



MAR 21 2016

Ms. Julia Bonardi
EJ Gallo
PO Box 1230
Modesto, CA 95353

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1662
Project # N-1153172**

Dear Ms. Bonardi:

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 modification of three glass furnaces to replace the existing gas/oxygen burners with Praxair Gen III gas/oxygen burners.

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

Sayed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Container Glass Furnaces # 1, #2, and #3 – Replace Burners

Facility Name:	Gallo Glass Company	Date:	February 16, 2016
Mailing Address:	P.O. Box 1230 Modesto, CA 95353	Engineer:	James Harader
Contact Person:	Julia Bonardi	Lead Engineer:	Nick Peirce
Telephone:	(209) 341-4298		
E-Mail:	Julia.Bonardi@ejgallo.com		
Application #(s):	N-1662-1-17, '-2-19, and '-3-18		
Project #:	N-1153172		
Deemed Complete:	October 27, 2015		

I. PROPOSAL

Gallo Glass Company has requested Authority to Construct (ATC) permits for the modification of glass furnaces #1, #2, and #3 as follows:

N-1662-1: Glass Furnace #1:

- To replace the existing 10 gas/oxygen burners (75 MMBtu/hr maximum heat capacity) with 10 new Praxair WideFlame Gen III gas/oxygen burners (75 MMBtu/hr maximum heat capacity)
- To lower the NOx emission limit to 1.3 lb/MMBtu (over a 30-day rolling average). Past continuous emission monitoring (CEMs) and source testing data indicates that this unit has historically met this limit.
- To lower the VOC emission limit to 0.02 lb/MMBtu. Past source testing data indicates that this unit has historically met this limit.

N-1662-2: Glass Furnace #2:

- To replace the existing 10 gas/oxygen burners (75 MMBtu/hr maximum heat capacity) with 10 new Praxair WideFlame Gen III gas/oxygen burners (75 MMBtu/hr maximum heat capacity)

N-1662-2: Glass Furnace #3:

- To replace the existing 10 gas/oxygen burners (75 MMBtu/hr maximum heat capacity) with 10 new Praxair WideFlame Gen III gas/oxygen burners (75 MMBtu/hr maximum heat capacity)
- To lower the NOx emission limit to 1.3 lb/MMBtu (over a 30-day rolling average). Past CEMs and source testing data indicates that this unit has historically met this limit.

- To lower the VOC emission limit to 0.02 lb/MMBtu. Past source testing data indicates that this unit has historically met this limit.

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

II. APPLICABLE RULES

Rule 2201 New and Modified Stationary Source Review (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 Emission 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 4202 Particulate Matter – Emission Rate (12/17/92)
Rule 4301 Fuel Burning Equipment (12/17/92)
Rule 4354 Glass Melting Furnaces (5/19/11)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 California Health & Safety Code, Sec 41700 - Health Risk Assessment
CH&SC 42301.6 California Health & Safety Code, Sec 42301.6 - School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. PROJECT LOCATION

This facility is located at 605 S Santa Cruz Ave, Modesto, CA. The District has verified that the facility is not located within 1,000 feet of any K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. PROCESS DESCRIPTION

The furnaces burn natural gas or LPG to melt cullet (crushed, recycled glass), sand, soda ash, limestone, and other raw materials. To assist in maintaining the melt, subsurface electrical heating elements are utilized. Once molten, the glass is pulled from the furnaces and used to form bottles.

V. EQUIPMENT LISTING

Pre-Project Equipment Descriptions

Permit #	Pre-Project Equipment Description
N-1662-1-15	FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR.
ATC N-1662-2-17	GLASS FURNACE #2 WITH 10 MAXON GAS/OXYGEN BURNERS (OR EQUIVALENT) AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR, AND A FURNACE CHARGING AREA SERVED BY TWO DUST COLLECTORS
PTO N-1662-3-16	GLASS FURNACE #3 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR.

Post-Project Equipment Descriptions

Permit #	Post-Project Equipment Description
ATC N-1662-1-17	GLASS FURNACE #1 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS AND ASSOCIATED EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR.
ATC N-1662-2-19	GLASS FURNACE #2 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS (OR EQUIVALENT) AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR, AND A FURNACE CHARGING AREA SERVED BY TWO DUST COLLECTORS

ATC N-1662-3-18	GLASS FURNACE #3 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRIMER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR.
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VI. EMISSION CONTROL EQUIPMENT EVALUATION

The furnaces are equipped with emission control equipment for NO_x, SO_x and PM₁₀. NO_x is controlled utilizing oxy-fuel firing, SO_x is controlled utilizing a shared scrubber and PM₁₀ is controlled utilizing a shared electrostatic precipitator (ESP) and/or a ceramic filter type dust collector.

Oxy-Fuel Firing

Oxy-fuel firing is utilized to control NO emissions. In oxy-fuel firing, oxygen is generated and replaces air in the combustion process. The absence of nitrogen containing combustion air prevents the formation of thermal NO_x.

SO_x Scrubber

Gallo Glass utilizes a shared scrubber for SO_x control followed by an Electrostatic Precipitator (ESP) for SO_x/particulate matter control.

From the furnace, the SO_x contaminated airstream travels through a shared scrubber. Inside of the scrubber, SO_x is absorbed by a reagent (lime, trona, etc.), which exits the scrubber in the form of particulate matter. The contaminated airstream (sulfur contaminated scrubber reagent and the particulate matter generated in the furnace) then enters the ESP. The ESP causes the influent particulate matter to be charged and captured on oppositely charged plates.

Electrostatic Precipitator

An electrostatic precipitator (ESP) is utilized to control the particulate matter emissions generated in the glass melting process and from the SO_x scrubber. The contaminated air stream is passed through positively or negatively charged electrodes that place a charge on the particulate matter. The contaminated air stream, including the charged particles, is then passed through oppositely charged electrodes that attract and collect the particulate matter.

Ceramic Filter Type Dust Collector

The dust collector operates like a traditional fabric filter type baghouse but utilizes ceramic filters that will provide a reliably high filtering efficiency at high temperatures. The unit utilizes reverse pulse air type cartridge cleaning.

VII. CALCULATIONS

A. Assumptions

N-1662-1: Glass Furnace #1:

- Maximum operating schedule = 24 hours/day, 365 days/year
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- Maximum daily glass pull rate = 520.1 tons/day (current PTO)

N-1662-2: Glass Furnace #2:

- Maximum operating schedule = 24 hours/day, 365 days/year
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- Maximum daily glass pull rate = 430 tons/day (current PTO)

N-1662-3: Glass Furnace #3:

- Maximum operating schedule = 24 hours/day, 365 days/year
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- Maximum daily glass pull rate = 352.1 tons/day (current PTO)

B. Emission Factors

1. Pre-Project Emission Factors

N-1662-1: Glass Furnace #1:

Pre-Project Emission Factors		
Pollutant	EF1	Source
NO _x	1.4 lb/ton	Current PTO
SO _x (≥ 25% mixed cullet)	0.99 lb/ton	Current PTO
SO _x (< 25% mixed cullet)	0.81 lb/ton	Current PTO
PM ₁₀ (normal mode)	0.45 lb/ton	Current PTO
PM ₁₀ (ESP by-pass mode)	0.71 lb/ton	Current PTO
CO	0.04 lb/ton	Current PTO
VOC	0.23 lb/ton	Current PTO

N-1662-2: Glass Furnace #2:

Pre-Project Emission Factors		
Pollutant	EF1	Source
NO _x	1.3 lb/ton	ATC N-1662-2-17
SO _x (≥ 25% mixed cullet)	0.99 lb/ton	ATC N-1662-2-17
SO _x (< 25% mixed cullet)	0.81 lb/ton	ATC N-1662-2-17
PM ₁₀ (normal mode)	0.45 lb/ton	ATC N-1662-2-17
PM ₁₀ (ESP by-pass mode)	0.71 lb/ton	ATC N-1662-2-17
CO	0.2 lb/ton	ATC N-1662-2-17
VOC	0.02 lb/ton	ATC N-1662-2-17

N-1662-3: Glass Furnace #3:

Pre-Project Emission Factors		
Pollutant	EF1	Source
NO _x	1.4 lb/ton	Current PTO
SO _x (≥ 25% mixed cullet)	0.99 lb/ton	Current PTO
SO _x (< 25% mixed cullet)	0.81 lb/ton	Current PTO
PM ₁₀ (normal mode)	0.45 lb/ton	Current PTO
PM ₁₀ (ESP by-pass mode)	0.71 lb/ton	Current PTO
CO	0.01 lb/ton	Current PTO
VOC	0.23 lb/ton	Current PTO

2. Post-Project Emission Factors

N-1662-1: Glass Furnace #1:

Post-Project Emission Factors		
Pollutant	EF2	Source
NO _x	1.3 lb/ton	Applicant Proposal
SO _x (≥ 25% mixed cullet)	0.99 lb/ton	Current PTO
SO _x (< 25% mixed cullet)	0.81 lb/ton	Current PTO
PM ₁₀ (normal mode)	0.45 lb/ton	Current PTO
PM ₁₀ (ESP by-pass mode)	0.71 lb/ton	Current PTO
CO	0.04 lb/ton	Current PTO
VOC	0.02 lb/ton	Applicant Proposal

N-1662-2: Glass Furnace #2:

Post-Project Emission Factors		
Pollutant	EF2	Source
NO _x	1.3 lb/ton	ATC N-1662-2-17
SO _x (≥ 25% mixed cullet)	0.99 lb/ton	ATC N-1662-2-17
SO _x (< 25% mixed cullet)	0.81 lb/ton	ATC N-1662-2-17
PM ₁₀ (normal mode)	0.45 lb/ton	ATC N-1662-2-17
PM ₁₀ (ESP by-pass mode)	0.71 lb/ton	ATC N-1662-2-17
CO	0.2 lb/ton	ATC N-1662-2-17
VOC	0.02 lb/ton	ATC N-1662-2-17

N-1662-3: Glass Furnace #3:

Post-Project Emission Factors		
Pollutant	EF2	Source
NO _x	1.3 lb/ton	Applicant Proposal
SO _x (≥ 25% mixed cullet)	0.99 lb/ton	Current PTO
SO _x (< 25% mixed cullet)	0.81 lb/ton	Current PTO
PM ₁₀ (normal mode)	0.45 lb/ton	Current PTO
PM ₁₀ (ESP by-pass mode)	0.71 lb/ton	Current PTO
CO	0.01 lb/ton	Current PTO
VOC	0.02 lb/ton	Applicant Proposal

C. Calculations

1. Pre-Project Potential to Emit (PE1)

N-1662-1: Glass Furnace #1:

The PE1 for each pollutant is calculated with the following equation:

- $PE1 = EF \text{ (lb/ton)} \times \text{Throughput (tons/day or tons/year)}$

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum daily emissions would occur if the unit operated for an entire day in emission control system by-pass mode.

Daily Pre-Project Potential to Emit			
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	PE1 (lb/day)
NO _x	1.4	520.1	728.1
SO _x (≥ 25% mixed cullet)	0.99	520.1	514.9
PM ₁₀ (by-pass mode)	0.71	520.1	369.3
CO	0.04	520.1	20.8
VOC	0.23	520.1	119.6

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum annual emissions would occur if the unit operated 6 days in emission control system by-pass mode and 359 days in normal mode.

Annual Pre-Project Potential to Emit				
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	Schedule (days/year)	PE1 (lb/year)
NO _x	1.4	520.1	365	265,771
SO _x (≥ 25% mixed cullet)	0.99	520.1	365	187,938
PM ₁₀ (normal mode)	0.45	520.1	359	84,022
PM ₁₀ (by-pass mode)	0.71	520.1	6	2,216
PM ₁₀ (total)	-	-	-	86,238
CO	0.04	520.1	365	7,593
VOC	0.23	520.1	365	43,662

N-1662-2: Glass Furnace #2:

The PE1 for each pollutant is calculated with the following equation:

- $PE1 = EF \text{ (lb/ton)} \times \text{Throughput (tons/day or tons/year)}$

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum daily emissions would occur if the unit operated for an entire day in emission control system by-pass mode.

Daily Pre-Project Potential to Emit			
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	PE1 (lb/day)
NO _x	1.3	430	559.0
SO _x (≥ 25% mixed cullet)	0.99	430	425.7
PM ₁₀ (by-pass mode)	0.71	430	305.3
CO	0.2	430	86.0
VOC	0.02	430	8.6

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum annual emissions would occur if the unit operated 6 days in emission control system by-pass mode and 359 days in normal mode.

Annual Pre-Project Potential to Emit				
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	Schedule (days/year)	PE1 (lb/year)
NO _x	1.3	430	365	204,035
SO _x (≥ 25% mixed cullet)	0.99	430	365	155,381
PM ₁₀ (normal mode)	0.45	430	359	69,467
PM ₁₀ (by-pass mode)	0.71	430	6	1,832
PM ₁₀ (total)	-	-	-	71,299
CO	0.2	430	365	31,390
VOC	0.02	430	365	3,139

N-1662-3: Glass Furnace #3:

The PE1 for each pollutant is calculated with the following equation:

- $PE1 = EF \text{ (lb/ton)} \times \text{Throughput (tons/day or tons/year)}$

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum daily emissions would occur if the unit operated for an entire day in emission control system by-pass mode.

Daily Pre-Project Potential to Emit			
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	PE1 (lb/day)
NO _x	1.4	352.1	492.9
SO _x (≥ 25% mixed cullet)	0.99	352.1	348.6
PM ₁₀ (by-pass mode)	0.71	352.1	250.0
CO	0.01	352.1	3.5
VOC	0.23	352.1	81.0

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum annual emissions would occur if the unit operated 6 days in emission control system by-pass mode and 359 days in normal mode.

Annual Pre-Project Potential to Emit				
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	Schedule (days/year)	PE1 (lb/year)
NO _x	1.4	352.1	365	179,923
SO _x (≥ 25% mixed cullet)	0.99	352.1	365	127,231
PM ₁₀ (normal mode)	0.45	352.1	359	56,882
PM ₁₀ (by-pass mode)	0.71	352.1	6	1,500
PM ₁₀ (total)	-	-	-	58,382
CO	0.01	352.1	365	1,285
VOC	0.23	352.1	365	29,559

2. Post Project Potential to Emit (PE2)

N-1662-1: Glass Furnace #1:

The PE2 for each pollutant is calculated with the following equation:

- $PE2 = EF \text{ (lb/ton)} \times \text{Throughput (tons/day or tons/year)}$

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum daily emissions would occur if the unit operated for an entire day in emission control system by-pass mode.

Daily Post-Project Potential to Emit			
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	PE2 (lb/day)
NO _x	1.3	520.1	676.1
SO _x (≥ 25% mixed cullet)	0.99	520.1	514.9
PM ₁₀ (by-pass mode)	0.71	520.1	369.3
CO	0.04	520.1	20.8
VOC	0.02	520.1	10.4

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum annual emissions would occur if the unit operated 6 days in emission control system by-pass mode and 359 days in normal mode.

Annual Post-Project Potential to Emit				
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	Schedule (days/year)	PE2 (lb/year)
NO _x	1.3	520.1	365	246,788
SO _x (≥ 25% mixed cullet)	0.99	520.1	365	187,938
PM ₁₀ (normal mode)	0.45	520.1	359	84,022
PM ₁₀ (by-pass mode)	0.71	520.1	6	2,216
PM ₁₀ (total)	-	-	-	86,238
CO	0.04	520.1	365	7,593
VOC	0.02	520.1	365	3,797

N-1662-2: Glass Furnace #2:

The PE2 for each pollutant is calculated with the following equation:

- $PE2 = EF \text{ (lb/ton)} \times \text{Throughput (tons/day or tons/year)}$

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum daily emissions would occur if the unit operated for an entire day in emission control system by-pass mode.

Daily Post-Project Potential to Emit			
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	PE2 (lb/day)
NO _x	1.3	430	559.0
SO _x (≥ 25% mixed cullet)	0.99	430	425.7
PM ₁₀ (by-pass mode)	0.71	430	305.3
CO	0.2	430	86.0
VOC	0.02	430	8.6

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum annual emissions would occur if the unit operated 6 days in emission control system by-pass mode and 359 days in normal mode.

Annual Post-Project Potential to Emit				
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	Schedule (days/year)	PE2 (lb/year)
NO _x	1.3	430	365	204,035
SO _x (≥ 25% mixed cullet)	0.99	430	365	155,381
PM ₁₀ (normal mode)	0.45	430	359	69,467
PM ₁₀ (by-pass mode)	0.71	430	6	1,832
PM ₁₀ (total)	-	-	-	71,299
CO	0.04	430	365	31,390
VOC	0.02	430	365	3,139

N-1662-3: Glass Furnace #3:

The PE2 for each pollutant is calculated with the following equation:

- $PE2 = EF \text{ (lb/ton)} \times \text{Throughput (tons/day or tons/year)}$

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum daily emissions would occur if the unit operated for an entire day in emission control system by-pass mode.

Daily Post-Project Potential to Emit			
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	PE2 (lb/day)
NO _x	1.3	352.1	457.7
SO _x (≥ 25% mixed cullet)	0.99	352.1	348.6
PM ₁₀ (by-pass mode)	0.71	352.1	250.0
CO	0.01	352.1	3.5
VOC	0.02	352.1	7.0

For PM₁₀, the maximum permitted amount of emission control system by-pass time is 144 hours/year (6 days/year). Therefore, the maximum annual emissions would occur if the unit operated 6 days in emission control system by-pass mode and 359 days in normal mode.

Annual Post-Project Potential to Emit				
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	Schedule (days/year)	PE2 (lb/year)
NO _x	1.3	352.1	365	167,072
SO _x (≥ 25% mixed cullet)	0.99	352.1	365	127,231
PM ₁₀ (normal mode)	0.45	352.1	359	56,882
PM ₁₀ (by-pass mode)	0.71	352.1	6	1,500
PM ₁₀ (total)	-	-	-	58,382
CO	0.01	352.1	365	1,285
VOC	0.02	352.1	365	2,570

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.

$$SSPE1_{Total} = SSPE1_{Permit Unit} + Total_{ERC}$$

With the exception of the calculations performed in this evaluation, the following data was obtained from the application review for District Project N-1151826.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)						
Permit #	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
N-1662-1-15	265,771	187,938	86,238	61,229*	7,593	43,662
ATC N-1662-2-17	204,035	155,381	71,299	51,080*	31,390	3,139
N-1662-3-16	179,923	127,231	58,382	41,151*	1,285	29,559
N-1662-4-17	302,684	230,505	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	112,524	112,524	0	0
N-1662-15-3	324	26	108	108	1,350	27
N-1662-16-0	0	0	5	5	0	0
N-1662-17-0	3,197	125	333	333	657	241
N-1662-18-0	3,197	125	333	333	657	241
SSPE1_{Permit Unit}	978,312	702,889	476,185	229,240	95,280	83,068
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
Pre-project SSPE (SSPE1_{Total})	2,076,180	702,889	569,083	229,240	100,741	83,068

* PM2.5 annual emissions were obtained from the application review for District Project N-1141107 for units N-1662-1, '-2, and '-3.

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.

$$SSPE1_{Total} = SSPE1_{Permit Unit} + Total_{ERC}$$

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)						
Permit #	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
ATC N-1662-1-17	246,788	187,938	86,238	61,229*	7,593	3,797
ATC N-1662-2-19	204,035	155,381	71,299	51,080*	31,390	3,139
N-1662-3-18	167,072	127,231	58,382	41,151*	1,285	2,570
ATC N-1662-4-18	302,684	230,505	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	112,524	112,524	0	0
N-1662-15-3	324	26	108	108	1,350	27
N-1662-16-0	0	0	5	5	0	0
N-1662-17-0	3,197	125	333	333	657	241
N-1662-18-0	3,197	125	333	333	657	241
SSPE2_{Permit Unit}	946,478	702,889	476,185	229,240	95,280	16,214
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
Post-project SSPE (SSPE2_{Total})	2,044,346	702,889	569,083	229,240	100,741	16,214

5. Major Source Determination

Rule 2201 Major Source Determination

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

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

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
Post Project SSPE (SSPE2)	946,478	702,889	476,185	229,240	95,280	16,214
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	Yes	Yes	Yes	No	No

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)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)					
	NO ₂	SO ₂	PM ₁₀	CO	VOC
Estimated Facility PE before Project Increase	473.2	351.4	114.6	47.6	8.1
PSD Major Source Thresholds	250	250	250	250	250
PSD Major Source ? (Y/N)	Y	Y	N	N	N

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

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

Post-project, this facility will be a non-Major Source for VOC and CO emissions; therefore, BE is equal to PE1 for VOC and CO emissions for each unit.

Clean Emission Unit Determination for NOx

The clean emission unit determination for NOx will be based on the 1.3 lb/ton of glass pulled (rolling 30-day average) Achieved in Practice NOx limit from BACT Guideline 1.5.9 (See Attachment III). Unit N-1662-2 is currently limited to 1.3 lb-NOx/ton of glass pulled, and is therefore clean for NOx emissions. Units N-1662-1 and N-1662-3 have historically been limited to 1.4 lb-NOx/ton of glass pulled; however, all four oxy-fuel fired furnaces at this facility share an exhaust stack and have historically met a limit of 1.3 lb-NOx/ton of glass pulled on a rolling 30-day basis (based on CEMs and Source Testing Data). Since furnaces N-1662-1 and N-1662-3 have historically met the 1.3 lb-NOx/ton limit furnaces N-1662-1 and N-1662-3 meet the definition of clean for Rule 2201. Thus, the baseline emissions are equal to the pre-project potential to emit. The baseline emissions are calculated below, using the clean emission unit emission factor of 1.3 lb-NOx/ton.

Baseline NO_xN-1662-1 = 520.1 tons/day x 365 days/year x 1.3 lb-NOx/ton
Baseline NO_xN-1662-1 = 246,788 lb-NOx/year

Baseline NO_xN-1662-2 = 430 tons/day x 365 days/year x 1.3 lb-NOx/ton
Baseline NO_xN-1662-2 = 204,035 lb-NOx/year

Baseline NO_xN-1662-3 = 352.1 tons/day x 365 days/year x 1.3 lb-NOx/ton
Baseline NO_xN-1662-3 = 167,072 lb-NOx/year

Clean Unit Determination for SOx

The clean emission unit determination for SOx will be based on the emission limits of BACT Guideline 1.5.9 (See Attachment III). Furnaces N-1662-1, '-2, and '-3 share identical permitted emission limits for SOx. Therefore, the following analysis is applicable to each of the three furnaces.

Pollutant	Guideline Requirement	Current PTO Emission Limits	Clean Emission Unit?
SOx	<u>< 25% mixed color cullet</u>	<u>< 25% mixed color cullet</u>	Yes*
	0.8 lb/ton	0.8 lb/ton	
	<u>≥ 25% mixed color cullet</u>	<u>≥ 25% mixed color cullet</u>	
	0.99 lb/ton	0.99 lb/ton	

* The District uses conventional rounding rules for determining compliance with emission limits. For SOx emissions, the current permitted emission limit contains more significant digits than the Achieved in Practice BACT limit from the revised BACT Guideline. Per conventional rounding procedures, the current permitted emission limit has been rounded to 0.8 lb-SOx/ton, to match the significant digits of the BACT limit. After rounding, the current SOx limit was determined to be in compliance with the BACT limit; therefore, the unit is clean for SOx.

Since these are clean emission units, the baseline SOx emissions are equal to the pre-project (PE1) SOx emission rate that was calculated earlier in this evaluation for each unit.

Clean Unit Determination for PM10

The clean emission unit determination for PM10 will be based on the emission limits of BACT Guideline 1.5.9 (See Attachment III). Furnaces N-1662-1, '-2, and '-3 share identical permitted emission limits for PM10. Therefore, the following analysis is applicable to each of the three furnaces.

Pollutant	Guideline Requirement	Current PTO Emission Limits	Clean Emission Unit?
PM10	0.45 lb-PM/ton	0.45 lb/ton	Yes

Since these are clean emission units, the baseline PM10 emissions are equal to the pre-project (PE1) PM10 emission rate that was calculated earlier in this evaluation for each unit.

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."

SB288 Modifications are triggered on a pollutant by pollutant basis, and cannot be triggered for pollutants for which the facility is not a Major Source. Additionally, an SB288 modification cannot be triggered for CO emissions, since CO is an attainment pollutant. This facility is a Major Source for NO_x, SO_x, and PM10 emissions; therefore, the facility could only trigger an SB288 Modification for these pollutants.

The first step is to determine whether SB288 Major Modification Calculations are required. SB288 Major Modification Calculations are required if the project potential to emit is greater than the SB288 Major Modification Threshold. As shown in the below table, an SB288 Major Modification calculation is required for NO_x, SO_x, and PM10 emissions.

SB 288 Major Modification Threshold (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	617,895	50,000	Yes
SO _x	470,550	80,000	Yes
PM ₁₀	215,919	30,000	Yes

For SB288 Major Modifications Calculations, the Net Emission Increase (NEI) must be calculated, and then compared to the threshold to determine whether the project triggers an SB288 Major Modification. The NEI is calculated as:

$$NEI = PE2 - BAE$$

Where,

PE2 = Post-Project Potential to Emit from all units in the project (lb/year)
BAE = Baseline Actual Emissions from all units in the project (lb/year)

In order to determine the NEI, the baseline actual emissions must be determined. The baseline actual emissions are calculated using the annual average-emissions over the baseline period. The baseline period is the two consecutive years immediately prior to the submission of a complete application, or at least two consecutive years within the five years immediately prior to the submission date of the Complete Application if determined by the APCO as more representative of normal source operation.

The District has determined that the emissions from January 2013 through December 2014 are most representative of the baseline actual emissions; therefore, this period will be used as the baseline period.

Baseline Actual Emissions

The following NOx and SOx emissions data are based on CEMs measurements. The PM10 emissions data is based on the actual product throughput and the source tested PM10 emission factors for each of the furnaces. The furnaces were in compliance with the NOx, SOx, and PM10 emission limits during these periods, so no adjustments to the baseline actual emissions were required.

NOx Baseline Actual Emissions (BAE)			
Unit	2013 NOx Emissions (lb/year)	2014 NOx Emissions (lb/year)	Average Annual NOx Emissions (lb/year)
N-1662-1	166,100	143,080	154,590
N-1662-2	105,059	79,969	92,514
N-1662-3	109,026	104,936	106,981
Total Baseline Actual Emissions for NOx			354,085

SOx Baseline Actual Emissions (BAE)			
Unit	2013 SOx Emissions (lb/year)	2014 SOx Emissions (lb/year)	Average Annual SOx Emissions (lb/year)
N-1662-1	122,140	125,640	123,890
N-1662-2	84,240	67,180	75,710
N-1662-3	87,420	88,140	87,780
Total Baseline Actual Emissions for SOx			287,380

PM10 Baseline Actual Emissions (BAE)			
Unit	2013 PM10 Emissions (lb/year)	2014 PM10 Emissions (lb/year)	Average Annual PM10 Emissions (lb/year)
N-1662-1	13,100	11,960	12,530
N-1662-2	9,040	6,400	7,720
N-1662-3	9,380	8,400	8,890
Total Baseline Actual Emissions for PM10			29,140

NEI Calculations:

$$NEI_{NOx} = \sum PE2 - \sum BAE$$

$$NEI_{NOx} = 617,893 \text{ lb-NOx/year} - 354,085 \text{ lb-NOx/year}$$

$$NEI_{NOx} = 263,808 \text{ lb-NOx/year}$$

$$NEI_{SOx} = \sum PE2 - \sum BAE$$

$$NEI_{SOx} = 470,550 \text{ lb-SOx/year} - 287,380 \text{ lb-SOx/year}$$

$$NEI_{SOx} = 183,170 \text{ lb-SOx/year}$$

$$NEI_{PM10} = \sum PE2 - \sum BAE$$

$$NEI_{PM10} = 215,919 \text{ lb-PM10/year} - 29,140 \text{ lb-PM10/year}$$

$$NEI_{PM10} = 186,779 \text{ lb-PM10/year}$$

The following table compares the NEI with the SB288 Major Modification Threshold. As shown in the table, the project triggers a SB288 Major Modification for NO_x, SO_x, and PM₁₀ emissions.

SB 288 Major Modification Threshold (Existing Major Source)			
Pollutant	NEI (lb/year)	Threshold (lb/year)	SB 288 Major Modification?
NO _x	122,939	50,000	Yes
SO _x	119,893	80,000	Yes
PM ₁₀	43,550	30,000	Yes

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.

This facility is a Major Source for NO_x, SO_x, PM₁₀ and PM_{2.5}. Therefore, a Federal Major Modification could be triggered for these pollutants.

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

Step 1

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

$$\text{Net Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

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

If the Net Emission Increase is greater than any of the following thresholds, a Federal Major Modification is triggered:

Federal Major Modification Thresholds	
Pollutant	Threshold (lb/year)
NO _x	50,000
SO _x	80,000
PM2.5	20,000 of direct PM2.5 emissions
	80,000 of sulfur dioxide emissions
	80,000 of nitrogen oxide emissions
SO _x	80,000

The proposal to replace the gas-fired burners in each of the furnaces:

1. will not result in an increase in potential to emit, since the potential to emit is based on the quantity of glass produced and on emission factors in terms of lb/ton of glass produced. The applicant is proposing to retain the existing glass production limits of the permits, and is not proposing to increase any of the emission limits.
2. will not result in an increase in design capacity and will not result in the furnaces regaining any lost capacity, for the following reasons:
 - a. For each furnace, the total maximum heat input rating of the replacement gas-fired burners is identical to the maximum total heat input rating of the existing gas-fired burners.
 - b. The permit for each furnace contains a permitted daily maximum glass production rate, in tons of glass produced/day. With the existing burners, the facility is currently able to operate each of the furnaces at its respective maximum permitted glass production rate. Therefore, there is currently no loss of production to regain by installing the new burners and the permitted furnace capacity will not increase as a result of replacing the gas-fired burners.

- c. Per past discussions with the Gallo Glass Engineering department, the gas-fired burners are not the limiting factor for glass production for these furnaces (District Project N-1151826). Rather, the quantity of glass that may be produced by the furnace is limited by the current design of the glass forming machines and furnace dimensions. Therefore, a production increase would require the facility to modify the furnace dimensions and/or the installation of additional glass forming machines. Modifications to these parameters are not proposed within this project.

As described above, the proposals in this project will not result in an increase in design capacity or potential to emit, and do not impact the ability of the furnaces to operate at a higher utilization rate. Pursuant to the District's revised draft Rule 2201 Major Modification Implementation Policy, dated 2/8/11,

If the District determines that the proposed modification does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate (and there are no existing physical or legal limitations on the unit's ability to operate at a higher utilization rate), the emission increase is presumed to be zero. In such cases, no detailed calculations are required".

Therefore, the net emission increase for this project is presumed to be zero and a Federal Major Modification is not triggered by this proposal.

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:

- 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). As determined earlier in this evaluation, this facility is an existing PSD Major Source. 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 earlier in this evaluation, 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.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO ₂	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	308.9	235.3	20.1	108.0	143.9
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	Y	Y	N	Y	Y

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 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.

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

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

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

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

As explained in the Federal Major Modification section, the replacement burners will not have any effect on the operation of the glass forming machines, the more efficient burners will not allow an increase in glass production in any form, and the project does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate.

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

$$\text{Net Emission Increase (NEI)} = \text{PAE} - \text{BAE} - \text{UBC} = 0$$

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

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 Attachment IV.

VIII. COMPLIANCE

Rule 2201 New and Modified Stationary Source Review

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 for the following*:

- 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 a Major Modification.

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

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

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

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

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

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

$$AIPE = PE2 - HAPE$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$HAPE = PE1 \times (EF2/EF1)$$

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$AIPE = PE2 - (PE1 \times (EF2 / EF1))$$

The post-project stationary source potential to emit (SSPE2) is less than 200,000 lb-CO/year. Therefore, BACT cannot be triggered for CO emissions.

N-1662-1: Glass Furnace #1:

Pollutant	PE2 (lb/day)	PE1 (lb/day)	EF2 (lb/ton)	EF1 (lb/ton)	AIPE (lb/day)
NOx	676.1	728.1	1.3	1.4	0.0
SOx	514.9	514.9	0.99	0.99	0.0
PM10	369.3	369.3	0.71	0.71	0.0
VOC	10.4	119.6	0.02	0.23	0.0

As shown in the above table, AIPE is equal to zero for all pollutants. Therefore, BACT is not triggered for AIPE purposes for this furnace.

N-1662-2: Glass Furnace #2:

Pollutant	PE2 (lb/day)	PE1 (lb/day)	EF2 (lb/ton)	EF1 (lb/ton)	AIPE (lb/day)
NOx	559.0	559.0	1.3	1.3	0.0
SOx	425.7	425.7	0.99	0.99	0.0
PM10	305.3	305.3	0.71	0.71	0.0
VOC	8.6	8.6	0.02	0.02	0.0

As shown in the above table, AIPE is equal to zero for all pollutants. Therefore, BACT is not triggered for AIPE purposes for this furnace.

N-1662-3: Glass Furnace #3:

Pollutant	PE2 (lb/day)	PE1 (lb/day)	EF2 (lb/ton)	EF1 (lb/ton)	AIPE (lb/day)
NOx	457.7	492.9	1.3	1.4	0.0
SOx	348.6	348.6	0.99	0.99	0.0
PM10	250.0	250.0	0.71	0.71	0.0
VOC	7.0	81.0	0.02	0.23	0.0

As shown in the above table, AIPE is equal to zero for all pollutants. Therefore, BACT is not triggered for AIPE purposes for this furnace.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute an SB 288 Major Modification for NO_x, SO_x, and PM₁₀ emissions. Therefore BACT is triggered for NO_x, SO_x, and PM₁₀ for the three furnaces.

2. BACT Guideline

BACT Guideline 1.5.9, applies to the container glass melting furnace. [Container Glass Melting Furnace] (See Attachment III)

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see Attachment III), BACT has been satisfied with the following:

NO_x: 1.3 lb-NO_x/ton of glass pulled on a rolling 30-day average, except during periods of startup, shutdown, and idling; and compliance with District Rule 4354 requirements for startup, shutdown, and idling.

SO_x: Oxy-fuel fired furnaces while processing material where > or = 25.0 percent of the total cullet is mixed color cullet: 0.99 lb-SO_x/ton of glass pulled on a rolling 30-day average; and compliance with District Rule 4354 requirements for startup, shutdown, and idling.

All other Container Glass Furnaces: 0.8 lb-SO_x/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.

PM₁₀: 0.45 lb-PM₁₀/ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	2,044,346	702,889	569,083	100,741	16,214
Offset Threshold	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 facility is an existing Major Source for all pollutants and the SSPE2 is greater than the offset thresholds for NO_x, SO_x, and PM₁₀; therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year 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

There are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

$$\text{Offsets Required (lb/year)} = (\sum[\text{PE2} - \text{BE}]) \times \text{DOR}$$

Baseline emissions were discussed earlier in this evaluation.

Offset Requirement			
Pollutant	NOx (lb/year)	SOx (lb/year)	PM ₁₀ (lb/year)
$\sum \text{PE2}$	617,895	470,550	215,919
$\sum \text{BE}$	617,895 ¹	470,550 ²	215,919 ²
$\sum(\text{PE2} - \text{BE})$	0	0	0

As demonstrated in the calculation above, the quantity of offsets required is equal to zero.

C. Public Notification

1. Applicability

Public noticing is required for:

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

¹ Calculated earlier, in the baseline emissions section of this evaluation.

² Baseline emissions for this pollutant were determined to be equal to the pre-project potential to emit, as discussed earlier in the baseline emissions section of this evaluation.

As demonstrated in VII.C.7 and VII.C.8, this project does constitute an SB 288 Major Modification for NO_x, SO_x, and PM₁₀ emissions; therefore, public noticing for SB 288 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 following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	2,076,180	2,044,346	20,000 lb/year	No
SO _x	702,889	702,889	54,750 lb/year	No
PM ₁₀	569,083	569,083	29,200 lb/year	No
CO	229,240	229,240	200,000 lb/year	No
VOC	83,068	16,214	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 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:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	2,044,346	2,076,180	< 0	20,000 lb/year	No
SO _x	702,889	702,889	0	20,000 lb/year	No
PM ₁₀	569,083	569,083	0	20,000 lb/year	No
CO	229,240	229,240	0	20,000 lb/year	No
VOC	16,214	83,068	< 0	20,000 lb/year	No

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

2. Public Notice Action

As discussed above, public noticing is required for this project for SB 288 Major Modification for NO_x, SO_x, and PM₁₀ emissions. 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 permit for this equipment.

D. Daily Emission Limits

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 permit 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 following DEL's will be included on the Authority to Construct permits:

N-1662-1: Glass Furnace #1:

- *The quantity of glass produced shall not exceed 520.1 tons during any one day. [District Rules 2201 and 4354]*
- *Except during periods of startup, shutdown, and idling, NO_x emissions shall not exceed 1.3 pounds per ton of glass produced (over a rolling 30-day average). This performance based limit is to enforce the NO_x emission reductions granted by certificate number N-106-2. Any CEM measurement greater than 1.3 lb-NO_x/ton of glass produced for each 30-day rolling average constitutes a violation of this emission limit. [District Rule 2201]*
- *CO emissions shall not exceed 0.04 pounds per ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by certificate number N-106-3. [District NSR Rule]*
- *Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201]*
- *Except during periods of startup, shutdown, and idling, the combined SO_x emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354]*
- *Except during periods of startup, shutdown, and idling, the combined SO_x emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354]*

- Except during periods of startup, shutdown, idling, and during full or partial emission control system bypass episodes, PM10 emissions shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354]
- The PM10 emissions, during full or partial emission control system bypass episodes for routine maintenance, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201]
- The NOx, SOx, and PM10 emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354]
- The PM10 emissions shall not exceed 22,936 pounds during the first calendar quarter, 23,190 pounds during the second calendar quarter, 23,445 pounds during the third calendar quarter and 23,445 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District NSR Rule]

N-1662-2: Glass Furnace #2:

- The quantity of glass produced shall not exceed 430 tons during any one day. [District Rules 2201 and 4354]
- Except during periods of startup, shutdown, and idling, NOx emissions shall not exceed 1.3 pounds per ton of glass produced (over a rolling 30-day average). This performance based limit is to enforce the NOx emission reductions granted by certificate number N-54-2. Any CEM measurement greater than 1.3 lb-NOx/ton of glass produced for each 30-day rolling average constitutes a violation of this emission limit. [District Rule 2201]
- Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.2 pounds per ton of glass produced. [District NSR Rule]
- Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201]
- Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354]
- Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354]

- Except during periods of startup, shutdown, idling, and during full or partial emission control system bypass episodes, PM10 emissions shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354]
- The PM10 emissions, during full or partial emission control system bypass episodes for routine maintenance, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201]
- The NOx, SOx, and PM10 emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354]
- The PM10 emissions shall not exceed 18,712 pounds during the first calendar quarter, 18,919 pounds during the second calendar quarter, 19,127 pounds during the third calendar quarter and 19,128 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District NSR Rule]

N-1662-3: Glass Furnace #3:

- The quantity of glass produced shall not exceed 352.1 tons during any one day. [District Rules 2201 and 4354]
- Except during periods of startup, shutdown, and idling, NOx emissions shall not exceed 1.3 pounds per ton of glass produced (over a rolling 30-day average). This performance based limit is to enforce the NOx emission reductions granted by certificate number N-56-2. Any CEM measurement greater than 1.3 lb-NOx/ton of glass produced for each 30-day rolling average constitutes a violation of this emission limit. [District Rule 2201]
- CO emissions shall not exceed 0.01 pounds per ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by certificate number N-56-3. [District NSR Rule]
- Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201]
- Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354]
- Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354]

- *Except during periods of startup, shutdown, idling, and during full or partial emission control system bypass episodes, PM10 emissions shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354]*
- *The PM10 emissions, during full or partial emission control system bypass episodes for routine maintenance, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201]*
- *PM emissions from the glass furnace shall not exceed 1 lb of particulate matter per ton of glass produced. [40 CFR 60.293(b)(1)]*
- *The NOx, SOx, and PM10 emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354]*
- *The PM10 emissions shall not exceed 15,527 pounds during the first calendar quarter, 15,699 pounds during the second calendar quarter, 15,872 pounds during the third calendar quarter and 15,872 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District NSR Rule]*

E. Compliance Assurance

1. Source Testing

Rule 4354 requires emission testing at least once every calendar year, but not more than every 18 months and not sooner than every 6 months, to demonstrate compliance with the applicable requirements of Section 5.0 of the rule. The following conditions will be included on each of the Authority to Construct permits:

- *Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted at least once every calendar year. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5]*
- *Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081]*

- *Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081]*
- *Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2]*
- *PM and PM10 source testing shall be conducted downstream of the electrostatic precipitator and the ceramic filter dust collector in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081]*

2. Monitoring

The furnaces exhaust through a common stack that is equipped with an operational CEMs for NOx and SOx. Additional monitoring requirements are discussed in the District Rule 4354 section of this document. The following conditions will continue to be included in each operating permit:

- *The furnace shall have continuous monitoring systems for NOx and SOx. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9]*
- *One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored downstream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1]*
- *The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]*

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following recordkeeping requirements will be included on each Authority to Construct permit:

- *Permittee shall keep a record of the daily hours of operation, the amount of glass pulled from the furnace (in tons), the NOx emissions (in lb/ton of glass pulled), the SOx emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent). [District Rules 2201 and 4354]*
- *Permittee shall maintain records of the following: 1) Source tests and source test results, 2) the acceptable range for each approved key system operating parameter, as established during source tests, 3) The operating values of the key system operating parameters at the approved recording frequency, 4) any maintenance and repair, and 5) any malfunctions. [District Rule 4354]*
- *The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354]*
- *A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354]*
- *The permittee shall keep a record of the cumulative annual hours of operation of the glass furnace on LPG fuel. [District Rule 2201]*
- *The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354, and 40 CFR Part 64]*
- *The operator shall monitor and record the pressure differential gauge reading of the ceramic filter dust collector at least once during each day that the unit operates. [District Rules 2201 and 4354 and 40 CFR Part 64]*
- *Records of dust collector maintenance, inspections and repairs shall be maintained. The records shall include, date of inspection, change outs of filter media, corrective action taken, and identification of the individual performing the inspection. [District Rules 2201 and 2520, 9.4.2]*
- *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 2201 and 4354 and 40 CFR Part 64]*

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA is typically required for public notice projects to determine whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. Since this project does not result in any increases in the potential to emit and will not affect any of the stack parameters, an Ambient Air Quality Analysis is not required for this project.

Rule 2410 Prevention of Significant Deterioration

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant.

As demonstrated earlier in this evaluation, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

Rule 2520 Federally Mandated Operating Permit

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment." Projects that trigger a Title I modification do not qualify as Significant Modifications. Since this project triggers an SB288 Modification, the proposed project constitutes a Significant Modification to the Title V Permit. Therefore, a public notice and EPA notice will be performed prior to issuance of the Authority to Construct permits.

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

40 CFR Part 60 Subpart CC – Standards of Performance for Glass Manufacturing Plants

Per Section 60.290, a glass manufacturing facility is subject to 40 CFR 60 Subpart CC if the affected facility commences construction (reconstruction) or modification after June 15, 1979. Section 60.2 defines a "modification" as "any physical change in, or change in the method of operation of an existing facility which increases the amount of any pollutant (to which the standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted."

N-1662-1 and N-1662-3: Glass Furnaces #1 and #3:

These units were installed prior to June 15, 1979 and a review of the permitting history of these units indicates that these units have never been modified in a manner that would have triggered a Modification under Section 60.2. This current project does not result in a modification as defined in Section 60.2. Therefore, the requirements of this subpart are not applicable to furnaces #1 and #3.

N-1662-2: Glass Furnace #2:

This furnace is subject to the requirements of Subpart CC. The following conditions will continue to be included on the permit for this furnace, to ensure compliance with the requirements of 40 CFR 60 Subpart CC:

- *PM emissions from the glass furnace shall not exceed 1 gram of particulate matter per kilogram of glass produced. [40 CFR 60.293(b)(2)]*
- *Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354, 40 CFR 60.293(d), and 40 CFR Part 64]*
- *The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rule 2520, §9.3.2, 40 CFR 60.293(d), and 40 CFR Part 64]*
- *The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354, 40 CFR 60.293(d), and 40 CFR Part 64]*
- *The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354, 40 CFR 60.293(d) and 40 CFR Part 64]*

Rule 4002 National Emission Standards for Hazardous Air Pollutants

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

This subpart applies to furnaces that use commercial arsenic as a raw material. The facility is prohibited by the Title V permit from using commercial arsenic as a raw material; therefore, this rule will not apply to the furnace. The following condition will continue to be listed on each Authority to Construct permit:

- *The requirements of 40 CFR Part 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520]*

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

Section 63.11448

You are subject to this subpart if you own or operate a glass manufacturing facility that is an area source of hazardous air pollutant (HAP) emissions and meets all of the criteria specified in paragraphs (a) through (c) of this section.

- (a) A glass manufacturing facility is a plant site that manufactures flat glass, glass containers, or pressed and blown glass by melting a mixture of raw materials, as defined in §63.11459, to produce molten glass and form the molten glass into sheets, containers, or other shapes.
- (b) An area source of HAP emissions is any stationary source or group of stationary sources within a contiguous area under common control that does not have the potential to emit any single HAP at a rate of 9.07 megagrams per year (Mg/yr) (10 tons per year (tpy)) or more and any combination of HAP at a rate of 22.68 Mg/yr (25 tpy) or more.
- (c) Your glass manufacturing facility uses one or more continuous furnaces to produce glass that contains compounds of one or more glass manufacturing metal HAP, as defined in §63.11459, as raw materials in a glass manufacturing batch formulation.

The facility is a glass manufacturing facility, is an area source of HAP emissions. Therefore, this facility is subject to the requirements of this subpart. The following condition will be included on each Authority to Construct permit:

- *Any glass melting furnace located at an Area Source of hazardous air pollutants shall comply with 40 CFR Part 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources). [40 CFR Part 63 Subpart SSSSSS]*

Compliance with the requirements of Subpart SSSSSS is expected.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). As the units are fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, based on past inspections of the facility continued compliance is expected.

The following condition will continue to be listed on the facility-wide permit to ensure compliance:

- *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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

No increase in emissions will occur due to the proposed modifications in this project. The permitted furnace production limits are not being changed, and the proposed modifications will not affect any of the stack parameters.

Therefore, since this project does not have a change in the permitted furnace production limits or changes in stack parameters no RMR is required.

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.

Particulate matter (PM) emissions are not expected to exceed 0.1 grains/dscf. Therefore, compliance with District Rule 4201 requirements is expected and a permit condition will be listed on each permit as follows:

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

Rule 4202 Particulate Matter – Emission Rate

Per Sec. 4.1, the particulate matter emissions from any source operation shall not exceed the allowable hourly emission rate (E) as calculated using the following formulas:

$$E \text{ (lb/hr)} = 3.59 P^{0.62} \text{ for process rates } < 30 \text{ tons/hr}$$
$$E \text{ (lb/hr)} = 17.31 P^{0.16} \text{ for process rates } > 30 \text{ tons/hr}$$

Where P = process weight in tons/hr

N-1662-1: Glass Furnace #1

Hourly Process Rate = 520.1 tons/day ÷ 24 hr/day = 21.67 tons/hr

$$\begin{aligned}\text{Rule 4202 emission limit} &= 3.59 * P^{0.62} \text{ (where P less than or equal to 30 tons/hr)} \\ &= 3.59 * (21.67)^{0.62} \\ &= 24.17 \text{ lb-PM/hr}\end{aligned}$$

Pursuant to AP-42 Table 11.15-3, the PM₁₀ fraction for a glass furnace manufacturing operation served by an electrostatic precipitator is 0.75 lb-PM₁₀/lb-PM. Using this data and the PM₁₀ emission rate from the furnace:

$$\begin{aligned}\text{PE PM} &= 369.3 \text{ lb-PM}_{10}/\text{day} \times \text{lb-PM}/0.75 \text{ lb-PM}_{10} \times \text{day}/24 \text{ hours} \\ \text{PE PM} &= 20.52 \text{ lb/hr}\end{aligned}$$

Since PE PM is less than the allowable value of 24.17 lb-PM/hr, the PM emissions are within allowable limits and compliance with the rule is expected for this furnace.

N-1662-2: Glass Furnace #2

Hourly Process Rate = 430 tons/day ÷ 24 hr/day = 17.92 tons/hr

$$\begin{aligned}\text{Rule 4202 emission limit} &= 3.59 * P^{0.62} \text{ (where P less than or equal to 30 tons/hr)} \\ &= 3.59 * (17.92)^{0.62} \\ &= 21.49 \text{ lb-PM/hr}\end{aligned}$$

Pursuant to AP-42 Table 11.15-3, the PM₁₀ fraction for a glass furnace manufacturing operation served by an electrostatic precipitator is 0.75 lb-PM₁₀/lb-PM. Using this data and the PM₁₀ emission rate from the furnace:

$$\begin{aligned}\text{PE PM} &= 305.3 \text{ lb-PM}_{10}/\text{day} \times \text{lb-PM}/0.75 \text{ lb-PM}_{10} \times \text{day}/24 \text{ hours} \\ \text{PE PM} &= 16.96 \text{ lb/hr}\end{aligned}$$

Since PE PM is less than the allowable value of 21.49 lb-PM/hr, the PM emissions are within allowable limits and compliance with the rule is expected for this furnace.

N-1662-3: Glass Furnace #3

Hourly Process Rate = 352.1 tons/day ÷ 24 hr/day = 14.67 tons/hr

$$\begin{aligned}\text{Rule 4202 emission limit} &= 3.59 * P^{0.62} \text{ (where P less than or equal to 30 tons/hr)} \\ &= 3.59 * (14.67)^{0.62} \\ &= 18.98 \text{ lb-PM/hr}\end{aligned}$$

Pursuant to AP-42 Table 11.15-3, the PM₁₀ fraction for a glass furnace manufacturing operation served by an electrostatic precipitator is 0.75 lb-PM₁₀/lb-PM. Using this data and the PM₁₀ emission rate from the furnace:

$$\begin{aligned} \text{PE PM} &= 250.0 \text{ lb-PM}_{10}/\text{day} \times \text{lb-PM}/0.75 \text{ lb-PM}_{10} \times \text{day}/24 \text{ hours} \\ \text{PE PM} &= 13.89 \text{ lb/hr} \end{aligned}$$

Since PE PM is less than the allowable value of 18.98 lb-PM/hr, the PM emissions are within allowable limits and compliance with the rule is expected for this furnace.

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO₂, NO₂, 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.

Per Section 3.1 defines fuel burning equipment as any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. The glass furnaces use direct heat transfer; therefore, this rule is not applicable to the glass furnaces.

Rule 4354 Glass Melting Furnaces

The purpose of this rule is to limit emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), oxides of sulfur (SO_x), and particulate matter (PM₁₀) from glass melting furnaces.

NO_x Emission Limits

Section 5.1.1 identifies NO_x emission limits for glass melting furnaces. The following applicable emission limits pursuant to Section 5.1 for glass furnaces are:

Table 1 – NO_x Emission Limits (lb/ton glass produced)			
Furnace Type	Tier 2 NO_x Limit	Tier 3 NO_x Limit	Tier 4 NO_x Limit
Container Glass	4.0 ^A	1.5 ^B	N/A

^A Block 24-hour average

^B Rolling 30-day average

Section 5.1.3 states instead of each furnace individually meeting the applicable Table 1 Tier 3 NO_x limit, an operator of multiple furnaces or a furnace battery may choose to meet the applicable emission limit by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for Tier 3 NO_x.

Pursuant to section 9.7.1, if the operator chooses to treat the furnaces as a furnace battery, the furnace shall be subject to a 10% air quality benefit in accordance with 40 CFR Part 51 Subpart U. The maximum emission rate shall be at least 10% lower than the applicable Tier 3 emission rate from Section 5.1.

Gallo Glass operates these furnaces as a furnace battery. Therefore, the furnace battery must meet an emission limit of:

$$\text{NO}_x \text{ Limit} = 1.5 \text{ lb/ton} - 1.5 \text{ lb/ton} \times 0.1 = 1.4 \text{ lb/ton (using District rounding procedures)}$$

The furnace battery is limited to a NO_x limit of 1.3 lb/ton. Therefore, compliance is expected.

CO and VOC Emission Limits

Section 5.2.1 identifies CO and VOC emission limits for glass melting furnaces. The following applicable emission limits pursuant to Section 5.2 for glass furnaces are:

Table 2 – CO and VOC Emission Limits – rolling three hour average (ppmv) limits are referenced at 8% O₂ and dry stack conditions)			
Furnace Type	Firing Technology	CO Limit	VOC Limit
Container Glass or Fiberglass	100% air fired furnace	300 ppmv	20 ppmv
	Oxygen-assisted or Oxy-fuel furnace	1.0 lb/ton glass produced	0.25 lb/ton glass produced

Section 5.2.1 states on and after January 1, 2009, instead of each furnace individually meeting the applicable CO or VOC or both emission limit in Table 2, an operator may choose to meet the CO or VOC or both emission limit for multiple furnaces or furnace batteries by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for CO emissions or VOC emissions or both.

Pursuant to section 9.7.1, if the operator chooses to treat the furnaces as a furnace battery, the furnace shall be subject to a 10% air quality benefit in accordance with 40 CFR Part 51 Subpart U.

Gallo Glass operates these furnaces as a furnace battery. Therefore, the furnace battery must meet an emission limit of:

$$\text{CO Limit} = 1.0 \text{ lb/ton} - 1.0 \text{ lb/ton} \times 0.1 = 0.9 \text{ lb/ton (using District rounding procedures)}$$

$$\text{VOC Limit} = 0.25 \text{ lb/ton} - 0.25 \text{ lb/ton} \times 0.1 = 0.23 \text{ lb/ton (using District rounding procedures)}$$

The proposed emission limits are lower than the above CO and VOC limit. Therefore, compliance is expected.

SOx Emission Limits

Section 5.3.2 identifies SOx emission limits for glass melting furnaces. The following applicable emission limits pursuant to Section 5.2 for glass furnaces are:

Table 3 – SOx Emission Limits (lb/ton glass produced)		
Furnace Type	Firing Technology	SOx Limit
Container Glass	Oxy-fuel furnaces and $\geq 25.0\%$ of total cullet is mixed color cullet	1.1 ^B
	All other container glass furnaces	0.90 ^B

^B Rolling 30-day average

Section 5.3.5 states instead of each furnace individually meeting the applicable SOx limit in Table 3, an operator may choose to meet the SOx limit for multiple furnaces or furnace batteries by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for SOx emissions.

Pursuant to section 9.7.1, if the operator chooses to treat the furnaces as a furnace battery, the furnace shall be subject to a 10% air quality benefit in accordance with 40 CFR Part 51 Subpart U.

Gallo Glass operates these furnaces as a furnace battery. Therefore, the furnace battery must meet an emission limit of:

SOx Limit = 1.1 lb/ton – 1.1 lb/ton x 0.1 = 0.99 lb/ton (using District rounding procedures), for units with > 25.0% color cullet

SOx Limit = 0.90 lb/ton – 0.90 lb/ton x 0.1 = 0.81 lb/ton (using District rounding procedures), for units with < 25.0% color cullet

The applicant is proposing the above emission limits for this operation; therefore, compliance is expected.

PM₁₀ Emission Limits

Section 5.4.1 identifies PM₁₀ emission limits for glass melting furnaces. The following applicable emission limits pursuant to Section 5.1 for glass furnaces are:

Table 4 – PM ₁₀ Emission Limits (lb/ton glass produced) Block 24-hour average		
Furnace Type	Firing Technology	PM ₁₀ Limit
Container Glass	All technologies	0.50

Section 5.4.2 states instead of each furnace individually meeting the applicable PM₁₀ limit in Table 4, an operator may choose to meet the PM₁₀ limit for multiple furnaces or furnace batteries by considering the multiple furnaces or furnace battery as a single unit. An operator choosing this option shall conform to the provisions of Sections 9.6 through 9.7.8.5 for PM₁₀ emissions.

Pursuant to section 9.7.1, if the operator chooses to treat the furnaces as a furnace battery, the furnace shall be subject to a 10% air quality benefit in accordance with 40 CFR Part 51 Subpart U.

PM₁₀ Limit = 0.50 lb/ton – 0.50 lb/ton x 0.1 = 0.45 lb/ton (using District rounding procedures)

The applicant is proposing the above emission limit for this unit; therefore, compliance is expected.

Start-up Requirements

Section 5.5.1 requires that the operator shall submit a request for a start-up exemption to the APCO in conjunction with or in advance of an application for Authority to Construct (ATC) associated with a furnace rebuild. This project is not a furnace rebuild and the burners will be installed while the furnaces are in operation. The facility is not requesting a start-up exemption for this project. Therefore, the start-up requirements do not apply to this permitting action.

Shutdown Requirements

Section 5.6.1 requires that the duration of shutdown, as measured from the time the furnace operations drop below the idle threshold specified in Section 3.17 to when all emissions from the furnace cease, shall not exceed 20 days.

Section 5.6.2 requires that the emission control system shall be in operation whenever technologically feasible during shutdown to minimize emissions.

The following conditions will be listed on the each Authority to Construct permit:

- *The permittee shall notify the District at least 24 hours prior to initiating idling, shutdown, or startup of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354]*
- *The emission control systems shall be in operation whenever conditions are consistent with equipment manufacturer's specifications during startup, idling and shutdown periods. [District Rule 4354]*
- *The duration of a furnace shutdown shall not exceed 20 days, measured from the time furnace operations drop below the idle threshold specified in Section 3.17 of District Rule 4354 to when all emissions from the furnace cease. [District Rule 4354]*

Idling Requirements

Section 5.7.1 requires that the emission control system shall be in operation whenever technologically feasible during idling to minimize emissions.

Section 5.7.2 requires that the NO_x , SO_x , PM_{10} , CO and VOC, and emissions during idling shall not exceed the amount as calculated using the following equation:

$$E_{i,\text{max}} = E_i * \text{Capacity}$$

Where,

$E_{i,\text{max}}$ = maximum daily emission of pollutant i during idling, in pounds pollutant per day;

E_i = Applicable emission limit from Table 1, Table 2, Table 3, or Table 4 for pollutant i, in pounds pollutant per ton glass produced;

Capacity = Furnace's permitted glass production capacity in tons glass produced per day.

The following conditions will be listed on each Authority to Construct permit:

- *The permittee shall notify the District at least 24 hours prior to initiating idling, shutdown, or startup of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354]*
- *The emission control systems shall be in operation whenever conditions are consistent with equipment manufacturer's specifications during startup, idling and shutdown periods. [District Rule 4354]*
- *NO_x , CO, VOC, SO_x , and PM_{10} emissions during idling shall not exceed the amount as calculated using the following equation: NO_x , CO, VOC, SO_x , or PM_{10} (lb/day) = Applicable emission limit (lb/ton) x Furnace permitted production capacity (tons/day). [District Rule 4354]*

Monitoring Requirements

NO_x Emission Monitoring Requirements

Section 5.9.1 requires that the operator of any glass melting furnace shall implement a NO_x CEMS that is approved, in writing, by the APCO and EPA, and that meets the requirements of Section 6.6. For a furnace battery, a single CEMS may be used to determine the total NO_x emissions from all the furnaces provided the emission measurements are made at the common stack. The furnace battery at this facility has a NO_x CEMS. Therefore, the requirements of this section of the rule are satisfied. The following conditions will be included on each Authority to Construct permit:

- *The furnace shall have continuous monitoring systems for NO_x and SO_x. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9]*
- *One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354]*

CO and VOC Emission Monitoring Requirements

Section 5.9.2 requires that for each furnace subject to Table 2 CO limits, the operator shall implement a CO and VOC CEMS that meets the requirements of Section 6.6.1, and that is approved, in writing, by the APCO. In lieu of installing and operating a CEMS for CO or CEMS for VOC or both, an operator may propose key system operating parameter(s) and frequency of monitoring and recording. The alternate monitoring shall meet the requirements of Section 6.6.2. The operator shall obtain approval of the APCO and EPA for the specific key system operating parameter(s), monitoring frequency, and recording frequency used by the operator to monitor CO/VOC emissions. The operator shall monitor approved key system operating parameter(s) at the approved monitoring frequency to ensure compliance with the emission limit(s) during periods of emission-producing activities. Acceptable range(s) for key system operating parameter(s) shall be demonstrated through source test.

Section 5.9.2.4 states for the operator of multiple furnaces or a furnace battery utilizing Section 5.2.2 to comply with CO emission limits or VOC emission limits or both, a single parametric monitoring arrangement or a single CEMS may be used to determine the CO emissions or VOC emissions or both from all the furnaces provided that the multiple furnaces/furnace battery is subject to the provisions of Sections 9.6 through 9.7.8.5 and: For units using a CEMS - the emission measurements are made at the common stack; For units using a parametric monitoring arrangement – the key system operating parameters are representative of the combined exhaust stream.

The applicant is proposing to continue to monitor and record the oxygen to fuel ratio of the burners. The District has approved the monitoring of this key system operating parameter. The following condition will be listed on the permit to ensure compliance:

- *The oxygen to fuel ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test. [District Rule 4354]*

SOx Emission Monitoring Requirements

Section 5.9.3 requires for each furnace subject to Section 5.3, the operator to implement a SOx CEMS that meets the requirements of Section 6.6.1 and that is approved, in writing, by the APCO and EPA. In lieu of installing and operating a CEMS for SOx, an operator may propose key system operating parameter(s) and frequency of monitoring and recording. The alternate monitoring shall meet the requirements of Section 6.6.2. The operator shall obtain approval of the APCO and EPA for the specific key system operating parameter(s), monitoring frequency, and recording frequency used by the operator to monitor SOx emissions. The operator shall monitor approved key system operating parameter(s) at the approved monitoring frequency to ensure compliance with the emission limit(s) during periods of emission-producing activities. Acceptable range(s) for key system operating parameter(s) shall be demonstrated through source test.

Section 5.9.3.3 states for the operator of multiple furnaces or a furnace battery utilizing Section 5.3.4 to comply with SOx emission limits, a single parametric monitoring arrangement or a single CEMS may be used to determine the SOx emissions from all the furnaces provided that the multiple furnaces/furnace battery is subject to the provisions of Sections 9.6 through 9.7.8.5 and one of the following: For units using a CEMS - the emission measurements are made at the common stack; For units using a parametric monitoring arrangement - the key system operating parameters are representative of the combined exhaust stream.

The facility uses a CEMS on the common stack to show compliance with the SOx limits for the furnace battery. The following conditions will be included on each Authority to Construct permit:

- *The furnace shall have continuous monitoring systems for NOx and SOx. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354]*
- *One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354]*

PM₁₀ Emission Monitoring Requirements

Section 5.9.4 requires the operator to propose key system operating parameter(s) and frequency of monitoring and recording. The parametric monitoring shall meet the requirements of Section 6.6.2. The operator shall obtain approval of the APCO and EPA for the specific key system operating parameter(s), monitoring frequency, and recording frequency used by the operator to monitor PM₁₀ emissions. The operator shall monitor approved key system operating parameter(s) at the approved monitoring frequency to ensure compliance with the emission limit(s) during periods of emission-producing activities. Acceptable range(s) for key system operating parameter(s) shall be demonstrated through source test. In lieu of parametric monitoring, the operator may elect to implement a PM₁₀ CEMS that meets the requirements of Section 6.6.1, and that is approved, in writing, by the APCO and EPA.

Section 5.9.4.3 states for the operator of multiple furnaces or a furnace battery utilizing Section 5.4.2 to comply with PM₁₀ emission limits, a single parametric monitoring arrangement or a single CEMS may be used to determine the total PM₁₀ emissions from all the furnaces provided that the multiple furnaces/furnace battery is subject to the provisions of Sections 9.6 through 9.7.8.5 and one of the following: For units using a CEMS - the emission measurements are made at the common stack; For units using a parametric monitoring arrangement - the key system operating parameters are representative of the combined exhaust stream.

In lieu of installing and operating a CEMS for PM₁₀, the operator has proposed to use parametric monitoring to show compliance with the Rule 4354 PM₁₀ monitoring requirements.

The permit currently requires monitoring and recording of the specific power of the electrostatic precipitator. Specific power is a measure of the voltage and current supplied to the electrostatic precipitator. The District has approved the monitoring and recording of this key system operating parameter. The following conditions will be included on each Authority to Construct permit:

- *Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354 and 40 CFR Part 64]*
- *The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rules 2520, §9.3.2 and 4354 and 40 CFR Part 64]*

Routine Maintenance of Add-On Emission Control Systems

Section 5.10 requires during routine maintenance of an add-on emission control system, an operator of a glass melting furnace subject to the provisions of Sections 5.1 through 5.4 is exempt from these limits if: Routine maintenance in each calendar year does not exceed 144 hours total for all add-on controls; and Routine maintenance is conducted in a manner consistent with good air pollution control practices for minimizing emissions.

The following condition will be included on each Authority to Construct permit:

- *The SO_x and PM₁₀ emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354]*

Administrative Requirements

Section 6.1 requires that each glass melting furnace's PTO shall include the furnace's permitted glass production capacity in units of tons of glass pulled per day as a permit condition.

Each furnace has the permitted glass production capacity in units of tons of glass pulled per day stated as a permit condition. Therefore, this section of the rule is satisfied.

Section 6.3.1 requires operators to maintain daily records of the following items:

- Total hours of operation;
- The quantity of glass pulled from each furnace;
- NO_x emission rate in lb/ton glass pulled;
- CO emission rate in units matching Table 2, if a CEMS is used;
- VOC emission rate in units matching Table 2, if a CEMS is used;
- SO_x emission rate in lb/ton glass pulled, if a CEMS is used;
- PM₁₀ emission rate in lb/ton glass pulled, if a CEMS is used;
- For container glass furnaces that are oxy-fuel fired:
 - The weight of mixed color mix cullet used;
 - The total amount of cullet used by weight; and
 - The ratio, expressed in percent, of mixed color mix weight to total cullet weight.

Section 6.3.2 requires for pollutants monitored using an approved parametric monitoring arrangement, operators shall record the operating values of the key system operating parameters at the approved recording frequency.

Section 6.3.3 requires that operators maintain records of the following items:

- Source tests and source test results;
- The acceptable range for each approved key system operating parameter, as established during source test;
- Maintenance and repair; and
- Malfunction

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

- *The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354 and 40 CFR Part 64]*
- *A daily record of the hours of operation, the amount of glass pulled from the furnace (in tons), the NO_x emissions (in lb/ton of glass pulled), the SO_x emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent) shall be kept. [District Rules 2201 and 4354]*
- *The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354]*
- *The permittee shall maintain daily records of the aggregated NO_x emissions. [District Rules 2520 and 4354]*
- *The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354]*
- *A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354]*
- *The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354 and 40 CFR Part 64]*

Section 6.3.4 requires that the operator retain records specified in Sections 6.3.1 through 6.3.3 for a period of five years; make the records available on site during normal business hours to the APCO, ARB, or EPA; and submit the records to the APCO, ARB, or EPA upon request.

The following condition will be included on each Authority to Construct permit:

- *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 2201 and 4354 and 40 CFR Part 64]*

Compliance Source Testing

Section 6.4.1 requires that each glass melting furnace or a furnace battery to be source tested at least once every calendar year, but not more than every 18 months and not sooner than every 6 months to demonstrate compliance with the applicable requirements of Section 5.0. Sources exempt under Section 4.3 are not required to source test for the exempted pollutants.

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

- *Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted within 60 days after the end of the start-up exemption, and at least once every calendar year thereafter. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5]*
- *Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081]*
- *Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081]*
- *PM and PM10 source testing shall be conducted down stream of the particulate matter control equipment in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081]*

Section 6.4.2 requires that source test conditions to be representative of normal operations, but not less than 60 percent of the permitted glass production capacity.

The following condition will be included on each Authority to Construct permit:

- *Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354]*

Section 6.4.3 requires that for operators using alternative monitoring systems, during the source test, the operator shall monitor and record, at a minimum, all operating data for each parameter, fresh feed rate, and flue gas flow rate and submit this data with the test report.

The facility does not use alternative monitoring systems. Therefore, the requirements of this section are not applicable.

Section 6.4.4 requires that during source testing in accordance with Section 6.4.1, the arithmetic average of three (3) 30-consecutive-minute test runs shall be used to determine compliance with NOx, CO, VOC, and SOx emission limits.

The following condition will be included on each Authority to Construct permit:

- *For source testing purposes, the arithmetic average of three 30-consecutive-minute test runs shall be used to determine compliance with NO_x, CO, VOC, and SO_x emission limits. [District Rule 4354]*

Section 6.4.5 requires that during source testing in accordance with Section 6.4.1, the arithmetic average of three (3) 60-consecutive-minute test runs shall be used to determine compliance with PM₁₀ emission limits.

The following condition will be included on each Authority to Construct permit:

- *For source testing purposes, the arithmetic average of three 60-consecutive-minute test runs shall be used to determine compliance with PM₁₀ emission limits. [District Rule 4354]*

Section 6.4.6 requires that for a given pollutant, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit.

The following condition will be included on each Authority to Construct permit:

- *For source testing purposes, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354]*

Test Methods

Section 6.5 requires that compliance with the requirements of Section 5.0 shall be determined in accordance with the following source test procedures or their equivalents as approved by the EPA, ARB, and the APCO:

- Oxides of nitrogen – EPA Method 7E, EPA Method 19, or ARB Method 100.
- Carbon monoxide (ppmv) – EPA Method 10, or ARB Method 100.
- Volatile Organic Compound (ppmv) – EPA Method 25A expressed in terms of carbon or ARB Method 100. EPA Method 18 or ARB Method 422 shall be used to determine emissions of exempt compounds.
- Stack gas oxygen, carbon dioxide, excess air, and dry molecular weight EPA Method 3 or 3A, or ARB Method 100.
- Stack gas velocity and volumetric flow rate – EPA Method 2.
- Oxides of sulfur – EPA Method 6C, EPA Method 8, or ARB Method 100.
- Filterable PM₁₀ emissions - EPA Method 5; EPA Method 201; or EPA Method 201A. An operator choosing EPA Method 5 shall count all PM collected as PM₁₀.
- Condensable PM 10 emissions - EPA Method 202.

The following condition will be included on each Authority to Construct permit:

- *Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted within 60 days after the end of the start-up exemption, and at least once every calendar year thereafter. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5]*

Emissions Monitoring Systems

Section 6.6.1 of this rule requires that an approved CEMS shall comply with all of the following requirements:

- 40 CFR Part 51;
- 40 CFR Part 60.7 (Notification and Record Keeping);
- 40 CFR Part 60.13 (Monitoring Requirements);
- 40 CFR Part 60 Appendix B (Performance Specifications);
- 40 CFR Part 60 Appendix F (Quality Assurance Procedures); and
- Applicable sections of Rule 1080 (Stack Monitoring).

The following condition will be included on each Authority to Construct permit:

- *One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1]*
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Section 6.6.2 requires an approved alternate emission monitoring method to be capable of determining the furnace emissions on an hourly basis and comply with 40 CFR 64 (Compliance Assurance Monitoring) and 40 CFR 60.13 (Monitoring Requirements).

The facility does not use alternate emission monitoring systems. Therefore, the requirements of this section are not applicable.

Notifications and Records for Start-up, Shutdown, and Idling

Section 6.7 requires the operator of any glass melting furnace claiming an exemption under Section 4.4 notify the APCO by telephone at least 24 hours before initiating idling, shutdown, or start-up. The notification shall include: date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The operator shall notify the APCO by telephone within 24 hours after completion of the start-up, shutdown, or

idling. The operator claiming exemption under Section 4.4 shall maintain all operating records/support documentation necessary to support claim of exemption. Records/support documentation required by Section 6.7.3 shall meet the following requirements: the records/support documentation shall be retained on-site for five years; the records/support documentation shall be made available to the APCO, ARB, or EPA during normal business hours; and the records/support documentation shall be submitted to the APCO, ARB, or EPA upon request.

The following condition will be included on each Authority to Construct permit:

- *The permittee shall notify the District at least 24 hours prior to initiating idling, shutdown, or startup of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354]*

Calculations

Section 8.1 requires the pollutant mass emission rate in lb/hr shall be converted to lb pollutant/ton of glass pulled according to the following equation:

$$lb\ emitted/ton\ glass\ pulled = \frac{lb/hr\ emitted}{Pull\ rate\ in\ tons/hr}$$

Section 8.3 requires the operator of a oxy-fuel fired furnace, oxygen-assisted combustion furnace, or a furnace utilizing any fuel oxidants other than 100% ambient air, to submit to the APCO, ARB, and EPA for approval any methodologies and data that will be used to calculate emission rates for NO_x, CO, and VOC if the methods are different than specified in Sections 8.1 or 8.2. Unless the operator received prior written approval from APCO, ARB, and EPA of all the calculation methods to be used that are different than specified in Sections 8.1 or 8.2, compliance with the emissions limits cannot be fully demonstrated, and it shall be deemed to be a violation of the rule.

The following condition will be included on each Authority to Construct permit:

- *The pollutant mass emission rate in lb/hr shall be converted to lb pollutant/ton of glass pulled as specified in Rule 4354. The operator of a oxy-fuel fired furnace, oxygen-assisted combustion furnace, or a furnace utilizing any fuel oxidants other than 100% ambient air, shall submit to the APCO, ARB, and EPA for approval any methodologies and data that will be used to calculate emission rates for NO_x, CO, and VOC if the methods are different from those specified in Rule 4354. Unless the operator received prior written approval from APCO, ARB, and EPA of all the calculation methods to be used that are different from those specified in Rule 4354, compliance with the emissions limits cannot be fully demonstrated, and it shall be deemed to be a violation of the rule. [District Rule 4354]*

Continued compliance with the requirements of this rule is expected.

Rule 4801 Sulfur Compounds

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 calculated as SO₂, on a dry basis averaged over 15 consecutive minutes.

Compliance with this requirement was determined in the evaluation for District Project N-1141107. The proposed changes to these units will not affect that prior determination; therefore, continued compliance is expected.

California Health & Safety Code 42301.6 (School Notice)

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

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

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

This project will not result in an increase in fuel usage and product throughput; therefore, no GHG emissions increase is expected from this project. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant

effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

X. RECOMMENDATION

Compliance with all applicable rules and regulations is expected. Issue Authorities to Construct N-1662-1-17, '-2-19, and '-3-18 subject to the permit conditions on the attached draft Authority to Construct in Attachment I.

XI. BILLING INFORMATION

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Current Fee Schedule
N-1662-1-17	3020-02-H	75 MMBtu/hr burner	3020-02-H
N-1662-2-19	3020-02-H	75 MMBtu/hr burner	3020-02-H
N-1662-3-18	3020-02-H	75 MMBtu/hr burner	3020-02-H

Attachments

- I Draft Authority to Construct permits:
- II: Current Permits to Operate
- III: BACT Guideline 1.5.9 and Top-down BACT Analysis
- IV: Quarterly Net Emission Change Calculations

ATTACHMENT I

Draft Authority to Construct Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-1662-1-17

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY

MAILING ADDRESS: PO BOX 1230
MODESTO, CA 95353

LOCATION: 605 S SANTA CRUZ AVE
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR. TO REPLACE THE EXISTING MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY) WITH NORTH AMERICAN PRAXIAR GENIII WIDEFLAME GAS OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. {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
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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-1662-1-17 Feb 16 2016 9:34AM - HARADERJ Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

5. Particulate matter emissions shall not exceed 0.1 grain/dscf in concentration. [District Rule 4201 and Stanislaus County Rule 404] Federally Enforceable Through Title V Permit
6. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The furnace shall have continuous monitoring systems for NO_x and SO_x. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9] Federally Enforceable Through Title V Permit
8. One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1] Federally Enforceable Through Title V Permit
9. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
10. The common exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO_x, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
11. The permittee shall notify the District at least 24 hours prior to initiating idling, shutdown, or startup of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354] Federally Enforceable Through Title V Permit
12. The emission control systems shall be in operation whenever conditions are consistent with equipment manufacturer's specifications during startup, idling and shutdown periods. [District Rule 4354] Federally Enforceable Through Title V Permit
13. The duration of a furnace shutdown shall not exceed 20 days, measured from the time furnace operations drop below the idle threshold specified in Section 3.17 of District Rule 4354 to when all emissions from the furnace cease. [District Rule 4354] Federally Enforceable Through Title V Permit
14. NO_x, CO, VOC, SO_x, and PM₁₀ emissions during idling shall not exceed the amount as calculated using the following equation: NO_x, CO, VOC, SO_x, or PM₁₀ (lb/day) = Applicable emission limit (lb/ton) x Furnace permitted production capacity (tons/day). [District Rule 4354] Federally Enforceable Through Title V Permit
15. The oxygen to fuel ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test. [District Rule 4354] Federally Enforceable Through Title V Permit
16. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation $E=3.59P^{0.62}$ ($P < 30$ tph) or $E=17.31P^{0.16}$ ($P > 30$ tph). [District Rule 4202] Federally Enforceable Through Title V Permit
17. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

18. Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted within 60 days after the end of the start-up exemption, and at least once every calendar year thereafter. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5] Federally Enforceable Through Title V Permit
19. Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081] Federally Enforceable Through Title V Permit
21. Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
22. For source testing purposes, the arithmetic average of three 30-consecutive-minute test runs shall be used to determine compliance with NOx, CO, VOC, and SOx emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
23. For source testing purposes, the arithmetic average of three 60-consecutive-minute test runs shall be used to determine compliance with PM10 emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
24. For source testing purposes, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354] Federally Enforceable Through Title V Permit
25. PM and PM10 source testing shall be conducted downstream of the electrostatic precipitator and the ceramic filter dust collector in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081] Federally Enforceable Through Title V Permit
26. An annual Relative Accuracy Test Audit (RATA) shall be performed on the continuous monitoring system as outlined in 40 CFR Part 60 Appendix B. [District Rule 1080] Federally Enforceable Through Title V Permit
27. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
28. An exceedance of a NOx or SOx emission limit as indicated by the CEMS shall be reported by the operator to the APCO within 24 hours. The notification shall include 1) name and location of the facility, 2) identification of furnace(s) causing the exceedances, 3) calculation of actual NOx, CO and VOC emissions, and 4) corrective actions and schedules to complete the work. [District Rule 1080 and Stanislaus County Rule 1080] Federally Enforceable Through Title V Permit
29. {2251} The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
30. Records shall be maintained and shall include: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

31. The operator shall notify the APCO no later than one hour after the detection of a breakdown of the CEMS. The operator shall inform the APCO of the intent to shut down the CEMS at least 24 hours prior to the event. [District Rule 1100] Federally Enforceable Through Title V Permit
32. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit
33. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
34. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
35. Cylinder gas audits (GGAs) of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
36. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Stanislaus County Rule 404, District Rule 4202 and Stanislaus County Rule 405. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
37. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4801 and Stanislaus County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
38. The requirements of District Rule 4301 and Stanislaus County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
39. The requirements of 40 CFR Part 60 Subpart CC were determined not to apply to this unit because the unit was constructed prior to the effective date in the regulation and has not been modified (according to the definition of "modified in the regulation"). A permit shield is granted from these requirements. [District Rule 2520 Section 13.2] Federally Enforceable Through Title V Permit
40. The requirements of 40 CFR Part 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
41. Any glass melting furnace located at an Area Source of hazardous air pollutants shall comply with 40 CFR Part 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources). [40 CFR Part 63 Subpart SSSSSS] Federally Enforceable Through Title V Permit
42. The quantity of glass produced shall not exceed 520.1 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
43. Except during periods of startup, shutdown, and idling, NOx emissions shall not exceed 1.3 pounds per ton of glass produced (over a rolling 30-day average). This performance based limit is to enforce the NOx emission reductions granted by certificate number N-106-2. Any CEM measurement greater than 1.3 lb-NOx/ton of glass produced for each 30-day rolling average constitutes a violation of this emission limit. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

44. Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.04 pounds per ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by certificate number N-106-3. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
46. Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
47. Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
48. Except during periods of startup, shutdown, idling, and during full or partial emission control system bypass episodes, PM10 emissions shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354] Federally Enforceable Through Title V Permit
49. The PM10 emissions, during full or partial emission control system bypass episodes for routine maintenance, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
50. The SOx and PM10 emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
51. The PM10 emissions shall not exceed 22,936 pounds during the first calendar quarter, 23,190 pounds during the second calendar quarter, 23,445 pounds during the third calendar quarter and 23,445 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District NSR Rule] Federally Enforceable Through Title V Permit
52. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR Part 61 Subpart N] Federally Enforceable Through Title V Permit
53. Each dust collector shall be maintained and operated in the range that optimizes control efficiency as recommended by the manufacturer. [District Rule 2201] Federally Enforceable Through Title V Permit
54. Each dust collectors cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
55. Material removed from each dust collector shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
56. Replacement filters numbering at least 10% of the total number of filters in the largest dust collector, and for each type of filter, shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit
57. Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
58. The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rule 2520 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

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59. The ceramic filter dust collector shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
60. Each of the furnace dust collectors shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201] Federally Enforceable Through Title V Permit
61. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 5 to 10 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
62. During operation of the furnace charger dust collectors, the pressure differential gauge reading for each dust collector shall be 2 to 8 inches of water column. [District Rule 2201] Federally Enforceable Through Title V Permit
63. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
64. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
65. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit
66. The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
67. Dust collector filters shall be inspected annually while in operation for evidence of particulate matter breakthrough and replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
68. Dust collector filters shall be inspected annually while not in operation for tears, scuffs, abrasions or hole that might interfere with the PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
69. Permittee shall keep a record of the daily hours of operation, the amount of glass pulled from the furnace (in tons), the NOx emissions (in lb/ton of glass pulled), the SOx emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
70. Permittee shall maintain records of the following: 1) Source tests and source test results, 2) the acceptable range for each approved key system operating parameter, as established during source tests, 3) The operating values of the key system operating parameters at the approved recording frequency, 4) any maintenance and repair, and 5) any malfunctions. [District Rule 4354] Federally Enforceable Through Title V Permit
71. The pollutant mass emission rate in lb/hr shall be converted to lb pollutant/ton of glass pulled as specified in Rule 4354. The operator of a oxy-fuel fired furnace, oxygen-assisted combustion furnace, or a furnace utilizing any fuel oxidants other than 100% ambient air, shall submit to the APCO, ARB, and EPA for approval any methodologies and data that will be used to calculate emission rates for NOx, CO, and VOC if the methods are different from those specified in Rule 4354. Unless the operator received prior written approval from APCO, ARB, and EPA of all the calculation methods to be used that are different from those specified in Rule 4354, compliance with the emissions limits cannot be fully demonstrated, and it shall be deemed to be a violation of the rule. [District Rule 4354] Federally Enforceable Through Title V Permit
72. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
73. The permittee shall maintain daily records of the aggregated NOx emissions. [District Rules 2520, 9.3.2 and 4354, 9.6.1 and 9.7] Federally Enforceable Through Title V Permit
74. The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit

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75. A record of the PM10 emissions from this unit, in pounds per calendar quarter, shall be kept. [District Rule 2201] Federally Enforceable Through Title V Permit
76. A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
77. The permittee shall keep a record of the cumulative annual hours of operation of the glass furnace on LPG fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
78. The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
79. The operator shall monitor and record the pressure differential gauge reading of the ceramic filter dust collector at least once during each day that the unit operates. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
80. Records of dust collector maintenance, inspections and repairs shall be maintained. The records shall include, date of inspection, change outs of filter media, corrective action taken ,and identification of the individual performing the inspection. [District Rules 2201 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
81. 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 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-1662-2-19

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY

MAILING ADDRESS: PO BOX 1230
MODESTO, CA 95353

LOCATION: 605 S SANTA CRUZ AVE
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF GLASS FURNACE #2 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR. TO REPLACE THE EXISTING MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY) WITH NORTH AMERICAN PRAXIAR GENIII WIDEFLAME GAS OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct N-1662-2-17 shall be implemented prior to or simultaneously with this Authority to Construct permit. [District Rule 2201]

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 Marjollet, Director of Permit Services

N-1662-2-19 Feb 15 2019 8:34AM - HARADERU - Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

4. {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
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. Particulate matter emissions shall not exceed 0.1 grain/dscf in concentration. [District Rule 4201 and Stanislaus County Rule 404] Federally Enforceable Through Title V Permit
7. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The furnace shall have continuous monitoring systems for NOx and SOx. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9] Federally Enforceable Through Title V Permit
9. One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1] Federally Enforceable Through Title V Permit
10. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
11. The common exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
12. The permittee shall notify the District at least 24 hours prior to initiating idling, shutdown, or startup of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354] Federally Enforceable Through Title V Permit
13. The emission control systems shall be in operation whenever conditions are consistent with equipment manufacturer's specifications during startup, idling and shutdown periods. [District Rule 4354] Federally Enforceable Through Title V Permit
14. The duration of a furnace shutdown shall not exceed 20 days, measured from the time furnace operations drop below the idle threshold specified in Section 3.17 of District Rule 4354 to when all emissions from the furnace cease. [District Rule 4354] Federally Enforceable Through Title V Permit
15. NOx, CO, VOC, SOx, and PM10 emissions during idling shall not exceed the amount as calculated using the following equation: $\text{NOx, CO, VOC, SOx, or PM10 (lb/day)} = \text{Applicable emission limit (lb/ton)} \times \text{Furnace permitted production capacity (tons/day)}$. [District Rule 4354] Federally Enforceable Through Title V Permit
16. The oxygen to fuel ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test. [District Rule 4354] Federally Enforceable Through Title V Permit

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17. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation $E=3.59P^{0.62}$ ($P < 30$ tph) or $E=17.31P^{0.16}$ ($P > 30$ tph). [District Rule 4202] Federally Enforceable Through Title V Permit
18. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit
19. Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted within 60 days after the end of the start-up exemption, and at least once every calendar year thereafter. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5] Federally Enforceable Through Title V Permit
20. Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081] Federally Enforceable Through Title V Permit
21. Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081] Federally Enforceable Through Title V Permit
22. Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
23. For source testing purposes, the arithmetic average of three 30-consecutive-minute test runs shall be used to determine compliance with NOx, CO, VOC, and SOx emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
24. For source testing purposes, the arithmetic average of three 60-consecutive-minute test runs shall be used to determine compliance with PM10 emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
25. For source testing purposes, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354] Federally Enforceable Through Title V Permit
26. PM and PM10 source testing shall be conducted downstream of the electrostatic precipitator and the ceramic filter dust collector in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081] Federally Enforceable Through Title V Permit
27. An annual Relative Accuracy Test Audit (RATA) shall be performed on the continuous monitoring system as outlined in 40 CFR Part 60 Appendix B. [District Rule 1080] Federally Enforceable Through Title V Permit
28. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
29. An exceedance of a NOx or SOx emission limit as indicated by the CEMS shall be reported by the operator to the APCO within 24 hours. The notification shall include 1) name and location of the facility, 2) identification of furnace(s) causing the exceedances, 3) calculation of actual NOx, CO and VOC emissions, and 4) corrective actions and schedules to complete the work. [District Rule 1080 and Stanislaus County Rule 1080] Federally Enforceable Through Title V Permit

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30. {2251} The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
31. Records shall be maintained and shall include: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080] Federally Enforceable Through Title V Permit
32. The operator shall notify the APCO no later than one hour after the detection of a breakdown of the CEMS. The operator shall inform the APCO of the intent to shut down the CEMS at least 24 hours prior to the event. [District Rule 1100] Federally Enforceable Through Title V Permit
33. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit
34. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
35. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
36. Cylinder gas audits (GGAs) of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
37. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Stanislaus County Rule 404, District Rule 4202 and Stanislaus County Rule 405. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
38. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4801 and Stanislaus County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
39. The requirements of District Rule 4301 and Stanislaus County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
40. The requirements of 40 CFR Part 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
41. Any glass melting furnace located at an Area Source of hazardous air pollutants shall comply with 40 CFR Part 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources). [40 CFR Part 63 Subpart SSSSSS] Federally Enforceable Through Title V Permit
42. The quantity of glass produced shall not exceed 430 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

43. Except during periods of startup, shutdown, and idling, NO_x emissions shall not exceed 1.3 pounds per ton of glass produced (over a rolling 30-day average). This performance based limit is to enforce the NO_x emission reductions granted by certificate number N-54-2. Any CEM measurement greater than 1.3 lb-NO_x/ton of glass produced for each 30-day rolling average constitutes a violation of this emission limit. [District Rule 2201] Federally Enforceable Through Title V Permit
44. Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.2 pounds per ton of glass produced. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
46. Except during periods of startup, shutdown, and idling, the combined SO_x emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
47. Except during periods of startup, shutdown, and idling, the combined SO_x emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
48. Except during periods of startup, shutdown, idling, and during full or partial emission control system bypass episodes, PM₁₀ emissions shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354] Federally Enforceable Through Title V Permit
49. The PM₁₀ emissions, during full or partial emission control system bypass episodes for routine maintenance, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
50. PM emissions from the glass furnace shall not exceed 1 lb of particulate matter per ton of glass produced. [40 CFR 60.293(b)(1)] Federally Enforceable Through Title V Permit
51. The SO_x and PM₁₀ emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
52. The PM₁₀ emissions shall not exceed 18,712 pounds during the first calendar quarter, 18,919 pounds during the second calendar quarter, 19,127 pounds during the third calendar quarter and 19,128 pounds during the fourth calendar quarter. These limits are to enforce the PM₁₀ emission reductions granted by certificate number N-161-4. [District NSR Rule] Federally Enforceable Through Title V Permit
53. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR Part 61 Subpart N] Federally Enforceable Through Title V Permit
54. Each dust collector shall be maintained and operated in the range that optimizes control efficiency as recommended by the manufacturer. [District Rule 2201] Federally Enforceable Through Title V Permit
55. Each dust collectors cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
56. Material removed from each dust collector shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
57. Replacement filters numbering at least 10% of the total number of filters in the largest dust collector, and for each type of filter, shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit
58. Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354, 40 CFR 60.293(d) and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

59. The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rule 2520, §9.3.2, 40 CFR 60.293(d), and 40 CFR Part 64] Federally Enforceable Through Title V Permit
60. The ceramic filter dust collector shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
61. Each of the furnace dust collectors shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201] Federally Enforceable Through Title V Permit
62. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 5 to 10 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
63. During operation of the furnace charger dust collectors, the pressure differential gauge reading for each dust collector shall be 2 to 8 inches of water column. [District Rule 2201] Federally Enforceable Through Title V Permit
64. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
65. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
66. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit
67. The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354, 40 CFR 60.293(d), and 40 CFR Part 64] Federally Enforceable Through Title V Permit
68. Dust collector filters shall be inspected annually while in operation for evidence of particulate matter breakthrough and replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
69. Dust collector filters shall be inspected annually while not in operation for tears, scuffs, abrasions or hole that might interfere with the PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
70. Permittee shall keep a record of the daily hours of operation, the amount of glass pulled from the furnace (in tons), the NO_x emissions (in lb/ton of glass pulled), the SO_x emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
71. Permittee shall maintain records of the following: 1) Source tests and source test results, 2) the acceptable range for each approved key system operating parameter, as established during source tests, 3) The operating values of the key system operating parameters at the approved recording frequency, 4) any maintenance and repair, and 5) any malfunctions. [District Rule 4354] Federally Enforceable Through Title V Permit
72. The pollutant mass emission rate in lb/hr shall be converted to lb pollutant/ton of glass pulled as specified in Rule 4354. The operator of a oxy-fuel fired furnace, oxygen-assisted combustion furnace, or a furnace utilizing any fuel oxidants other than 100% ambient air, shall submit to the APCO, ARB, and EPA for approval any methodologies and data that will be used to calculate emission rates for NO_x, CO, and VOC if the methods are different from those specified in Rule 4354. Unless the operator received prior written approval from APCO, ARB, and EPA of all the calculation methods to be used that are different from those specified in Rule 4354, compliance with the emissions limits cannot be fully demonstrated, and it shall be deemed to be a violation of the rule. [District Rule 4354]
73. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
74. The permittee shall maintain daily records of the aggregated NO_x emissions. [District Rules 2520, 9.3.2 and 4354, 9.6.1 and 9.7] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

75. The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
76. A record of the PM10 emissions from this unit, in pounds per calendar quarter, shall be kept. [District Rule 2201] Federally Enforceable Through Title V Permit
77. A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
78. The permittee shall keep a record of the cumulative annual hours of operation of the glass furnace on LPG fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
79. The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354, 40 CFR 60.293(d), and 40 CFR Part 64] Federally Enforceable Through Title V Permit
80. The operator shall monitor and record the pressure differential gauge reading of the ceramic filter dust collector at least once during each day that the unit operates. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
81. Records of dust collector maintenance, inspections and repairs shall be maintained. The records shall include, date of inspection, change outs of filter media, corrective action taken, and identification of the individual performing the inspection. [District Rules 2201 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
82. 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 N1141107 and N-1142733, which are the public notice and modeling requirements of 40 CFR 52.21 (June 16, 2011 version). Actual PM and PM₁₀ emissions for the furnace may be calculated using source test results and the throughput of the glass furnace. [District Rule 2201] Federally Enforceable Through Title V Permit
83. 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 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1662-3-18

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY

MAILING ADDRESS: PO BOX 1230
MODESTO, CA 95353

LOCATION: 605 S SANTA CRUZ AVE
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF GLASS FURNACE #3 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR; TO REPLACE THE EXISTING MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY) WITH NORTH AMERICAN PRAXIAR GENIII WIDEFLAME GAS OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. {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
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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-1662-3-18 / Feb. 16 2018 8:34AM - HARADERJ - Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

5. Particulate matter emissions shall not exceed 0.1 grain/dscf in concentration. [District Rule 4201 and Stanislaus County Rule 404] Federally Enforceable Through Title V Permit
6. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The furnace shall have continuous monitoring systems for NO_x and SO_x. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9] Federally Enforceable Through Title V Permit
8. One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1] Federally Enforceable Through Title V Permit
9. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
10. The common exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO_x, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
11. The permittee shall notify the District at least 24 hours prior to initiating idling, shutdown, or startup of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354] Federally Enforceable Through Title V Permit
12. The emission control systems shall be in operation whenever conditions are consistent with equipment manufacturer's specifications during startup, idling and shutdown periods. [District Rule 4354] Federally Enforceable Through Title V Permit
13. The duration of a furnace shutdown shall not exceed 20 days, measured from the time furnace operations drop below the idle threshold specified in Section 3.17 of District Rule 4354 to when all emissions from the furnace cease. [District Rule 4354] Federally Enforceable Through Title V Permit
14. NO_x, CO, VOC, SO_x, and PM₁₀ emissions during idling shall not exceed the amount as calculated using the following equation: NO_x, CO, VOC, SO_x, or PM₁₀ (lb/day) = Applicable emission limit (lb/ton) x Furnace permitted production capacity (tons/day). [District Rule 4354] Federally Enforceable Through Title V Permit
15. The oxygen to fuel ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test. [District Rule 4354] Federally Enforceable Through Title V Permit
16. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation $E=3.59P^{0.62}$ ($P < 30$ tph) or $E=17.31P^{0.16}$ ($P > 30$ tph). [District Rule 4202] Federally Enforceable Through Title V Permit
17. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit

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18. Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted within 60 days after the end of the start-up exemption, and at least once every calendar year thereafter. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5] Federally Enforceable Through Title V Permit
19. Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081] Federally Enforceable Through Title V Permit
21. Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
22. For source testing purposes, the arithmetic average of three 30-consecutive-minute test runs shall be used to determine compliance with NOx, CO, VOC, and SOx emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
23. For source testing purposes, the arithmetic average of three 60-consecutive-minute test runs shall be used to determine compliance with PM10 emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
24. For source testing purposes, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354] Federally Enforceable Through Title V Permit
25. PM and PM10 source testing shall be conducted downstream of the electrostatic precipitator and the ceramic filter dust collector in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081] Federally Enforceable Through Title V Permit
26. An annual Relative Accuracy Test Audit (RATA) shall be performed on the continuous monitoring system as outlined in 40 CFR Part 60 Appendix B. [District Rule 1080] Federally Enforceable Through Title V Permit
27. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
28. An exceedance of a NOx or SOx emission limit as indicated by the CEMS shall be reported by the operator to the APCO within 24 hours. The notification shall include 1) name and location of the facility, 2) identification of furnace(s) causing the exceedances, 3) calculation of actual NOx, CO and VOC emissions, and 4) corrective actions and schedules to complete the work. [District Rule 1080 and Stanislaus County Rule 1080] Federally Enforceable Through Title V Permit
29. {2251} The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
30. Records shall be maintained and shall include: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080] Federally Enforceable Through Title V Permit

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31. The operator shall notify the APCO no later than one hour after the detection of a breakdown of the CEMS. The operator shall inform the APCO of the intent to shut down the CEMS at least 24 hours prior to the event. [District Rule 1100] Federally Enforceable Through Title V Permit
32. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit
33. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
34. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
35. Cylinder gas audits (GGAs) of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
36. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Stanislaus County Rule 404, District Rule 4202 and Stanislaus County Rule 405. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
37. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4801 and Stanislaus County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
38. The requirements of District Rule 4301 and Stanislaus County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
39. The requirements of 40 CFR Part 60 Subpart CC were determined not to apply to this unit because the unit was constructed prior to the effective date in the regulation and has not been modified (according to the definition of "modified in the regulation"). A permit shield is granted from these requirements. [District Rule 2520 Section 13.2] Federally Enforceable Through Title V Permit
40. The requirements of 40 CFR Part 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
41. Any glass melting furnace located at an Area Source of hazardous air pollutants shall comply with 40 CFR Part 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources). [40 CFR Part 63 Subpart SSSSSS] Federally Enforceable Through Title V Permit
42. The quantity of glass produced shall not exceed 352.1 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
43. Except during periods of startup, shutdown, and idling, NO_x emissions shall not exceed 1.3 pounds per ton of glass produced (over a rolling 30-day average). This performance based limit is to enforce the NO_x emission reductions granted by certificate number N-56-2. Any CEM measurement greater than 1.3 lb-NO_x/ton of glass produced for each 30-day rolling average constitutes a violation of this emission limit. [District Rule 2201] Federally Enforceable Through Title V Permit

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44. Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.01 pounds per ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by certificate number N-56-3. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
46. Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
47. Except during periods of startup, shutdown, and idling, the combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
48. Except during periods of startup, shutdown, idling, and during full or partial emission control system bypass episodes, PM10 emissions shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354] Federally Enforceable Through Title V Permit
49. The PM10 emissions, during full or partial emission control system bypass episodes for routine maintenance, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
50. The SOx and PM10 emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
51. The PM10 emissions shall not exceed 15,527 pounds during the first calendar quarter, 15,699 pounds during the second calendar quarter, 15,872 pounds during the third calendar quarter and 15,872 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District NSR Rule] Federally Enforceable Through Title V Permit
52. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR Part 61 Subpart N] Federally Enforceable Through Title V Permit
53. Each dust collector shall be maintained and operated in the range that optimizes control efficiency as recommended by the manufacturer. [District Rule 2201] Federally Enforceable Through Title V Permit
54. Each dust collectors cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
55. Material removed from each dust collector shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
56. Replacement filters numbering at least 10% of the total number of filters in the largest dust collector, and for each type of filter, shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit
57. Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
58. The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rule 2520 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

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59. The ceramic filter dust collector shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
60. Each of the furnace dust collectors shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201] Federally Enforceable Through Title V Permit
61. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 5 to 10 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
62. During operation of the furnace charger dust collectors, the pressure differential gauge reading for each dust collector shall be 2 to 8 inches of water column. [District Rule 2201] Federally Enforceable Through Title V Permit
63. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
64. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
65. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit
66. The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
67. Dust collector filters shall be inspected annually while in operation for evidence of particulate matter breakthrough and replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
68. Dust collector filters shall be inspected annually while not in operation for tears, scuffs, abrasions or hole that might interfere with the PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
69. Permittee shall keep a record of the daily hours of operation, the amount of glass pulled from the furnace (in tons), the NOx emissions (in lb/ton of glass pulled), the SOx emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
70. Permittee shall maintain records of the following: 1) Source tests and source test results, 2) the acceptable range for each approved key system operating parameter, as established during source tests, 3) The operating values of the key system operating parameters at the approved recording frequency, 4) any maintenance and repair, and 5) any malfunctions. [District Rule 4354] Federally Enforceable Through Title V Permit
71. The pollutant mass emission rate in lb/hr shall be converted to lb pollutant/ton of glass pulled as specified in Rule 4354. The operator of a oxy-fuel fired furnace, oxygen-assisted combustion furnace, or a furnace utilizing any fuel oxidants other than 100% ambient air, shall submit to the APCO, ARB, and EPA for approval any methodologies and data that will be used to calculate emission rates for NOx, CO, and VOC if the methods are different from those specified in Rule 4354. Unless the operator received prior written approval from APCO, ARB, and EPA of all the calculation methods to be used that are different from those specified in Rule 4354, compliance with the emissions limits cannot be fully demonstrated, and it shall be deemed to be a violation of the rule. [District Rule 4354] Federally Enforceable Through Title V Permit
72. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
73. The permittee shall maintain daily records of the aggregated NOx emissions. [District Rules 2520, 9.3.2 and 4354, 9.6.1 and 9.7] Federally Enforceable Through Title V Permit
74. The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit

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75. A record of the PM10 emissions from this unit, in pounds per calendar quarter, shall be kept. [District Rule 2201] Federally Enforceable Through Title V Permit
76. A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
77. The permittee shall keep a record of the cumulative annual hours of operation of the glass furnace on LPG fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
78. The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
79. The operator shall monitor and record the pressure differential gauge reading of the ceramic filter dust collector at least once during each day that the unit operates. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
80. Records of dust collector maintenance, inspections and repairs shall be maintained. The records shall include, date of inspection, change outs of filter media, corrective action taken, and identification of the individual performing the inspection. [District Rules 2201 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
81. 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 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

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ATTACHMENT II
Current Permits to Operate

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-1662-1-15

EXPIRATION DATE: 06/30/2016

EQUIPMENT DESCRIPTION:

FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR.

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grain/dscf in concentration. [District Rule 4201 and Stanislaus County Rule 404] Federally Enforceable Through Title V Permit
2. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
3. The furnace shall have continuous monitoring systems for NOx and SOx. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9] Federally Enforceable Through Title V Permit
4. One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1] Federally Enforceable Through Title V Permit
5. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
6. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
7. During startups, the permittee shall comply with the requirements of section 5.5 of District Rule 4354. [District Rule 4354, §5.5] Federally Enforceable Through Title V Permit
8. The NOx control system shall be in operation as soon as technologically feasible during the startup period to minimize emissions. [District Rule 4354, §5.5.6] Federally Enforceable Through Title V Permit
9. The NOx control system shall be in operation whenever technologically feasible during shutdown to minimize emissions. [District Rule 4354, §5.6.2] Federally Enforceable Through Title V Permit
10. The NOx control system shall be in operation whenever technologically feasible during furnace idling to minimize emissions. [District Rule 4354, §5.7.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

11. The duration of shutdown, as measured from the time the furnace operations drop below the idle threshold specified in section 3.17 of District Rule 4354 to when all emissions from the furnace cease, shall not exceed 20 days. [District Rule 4354, §5.6.1] Federally Enforceable Through Title V Permit
12. The oxygen to fuel ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test. [District Rule 4354] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation $E=3.59P^{0.62}$ ($P < 30$ tph) or $E=17.31P^{0.16}$ ($P > 30$ tph). [District Rule 4202] Federally Enforceable Through Title V Permit
14. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit
15. Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted at least once every calendar year. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5] Federally Enforceable Through Title V Permit
16. Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081] Federally Enforceable Through Title V Permit
17. Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081] Federally Enforceable Through Title V Permit
18. Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
19. PM and PM10 source testing shall be conducted downstream of the electrostatic precipitator and the ceramic filter dust collector in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081] Federally Enforceable Through Title V Permit
20. An annual Relative Accuracy Test Audit (RATA) shall be performed on the continuous monitoring system as outlined in 40 CFR Part 60 Appendix B. [District Rule 1080] Federally Enforceable Through Title V Permit
21. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
22. An exceedance of a NOx or SOx emission limit as indicated by the CEMS shall be reported by the operator to the APCO within 24 hours. The notification shall include 1) name and location of the facility, 2) identification of furnace(s) causing the exceedances, 3) calculation of actual NOx, CO and VOC emissions, and 4) corrective actions and schedules to complete the work. [District Rule 1080 and Stanislaus County Rule 108] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

23. The operator shall notify the APCO no later than one hour after the detection of a breakdown of the CEMS. The operator shall inform the APCO of the intent to shut down the CEMS at least 24 hours prior to the event. [District Rule 1100] Federally Enforceable Through Title V Permit
24. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit
25. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
26. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
27. Cylinder gas audits (GGAs) of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
28. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Stanislaus County Rule 404, District Rule 4202 and Stanislaus County Rule 405. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
29. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4801 and Stanislaus County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
30. The requirements of District Rule 4301 and Stanislaus County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
31. The requirements of 40 CFR Part 60, Subpart CC were determined to not apply to this unit because the unit was constructed prior to the effective date in the regulation and has not been modified (according to the definition of "modified" in the regulation). A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
32. The requirements of 40 CFR Part 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
33. Any glass melting furnace located at an Area Source of hazardous air pollutants shall comply with 40 CFR Part 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources). [40 CFR Part 63 Subpart SSSSSS] Federally Enforceable Through Title V Permit
34. The amount of glass produced shall not exceed 520.1 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
35. NOx emissions shall not exceed 1.4 pounds per ton of glass produced. This performance based limit is to enforce the NOx emission reductions granted by certificate number N-106-2. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

36. CO emissions shall not exceed 0.04 pounds per ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by certificate number N-106-3. [District NSR Rule] Federally Enforceable Through Title V Permit
37. The VOC emissions shall not exceed 0.23 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
38. The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
39. The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
40. The PM10 emissions, except during full or partial emission control system bypass episodes, shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354] Federally Enforceable Through Title V Permit
41. The PM10 emissions, during full or partial emission control system bypass episodes, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
42. The amount of time that the furnace exhaust is not fully treated by a control device shall not exceed 144 hours per calendar year. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
43. The PM10 emissions shall not exceed 22,936 pounds during the first calendar quarter, 23,190 pounds during the second calendar quarter, 23,445 pounds during the third calendar quarter and 23,445 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District Rule 2201] Federally Enforceable Through Title V Permit
44. During furnace idling, NOx emissions shall not exceed 780.2 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
45. During furnace idling, CO emissions shall not exceed 520.1 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
46. During furnace idling, VOC emissions shall not exceed 130.0 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
47. During furnace idling, SOx emissions shall not exceed 572.1 pounds in any one day when producing glass with equal to or greater than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
48. During furnace idling, SOx emissions shall not exceed 468.1 pounds in any one day when producing glass with less than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
49. During furnace idling, PM10 emissions shall not exceed 260.1 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
50. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR Part 61 Subpart N] Federally Enforceable Through Title V Permit
51. The ceramic filter dust collector shall be maintained and operated according to manufacturer's specifications. [District Rule 2201] Federally Enforceable Through Title V Permit
52. The ceramic filter dust collector cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
53. Material removed from the ceramic filter dust collector shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
54. Replacement filters numbering at least 10% of the total number of filters in the ceramic filter dust collector shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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55. Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
56. The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rule 2520, §9.3.2 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
57. The ceramic filter dust collector shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
58. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 5 to 10 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
59. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
60. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
61. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit
62. The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
63. Dust collector filters shall be inspected annually while in operation for evidence of particulate matter breakthrough and replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
64. Dust collector filters shall be inspected annually while not in operation for tears, scuffs, abrasions or hole that might interfere with the PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
65. A daily record of the hours of operation, the amount of glass pulled from the furnace (in tons), the NOx emissions (in lb/ton of glass pulled), the SOx emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
66. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
67. The permittee shall maintain daily records of the aggregated NOx emissions. [District Rules 2520, 9.3.2 and 4354, 9.6.1 and 9.7] Federally Enforceable Through Title V Permit
68. The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
69. A record of the PM10 emissions from this unit, in pounds per calendar quarter, shall be kept. [District Rule 2201] Federally Enforceable Through Title V Permit
70. A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
71. The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

72. The operator shall monitor and record the pressure differential gauge reading of the ceramic filter dust collector at least once during each day that the unit operates. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
73. Records of dust collector maintenance, inspections and repairs shall be maintained. The records shall include, date of inspection, change outs of filter media, corrective action taken ,and identification of the individual performing the inspection. [District Rules 2201 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
74. 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 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



AUTHORITY TO CONSTRUCT

PERMIT NO: N-1662-2-17

ISSUANCE DATE: 12/01/2014

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

LOCATION: 605 S SANTA CRUZ AVE
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF GLASS FURNACE #2 WITH 12 GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (80 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR. TO REBRICK THE FURNACE, TO REMOVE TWO 2.5 MMBTU/HR BURNERS, TO EXPAND THE FOOTPRINT OF THE FURNACE TO 1425 SQUARE FEET, TO INCREASE THE FURNACE PRODUCTION CAPACITY TO 430 TONS OF GLASS PULLED PER DAY, TO LIMIT NOX EMISSIONS TO 1.3 LB/TON OF GLASS PULLED, TO LIMIT CO EMISSIONS TO 0.2 LB/TON OF GLASS PULLED, AND TO LIMIT VOC EMISSIONS TO 0.02 LB/TON OF GLASS PULLED. POST-PROJECT EQUIPMENT DESCRIPTION: GLASS FURNACE #2 WITH 10 MAXON GAS/OXYGEN BURNERS (OR EQUIVALENT) AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR, AND A FURNACE CHARGING AREA SERVED BY TWO DUST COLLECTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. 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

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 Sadeghin, Executive Director / APCO


Arnaud Marjollet, Director of Permit Services

N-1662-2-17 Dec 1 2014 10:07AM - HARADERJ : Joint Inspection NOT Required

3. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions (not including the offset ratio): 1st quarter - 9,114 lb, 2nd quarter - 9,215 lb, 3rd quarter - 9,317 lb, and 4th quarter - 9,317 lb. Offsets shall be provided at a distance offset ratio 1.5 to 1. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx emission reduction credits for the following quantity of emissions (not including the offset ratio): 1st quarter - 6,941 lb, 2nd quarter - 7,018 lb, 3rd quarter - 7,095 lb, and 4th quarter - 7,096 lb. Offsets shall be provided at the applicable offset ratio specified in District Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit
5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions (not including the offset ratio): 1st quarter - 3,185 lb, 2nd quarter - 3,220 lb, 3rd quarter - 3,255 lb, and 4th quarter - 3,256 lb. Offsets shall be provided at the applicable offset ratio specified in District Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit
6. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions (not including the offset ratio): 1st quarter - 140 lb, 2nd quarter - 142 lb, 3rd quarter - 143 lb, and 4th quarter - 143 lb. Offsets shall be provided at a distance offset ratio of 1.5 to 1. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC certificates S-4126-1, N-768-2, N-900-2, S-4214-5, S-4215-5, C-1280-5, C-1281-5, and N-161-4 (or a certificate split from these certificates) 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. 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
9. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf in concentration. [District Rule 4201 and Stanislaus County Rule 404] Federally Enforceable Through Title V Permit
11. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The furnace shall have continuous monitoring systems for NOx and SOx. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9] Federally Enforceable Through Title V Permit
13. One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1] Federally Enforceable Through Title V Permit
14. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

15. The common exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO_x, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
16. The permittee shall notify the District at least 24 hours prior to initiating idling, shutdown, or startup of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354] Federally Enforceable Through Title V Permit
17. During startups, the permittee shall comply with the requirements of section 5.5 of District Rule 4354. [District Rule 4354, §5.5] Federally Enforceable Through Title V Permit
18. The startup exemption time period shall not exceed 18 days, beginning from the time of primary combustion system activation. [District Rule 4354] Federally Enforceable Through Title V Permit
19. During start-up period, the stoichiometric ratio of the primary furnace combustion system shall not exceed 5% excess oxygen, as calculated from the actual fuel and oxidant flow measurements for combustion in the furnace, except during the time when the oxidant stream for an oxy-fuel fired furnace contains at least 50% oxygen. [District Rule 4354] Federally Enforceable Through Title V Permit
20. The emission control systems shall be in operation whenever conditions are consistent with equipment manufacturer's specifications during startup, idling and shutdown periods. [District Rule 4354] Federally Enforceable Through Title V Permit
21. The duration of a furnace shutdown shall not exceed 20 days, measured from the time furnace operations drop below the idle threshold specified in Section 3.17 of District Rule 4354 to when all emissions from the furnace cease. [District Rule 4354] Federally Enforceable Through Title V Permit
22. NO_x, CO, VOC, SO_x, and PM₁₀ emissions during idling shall not exceed the amount as calculated using the following equation: NO_x, CO, VOC, SO_x, or PM₁₀ (lb/day) = Applicable emission limit (lb/ton) x Furnace permitted production capacity (tons/day). [District Rule 4354] Federally Enforceable Through Title V Permit
23. The oxygen to fuel ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test. [District Rule 4354] Federally Enforceable Through Title V Permit
24. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation $E=3.59P^{0.62}$ ($P < 30$ tph) or $E=17.31P^{0.16}$ ($P > 30$ tph). [District Rule 4202] Federally Enforceable Through Title V Permit
25. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit
26. Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted within 60 days after the end of the start-up exemption, and at least once every calendar year thereafter. NO_x and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM₁₀ testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SO_x testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5] Federally Enforceable Through Title V Permit
27. Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

28. Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081] Federally Enforceable Through Title V Permit
29. Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
30. For source testing purposes, the arithmetic average of three 30-consecutive-minute test runs shall be used to determine compliance with NOx, CO, VOC, and SOx emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
31. For source testing purposes, the arithmetic average of three 60-consecutive-minute test runs shall be used to determine compliance with PM10 emission limits. [District Rule 4354] Federally Enforceable Through Title V Permit
32. For source testing purposes, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354] Federally Enforceable Through Title V Permit
33. PM and PM10 source testing shall be conducted downstream of the electrostatic precipitator and the ceramic filter dust collector in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081] Federally Enforceable Through Title V Permit
34. An annual Relative Accuracy Test Audit (RATA) shall be performed on the continuous monitoring system as outlined in 40 CFR Part 60 Appendix B. [District Rule 1080] Federally Enforceable Through Title V Permit
35. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
36. An exceedance of a NOx or SOx emission limit as indicated by the CEMS shall be reported by the operator to the APCO within 24 hours. The notification shall include 1) name and location of the facility, 2) identification of furnace(s) causing the exceedances, 3) calculation of actual NOx, CO and VOC emissions, and 4) corrective actions and schedules to complete the work. [District Rule 1080 and Stanislaus County Rule 1080] Federally Enforceable Through Title V Permit
37. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
38. Records shall be maintained and shall include: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The operator shall notify the APCO no later than one hour after the detection of a breakdown of the CEMS. The operator shall inform the APCO of the intent to shut down the CEMS at least 24 hours prior to the event. [District Rule 1100] Federally Enforceable Through Title V Permit
40. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
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44. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Stanislaus County Rule 404, District Rule 4202 and Stanislaus County Rule 405. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
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46. The requirements of District Rule 4301 and Stanislaus County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
47. The requirements of 40 CFR Part 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
48. Any glass melting furnace located at an Area Source of hazardous air pollutants shall comply with 40 CFR Part 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources). [40 CFR Part 63 Subpart SSSSSS] Federally Enforceable Through Title V Permit
49. The quantity of glass produced shall not exceed 430 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
50. Except during periods of startup, shutdown, and idling, NO_x emissions shall not exceed 1.3 pounds per ton of glass produced (over a rolling 30-day average). This performance based limit is to enforce the NO_x emission reductions granted by certificate number N-54-2. Any CEM measurement greater than 1.3 lb-NO_x/ton of glass produced for each 30-day rolling average constitutes a violation of this emission limit. [District Rule 2201] Federally Enforceable Through Title V Permit
51. Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.2 pounds per ton of glass produced. [District NSR Rule] Federally Enforceable Through Title V Permit
52. Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
53. Except during periods of startup, shutdown, and idling, the combined SO_x emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
54. Except during periods of startup, shutdown, and idling, the combined SO_x emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
55. Except during periods of startup, shutdown, idling, and during full or partial emission control system bypass episodes, PM₁₀ emissions shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354] Federally Enforceable Through Title V Permit

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56. The PM10 emissions, during full or partial emission control system bypass episodes for routine maintenance, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
57. PM emissions from the glass furnace shall not exceed 1 lb of particulate matter per ton of glass produced. [40 CFR 60.293(b)(1)] Federally Enforceable Through Title V Permit
58. The SOx and PM10 emission limits of this permit shall not apply during routine maintenance of the respective add-on control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all add-on controls and routine maintenance shall be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. Routine maintenance includes, but is not limited to: 1) Calibration and scheduled parts replacement of CEMS equipment per manufacturer's recommendations, 2) Cleaning of particulate control devices and stack ductwork to ensure optimal performance, and 3) Necessary repairs to ensure optimal performance of all parts of the system. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
59. The PM10 emissions shall not exceed 18,712 pounds during the first calendar quarter, 18,919 pounds during the second calendar quarter, 19,127 pounds during the third calendar quarter and 19,128 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District NSR Rule] Federally Enforceable Through Title V Permit
60. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR Part 61 Subpart N] Federally Enforceable Through Title V Permit
61. Each dust collector shall be maintained and operated in the range that optimizes control efficiency as recommended by the manufacturer. [District Rule 2201] Federally Enforceable Through Title V Permit
62. Each dust collectors cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
63. Material removed from each dust collector shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
64. Replacement filters numbering at least 10% of the total number of filters in the largest dust collector, and for each type of filter, shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit
65. Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354, 40 CFR 60.293(d) and 40 CFR Part 64] Federally Enforceable Through Title V Permit
66. The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rule 2520, §9.3.2, 40 CFR 60.293(d), and 40 CFR Part 64] Federally Enforceable Through Title V Permit
67. The ceramic filter dust collector shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
68. Each of the furnace dust collectors shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201] Federally Enforceable Through Title V Permit
69. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 5 to 10 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
70. During operation of the furnace charger dust collectors, the pressure differential gauge reading for each dust collector shall be 2 to 8 inches of water column. [District Rule 2201] Federally Enforceable Through Title V Permit
71. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
72. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

73. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit
74. The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354, 40 CFR 60.293(d), and 40 CFR Part 64] Federally Enforceable Through Title V Permit
75. Dust collector filters shall be inspected annually while in operation for evidence of particulate matter breakthrough and replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
76. Dust collector filters shall be inspected annually while not in operation for tears, scuffs, abrasions or hole that might interfere with the PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
77. Permittee shall keep a record of the daily hours of operation, the amount of glass pulled from the furnace (in tons), the NOx emissions (in lb/ton of glass pulled), the SOx emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
78. Permittee shall maintain records of the following: 1) Source tests and source test results, 2) the acceptable range for each approved key system operating parameter, as established during source tests, 3) The operating values of the key system operating parameters at the approved recording frequency, 4) any maintenance and repair, and 5) any malfunctions. [District Rule 4354] Federally Enforceable Through Title V Permit
79. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
80. The permittee shall maintain daily records of the aggregated NOx emissions. [District Rules 2520, 9.3.2 and 4354, 9.6.1 and 9.7] Federally Enforceable Through Title V Permit
81. The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
82. A record of the PM10 emissions from this unit, in pounds per calendar quarter, shall be kept. [District Rule 2201] Federally Enforceable Through Title V Permit
83. A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
84. The permittee shall keep a record of the cumulative annual hours of operation of the glass furnace on LPG fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
85. The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354, 40 CFR 60.293(d), and 40 CFR Part 64] Federally Enforceable Through Title V Permit
86. The operator shall monitor and record the pressure differential gauge reading of the ceramic filter dust collector at least once during each day that the unit operates. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
87. Records of dust collector maintenance, inspections and repairs shall be maintained. The records shall include, date of inspection, change outs of filter media, corrective action taken, and identification of the individual performing the inspection. [District Rules 2201 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

88. 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 N1141107 and N-1142733, which are the public notice and modeling requirements of 40 CFR 52.21 (June 16, 2011 version). Actual PM and PM₁₀ emissions for the furnace may be calculated using source test results and the throughput of the glass furnace. [District Rule 2201] Federally Enforceable Through Title V Permit
89. 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 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-1662-3-16

EXPIRATION DATE: 06/30/2016

EQUIPMENT DESCRIPTION:

GLASS FURNACE #3 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED SOX SCRUBBER AND AN ELECTROSTATIC PRECIPITATOR AND/OR A TRI-MER UTF460 CERAMIC FILTER TYPE DUST COLLECTOR.

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grain/dscf in concentration. [District Rule 4201 and Stanislaus County Rule 404] Federally Enforceable Through Title V Permit
2. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
3. The furnace shall have continuous monitoring systems for NOx and SOx. The monitoring devices shall have continuous recording devices, and all records shall be kept on site. [District Rules 1080 and 4354, §5.9] Federally Enforceable Through Title V Permit
4. One continuous emissions monitoring (CEM) system may be used for monitoring oxy-fuel fired furnaces #1, #2, #3, and #4 provided all of the exhaust gases of each of these furnaces are ducted to a common stack, and monitored down stream of the common stack. The CEMS shall comply with the requirements of 40 Code of Federal Regulations (CFR) Part 51, 40 CFR Parts 60.7 and 60.13, 40 CFR Part 60 Appendix B (Performance Specifications) and Appendix F (Quality Assurance Procedures) and the applicable sections of Rule 1080 (Stack Monitoring). [District Rule 4354, 5.9 and 6.6.1] Federally Enforceable Through Title V Permit
5. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
6. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
7. During startups, the permittee shall comply with the requirements of section 5.5 of District Rule 4354. [District Rule 4354, §5.5] Federally Enforceable Through Title V Permit
8. The NOx control system shall be in operation as soon as technologically feasible during the startup period to minimize emissions. [District Rule 4354, §5.5.6] Federally Enforceable Through Title V Permit
9. The NOx control system shall be in operation whenever technologically feasible during shutdown to minimize emissions. [District Rule 4354, §5.6.2] Federally Enforceable Through Title V Permit
10. The NOx control system shall be in operation whenever technologically feasible during furnace idling to minimize emissions. [District Rule 4354, §5.7.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

11. The duration of shutdown, as measured from the time the furnace operations drop below the idle threshold specified in section 3.17 of District Rule 4354 to when all emissions from the furnace cease, shall not exceed 20 days. [District Rule 4354, §5.6.1] Federally Enforceable Through Title V Permit
12. The oxygen to fuel ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test. [District Rule 4354] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation $E=3.59P^{0.62}$ ($P < 30$ tph) or $E=17.31P^{0.16}$ ($P > 30$ tph). [District Rule 4202] Federally Enforceable Through Title V Permit
14. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit
15. Source testing to demonstrate compliance with permit conditions and all rules and regulations for both natural gas and LPG shall be conducted at least once every calendar year. NOx and CO testing shall be performed using CARB Method 100. VOC testing shall be performed using EPA method 25A. PM10 testing shall be performed using EPA methods 201 and 202, EPA methods 201a and 202, or CARB methods 501 and 5. SOx testing shall be performed using EPA Method 8 and CARB Method 1-100. [District Rules 1081, 2201, 2520, §9.3.2; and 4354, 6.4 and 6.5] Federally Enforceable Through Title V Permit
16. Source testing when firing on LPG fuel need not be performed if the LPG fuel usage for this furnace does not exceed 100 hours during any one calendar year. A source test shall be performed within 90 days after this furnace exceeds 100 hours of operation, on LPG, on an annual basis. [District Rule 1081] Federally Enforceable Through Title V Permit
17. Source testing shall be conducted by a CARB-certified source testing contractor. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to source testing. The results of each source test shall be submitted to the District within 60 days after the source test date. [District Rule 1081] Federally Enforceable Through Title V Permit
18. Source test conditions shall be representative of operations equal to or greater than 60 percent of the fuel use capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
19. PM and PM10 source testing shall be conducted downstream of the electrostatic precipitator and the ceramic filter dust collector in the common stack. Furnaces #1, #2, #3, and #4 must operate simultaneously during source testing unless prior approval is obtained from the District. [District Rule 1081] Federally Enforceable Through Title V Permit
20. An annual Relative Accuracy Test Audit (RATA) shall be performed on the continuous monitoring system as outlined in 40 CFR Part 60 Appendix B. [District Rule 1080] Federally Enforceable Through Title V Permit
21. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
22. An exceedance of a NOx or SOx emission limit as indicated by the CEMS shall be reported by the operator to the APCO within 24 hours. The notification shall include 1) name and location of the facility, 2) identification of furnace(s) causing the exceedances, 3) calculation of actual NOx, CO and VOC emissions, and 4) corrective actions and schedules to complete the work. [District Rule 1080 and Stanislaus County Rule 108] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

23. The operator shall notify the APCO no later than one hour after the detection of a breakdown of the CEMS. The operator shall inform the APCO of the intent to shut down the CEMS at least 24 hours prior to the event. [District Rule 1100] Federally Enforceable Through Title V Permit
24. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit
25. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
26. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
27. Cylinder gas audits (GGAs) of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
28. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Stanislaus County Rule 404, District Rule 4202 and Stanislaus County Rule 405. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
29. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4801 and Stanislaus County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
30. The requirements of District Rule 4301 and Stanislaus County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
31. The requirements of 40 CFR Part 60, Subpart CC were determined to not apply to this unit because the unit was constructed prior to the effective date in the regulation and has not been modified (according to the definition of "modified" in the regulation). A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
32. The requirements of 40 CFR Part 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520, §13.2] Federally Enforceable Through Title V Permit
33. Any glass melting furnace located at an Area Source of hazardous air pollutants shall comply with 40 CFR Part 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources). [40 CFR Part 63 Subpart SSSSSS] Federally Enforceable Through Title V Permit
34. The amount of glass produced shall not exceed 352.1 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
35. NOx emissions shall not exceed 1.4 pounds per ton of glass produced. This performance based limit is to enforce the NOx emission reductions granted by certificate number N-56-2. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

36. CO emissions shall not exceed 0.01 pounds per ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by certificate number N-56-3. [District NSR Rule] Federally Enforceable Through Title V Permit
37. The VOC emissions shall not exceed 0.23 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
38. The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
39. The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
40. The PM10 emissions, except during full or partial emission control system bypass episodes, shall not exceed 0.45 lb/ton of glass produced. [District NSR Rules 2201 and 4354] Federally Enforceable Through Title V Permit
41. The PM10 emissions, during full or partial emission control system bypass episodes, shall not exceed 0.71 lb/ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
42. The amount of time that the furnace exhaust is not fully treated by a control device shall not exceed 144 hours per calendar year. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
43. The PM10 emissions shall not exceed 15,527 pounds during the first calendar quarter, 15,699 pounds during the second calendar quarter, 15,872 pounds during the third calendar quarter and 15,872 pounds during the fourth calendar quarter. These limits are to enforce the PM10 emission reductions granted by certificate number N-161-4. [District NSR Rule] Federally Enforceable Through Title V Permit
44. During furnace idling, NOx emissions shall not exceed 528.2 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
45. During furnace idling, CO emissions shall not exceed 352.1 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
46. During furnace idling, VOC emissions shall not exceed 88.0 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
47. During furnace idling, SOx emissions shall not exceed 387.3 pounds in any one day when producing glass with equal to or greater than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
48. During furnace idling, SOx emissions shall not exceed 316.9 pounds in any one day when producing glass with less than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
49. During furnace idling, PM10 emissions shall not exceed 176.1 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
50. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR Part 61 Subpart N] Federally Enforceable Through Title V Permit
51. The ceramic filter dust collector shall be maintained and operated according to manufacturer's specifications. [District Rule 2201] Federally Enforceable Through Title V Permit
52. The ceramic filter dust collector cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
53. Material removed from the ceramic filter dust collector shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
54. Replacement filters numbering at least 10% of the total number of filters in the ceramic filter dust collector shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

55. Devices to measure the primary and secondary voltage and current of the electrostatic precipitator shall be maintained in accordance with the manufacturer's specifications. [District Rule 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
56. The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [District Rule 2520, §9.3.2 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
57. The ceramic filter dust collector shall be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
58. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 5 to 10 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
59. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
60. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
61. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit
62. The specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
63. Dust collector filters shall be inspected annually while in operation for evidence of particulate matter breakthrough and replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
64. Dust collector filters shall be inspected annually while not in operation for tears, scuffs, abrasions or hole that might interfere with the PM collection efficiency and shall be replaced as needed. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
65. A daily record of the hours of operation, the amount of glass pulled from the furnace (in tons), the NO_x emissions (in lb/ton of glass pulled), the SO_x emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
66. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
67. The permittee shall maintain daily records of the aggregated NO_x emissions. [District Rules 2520, 9.3.2 and 4354, 9.6.1 and 9.7] Federally Enforceable Through Title V Permit
68. The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
69. A record of the PM₁₀ emissions from this unit, in pounds per calendar quarter, shall be kept. [District Rule 2201] Federally Enforceable Through Title V Permit
70. A record of the cumulative annual number of hours that the emission control system is either fully or partially bypassed shall be kept. The record shall be updated at least weekly. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
71. The permittee shall maintain daily records of the specific power of the electrostatic precipitator (in milliwatts/acfm). [District Rules 2201, 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

72. The operator shall monitor and record the pressure differential gauge reading of the ceramic filter dust collector at least once during each day that the unit operates. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
73. Records of dust collector maintenance, inspections and repairs shall be maintained. The records shall include, date of inspection, change outs of filter media, corrective action taken ,and identification of the individual performing the inspection. [District Rules 2201 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
74. 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 2201, 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

ATTACHMENT III

BACT Guideline 1.5.9 and Top Down BACT Analysis

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Best Available Control Technology (BACT) Guideline 1.5.9
Last Update: 12/9/2014

Container Glass Melting Furnace

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
NOx	1.3 lb-NOx/ton of glass pulled on a rolling 30-day average, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		Electric Furnace
SOx	1. Oxy-fuel fired furnaces while processing material where > or = 25.0 percent of the total cullet is mixed color cullet: 0.99 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling. 2. All other Container Glass Furnaces: 0.8 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and		Electric Furnace

	idling.	
PM10	0.45 lb-PM10/ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.	Electric Furnace
CO	0.20 lb-CO/ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.	Electric Furnace
VOC	0.02 lb-VOC/ton of glass pulled, except during periods of startup, shutdown and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.	Electric Furnace

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. For background information, see Permit Specific BACT Determinations on [Details Page](#).

Top Down BACT Analysis

NOx Top-Down BACT Analysis

Step 1 – Identify all control technologies

BACT Guideline 1.5.9 identifies the following control technologies:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NOx	1.3 lb-NOx/ton of glass pulled on a rolling 30-day average, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		electric furnace

Step 2 - Eliminate Technologically Infeasible Options

Pursuant to District BACT Policy, the Alternate Basic Equipment provision applies only to applications for new equipment. As the container glass furnaces in this project are existing pieces of equipment, the Alternate Basic Equipment option of electric furnace is not applicable for this project.

There are no other technologically infeasible options for NOx.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank	Control Technology	Achieved in Practice
1	1.3 lb-NOx/ton of glass pulled on a rolling 30-day average, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling	Y

There are no remaining control technologies for NOx.

Step 4 - Cost Effectiveness Analysis

Pursuant to Section IX.D of District Policy APR 1305 – BACT Policy, a cost effectiveness analysis is required for the options that have not been determined to be achieved in practice.

As the applicant has proposed the most effective control technology applicable for NOx, a cost effectiveness analysis is not required.

Step 5 - Select BACT

Pursuant to the above Top-Down BACT Analysis, BACT for the container glass furnaces is satisfied with the following:

NO_x: 1.3 lb-NO_x/ton of glass pulled on a rolling 30-day average, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling (Achieved in Practice)

SOx Top-Down BACT Analysis

Step 1 – Identify all control technologies

BACT Guideline 1.5.9 identifies the following control technologies:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
SOx	- Oxy-fuel fired furnaces while processing material where ≥ 25.0 percent of the total cullet is mixed color cullet: 0.99 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling. - All other Container Glass Furnaces: 0.8 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		electric furnace

Step 2 - Eliminate Technologically Infeasible Options

Pursuant to District BACT Policy, the Alternate Basic Equipment provision applies only to applications for new equipment. As the container glass furnaces in this project are existing pieces of equipment, the Alternate Basic Equipment option of electric furnace is not applicable for this project.

There are no other technologically infeasible options for SOx.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank	Control Technology	Achieved in Practice
1	- Oxy-fuel fired furnaces while processing material where ≥ 25.0 percent of the total cullet is mixed color cullet: 0.99 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling. - All other Container Glass Furnaces: 0.8 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.	Y

There are no remaining control technologies for SOx.

Step 4 - Cost Effectiveness Analysis

Pursuant to Section IX.D of District Policy APR 1305 – BACT Policy, a cost effectiveness analysis is required for the options that have not been determined to be achieved in practice.

As the applicant has proposed the most effective control technology applicable for SO_x, a cost effectiveness analysis is not required.

Step 5 - Select BACT

Pursuant to the above Top-Down BACT Analysis, BACT for the container glass furnace is satisfied with the following:

SO_x:

1. Oxy-fuel fired furnaces while processing material where > or = 25.0 percent of the total cullet is mixed color cullet: 0.99 lb-SO_x/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling. (Achieved in Practice)
2. All other Container Glass Furnaces: 0.8 lb-SO_x/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling. (Achieved in Practice)

PM₁₀ Top-Down BACT Analysis

Step 1 – Identify all control technologies

BACT Guideline 1.5.9 identifies the following control technologies:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
PM ₁₀	0.45 lb-PM ₁₀ /ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		electric furnace

Step 2 - Eliminate Technologically Infeasible Options

Pursuant to District BACT Policy, the Alternate Basic Equipment provision applies only to applications for new equipment. As the container glass furnaces in this project are existing pieces of equipment, the Alternate Basic Equipment option of electric furnace is not applicable for this project.

There are no other technologically infeasible options for PM₁₀.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank	Control Technology	Achieved in Practice
1	0.45 lb-PM ₁₀ /ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.	Y

There are no remaining control technologies for PM₁₀.

Step 4 - Cost Effectiveness Analysis

Pursuant to Section IX.D of District Policy APR 1305 – BACT Policy, a cost effectiveness analysis is required for the options that have not been determined to be achieved in practice.

As the applicant has proposed the most effective control technology applicable for PM₁₀ and the Achieved in Practice option, a cost effectiveness analysis is not required.

Step 5 - Select BACT

Pursuant to the above Top-Down BACT Analysis, BACT for the container glass furnace is satisfied with the following:

PM₁₀: 0.45 lb-PM₁₀/ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling. (Achieved in Practice)

ATTACHMENT IV
Quarterly Net Emission Change

QNEC Calculations

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

As shown in Section VII.C.5, BE is equal to PE1 for all pollutants. Therefore, the equation for QNEC reduces to:

$$\text{QNEC} = (\text{PE2} - \text{PE1}) \div 4$$

N-1662-1

Pollutant	PE2 (lb/year)	PE1 (lb/year)	QNEC (lb/qtr)
NOx	246,788	265,771	-4,745.75
SOx	187,938	187,938	0.0
PM10	86,238	86,238	0.0
CO	7,593	7,593	0.0
VOC	3,797	43,662	-9,966.25

N-1662-2

Pollutant	PE2 (lb/year)	PE1 (lb/year)	QNEC (lb/qtr)
NOx	204,035	204,035	0.0
SOx	155,381	155,381	0.0
PM10	71,299	71,299	0.0
CO	31,390	31,390	0.0
VOC	3,139	3,139	0.0

N-1662-3

Pollutant	PE2 (lb/year)	PE1 (lb/year)	QNEC (lb/qtr)
NOx	167,072	179,923	-3,212.75
SOx	127,231	127,231	0.0
PM10	58,382	58,382	0.0
CO	1,285	1,285	0.0
VOC	2,570	29,559	-6,747.25