



DEC 23 2010

Mr. R. Todd Rosebrock
Saint-Gobain Containers, Inc
P.O. Box 4200
Muncie, IN 47307-4200

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity
Facility # C-801
Project # C-1103288**

Dear Mr. Rosebrock:

Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Saint-Gobain Containers, Inc at 24441 Avenue 12, Madera, CA. The applicant proposes to install two 10 MMBtu/hr natural gas-fired portable refractory curing equipment.

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

The public notice will be published approximately three days from the date of this letter. Please submit your written comments within the 30-day public comment period which begins on the date of publication of the public notice.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

c: Stanley Tom, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
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DEC 23 2010

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity
Facility # C-801
Project # C-1103288**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Saint-Gobain Containers, Inc at 24441 Avenue 12, Madera, CA, which has been issued a Title V permit. Saint-Gobain Containers, Inc is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The applicant proposes to install two 10 MMBtu/hr natural gas-fired portable refractory curing equipment.

Enclosed is the engineering evaluation of this application and proposed Authorities to Construct # C-801-45-0 and '46-0 with Certificates of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

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DEC 23 2010

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

Re: **Notice of Preliminary Decision - ATC / Certificate of Conformity**
Facility # C-801
Project # C-1103288

Dear Mr. Tollstrup:

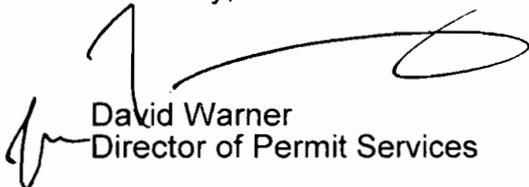
Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Saint-Gobain Containers, Inc at 24441 Avenue 12, Madera, CA. The applicant proposes to install two 10 MMBtu/hr natural gas-fired portable refractory curing equipment.

The public notice will be published approximately three days from the date of this letter. Please submit your written comments within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

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c: Stanley Tom, Permit Services

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Fresno Bee

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of Authority To Construct to Saint-Gobain Containers, Inc for its glass manufacturing operation at 24441 Avenue 12, Madera, California. The applicant proposes to install two 10 MMBtu/hr natural gas-fired portable refractory curing equipment.

The analysis of the regulatory basis for these proposed actions, Project #C-1103288, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.**

III. PROJECT LOCATION

This facility is located at 24441 Avenue 12, at Road 24 1/2, Madera, CA. The District has verified that the facility is not located within 1,000 feet of any K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. PROCESS DESCRIPTION

Checker burns are conducted approximately once every ten years for regenerative furnaces. The purpose of the checker burns is to burn off sulfur deposits on the checkers (refractory material used in the heat recovery area of the furnace). The furnace will be in operation when the burners will be operated. Saint-Gobain Containers, Inc. plans to bring in an outside firm as a subcontractor that owns and operates burners used for this purpose. The checker burn is anticipated to last a total of less than one week. The facility plans to operate one burner at a time (one on each side). However, the emission calculations and health risk analysis assumed both burners will operate simultaneously to provide operational flexibility.

V. EQUIPMENT LISTING

Post Project Equipment Description:

C-801-45-0: 10 MMBTU/HR NATURAL GAS-FIRED PORTABLE REFRACTORY CURING EQUIPMENT WITH A HOTWORK SJB LOW NO_x BURNER AND COMBUSTION AIR BLOWER

C-801-46-0: 10 MMBTU/HR NATURAL GAS-FIRED PORTABLE REFRACTORY CURING EQUIPMENT WITH A HOTWORK SJB LOW NO_x BURNER AND COMBUSTION AIR BLOWER

VI. EMISSION CONTROL EQUIPMENT EVALUATION

Low-NO_x burners reduce NO_x formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO_x burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO_x. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

VII. CALCULATIONS

A. Assumptions

- The unit is fired solely on PUC regulated natural gas
- The maximum operating schedule for each individual burner unit is 17 hours per day (equivalent to 170,000 scf/day) (per applicant to avoid SO_x offsets)
- The maximum operating schedule for both burner units combined is 290 hours per year (equivalent to 2,900,000 scf/year)
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)

B. Emission Factors

The following emissions factors will be used for this project.

Pollutant	Post-Project Emission Factors (EF2)		Source
NO _x	0.042 lb-NO _x /MMBtu	35 ppmvd NO _x (@ 3%O ₂)	Manufacturer Guarantee
SO _x	0.00285 lb-SO _x /MMBtu		District Policy APR 1720
PM10	0.0076 lb-PM10/MMBtu		AP-42 (07/98) Table 1.4-2
CO	0.218 lb-CO/MMBtu	300 ppmvd CO (@ 3%O ₂)	Applicant's data
VOC	0.0055 lb-VOC/MMBtu		AP-42 (07/98) Table 1.4-2

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post Project Potential to Emit (PE2)

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

- $PE2 = EF \text{ (lb/MMBtu)} \times \text{Heat Input (MMBtu/hr)} \times \text{Op. Sched. (hr/day or hr/year)}$

Pollutant	Daily PE2 (each unit)			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO _x	0.042	10	17	7.1
SO _x *	0.00285	10	17	0.5
PM ₁₀	0.0076	10	17	1.3
CO	0.218	10	17	37.1
VOC	0.0055	10	17	0.9

Pollutant	Annual PE2 (both units combined)			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO _x	0.042	10	290	122
SO _x	0.00285	10	290	8
PM ₁₀	0.0076	10	290	22
CO	0.218	10	290	632
VOC	0.0055	10	290	16

* Per District Policy APR 1130, District policy is to consider an IPE of less than 0.5 lb/day to be rounded to zero for the purposes of triggering NSR requirements and therefore the requirements are not triggered. However, to minimize rounding errors, DELs, SSPE, PE and all other associated figures will be reflected in the EE and the permits without setting a daily increase in emissions of less than 0.5 lb/day to zero.

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. The Pre-Project Stationary Source Potential to Emit (SSPE1) is summarized below (see project C-1084423).

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
	NO _x (lb/year)	SO _x (lb/year)	PM ₁₀ (lb/year)	CO (lb/year)	VOC (lb/year)
Pre-project SSPE (SSPE1)	> 20,000	> 140,000	> 140,000	> 200,000	> 20,000

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. The Post Project Stationary Source Potential to Emit (SSPE2) is summarized below.

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
	NO _x (lb/year)	SO _x (lb/year)	PM ₁₀ (lb/year)	CO (lb/year)	VOC (lb/year)
Post Project SSPE (SSPE2)	> 20,000	> 140,000	> 140,000	> 200,000	> 20,000

5. Major Source Determination

Pursuant to Section 3.25 of District Rule 2201, a major source is a stationary source with post project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values.

Major Source Determination					
	NO _x (lb/year)	SO _x (lb/year)	PM ₁₀ (lb/year)	CO (lb/year)	VOC (lb/year)
Post Project SSPE (SSPE2)	> 20,000	> 140,000	> 140,000	> 200,000	> 20,000
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	Yes	Yes	Yes	Yes

6. Baseline Emissions (BE)

Section 3.7 of Rule 2201 defines Baseline Emissions as the following:

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

Since this is a new emissions unit, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

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

As discussed in Section VII.C.5 above, the facility is an existing Major Source for all pollutants; however, the project by itself would need to be a significant increase in order to trigger a Major Modification. The emission units within this project do not have a total potential to emit which is greater than Major Modification thresholds (see table below). Therefore, the project cannot be a significant increase and the project does not constitute a Major Modification.

Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
NO _x	122	50,000	No
SO _x	8	80,000	No
PM ₁₀	22	30,000	No
VOC	16	50,000	No

8. Federal Major Modification

District Rule 2201, Section 3.17 states that major modifications are also federal major modifications, unless they qualify for either a "Less-Than-Significant Emissions Increase" exclusion or a "Plantwide Applicability Limit" (PAL) exclusion.

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

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

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	0
NO _x	0
PM ₁₀	30,000
SO _x	80,000

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

Net Emission Increase for New Units (NEI_N)

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

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

BAE = 0 for the new units therefore $NEI_N = PE_{2N}$

$$NEI_N (NO_x) = 122 \text{ lb/year}$$

$$NEI_N (SO_x) = 8 \text{ lb/year}$$

$$NEI_N (PM_{10}) = 22 \text{ lb/year}$$

$$NEI_N (VOC) = 16 \text{ lb/year}$$

$$NEI (NO_x) = 122 \text{ lb/year}$$

$$NEI (SO_x) = 8 \text{ lb/year}$$

$$NEI (PM_{10}) = 22 \text{ lb/year}$$

$$NEI (VOC) = 16 \text{ lb/year}$$

The NEI for this project will be greater than the federal Major Modification threshold of 0 lb/year for NO_x and VOC. Therefore, this project does not qualify for a “Less-Than-Significant Emissions Increase” exclusion and is thus determined to be a Federal Major Modification.

VIII. COMPLIANCE

Rule 2201 New and Modified Stationary Source Review

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,

- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

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

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

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install a new portable refractory curing unit with a PE greater than 2 lb/day for NO_x and CO. BACT is triggered for NO_x and CO since the PEs are greater than 2 lbs/day and the SSPE2 for CO is greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 of this document.

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

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

As discussed in Section I above, there are no modified emissions units associated with this project; therefore BACT is not triggered.

d. Major Modification

As discussed in Section VII.C.7 previously, this project does constitute a Major Modification; therefore BACT is triggered for NO_x and VOC.

2. BACT Guideline

BACT Guideline 1.9.XX, applies to the portable refractory curing equipment. [Portable Refractory Curing Equipment] (See Attachment A)

3. Top-Down BACT Analysis

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

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

NO_x: 0.042 lb/MMBtu Low NO_x burner fired on natural gas
CO: 0.218 lb/MMBtu natural gas-fired burner
VOC: Natural gas-fired burner

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

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

Offset Determination					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	> 20,000	> 140,000	> 140,000	> 200,000	> 20,000
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

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

Per Sections 4.7.1 and 4.7.3, 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.

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

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 = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

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

Offsets Required (lb/year) = $(\Sigma [PE2 - BE]) \times DOR$

NO_x

PE2 = 122 lb/year

BE = 0 lb/year

Offsets Required (lb/year) = $([122 - 0]) \times DOR$
= 122 lb NO_x/year

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
30	30	31	31

Assuming an offset ratio of 1.5:1, the amount of NO_x ERCs that need to be withdrawn is:

Offsets Required (lb/year) = $([64 - 0]) \times 1.5$
= 122 x 1.5
= 183 lb NO_x/year

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
45	46	46	46

The applicant has stated that the facility plans to use ERC certificate C-1083-2 to offset the increases in NO_x emissions associated with this project. The above certificate has available quarterly NO_x credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #C-1083-2	0	0	0	183

As seen above, the facility has sufficient credits to fully offset the quarterly NO_x emissions increases associated with this project.

SOx

PE2 = 8 lb/year
BE = 0 lb/year

Offsets Required (lb/year) = $([8 - 0]) \times \text{DOR}$
= 8 → 0* lb SOx/year

* Per District Policy APR 1130, District policy is to consider an IPE of less than 0.5 lb/day to be rounded to zero for the purposes of triggering NSR requirements. Therefore, offsets are not required for this project.

PM10

PE2 = 22 lb/year
BE = 0 lb/year

Offsets Required (lb/year) = $([22 - 0]) \times \text{DOR}$
= 22 lb PM10/year

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
5	5	6	6

Assuming an offset ratio of 1.5:1, the amount of PM10 ERCs that need to be withdrawn is:

Offsets Required (lb/year) = $([22 - 0]) \times 1.5$
= 22 x 1.5
= 33 lb PM10/year

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
8	8	8	9

The applicant has stated that the facility plans to use ERC certificate N-921-4 to offset the increases in PM10 emissions associated with this project. The above certificate has available quarterly PM10 credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #N-921-4	0	0	0	200

As seen above, the facility has sufficient credits to fully offset the quarterly PM10 emissions increases associated with this project.

VOC

$$\begin{aligned} \text{PE2} &= 16 \text{ lb/year} \\ \text{BE} &= 0 \text{ lb/year} \end{aligned}$$

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([16 - 0]) \times \text{DOR} \\ &= 16 \text{ lb VOC/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\frac{1^{\text{st}} \text{ Quarter}}{4} \quad \frac{2^{\text{nd}} \text{ Quarter}}{4} \quad \frac{3^{\text{rd}} \text{ Quarter}}{4} \quad \frac{4^{\text{th}} \text{ Quarter}}{4}$$

Assuming an offset ratio of 1.5:1, the amount of VOC ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([16 - 0]) \times 1.5 \\ &= 16 \times 1.5 \\ &= 24 \text{ lb VOC/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\frac{1^{\text{st}} \text{ Quarter}}{6} \quad \frac{2^{\text{nd}} \text{ Quarter}}{6} \quad \frac{3^{\text{rd}} \text{ Quarter}}{6} \quad \frac{4^{\text{th}} \text{ Quarter}}{6}$$

The applicant has stated that the facility plans to use ERC certificate C-1082-1, S-3498-1, and N-923-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #C-1082-1	0	0	0	7
ERC #S-3498-1	0	0	0	34
ERC #N-923-1	0	0	0	159
Total	0	0	0	200

As seen above, the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

CO-Offset Calculations:

CO offsets are triggered by CO emissions in excess of 200,000 lb/year for the facility.

However, pursuant to Section 4.6.1, "Emission Offsets shall not be required for the following: increases in carbon monoxide in attainment areas if the applicant demonstrates to the satisfaction of the APCO, that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards (AAQS)."

The Technical Services Section of the San Joaquin Valley Unified Air Pollution Control District performed a CO modeling run, using the EPA ISCST3 air dispersion model, to determine if the CO emissions from the refractory curing equipment would exceed the State and Federal AAQS (Attachment D). Modeling of the worst case 1 hour and 8 hour CO impacts were performed. These values were added to the worst case ambient concentration (background) measured and compared to the ambient air quality standards. Results of the modeling are presented below:

Ambient Modeling Results for CO		
	1 hr std	8 hr std
AAQS (ug/m ³)	23,000	10,000
Worst case ambient (background) (ug/m ³)	3611.5	2679.5
Modeled impact (ug/m ³)	1.6	1.2
Modeled ambient CO (ug/m ³)	3613.2	2680.8

This modeling demonstrates that the proposed increase in CO emissions will not cause a violation of the CO ambient air quality standards. Therefore, the increase in CO emissions is exempt from offsets pursuant to Section 6.4.1.

Proposed Rule 2201 (offset) Conditions:

- Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter - 30 lb, 2nd quarter - 30 lb, 3rd quarter - 31 lb, and fourth quarter - 31 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]
- Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 5 lb, 2nd quarter - 5 lb, 3rd quarter - 6 lb, and fourth quarter - 6 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]
- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 4 lb, 2nd quarter - 4 lb, 3rd quarter - 4 lb, and fourth quarter - 4 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]
- ERC Certificate Numbers C-1083-2, N-921-4, C-1082-1, S-3498-1, N-923-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

- a. Any new Major Source, which is a new facility that is also a Major Source,
- b. Major Modifications,
- c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d. Any project which results in the offset thresholds being surpassed, and/or
- e. Any project with an SSPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

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.

b. Major Modification

As demonstrated in VII.C.7, this project is a Federal Major Modification; therefore, public noticing for Federal Major Modification purposes is required.

c. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit 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.

d. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	> 20,000	> 20,000	20,000 lb/year	No
SO _x	> 54,750	> 54,750	54,750 lb/year	No
PM ₁₀	> 29,200	> 29,200	29,200 lb/year	No
CO	> 200,000	> 200,000	200,000 lb/year	No
VOC	> 20,000	> 20,000	20,000 lb/year	No

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

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. $SSIPE = SSPE2 - SSPE1$. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	Project PE2 (lb/year)	Project PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	122	0	122	20,000 lb/year	No
SO _x	8	0	8	20,000 lb/year	No
PM ₁₀	22	0	22	20,000 lb/year	No
CO	632	0	632	20,000 lb/year	No
VOC	16	0	16	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.

2. Public Notice Action

As discussed above, public noticing is required for this project for triggering Federal Major Modification for NO_x and VOC emissions. Therefore, public notice documents will be submitted to the U.S. Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits

Daily emissions limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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.

Proposed Rule 2201 (DEL) Conditions:

Natural gas fuel use

10 MMBtu/hr x scf/1000 Btu x 17 hr/day x 1E6/MM = 170,000 scf/day

10 MMBtu/hr x scf/1000 Btu x 290 hr/year x 1E6/MM = 2,900,000 scf/year

- Maximum fuel use of the unit shall not exceed 170,000 scf per day. [District Rule 2201]
- Maximum fuel use of units C-801-45 and '46 combined shall not exceed 2,900,000 scf per year. [District Rule 2201]
- Emissions from the natural gas-fired unit shall not exceed any of the following limits: 35 ppmvd NO_x @ 3% O₂ or 0.042 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 300 ppmvd CO @ 3% O₂ or 0.218 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

As the equipment in this project will be operated for a one week time period and then removed from the facility initial source testing is not practical or feasible within the operational time frame proposed. Therefore, no source testing will be required.

2. Monitoring

As the equipment in this project will be operated for a one week time period and then removed from the facility monitoring of the equipment is not practical or feasible within the operational time frame proposed. Therefore, no monitoring will be required.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201.

- Records of daily and annual natural gas usage of the unit shall be maintained. [District Rule 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Attachment D of this document for the AAQA summary sheet.

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

The proposed location is in a non-attainment area for PM₁₀. The increase in the ambient PM₁₀ concentration due to the proposed equipment is shown on the table titled Calculated Contribution. The levels of significance, from 40 CFR Part 51.165 (b)(2), are shown on the table titled Significance Levels.

Significance Levels					
Pollutant	Significance Levels (µg/m ³) - 40 CFR Part 51.165 (b)(2)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM ₁₀	1.0	5	N/A	N/A	N/A

Calculated Contribution					
Pollutant	Calculated Contributions (µg/m ³)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM ₁₀	0.0	0.0	N/A	N/A	N/A

As shown, the calculated contribution of PM₁₀ will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a and VIII-Rule 2201-C.1.b, this source is undergoing a Federal Major Modification, therefore this requirement is applicable. Included in Attachment B is Saint-Gobain Container Inc.'s compliance certification.

H. Alternative Siting Analysis

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.

The operation of a container glass manufacturing operation requires a large number support equipment, services and structures such as raw material storage bins, glass melting furnaces, warehouses, and administration buildings.

Since the current project involves no change in the amount of container glass processed at the facility and no change to any other facets of the operation, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures and facilities on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permit

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

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

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Based on past inspections of the facility continued compliance is expected.

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. The emissions from the proposed operations are not expected to impose any comfort, repose, health, or safety problems to the public provided the equipment is properly maintained and operated.

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-801-45-0	0.00 per million	No
C-801-46-0	0.00 per million	No

Discussion of T-BACT

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

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 10 in a million). As outlined by the HRA Summary in Attachment D 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.

F-Factor for NG:	8,578 dscf/MMBtu at 60 °F	
PM10 Emission Factor:	0.0076 lb-PM10/MMBtu	
Percentage of PM as PM10 in Exhaust:	100%	
Exhaust Oxygen (O ₂) Concentration:	3%	
Excess Air Correction to F Factor =	20.9	= 1.17
	<u>(20.9 - 3)</u>	

$$GL = \left(\frac{0.0076 \text{ lb} - \text{PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb} - \text{PM}} \right) / \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.0053 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with District Rule 4201 requirements is expected and a permit condition will be listed on the permit as follows:

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

Rule 4301 Fuel Burning Equipment

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

District Rule 4301 Limits			
Pollutant	NO ₂	Total PM	SO ₂
ATC #C-801-45-0 or '46-0 (lb/hr)	0.27	0.05	0.04
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance 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.

Using the ideal gas equation and the emission factors presented in Section VII, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = \frac{n RT}{P}$$

With:

N = moles SO₂

T (Standard Temperature) = 60°F = 520°R

P (Standard Pressure) = 14.7 psi

R (Universal Gas Constant) = $\frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}}$

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

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

Therefore, compliance with District Rule 4801 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

The District's engineering evaluation (this document – Attachment E) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

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

calculations). The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

X. RECOMMENDATION

Compliance with all applicable rules and regulations is expected. Issue Authorities to Construct C-801-45-0 and '46-0 subject to the permit conditions on the attached draft Authorities to Construct in Attachment F.

XI. BILLING INFORMATION

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
C-801-45-0	3020-02-G	10 MMBtu/hr	\$815.00
C-801-46-0	3020-02-G	10 MMBtu/hr	\$815.00

Attachments:

- Attachment A – BACT Determination Guideline 1.9.XX and Top Down BACT Analysis
- Attachment B – Compliance Certification
- Attachment C – Certificate of Conformity
- Attachment D – Health Risk Assessment and Ambient Air Quality Analysis
- Attachment E – Greenhouse Gas Calculations
- Attachment F – Draft ATCs

ATTACHMENT A

BACT Determination Guideline 1.9.XX and Top Down BACT Analysis

IV. PROCESS DESCRIPTION

Checker burns are conducted approximately once every ten years for regenerative furnaces. The purpose of the checker burns is to burn off sulfur deposits on the checkers (refractory material used in the heat recovery area of the furnace). Saint-Gobain Containers, Inc. plans to bring in an outside firm as a subcontractor that owns and operates burners used for this purpose. The checker burn is anticipated to last a total of less than one week. The facility plans to operate one burner at a time (one on each side).

IV. CONTROL EQUIPMENT EVALUATION

Low-NO_x burners reduce NO_x formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO_x burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO_x. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

A. Best Available Control Technology (BACT) for Permit Units C-801-45-0 and '46-0:

Applicability

District Rule 2201 Section 4.1 states that BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following:

- a) Any new emissions unit with a potential to emit exceeding two pounds per day,
- b) The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day, and/or
- c) Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day.
- d) When a Major Modification is triggered for a modification project at a facility that is a Major Source.

As shown in the table below, BACT is triggered for NO_x, CO, and VOC emissions.

PE Table	NO_x (lb/day)	SO_x (lb/day)	PM₁₀ (lb/day)	CO (lb/day)	VOC (lb/day)
C-801-45-0 or '46-0	7.1	0.5	1.3	37.1	0.9
BACT Triggered?	Yes	No	No	Yes	Yes*

* Triggered due to the project constituting a Federal Major Modification for NO_x and VOC.

B. Toxic Best Available Control Technology (T-BACT) for Permit Units C-801-45-0 and '46-0:

Applicability

Per District policy Application Processing 1905, Section VII, an applicant shall apply Toxic Best Available Control Technology (T-BACT) to each new or modified emissions unit with: (1) A greater than de minimus increase in cancer risk (A de minimus increase in cancer risk is an increase in risk of one per million, as determined in Section VIII of this policy.); or (2) A greater than de minimus increase in noncancer risk (A de minimus increase in noncancer risk is an increase in the hazard index of one, as determined in Section VIII of this policy.); or (3) A greater than de minimus increase in permitted emissions of any hazardous air pollutant listed in section 112 (b) of the Federal Clean Air Act that does not have an OEHHA approved health risk value (De minimus levels for increases in permitted emissions of hazardous air pollutants that do not have OEHHA approved health risk values can be found in Attachment III of this policy.).

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-801-45-0	0.00 per million	No
C-801-46-0	0.00 per million	No

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.

C. BACT Policy

Per District Policy APR 1305, Section IX, "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 for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis".

The District's 4th quarter 2010 BACT Clearinghouse was surveyed to determine if an existing BACT guideline was applicable for this class and category of operation. No BACT guidelines were found that cover portable refractory curing equipment. Therefore, pursuant to the District's BACT policy, a Top-Down BACT analysis will be performed for inclusion of a new determination in the District's BACT Clearinghouse.

D. Top-Down BACT Analysis for Permit Units C-801-45-0 and '46-0

The Environmental Protection Agency (EPA), California Air Resources Board (CARB), San Diego County Air Pollution Control District (SDCAPCD), South Coast Air Quality Management District (SCAQMD), Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD) BACT

clearinghouses were reviewed to determine potential control technologies for this class and category of operation, but no BACT guidelines for portable refractory curing equipment were found.

A nationwide search of numerous burner manufacturers were researched for possible options within this class and category of operation. Eclipse was the only burner manufacturer found that offered portable refractory curing equipment for the type of operation proposed in this project. Per Kevin Cook of Eclipse (407-628-3338), for a portable refractory curing burner rated at 10 MMBtu/hr the expected NO_x emission rates would range from 40 ppmv to 70 ppmv @ 3% O₂ depending on firing capacity.

SCAQMD has issued a Permit to Operate for this exact equipment in the year 2000 (see Appendix 1). The manufacturer performed a source test and the results show average emission rates of 31 ppmv @ 3% O₂ and 295 ppmv CO @ 3% O₂. The Achieved in Practice BACT emission limits will be established at the manufacturer guaranteed emission rate of 0.042 lb-NO_x/MMBtu (35 ppmv @ 3% O₂) and average source tested emission rate of 0.218 lb-CO/MMBtu (300 ppmv CO @ 3% O₂).

There are also two technologically feasible options. The burners could be retrofitted with a 9 ppmv-NO_x @ 3% O₂ or 30 ppmv-NO_x @ 3% O₂ low NO_x burner.

NO_x Emissions:

Step 1 - Identify all control technologies

As shown above, the following control technologies have been found serving this class and category of operation that will control NO_x emissions.

1. 0.011 lb/MMBtu Low NO_x Burner fired on natural gas
2. 0.036 lb/MMBtu Low NO_x Burner fired on natural gas
3. 0.042 lb/MMBtu Low NO_x Burner fired on natural gas

Step 2 - Eliminate Technologically Infeasible Options

All of the control technologies listed above are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank	Control Technology	Achieved in Practice
1	0.011 lb/MMBtu Low NO _x Burner fired on natural gas	N
2	0.036 lb/MMBtu Low NO _x Burner fired on natural gas	N
3	0.042 lb/MMBtu Low NO _x Burner fired on natural gas	Y

There are no remaining control technologies for NO_x.

Step 4 - Cost Effectiveness Analysis

9 ppmv-NOx @ 3% O2

Annualized Cost

The applicant has supplied the cost data to retrofit a 4 MMBtu/hr boiler with a low NO_x burner at \$40,000. This value represents the replacement cost of the entire burner. Since the unit in this project is an existing 10 MMBtu/hr unit, the total replacement cost can be used. A capital cost of \$20,000 will be utilized as a conservative assumption.

Capital cost = \$20,000

$$\text{Total annual cost} = \$20,000 \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = \$3,255/\text{yr}$$

Emission Reductions

The two proposed burners are limited to 290 hours per year combined operation which will be used to establish the BACT Guideline for this class and category source of operation.

$$10 \text{ MMBtu/hr} \times \text{scf}/1000 \text{ Btu} \times 290 \text{ hr/year} \times 10^6/\text{MM} = 2,900,000 \text{ scf/year}$$

Technologically Feasible emission limit = 9 ppmv-NOx @ 3% O2 = 0.011 lb-NOx/MMBtu

$$0.011 \text{ lb-NOx/MMBtu} \times 10 \text{ MMBtu/hr} \times 290 \text{ hr/year} \times 1 \text{ ton}/2000 \text{ lb} \\ = 0.01595 \text{ ton-NOx/year}$$

Achieved in Practice emission limit = 35 ppmv-NOx @ 3% O2 = 0.042 lb/MMBtu

$$0.042 \text{ lb-NOx/MMBtu} \times 10 \text{ MMBtu/hr} \times 290 \text{ hr/year} \times 1 \text{ ton}/2000 \text{ lb} \\ = 0.0609 \text{ ton-NOx/year}$$

Therefore, the reduction in NOx emissions is the following:

$$(0.0609 - 0.01595) \text{ ton-NOx/year} = \mathbf{0.04495 \text{ tons-NOx/year}}$$

Cost Effectiveness

$$\text{Cost effectiveness} = \$3,255/\text{yr} / 0.04495 \text{ tons-NOx/yr} = \mathbf{\$72,414/\text{ton}}$$

This is greater than the District NOx cost effectiveness threshold of \$24,500/ton. Therefore, this option is not cost effective.

30 ppmv-NOx @ 3% O2

Annualized Cost

The applicant has supplied the cost data to retrofit a 4 MMBtu/hr boiler with a low NO_x burner at \$40,000. This value represents the replacement cost of the entire burner. Since the unit in this project is an existing 10 MMBtu/hr unit, the total replacement cost can be used. A capital cost of \$20,000 will be utilized as a conservative assumption.

Capital cost = \$20,000

$$\text{Total annual cost} = \$20,000 \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = \$3,255/\text{yr}$$

Emission Reductions

The two proposed burners are limited to 290 hours per year combined operation which will be used to establish the BACT Guideline for this class and category source of operation.

Technologically Feasible emission limit = 30 ppmv-NOx @ 3% O₂ = 0.036 lb-NOx/MMBtu

$$0.036 \text{ lb-NOx/MMBtu} \times 10 \text{ MMBtu/hr} \times 290 \text{ hr/year} \times 1 \text{ ton}/2000 \text{ lb} \\ = 0.0522 \text{ ton-NOx/year}$$

Achieved in Practice emission limit = 35 ppmv-NOx @ 3% O₂ = 0.042 lb/MMBtu

$$0.042 \text{ lb-NOx/MMBtu} \times 10 \text{ MMBtu/hr} \times 290 \text{ hr/year} \times 1 \text{ ton}/2000 \text{ lb} \\ = 0.0609 \text{ ton-NOx/year}$$

Therefore, the reduction in NO_x emissions is the following:

$$(0.0609 - 0.0522) \text{ ton-NOx/year} = \mathbf{0.0087 \text{ tons-NOx/year}}$$

Cost Effectiveness

$$\text{Cost effectiveness} = \$3,255/\text{yr} / 0.0087 \text{ tons-NOx/yr} = \mathbf{\$374,138/\text{ton}}$$

This is greater than the District NO_x cost effectiveness threshold of \$24,500/ton. Therefore, this option is not cost effective.

Step 5 - Select BACT

NO_x: 0.042 lb/MMBtu Low NO_x burner fired on natural gas is selected as BACT.

CO Emissions:

Step 1 - Identify all control technologies

As shown above, the following control technologies have been found serving this class and category of operation that will control CO emissions.

- 0.218 lb/MMBtu Natural Gas Fuel Burner

Step 2 - Eliminate Technologically Infeasible Options

All of the control technologies listed above are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank	Control Technology	Achieved in Practice
1	0.218 lb/MMBtu Natural Gas-Fired Burner	Y

There are no remaining control technologies for CO.

Step 4 - Cost Effectiveness Analysis

The applicant is proposing the most effective control technology applicable for CO therefore, a cost effectiveness analysis is not required.

Step 5 - Select BACT

CO: 0.218 lb/MMBtu natural gas-fired burner is selected as BACT.

VOC Emissions:

Step 1 - Identify all control technologies

As shown above, the following control technologies have been found serving this class and category of operation that will control VOC emissions.

- Natural Gas Fuel Burner

Step 2 - Eliminate Technologically Infeasible Options

All of the control technologies listed above are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank	Control Technology	Achieved in Practice
1	Natural Gas-Fired Burner	Y

There are no remaining control technologies for VOC.

Step 4 - Cost Effectiveness Analysis

The applicant is proposing the most effective control technology applicable for VOC therefore, a cost effectiveness analysis is not required.

Step 5 - Select BACT

VOC: Natural gas-fired burner is selected as BACT.

APPENDIX 1

South Coast AQMD Permit to Operate



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

page 1
Permit No.
F31033
A/N 368330

PERMIT TO CONSTRUCT/OPERATE

This is a permit to construct and operate equipment. It does not constitute a guarantee of performance or a warranty of any kind. The permit holder is responsible for the equipment and its operation. If the permit holder is not in compliance with the permit conditions, the permit may be suspended or revoked.

LEGAL OWNER
OR OPERATOR:

HOTWORK, DIV OF FOSBEL INC
223 GOLDRUSH RD
LEXINGTON, KY 40503-2904

ID 122299

Equipment Location: VARIOUS LOCATIONS

Equipment Description:

PORTABLE REFRACTORY CURING EQUIPMENT NO. 3, WITH TWO HOTWORK SJB LOW NOX BURNERS, EACH 10,000,000 BTU/HR, NATURAL GAS/PROPANE FIRED, EACH WITH A COMBUSTION AIR BLOWER RATED AT 100,000 SCFH.

Conditions:

- 1) OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
- 2) THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
- 3) THE SCAQMD SHALL BE NOTIFIED IN WRITING OF THE FOLLOWING INFORMATION AT LEAST FIVE DAYS PRIOR TO PLACING THE EQUIPMENT IN THE DISTRICT:
 - A. THE LOCATION WHERE THE EQUIPMENT WILL BE OPERATED.
 - B. THE ESTIMATED CALENDAR TIME THE EQUIPMENT WILL BE OPERATED AT THE LOCATION.
 - C. ALL OPERATING RECORDS REQUIRED UNDER CONDITION NO. 10 AT THE PREVIOUS LOCATION.

- 4) NOTIFICATION REQUIRED IN CONDITION NO. 3 SHALL BE ADDRESSED TO:

SCAQMD
PANG MUELLER, SR. MANAGER, REFINERY, ENERGY & RECLAIM ADMINISTRATION
21865 E. COPLEY DRIVE
DIAMOND BAR, CA 91765-4182.

FILE COPY



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT/OPERATE

page 2
Permit No.
F31033
A/N 368330

CONDITIONS OF PERMIT TO CONSTRUCT/OPERATE

- 5) A TAG OR NAMEPLATE SHALL BE DISPLAYED ON EACH PROCESS EQUIPMENT FOR IDENTIFICATION PURPOSES. THE TAG(S) OR PLATE(S) SHALL BE ADHERED TO THE EQUIPMENT IN A PERMANENT AND CONSPICUOUS POSITION.
- 6) THIS EQUIPMENT SHALL NOT BE OPERATED MORE THAN 30 DAYS AT ANY ONE LOCATION IN THE DISTRICT WITHIN A 12-MONTH PERIOD.
- 7) THIS EQUIPMENT SHALL NOT BE OPERATED IN A LOCATION WITHIN 1,000 FEET OF THE OUTER BOUNDARY OF ANY SCHOOL
- 8) FUEL GAS USAGE IN THIS EQUIPMENT SHALL NOT EXCEED 4,731,430 SCF PER MONTH AND 9,257,145 SCF PER YEAR.
- 9) A NON-RESETTABLE, TOTALIZING GAS METER, INDICATING IN CUBIC FEET, SHALL BE INSTALLED IN THE FUEL SUPPLY LINE TO THIS EQUIPMENT.
- 10) THE OPERATOR SHALL MAINTAIN A DAILY LOG OF THE EQUIPMENT USAGE, INCLUDING THE EQUIPMENT LOCATION WITHIN THE SOUTH COAST AIR BASIN, DAILY HOURS OF OPERATION, AND FUEL CONSUMPTION. RECORDS SHALL ALSO BE KEPT TO SHOW COMPLIANCE WITH CONDITION NOS. 6 AND 8. THESE RECORDS SHALL BE MAINTAINED AND KEPT ON FILE FOR AT LEAST TWO YEARS, AND SHALL BE MADE AVAILABLE TO THE EXECUTIVE OFFICER OR AUTHORIZED REPRESENTATIVE UPON REQUEST.

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

FILE COPY



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT/OPERATE

page 3
Permit No.
F31033
A/N 368330

CONTINUATION OF PERMIT TO CONSTRUCT/OPERATE

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M. Bailey

By Dorris M. Bailey/er02
5/24/2000

FILE COPY

 <p>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</p> <p><u>STATIONARY SOURCE COMPLIANCE DIVISION</u></p> <p>APPLICATION PROCESSING AND CALCULATIONS</p>	PAGES 6	PAGE 1
	APPL. NO. 368330	DATE 5-18-00
	PROCESSED BY Emmanuel Rulvivar	CHECKED BY

Name of Applicant : Hotwork Division of Fosbel, Inc.

Mailing Address : 223 Goldrush Road
Lexington, KY 40503-2904

Equipment Location : Various Locations

P E R M I T T O C O N S T R U C T A N D O P E R A T E
(V A R I O U S L O C A T I O N S)

APPLICATION NO. 368329

PORTABLE REFRACTORY CURING EQUIPMENT NO. 2, WITH TWO HOTWORK SJB LOW NOx BURNERS, EACH 10,000,000 BTU/HR, NATURAL GAS/PROPANE FIRED, EACH WITH A COMBUSTION AIR BLOWER RATED AT 100,000 SCFH.

APPLICATION NO. 368330

PORTABLE REFRACTORY CURING EQUIPMENT NO. 3, WITH TWO HOTWORK SJB LOW NOx BURNERS, EACH 10,000,000 BTU/HR, NATURAL GAS/PROPANE FIRED, EACH WITH A COMBUSTION AIR BLOWER RATED AT 100,000 SCFH.

APPLICATION NO. 368331

PORTABLE REFRACTORY CURING EQUIPMENT NO. 4, WITH TWO HOTWORK SJB LOW NOx BURNERS, EACH 10,000,000 BTU/HR, NATURAL GAS/PROPANE FIRED, EACH WITH A COMBUSTION AIR BLOWER RATED AT 100,000 SCFH.

 <p>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</p> <p><u>STATIONARY SOURCE COMPLIANCE DIVISION</u></p> <p>APPLICATION PROCESSING AND CALCULATIONS</p>	PAGES 6	PAGE 2
	APPL. NO. 368330	DATE 05/18/2000
	PROCESSED BY Emmanuel Ruivivar	CHECKED BY

- C O N D I T I O N S -

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THE SCAQMD SHALL BE NOTIFIED IN WRITING OF THE FOLLOWING INFORMATION AT LEAST FIVE DAYS PRIOR TO PLACING THE EQUIPMENT IN THE DISTRICT:
 - A. THE LOCATION WHERE THE EQUIPMENT WILL BE OPERATED.
 - B. THE ESTIMATED CALENDAR TIME THE EQUIPMENT WILL BE OPERATED AT THE LOCATION.
 - C. ALL OPERATING RECORDS REQUIRED UNDER CONDITION NO. 10 AT THE PREVIOUS LOCATION.
4. NOTIFICATION REQUIRED IN CONDITION NO. 3 SHALL BE ADDRESSED TO:

SCAQMD
PANG MUELLER, SR. MANAGER, REFINERY,
ENERGY & RECLAIM ADMINISTRATION
21865 E. COPLEY DRIVE
DIAMOND BAR, CA 91765-4182
5. A TAG OR NAME PLATE SHALL BE DISPLAYED ON EACH PROCESS EQUIPMENT FOR IDENTIFICATION PURPOSES. THE TAG(S) OR PLATE(S) SHALL BE ADHERED TO THE EQUIPMENT IN A PERMANENT AND CONSPICUOUS POSITION.
6. THIS EQUIPMENT SHALL NOT BE OPERATED MORE THAN 30 DAYS AT ANY ONE LOCATION IN THE DISTRICT WITHIN A 12-MONTH PERIOD.
7. THIS EQUIPMENT SHALL NOT BE OPERATED IN A LOCATION WITHIN 1,000 FEET OF THE OUTER BOUNDARY OF ANY SCHOOL.



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

STATIONARY SOURCE COMPLIANCE DIVISION

APPLICATION PROCESSING AND CALCULATIONS

PAGES
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PAGE
3

APPL. NO.
368330

DATE
5-18-00

PROCESSED BY
Emmanuel Ruivivar

CHECKED BY

8. FUEL GAS USAGE IN THIS EQUIPMENT SHALL NOT EXCEED 4,731,430 SCF PER MONTH AND 9,257,145 SCF PER YEAR.
9. A NON-RESETTABLE, TOTALIZING GAS METER, INDICATING IN CUBIC FEET, SHALL BE INSTALLED IN THE FUEL SUPPLY LINE TO THIS EQUIPMENT.
10. THE OPERATOR SHALL MAINTAIN A DAILY LOG OF THE EQUIPMENT USAGE, INCLUDING THE EQUIPMENT LOCATION WITHIN THE SOUTH COAST AIR BASIN, DAILY HOURS OF OPERATION, AND FUEL CONSUMPTION. RECORDS SHALL ALSO BE KEPT TO SHOW COMPLIANCE WITH CONDITION NOS. 6 AND 8. THESE RECORDS SHALL BE MAINTAINED AND KEPT ON FILE FOR AT LEAST TWO YEARS, AND SHALL BE MADE AVAILABLE TO THE EXECUTIVE OFFICER OR AUTHORIZED REPRESENTATIVE UPON REQUEST.

 <p>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</p> <p><u>STATIONARY SOURCE COMPLIANCE DIVISION</u></p> <p>APPLICATION PROCESSING AND CALCULATIONS</p>	PAGES 6	PAGE 4
	APPL. NO. 368330	DATE 05/18/2000
	PROCESSED BY Emmanuel Rulviver	CHECKED BY

I. BACKGROUND:

These applications (nos. 368329, 368330 & 368331) were submitted as identical equipment (see letter dated 4-14-2000) to the portable refractory curing equipment no. 1 issued a Permit to Construct/Operate on 4/28/2000 under AN366766 to the same applicant (see Appendix A for copy of the permit). Therefore, an engineering evaluation for the subject equipment would be the same as that completed for AN366766 (see Appendix B for copy). Portions of this evaluation are repeated below.

The subject equipment would be used as portable equipment to be operated not more than 30 days at any one location in the District within a 12-month period. The first location of use of any of the subject equipment is not known at this time.

II. GENERAL INFORMATION:

The subject curing equipment is claimed to be a proprietary designed burner to provide controlled dryout or slow curing of refractory linings to ensure that these linings will perform to its maximum design capabilities in terms of longer service, less maintenance, integrity and deliver maximum production over their life span. Once properly cured, the refractory linings are expected to last anywhere from 1 to 12 years before a relining of the refractory is required.

The subject equipment would comprise of a set of two burners each rated at 10 MMBtu/Hr each. Each burner would have a combustion air blower with a capacity of 100,000 scfh. Since the equipment design is for an excess air system, this volume flow rate is not varied throughout the entire curing process. The only thing that would be modulated would be the flow of fuel gas (natural gas or propane) to the burner. The overall average firing rate for a refractory cure out cycle would be approximately 20% to 30% of the maximum and the highest actual firing rate is not expected to exceed 50% of the maximum rated firing rate of the burner. The normal curing temperature would not exceed about 1,600 deg. F. At this temperature, the hot mix temperature of the burner would only be 100 deg. F. above the actual furnace temperature. The applicant estimated that this would occur at about 175% excess air.

The equipment is expected to be operated 24 hrs/day, 1 to 7 days/wk and a maximum of 45 days per year. The equipment would not be operated within 1,000 feet of the outer boundary of any school.

Process Description -

The burner(s) are bricked into a door or opening of the furnace or equipment whose refractories is to be cured. This would provide a good seal and not allow for infiltration of ambient air. A typical curing process starting temperature is about 150 deg. F. The type of

 <p>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</p> <p><u>STATIONARY SOURCE COMPLIANCE DIVISION</u></p> <p>APPLICATION PROCESSING AND CALCULATIONS</p>	PAGES 6	PAGE 5
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refractory determines the curing schedule. The usual cure cycle calls for the temperature to be raised at a rate of 10 deg. F to 20 deg. F per hour until the final temperature of about 1600 deg. F. or less is reached. At this maximum curing temperature, the normal or integral combustion system of the equipment is turned on and the curing is completed. The equipment is then made ready for normal operation. The portable curing equipment is shutoff when the curing cycle is completed.

III. EVALUATION:

Based on the submitted information, the maximum combustion contaminant emissions from the subject equipment are expected to be as follows:

R1=R2, AEIS, lbs/hr	30-Day Ave., lbs/day	lb/yr
ROG 0.06	1.10	65
NOx 0.39	7.10	417
SOx 0.01	0.13	8
CO 0.30	5.50	324
PM10 0.06	1.17	69

Rule 1401 compound emissions are expected to be minimal (less than screening levels) and would not trigger further review under this rule. Also, no toxic compound is also expected to be emitted from the refractories to be cured based on the typical MSDS submitted.

The operation of the subject equipment is also expected to comply with all the applicable Rule and Regulations of the District including:

Rule 212: No public notice would be required because the equipment at various locations would not be operated within 1,000 feet distance from the outer boundary of any school and that no Rule 1401 compound is expected to be emitted.

Permit conditions would be imposed to ensure compliance with this rule.

Rules 401: No visible emissions and nuisance problem are expected & 402 from the operation of the subject equipment. Compliance with these rules is expected.

Rule 407: The CO and SOx emissions from this equipment will be much less than the rule limits of 2000 ppmv and 500 ppmv, respectively. Thus, the emission limits of this rule will be satisfied.

Rule 431.1: The sulfur content of natural gas or propane to be used in this equipment will meet the 40 ppmv max. sulfur content limit of this rule.

 <p>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</p> <p><u>STATIONARY SOURCE COMPLIANCE DIVISION</u></p> <p>APPLICATION PROCESSING AND CALCULATIONS</p>	PAGES 6	PAGE 6
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Rule 1146: The NOx emission from the subject burners is expected to be not more than 35 ppmv @ 3% O2, dry; therefore, would comply with the 40 ppmv @ 3%O2, dry, limit of this rule

Rule 1401: Potential toxic emissions from the equipment are expected to be minimal and less than the screening threshold levels under this rule.

Reg. XIII: New Source Review

Emission Increase: Since the equipment qualifies as a portable equipment, its emission increases would not be subject to emission offset and dispersion modeling per Rule 1304.

BACT: Considering the nature of the operation of the equipment with very high excess air (>100%) and turndown firing rate of 200:1 max, its emissions of NOx at not more than 35 ppmv @3%O2, dry basis (see also source test report submitted) may be considered as BACT for this type of application. This NOx emission level is comparable to that achieved by regular low NOx burners. Applicant has also demonstrated based on their contact with burner manufacturers (see consultant's letter dated 4-14-2000) that no other burner with lower NOx emission for the required specific application is available in the market.

IV. RECOMMENDATION:

Based on the foregoing evaluation, it is recommended that a Permit to Construct and Operate the equipment at various locations be issued subject to condition nos. 1 to 10 on pages 2 to 3.

Emmanuel Ruivivar
Air Quality Engr. II



ENERGY SERVICES CORPORATION

2014 GRANT AVE., SUITE A
REDONDO BEACH, CA 90278
TEL: 310-374-1255 • FAX: 310-374-4855

AIR QUALITY AND ENERGY EFFICIENCY CONSULTING

April 14, 2000

Mr. Emmanuel Ruivivar
Air Quality Engineer
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

RE. HOTWORK I.D. 122299, Applications For Portable Refractory Curing Equipment.

Dear Mr. Ruivivar,

We are pleased to submit these four applications for refractory curing equipment. The equipment is for the sole purpose of providing a very slow curing or drying of refractory (starting at 150F) in a variety of sources. The use of this equipment is extremely limited in nature and thus, by calculation, generates no more than 420#/year NOx.

Research has been conducted to determine the availability of any other equipment that would be lower in NOx values and still satisfy the required performance profile - nothing was found (see enclosed letter). Because of its unique nature, there has never been BACT established for this equipment. The emissions for this equipment have been substantiated by source test and, quite probably, sets BACT for this type of equipment.

In that this equipment is simple in nature, low emitting and, due to the portable nature of the equipment, is exempt from modeling and offsets, we feel that this should fall into a "B" fee category. Per a conversation with Mr. Rod Milican, the nearest equipment category would be either 000254 or 000265. The permit applications are identical in every way. Their intended use is also identical. For this reason they are applied for as a multiple equipment application fee schedule.

To aid in your review we have included a Fee Calculation Worksheet, P.C. / P.O. Application Pre-Screening Checklist, complete process description, equipment description, emissions calculations, rule evaluation, and proposed Permit Conditions. This complete package should aid in your expeditious review and permitting of these applications.

It is very important that the application be processed as quickly as possible, in that HOTWORK will lose a contract if there is a delay beyond April 26, 2000. If I can be of any further assistance in helping expedite this application please call me at 310-374-1255 and I will promptly provide any required information.

Sincerely,

Anthony W. Endres
President

HOTWORK, I.D. #122299

PERMIT TO OPERATE

20 MMBTU/HR REFRACTORY CURING EQUIPMENT - UNIT #3

COMPANY BACKGROUND: HOTWORK Division of Fosbel Inc. is a service company providing curing of refractory linings in a variety of furnaces, and like devices. This company is located in Lexington, Kentucky but has regional offices in different states around the world. The regional service center is located in Fresno, CA and has four employees. The equipment to be permitted is for portable use only, used specifically for slow curing of refractory to maintain the design strength and operational integrity. Once properly cured, the refractory linings in this equipment lasts anywhere from 1 to 12 years before a relining of the refractory is required.

EQUIPMENT BACKGROUND: HOTWORK services clients all over California. The curing equipment is shipped to the client in pairs of two burners. HOTWORK is permitting 4 two burner units. This is to provide flexibility. Because this Fresno field office services the whole state, all units need to have permits, in case there would be more than one job in the SCAB or that a permitted unit may be already in use in other parts of the state.

CURING PROCESS DESCRIPTION: The burner(s) are bricked into a door or opening of the furnace or equipment to be cured. This provides a good seal and not allow for infiltration of ambient air. A typical curing process start point temperature is 150°F. The type of refractory to be cured determines the cure schedule. The usual cure cycle calls for the temperature to be raised at a rate of 10°F to 20°F per hour. For instance the temperature the first hour would be 150°F for one hour then raised to 160°F or 170°F for the second hour and so on until the final temperature is reached. Typical is Southern California, the final temperature is 1,600°F or under. When the temperature gets to that point the combustion system of the device is turned on and the curing is completed with it's own integral combustion system. The only reason for the equipment to have this large a heating capacity is to provide adequate flow (temperature uniformity) of air to cure the refractory.

CURING EQUIPMENT DESCRIPTION: There are two burners that comprise one unit. Each burner has a capacity of 10 MMBTU/HR. Each burner has a combustion air blower with a capacity of 100,000 scfh. Since this is an excess air system this volume flow rate is not varied throughout the entire curing procedure. The only thing that is modulated is the flow of gas to the burner. It should be noted that the reason for the selection of the burner capacity is not for the firing rate but for the airflow rate. The overall average firing rate for a refractory cure out cycle is approximately 20% to 30% of the maximum and the highest actual firing rate will probably not exceed about 50% of the maximum

rated firing rate of the burner. As indicated above, the normal curing temperature does not exceed about 1,600°F. At this point, the hot mix temperature of the burner is only 100F above the actual furnace temperature. This would be an equivalent to about 175% excess air or about 14% O₂.

PRODUCTION SCHEDULE: There is usually a day before and after the start of curing for unpacking and setting up the equipment. During the actual curing process, the equipment is operated 24 hours per day, from 1 day to 5 or 6 days per job. On a rare occasion, there may be a job that could last 7 days. HOTWORK has only 4 employees in California and their jobs are spread across the whole state. They do not do more than approximately 6 cure jobs in the SCAB per year. Traditionally this has represented an actual curing time of about 20 days per year. In the emissions summary section of this application, the calculations are based on 30 days in one month but not more than 45 days per year. This is actually 2.25 times that historic curing jobs.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

BACKGROUND: Due to the unique nature of the equipment and the process, the SCAQMD does not have an officially established BACT guideline for this type of equipment. However, the burner used for this operation are indeed low NO_x in nature and has been source tested to <35 ppmv NO_x.

EMISSIONS FROM THE CURING EQUIPMENT: There was a source test conducted on a furnace where the curing system was used. The temperature during the test was a constant 1,575°F. This correlates to approximately 14% O₂. The emission values, corrected to 3% O₂ are <35 ppmv NO_x – at that temperature. Typically, the process starts out at 150°F and gradually is elevated to about 1,600°F. Due to the very low average flame temperatures, very little NO_x is generated throughout most of the cure. Of the emissions that are of concern to the SCAQMD, NO_x is the only emittent of consequence. The Emissions Calculations, Chart 1 and Chart 2, defines the volume of each criteria pollutant (and air toxic) in lbs. per hour, day, month and year – based on an accepted limit of natural gas use based on a 30 day period. Because this is portable, limited use equipment, the total annual use is not expected to exceed 45 days. Therefore, the total annual NO_x generated is expected to be well below 500 pounds.

LOW NO_x BURNERS: The burners used for this curing equipment were specifically designed by HOTWORK® in England for this process. We believe that this burner is the lowest NO_x burner manufactured that would be acceptable for the required excess air operation and low temperature stability of operation.

It should be remembered that the maximum hourly emissions (pounds per hour) would never occur because the burners are never fired at maximum firing rate. The maximum values are based on nameplate capacity not actual firing rate. The overall average firing rate will probably be approximately 25% of maximum capacity. Thus, the values indicate in Chart 1 are actually overstated. To fire the burners at high fire at low temperature would explode the refractory due to the entrained water. Thus, the "Average Hourly Emissions" is the most accurate representation of the normal expected emissions.

COMBUSTION SYSTEM AND CONTROLS: This system is an excess air system only. That means that only the gas is modulated, not the air. The airflow is maintained at 100,000 scfh for each burner throughout the entire curing process. The amount of excess air rarely gets lower than 150%. The average excess air condition (for a complete curing cycle) would probably 400% to 600% excess air. Due to the critical nature of the curing process, the equipment is manned 24 hours a day during the curing cycle.

BACT CONCLUSION: In conclusion, the above-mentioned equipment is BACT. This equipment operating 150°F will generate virtually no measurable NOx due to the low flame temperature and <35 ppmv NOx under most other conditions. These values should satisfy BACT requirements for this unusual portable refractory curing equipment.

RULE COMPLIANCE

The limited use of this equipment, and the emissions generated, will not qualify for either RECLAIM Rules or Title V Rules. We believe that with the exemptions noted below, the company complies with all applicable rules and regulations. Therefore, discussions of rule compliance will be limited to command and control rules.

COMMAND AND CONTROL RULES

RULE 401, 402, 404 & 405: Due to the method of operation, the only particulates generated are related to natural gas combustion. Therefore, this equipment will comply with all the aforementioned rules.

RULE 1303: Rule 1303(a). All provisions of BACT are met by this application.

RULE 1303: Rule 1303(b)(1). This equipment is defined a portable equipment and falls under Rule 1304 (a)(7) portable equipment exemption from the modeling requirements of Rule 1303 (b)(1). As a result, no modeling is indicated.

RULE 1303: Rule 1303(b)(2). This equipment is defined a portable equipment and falls under Rule 1304 (a)(7) portable equipment exemption from the offsetting requirements of Rule 1303 (b)(2). As a result, no offsetting is required.

RULE 1306 Through RULE 1309: These rules do not apply.

RULE 1313: Rule 1313(g)(1) & (2). HOTWORK is accepting operating limits on the furnace based on monthly maximum natural gas use. See the "Recommended Permit Conditions" section of this application.

RULE 1401: Rule 1401 does not apply to this application in that no melting or vaporization of metals exists. Emissions are from natural gas combustion only. Compliance is assured.

EQUIPMENT DATA

SYSTEM CONFIGURATION

Furnace Number:	Unit #3 Refractory Curing Equipment
Burners:	2 Ea. HOTWORK® Model SJB Low NOx Burners
Low NOx emissions:	Normal operation est. @ <35 ppmv NOx @ 3% O ₂ *
Burner Rating (each):	10.0 MMBTU/HR each. @ 10% excess air.
Total Rating:	20 MMBTU/HR
Method of Firing:	Excess Air Only
Minimum Temperature:	150°F
Maximum Temperature:	2,000°F
Average Operating Range:	150°F to 1,600°F
Combustion Blowers:	2 each @ 100,000 SCFH

ESTIMATED EMISSIONS

Maximum Firing Rate:	20 MMBTU/HR*
Average Firing Rate:	9 MMBTU/HR
Approx. Max Daily N.G. Use:	205,714 SCF/day (based on 1050 BTU/c.f. N.G.)
Avg. Emissions:	<35 ppmv (expected) = .0425/MMBTU
Avg. hourly emissions (24 hr):	4.5 MMBTU/hr x .0425#/MMBTU = .19#/hr NOx
Max. Hourly Emissions:	9 MMBTU/HR x .0425#/MMBTU = .39#/hr NOx Max.

* This maximum firing rate condition exists in nameplate only. The size of the burner was chosen for the throughput capacity - to provide a large volume of air at low temperature to assure adequate heating uniformity throughout the entire curing cycle. To fire this system at maximum would destroy the refractory to be cured. In the normal curing cycle the average firing rate would be approximately 20% to 30% of the maximum capacity.

PROPOSED PERMIT DESCRIPTION AND CONDITIONS**EQUIPMENT DESCRIPTION:**

PORTABLE REFRACTORY CURING EQUIPMENT UNIT NO. 3, TWO HOTWORK SJB BURNERS 10,000,000 BTU/HR EACH, EACH WITH A COMBUSTION AIR BLOWER RATED AT 100,000 SCFH, NATURAL GAS FIRED AND PROPANE FIRED.

PERMIT CONDITIONS:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL EMISSIONS DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. A NON-RESETTABLE, TOTALIZING GAS METER, INDICATING IN CUBIC FEET, SHALL BE INSTALLED IN THE FUEL SUPPLY LINE TO THE REFRACTORY CURING EQUIPMENT.
4. A MONTHLY LOG LISTING THE AMOUNT, IN CUBIC FEET, OF NATURAL GAS CONSUMED IN THIS EQUIPMENT SHALL BE KEPT AND MAINTAINED ON FILE FOR A MINIMUM OF TWO YEARS AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
5. NATURAL GAS USAGE SHALL NOT EXCEED 4,731,430 STANDARD CUBIC FEET PER MONTH.
6. OPERATOR SHALL MAINTAIN A DAILY LOG OF EQUIPMENT USAGE, INCLUDING THE EQUIPMENT LOCATION WITHIN THE SOUTH COAST AIR BASIN, DAILY HOURS OF OPERATION, AND FUEL CONSUMPTION. THESE RECORDS SHALL BE MAINTAINED FOR TWO YEARS.
7. EQUIPMENT CANNOT BE USED FOR MORE THAT 30 DAYS PER YEAR AT ANY ONE LOCATION WITHIN THE SOUTH COAST AIR BASIN.

HOTWORK
PERMIT TO CONSTRUCT
EMISSIONS CALCULATIONS
PORTABLE REFRACTORY DRYOUT SYSTEM

ENERGY USE	MAXIMUM INPUT USE	AVERAGE INPUT USE	MINIMUM INPUT USE	MAXIMUM DAILY USE
MMBTU/HR	20.00	9.0	0.10	216
NATURAL GAS - SCF	19,048	8,571	95	205,714
NATURAL GAS - MMCF	0.0190	0.0086	0.0001	0.2057

NEW FURNACE EMISSIONS	MAXIMUM HOURLY EMISSIONS	AVERAGE HOURLY EMISSIONS	MINIMUM HOURLY EMISSIONS	MAXIMUM DAILY EMISSIONS
NOx (45#/MMCF)	0.86	0.39	0.00	9.26
CO (35#/MMCF)	0.67	0.30	0.00	7.20
SOx (.83#/MMCF)	0.02	0.01	0.00	0.17
ROC (7#/MMCF)	0.13	0.06	0.00	1.44
PM10 (7.5#/MMCF)	0.14	0.03	0.00	0.77

EMISSIONS SUMMARY	MAXIMUM DAILY VALUES	MONTHLY	ANNUAL
MMBTU	216 MMBTU	4,968	9,720
NATURAL GAS	205,714 STD. CF	4,731,429	9,257,143
NOx	9.26 POUNDS	213	417
CO	7.20 POUNDS	166	324
SOx	0.17 POUNDS	4	8
ROC	1.44 POUNDS	33	65
PM10	0.77 POUNDS	18	35

NOTES:

1. The "MAXIMUM HOURLY EMISSIONS" are based on 100% firing rate (due to the nature of the device never orrurs).
2. The "AVERAGE HOURLY EMISSIONS" are those expected for the average production cycle.
3. Emission factors = 45# NOx/MMCF N.G. (34ppmv NOx @3% O2) represents the highest expected at normal operating conditions.
4. Emission factors other than NOx are from SCAQMD default Emission Fee Billing values.
5. The natural gas consumption limit of 4,731,429 CF/Month is accepted as a monthly consumption limit..
6. The "MAXIMUM DAILY USE" is based on 24 hours per day.
7. Natural gas uses a default heating value of 1050 BTU/c.f.
8. A maximum month is based on 23 days. Monthly emissions = Daily emissions x 23 days.
9. Annual emissions are based on a maximum 45 days per year operation. Annual emissions = Daily Emissions x 45 days

CHART 1

HOTWORK
PERMIT TO CONSTRUCT / OPERATE
EMISSIONS CALCULATIONS
REFRACTORY DRYOUT EQUIPMENT

SUMMARY OF OPERATING CRITERIA

ENERGY USE DATA	Maximum Input/hr	Average Input/hr	Minimum Input/hr	Avg Day Input	Monthly Maximum*
Input - MMBTU	20.0	9.0	0.9	216	4,968
Natural Gas - scf	19,048	8,571	857	205,714	4,731,429
Natural Gas - MCF	0.0190	0.0086	0.0009	0.206	4.7314

* Based on permit limit on fuel use per month.

CRITERIA POLLUTANTS

CRITERIA POLLUTANTS	MHU lb/hr	MHC lb/hr	AHU lb/hr	AHC lb/hr	MDU lb/day	MDC lb/day	AA lb/yr	30 DAY lb/mo
CO (35#/MMCF)	0.67	0.67	0.30	0.30	7.20	7.20	324	216
NOx (45#/MMCF)	0.66	0.66	0.39	0.39	9.26	9.26	417	278
PM10 (7.5#/MMCF)	0.14	0.14	0.06	0.06	1.54	1.54	69	46
ROG (7#/MMCF)	0.13	0.13	0.06	0.06	1.44	1.44	65	43
SOx (83#/MMCF)	0.02	0.02	0.01	0.01	0.17	0.17	8	5

MHU: Maximum hourly uncontrolled

MHC: Maximum hourly controlled

AHU: Average hourly uncontrolled

AHC: Average hourly controlled

MDU: Maximum daily uncontrolled

MDC: Maximum daily controlled

AA: Annual Average

30DA: 30 - Day average

CONTROLLED AND UNCONTROLLED EMISSION FACTORS & EMISSION SUMMARY

CRITERIA POLLUTANTS	Default CE	Actual CE	EFU	EFC	MHU lb/hr	MHC lb/hr	MAC lb/yr	
CO	0.0		6.89E-03	6.89E-03	0.137800	0.137800	324	
NOx	0.0		4.20E-02	4.20E-02	0.840000	0.840000	417	
PM10	0.0		7.10E-03	7.10E-03	0.142000	0.142000	69	
ROG	0.0		6.70E-03	6.70E-03	0.134000	0.134000	65	
SOx	0.0		7.90E-04	7.90E-04	0.015800	0.015800	8	Rule 1401
AIR TOXICS	Default CE	Actual CE	EFU	EFC	MHU lb/hr	MHC lb/hr	MAC lb/yr	Limits lb/yr
Acetaldehyde	0.0		4.10E-06	4.10E-06	0.000082	0.000082	0.4304	95.7
Benzene	0.0		7.62E-06	7.62E-06	0.000152	0.000152	0.7999	8.91
Formaldehyde	0.0		1.62E-05	1.62E-05	0.000324	0.000324	1.7006	43.07
PAHs	0.0		9.52E-08	9.52E-08	0.000002	0.000002	0.0100	0.012

Emission Factors in #/MMBTU

EFU and EFC are identical (no control features).

MHU: Maximum hourly uncontrolled

MHC: Maximum hourly controlled

MAC: Maximum Annual Controlled

NOTES: 1. Annual emissions reflect the total expected use of this equipment in the SCAB.

CHART 2

Proposed Pages For the BACT Clearinghouse

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 1.9.XX*

Emission Unit: Portable Refractory Curing Burners

Industry Type: Regenerative Glass Furnace

Last Update: December 15, 2010

Equipment Rating: ≤ 2,900,000 scf/year

	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NO _x	0.042 lb/MMBtu Low NO _x Burner Fired on Natural Gas	1) 0.011 lb/MMBtu Low NO _x Burner Fired on Natural Gas 2) 0.036 lb/MMBtu Low NO _x Burner Fired on Natural Gas	
CO	0.218 lb/MMBtu Natural Gas-Fired Burner		
VOC	Natural Gas-Fired Burner		

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 - Permit Specific BACT Determinations on Next Page(s)**

1.9.XX

4th Qtr. '10

DRAFT

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 1.9.xxA

Emission Unit: Portable Refractory Curing Burners

Equipment Rating: ≤ 2,900,000 scf/year

Facility: Saint-Gobain Containers, Inc

References: ATC #: C-801-45-0 and '46-0
Project #: 1103288

Location: 24441 Avenue 12, Madera, CA

Date of Determination: December 15, 2010

Pollutant	BACT Requirements
VOC	Natural Gas-Fired Burner
SO _x	BACT NOT TRIGGERED
NO _x	0.042 lb/MMBtu Low NOx Burner Fired on Natural Gas
CO	0.218 lb/MMBtu Natural Gas-Fired Burner
PM ₁₀	BACT NOT TRIGGERED

- BACT Status:**
- Achieved in practice Small Emitter T-BACT
 - Technologically feasible BACT
 - At the time of this determination achieved in practice BACT was equivalent to technologically feasible BACT
 - Contained in EPA approved SIP
 - The following technologically feasible options were not cost effective:
 - 1) 0.011 lb/MMBtu Low NOx Burner Fired on Natural Gas
 - 2) 0.036 lb/MMBtu Low NOx Burner Fired on Natural Gas
 - Alternate Basic Equipment
 - The following alternate basic equipment was not cost effective:

BACT CLEARINGHOUSE

--Submission Form--

Category

Source Category

Glass Manufacturing

SIC Code

3221

[View SIC Code List](#)

NAICS Code

[View NAICS Code List](#)

Emission Unit Information

Manufacturer

Hotwork

Type

Low NO_x burner

Model

SJB

Equipment Description

10 MMBtu/Hr Natural Gas-Fired Portable Refractory Curing Equipment With A Hotwork SJB Low NO_x Burner and Combustion Air Blower

Capacity/Dimensions

10 MMBtu/hr

Fuel Type

Natural Gas

Multiple Fuel Types

Operating Schedule

Continuous 17 hrs/day, 290 hrs/yr

Function of Equipment

The purpose of the portable refractory curing equipment is to burn off sulfur deposits on the checkers (refractory material used in the heat recovery area of the furnace).

Facility/District Information

Facility Name

Saint-Gobain Containers, Inc.

Facility County

Fresno County

Facility Zip Code

93637

District Contact

David Warner, San Joaquin Valley Air Pollution District

District Contact Phone

(559) 230-6000

District Contact E-mail

carlos.garcia@valleyair.org

Project/Permit Information

Application or Permit Number C-801-45-0 and '46-0

New Construction/Modification New Construction
 ATC Date (mm-dd-yyyy) TBD
 PTO Date (mm-dd-yyyy) TBD
 Startup Date (mm-dd-yyyy) TBD
 Technology Status Achieved in Practice
 Source Test Available Yes
 Source Test Results TBD

Example: 03-29-2001

BACT Information

Pollutant Limit(s) and Control Method(s) – Please include proper units

<u>NOx</u>	Limit: 0.042 Control Method Type: Control Method Description:	Units: lb/MMBtu	Averaging Time:
<u>CO</u>	Limit: 0.218 Control Method Type: Control Method Description:	Units: lb/MMBtu	Averaging Time:
<u>VOC</u>	Limit: 0.0055 Control Method Type: Control Method Description:	Units: lb/MMBtu	Averaging Time:
<u>PM</u>	Limit: Control Method Type: Control Method Description:	Units:	Averaging Time:
<u>PM 2.5</u>	Limit: Control Method Type: Control Method Description:	Units:	Averaging Time:
<u>PM 10</u>	Limit: Control Method Type: Control Method Description:	Units:	Averaging Time:
<u>SOx</u>	Limit: Control Method Type: Control Method Description:	Units:	Averaging Time:

ATTACHMENT B
Compliance Certification

**Application for Checker Burn Permit
Saint-Gobain Containers, Inc.
Madera, CA**

Statewide Compliance Certification

Pursuant to SJVAPCD Rule 2201 Section 4.15.2, Saint-Gobain Containers, Inc. (SGCI) submits this Statewide Compliance Certification regarding other owned, operated, or controlled major stationary sources in California.

SGCI is applying for an Authority to Construct (ATC) for two checker burn units. There are two major sources owned or operated by SGCI (or under common control with SGCI) in California: (1) SGCI in Madera, CA (the facility that is the subject of this application), and (2) CertainTeed in Chowchilla, CA (a facility under common control with the Madera plant since it shares a parent company – Saint-Gobain Group, but which is under separate site management)

As of the date designated with the signature below, SGCI asserts the following:

All major Stationary Sources owned or operated by SGCI (or by any entity controlling, controlled by, or under common control with SGCI) in California, which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

This certification is based upon a review by the employees of SGCI who have responsibility for compliance with environmental requirements in California. This certification is based on data available as of the date of its execution.

Thank you for your consideration. Please contact Jayne Browning at (765) 741-7112 or Steve Branoff of ENVIRON at (510) 420-2540 regarding this matter.

Sincerely,



R. Todd Rosebrock
Plant Manager

10/18/12

Date

ATTACHMENT C
Certificate of Conformity

San Joaquin Valley Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

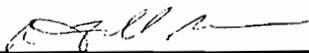
- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE
 MINOR PERMIT MODIFICATION AMENDMENT

COMPANY NAME: Saint-Gobain Containers, Inc.	FACILITY ID: C-801
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Saint-Gobain Containers, Inc.	
3. Agent to the Owner: n/a	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:



Signature of Responsible Official

R. Todd Rosebrock

Name of Responsible Official (please print)

Plant Manager

Title of Responsible Official (please print)

10/18/10

Date

ATTACHMENT D

Health Risk Assessment and Ambient Air Quality Analysis

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Stanley Tom – Permit Services
 From: Yu Vu – Technical Services
 Date: November 2, 2010
 Facility Name: Saint-Gobain Containers
 Location: 24441 Avenue 12, Madera, CA
 Application #(s): C-801-45-0 and -46-0
 Project #: C-1103288

A. RMR SUMMARY

RMR Summary				
Categories	NG-Fired Curing Eqpt. (Unit 45-0)	NG-Fired Curing Eqpt. (Unit 46-0)	Project Totals	Facility Totals
Prioritization Score	0.01	0.01	0.01	>1.0
Acute Hazard Index	0.00	0.00	0.00	0.00
Chronic Hazard Index	0.00	0.00	0.00	0.00
Maximum Individual Cancer Risk (10⁻⁶)	0.00	0.00	0.00	2.25
T-BACT Required?	No	No		
Special Permit Conditions?	No	No		

Proposed Permit Conditions

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

Units # 45-0 and 46-0

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on November 1, 2010, to perform a Risk Management Review for a proposed installation of two portable 10 MMBtu/hr natural gas-fired portable refractory curing devices. These two units will be venting through the existing furnace stack. Technical services was also asked to perform CO modeling for public notice and offset purposes.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using Ventura County Emission Factors for External Combustion of natural gas (10-100 MMBtu/hr) were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2003-2007 from Madera to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Units 45-0 and 46-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	33.5	Closest Receptor (m)	152.4
Stack Diameter. (m)	2.0	Type of Receptor	Business
Stack Exit Velocity (m/s)	23.0	Max Hours per Year	168
Stack Exit Temp. (°K)	590	Fuel Type	NG
Burner Rating (MMBtu/hr)	10		

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀. The emission rates used for criteria pollutant modeling were 2.15 lb/hr CO, 0.38 lb/hr NO_x, 0.03 lb/hr SO_x, and 0.08 lb/hr PM₁₀.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ¹	Pass ¹

*Results were taken from the attached PSD spreadsheet.

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

III. Conclusion

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

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

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

Attachments:

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Toxic emissions summary
- D. Prioritization score

AAQA for Saint-Gobain Containers CO Modeling (C-801)
All Values are in Micrograms per Cubic Meter

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
1	0.1	0.0	0.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0
2	0.1	0.0	0.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Background	89.9	15.3	3,611.5	2,679.5	159.8	133.2	71.9	26.6	99.0	47.0
Facility Totals	90.2	15.3	3,613.2	2,680.8	159.9	133.2	71.9	26.6	99.0	47.0
AAQS	188.7	56.0	23,000.0	10,000.0	195.0	1,300.0	105.0	80.0	50.0	30.0
	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Fail

EPA's Significance Level (ug/m³)

NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

*Since 5-years of meteorological data were used, an adjustment factor of 1.5 for Madera was applied to the annual average concentrations for the devices modeled.

AAQA Emission (g/sec)

<i>Device</i>	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
1	4.82E-02	9.20E-04	2.71E-01	2.71E-01	3.71E-03	3.71E-03	3.71E-03	7.19E-05	9.63E-03	1.87E-04
2	4.82E-02	9.20E-04	2.71E-01	2.71E-01	3.71E-03	3.71E-03	3.71E-03	7.19E-05	9.63E-03	1.87E-04

*Since 5-years of meteorological data were used, an adjustment factor of 1.5 for Madera was applied to the annual average concentrations for the devices modeled.

ATTACHMENT E
Greenhouse Gas Calculations

Two 10 MMBtu/hour Natural Gas-Fired Burners

Basis and Assumptions

- The burners are fired with natural gas at a rate of 10 MMBtu/hour (HHV)
- Only one burner unit will operate at any given time
- The burner operates 17 hours per day and 168 hours per year and is in commercial service
- Emission factors and global warming potentials (GWP) are taken from the California Climate Change Action Registry (CCAR), Version 3.1, January, 2009 (Appendix C, Tables C.7 and C.8):

CO₂ 53.06 kg/MMBtu (HHV) natural gas (116.7 lb/MMBtu)
CH₄ 0.005 kg/MMBtu (HHV) natural gas (0.011 lb/MMBtu)
N₂O 0.0001 kg/MMBtu (HHV) natural gas (0.00022 lb/MMBtu)

GWP for CH₄ = 23 lb-CO₂e per lb-CH₄
GWP for N₂O = 296 lb-CO₂e per lb-N₂O

Calculations

Hourly Emissions

CO₂ Emissions = 10.0 MMBtu/hr x 116.7 lb/MMBtu = 1167 lb-CO₂e/hour
CH₄ Emissions = 10.0 MMBtu/hr x 0.011 lb/MMBtu x 23 lb-CO₂e per lb-CH₄ = 2.53 lb-CO₂e/hour
N₂O Emissions = 10.0 MMBtu/hr x 0.00022 lb/MMBtu x 296 lb-CO₂e per lb-N₂O = 0.65 lb-CO₂e/hour

Total = 1167 + 2.53 + 0.65 = 1170.18 lb-CO₂e/hour

Annual Emissions

1170.18 lb-CO₂e/hour x 168 hr/year ÷ 2,000 lb/ton = 98 tons-CO₂e/year

Metric Conversion

98 short tons-CO₂e/year x 0.9072 metric tons/short ton = **89 metric tons**

Per District Policy, project specific greenhouse gas emissions less than or equal to 230 metric tons-CO₂e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.

ATTACHMENT F

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-801-45-0

LEGAL OWNER OR OPERATOR: SAINT-GOBAIN CONTAINERS, INC
MAILING ADDRESS: ATTN: ENVIRONMENTAL MANAGER/V. KRULIC
PO BOX 4200
MUNCIE, IN 47307-4200

LOCATION: 24441 AVENUE 12 & ROAD 24 1/2
MADERA, CA 93637

EQUIPMENT DESCRIPTION:
10 MMBTU/HR NATURAL GAS-FIRED PORTABLE REFRACTORY CURING EQUIPMENT WITH A HOTWORK SJB LOW NOX BURNER AND COMBUSTION AIR BLOWER

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 NSR Rule] 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 30 lb, 2nd quarter - 30 lb, 3rd quarter - 31 lb, and fourth quarter - 31 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 5 lb, 2nd quarter - 5 lb, 3rd quarter - 6 lb, and fourth quarter - 6 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

DRAFT

DAVID WARNER, Director of Permit Services

C-801-45-0 : Nov 12 2010 9:37AM -- TOMS : Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 4 lb, 2nd quarter - 4 lb, 3rd quarter - 4 lb, and fourth quarter - 4 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]
6. ERC Certificate Numbers C-1083-2, N-921-4, C-1082-1, S-3498-1, N-923-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
7. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
8. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
9. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
10. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
11. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
12. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
13. Maximum fuel use of the unit shall not exceed 170,000 scf per day. [District Rule 2201]
14. Maximum fuel use of units C-801-45 and '46 combined shall not exceed 2,900,000 scf per year. [District Rule 2201]
15. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 35 ppmvd NOx @ 3% O2 or 0.042 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 300 ppmvd CO @ 3% O2 or 0.218 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201]
16. Records of daily and annual natural gas usage of the unit shall be maintained. [District Rule 2201]
17. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-801-46-0

LEGAL OWNER OR OPERATOR: SAINT-GOBAIN CONTAINERS, INC
MAILING ADDRESS: ATTN: ENVIRONMENTAL MANAGER/V. KRULIC
PO BOX 4200
MUNCIE, IN 47307-4200

LOCATION: 24441 AVENUE 12 & ROAD 24 1/2
MADERA, CA 93637

EQUIPMENT DESCRIPTION:
10 MMBTU/HR NATURAL GAS-FIRED PORTABLE REFRACTORY CURING EQUIPMENT WITH A HOTWORK SJB LOW NOX BURNER AND COMBUSTION AIR BLOWER

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 NSR Rule] 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 30 lb, 2nd quarter - 30 lb, 3rd quarter - 31 lb, and fourth quarter - 31 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 5 lb, 2nd quarter - 5 lb, 3rd quarter - 6 lb, and fourth quarter - 6 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

C-801-46-0 : Nov 12 2010 9:38AM - TOMS : Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 4 lb, 2nd quarter - 4 lb, 3rd quarter - 4 lb, and fourth quarter - 4 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/18/08). [District Rule 2201]
6. ERC Certificate Numbers C-1083-2, N-921-4, C-1082-1, S-3498-1, N-923-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
7. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
8. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
9. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
10. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
11. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
12. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
13. Maximum fuel use of the unit shall not exceed 170,000 scf per day. [District Rule 2201]
14. Maximum fuel use of units C-801-45 and '46 combined shall not exceed 2,900,000 scf per year. [District Rule 2201]
15. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 35 ppmvd NO_x @ 3% O₂ or 0.042 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 300 ppmvd CO @ 3% O₂ or 0.218 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201]
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