period within last 10 years)

For existing units, NEI is equal to PE₂ - BAE, where:

BAE = Baseline average annual emissions over a representative 2-years of operation.

Since the pre-project emissions for the existing lehrs are equal to zero, BAE is equal to zero for the lehrs. Therefore, for the natural gas-fired lehrs, the NEI is equal to PE2.

It was determined that the installation of the natural gas-fired lehrs is related to the previous project to expand glass furnace #2, District Project N-1141107. Therefore, Federal NSR considers the changes to the furnace and to the lehrs to be one project and the NEI from District Project N-1141107 will be included to determine whether the project triggers a Federal Major Modification. The following formula will be used to determine the NEI:

$$NEI_{Total} = PE_{2, Lehrs} + NEI_{Project\ N-1141107, FMM\ Calculations}$$

Pollutant	PE _{2,Lehrs} (lb/year)	NEI _{Project N-1141107} (lb/year)	NEI _{Total} (lb/year)	SB288 Modification Threshold
NOx	6,394	33,000	39,394	0 lb/year
SOx	250	63,479	63,729	80,000 lb/year
PM10	666	11,238	11,904	30,000 lb/year
PM2.5 ¹	666	11,238	11,904	20,000 lb/year

As shown in the previous table, NEI_{Total} is greater than the Federal Major Modification threshold for NOx; therefore, this project triggers a Federal Major Modification for NOx. District project N-1140117 was previously determined to trigger a Federal Major Modification for NOx and Federal Major Modification requirements for the expansion of Glass Furnace #2 were addressed within that project; therefore, it is not necessary to reexamine the modifications proposed in District Project N-1140117.

NOx		Federal Offset Ratio		1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)	
N-1662-17-1	0	3,197	3,197	
N-1662-18-1	0	3,197	3,197	
Net Emission Change (lb/year):			6,394	
Federal Offset Quantity: (NEC * 1.5)			9,591	

¹ A Federal Major Modification for PM2.5 may also be triggered if the NEI_{Total} for NOx or SOx are 80,000 lb/year or greater. Since the NEI_{Total} is less than these additional thresholds and less than the direct PM2.5 threshold of 20,000 lb/year, a Federal Major Modification is not triggered for PM2.5.

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

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

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

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.

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.

The values shown in the below table include the potential to emit from glass furnace #2, since the modifications to glass furnace #2 are considered part of the same stationary source project for PSD. The greenhouse gas emission rate was provided by the applicant and is based on testing results for glass furnaces and lehr units.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO ₂	SO ₂	CO	PM ²	PM10 ³	CO _{2e}
Total PE from New and Modified Units	105.2	77.8	16.4	32.1	23.1	57,133
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	Y	Y	N	Y	Y	N

As demonstrated above, because the project has a total potential to emit from all new and modified emission units greater than PSD significant emission increase thresholds for NO₂, SO₂, PM, and PM10, further analysis is required for NO₂, SO₂, PM, and PM10 to determine if the project has an emission increase greater than the PSD significant emission increase thresholds for those pollutants.

b. Emission Increase for Each Attainment/Unclassified Pollutant with a Significant Emission Increase vs PSD Significant Emission Increase Thresholds

In this step, the emission increase for each remaining attainment/unclassified pollutant is compared to the PSD significant emission increase thresholds, and if emission increase for each attainment pollutant is below this threshold, no further analysis is needed.

The method to calculate the NEI is identical to the method used for determining the NEI in the Federal Major Modification Calculations shown earlier in this evaluation.

NO₂

The NEI for NO₂ is identical to the NEI calculated for NO_x in the Federal Major Modification section of this evaluation. Thus,

$$\text{NEI} = 39,394 \text{ lb-NO}_2/\text{year} = 19.7 \text{ tons-NO}_2 \text{ year}$$

Since the NEI for NO₂ is less than the PSD significant emission increase threshold of 40 tons-NO₂/year, the project does not trigger PSD for NO₂. A 10-year NO₂ recordkeeping requirement will be included on the permit to ensure that PSD is not triggered following the modifications to the glass furnace.

² The PM and PM10 emission rates in this table do not include PM and PM10 emissions from the potentially debottlenecked batch plant.

SO₂

The NEI for SO₂ is identical to the NEI calculated for SO_x in the Federal Major Modification section of this evaluation. Thus,

$$\text{NEI} = 63,729 \text{ lb-SO}_2/\text{year} = 31.9 \text{ tons-SO}_2 \text{ year}$$

Since the NEI for SO₂ is less than the PSD significant emission increase threshold of 40 tons-SO₂/year, the project does not trigger PSD for SO₂. Furthermore, even when the NEI is calculated as PE₂ – BAE (rather than PAE – BAE used to calculate the NEI above), the 40 ton significant threshold is not triggered. Therefore, recordkeeping for SO_x emissions will not be required to demonstrate that PSD will not be triggered following the modifications to the glass furnace.

PM₁₀

The NEI for PM₁₀ is identical to the NEI calculated for PM₁₀ in the Federal Major Modification section of this evaluation. Thus,

$$\text{NEI}_{\text{total}} = 11,904 \text{ lb-PM}_{10}/\text{year} = 5.9 \text{ tons-PM}_{10} \text{ year}$$

Since the NEI for PM₁₀ is less than the PSD significant emission increase threshold of 15 tons-PM₁₀/year, the project does not trigger PSD for PM₁₀. A 10-year PM₁₀ recordkeeping requirement will be included on the permit to ensure that PSD is not triggered following the modifications to the glass furnace.

PM

The NEI for PM from District project N-1141107 was 20,025 lb-PM/year. All PM from the proposed lehrs is PM₁₀. This project will add 666 lb-PM/year to the NEI. Thus,

$$\begin{aligned} \text{NEI}_{\text{total}} &= 14,984 \text{ lb-PM}/\text{year} + 666 \text{ lb-PM}/\text{year} = 15,650 \text{ lb-PM}/\text{year} \\ \text{NEI}_{\text{total}} &= 7.8 \text{ tons-PM}/\text{year} \end{aligned}$$

Since the NEI for PM is less than the PSD significant emission increase threshold of 25 tons PM/year, the project does not trigger PSD for PM. A 10-year PM recordkeeping requirement will be included on the permit to ensure that PSD is not triggered following the modifications to the glass furnace.

Summary

Therefore, the project will not trigger a PSD Major Modification.

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

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

The following analysis is applicable to each of the identical natural gas-fired lehrs.

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for Each Lehr (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	8.8	> 2.0	n/a	Yes
SO _x	0.3	> 2.0	n/a	No
PM ₁₀	0.9	> 2.0	n/a	no
CO	10.1	> 2.0 and SSPE2 ≥ 200,000 lb/yr	109,041	No
VOC	0.7	> 2.0	n/a	no

As shown above, BACT will be triggered for NO_x from each Lehr.

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

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another.

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

As discussed in Section I above, there are no modified emissions units associated with this project.

d. SB 288/Federal Major Modification

This project triggers an SB288 Modification for NOx and PM10 emissions and triggers a Federal Major Modification for NOx emissions. Therefore, BACT is triggered for NOx and PM10 emissions.

2. BACT Guideline

BACT Guideline 1.5.10, for Container Glass Production – Container Glass Lehr, is applicable to the lehrs in this project. For a copy of the BACT Guideline, see Appendix II.

3. Top-Down BACT Analysis

Per the Top-Down BACT Analysis in Appendix II, BACT is satisfied with the following:

NOx	Natural gas-fired container glass lehr with emissions of 60 ppmv NOx @ 3% O ₂ or 0.073 lb-NOx/MMBtu and using LPG backup fuel.
PM10	No add-on control technologies are required.

As shown in the Top-Down BACT Analysis in Appendix II, the facilities proposal meets the above requirements. Therefore, BACT requirements are satisfied by this proposal.

B. Offsets

1. Offset Applicability

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

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

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	2,090,899	701,952	520,093	109,041	17,543
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_x, SO_x and PM₁₀ only. Offsets for PM_{2.5} are not triggered, since the project is not a Federal Major Modification for PM_{2.5}. Therefore, offset calculations will be required for this project.

Quantity of NO_x Offsets Required

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

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

Where,

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

Cargo Carriers are defined as trains solely dedicated to the stationary source, or vessel dockside activities as defined in 45 Federal Register 52696 for vessels dedicated to a specific stationary source. There are no trains or vessels solely dedicated to Gallo Glass Company's stationary source; therefore, there are no cargo carrier emissions. Thus,

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

The facility is proposing to install new emissions units; therefore BE = 0.

- PE2 (NO_x) = 3,197 lb/year (For each Lehr)
- BE (NO_x) = 0 lb/year
- ICCE = 0 lb/year

The project is a Federal Major Modification and therefore the correct offset ratio for NO_x is 1.5:1.

The following table shows the quantity of offsets required by quarter for NO_x, which have been calculated using the ratio of the number of days per quarter to the number of days/year. Since this is a Federal Major Modification for NO_x, the distance ratio is 1.5 per Section 4.8.1 of District Rule 2201. The facility has proposed to use ERC Certificate N-900-2 to offset the NO_x emissions from this project.

Quarter	Q1	Q2	Q3	Q4
Days	90	91	92	92
Quantity of NO _x Offsets Required (lb) without the distance ratio	788	797	806	806
Distance Ratio	1.5	1.5	1.5	1.5
Quantity of NO _x Offsets Required (lb) with the distance ratio (per unit)	1,182	1,196	1,209	1,209
Quantity of NO _x Offsets Required (lb) with the distance ratio (Combined for 2 units)	2,364	2,392	2,418	2,418
Quantity of ERC's Reserved from N-900-2	2,364	2,392	2,418	2,418

The quantity of NO_x credits available from ERC Credit N-900-2 is sufficient to offset emissions from the project.

Proposed Rule 2201 (offset) Conditions (for each lehr):

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter – 1,182 lb, 2nd quarter – 1,196 lb, 3rd quarter – 1,209 lb, and fourth quarter – 1,209 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number N-900-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

Quantity of SO_x Offsets Required

The District rounds emission increases equal or less than 0.5 lb/day to zero for NSR purposes on a permit unit basis (See District Policy APR 1130). The permit units in this project each emit less than 0.5 lb-SO_x/day; therefore, these increases are rounded to zero and the quantity of offsets required is equal to zero.

Quantity of PM₁₀ Offsets Required

The quantity of offsets in pounds per year for PM₁₀ is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

Where,

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

Cargo Carriers are defined as trains solely dedicated to the stationary source, or vessel dockside activities as defined in 45 Federal Register 52696 for vessels dedicated to a specific stationary source. There are no trains or vessels solely dedicated to Gallo Glass Company's stationary source; therefore, there are no cargo carrier emissions. Thus,

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

The facility is proposing to install new emissions units; therefore BE = 0.

- PE2 (PM₁₀) = 333 lb/year (for each unit)
- BE (PM₁₀) = 0 lb/year
- ICCE = 0 lb/year

The facility is proposing to use an ERC certificate that was generated on-site; therefore, the distance offset ratio is equal to 1.0, per District Rule 2201.

The following table shows the quantity of offsets required by quarter for PM₁₀, which have been calculated using the ratio of the number of days per quarter to the number of days/year. The facility has proposed to use ERC Certificate N-161-4 to offset the PM₁₀ emissions from this project. Since the reductions that generated the credits for N-161-4 were from the same stationary source, the offset distance ratio is 1.0.

Quarter	Q1	Q2	Q3	Q4
Days	90	91	92	92
Quantity of PM10 Offsets Required (lb) without the distance ratio (per unit)	82	83	84	84
Distance Ratio	1.0	1.0	1.0	1.0
Quantity of PM10 Offsets Required (lb) with the distance ratio	82	83	84	84
Quantity of PM10 Offsets Required (lb) with the distance ratio (Combined for 2 units)	164	166	168	168
Quantity of ERC's Reserved from N-161-4	164	166	168	168

The quantity of PM10 credits available from ERC Credit N-161-4 is sufficient to offset emissions from the project.

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter – 82 lb, 2nd quarter – 83 lb, 3rd quarter – 84 lb, and fourth quarter – 84 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number N-161-4 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

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

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

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	2,084,505	2,090,899	20,000 lb/year	No
SO _x	701,702	701,952	54,750 lb/year	No
PM ₁₀	519,427	520,093	29,200 lb/year	No
CO	101,683	109,041	200,000 lb/year	No
VOC	17,061	17,543	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	2,090,899	2,084,505	6,394	20,000 lb/year	No
SO _x	701,952	701,702	250	20,000 lb/year	No
PM ₁₀	520,093	519,427	666	20,000 lb/year	No
CO	109,041	101,683	7,358	20,000 lb/year	No
VOC	17,543	17,061	482	20,000 lb/year	No

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

e. Title V Significant Permit Modification

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

2. Public Notice Action

As discussed above, public noticing is required for this project since the project triggers a Major Modification and a Title V Significant Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and US EPA, and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

The following conditions will be included on each Authority to Construct permit for the lehrs:

- *This unit shall be fired on PUC-Quality natural gas. [District Rules 2201 and 4102]*
- *Emissions from the natural gas-fired lehr shall not exceed any of the following limits: 0.073 lb-NO/MMBtu (equivalent to 60 ppmvd NOx @ 3% O₂), 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201]*

E. Compliance Assurance

1. Source Testing

As described by District Policy APR 1705, Section I.E,

In establishing source test requirements, it must be noted that certain types of equipment or operation do not lend themselves to source testing. Large Sources (i.e. too big for total enclosure) of fugitive emissions without a stack are an example of such sources.

The proposed lehrs are large sources that are not equipped with exhaust stacks. Furthermore, the lehrs will occupy a tight space and operate at very high temperatures; therefore, erecting a temporary total enclosure for the purposes of source testing is neither safe nor practical. The lehrs are not conducive to source testing; therefore, source testing will not be required for these units.

2. Monitoring

No monitoring is required for District Rule 2201 compliance.

3. Recordkeeping

No recordkeeping requirements are required for compliance with District Rule 2201 requirements.

4. Reporting

Reporting is not required for District Rule 2201 for this operation.

F. Ambient Air Quality Analysis (AAQA)

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

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

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project constitutes a Federal Major Modification; therefore, this requirement is applicable. Gallo Glass Company's compliance certification is included in **Appendix V**.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install two natural gas-fired lehrs, replacing existing electric lehrs that serve existing glass furnace #2.

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

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment." Since this project triggers a Federal Major Modification, the project is not a minor permit modification or administrative amendment. Therefore, the proposed project constitutes a Significant Modification to the Title V Permit.

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

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60 Subpart CC, "Standards of Performance for Glass Manufacturing Plants" applies to each glass furnace that commences construction or modification after June 15, 1979.

This rule is applicable to glass melting furnaces. A glass melting furnace is defined as "a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming apparatuses. The forming apparatuses, including the float bath used in flat glass manufacturing and flow channels in wool fiberglass and textile fiberglass manufacturing, are not considered part of the glass melting furnace." The lehrs anneal glass that has already been distributed to the forming apparatuses and are not included in the definition of a glass melting furnace. Therefore, Subpart CC requirements are not applicable to the natural gas-fired lehrs proposed in this project.

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

40 CFR Part 61 Subpart N, National Emission Standard for Inorganic Arsenic Emissions from Glass Manufacturing Plants

This rule is applicable to glass melting furnaces. A glass melting furnace is defined as "a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming apparatuses. The forming apparatuses, including the float bath used in flat glass manufacturing and flow channels in wool fiberglass and textile fiberglass manufacturing, are not considered part of the glass melting furnace." The lehrs anneal glass that has already been distributed to the forming apparatuses and are not included in the definition of a glass melting furnace. Therefore, Subpart N requirements are not applicable to the natural gas-fired lehrs proposed in this project.

40 CFR Part 63 Subpart SSSSSS, National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources

The requirements of Subpart SSSSSS are applicable to glass melting furnaces. A glass melting furnace is defined in this subpart as: "a unit comprising a refractory-lined vessel in which raw materials are charged and melted at high temperature to produce molten glass." The lehrs do not meet the definition of a glass melting furnace; therefore, Subpart SSSSSS requirements are not applicable to the lehrs.

Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates 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 dark or darker than Ringelmann 1 or equivalent to 20% opacity.

The following condition will be listed on each of the Authority to Construct permits:

- *{4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)]*

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.

The following condition will be included on each of the Authority to Construct permits:

- *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.

A risk management review (RMR) was conducted. The following table summarizes the results of the RMR. For the complete summary, please see Appendix III.

RMR Summary				
Categories	Lehr (Unit 17-1)	Lehr (Unit 18-1)	Project Totals	Facility Totals
Prioritization Score	0.04	0.04	0.08	>1.0
Acute Hazard Index	0.00	0.00	0.00	0.01
Chronic Hazard Index	0.00	0.00	0.00	0.01
Maximum Individual Cancer Risk (10⁻⁶)	9.65E-9	9.65E-9	1.93E-8	5.27E-6
T-BACT Required?	No	No		
Special Permit Conditions?	No	No		

Discussion of T-BACT

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

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

This requirement is applicable to units that are equipped with exhaust stacks. The lehr emissions are fugitive and are not directed through an exhaust stack; therefore, the requirements of District Rule 4201 are not applicable to the lehrs.

Rule 4301 Fuel Burning Equipment

This rule applies to fuel burning equipment, which is defined as any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. The lehrs are a direct-fired unit and do not produce heat or power by indirect heat transfer. Therefore, the requirements of District Rule 4301 are not applicable to the lehrs.

District Rule 4309 Dryers, Dehydrators, and Ovens

Section 4.1.7 states the units with all of the following characteristics are exempt from District Rule 4309 requirements:

1. There is no stack for the exhaust gas, and
2. One or more sides are open to the atmosphere.

The proposed lehrs do not have exhaust stacks and the lehrs have sides that are open to the atmosphere; therefore, District Rule 4309 requirements are not applicable to the proposed lehrs.

District Rule 4801 Sulfur Compounds

Per Section 3.1, a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume (2000 ppmvd) calculated as SO₂ on a dry basis averaged over 15 consecutive minutes.

Natural Gas Combustion:

EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 °F, equivalent to

$$\text{Corrected F - factor} = \left(\frac{8,710 \text{ dscf}}{\text{MMBtu}} \right) \times \left(\frac{60^\circ \text{ F} + 459.6}{68^\circ \text{ F} + 459.6} \right) = 8,578 \frac{\text{dscf}}{\text{MMBtu}} \text{ at } 60^\circ \text{ F}$$

$$\frac{0.00285 \text{ lb} - \text{SO}_x}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ \text{R}} \times \frac{520^\circ \text{ R}}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 1.97 \frac{\text{parts}}{\text{million}}$$

$$\text{Sulfur Concentration} = 1.97 \frac{\text{parts}}{\text{million}} < 2,000 \text{ ppmv (or 0.2\%)}$$

Therefore, compliance with District Rule 4801 requirements is expected.

40 CFR Part 64 Compliance Assurance Monitoring

40 CFR Part 64 requires Compliance Assurance Monitoring (CAM) for units that meet the following three 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, and catalytic oxidizers; and
- 3) the unit must have a pre-control potential to emit of greater than the major source thresholds.

The natural gas-fired lehrs are not equipped with any add-on controls; therefore, CAM requirements are not applicable to the natural gas-fired lehrs.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

District is a Lead Agency & Facility is Subject to Cap-and-Trade

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

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*, for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, *CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation*, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

Industries covered by Cap-and-Trade are identified in the regulation under section 95811, Covered Entities:

1. Group 1: Large industrial facilities

These types of facilities are subject to Cap and Trade, and the specific companies covered are listed at <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>, Section 95811 (a), under the "Publicly Available Market Information" section (list maintained by the California Air Resources Board).

2. Group 2: Electricity generation facilities located in California, or electricity importers

These types of facilities are subject to Cap and Trade (section 95811, b).

3. Group 3: Suppliers of Natural Gas, Suppliers of Reformulated Gasoline Blendstock for Oxygenate Blending and Distillate Fuel Oil, Suppliers of Liquefied Petroleum Gas, and Suppliers of Blended Fuels

These entities are subject to Cap and Trade compliance obligations which must cover all fuels (except jet fuels) identified in section 95811 (c) through (f) of the Cap-and-Trade regulation delivered to end users in California, less the fuel delivered to covered entities (group 1 above).

This facility is subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

District CEQA Findings

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

Indemnification Agreement/Letter of Credit Determination

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

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs N-1662-17-1 and '-18-1 subject to the permit conditions on the attached draft ATC in **Appendix I**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-1662-17-1	3020-02-G	5 MMBtu/hr	\$893
N-1662-18-1	3020-02-G	5 MMBtu/hr	\$893

Appendixes

- I: Draft Authority to Construct Permits
- II: BACT Guideline 1.5.10 and Top-Down BACT Analysis
- III: Risk Management Review and AAQA Summary
- IV: Quarterly Net Emissions Change (QNEC)
- V: Compliance Certification

APPENDIX I

Draft Authority to Construct Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-1662-17-1

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY
MAILING ADDRESS: PO BOX 1230
ATTN: JULIA BONARDI
MODESTO, CA 95353

LOCATION: 605 S SANTA CRUZ AVE
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
5.0 MMBTU/HR NATURAL GAS-FIRED LEHR WITH PENNEKAMP BLEU BURNERS, OR EQUIVALENT (LEHR SHOP #21 SERVING GLASS FURNACE #2)

CONDITIONS

1. Authority to Construct N-1662-17-0 shall be cancelled upon the implementation of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 1,182 lb, 2nd quarter - 1,196 lb, 3rd quarter - 1,209 lb, and fourth quarter - 1,209 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-1662-17-1 - Oct 18 2017 2:39AM - HARADERJ - Joint Inspection NOT Required

5. ERC Certificate Number N-900-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 82 lb, 2nd quarter - 83 lb, 3rd quarter - 84 lb, and fourth quarter - 84 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Number N-161-4 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. {4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit
10. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
11. This unit shall be fired on PUC-Quality natural gas. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
12. Emissions from the natural gas-fired lehr shall not exceed any of the following limits: 0.073 lb-NO/MMBtu (equivalent to 60 ppmvd NOx @ 3% O2), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The permittee shall maintain records of the actual NO2, PM10, and PM emissions from this unit for each 12 consecutive-month rolling period for a period of 10 years beginning on the date the unit starts operation under this permit for the purposes of demonstrating that there has not been a PSD "significant net emissions increase" above the baseline actual NO2, PM10, and PM emission levels reported under projects N-1141107 and N-1142733. The actual net emissions increase shall be calculated in accordance with 40 CFR 52.21 (June 16, 2011 version). If a significant net emissions increase for NO2, PM10, and PM emissions occurs during any 12 consecutive month period in the 10 year recordkeeping period, the permittee shall submit a permit application to modify the permit to meet the Prevention of Significant Deterioration requirements that were avoided under projects N-1141107 and N-1142733, which are the public notice and modeling requirements of 40 CFR 52.21 (June 16, 2011 version). [District Rule 2201] Federally Enforceable Through Title V Permit
14. 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 Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-1662-18-1

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY
MAILING ADDRESS: PO BOX 1230
ATTN: JULIA BONARDI
MODESTO, CA 95353

LOCATION: 605 S SANTA CRUZ AVE
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
5.0 MMBTU/HR NATURAL GAS-FIRED LEHR WITH PENNEKAMP BLEU BURNERS, OR EQUIVALENT (LEHR SHOP #23 SERVING GLASS FURNACE #2)

CONDITIONS

1. Authority to Construct N-1662-18-0 shall be cancelled upon the implementation of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
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CONDITIONS CONTINUE ON NEXT PAGE

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Sayed Sadredin, Executive Director, APCO

DRAFT

Arnaud Marjolle, Director of Permit Services
N-1662-18-1 Oct 18 2017 6:32AM - HARADERJ Joint Inspection NOT Required

5. ERC Certificate Number N-900-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 82 lb, 2nd quarter - 83 lb, 3rd quarter - 84 lb, and fourth quarter - 84 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Number N-161-4 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. {4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit
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11. This unit shall be fired on PUC-Quality natural gas. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
12. Emissions from the natural gas-fired Lehr shall not exceed any of the following limits: 0.073 lb-NO/MMBtu (equivalent to 60 ppmvd NOx @ 3% O₂), 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The permittee shall maintain records of the actual NO₂, PM₁₀, and PM emissions from this unit for each 12 consecutive-month rolling period for a period of 10 years beginning on the date the unit starts operation under this permit for the purposes of demonstrating that there has not been a PSD "significant net emissions increase" above the baseline actual NO₂, PM₁₀, and PM emission levels reported under projects N-1141107 and N-1142733. The actual net emissions increase shall be calculated in accordance with 40 CFR 52.21 (June 16, 2011 version). If a significant net emissions increase for NO₂, PM₁₀, and PM emissions occurs during any 12 consecutive month period in the 10 year recordkeeping period, the permittee shall submit a permit application to modify the permit to meet the Prevention of Significant Deterioration requirements that were avoided under projects N-1141107 and N-1142733, which are the public notice and modeling requirements of 40 CFR 52.21 (June 16, 2011 version). [District Rule 2201] Federally Enforceable Through Title V Permit
14. 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 Rule 2201] Federally Enforceable Through Title V Permit

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APPENDIX II

BACT Guideline 1.5.10 and Top-Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.5.10*

Last Update: 06/19/2006

Container Glass Production - Container Glass Lehr

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC			Electric Lehr
SOx			Electric Lehr
PM10			Electric Lehr
NOx	Natural gas-fired container glass lehr with emissions of 60 ppmv NOx @ 3% O2 or 0.073 lb-NOx/MMBtu and using LPG backup fuel		Electric Lehr
CO	Natural gas-fired container glass lehr with emissions of 20 ppmv CO @ 3% O2 or 0.015 lb-CO/MMBtu and using LPG backup fuel		Electric Lehr

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

Top Down BACT Analysis for NOx and PM10

I. BACT Analysis for Glass Lehrs N-1662-17-1 and '-18-1

BACT is required for NOx and PM10 emissions from the natural gas-fired lehrs. District BACT Guideline 1.5.10 for Container Glass Production – Container Glass Lehr is applicable to the proposed units.

a. Step 1 - Identify All Possible Control Technologies

The following control technologies were identified in District BACT Guideline 1.5.10.

Pollutant	Achieved In Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NOx	Natural gas-fired container glass lehr with emissions of 60 ppmv NOx @ 3% O ₂ or 0.073 lb-NOx/MMBtu and using LPG backup fuel		Electric Lehr
PM10			Electric Lehr

The Environmental Protection Agency (EPA), California Air Resources Board (CARB), South Coast Air Quality Management District (SCAQMD), and Bay Area Air Quality Management District (BAAQMD) BACT Clearinghouses were reviewed to determine potential control technologies for this class and category of operation. No BACT Guidelines were identified for container glass lehrs.

The District identified several facilities operating natural gas-fired lehrs at container glass production facilities. NOx emissions from the lehrs identified were equal to or greater than what is currently listed in the table above, and no additional control techniques were identified. Additionally, the District contacted Eclipse, a Low-NOx burner manufacturer, to determine whether low-NOx burners may be utilized in this type of unit. Pursuant to Chad Holstrum of Eclipse, 60 ppmv NOx @ 3% O₂ is the lowest NOx option available for this type of unit. Low-NOx and Ultra-Low NOx burners are not capable of achieving the turndown ratio requirements for a glass annealing lehr.

b. Step 2 - Eliminate Technologically Infeasible Options

There are no infeasible options.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

NOx Emissions:

Rank	Control Technology	Achieved in Practice
1	Electric Furnace	N/A, Alternate Basic Equipment
2	Natural gas-fired container glass lehr with emissions of 60 ppmv NOx @ 3% O ₂ or 0.073 lb-NOx/MMBtu and using LPG backup fuel	Y

PM10 Emissions:

Rank	Control Technology	Achieved in Practice
1	Electric Lehr	N/A, Alternate Basic Equipment
2	None	Y

d. Step 4 - Cost Effectiveness Analysis

A cost effective analysis is required for the alternate basic equipment option, the use of an electric lehr. The following cost analysis is applicable to each proposed lehr.

Cost Effective Analysis for Electric Lehr

Emission Reductions

The use of an electric lehr would result in zero emissions; thus, the emission reductions for each lehr are equal to the potential to emit from each lehr. The emission reductions for each lehr are:

NOx: 3,197 lb/year (1.6 tons/year)

PM10: 333 lb/year (0.2 tons/year)

Annual Natural Gas Cost

Each lehr is rated at 5.0 MMBtu/hr and operates 8,760 hours/year. Thus, the annual fuel usage is:

Annual Fuel Usage = 5.0 MMBtu/hr x 8760 hr/year x 1000 scf/MMBtu

Annual Fuel Usage = 43,800,000 scf/year

The average natural gas price during the past 12 months of data available (August 2016 through July 2017) from the California Natural Gas Industrial Prices compiled by the US Department of Energy - Energy Information Administration database is 7.41 dollars per 1000 scf of natural gas consumed³. Using this price, the annual fuel cost for natural gas for each lehr is:

$$\begin{aligned}\text{Annual Fuel Cost} &= 43,800,000 \text{ scf/year} \times \$7.41/1000 \text{ scf} \\ \text{Annual Fuel Cost} &= \$324,558\end{aligned}$$

Annual Electricity Cost

The existing electric lehrs are rated at 420 kW each and can process up to 130 tons per day each. The lehr capacity is increasing to 160 tons per day, each, in this project. Thus, new electric lehrs would need to be purchased and installed. It is assumed that the kW energy rating for a lehr is linearly related the production capacity. Thus,

$$\begin{aligned}\text{Replacement Lehr} &= 420 \text{ kW} \times 160 \text{ tons/day} \div 130 \text{ tons/day} \\ \text{Replacement Lehr} &= 517 \text{ kW}\end{aligned}$$

The annual electricity usage for each lehr is:

$$\begin{aligned}\text{Annual Electricity Usage} &= 517 \text{ kW/hr} \times 8760 \text{ hr/year} \\ \text{Annual Electricity Usage} &= 4,528,920 \text{ kW/year}\end{aligned}$$

PG&E's current average annual total electricity rate for industrial/general service (E-20, October 2017 data) is \$0.14049/kWh for a primary firm. This rate will be used to calculate the annual electricity cost.

$$\begin{aligned}\text{Annual Electricity Cost} &= 4,528,920 \text{ kW/year} \times \$0.14049/\text{kWh} \\ \text{Annual Electricity Cost} &= \$636,268/\text{year}\end{aligned}$$

Multi-pollutant Cost Effectiveness Threshold

Since the use of an electric lehr will result in reductions of emissions from multiple pollutants, District practice is to use a multi-pollutant cost effectiveness threshold (MCET) to determine whether a control technology is cost effective. The MCET is calculated below

$$\begin{aligned}\text{MCET} &= 1.6 \text{ tons-NOx/year} \times \$24,500/\text{ton-NOx} + \\ &\quad 0.2 \text{ tons-PM10/year} \times \$11,400/\text{ton-PM10}\end{aligned}$$

$$\text{MCET} = \$41,480/\text{year}$$

³ <https://www.eia.gov/dnav/ng/hist/n3035ca3m.htm>

Cost Effectiveness Determination

Typically, the cost effectiveness for alternate basic equipment is determined by dividing the difference between the annualized cost of the alternate basic equipment and annualized cost of the proposed equipment by the emission reductions that would be achieved by installing the alternate basic equipment (see the equation below).

$$CE_{ALT} = \frac{Cost_{ALT} - Cost_{Basic}}{Emissions_{Basic} - Emissions_{ALT}}$$

CE_{ALT} is then compared with the cost effectiveness threshold for the pollutant that is being evaluated. However, in this case the alternate basic equipment controls multiple pollutants. When a control option controls multiple pollutants, the District uses the MCET to evaluate the cost effectiveness of the control option. The MCET method already factors in the emission reductions. Since Emissions_{Basic} - Emissions_{ALT} is already factored in by the use of the MCET, the cost is reduced to:

$$CE_{ALT} = Cost_{ALT} - Cost_{Basic}$$

Where,

Cost_{ALT} = The annualized cost for the alternate basic equipment.

Cost_{Basic} = The annualized cost for the proposed equipment

The proposed basic equipment is a natural gas-fired lehr. The alternate basic equipment option is the use of an electric lehr. The capital cost of an electric lehr is expected to be equal to or greater than the capital cost of a natural gas-fired lehr. Thus, the capital cost from the two options will cancel out when the difference is taken. The fuel cost of the natural gas-fired lehr will be used for Cost_{Basic}, while the electricity cost will be used for Cost_{Alt}. Thus,

$$CE_{ALT} = Cost_{ALT} - Cost_{Basic}$$

$$CE_{ALT} = \text{Electricity Cost} - \text{Fuel Cost}$$

$$CE_{ALT} = \$636,268/\text{year} - \$324,558/\text{year}$$

$$CE_{ALT} = \$311,710/\text{year}$$

Since CE_{ALT} (\$311,710/year), is greater than the MCET (\$43,230/year), the use of an electric lehr is not cost effective.

e. Step 5 - Select BACT

The use of an electric lehr was determined to not be cost effective. Thus, BACT is the following:

NOx	Natural gas-fired container glass lehr with emissions of 60 ppmv NOx @ 3% O ₂ or 0.073 lb-NOx/MMBtu and using LPG backup fuel
PM10	None

The applicant has proposed this level of control.

APPENDIX III

Risk Management Review and Ambient Air Quality Analysis Results

San Joaquin Valley Air Pollution Control District Risk Management Review

To: James Harader – Permit Services
 From: Seth Lane – Technical Services
 Date: June 6, 2017
 Facility Name: N-1662-17-1 & 18-1
 Location: 605 S. Santa Cruz, Modesto
 Application #(s): N-1662-17-1 & 18-1
 Project #: N-1171407

A. RMR SUMMARY

RMR Summary						
Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required?	Special Permit Requirements?
Unit 17-1 (NG Burner)	0.04	0.00	0.00	9.65E-09	No	No
Unit 18-1 (NG Burner)	0.04	0.00	0.00	9.65E-09	No	No
Project Totals	0.08	0.0	0.0	1.93E-08		
Facility Totals	>1	0.01	0.01	5.27E-06		

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 17-1 & 18-1

No special requirements are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on May 15, 2017, to perform an Ambient Air Quality Analysis and a Risk Management Review for two natural gas-fired lehrs.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program

(SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2010-2014 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 SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 17-1 & Unit 18-1 (each)			
Source Type	Area	Location Type	Urban
X-Length (m)	4.88	Closest Receptor (m)	160
Y-Length (m)	19.20	Type of Receptor	Residential
Release Height including building (m)	44.96	Pollutant Type	VOC/PM
Emission Rate (mmscf/hr)	0.005	Emission Rate (mmscf/yr)	43.80

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x, and PM₁₀ with the emission rates below:

Unit #	NO _x (Lbs.)		SO _x (Lbs.)		CO (Lbs.)		PM ₁₀ (Lbs.)	
	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.
17-1	0.37	3,197	0.013	125	0.42	3,679	0.038	333
18-1	0.37	3,197	0.013	125	0.42	3,679	0.038	333

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

	Background Site	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Modesto-14th (2016)	NA ¹	X	NA ¹	X	X
NO _x	Turlock (2016)	NA ¹	X	X	X	Pass
SO _x	Fresno-Garland (2016)	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	Modesto-14th (2016)	X	X	X	NA ¹	Pass ²
PM _{2.5}	Modesto-14th (2015)	X	X	X	NA ¹	Pass ³

*Results were taken from the attached PSD spreadsheet.

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour and 24-hour) standards is not required.

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

³The court has vacated EPA's PM_{2.5} SILs. Until such time as new SIL values are approved, the District will use the corresponding PM₁₀ SILs for both PM₁₀ and PM_{2.5} analyses.

III. Conclusion

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

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

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

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

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 Report

APPENDIX IV
Quarterly Net Emissions Change

QNEC Calculations

$$\text{QNEC} = (\text{PE2} - \text{BE}) \div 4$$

BE is equal to zero. Therefore,

$$\text{QNEC} = \text{PE2} \div 4$$

N-1662-17-0

Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
NOx	3,197	799.25
SOx	125	31.25
PM10	333	83.25
CO	3,679	919.75
VOC	241	60.25

N-1662-18-0

Pollutant	PE2 (lb/year)	QNEC (lb/qtr)
NOx	3,197	799.25
SOx	125	31.25
PM10	333	83.25
CO	3,679	919.75
VOC	241	60.25

APPENDIX V
Compliance Certification



GALLO GLASS COMPANY

P.O. BOX 1230
MODESTO, CALIFORNIA 95353

13 November 2017

Mr. James Harader
San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto CA 95356-8718
James.Harader@valleyair.org

Subject: Compliance Statement for the Gallo Glass Company

Dear Mr. Harader:

In accordance with Rule 2201, Section 4.15, "Additional Requirements for New Major Sources and Federal Major Modifications," the Gallo Glass Company is pleased to provide this compliance statement regarding its Furnace 2 Lehr project N-1171407.

All major stationary sources owned or operated by the Gallo Glass Company, or by any entity controlling, controlled by, or under common control with the Gallo Glass Company in California, and which are subject to emissions limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards. These sources include one or more of the following facilities:

Facility #1: Gallo Glass Company, 605 South Santa Cruz Avenue, Modesto, CA 95354

Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Please contact me if you have any questions regarding this certification.

Sincerely,

Joseph Majewski
Senior Director, Operations- Gallo Glass