



September 21, 2010

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

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-1662
Project Number: N-1201553

Dear Mr. Bobak:

Enclosed for your review and comment is the District's analysis of Gallo Glass Company's application for an Authority to Construct for the use of an existing lime storage silo served by a bin vent filter, and the installation of three ceramic dust collectors and associated equipment, at 605 S Santa Cruz Ave, Modesto.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice and 45-day EPA notice comment periods, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jesse A. Garcia of Permit Services at (559) 230-5918.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM:jag

Enclosures

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

Samir Sheikh
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Modification of Glass Furnaces to Install Three Ceramic Filter Dust Collectors (CDC) and a Lime Storage Silo

Facility Name: Gallo Glass Company

Date: September 21, 2020

Mailing Address: PO Box 1230
Modesto, CA 95353

Engineer: Jesse A. Garcia

Lead Engineer: Jerry Sandhu

Contact Person: Ted Bobak, Gallo Glass Company or
Trevor Yorke, Yorke Engineering

Telephone: (209) 341-3778 (Ted)

E-Mail: Ted.Bobak@EJGallo.com or
tyorke@yorkeengr.com

Application #s: N-1662-1-19, -2-21, -3-20, and -4-22

Project #: N-1201553

Deemed Complete: May 27, 2020

I. Proposal

Gallo Glass Company has submitted an Authority to Construct (ATC) application to install three ceramic filter dust collectors (CDCs) in addition to their existing CDC serving the four glass furnaces listed under permits N-1662-1, -2, -3, and -4. By design, three or four CDC units will be operated in parallel to treat the combined emissions of the four furnaces, allowing for one CDC unit to, periodically, be off-line for maintenance and cleaning. Two additional induction fans are also proposed as part of this project: one fan will be operated in parallel with the existing CDC fan to reduce the load on the fans and the second will be used as a backup during repair of the other two fans. The applicant is also proposing to modify the pressure differential range of the CDC units, per the manufacturer's recommendation, from 1 to 15 inches of water column to 1 to 20 inches of water column.

Additionally, the facility receives lime and stores it in a silo served by a bin vent filter. The lime sorbent is injected into the exhaust, upstream of the CDC and electrostatic precipitator (ESP), to reduce SOx emissions. The lime storage silo was previously installed, but did not go through a permitting action. As such, the applicant proposes to include the existing lime storage silo as a part of this project. For the purposes of this project, the lime storage silo will be considered as new.

Lastly, the applicant proposes to include a second lime sorbent feeder for injecting lime sorbent in to the exhaust stream from the furnaces to reduce SOx emissions through the CDCs.

A process flow diagram is included in Appendix A and the current permits to operate (PTOs) are included in Appendix B.

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

II. Applicable Rules

Rule 1080	Stack Monitoring (12/17/92)
Rule 1081	Source Sampling (12/16/93)
Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4354	Glass Melting Furnaces (5/19/11)
Rule 4801	Sulfur Compounds (12/17/92)
40 CFR Part 64	Compliance Assurance Monitoring
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)	
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines	

III. Project Location

The facility is located at 605 S Santa Cruz Ave in Modesto, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Four glass production furnaces are charged with a combination of recycled glass cullet and raw materials (sand, soda ash, limestone and other minor ingredients) to produce molten glass that is then molded into bottles. The heat for the glass production furnaces is produced from the combustion of natural gas and pure oxygen, also called OXY-fuel. The gaseous products of combustion from the OXY-fueled glass furnaces combine into one flue gas stream that passes through a dry SO_x scrubber, a particulate matter control system and then through a single

exhaust stack equipped with a continuous emission monitoring system (CEMS) for NO_x, SO_x, CO₂ and O₂, before exhausting to the atmosphere. The exhaust is drawn through the emission control systems by downstream induction fans.

In the SO_x scrubber, a dry sorbent, consisting primarily of calcium hydroxide (lime) powder, is injected into the combined flue gas exhaust duct, where the gaseous SO_x reacts with the sorbent to form solid calcium sulfate, which is subsequently removed from the exhaust by the CDC and/or ESP. The dry sorbent is received into, and fed from, the proposed storage silo served by a bin vent filter.

After passing through the SO_x scrubber, the exhaust gases are drawn through a particulate matter (PM) control system of either the ESP or the CDC. The ESP and the CDC are parallel PM removal systems. Solids removed from the exhaust by the ESP and CDC are combined and either recycled back into the glass batch material or disposed of as hazardous waste.

After passing through the PM control system, the cleaned exhaust is discharged through an exhaust stack equipped with CEMS.

Proposed Modifications to Furnace Permits

Gallo Glass proposes to expand the CDC system with the addition of three TRI-MER UCF 500 CDC units, resulting in a total of four TRI-MER UCF 500 CDC units. A block flow diagram of the proposed modification is presented in Appendix A.

The expanded CDC system is planned to operate in parallel with the ESP system during a transition period (approximately 1-2 years). After the transition period, the ESP system will be shut down and disconnected from the furnace exhaust ducting and the CDC system will operate treating the entire combined exhaust flow from the four furnaces. For the purpose of this project, it will be assumed that either system can operate in parallel or independently. By design, three or four CDC units may be operated in parallel to treat the combined emissions of the four furnaces, allowing for one CDC unit to periodically be off-line for maintenance and cleaning.

Two additional induction fans are also proposed as part of this project: one to be operated in parallel with the existing CDC fan such that both can operate at reduced loading, and the second to be used as a backup fan during repair of the other fans in service. The fan speeds are controlled to maintain a precise constant pressure in the glass furnaces.

Hydrated lime injection and reaction for SO_x control in the expanded CDC system will occur directly within the exhaust duct, eliminating the contact chamber/SO_x scrubber used in association with the ESP system.

The facility can operate a maximum of 24 hours per day and 365 days per year.

V. Equipment Listing

Pre-Project Equipment Description:

N-1662-1-18: GLASS FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. 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 UCF-500¹ CERAMIC FILTER TYPE DUST COLLECTORS

N-1662-2-20: GLASS FURNACE #2 WITH 10 NORTH AMERICAN PRAXAIR GEN III GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. 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 UCF-500 CERAMIC FILTER TYPE DUST COLLECTOR

N-1662-3-19: GLASS FURNACE #3 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY) AND A 2700 KW ELECTRIC BOOST SYSTEM. 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 UCF-500 CERAMIC FILTER TYPE DUST COLLECTOR

N-1662-4-20: GLASS FURNACE #4 WITH 10 PRAXAIR GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (90 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 UCF-500 CERAMIC FILTER TYPE DUST COLLECTOR

Proposed Modification:

N-1662-1-19: MODIFICATION OF GLASS FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. 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 UCF-500 CERAMIC FILTER DUST

¹ The applicant has clarified that the unit models are UCF instead of the UTF as stated on the existing

COLLECTORS: *INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, A LIME SORBENT FEEDER, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER ALL SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4*

N-1662-2-21: MODIFICATION OF GLASS FURNACE #2 WITH 10 NORTH AMERICAN PRAXAIR GEN III GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. 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 UCF-500 CERAMIC FILTER DUST COLLECTOR: *INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, A LIME SORBENT FEEDER, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER ALL SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4*

N-1662-3-20: MODIFICATION OF GLASS FURNACE #3 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY) AND A 2700 KW ELECTRIC BOOST SYSTEM. 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 UCF-500 CERAMIC FILTER DUST COLLECTOR: *INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, A LIME SORBENT FEEDER, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER ALL SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4*

N-1662-4-22: MODIFICATION OF GLASS FURNACE #4 WITH 10 PRAXAIR GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (90 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 UCF-500 CERAMIC FILTER DUST COLLECTOR: *INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, A LIME SORBENT FEEDER, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER ALL SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4*

Post-Project Equipment Description:

N-1662-1-19: GLASS FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3

3 AND N-1662-4. THE FURNACES ARE SERVED BY THE FOLLOWING SHARED EQUIPMENT: SOX SCRUBBER INCLUDING A LIME STORAGE SILO SERVED BY A BIN VENT FILTER, AN ELECTROSTATIC PRECIPITATOR, AND/OR FOUR TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS

N-1662-2-21: GLASS FURNACE #2 WITH 10 NORTH AMERICAN PRAXAIR GEN III GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. 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 THE FOLLOWING SHARED EQUIPMENT: SOX SCRUBBER INCLUDING A LIME STORAGE SILO SERVED BY A BIN VENT FILTER, AN ELECTROSTATIC PRECIPITATOR, AND/OR FOUR TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS

N-1662-3-20: GLASS FURNACE #3 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY) AND A 2700 KW ELECTRIC BOOST SYSTEM. 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 THE FOLLOWING SHARED EQUIPMENT: SOX SCRUBBER INCLUDING A LIME STORAGE SILO SERVED BY A BIN VENT FILTER, AN ELECTROSTATIC PRECIPITATOR, AND/OR FOUR TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS

N-1662-4-22: GLASS FURNACE #4 WITH 10 PRAXAIR GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (90 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 THE FOLLOWING SHARED EQUIPMENT: SOX SCRUBBER INCLUDING A LIME STORAGE SILO SERVED BY A BIN VENT FILTER, AN ELECTROSTATIC PRECIPITATOR, AND/OR FOUR TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS

VI. Emission Control Technology Evaluation

The OXY-fueled glass furnaces emit NO_x, SO_x, PM₁₀, CO and VOC. The furnaces are equipped with emission control technologies for NO_x, SO_x and PM₁₀. NO_x is controlled utilizing OXY-fuel, SO_x is controlled utilizing a scrubber, and PM₁₀ is controlled utilizing an ESP or a CDC system. The emission control technology remains the same as that which has been authorized and evaluated under previous projects.

OXY-Fuel Firing:

OXY-fuel firing is utilized to control NO_x 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.

SOx Scrubber:

Gallo Glass Company utilizes a scrubber for SOx control followed by an ESP or CDC system for SOx/particulate matter control.

From the furnace, the SOx contaminated airstream travels through a scrubber where, prior to entering the scrubber, the exhaust steam is injected with hydrated lime from the proposed lime storage silo. Inside of the scrubber, SOx is absorbed by the reagent (lime), and then the exhaust stream exits the scrubber with the SOx being 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 or CDC system.

Electrostatic Precipitator:

An ESP is utilized to control the particulate matter emissions generated in the glass melting process and from the SOx 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 Dust Collector:

The dust collectors are TRI-MER UCF-500 ceramic cartridge, which are designed to operate under the high temperatures generated by the furnaces. The CDCs utilize reverse pulse air type cartridge cleaning.

See Appendix A for a process flow diagram, which shows the path of the exhaust stream from the furnaces all the way to exhaust into the atmosphere from the stack.

VII. General Calculations

A. Assumptions

- To streamline emission calculations, PM_{2.5} emissions are assumed to be equal to PM₁₀ emissions.
- The equipment under the permits proposed to be modified in this project operate 24 hours/day, 365 days/year.
- Throughput of the silo storing lime is 65 tons/day and 440 tons/year (per applicant).
- Maximum pre and post-project glass produced in the furnace listed under permit -1:
 - 520.1 tons/day per current permit
- Maximum pre and post-project glass produced in the furnace listed under permit -2:
 - 430 tons/day per current permit
- Maximum pre and post-project glass produced in the furnace listed under permit -3:
 - 430 tons/day per current permit
- Maximum pre and post-project glass produced in the furnace listed under permit -4:
 - 637.9 tons/day per current permit

B. Emission Factors

N-1662-1, -2, -3, and -4: Lime Storage Silo Served by Bin Vent Filter

Controlled Emission Factor for the Silo Served by a Bin Vent Filter		
Emission Unit	lb-PM ₁₀ /ton	Source
Lime Receiving/Storage	0.0049	District Practice for Similar Operations -AP-42 Table 11.12.2 (8/04)

N-1662-1: Glass Furnace

Pollutant	Pre and Post-Project Emission Factors (EF) and/or Emission Rates	Source
NO _x	1.3 lb/ton of glass produced (rolling 30-day average)	Current Permit
SO _x	<u>When producing glass that is ≥ 25% mixed color cullet by weight</u> 0.95 lb/ton of glass produced (rolling 30-day average)	
	<u>When producing glass that is < 25% mixed color cullet by weight</u> 0.79 lb/ton of glass produced (rolling 30-day average)	
PM ₁₀	<u>Normal Operation:</u> 0.45 lb/ton of glass produced	
	<u>Emission Bypass Periods:</u> 0.71 lb/ton of glass produced	
CO	0.04 lb/ton of glass produced	Current Permit
VOC	0.02 lb/ton of glass produced	

N-1662-2: Glass Furnace

Pollutant	Pre and Post-Project Emission Factors (EF) and/or Emission Rates	Source
NO _x	1.3 lb/ton of glass produced (rolling 30-day average)	Current Permit
SO _x	<u>When producing glass that is ≥ 25% mixed color cullet by weight</u> 0.95 lb/ton of glass produced (rolling 30-day average)	
	<u>When producing glass that is < 25% mixed color cullet by weight</u> 0.79 lb/ton of glass produced (rolling 30-day average)	
PM ₁₀	<u>Normal Operation:</u> 0.45 lb/ton of glass produced	
	<u>Emission Bypass Periods:</u> 0.71 lb/ton of glass produced	
CO	0.2 lb/ton of glass produced	Current Permit
VOC	0.02 lb/ton of glass produced	

N-1662-3: Glass Furnace

Pollutant	Pre and Post-Project Emission Factors (EF) and/or Emission Rates	Source
NO _x	1.3 lb/ton of glass produced (rolling 30-day average)	Current Permit
SO _x	<u>When producing glass that is ≥ 25% mixed color cullet by weight</u> 0.95 lb/ton of glass produced (rolling 30-day average)	
	<u>When producing glass that is < 25% mixed color cullet by weight</u> 0.79 lb/ton of glass produced (rolling 30-day average)	
PM ₁₀	<u>Normal Operation:</u> 0.45 lb/ton of glass produced	
	<u>Emission Bypass Periods:</u> 0.71 lb/ton of glass produced	
CO	0.01 lb/ton of glass produced	
VOC	0.02 lb/ton of glass produced	

N-1662-4: Glass Furnace

Pollutant	Pre and Post-Project Emission Factors (EF) and/or Emission Rates	Source
NO _x	1.3 lb/ton of glass produced (rolling 30-day average)	Current Permit
SO _x	<u>When producing glass that is ≥ 25% mixed color cullet by weight</u> 0.95 lb/ton of glass produced (rolling 30-day average)	
	<u>When producing glass that is < 25% mixed color cullet by weight</u> 0.79 lb/ton of glass produced (rolling 30-day average)	
PM ₁₀	<u>Normal Operation:</u> 0.45 lb/ton of glass produced	
	<u>Emission Bypass Periods:</u> 0.71 lb/ton of glass produced	
CO	0.20 lb/ton of glass produced	
VOC	0.02 lb/ton of glass produced	

C. Calculations

1. Pre-Project Potential to Emit (PE1)

N-1662-1, -2, -3, and -4: Lime Storage Silo Served by Bin Vent Filter

Since this is a new emissions unit, PE1 = 0 for PM₁₀.

N-1662-1: Glass Furnace

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) per the current permit. 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)	PE (lb/day)
NO _x	1.3	520.1	676.1
SO _x (≥ 25% mixed cullet)	0.95	520.1	494.1
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 Pre-Project Potential to Emit				
Pollutant	Emissions Factor (lb/ton)	Throughput (tons/day)	Schedule (days/year)	PE1 (lb/year)
NO _x	1.3	520.1	365	246,787
SO _x (≥ 25% mixed cullet)	0.95	520.1	365	180,345
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

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)	0.95	430	408.5
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)	0.95	430	365	149,103
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

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)	0.95	430	408.5
PM ₁₀ (by-pass mode)	0.71	430	305.3
CO	0.01	430	4.3
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)	0.95	430	365	149,103
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	0.01	430	365	1,570
VOC	0.02	430	365	3,139

N-1662-4: Glass Furnace

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	637.9	829.3
SO _x (≥ 25% mixed cullet)	0.95	637.9	606.0
PM ₁₀ (by-pass mode)	0.71	637.9	452.9
CO	0.2	637.9	127.6
VOC	0.02	637.9	12.8

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	637.9	365	302,684
SO _x (≥ 25% mixed cullet)	0.95	637.9	365	221,192
PM ₁₀ (normal mode)	0.45	637.9	359	103,053
PM ₁₀ (by-pass mode)	0.71	637.9	6	2,717
PM ₁₀ (total)	-	-	-	105,770
CO	0.2	637.9	365	46,567
VOC	0.02	637.9	365	4,657

2. Post-Project Potential to Emit (PE2)

N-1662-1, -2, -3, and -4: Shared Lime Storage Silo Served by Bin Vent Filter

$$\begin{aligned}\text{Daily PE2} &= 65 \text{ tons/day} \times 0.0049 \text{ lb-PM}_{10}/\text{ton} \\ &= 0.3 \text{ lb-PM}_{10}/\text{day}\end{aligned}$$

$$\begin{aligned}\text{Annual PE2} &= 440 \text{ tons/year} \times 0.0049 \text{ lb-PM}_{10}/\text{ton} \\ &= 2 \text{ lb-PM}_{10}/\text{year}\end{aligned}$$

N-1662-1, -2, -3, and -4: Glass Furnaces

As previously discussed, the proposed modifications in this project do not result in a change in emissions from the furnaces; therefore, for these emission units, PE1 = PE2.

N-1662-1, -2, -3, and -4: Total Emissions from Shared Lime Storage Silo Served by Bin Vent Filter and Glass Furnaces

District practice is to attribute emissions from shared equipment under the lower permit number; therefore, the emissions from the shared lime storage silo served by bin vent filter will be listed under permit N-1662-1 as summarized in the following table:

Total Daily Post-Project Potential to Emit (lb/day)				
Pollutant	Permit Unit			
	N-1662-1	N-1662-2	N-1662-3	N-1662-4
NO _x	676.1	559.0	559.0	829.3
SO _x (≥ 25% mixed cullet)	494.1	408.5	408.5	606.0
PM ₁₀ (by-pass mode)	369.3 + 0.3 from lime storage silo	305.3	305.3	452.9
CO	20.8	86.0	4.3	127.6
VOC	10.4	8.6	8.6	12.8

Annual Post-Project Potential to Emit (lb/year)				
Pollutant	Permit Unit			
	N-1662-1	N-1662-2	N-1662-3	N-1662-4
NO _x	246,787	204,035	204,035	302,684
SO _x (≥ 25% mixed cullet)	180,345	149,103	149,103	221,192
PM ₁₀ (total)	86,238 + 2 from lime storage silo	71,299	71,299	105,770
CO	7,593	31,390	1,570	46,567
VOC	3,797	3,139	3,139	4,657

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

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

The SSPE1 can be calculated by adding the PE1 from all units with valid ATCs or PTOs and the sum of the ERCs that have been banked at the source and which have not been used on-site (Total_{ERC}).

$$\text{SSPE1}_{\text{Total}} = \text{SSPE1}_{\text{Permit Unit}} + \text{Total}_{\text{ERC}}$$

SSPE1 (lb/year)					
Permit Unit/ERC	NO_x	SO_x	PM₁₀	CO	VOC
N-1662-1-18	246,787	180,345	86,238	7,593	3,797
N-1662-2-20	204,035	149,103	71,299	31,390	3,139
N-1662-3-19	204,035	149,103	71,299	1,570	3,139
N-1662-4-20	302,684	221,192	105,770	46,567	4,657
ATC N-1662-7-6 ¹	0	0	114	0	0
N-1662-8-10 ²	1,003	1,537	11,531	766	50
N-1662-10-4 ²	642	0	31	195	73
N-1662-11-4 ²	642	0	31	195	73
N-1662-12-4 ²	642	0	31	195	73
ATC N-1662-14-9 ³	0	0	112,530	0	0
N-1662-15-4 ²	65	5	14	270	10
N-1662-17-1 ⁴	3,197	125	333	3,679	241
N-1662-18-1 ⁴	3,197	125	333	3,679	241
ATC N-1662-19-3 ⁵	0	0	0	0	219
ATC N-1662-21-1 ⁶	3,197	125	333	3,679	241
ATC N-1662-22-1 ⁶	3,197	125	333	3,679	241
ATC N-1662-23-1 ⁶	3,197	125	333	3,679	241
N-1662-25-1 ⁷	122	91	8	559	252
N-1662-26-0 ⁸	0	0	146	0	0
SSPE1_{Permit Unit}	976,642	702,001	460,707	107,695	16,687
ERC N-966-2	229,479	-	-	-	-
ERC N-1476-2	246,506	-	-	-	-
ERC N-1510-2	1,459	-	-	-	-
ERC N-56-3	-	-	-	2,044	-
ERC N-106-3	-	-	-	3,427	-
ERC N-1516-4	-	-	78,316	-	-
Total_{ERC}	4,77,444	0	78,316	5,471	0
SSPE1_{Total}	1,454,086	702,001	539,023	113,156	16,687

¹ PE calculations performed in project N-1181509.

² PE calculations performed in Appendix C

³ This ATC has higher emissions than the valid ATC N-1662-14-10; therefore, the emissions from ATC N-1662-14-9 will be used for SSPE calculations as determined in project N-1183475.

⁴ PE calculations performed in project N-1171407.

⁵ PE calculations performed in project N-1193858.

⁶ PE calculations performed in project N-1182275.

⁷ PE calculations performed in project N-1182628.

⁸ PE calculations performed in project N-1193401.

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

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

For the purpose of the SSPE calculations, the PM₁₀ emissions from the lime storage silo will be accounted for under permit unit N-1662-1.

SSPE2 (lb/year)					
Permit Unit/ERC	NO _x	SO _x	PM ₁₀	CO	VOC
ATC N-1662-1-19	246,787	180,345	86,240	7,593	3,797
ATC N-1662-2-21	204,035	149,103	71,299	31,390	3,139
ATC N-1662-3-20	204,035	149,103	71,299	1,570	3,139
ATC N-1662-4-22	302,684	221,192	105,770	46,567	4,657
ATC N-1662-7-6	0	0	114	0	0
N-1662-8-10	1,003	1,537	11,531	766	50
N-1662-10-4	642	0	31	195	73
N-1662-11-4	642	0	31	195	73
N-1662-12-4	642	0	31	195	73
ATC N-1662-14-9	0	0	112,530	0	0
N-1662-15-4	65	5	14	270	10
N-1662-17-1	3,197	125	333	3,679	241
N-1662-18-1	3,197	125	333	3,679	241
ATC N-1662-19-3	0	0	0	0	219
ATC N-1662-21-1	3,197	125	333	3,679	241
ATC N-1662-22-1	3,197	125	333	3,679	241
ATC N-1662-23-1	3,197	125	333	3,679	241
N-1662-25-1	122	91	8	559	252
N-1662-26-0	0	0	146	0	0
SSPE2_{Permit Unit}	976,642	702,001	460,709	107,695	16,687
ERC N-966-2	229,479	-	-	-	-
ERC N-1476-2	246,506	-	-	-	-
ERC N-1510-2	1,459	-	-	-	-
ERC N-56-3	-	-	-	2,044	-
ERC N-106-3	-	-	-	3,427	-
ERC N-1516-4	-	-	78,316	-	-
Total_{ERC}	4,77,444	0	78,316	5,471	0
SSPE2_{Total}	1,454,086	702,001	539,025	113,156	16,687

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 nonroad IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

Rule 2201 Major Source Determination (lb/year)						
	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
SSPE1	1,454,086	702,001	539,023	539,023	113,156	16,687
SSPE2	1,454,086	702,001	539,025	539,025	113,156	16,687
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	Yes	Yes	Yes	Yes	No	No

This source is an existing Major Source for NO_x, SO_x, PM₁₀, and PM_{2.5} emissions and will remain a Major Source for NO_x, SO_x, PM₁₀, and PM_{2.5}.

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Estimated Facility PE before Project Increase*	488	8	351	54	230	230
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	Yes	No	Yes	No	No	No

* These values are taken from the SSPE1 table, excluding ERCs.

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

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate, if applicable, 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 District Rule 2201.

Since the lime silo is considered a new emissions unit for this project, BE = PE1 = 0 for PM₁₀ emissions.

Clean Emissions Unit, Located at a Major Source

As shown in Section VII.C.5 above, this facility is a major stationary source for NO_x, SO_x, and PM₁₀/PM_{2.5} emissions. Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is “equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

Based on BACT Guideline 1.5.9, see Appendix D, the glass furnaces are Clean Emissions Units for NO_x, SO_x, and PM₁₀ since the furnaces meet the requirements for achieved-in-practice BACT during the five years immediately prior to the submission of a complete application for this project; therefore, BE = PE1 for NO_x, SO_x, and PM₁₀. No determination for PM_{2.5} is required since offsets are not triggered or required for this project.

BE (lb/year)			
Permit Unit	NO _x	SO _x	PM ₁₀
N-1662-1-18	246,787	180,345	86,238
N-1662-2-20	204,035	149,103	71,299
N-1662-3-19	204,035	149,103	71,299
N-1662-4-20	302,684	221,192	105,770

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is a major source for NO_x, SO_x, and PM₁₀, the project's PE2 is compared to the SB 288 Major Modification Threshold in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	246,787 + 204,035 + 204,035 + 302,684 = 957,541	50,000	Yes
SO _x	180,345 + 149,103 + 149,103 + 221,192 = 699,743	80,000	Yes
PM ₁₀	86,240 + 71,299 + 71,299 + 105,770 = 334,608	30,000	Yes

Since the project's PE2 surpasses the SB 288 Major Modification Threshold for NO_x, SO_x, and PM₁₀, the Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

$$NEI = \sum (PE2 - AE)$$

Where: PE2 = the sum of all the PE2s for each permit unit in this project
 AE = Actual emissions, as of a particular date, shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

Based off information provided by the applicant for the past 10 years of operation, the District has determined the calendar years 2017-2018 represent the consecutive 24-month period that is most representative of the normal source operation (see Appendix H).

Actual Emissions (AE) are calculated based off of the actual throughput data the applicant has provided during the baseline period: 2017 – 537,456 tons of glass produced/year; 2018 – 462,796 tons of glass produced/year. The AE are calculated as follows:

NO_x:

Based off of CEMS data submitted by the facility, the average NO_x emission factor was 0.99 lb-NO_x/ton of glass produced (based off of 30 day run average).

Using the NO_x emission factor of 0.93 lb/ton of glass produced, AE = (537,456 + 462,796) ÷ 2 x 0.99 = **495,125 lbs-NO_x /year**.

SO_x:

Based off of CEMS data submitted by the facility, the average SO_x emission factor was 0.70 lb-SO_x/ton of glass produced (based off of 30 day run average).

Using the SO_x emission factor of 0.70 lb/ton of glass produced, AE = (537,456 + 462,796) ÷ 2 x 0.70 = **350,088 lbs-SO_x /year**.

PM₁₀:

The four furnaces were source tested in the baseline period and yielded the following emission rates: 2017 – 0.0605 lb-PM₁₀/ton; 2018 – 0.089 lb-PM₁₀/ton. The average emission rate during this period is 0.0748 lb-PM₁₀/ton.

Using the average PM₁₀ emission factor from the source tests during the baseline period of 0.07 lb/ton of glass produced, AE = (537,456 + 462,796) ÷ 2 x 0.07 = **35,009 lbs-PM₁₀/year**.

Using the PE2 from this project and the calculated AE, the NEI is calculated as follows:

$$NEI = \sum (PE2 - AE)$$

$$NEI = (PE2_{unit-1} - AE_{unit-1}) + (PE2_{unit-2} - AE_{unit-2}) + (PE2_{unit-3} - AE_{unit-3}) + (PE2_{unit-4} - AE_{unit-4})$$

Or

$$NEI = (PE2_{unit-1} + PE2_{unit-2} + PE2_{unit-3} + PE2_{unit-4}) - (AE_{unit-1} + AE_{unit-2} + AE_{unit-3} + AE_{unit-4})$$

$$\begin{aligned} NEI_{NO_x} &= 957,541 \text{ lbs/year} - 495,125 \text{ lbs/year} \\ &= 462,416 \text{ lbs-NO}_x/\text{year} \end{aligned}$$

$$\begin{aligned} NEI_{SO_x} &= 699,743 \text{ lbs/year} - 350,088 \text{ lbs/year} \\ &= 349,655 \text{ lbs-SO}_x/\text{year} \end{aligned}$$

$$\begin{aligned} NEI_{PM_{10}} &= 334,608 \text{ lbs/year} - 35,009 \text{ lbs/year} \\ &= 299,599 \text{ lbs-PM}_{10}/\text{year} \end{aligned}$$

SB 288 Major Modification Calculation and Determination					
Pollutant	PE2 (lb/year)	AE (lb/yr)	NEI (lb/yr)	Thresholds (lb/yr)	SB 288 Major Modification?
NO _x	957,541	495,125	462,416	50,000	Yes
SO _x	699,743	350,088	349,655	80,000	Yes
PM ₁₀	334,608	35,009	299,599	30,000	Yes

As demonstrated in the preceding table, this project is an SB 288 Major Modification for NO_x, SO_x, and PM₁₀.

8. Federal Major Modification

As demonstrated above, this facility is a major source for NO_x, SO_x, PM₁₀, and PM_{2.5}. Therefore, the Federal Major Modification calculation will only be performed for these criteria pollutants.

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

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. In step 1, emission decreases can not cancel out the increases. Step 2 allows consideration of the project’s net emissions increase as described in 40 CFR 51.165 and the Federal Clean Air Act Section 182 (e), as applicable.

Project consists of both existing and new emissions units, the “hybrid test” specified in 40 CFR 51.165(a)(2)(ii)(F) is applicable and requires that the project emissions increase determination be based on the sum of the individual emissions increase determinations for existing emissions units and new emissions units pursuant to 40 CFR 51.165 (a)(2)(ii)(C) and (D) respectively.

The new unit (silo served by bin vent filter) has emissions less than 0.5 lb-PM₁₀/day. Per District Policy APR 1150, for purposes of determining if a new or modified emission unit is part of a Federal Major Modification, if the annual emission increase for the emission unit when divided by 365 is less than or equal to 0.5 lb-PM₁₀/day, such an increase shall be rounded to 0. Therefore, according to District Policy APR 1150, annual PM₁₀ emission increase from the proposed new silo served by bin vent filter is rounded to 0.

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

Emission Increase = PAE – BAE

As described in 40 CFR 51.165(a)(1)(xxviii)(B), when using historical data and a company’s expected business activity to determine PAE, the portion of the emissions after the project that the existing unit could have accommodated (Unused Baseline Capacity, UBC) before the project (during the same 24-month baseline period used to

determine BAE) and that are unrelated to the particular project (including emissions increases due to product demand growth) are to be excluded.

Otherwise, according to 40 CFR 51.165(a)(1)(xxvii)(B)(4), when determining PAE, in lieu of using the method described in 40 CFR 51.165 (a)(1)(xxviii)(B)(1)-(3), *Projected Actual Emissions*, the owner/operator may elect to use emissions unit's Potential to Emit. If appropriate projected actual emissions are not provided by the applicant, then the emissions unit's Potential to Emit is used to calculate the emissions increase.

Since the project proponent has provided the required historical and projected operation data required to calculate PAE (see below), the emissions increase will be 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

Projected Actual Emissions

The applicant has projected actual emissions based on historical production and projected future use of the furnaces of 2,018 tons of glass produced per day (equivalent to 736,570 tons of glass produced per year). The projected actual production amount accounts for historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity. The projected future use accounts for expanded growth with the E&J Gallo Winery brand, expanded outside sales, and business mergers and acquisitions.

$$\text{Projected Actual Emissions} = \text{Emission Factor} \times \text{Projected Actual Glass Production}$$

Projected Actual Emissions (PAE)				
Permit Units	Pollutant	Emission Factor (lb/ton)	Production (tons/year)	PAE (lb/year)
N-1662-1, -2, -3, -4	NO _x	1.3	736,570	957,541
	SO _x	0.95	736,570	699,742
	PM ₁₀	0.45	736,570	331,457
	PM _{2.5} *	0.45	736,570	331,457

*Assuming PM₁₀ = PM_{2.5}

Baseline Actual Emissions

For emission units (other than electric utility steam generating units), according to according to 40 CFR 51.165(a)(1)(xxxv)(B), the BAE are calculated as the average, in tons/year, at which the emissions unit actually emitted during any 24-month period selected by the operator within the previous 10-year period.

The Federal Major Modification Baseline Actual Emissions will be calculated utilizing information provided by the applicant. Based on the information for the past 10 years of operation, the applicant has proposed to use the 2016-2017 calendar years as the baseline period for the project.

BAE are calculated based off of the actual throughput data the applicant has provided during the baseline period: 2016 – 543,906 tons of glass produced/year 2017 – 537,456 tons of glass produced/year. The BAE are calculated as follows:

NO_x:

Based off of CEMS data submitted by the facility, the average NO_x emission factor was 0.93 lb-NO_x/ton of glass produced (based off of 30 day run average).

Using the NO_x emission factor of 0.93 lb/ton of glass produced, BAE = (537,456 + 462,796) ÷ 2 x 0.93 = **465,117 lbs-NO_x /year**.

SO_x:

Based off of CEMS data submitted by the facility, the average SO_x emission factor was 0.67 lb-SO_x/ton of glass produced (based off of 30 day run average).

Using the SO_x emission factor of 0.67 lb/ton of glass produced, BAE = (537,456 + 462,796) ÷ 2 x 0.67 = **335,084 lbs-SO_x /year**.

PM₁₀:

The four furnaces were source tested in the baseline period and yielded the following emission rates: 2016 – 0.0579 lb-PM₁₀/ton; 2017 – 0.0605 lb-PM₁₀/ton. The average emission rate during this period is 0.0592 lb-PM₁₀/ton .

Using the average PM₁₀ emission factor from the source tests during the baseline period of 0.06 lb/ton of glass produced, BAE = (537,456 + 462,796) ÷ 2 x 0.06 = **30,008 lbs-PM₁₀/year**.

Baseline Actual Emissions are presented in the table below.

Baseline Actual Emissions (BAE)					
Permit Unit	Two Year Average	NO _x (lb/year)	SO _x (lb/year)	PM ₁₀ (lb/year)	PM _{2.5} * (lb/year)
N-1662-1, -2, -3, -4	2016-2017	465,117	335,084	30,008	30,008

*Assuming PM₁₀ = PM_{2.5}

Unused Baseline Capacity

As described in 40 CFR 51.165(a)(1)(xxviii)(B), when using historical data and company's expected business activity and highest projections of business activity to determine PAE, the portion of the emissions after the project that the existing unit could have accommodated before the project (during the same 24-month baseline period used to

determine BAE) and that are unrelated to the particular project (including emissions increases due to product demand growth) are to be excluded.

The units have historically operated near their permitted emission limits for NO_x and SO_x as demonstrated by CEMS data. For PM₁₀ emissions, the source test data has demonstrated that the emission rate varies and has ranged from as low as 0.053 lb-PM₁₀/ton of glass pulled, up to 0.28 lb-PM₁₀/ton of glass pulled with one of the runs during that source test measuring as high as 0.47 lb-PM₁₀/ton of glass pulled. To maintain a margin of compliance when accounting for all startups, shutdowns, and malfunctions, as authorized by 40 CFR 51.165 (a)(1)(xxviii)(B)(2), the permitted emission limits will be used when calculating the emissions that the unit could have physically and legally accommodated during the baseline period.

Additionally, as demonstrated with the information provided by the applicant in the following table, the furnaces have actually produced up to a combined 1,709 tons per day of glass. The following table considers the maximum operational data from each furnace based on product demand on any given day during the baseline period since the furnaces do not typically operate at the maximum capacity for all units on a single day:

Actual Production Data (tons/day)				
Date	Furnace #1	Furnace #2	Furnace #3	Furnace #4
02/26/16	463	391	316	
01/09/16	417	398	289	468
05/28/17	327	387	337	505
10/04/16	441	388	317	512
Total: 1,709				

The four Gallo Glass Company furnaces have maximum glass pull rate design capacities of the following: Furnace 1 (520 tons/day), Furnace 2 (430 tons/day), Furnace 3 (430 tons/day) and Furnace 4 (638 tons/day). The applicant has stated that the furnaces typically operate over 80% of their maximum pull capacity and are only limited by the facility's current demand for product (glass wine bottles). Based on the applicant's statement, there is nothing physically preventing the facility from operating each furnace at their maximum capacity, as stated above.

The maximum design capacities of all four furnaces is calculated as follows:

$$520 + 430 + 430 + 638 \text{ tons/day} = 2,018 \text{ total tons/day.}$$

The applicant stated that the market demand for higher production rates, due to increases from internal demand (E&J Gallo Winery) or from expanded outside sales, and business mergers and acquisitions could be accommodated if the demand materialized. Additionally, since Gallo Glass Company produces containers for the E&J Gallo Winery (with an international market) and to outside customers, if disruptions in container glass supply from another facility (i.e. catastrophic plant closure) or as a whole (e.g. loss of alternate suppliers, import tariffs, global pandemics), Gallo Glass Company could easily increase production

and would do so with the furnaces as they are currently permitted/configured. Therefore, if the market demand required such production, the applicant indicated that the production of the four furnaces combined is able to physically produce a maximum capacity of 2,018 tons of glass per day (equivalent to 736,570 tons of glass per year).

As discussed above, the maximum quantity of glass that could have been produced, as identified by the applicant, is identical to the maximum combined design capacity of the furnaces, 2018 tons/day. Therefore, the facility could have accommodated the following annual production rate: 2,018 tons/day x 365 days/year = 736,570 tons/year, resulting in the following emissions:

Permit Units	Pollutant	lb/year
N-1662-1, -2, -3, -4	NO _x	957,541
	SO _x	699,742
	PM ₁₀	331,457
	PM _{2.5} *	331,457

*Assuming PM₁₀ = PM_{2.5}

The unused baseline capacity (UBC) for this project is the difference between the emissions the units could have accommodated (maximum furnace designed capacity of production) and the baseline actual emissions as summarized in the following table:

Unused Baseline Capacity			
Pollutant	Maximum Production (lb/yr)	BAE (lb/yr)	UBC (lb/yr)
NO _x	957,541	465,117	492,424
SO _x	699,742	335,084	364,658
PM ₁₀	331,457	30,008	301,449
PM _{2.5} *	331,457	30,008	301,449

*Assuming PM₁₀ = PM_{2.5}

Project Emissions Increase For Modified Emission Units

$$EI = PAE - BAE - UBC$$

Project Emissions Increase For Modified Emissions Units (EI)					
Permit Units		NO _x	SO _x	PM ₁₀	PM _{2.5}
N-1662-1, -2, -3, -4 (Modified emissions units)	PAE (lb/year)	957,541	699,742	331,457	331,457
	BAE (lb/year)	465,117	335,084	30,008	30,008
	UBC (lb/year)	492,424	364,658	301,449	301,449
	EI (lb/year)	0	0	0	0

Project Emissions Increase

Project Emissions Increase For Existing Units (EI)					
Permit Units		NO _x	SO _x	PM ₁₀	PM _{2.5}
N-1662-1, -2, -3, -4 (Modified emissions units)	EI (lb/year)	0	0	0	0
N-1662-1, -2, -3, -4 (New emissions unit)	EI (lb/year)	0	0	0	0
Project Emissions Increase (lb/year)		0	0	0	0

In conclusion, the project's total emission increases are summarized in the following table and are compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Project Emissions Increases (lb/year)	Thresholds (lb/year)	Federal Major Modification?
NO _x *	0	0	No
VOC*	0	0	No
PM ₁₀	0	30,000	No
PM _{2.5}	0	20,000	No
SO _x	0	80,000	No

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

Since none of the Federal Major Modification Thresholds are being surpassed with this project, this project does not constitute a Federal Major Modification, step 2 is not required and no further discussion is required.

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

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

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

I. Project Location Relative to Class 1 Area

As demonstrated in the “PSD Major Source Determination” Section above, the facility was determined to be a existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no further PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO₂	SO₂	CO	PM	PM₁₀
Total PE from New and Modified Units	479	350	44	167	167
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	Y	Y	N	Y	Y

As demonstrated in the table above, because the post-project potential to emit from all new and modified emission units is greater than at least one PSD significant emission increase threshold, further analysis is required to determine if the project will result in an increase greater than the PSD significant emission increase thresholds, see step b. below for further analysis.

b. Evaluation of Calculated Emission Increases vs PSD Significant Emission Increase Thresholds

In this step, the emission increase for each subject pollutant is compared to the PSD significant emission increase threshold, and if the emission increase for each subject pollutant is below their threshold, no further analysis is required.

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

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

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

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

The project's total emission increases, as calculated in the Federal Major Modification section above, are listed below and compared to the PSD significant emission increase thresholds in the following table.

PSD Significant Emission Increase Determination: Emission Increase (tons/year)					
	NO₂	SO₂	CO	PM	PM₁₀
Emission Increases (only)	0	0	44*	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	No	No	No	No	No

* Since this value was not calculated in the Federal Major Modification section, as a worse case, it will be assumed to be equal to the PE2 for the units in this project.

As shown in the table above, the emission increases from the project, 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 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. The only change in potential emissions is solely 2 lb-PM₁₀/year from the lime storage silo. This emissions increase will be attributed to unit -1 only.

VIII. Compliance Determination

Rule 1080 Stack Monitoring

This Rule grants the APCO the authority to request the installation and use of continuous emissions monitors (CEMs), and specifies performance standards for the equipment and administrative requirements for recordkeeping, reporting, and notification.

Furnace #1, #2, #3, and #4 are equipped with an operational CEMs for NO_x and SO_x on the shared stack. Continued compliance with the requirements of this Rule is anticipated.

The following existing conditions will be included on the Authority to Construct permit for each of the furnaces:

- 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 emission 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]
- 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]
- 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]
- 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]
- An exceedance of a NO_x or SO_x 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 NO_x, CO and VOC emissions, and 4) corrective actions and schedules to complete the work. [District Rule 1080 and Stanislaus County Rule 1080]
- 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]
- 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]
- 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]

- 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]
- 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]
- {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]
- 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]

Rule 1081 Source Sampling

This rule requires adequate and safe facilities for use in sampling to determine compliance with emission limits, and specifies methods and procedures for source testing and sample collection. Compliance with this Rule is expected.

The furnaces are subject to Rule 1081 requirements. The following existing conditions will be included on the Authority to Construct permit for each of the furnaces:

- 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]
- 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]
- 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 downstream of the electrostatic precipitator and the ceramic filter dust collectors 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]

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing a new lime storage silo with a PE less than 2 lb/day for PM₁₀. BACT is not triggered for PM₁₀ since the PE is less than 2 lb/day.

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

$$AIPE = PE2 - (PE1 * (EF2 / EF1))$$

Since the emission factors are not changing, EF2 = EF1 and EF2/EF1 =1.

AIPE (lb/day) for N-1662-1					
	NO _x	SO _x	PM ₁₀	CO	VOC
PE2 (lb/day)	676.1	494.1	369.3	20.8	10.4
PE1 (lb/day)	676.1	494.1	369.3	20.8	10.4
AIPE (lb/day)	0.0	0.0	0.0	0.0	0.0

AIPE (lb/day) for N-1662-2 and -3					
	NO _x	SO _x	PM ₁₀	CO	VOC
PE2 (lb/day)	559.0	408.5	305.3	86.0	8.6
PE1 (lb/day)	559.0	408.5	305.3	86.0	8.6
AIPE (lb/day)	0.0	0.0	0.0	0.0	0.0

AIPE (lb/day) for N-1662-4					
	NO _x	SO _x	PM ₁₀	CO	VOC
PE2 (lb/day)	829.3	606.0	452.9	127.6	12.8
PE1 (lb/day)	829.3	606.0	452.9	127.6	12.8
AIPE (lb/day)	0.0	0.0	0.0	0.0	0.0

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7, this project constitutes an SB 288 Major Modification for NO_x, SO_x, and PM₁₀ emissions. BACT is triggered for NO_x, SO_x, and PM₁₀ for each new and modified emissions unit in this project. Therefore, BACT is triggered for each furnace and the lime storage silo served by a bin vent filter.

2. BACT Guideline

BACT Guideline 1.5.9, applies to the container glass melting furnaces. [Container Glass Melting Furnace] (See Appendix D)

BACT Guideline 8.4.1 applies to the lime storage silo. [Dry Material Storage and Handling Operations (Except Grains)] (See Appendix E)

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 Analyses (see Appendices D and E), BACT has been satisfied with the following:

Container Glass Melting Furnaces

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

PM₁₀: 0.45 lb/ton of glass pulled

Lime Storage Silo Served by Bin Vent Filter

PM₁₀: Use of bin vent filter

B. Offsets

1. Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

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

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	1,454,086	702,001	539,025	113,156	16,687
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	No	No

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for NO_x, SO_x, and PM₁₀ and the SSPE2 is greater than the offset thresholds. Therefore offset calculations will be required for this project.

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from the furnaces are equal to the PE1 since the furnaces are Clean Emissions Units.

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

NO_x:

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

$$\sum \text{PE2 (NO}_x) = 957,541 \text{ lb/year}$$

$$\sum \text{BE (NO}_x) = 957,541 \text{ lb/year}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([957,541 - 957,541] + 0) \times \text{DOR} \\ &= 0 \text{ lb NO}_x/\text{year} \end{aligned}$$

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

SO_x:

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

$$\sum \text{PE2 (SO}_x) = 699,742 \text{ lb/year}$$

$$\sum \text{BE (SO}_x) = 699,742 \text{ lb/year}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([699,742 - 699,742] + 0) \times \text{DOR} \\ &= 0 \text{ lb SO}_x/\text{year} \end{aligned}$$

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

PM₁₀:

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

$$\sum \text{PE2 (PM}_{10}) = 334,608 \text{ lb/year}$$

$$\sum \text{BE (PM}_{10}) = 334,606 \text{ lb/year}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([334,608 - 334,606] + 0) \times \text{DOR} \\ &= 2 \text{ lb PM}_{10}/\text{year} \end{aligned}$$

Pursuant to District Policy APR 1130, offsets will not be required for this project since the total project annual emission increase (sum for all units in the project) averages less than or equal to 0.5 lb/day and is therefore rounded to zero for the purposes of triggering NSR requirements.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

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

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

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project is an SB 288 Major Modification. 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

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	1,454,086	1,454,086	20,000 lb/year	No
SO _x	702,001	702,001	54,750 lb/year	No
PM ₁₀	539,023	539,025	29,200 lb/year	No
CO	113,156	113,156	200,000 lb/year	No
VOC	16,687	16,687	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	1,454,086	1,454,086	0	20,000 lb/year	No
SO _x	702,001	702,001	0	20,000 lb/year	No
PM ₁₀	539,025	539,023	2	20,000 lb/year	No
CO	113,156	113,156	0	20,000 lb/year	No
VOC	16,687	16,687	0	20,000 lb/year	No

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

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project does not constitute a Title V significant modification. Therefore, public noticing for Title V significant modifications is not required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project for being an SB 288 Major Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATCs for this equipment.

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

N-1662-1, -2, -3, -4

- The furnace shall be fired on natural gas and LPG only. [District Rule 2201]

- 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]
- 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 0.95 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 0.79 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 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 maximum throughput of lime received and stored in the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed either of the following: 65 ton-lime/day or 110 tons-lime/quarter. [District Rule 2201]²
- PM₁₀ emissions rate from the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed 0.0049 lb-PM₁₀/ton-lime stored. [District Rule 2201]
- Each dust collector and bin vent filter shall be maintained and operated in the range that optimizes control efficiency as recommended by the manufacturer. [District Rule 2201]
- Each dust collector and bin vent filter's cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
- Material removed from each dust collector shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
- 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]
- A spare set of bags or filters shall be maintained on the premises at all times for the bin vent filter serving the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4. [District Rule 2201]
- The ceramic filter dust collectors shall each be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauges shall be maintained in good working condition at all times and shall be located in easily accessible locations. [District Rules 2201 and 4354 and 40 CFR Part 64]

² The annual throughput limit of 440 tons/year is being made enforceable on a quarterly basis (440 tons/year ÷ 4 qtr/year = 110 tons/qtr) to be consistent with the other existing limits on the permit.

- During operation of the ceramic filter dust collectors, the pressure differential gauge readings shall be 1 to 20 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64]
- The permittee shall maintain the burner oxygen to fuel ratio records required by this permit. [District Rules 2201 and 4354]
- The emission limits of this permit shall not apply during routine maintenance of the respective control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all 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]

N-1662-1-18

- 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, 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]
- 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]

N-1662-2-20

- 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, CO emissions shall not exceed 0.2 pounds per ton of glass produced. [District Rule 2201]
- Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201]
- 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 Rule 2201]
- 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 from July

24, 2016 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]

N-1662-3-19

- 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, 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 Rule 2201]
- Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201]
- The PM₁₀ emissions shall not exceed 19,006 pounds during the first calendar quarter, 19,178 pounds during the second calendar quarter, 19,351 pounds during the third calendar quarter and 19,351 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]

N-1662-4-20

- The quantity of glass produced shall not exceed 637.9 tons during any one day. [District Rules 2201 and 4354]
- Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.20 pounds per ton of glass produced. [District Rule 2201]
- Except during periods of startup, shutdown, and idling, VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201]
- The PM₁₀ emissions shall not exceed 28,132 pounds during the first calendar quarter, 28,445 pounds during the second calendar quarter, 28,757 pounds during the third calendar quarter and 28,758 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]
- During furnace idling, NO_x emissions shall not exceed 956.9 pounds in any one day. [District Rules 2201 and 4354]
- During furnace idling, CO emissions shall not exceed 637.9 pounds in any one day. [District Rules 2201 and 4354]
- During furnace idling, VOC emissions shall not exceed 12.8 pounds in any one day. [District Rules 2201 and 4354]

- During furnace idling, SOx emissions shall not exceed 701.7 pounds in any one day when producing glass with cullet that is equal to or greater than 25% by weight mixed color cullet. [District Rules 2201 and 4354]
- During furnace idling, SOx emissions shall not exceed 574.1 pounds in any one day when producing glass with cullet that is less than 25% by weight mixed color cullet. [District Rules 2201 and 4354]
- During furnace idling, PM10 emissions shall not exceed 319.0 pounds in any one day. [District Rules 2201 and 4354]

E. Compliance Assurance

1. Source Testing

N-1662-1, -2, -3, -4

Annual testing is required for District Rule 4354 compliance. The following existing conditions will be included 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]
- 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 collectors 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

N-1662-1, -2, -3, -4

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

N-1662-1, -2, -3, -4

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 the 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 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]
- 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]
- When the electrostatic precipitator is in operation, 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 and bin vent filter 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]
- Records of daily and quarterly amount of lime transferred into the lime storage silo shall be maintained. [District Rules 1070 and 2201]
- 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

N-1662-1, -2, -3, -4

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

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

In accordance with Rule 2520, Minor Permit Modifications are permit modifications that:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;

3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements;
7. Do not grant or modify a permit shield.

Additionally, Section 11.4 requires a description of the proposed change, the emissions resulting from the change, any new applicable requirements that will apply if the change occurs, suggested draft permits, compliance certification and an EPA 45-day review period of the proposed permit modification (or a shorter period if EPA has notified the District that EPA will not object to issuance of the permit modification, whichever is first).

As discussed above, the facility has applied for a Certificate of Conformity (COC) and the District will forward to EPA, for a 45-day review period, this application review which includes the proposed modified Title V permit [i.e. proposed ATC(s)] and the compliance certification form which demonstrates compliance with the minor permit modification requirements in Section 11.4. Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application.

Rule 4001 New Source Performance Standards (NSPS)

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

N-1662-2, -3, -4

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.”

Furnaces #2, #3 and #4 have been modified since 1979 and are subject to the requirements of Subpart CC. Furnace #1 has not been modified, as defined in the subpart, since 1979 and is not subject to the requirements of Subpart CC. The following existing conditions will be included on the ATCs for furnaces #2, #3, and #4 as a mechanism 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]
- When the electrostatic precipitator is in operation, 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]
- When the electrostatic precipitator is in operation, 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]
- When the electrostatic precipitator is in operation, 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 (NESHAPs)

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

N-1662-1, -2, -3, -4

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 existing condition will continue to be listed on each of the Authority to Construct permits for the furnaces:

- 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

N-1662-2, -3, -4

Section 63.11448

Facilities are subject to this subpart if they 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) Glass manufacturing facilities that use 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 and will continue to be an area source of HAP emissions. Therefore, this facility is subject to the requirements of this subpart. The following existing 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

District Rule 4101, Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringelmann 1 or equivalent to 20% opacity.

The following existing condition listed on the facility-wide permit (-0-4) will be maintained as a mechanism to ensure compliance:

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

Rule 4102 Nuisance

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.

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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

HRA Summary		
Permit Units	Cancer Risk	T-BACT Required
N-1162-1-19, -2-21, -3-20 and -4-22	N/A*	No

* A prioritization was not performed after determining no Toxic Air Contaminants (TACs) are associated with this project. No further analysis was required.

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the

HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 20 in a million). As outlined by the HRA Summary in Appendix F of this report, the emissions increases for this project was determined to be less than significant.

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.

N-1662-1, -2, -3, -4

For the furnaces:

The worst case particulate matter emission concentration from the furnaces will occur during operation with the emission control system (ESP and ceramic filter dust collectors) by-passed. Compliance with the requirements of this rule was shown during the most recent source test performed on 4/16-17/19 which measured a concentration of 0.022 gr/dscf. Continued compliance is expected.

For the shared lime storage silo:

$$\text{PM Conc. (gr/scf)} = \frac{(\text{PM emission rate}) \times (7,000 \text{ gr/lb})}{(\text{Air flow rate}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})}$$

PM₁₀ emission rate = 0.3 lb/day. Assuming 100% of PM is PM₁₀

Exhaust Gas Flow = 500 scfm per the applicant

$$\begin{aligned} \text{PM Conc. (gr/scf)} &= [(0.3 \text{ lb/day}) \times (7,000 \text{ gr/lb})] \div [(500 \text{ ft}^3/\text{min}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})] \\ \text{PM Conc.} &= 0.0029 \text{ gr/scf} \end{aligned}$$

Therefore, compliance with the Rule is expected.

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, -2, -3, -4 (lime storage silo)

Hourly Process Rate = $400 \text{ lb/ft}^3 \times 500 \text{ ft}^3/\text{min} \times 60 \text{ min/hr} \div 2000 \text{ lb/ton} = 6000 \text{ ton/hr}$

Where 400 lb/ft^3 is the density of lime and $500 \text{ ft}^3/\text{min}$ is the flow rate through the silo per the applicant.

Rule 4202 emission limit = $17.31 * P^{0.16}$ (where P is greater than 30 tons/hr)
= $17.31 * (2.5)^{0.16}$
= 20.04 lb/hr

The operation has a maximum Post-Project Potential to Emit (PE2) of 0.3 lb/hr (assuming that the entire daily throughput limit can be processed in one hour).

Since the PE PM is less than the allowable value of 20.04 lb-PM/hr, the PM emissions are within allowable limits and compliance with the rule is expected.

N-1662-1 (furnace)

Hourly Process Rate = $520.1 \text{ tons/day} \div 24 \text{ hr/day} = 21.67 \text{ tons/hr}$

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

Pursuant to AP-42 Table 11.15-3, the PM_{10} fraction for a glass furnace manufacturing operation served by an electrostatic precipitator is $0.75 \text{ lb-PM}_{10}/\text{lb-PM}$. Since the $\text{PM}_{10}/\text{lb-PM}$ ratio is expected to be similar, using this data and the PM_{10} emission rate from the furnace:

PE PM = $369.3 \text{ lb-PM}_{10}/\text{day} \times \text{lb-PM}/0.75 \text{ lb-PM}_{10} \times \text{day}/24 \text{ hours}$
PE PM = 20.51 lb/hr

Since the 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 (furnace)

Hourly Process Rate = $430 \text{ tons/day} \div 24 \text{ hr/day} = 17.92 \text{ tons/hr}$

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

Pursuant to AP-42 Table 11.15-3, the PM_{10} fraction for a glass furnace manufacturing operation served by an electrostatic precipitator is $0.75 \text{ lb-PM}_{10}/\text{lb-PM}$. Since the $\text{PM}_{10}/\text{lb-PM}$ ratio is expected to be similar, using this data and the PM_{10} 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 the 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 (furnace)

$$\text{Hourly Process Rate} = 430 \text{ tons/day} \div 24 \text{ hr/day} = 17.92 \text{ tons/hr}$$

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

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. Since the PM₁₀/lb-PM ratio is expected to be similar, 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 the 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-1662-4 (furnace)

$$\text{Hourly Process Rate} = 637.9 \text{ tons/day} \div 24 \text{ hr/day} = 26.58 \text{ tons/hr}$$

$$\begin{aligned}\text{Rule 4202 emission limit} &= 3.59 * P^{0.62} \text{ (where P less than or equal to 30 tons/hr)} \\ &= 3.59 * (26.58)^{0.62} \\ &= 27.44 \text{ lb-PM/hr}\end{aligned}$$

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. Since the PM₁₀/lb-PM ratio is expected to be similar, using this data and the PM₁₀ emission rate from the furnace:

$$\begin{aligned}\text{PE PM} &= 452.9 \text{ lb-PM}_{10}/\text{day} \times \text{lb-PM}/0.75 \text{ lb-PM}_{10} \times \text{day}/24 \text{ hours} \\ \text{PE PM} &= 25.18 \text{ lb/hr}\end{aligned}$$

Since the PE PM is less than the allowable value of 27.44 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. This rule and the following analysis applies to the furnaces in permits N-1662-1, -2, -3, and -4.

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 a furnace battery. Therefore, the furnace battery must meet an emission limit of:

NO_x Limit = 1.5 lb/ton – 1.5 lb/ton x 0.1 = 1.4 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 5.2.2 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 a furnace battery. Therefore, the furnace battery must meet emission limits of:

CO Limit = 1.0 lb/ton – 1.0 lb/ton x 0.1 = 0.9 lb/ton (using District rounding procedures)

VOC Limit = 0.25 lb/ton – 0.25 lb/ton x 0.1 = 0.23 lb/ton (using District rounding procedures)

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

SO_x Emission Limits

Section 5.3.2 identifies SO_x 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 a furnace battery. Therefore, the furnace battery must meet an emission limit of:

$\text{SOx Limit} = 1.1 \text{ lb/ton} - 1.1 \text{ lb/ton} \times 0.1 = 0.99 \text{ lb/ton}$ (using District rounding procedures), for units with $> 25.0\%$ color cullet

$\text{SOx Limit} = 0.90 \text{ lb/ton} - 0.90 \text{ lb/ton} \times 0.1 = 0.81 \text{ lb/ton}$ (using District rounding procedures), for units with $< 25.0\%$ color cullet

The applicant's proposal meets the above emission limit requirements; 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 – PM₁₀ Emission Limits (lb/ton glass produced) Block 24-hour average		
Furnace Type	Firing Technology	PM₁₀ 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 the furnace battery; 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 for a furnace rebuild; therefore, this section does not apply.

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 existing conditions will be listed on each Authority to Construct for the furnaces:

- 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 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, PM₁₀, CO and VOC, and emissions during idling shall not exceed the amount as calculated using the following equation:

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

Where,

$E_{i,max}$ = 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 existing conditions will be listed on each Authority to Construct for the furnaces.

- 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 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 following existing condition will be listed on permits -1, -2, and -3.

- 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]

The following existing conditions will be listed on permit 4.

- During furnace idling, NO_x emissions shall not exceed 956.9 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
- During furnace idling, CO emissions shall not exceed 637.9 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
- During furnace idling, VOC emissions shall not exceed 12.8 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
- During furnace idling, SO_x emissions shall not exceed 701.7 pounds in any one day when producing glass with cullet that is equal to or greater than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
- During furnace idling, SO_x emissions shall not exceed 574.1 pounds in any one day when producing glass with cullet that is less than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
- During furnace idling, PM₁₀ emissions shall not exceed 319.0 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit

Monitoring Requirements

NOx Emission Monitoring Requirements

Section 5.9.1 requires that the operator of any glass melting furnace shall implement a NOx 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 NOx emissions from all the furnaces provided the emission measurements are made at the common stack. The furnace battery at this facility has a NOx CEMS. Therefore, the requirements of this section of the rule are satisfied. The following existing conditions will be included on each Authority to Construct for the furnaces:

- 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 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 existing condition will be listed on each Authority to Construct for the furnaces:

- 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 existing conditions will be included on each Authority to Construct for the furnaces:

- 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 existing permits currently require 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 existing conditions will be included on each Authority to Construct for the furnaces:

- 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]
- When the electrostatic precipitator is in operation, 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 existing condition will be included on each Authority to Construct for the furnaces:

- The 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 of the furnaces has a 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 that 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 existing conditions will be included on each Authority to Construct for the furnaces:

- When the electrostatic precipitator is in operation, the specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354 and 40 CFR Part 64]
- 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]
- 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]
- When the electrostatic precipitator is in operation, 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 existing condition will be included on each Authority to Construct for the furnaces:

- 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 existing conditions will be included on each Authority to Construct permit for the furnaces:

- 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. 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 existing condition will be included on each Authority to Construct permit for the furnaces:

- 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 existing condition will be included on each Authority to Construct permit for the furnaces:

- 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]

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 existing condition will be included on each Authority to Construct permit for the furnaces:

- 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 existing condition will be included on each Authority to Construct for the furnaces:

- 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 existing condition will be included on each Authority to Construct permit for the furnaces:

- 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. 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 existing condition will be included on each Authority to Construct for the furnaces:

- 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]

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 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 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 existing condition will be included on each Authority to Construct for the furnaces:

- 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 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 existing condition will be included on each Authority to Construct permit for the furnaces:

- 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.

The latest available source test for the furnace battery, dated December 11, 2019, indicates that the furnaces were operating with a sulfur concentration less than 2,000 ppmv (or 0.2 %). This project is not expected to increase the SO₂ concentration. Therefore, continued compliance is expected with this rule and the following existing condition will be included on the ATCs issued in this project:

- 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]

40 CFR Part 64 Compliance Assurance Monitoring

40 CFR Part 64 requires Compliance Assurance Monitoring (CAM) for units that meet the following three criteria:

- 1) the unit must have an emission limit for the pollutant;
- 2) the unit must have add-on controls for the pollutant; these are devices such as flue gas recirculation (FGR), baghouses, and catalytic oxidizers; and
- 3) the unit must have a pre-control potential to emit of greater than the major source thresholds.

CAM is only required to be addressed during significant Title V modification and during a Title V renewal. Since this project is not a significant Title V modification or a Title V renewal, CAM is not required to be evaluated. Therefore, the following existing condition will be included on each Authority to Construct permit for the furnaces:

- 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]
- When the electrostatic precipitator is in operation, 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] 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]
- During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 1 to 20 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64]

- The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 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]
- The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64]
- When the electrostatic precipitator is in operation, the specific power of the electrostatic precipitator shall be continuously monitored and recorded. [District Rules 2201 and 4354, and 40 CFR Part 64]
- When the electrostatic precipitator is in operation, 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]
- 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]

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project. The project will not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that for each emissions unit affected by the project the potential project emission increase is equal to or less than 2 lbs per day per pollutant. Therefore, the potential project emission increase is considerably below all annual criteria emissions CEQA significant thresholds. The activity will occur at an existing facility and involves negligible expansion of the existing or former use. Furthermore, the District determined that the activity will not have a significant effect on the environment. Therefore, the District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the common sense exemption that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

Indemnification Agreement/Letter of Credit Determination

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

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

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful EPA noticing period, issue ATCs N-1662-1-19, -2-21, -3-20, and -4-22 subject to the permit conditions on the attached draft ATCs in Appendix G.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-1662-1-19	3020-02-H	75 MMBtu/hr	\$1,138.00
N-1662-2-21	3020-02-H	75 MMBtu/hr	\$1,138.00
N-1662-3-20	3020-02-H	75 MMBtu/hr	\$1,138.00
N-1662-4-22	3020-02-H	90 MMBtu/hr	\$1,138.00

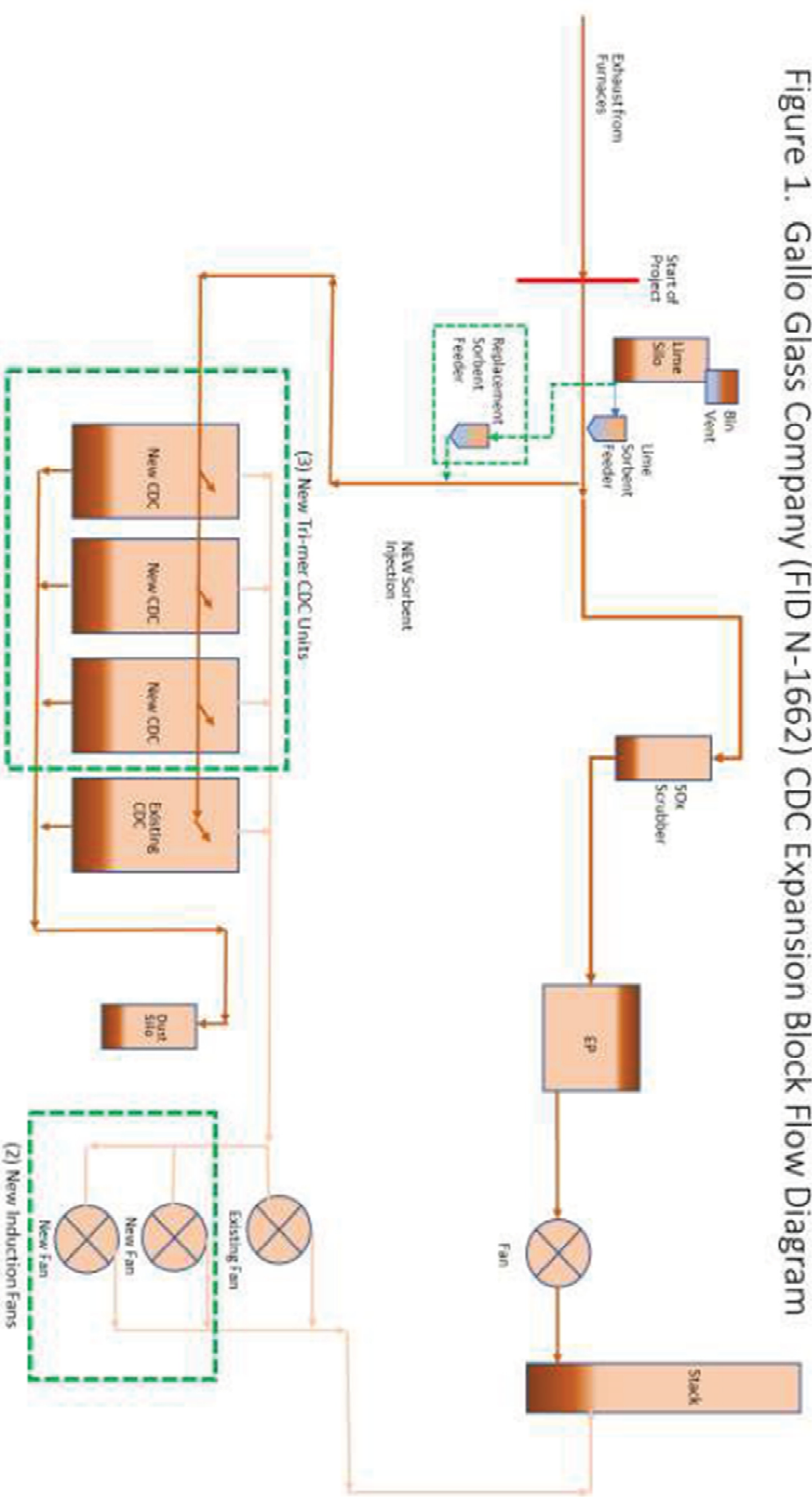
Appendices

- A: Process Flow Diagram
- B: Current PTOs
- C: PE Calculations for Permits N-1662-8-10, -10-4, -11-4, -12-4, -15-4
- D: BACT Guideline 1.5.9 and Analysis
- E: BACT Guideline 8.4.1 and Analysis
- F: HRA and AAQA Summary
- G: Draft ATCs
- H: Actual Emissions Calculations

APPENDIX A

Process Flow Diagram

Figure 1. Gallo Glass Company (FID N-1662) CDC Expansion Block Flow Diagram



APPENDIX B

Current PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-1662-1-18

EXPIRATION DATE: 06/30/2021

EQUIPMENT DESCRIPTION:

GLASS FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTH, COATING, AND CHAIN BURNERS. 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 UTF-500 CERAMIC FILTER TYPE DUST COLLECTORS

PERMIT UNIT REQUIREMENTS

1. 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
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. 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
4. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
5. 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
6. 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
7. 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
8. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

9. 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
10. 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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
18. 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
19. Source test conditions shall be representative of operations equal to or greater than 60 percent of capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
20. 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] Federally Enforceable Through Title V Permit
21. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

22. 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
23. 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
24. 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
25. 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
26. 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
27. 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
28. 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
29. 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
30. 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
31. 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
32. 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
33. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

34. 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
35. 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
36. 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
37. 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
38. 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
39. 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
40. 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
41. 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] Federally Enforceable Through Title V Permit
42. 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
43. 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
44. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
45. 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
46. 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
47. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

48. The emission limits of this permit shall not apply during routine maintenance of the respective control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all 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
49. 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
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. 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
52. Each dust collectors 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 each 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 largest dust collector, and for each type of filter, shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit
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 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 1 to 15 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

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. 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
66. 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
67. 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
68. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
69. 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
70. 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
71. 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
72. 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
73. 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
74. 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
75. 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
76. 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
77. 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

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-1662-2-20

EXPIRATION DATE: 06/30/2021

EQUIPMENT DESCRIPTION:

GLASS FURNACE #2 WITH 10 NORTH AMERICAN PRAXAIR GEN III GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTH, COATING, AND CHAIN BURNERS. 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 UTF-500 CERAMIC FILTER TYPE DUST COLLECTOR

PERMIT UNIT REQUIREMENTS

1. 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
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. 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
4. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
5. 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
6. 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
7. 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
8. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

9. 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
10. 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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
18. 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
19. Source test conditions shall be representative of operations equal to or greater than 60 percent of capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
20. 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] Federally Enforceable Through Title V Permit
21. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

22. 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
23. 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
24. 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
25. 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
26. An exceedance of a NO_x or SO_x 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 NO_x, 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
27. 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
28. 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
29. 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
30. 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
31. 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
32. 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
33. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

34. 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
35. 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
36. 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
37. 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
38. 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
39. 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
40. 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] Federally Enforceable Through Title V Permit
41. 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
42. 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
43. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
44. 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
45. Except during periods of startup, shutdown, idling, and during partial emission control system bypass episodes, PM10 emissions shall not exceed 0.45 lb/ton of glass produced. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
46. 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
47. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

48. The emission limits of this permit shall not apply during routine maintenance of the respective control systems. The routine maintenance in each calendar year shall not exceed 144 hours total for all 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
49. 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
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. 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
52. Each dust collectors 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 each 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 largest dust collector, and for each type of filter, shall be maintained on the premises. [District Rule 2201] Federally Enforceable Through Title V Permit
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, 40 CFR 60.293(d) 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, 40 CFR 60.293(d), 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 1 to 15 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, 40 CFR 60.293(d), 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

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. 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
66. 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
67. 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]
68. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
69. 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
70. 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
71. 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
72. 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
73. 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
74. 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
75. 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
76. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

77. 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
78. 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

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-1662-3-19

EXPIRATION DATE: 06/30/2021

EQUIPMENT DESCRIPTION:

GLASS FURNACE #3 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY) AND A 2700 KW ELECTRIC BOOST SYSTEM. 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 UTF-500 CERAMIC FILTER TYPE DUST COLLECTOR

PERMIT UNIT REQUIREMENTS

1. 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
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. 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
4. The furnace shall be fired on natural gas and LPG only. [District NSR Rule] Federally Enforceable Through Title V Permit
5. 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
6. One continuous emission 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
7. 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
8. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

9. 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
10. The startup exemption time period shall not exceed 70 days, beginning from the time of primary combustion system activation. [District Rule 4354] Federally Enforceable Through Title V Permit
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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
18. 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
19. 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
20. Source test conditions shall be representative of operations equal to or greater than 60 percent of capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
21. 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] 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.

22. 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
23. 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
24. 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
25. 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
26. 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
27. 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
28. 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
29. 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
30. 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
31. 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
32. 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
33. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

34. 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
35. 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
36. 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
37. 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
38. 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
39. 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
40. 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
41. 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
42. 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
43. 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
44. 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
45. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 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, 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

48. 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
49. The 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 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
50. The PM10 emissions shall not exceed 19,006 pounds during the first calendar quarter, 19,178 pounds during the second calendar quarter, 19,351 pounds during the third calendar quarter and 19,351 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
51. 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
52. 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
53. Each dust collectors cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
54. 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
55. 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
56. 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
57. 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
58. 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
59. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 1 to 15 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
60. 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
61. 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
62. 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
63. 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
64. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

65. 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
66. 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
67. 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
68. 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
69. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
70. 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
71. 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
72. 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
73. 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
74. 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
75. 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
76. 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
77. 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
78. 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

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-1662-4-20

EXPIRATION DATE: 06/30/2021

EQUIPMENT DESCRIPTION:

GLASS FURNACE #4 WITH 10 PRAXAIR GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (90 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 UTF-500 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 Rule 2201] 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] 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] 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] 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] 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] 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] 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] 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 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; 2520; and 4354] 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 capacity for each furnace as stated in the Permit to Operate. [District Rule 4354] Federally Enforceable Through Title V Permit
19. 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] Federally Enforceable Through Title V Permit
20. During source testing, 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. [District Rule 4354]
21. During source testing, the arithmetic average of three (3) 60-consecutive-minute test runs shall be used to determine compliance with PM10 emission limits. [District Rule 4354]
22. 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. [District Rule 4354]
23. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

24. 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
25. 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
26. 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
27. 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
28. 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
29. 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
30. Cylinder gas audits (CGAs) 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
31. 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] Federally Enforceable Through Title V Permit
32. 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] Federally Enforceable Through Title V Permit
33. 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] Federally Enforceable Through Title V Permit
34. 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] Federally Enforceable Through Title V Permit
35. 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] 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. 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
37. The amount of glass produced shall not exceed 637.9 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
38. NOx emissions shall not exceed 1.3 pounds per ton of glass produced. This performance based limit is to enforce the NOx emission reductions granted by certificate number N-107-2. [District Rule 2201] Federally Enforceable Through Title V Permit
39. CO emissions shall not exceed 0.20 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The VOC emissions shall not exceed 0.02 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
41. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
42. 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
43. The PM10 emissions, except for during full or partial emission control system bypass episodes, shall not exceed 0.45 lb/ton of glass produced. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
44. 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
45. The number of hours 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
46. The PM10 emissions shall not exceed 28,132 pounds during the first calendar quarter, 28,445 pounds during the second calendar quarter, 28,757 pounds during the third calendar quarter and 28,758 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
47. During furnace idling, NOx emissions shall not exceed 956.9 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
48. During furnace idling, CO emissions shall not exceed 637.9 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
49. During furnace idling, VOC emissions shall not exceed 12.8 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
50. During furnace idling, SOx emissions shall not exceed 701.7 pounds in any one day when producing glass with cullet that is equal to or greater than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
51. During furnace idling, SOx emissions shall not exceed 574.1 pounds in any one day when producing glass with cullet that is less than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
52. During furnace idling, PM10 emissions shall not exceed 319.0 pounds in any one day. [District Rules 2201 and 4354] 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.

53. Permittee shall notify the District at least 24 hours before initiating idling, shutdown and startup and this notification shall include: 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]
54. 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]
55. 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
56. The ceramic filter dust collector shall be maintained and operated according to manufacturer's specifications. [District Rule 2201] Federally Enforceable Through Title V Permit
57. 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
58. 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
59. 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
60. 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
61. 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 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
62. 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
63. During operation of the ceramic filter dust collector, the pressure differential gauge reading shall be 1 to 15 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] 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 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] 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.

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] Federally Enforceable Through Title V Permit
70. 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) shall be kept. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
71. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
72. The permittee shall maintain daily records of the aggregated NOx emissions. [District Rules 2520 and 4354] Federally Enforceable Through Title V Permit
73. 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
74. 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
75. 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
76. 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
77. 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
78. 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] Federally Enforceable Through Title V Permit
79. 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

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

APPENDIX C

PE Calculations for N-1662-8-10, -10-4, -11-4, -12-4, -15-4

N-1162-8

A. Assumptions

- The unit operates 365 days/year
- Maximum raw material transfer/mixing system throughput: 459 tons/day (per current permit)
- Maximum emergency furnace filling throughput: 35 tons/day (per current permit)
- Maximum normal furnace filling and glass melting throughput: 230 tons/day (per current permit)
- The furnace includes 16 identical 2.85 MMBtu/hr emergency burners(current permit)
- Each emergency burner is limited to 200 hour/year (current permit)

B. Emission Factors

Raw Material Transfer/Mixing System		
Pollutant	lb/ton	Source
PM ₁₀	0.047	Current Permit
Emergency Furnace Filling		
Pollutant	lb/ton	Source
PM ₁₀	0.12	Current Permit
Normal Furnace Filling and Glass Melting		
Pollutant	lb/ton	Source
PM ₁₀	0.024	Current Permit
SO _x	0.018	

Emergency Burners		
Pollutant	lb/MMBtu	Source
NO _x	0.11	Current Permit
SO _x	0.00285	
PM ₁₀	0.0076	
CO	0.084	
VOC	0.0055	

C. Calculations

Raw Material Transfer/Mixing System (including the Bad Batch surge Hopper Drop into the Bad Batch Bin:

$$PE_{PM10} = (459 \text{ tons/day})(0.047 \text{ lb/ton})(365 \text{ days/yr}) = 7,874 \text{ lb/yr}$$

Furnace:**Emergency Furnace Filling (Emergency Batch Screw Conveyor):**

$$PE_{PM10} = (0.12 \text{ lb/ton})(35 \text{ tons/day})(365 \text{ days/yr}) = 1,533 \text{ lb/yr}$$

Normal Furnace Charging and Glass Melting:

$$PE_{SOx} = (230 \text{ tons/day})(0.018 \text{ lb/ton})(365 \text{ days/yr}) = 1,511 \text{ lb/yr}$$

$$PE_{PM10} = (230 \text{ tons/day})(0.024 \text{ lb/ton})(365 \text{ days/yr}) = 2,015 \text{ lb/yr}$$

Total Potential to Emit from the Furnace:

$$PE_{SOx} = 1,511 \text{ lb/yr}$$

$$PE_{PM10} = 1,533 \text{ lb/yr} + 2,015 \text{ lb/yr} = 3,548 \text{ lb/yr}$$

Furnace Emergency Burners:

The following calculations represent the emissions from all 16 burners.

$$NO_x = (16)(0.11 \text{ lb/MMBtu})(2.85 \text{ MMBtu/hr})(200 \text{ hr/yr}) = 1,003 \text{ lb/yr}$$

$$CO = (16)(0.084 \text{ lb/MMBtu})(2.85 \text{ MMBtu/hr})(200 \text{ hr/yr}) = 766 \text{ lb/yr}$$

$$VOC = (16)(0.0055 \text{ lb/MMBtu})(2.85 \text{ MMBtu/hr})(200 \text{ hr/yr}) = 50 \text{ lb/yr}$$

$$SO_x = (16)(0.00285 \text{ lb/MMBtu})(2.85 \text{ MMBtu/hr})(200 \text{ hr/yr}) = 26 \text{ lb/yr}$$

$$PM_{10} = (16)(0.0076 \text{ lb/MMBtu})(2.85 \text{ MMBtu/hr})(200 \text{ hr/yr}) = 69 \text{ lb/yr}$$

Total Annual Potential to Emit for Permit Unit N-1662-8:

$$NO_x = 1,003 \text{ lb/yr}$$

$$CO = 766 \text{ lb/yr}$$

$$VOC = 50 \text{ lb/yr}$$

$$SO_x = 1,511 \text{ lb/yr} + 26 \text{ lb/yr} = 1,537 \text{ lb/yr}$$

$$PM_{10} = 7,874 \text{ lb/yr} + 3,548 \text{ lb/yr} + 69 \text{ lb/yr} + 40 \text{ lb/yr} = 11,531 \text{ lb/yr}$$

N-1162-10, -11, -12

The three engines listed under permit N-1162-10, -11, and -12 are all similar sized, with similar hours of operation and similar emission factors; therefore, the following calculations apply to each of the three engines.

A. Assumptions

Non-emergency operating schedule: 30 hours/year
Density of diesel fuel: 7.1 lb/gal
Fuel heating value: 137,000 Btu/gal
BHP to Btu/hr conversion: 2,542.5 Btu/hp·hr
Thermal efficiency of engine: commonly ≈ 35%

B. Emission Factors

Diesel-fired IC Engine Emission Factors		
	g/hp·hr*	Source
NO _x	10.00	Carl Moyer Program
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.475	Carl Moyer Program
CO	3.04	AP-42 (10/96) Table 3.3-1
VOC	1.14	AP-42 (10/96) Table 3.3-1

*g/hp·hr is calculated using the lb/hp·hr value multiplied by 453.6 g/lb.

$$0.0015\%S \times \frac{7.1 \text{ lb} \cdot \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} \cdot \text{SO}_2}{1 \text{ lb} \cdot S} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ hp input}}{0.35 \text{ hp out}} \times \frac{2,542.5 \text{ Btu}}{\text{hp} \cdot \text{hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} \cdot \text{SO}_x}{\text{hp} \cdot \text{hr}}$$

C. Calculations

Potential to Emit							
NO _x	10.00	(g/hp·hr) x	971.1	(bhp) x	30	(hr/yr) ÷ 453.6 (g/lb) =	642 (lb/yr)
SO _x	0.0051	(g/hp·hr) x	971.1	(bhp) x	30	(hr/yr) ÷ 453.6 (g/lb) =	0 (lb/yr)
PM ₁₀	0.475	(g/hp·hr) x	971.1	(bhp) x	30	(hr/yr) ÷ 453.6 (g/lb) =	31 (lb/yr)
CO	3.04	(g/hp·hr) x	971.1	(bhp) x	30	(hr/yr) ÷ 453.6 (g/lb) =	195 (lb/yr)
VOC	1.14	(g/hp·hr) x	971.1	(bhp) x	30	(hr/yr) ÷ 453.6 (g/lb) =	73 (lb/yr)

N-1162-15**B. Assumptions**

Maximum heat input: 1.8 billion Btu/year

B. Emission Factors

Emission Factors		
	lb/MMBtu	Source
NO _x	0.036	Current Permit
SO _x	0.00285	
PM ₁₀	0.0076	
CO	0.15	
VOC	0.0055	

C. Calculations

Potential to Emit						
NO _x	0.036	lb/MMBtu x	1.8×10^3	MMBtu/year =	65	(lb/yr)
SO _x	0.00285	lb/MMBtu x	1.8×10^3	MMBtu/year =	5	(lb/yr)
PM ₁₀	0.0076	lb/MMBtu x	1.8×10^3	MMBtu/year =	14	(lb/yr)
CO	0.15	lb/MMBtu x	1.8×10^3	MMBtu/year =	270	(lb/yr)
VOC	0.0055	lb/MMBtu x	1.8×10^3	MMBtu/year =	10	(lb/yr)

APPENDIX D
BACT Guideline 1.5.9 and Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.5.9*

Last Update: 12/9/2014

Container Glass Melting Furnace

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
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
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 idling.		Electric Furnace
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
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
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

Top-Down BACT Analysis for NO_x emissions

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

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

Technologically Feasible:

There is no technologically feasible control technology listed on this guideline.

Alternate Basic Equipment:

Pursuant to District BACT Policy APR 1305 III.A (11/99), alternate basic equipment only applies to new equipment. Since the furnaces are not new, the alternate basic equipment does apply and no further analysis of this equipment is required.

Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options that can be eliminated from step 1.

Step 3 - Rank remaining options by control effectiveness

Ranking of the control technologies is not required, since the applicant has proposed to utilize the only control technology, achieved in practice control technology, listed on this guideline.

Step 4 - Cost Effectiveness Analysis

Pursuant to District BACT Policy APR 1305 IX.D.3 (11/99), a cost-effective analysis is not required because the above control option is categorized as Achieved in Practice, such option is required regardless of cost. Therefore, a cost effectiveness analysis is not required.

Step 5 - Select BACT

BACT for NO_x emissions from this type of operation is 1.3 lb/ton of glass pulled on a rolling 30-day average, except during periods of startup, shutdown, and idling; and compliance with Rule 4354 for periods of startup, shutdown, and idling. The applicant has proposed these limits; therefore, BACT for NO_x emissions is satisfied.

Top-Down BACT Analysis for SO_x emissions

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

Oxy-fuel fired furnaces while processing material where ≥ 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 Rule 4354 for periods of startup, shutdown, and idling

Technologically Feasible:

There is no technologically feasible control technology listed on this guideline.

Alternate Basic Equipment:

Pursuant to District BACT Policy APR 1305 III.A (11/99), alternate basic equipment only applies to new equipment. Since the furnaces are not new, the alternate basic equipment does not apply and no further analysis of this equipment is required.

Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options that can be eliminated from step 1.

Step 3 - Rank remaining options by control effectiveness

Ranking of the control technologies is not required, since the applicant has proposed to utilize the only control technology, achieved in practice control technology, listed on this guideline.

Step 4 - Cost Effectiveness Analysis

Pursuant to District BACT Policy APR 1305 IX.D.3 (11/99), a cost-effective analysis is not required because the above control option is categorized as Achieved in Practice, such option is required regardless of cost. Therefore, a cost effectiveness analysis is not required.

Step 5 - Select BACT

BACT for SO_x emissions from this type of operation is for oxy-fuel fired furnaces while processing material where ≥ 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 Rule 4354 for periods of startup, shutdown, and idling. The applicant has proposed these limits; therefore, BACT for SO_x emissions is satisfied.

Top-Down BACT Analysis for PM₁₀ emissions

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

0.45 lb/ton of glass pulled

Technologically Feasible:

There is no technologically feasible control technology listed on this guideline.

Alternate Basic Equipment:

There is no alternate basic equipment listed on this guideline.

Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options that can be eliminated from step 1.

Step 3 - Rank remaining options by control effectiveness

Ranking of the control technologies is not required, since the applicant has proposed to utilize the only control technology, achieved in practice control technology, listed on this guideline.

Step 4 - Cost Effectiveness Analysis

Pursuant to District BACT Policy APR 1305 IX.D.3 (11/99), a cost-effective analysis is not required because the above control option is categorized as Achieved in Practice, such option is required regardless of cost. Therefore, a cost effectiveness analysis is not required.

Step 5 - Select BACT

BACT for PM₁₀ emissions from this type of operation is an emission limit of 0.45 lb/ton of glass pulled. The applicant has proposed this limit; therefore, BACT for PM₁₀ emissions is satisfied.

APPENDIX E
BACT Guideline 8.4.1 and Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 8.4.1*

Last Update: 6/15/2020

Dry Material Storage and Handling Operations (Except Grains)

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Storage, processing equipment, conveyors, and associated material transfer points all enclosed and vented to a fabric filter baghouse (99% control)		

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

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

Top-Down BACT Analysis for PM₁₀ emissions

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

Storage, processing equipment, conveyors, and associated material transfer points all enclosed and vented to a fabric filter baghouse (99% control)

Technologically Feasible:

There is no technologically feasible control technology listed on this guideline.

Alternate Basic Equipment:

There is no alternate basic equipment listed on this guideline.

Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options that can be eliminated from step 1.

Step 3 - Rank remaining options by control effectiveness

Ranking of the control technologies is not required, since the applicant has proposed to utilize the only control technology, achieved in practice control technology, listed on this guideline.

Step 4 - Cost Effectiveness Analysis

Pursuant to District BACT Policy APR 1305 IX.D.3 (11/99), a cost-effective analysis is not required because the above control option is categorized as Achieved in Practice, such option is required regardless of cost. Therefore, a cost effectiveness analysis is not required.

Step 5 - Select BACT

BACT for PM₁₀ emissions from this type of operation is 99% control of all silos and conveyors. The applicant has proposed to use an enclosed conveyance system (pneumatic system) and silo served by a bin vent filter which is expected to have at least a 99% control. Therefore, BACT for PM₁₀ emissions is satisfied.

APPENDIX F
HRA and AAQA Summary

San Joaquin Valley Air Pollution Control District

Risk Management Review & Ambient Air Quality Analysis

To: Jesse Garcia – Permit Services

From: Kyle Melching – Technical Services

Date: September 15, 2020

Facility Name: Gallo Glass Co

Location: 605 S. Santa Cruz Ave., Modesto

Application #(s): N-1662-1-19, 2-21, 3-20, & 4-22

N-1201553 N-1201553

Summary

RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
Units 1-19, 2-21, 3-20, & 4-22	N/A	N/A	N/A	N/A	No	No
Project Totals	N/A	N/A	N/A	N/A		
Facility Totals	>1	0.01	0.01	5.71E-06		

Notes:

1. A prioritization was not performed since it was determined there are toxics associated with the project; however, none with the respirable fraction. No further analysis was required.

AAQA

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	N/A		N/A		
NO _x	N/A				N/A
SO _x	N/A	N/A		N/A	N/A
H ₂ S	N/A				
PM ₁₀				Pass	Pass
PM _{2.5}				Pass	Pass
Ozone	N/A		N/A		

Notes:

1. Results were taken from the attached AAQA Report.
2. Modeled PM₁₀ concentrations were below the District SIL for non-fugitive sources of 5 µg/m³ for the 24-hour average concentration and 1 µg/m³ for the annual concentration.
3. Modeled PM₁₀ concentrations were below the District SIL for fugitive sources of 10.4 µg/m³ for the 24-hour average concentration and 2.08 µg/m³ for the annual concentration.
4. Modeled PM_{2.5} concentrations were below the District SIL for non-fugitive sources of 1.2 µg/m³ for the 24-hour average concentration and 0.2 µg/m³ for the annual concentration.
5. Modeled PM_{2.5} concentrations were below the District SIL for fugitive sources of 2.5 µg/m³ for the 24-hour average concentration and 0.63 µg/m³ for the annual concentration.

Proposed Permit Requirements

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

Units # 1-19, 2-21, 3-20, & 4-22

1. No special requirements.

Project Description

Technical Services received a request on September 10, 2020 to perform a revised Health Risk Assessment (HRA) and Ambient Air Quality Analysis (AAQA) for the following:

- A LIME STORAGE SILO SERVED BY A BIN VENT FILTER SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4.
- This revised request includes an AAQA to be performed for the project

RMR Report

Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the unit(s) or the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required

If a refined assessment is greater than one in a million but less than 20 in one million for carcinogenic impacts (Cancer Risk) and less than 1.0 for the Acute and Chronic hazard indices (Non-Carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

Technical Services reviewed the submitted SDS sheets for toxic air contaminants (TACs). After reviewing the SDS sheet, it was determined that there are TACs; however, none designated to be the respirable fraction. Therefore, no further analysis or prioritization was required for this project.

AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO₂ standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
Unit 1-19, 2-21, 3-20, & 4-22	1	N/A	N/A	N/A	0.0125*	0.0125*

*PM10 and PM2.5 24 values assume the maximum daily PM10/PM2.5 emissions of 0.3 lb-day divided by 24 hours a day.

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
Unit1-19, 2-21, 3-20, & 4-22	1	N/A	N/A	N/A	2	2

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined below and meteorological data for 2013-2017 from Modesto (Urban) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
Unit1-19, 2-21, 3-20, & 4-22	Bin Vent Filter	15.24	294	2.32	0.36	Horizontal

Conclusion

RMR

The proposed project will not contribute to the facility's risk. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

AAQA

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

Attachments

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Facility Summary
- D. AAQA results

APPENDIX G

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-1662-1-19

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY

MAILING ADDRESS:

PO BOX 1230

ATTN: ENVIRO HEALTH & SAFETY MANAGER

MODESTO, CA 95353

LOCATION:

605 S SANTA CRUZ AVE

MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF GLASS FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. 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 UCF-500 CERAMIC FILTER DUST COLLECTORS: INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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
5. The furnace shall be fired on natural gas and LPG only. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

N-1662-1-19 : Sep 21 2020 1:15PM -- GARCIAJ : Joint Inspection NOT Required

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

6. 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
7. 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
8. 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
9. 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
10. 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 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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

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CONDITIONS CONTINUE ON NEXT PAGE

18. 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
19. 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
20. Source test conditions shall be representative of operations equal to or greater than 60 percent of capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
21. 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] Federally Enforceable Through Title V Permit
22. 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
23. 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
24. 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
25. 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
26. 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
27. An exceedance of a NO_x or SO_x 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 NO_x, 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
28. {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
29. 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
30. 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

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CONDITIONS CONTINUE ON NEXT PAGE

31. 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
32. 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
33. 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
34. Cylinder gas audits (CGAs) 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
35. 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
36. 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
37. 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
38. 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
39. 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
40. 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
41. 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
42. 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] Federally Enforceable Through Title V Permit
43. 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 Rule 2201] Federally Enforceable Through Title V Permit
44. 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

CONDITIONS CONTINUE ON NEXT PAGE

45. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 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, idling, and during full or partial emission control system bypass episodes, PM₁₀ emissions shall not exceed 0.45 lb/ton of glass produced. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
48. 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
49. The 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 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
50. 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
51. The maximum throughput of lime received and stored in the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed either of the following limits: 65 tons-lime/day or 110 tons-lime/quarter. [District Rule 2201] Federally Enforceable Through Title V Permit
52. PM₁₀ emissions rate from the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed 0.0049 lb-PM₁₀/ton-lime stored. [District Rule 2201] 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 and bin vent filter 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 collector and bin vent filter's 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 and bin vent filter 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. A spare set of bags or filters shall be maintained on the premises at all times for the bin vent filter serving the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4. [District Rule 2201] Federally Enforceable Through Title V Permit
59. 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
60. When the electrostatic precipitator is in operation, 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

CONDITIONS CONTINUE ON NEXT PAGE

61. The ceramic filter dust collectors shall each be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauges 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
62. During operation of the ceramic filter dust collectors, the pressure differential gauge reading shall be 1 to 20 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] 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. When the electrostatic precipitator is in operation, 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 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
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 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] 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 NO_x 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
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

CONDITIONS CONTINUE ON NEXT PAGE

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. When the electrostatic precipitator is in operation, 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 each ceramic filter dust collector at least once during each day that the units operate. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
80. Records of dust collector and bin vent filter 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. Records of daily and quarterly amount of lime transferred into the lime storage silo shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
82. 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-1662-2-21

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY

MAILING ADDRESS:

PO BOX 1230

ATTN: ENVIRO HEALTH & SAFETY MANAGER

MODESTO, CA 95353

LOCATION:

605 S SANTA CRUZ AVE

MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF GLASS FURNACE #2 WITH 10 NORTH AMERICAN PRAXAIR GEN III GAS/OXYGEN BURNERS (75 MMBTU/HR MAX HEAT CAPACITY), AND ASSOCIATED FORMING EQUIPMENT INCLUDING FOREHEARTHS, COATING, AND CHAIN BURNERS. 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 UCF-500 CERAMIC FILTER DUST COLLECTOR: INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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
5. The furnace shall be fired on natural gas and LPG only. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

N-1662-2-21 : Sep 21 2020 1:15PM -- GARCIAJ : Joint Inspection NOT Required

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

6. 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
7. 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
8. 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
9. 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
10. 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 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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

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CONDITIONS CONTINUE ON NEXT PAGE

18. 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
19. 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
20. Source test conditions shall be representative of operations equal to or greater than 60 percent of capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
21. 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] Federally Enforceable Through Title V Permit
22. 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
23. 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
24. 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
25. 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
26. 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
27. An exceedance of a NO_x or SO_x 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 NO_x, 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
28. {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
29. 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
30. 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

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CONDITIONS CONTINUE ON NEXT PAGE

31. 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
32. 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
33. 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
34. Cylinder gas audits (CGAs) 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
35. 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
36. 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
37. 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
38. 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
39. 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
40. 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
41. 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] Federally Enforceable Through Title V Permit
42. Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.2 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
43. 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
44. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

45. 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
46. 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 Rules 2201 and 4354] Federally Enforceable Through Title V Permit
47. 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
48. 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
49. The 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 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
50. 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 Rule 2201] Federally Enforceable Through Title V Permit
51. The maximum throughput of lime received and stored in the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed either of the following limits: 65 tons-lime/day or 110 tons-lime/quarter. [District Rule 2201] Federally Enforceable Through Title V Permit
52. PM₁₀ emissions rate from the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed 0.0049 lb-PM₁₀/ton-lime stored. [District Rule 2201] 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 and bin vent filter 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 collector and bin vent filter's 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 and bin vent filter 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. A spare set of bags or filters shall be maintained on the premises at all times for the bin vent filter serving the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4. [District Rule 2201] Federally Enforceable Through Title V Permit
59. 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
60. When the electrostatic precipitator is in operation, 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

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CONDITIONS CONTINUE ON NEXT PAGE

61. The ceramic filter dust collectors shall each be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauges 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
62. During operation of the ceramic filter dust collectors, the pressure differential gauge reading shall be 1 to 20 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] 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. When the electrostatic precipitator is in operation, 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
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 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
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 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] 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 NO_x 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
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

CONDITIONS CONTINUE ON NEXT PAGE

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. When the electrostatic precipitator is in operation, 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
79. The operator shall monitor and record the pressure differential gauge reading of each ceramic filter dust collector at least once during each day that the units operate. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
80. Records of dust collector and bin vent filter 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. 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 from July 24, 2016 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
82. Records of daily and quarterly amount of lime transferred into the lime storage silo shall be maintained. [District Rules 1070 and 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

ISSUANCE DATE: DRAFT

PERMIT NO: N-1662-3-20

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY

MAILING ADDRESS:

PO BOX 1230

ATTN: ENVIRO HEALTH & SAFETY MANAGER

MODESTO, CA 95353

LOCATION:

605 S SANTA CRUZ AVE

MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF GLASS FURNACE #3 WITH 10 PRAXAIR GEN III GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY) AND A 2700 KW ELECTRIC BOOST SYSTEM. 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 UCF-500 CERAMIC FILTER DUST COLLECTOR: INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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
5. The furnace shall be fired on natural gas and LPG only. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

N-1662-3-20 : Sep 21 2020 1:15PM -- GARCIAJ : Joint Inspection NOT Required

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6. 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
7. 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
8. 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
9. 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
10. 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 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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

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CONDITIONS CONTINUE ON NEXT PAGE

18. 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
19. 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
20. Source test conditions shall be representative of operations equal to or greater than 60 percent of capacity for each furnace as stated in the Permit to Operate. [District Rule 4354, §6.4.2] Federally Enforceable Through Title V Permit
21. 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] Federally Enforceable Through Title V Permit
22. 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
23. 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
24. 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
25. 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
26. 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
27. An exceedance of a NO_x or SO_x 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 NO_x, 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
28. {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
29. 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
30. 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

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CONDITIONS CONTINUE ON NEXT PAGE

31. 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
32. 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
33. 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
34. Cylinder gas audits (CGAs) 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
35. 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
36. 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
37. 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
38. 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
39. 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
40. 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
41. 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
42. 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 Rule 2201] Federally Enforceable Through Title V Permit
43. 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
44. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

45. 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
46. 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 Rules 2201 and 4354] Federally Enforceable Through Title V Permit
47. 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
48. 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
49. The 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 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
50. The PM₁₀ emissions shall not exceed 19,006 pounds during the first calendar quarter, 19,178 pounds during the second calendar quarter, 19,351 pounds during the third calendar quarter and 19,351 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
51. The maximum throughput of lime received and stored in the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed either of the following limits: 65 tons-lime/day or 110 tons-lime/quarter. [District Rule 2201] Federally Enforceable Through Title V Permit
52. PM₁₀ emissions rate from the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed 0.0049 lb-PM₁₀/ton-lime stored. [District Rule 2201] 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 and bin vent filter 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 collector and bin vent filter's 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 and bin vent filter 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. A spare set of bags or filters shall be maintained on the premises at all times for the bin vent filter serving the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4. [District Rule 2201] Federally Enforceable Through Title V Permit
59. 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
60. When the electrostatic precipitator is in operation, 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

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CONDITIONS CONTINUE ON NEXT PAGE

61. The ceramic filter dust collectors shall each be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauges 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
62. During operation of the ceramic filter dust collectors, the pressure differential gauge reading shall be 1 to 20 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] 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. When the electrostatic precipitator is in operation, 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
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
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

CONDITIONS CONTINUE ON NEXT PAGE

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. When the electrostatic precipitator is in operation, 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
79. The operator shall monitor and record the pressure differential gauge reading of each ceramic filter dust collector at least once during each day that the units operate. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
80. Records of dust collector and bin vent filter 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. Records of daily and quarterly amount of lime transferred into the lime storage silo shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
82. 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-1662-4-22

LEGAL OWNER OR OPERATOR: GALLO GLASS COMPANY

MAILING ADDRESS:

PO BOX 1230

ATTN: ENVIRO HEALTH & SAFETY MANAGER

MODESTO, CA 95353

LOCATION:

605 S SANTA CRUZ AVE

MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF GLASS FURNACE #4 WITH 10 PRAXAIR GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (90 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 UCF-500 CERAMIC FILTER DUST COLLECTOR: INSTALL THREE NEW TRI-MER UCF-500 CERAMIC FILTER DUST COLLECTORS, TWO NEW INDUCTION FANS, AND A LIME STORAGE SILO SERVED BY A BIN VENT FILTER SHARED WITH PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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
5. The furnace shall be fired on natural gas and LPG only. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

N-1662-4-22 : Sep 21 2020 1:15PM -- GARCIAJ : Joint Inspection NOT Required

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6. 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] Federally Enforceable Through Title V Permit
7. 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
8. 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
9. 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
10. 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 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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; 2520; and 4354] Federally Enforceable Through Title V Permit
17. 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

18. 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
19. Source test conditions shall be representative of operations equal to or greater than 60 percent of capacity for each furnace as stated in the Permit to Operate. [District Rule 4354] Federally Enforceable Through Title V Permit
20. 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] Federally Enforceable Through Title V Permit
21. 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
22. 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
23. 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
24. 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
25. 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
26. An exceedance of a NO_x or SO_x 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 NO_x, 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
27. {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
28. 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
29. 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
30. 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

31. 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
32. 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
33. Cylinder gas audits (CGAs) 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
34. 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] Federally Enforceable Through Title V Permit
35. 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] Federally Enforceable Through Title V Permit
36. 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] Federally Enforceable Through Title V Permit
37. 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] Federally Enforceable Through Title V Permit
38. 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
39. The amount of glass produced shall not exceed 637.9 tons during any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
40. 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-107-2. 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
41. Except during periods of startup, shutdown, and idling, CO emissions shall not exceed 0.20 pounds per ton of glass produced. [District Rule 2201] Federally Enforceable Through Title V Permit
42. 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
43. 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 cullet that is equal to or greater than 25% by weight mixed color cullet, shall not exceed 0.95 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
44. 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 cullet that is less than 25% by weight mixed color cullet, shall not exceed 0.79 lb/ton of glass produced (over a rolling 30 day average). [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
45. 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 Rules 2201 and 4354] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

46. 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
47. 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
48. The 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 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
49. 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
50. During furnace idling, NOx emissions shall not exceed 956.9 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
51. During furnace idling, CO emissions shall not exceed 637.9 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
52. During furnace idling, VOC emissions shall not exceed 12.8 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
53. During furnace idling, SOx emissions shall not exceed 701.7 pounds in any one day when producing glass with cullet that is equal to or greater than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
54. During furnace idling, SOx emissions shall not exceed 574.1 pounds in any one day when producing glass with cullet that is less than 25% by weight mixed color cullet. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
55. During furnace idling, PM10 emissions shall not exceed 319.0 pounds in any one day. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
56. The PM10 emissions shall not exceed 28,132 pounds during the first calendar quarter, 28,445 pounds during the second calendar quarter, 28,757 pounds during the third calendar quarter and 28,758 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
57. The maximum throughput of lime received and stored in the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed either of the following limits: 65 tons-lime/day or 110 tons-lime/quarter. [District Rule 2201] Federally Enforceable Through Title V Permit
58. PM10 emissions rate from the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4 shall not exceed 0.0049 lb-PM10/ton-lime stored. [District Rule 2201] Federally Enforceable Through Title V Permit
59. Each dust collector and bin vent filter 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
60. Each dust collector and bin vent filter's cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
61. Material removed from each dust collector and bin vent filter shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
62. 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
63. A spare set of bags or filters shall be maintained on the premises at all times for the bin vent filter serving the lime storage silo shared with permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

64. 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
65. When the electrostatic precipitator is in operation, 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
66. The ceramic filter dust collectors shall each be equipped with a pressure differential gauge to indicate the pressure drop across the filters. The gauges 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
67. During operation of the ceramic filter dust collectors, the pressure differential gauge reading shall be 1 to 20 inches of water column. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
68. 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
69. 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
70. 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
71. When the electrostatic precipitator is in operation, 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
72. Dust collector filters shall be inspected annually while in operation for evidence of particulate matter breakthrough and replaced as needed. [District Rule 2520] Federally Enforceable Through Title V Permit
73. 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] Federally Enforceable Through Title V Permit
74. 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
75. 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
76. 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] Federally Enforceable Through Title V Permit
77. The oxygen to fuel ratio shall be continuously monitored and recorded. [District Rule 4354] Federally Enforceable Through Title V Permit
78. The permittee shall maintain daily records of the aggregated NO_x emissions. [District Rules 2520 and 4354] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

79. 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
80. 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
81. 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
82. The permittee shall keep a record of the cumulative annual hours of operation of the glass furnace on LPG fuel. [District Rule 1070] Federally Enforceable Through Title V Permit
83. When the electrostatic precipitator is in operation, 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
84. The operator shall monitor and record the pressure differential gauge reading of each ceramic filter dust collector at least once during each day that the units operate. [District Rules 2201 and 4354 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
85. Records of dust collector and bin vent filter 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] Federally Enforceable Through Title V Permit
86. Records of daily and quarterly amount of lime transferred into the lime storage silo shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
87. 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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APPENDIX H

Actual Emissions Calculations

The table below presents the determination of the consecutive 24-month period that is most representative of the normal source operation with the following considerations:

- The applicant provided the actual production records for the calendar years 2010-2019.
- The normal source operation (NSO) is determined as the average of the production rates in the past ten years in which a furnace rebuild was not performed. Therefore, years 2013, 2015, and 2019 are excluded from the NSO calculation.
- The “Two Year Average” is calculated as the average between the current year and the previous year (for example: $512,564 = (533,433 + 491,695)/2$).
- The “Difference between 2 Yr Avg vs NSO” is calculated as the difference between each two year average and the normal source operation (for example: $3,018 = (515,582 - 512,564)$). This calculation will determine which two year period, is closest to the normal source operation (the one with the smallest difference).

Year	Glass Produced (tons/year)	Two Year Average	Difference between 2 Yr Avg vs NSO
2010	491,695		
2011	533,433	512,564	3,018
2012	540,661	537,047	21,465
2013*	491,702*		
2014	499,129		
2015*	488,052*		
2016	543,906		
2017	537,456	540,681	25,099
2018	462,796	500,126	15,456
2019*	491,149*		
NSO	515,582		

* Excluded from NSO determination

Calendar years 2017-2018 represent the consecutive 24-month period that is most representative of the normal source operation as demonstrated in the table above by having the smallest difference between the consecutive 24-period and the NSO. Calendar years 2010-2011 were conservatively not chosen since it can be argued that the glass production operations have changed since that time period; therefore, calendar years 2017-2018 were chosen as most representative of normal source operation.