

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **092012-004** Project Number: 2012-05-078
Installation Number: 099-0068

Parent Company: Saint - Gobain Containers, Inc.
Parent Company Address: 1500 Saint - Gobain Drive, Pevely, MO 63070
Installation Name: Saint - Gobain Containers, Inc.
Installation Address: 1500 Saint - Gobain Drive, Pevely, MO 63070
Location Information: Jefferson County, S7, T41N, R5E

Application for Authority to Construct was made for:
Re-bricking of Furnace 20, de-limiting the electric boost capacity for both Furnaces 20 and 21, addition of an emergency generator, and installation of air pollution control equipment as required by a Global Consent Decree. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

SEP 12 2012

EFFECTIVE DATE

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of startup of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual startup of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Saint-Gobain Containers, Inc.
Jefferson County, S7, T41N, R5E

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in the previously issued construction permit (Permit Number 042000-008) issued by the Air Pollution Control Program.
2. **NOx Emission Limitations**
 - A. **Emission Rate 30-day Rolling Average Limit**
Commencing on the first Operating Day after completion of the Furnace Startup Period and Continuous Emission Monitoring System (CEMS) certification, Saint-Gobain Containers, Inc. shall not exceed the Emission Rate 30-day Rolling Average (see Appendix A) of 1.3 pounds of NOx per ton of glass produced as measured using a NOx CEMS, except during the following periods: Abnormally Low Production Rate Days; Furnace Startup; Malfunction of the Furnace; and Maintenance of the Furnace. A new Emission Rate 30-Day Rolling Average shall be calculated for each new Operating Day. Any Operating Day where the newly calculated Emission Rate 30-Day Rolling Average exceeds the limit is a separate one Day violation.
 - B. **During Abnormally Low Production Rate (ALPR) Days**
ALPR days may be excluded from the Emission Rate 30-Day Rolling Average. ALPR is defined as any calendar day during which the glass pull rate falls below 116.2 tons per day (TPD) for Furnace 20 for at least one continuous hour. During ALPR days that are excluded from the Emission Rate 30-Day Rolling Average, a CEMS shall be used to demonstrate compliance on a 24-hour Block Average with the following pound per day limit:

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Furnace 20:
$$NO_{X_Oxy_Abn_20} = 1.3 \frac{lbNOx}{ton} \times \frac{P_{20}}{0.35} = 431 \text{ pounds (lbs)/day}$$

Where:

$NO_{X_Oxy_Abn_20}$ = NOx emission limit for Furnace 20 during an Abnormally Low Production Rate Day

P_{20} = Furnace 20-specific production threshold on ALPR days (i.e., 116 tons of glass produced per day).

C. During Furnace Startup

- 1) Initial Heating Phase Operational Limit
Saint-Gobain Containers, Inc. shall burn no more than 5,000,000 standard cubic feet (ft³) of natural gas in that Furnace during the Initial Heating Phase of the Furnace Startup.
- 2) Refractory Soak and Seal Phase Operational Limits
Saint-Gobain Containers, Inc. shall comply with the following operational limits to limit NOx emissions during the Refractory Soak and Seal Phase of the Furnace Startup:
 - a) Burn no more than 60,000,000 standard ft³ of natural gas in that Furnace;
 - b) Limit excess oxygen below 5% at the Furnace exhaust flue, as determined by a handheld monitor, once per shift;
 - c) Limit the Hot Spot Temperature to 2,900°F, as determined by a handheld measurement device, once per shift; and
 - d) Use thermal blankets or similar techniques to minimize air infiltration until expansion joints are sufficiently closed.
- 3) Furnace Stabilization Phase Operational Limits
Saint-Gobain Containers, Inc. shall comply with the following operational limits to limit NOx emissions during the Furnace Stabilization Phase of the Furnace Startup:
 - a) Burn no more than 90,000,000 standard ft³ of natural gas in that Furnace;
 - b) Limit excess oxygen below 5% at the Furnace exhaust flue as determined by a handheld monitor, once per shift; and
 - c) Limit the Hot Spot Temperature to 2,900°F, as determined by a handheld measurement device, once per shift.

D. During Malfunction of the Furnace

For any Operating Day where a Malfunction of a Furnace occurs for any period of time, Saint-Gobain Containers, Inc. may elect to exclude the

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emissions generated during that Operating Day (Operating Days if the event covers more than one Operating Day) from the Emission Rate 30-Day Rolling Average. During the Malfunction Days excluded from the Emission Rate 30-Day Rolling Average, a CEMS shall be used to demonstrate compliance on a 24 hour Block Average with the following pound per day limit:

Furnace 20:

$$NO_{X_Oxy_Malif_20} = 4 \times NO_{X_Oxy_Abn_20} = 1,724 \text{ lbs/day}$$

Where:

$NO_{X_Oxy_Malif_20}$ = NOx emission limit for Furnace 20 during a Malfunction Day

$NO_{X_Oxy_Abn_20}$ = NOx emission limit for Furnace 20 during an Abnormally Low Production Rate Day = 431 lbs/day

- E. During Maintenance of the Furnace
 For any Operating Day where Maintenance activities on a Furnace are performed, Saint-Gobain Containers, Inc. may elect to exclude the Maintenance Day from the Emission Rate 30-Day Rolling Average. The use of this Maintenance exception shall be limited to 96 hours annually; however, maintenance time accrued while the Furnaces are shut down does not count towards this total. For any Maintenance Day which is excluded from the Emission Rate 30-Day Rolling Average, a CEMS shall be used to demonstrate compliance on a 24-hour Block Average with the pound per day limit calculated using the following equation:

Furnace 20:

$$NO_{X_Oxy_Maint_20} = \frac{MH \times [4 \times NO_{X_Oxy_Abn_20}]}{24} + \frac{NH \times [NO_{X_Oxy_Abn_20}]}{24}$$

Where:

$NO_{X_Oxy_Maint_20}$ = NOx emission limit for Furnace 20 during a Maintenance Day, in lbs/day

$NO_{X_Oxy_Abn_20}$ = NOx emission limit for Furnace 20 during an Abnormally Low Production Rate Day = 431 lb/day

MH = Hours of Maintenance during a Maintenance Day (less than or equal to 24 hours per day)

NH = Normal Operating Hours during a Maintenance Day = 24 – MH .

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3. SO_x Emission Limitations

A. 30-day Rolling Average Limit

Commencing on the first Operating Day after completion of the Control Device Startup and CEMS certification, Saint-Gobain Containers, Inc. shall comply with the following limits as measured using a SO₂ CEMS, except during the following periods: Control Device Startup; Furnace Startup; Malfunction of the Scrubber System or ESP; and Maintenance of the Scrubber System or ESP.

- 1) No dilution air will be intentionally added to the stack gases between the Scrubber System and the CEMS. When determining compliance with all Scrubber System limits, there shall be no oxygen correction, as per vendor guarantee.
- 2) The 30-Day Rolling Average limit for the combined exhaust from Furnaces 20 and 21 will be determined based on the measured daily Inlet 24-hour Block Average SO₂ concentrations (see Appendix A).
- 3) If the daily Inlet 24-hour Block Average SO₂ concentration is equal to or greater than 300 parts per million by volume dry (ppmvd), then 24-hour block average SO₂ removal efficiency is calculated and the 30-Day rolling average SO₂ removal efficiency shall be at or above 85%.
- 4) If the daily Inlet 24-hour Block Average SO₂ concentration is less than 300 ppmvd, then the 24-hour block average outlet concentration is calculated and the 30-Day rolling average outlet concentration shall be less than or equal to 45 ppmvd.
- 5) A new Removal Efficiency 30-Day Rolling Average shall be calculated for each new Operating Day. Any Operating Day where the newly calculated Removal Efficiency 30-Day Rolling Average is less than the Removal Efficiency limit is a separate one Day violation.

B. During Control Device Startup or Up to the First Seven Days of Furnace Startup

Saint-Gobain Containers, Inc. shall comply with the following operational limit to limit SO₂ emissions during all phases of Control Device Startup or Furnace Startup:

- 1) During the startup period, Saint-Gobain Containers, Inc. will limit the amount of sulfur added to the batch materials to 2.6 lbs/ton of total batch material (including cullet) or less.
- 2) During no more than the first seven days of Furnace Startup, the Furnace exhaust may bypass the semi-dry scrubber control system to avoid having the operating inlet temperature of the control system fall below its operational range. During these bypass days, natural

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gas combustion is limited to 15.0 million standard cubic feet (mmscf) in that Furnace. This limitation will apply to both Furnaces, until the Control Device Startup or Up to the First Seven Days of Furnace Startup are complete.

- C. During Malfunction of the Scrubber System or ESP
 For any Operating Day where a Malfunction of the control device occurs for any period of time, Saint-Gobain Containers, Inc. may elect to exclude the emissions generated during that Operating Day (or Operating Days if the event covers more than one Operating Day) from the 30-Day Rolling Average SO₂ Removal Efficiency or 30-Day Rolling Average SO₂ outlet concentration limit applicable during the Malfunction. During the Malfunction Days excluded from the 30-Day Rolling Averages, a CEMS shall be used to demonstrate compliance on a 24-Hour Block Average with the following lbs/day limit for the Malfunctioning Control Device calculated as the sum of the following two equations:

$$\text{Furnace 20: } SO_{2_Scrub_Malf_20} = 2.5 \frac{lbSO_2}{ton} \times \frac{P_{20}}{0.35} = 829 \text{ lbs/day}$$

$$\text{Furnace 21: } SO_{2_Scrub_Malf_21} = 2.5 \frac{lbSO_2}{ton} \times \frac{P_{21}}{0.35} = 1,200 \text{ lbs/day}$$

Where:

SO_{2_Malf_20} = SO₂ emission limit for Furnace 20 during a Malfunction Day

SO_{2_Malf_21} = SO₂ emission limit for Furnace 21 during a Malfunction Day

P₂₀ = Furnace 20-specific production threshold on ALPR days (i.e. 116 tons of glass produced per day).

P₂₁ = Furnace 21-specific production threshold on ALPR days (i.e. 168 tons of glass produced per day).

- D. During Maintenance of the Scrubber System or ESP
 For any Operating Day where Maintenance activities on the Control Device are performed, Saint-Gobain Containers, Inc. may elect to exclude the Maintenance Day from the 30-Day Rolling Average Removal Efficiency and the 30-Day Rolling Average Control Device Outlet concentration emission limit applicable for that Maintenance event. The use of this Maintenance exception shall be limited to 144 hours annually, excluding maintenance hours when the Furnaces are shut down. For any Day which is excluded from the 30-Day Rolling Average Emission Rate, a CEMS shall be used to demonstrate compliance on a 24-Hour Block Average with the pound per day limit for the Control Device undergoing

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Maintenance calculated as the sum of the two following equations:

$$\text{Furnace 20: } SO_{2_Maint_20} = \frac{MH \times [SO_{2_Scrub_Malf_20}]}{24} + \frac{NH \times [1/3xSO_{2_Scrub_Malf_20}]}{24}$$

$$\text{Furnace 21: } SO_{2_Maint_21} = \frac{MH \times [SO_{2_Scrub_Malf_21}]}{24} + \frac{NH \times [1/3xSO_{2_Scrub_Malf_21}]}{24}$$

Where:

$SO_{2_Maint_20}$ = SO₂ emission limit for Furnace 20 with a control device during a Maintenance Day, in lbs/day

$SO_{2_Maint_21}$ = SO₂ emission limit for Furnace 21 with a control device during a Maintenance Day, in lbs/day

$SO_{2_Abn_20}$ = SO₂ emission limit for Furnace 20 during an Abnormally Low Production Rate Day = 829 lbs/day

$SO_{2_Abn_21}$ = SO₂ emission limit for Furnace 21 during an Abnormally Low Production Rate Day = 1,200 lbs/day

MH = Hours of Maintenance during a Maintenance Day (less than or equal to 24 hours per day)

NH = Normal Hours = 24 – MH during a Maintenance Day.

4. Sulfuric Acid Mist Limit
 - A. Saint-Gobain Containers, Inc. shall emit less than 1 pound per ton glass produced for both Furnaces 20 and 21 as emitted from the control device system.
 - B. Compliance with the sulfuric acid mist limit shall be demonstrated through a stack test performed using Conditional Test Method 13A or 13B once during the life of each Title V permit.

5. Particulate matter less than 10 microns in diameter (PM₁₀) Emission Limitation
 - A. Saint-Gobain Containers, Inc. shall emit less than 0.2 pounds of filterable particulate matter (PM) per ton of glass produced and 0.45 pounds of total PM per ton of glass produced for both Furnaces 20 and 21 as emitted from the control device system.
 - B. Compliance with the filterable and total PM emission limits shall be demonstrated by annual stack tests performed using EPA Test Method 5 for filterable PM and Test Method 5 and 202 for total PM. This testing will be performed at the common stack from the electrostatic precipitator (ESP) controlling the combined PM emissions from both Furnaces.

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- C. Compliance with the limits on each Furnace set forth herein shall be determined using the following equation:

$$PM_Emission_Rate = \frac{[lbs_of_PM_from_ST]}{Daily_Production(tons)} \times \frac{24_hours}{Source_Test_Length(hrs)}$$

Where:

PM_Emission_Rate = PM emission limit in pounds PM per ton glass produced

Lbs_of_PM_from_ST = The pounds of PM measured during the entire length of the source test (including all runs).

Daily_Production = The amount of glass produced on all Furnaces during the Day of the source test.

Source_Test_Length = Length of the entire source test (including all runs), in hours.

- D. If the resulting PM Emission Rate is below the limit set forth on each Furnace individually, then all included Furnaces are in compliance. If the resulting PM Emission Rate is above the limits set forth on each Furnace individually, then all included Furnaces are in noncompliance.
6. Haul Road Watering
- A. Saint-Gobain Containers, Inc. shall water haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.
- B. Watering may be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
7. Production Limitations
- A. The pull rate for Furnace 20 shall not exceed 332 tons of glass per day.
- B. The pull rate for Furnace 21 shall not exceed 480 tons of glass per day.
8. Control Device Requirement – ESP and Semi-dry Scrubber
- A. Saint-Gobain Containers, Inc. shall operate an ESP and semi-dry scrubber control system to control the combined PM and SO₂ emissions from Furnaces 20 and 21. Furnace exhaust gas shall be routed to the ESP and semi-dry scrubber control system at all times, except during periods of Control Device Startup and during Malfunction of the Control Device and Maintenance on the Control Device and up to the first seven days of the Furnace Startup.

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The permittee is authorized to construct and operate subject to the following special conditions:

- B. The ESP and semi-dry scrubber control system and any related instrumentation or equipment shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Saint-Gobain Containers, Inc. shall monitor and record the operating parameters specified in Special Condition 13. The operating parameters shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - D. Saint-Gobain Containers, Inc. shall maintain an operating and maintenance log for the ESP and semi-dry scrubber control system which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
9. Control Device Requirement-Baghouse
- A. Saint-Gobain Containers, Inc. shall control emissions from the following equipment using baghouses as specified in the permit application.
 - 1) ESP Silo (EP35)
 - 2) Scrubber Silo (EP36)
 - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Saint-Gobain Containers, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

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- E. Saint-Gobain Containers, Inc. shall maintain an operating and maintenance log for the baghouses which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
10. CEMS Requirements
- A. Saint-Gobain Containers, Inc. shall install, calibrate, certify, maintain and operate a CEMS for measuring NO_x emissions discharged to the atmosphere. The NO_x CEMS shall be located on each individual exhaust duct from Furnaces 20 and 21.
 - B. Saint-Gobain Containers, Inc. shall install, calibrate, maintain and operate a CEMS for measuring SO₂ emissions discharged to the atmosphere. The SO₂ CEMS shall be located on the combined inlet header and exhaust stack of the ESP/semi-dry scrubber control system.
 - C. Saint-Gobain Containers, Inc. must comply with all monitoring, recordkeeping and reporting requirements in 40 CFR § 60.13 and 40 CFR Part 60 Appendix B (Performance Specifications 2 and 6).
 - D. The NO_x and SO₂ CEMS shall be installed, calibrated, certified, maintained, and operated in accordance with 40 CFR § 60.13, 40 CFR Part 60 Appendix B (Performance Specifications 2 and 6), and 40 CFR Part 60 Appendix F (Quality Assurance Procedures).
 - E. The NO_x and SO₂ CEMS shall monitor continuously and record the hourly NO_x and SO₂ emission concentration (parts per million) during each Operating Day from each Furnace. The CEMS shall calculate and record in units of parts per million (ppm) of NO_x and SO₂ emitted.
 - F. In conjunction with EPA approved flow method calculation or the flow rate monitoring device, the data acquisition and handling system for the CEMS shall convert the ppm values into pound per hour values where the limit is expressed in pounds of pollutant per ton of glass produced. At the end of each Operating Day, the data acquisition and handling system shall divide the total daily emissions in pounds per day for valid CEMS hourly data by the total tons of glass produced during the Operating Day (reduced proportionally based on the valid CEMS data hours) to describe the

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pounds per ton emission rate for the Operating Day. This number shall be recorded in units of pounds of pollutant per ton of glass produced for the applicable Day.

- G. If a CEMS Certification Event occurs, then the requirement to demonstrate compliance continuously with the limit for that Furnace will be suspended until Certification is completed (provided the seven day test required for Certification is commenced the first Operating Day following the conclusion of the CEMS Certification Event). A "CEMS Certification Event" is defined as an event that triggers the requirement to complete the first or subsequent CEMS certification required by 40 CFR § 60.13, 40 CFR Part 60 Appendix B (Performance Specification 2) and 40 CFR Part 60 Appendix F (Quality Assurance Procedures).
 - H. Saint-Gobain Containers, Inc. must certify the CEMS in accordance with 40 CFR 60.13, 40 CFR Part 60 Appendix B (Performance Specifications 2 and 6) and 40 CFR Part 60 Appendix F (Quality Assurance Procedures) on the first operating day after each CEMS Certification Event occurs. The CEMS certification cannot occur during periods of ALPR Days, Furnace Startup, Malfunction, Maintenance, or Color Transition. Saint-Gobain Containers, Inc. shall commence a new CEMS Certification on a particular Furnace on the first Operating Day after each CEMS Certification Event concludes on that Furnace.
 - I. The requirement to demonstrate compliance continuously with each NO_x or SO₂ emission limit for that Furnace will be suspended if a CEMS Certification Event occurs, until the Certification is completed (provided the seven day test required for Certification is commenced the first Operating Day following conclusion of the CEMS Certification Event).
11. Continuous Opacity Monitoring System (COMS) Requirements
- A. Saint-Gobain Containers, Inc. must install, calibrate, certify, maintain, and operate continuously a COMS during each operating Day on the common exhaust stack for the ESP/semi-dry scrubber control system for Furnaces 20 and 21.
 - B. Saint-Gobain Containers, Inc. shall operate the COMS in accordance with Performance Specification 1 of 40 CFR 60, Appendix B.

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- C. Saint-Gobain Containers, Inc. shall comply with all monitoring, recordkeeping and reporting requirements in 40 CFR 60.13 and 40 CFR 60, Appendix B (Performance Specification 1).
 - D. The COMS certification cannot occur during periods of ALPR Days, Furnace Startup, Control Device Startup, Malfunction, or Maintenance.
12. Operation and Maintenance Requirements
- A. Scheduled or preventative Furnace Maintenance shall not exceed 96 operating hours annually and shall be conducted only when any downstream control devices required by the Consent Decree are operating. For NO_x 30-Day Rolling Average exclusions, Maintenance Days that Saint-Gobain Containers, Inc. elects to exclude from the 30-Day Rolling Average Emission Rate shall not include more than 96 hours of maintenance annually for each Furnace. Maintenance shall mean activities necessary to keep the system or equipment working in its normal operating condition.
 - B. Control system scheduled or preventive Maintenance of the emission control system shall occur when the Furnace is not operating. However, for any Calendar Year which is a Continuous Operating Year, scheduled or preventative maintenance may be conducted while the Furnace is in operation. During these Continuous Operating Years, Maintenance lasting greater than twenty-four (24) consecutive hours shall occur only during ALPR days.
 - C. Bypass of the control device for Maintenance when the Furnaces are operating shall not exceed 144 hours annually in any Calendar Year. If the ESP is bypassed, the Scrubber System must be bypassed as well. Bypass of the Scrubber system required by the bypass of the ESP shall be included in the 144 hours.
13. Record Keeping and Reporting Requirements
- A. For any Operating Day that Saint-Gobain Containers, Inc. is excluding emissions from the relevant 30-Day Rolling Average Emission Rate for NO_x and/or SO₂, Saint-Gobain Containers, Inc. shall record the date, the exception under which it is excluded, a calculation of the applicable limit (lbs/day) according to the equations above, and the recorded emissions according to the CEMS (lbs/day).

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- 1) For NO_x, the exceptions are Abnormally Low Production Rate Day, Furnace Startup, Control Device Startup, Malfunction, or Maintenance
 - 2) For SO₂, The exceptions are Control Device Malfunction, Control Device Maintenance, Control Device Startup and Up to the First Seven Days of Furnace Startup
- B. For any Operating Day excluded for Maintenance, Saint-Gobain Containers, Inc. shall record the total number of hours during which Maintenance occurred (excluding maintenance hours when the Furnace is shut down).
- C. During Furnace Startup period phases Saint-Gobain Containers, Inc. must also keep the following records:
- 1) Initial Heating Phase
 - a. Total natural gas usage in that Furnace (in million standard ft³)
 - 2) Refractory Soak and Seal Phase
 - a. Total natural gas usage in that Furnace (in million standard ft³);
 - b. Excess oxygen percentage at the Furnace exhaust flue (as determined by handheld monitor once per shift);
 - c. Hot Spot Temperature (measured once per shift); and
 - d. A certified statement asserting whether thermal blankets or similar techniques were used during this period.
 - 3) Furnace Stabilization Phase
 - a. Total natural gas usage in that Furnace (in million standard ft³);
 - b. Excess oxygen percentage at the Furnace exhaust flue (as determined by handheld monitor once per shift); and
 - c. Average Hot Spot Temperature (measured once per shift).
 - 4) During Furnace Startup period phases, Saint-Gobain Containers, Inc. will record the amount of sulfur added to the batch materials, in lbs/ton of total batch material.
- D. Saint-Gobain Containers, Inc. shall record the daily glass pull rate for Furnace 20 and 21.
- E. Saint-Gobain Containers, Inc. shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used

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- F. Saint-Gobain Containers, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.
14. Performance Testing
- A. Saint-Gobain Containers, Inc. shall conduct performance testing on Furnaces 20 and 21 as required in Special Conditions 4.B. and 5.B.
 - B. The operating parameters (i.e. flowrate, temperature, pressure, etc.) at which the stack tests are conducted shall be used to set the appropriate values used in actual operations of the ESP/semi-dry scrubber control system.
 - C. The operating parameters in Special Condition 13.B. shall be determined and agreed upon by the Air Pollution Control Program's Enforcement Section prior to the start of the performance tests.
 - D. The operating parameters in Special Condition 13.B. shall be recorded on record keeping sheet(s) and be made available to Department of Natural Resources personnel upon request. The frequency of the record keeping is dependent upon the parameters being kept and should be determined and agreed upon by the Air Pollution Control Program's Enforcement Section prior to the start of the performance tests.
 - E. These tests shall be performed within 60 days after achieving the maximum production rate of the installation, but not later than 180 days after initial start-up for commercial operation and shall be conducted in accordance with the Performance Testing requirements outlined in Special Condition 14.
 - F. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.

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Project No.	2012-05-078

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- G. Two copies of a written report of the performance test results shall be submitted to the Director within 60 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
 - H. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.
15. Cooling Tower Requirements
- A. The cooling tower(s) shall be operated and maintained in accordance with the manufacturer's specifications. Manufacturer's specifications shall be kept on site and made readily available to Department of Natural Resources' employees.
 - B. The cooling water circulation rate shall not exceed the rate listed in Appendix C. Each tower shall be equipped with a gauge or meter, which indicates the flowrate. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.
 - C. Saint-Gobain Containers, Inc. shall keep records of the monthly and 12-month rolling averages of the amount of water circulated.
 - D. The total dissolved solids (TDS) concentration in the circulated cooling water shall not exceed a TDS concentration of 2,500 parts per million (ppm). A TDS sample shall be collected and the results recorded monthly to verify the TDS concentration.
 - E. The requirement for TDS sample collection may be eliminated or the frequency may be reduced upon written approval by the Air Pollution Control Program if TDS sampling results demonstrate compliance for 24 consecutive months.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2012-05-078
Installation ID Number: 099-0068
Permit Number:

Saint-Gobain Containers, Inc.
1500 Saint-Gobain Drive
Pevely, MO 63070

Complete: July 12, 2012

Parent Company:
Saint-Gobain Containers, Inc.
1500 Saint-Gobain Drive
Pevely, MO 63070

Jefferson County, S7, T41N, R5E

REVIEW SUMMARY

- Saint-Gobain Containers, Inc. has applied for authority to re-brick Furnace 20, de-limit the electric boost capacity for both Furnaces 20 and 21, add an emergency generator, and install air pollution control equipment as required by a Global Consent Decree (GCD).
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are hydrogen chloride.
- New Source Performance Standards (NSPS) 40 CFR 60 Subpart CC for Glass Manufacturing Plants applies to the installation.
- 40 CFR 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" applies to the new emergency generator (EP34).
- Maximum Achievable Control Technology (MACT) regulations 40 CFR 63 Subpart ZZZZ, Reciprocating Internal Combustion Engine (RICE) apply to the proposed the new emergency generator (EP34).
- An electrostatic precipitator and semi-dry scrubber control system is being used to control the PM and SO₂ emissions from Furnaces 20 and 21.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants for the project are conditioned below de minimis levels.
- This installation is located in Jefferson County, a nonattainment area for the 8-hour ozone standard and the PM_{2.5} standard and an attainment area for all other criteria pollutants. Part of Jefferson County is a nonattainment area for lead. The

installation is not located in the Jefferson County lead nonattainment area.

- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2, Number 27, any other stationary source category which as of August 7, 1980 is being regulated under section 111 or 112 of the Act. The installation's major source level is 250 tons per year for PM_{2.5}, PM₁₀, PM, SO_x, and CO; 100 tons per year for VOC and NO_x. Fugitive emissions are counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the project are below de minimis levels.
- Emissions testing is required for the installation.
- A Part 70 Operating Permit application is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Saint-Gobain Containers, Inc. (SGCI) owns and operates a soda-lime glass container manufacturing facility in Pevely, Missouri, which is located in Jefferson County. Batches of dry ingredients are melted in two oxy-fuel glass furnaces and then processed into glass bottles for the beverage industry by molding, annealing, coating, and packaging operations. According to the application, ancillary operations include waste water treatment and general maintenance.

Jefferson County has been designated an 8-hour ozone nonattainment area. Therefore, the major source threshold for VOC and NO_x is 100 tons per year.

This installation does not qualify in any of the PSD source categories as stated in 40 CFR 52.21 (b)(1)(i)(a), which lists the categories that have a major source level of 100 tons per year of regulated New Source Review (NSR) pollutants. Consequently, the major source threshold is 250 tons per year for the remaining criteria pollutants (i.e. PM_{2.5}, PM₁₀, PM, SO_x, and CO). However, this installation is listed in the "List of Named Installations" under 10 CSR 10-6.020(3)(B), Table 2 under Category 27, which is defined as any stationary source which, as of August 7, 1980, is being regulated under section 111 (NSPS) or section 112 (MACT) of the Clean Air Act. Since Subpart CC of the NSPS applies to this installation and Subpart CC was proposed prior to August 7, 1980, this installation is considered a named installation, and fugitive emissions should be included in calculating potential emissions for major source determinations (See 40 CFR 52.21 (b)(1)(iii)). This installation is a major source for both construction and operating permits.

The following air permits have been issued to SGCI from the Air Pollution Control Program. SGCI currently has a Part 70 Operating Permit renewal application in-house under Project #2011-12-011.

Table 1: Permit History

Permit Number	Description
0680-014 to 0680-017	Construction of a glass bottle manufacturing plant (no special conditions)
0397-006	Convert Furnace #20 to oxy-fire
OP2000-076	Initial Part 70 Operating Permit
042000-008	Section (5) permit for the reconfiguration of Furnace 20 (testing special condition)
OP2007-035	Part 70 Operating Permit renewal
062009-010	Section (5) permit for the debottlenecking of Furnace 20 and its forming lines by increasing the rate of cooling (no special conditions)
062010-006	Temporary permit to test a new combustion technology in the glass production furnaces.

SGCI entered into a Global Consent Decree (GCD) with the USEPA and the Missouri Department of Natural Resources on May 7, 2010. As a part of the GCD, this project is subject to applicable requirements and emissions limits for both furnaces at this installation.

PROJECT DESCRIPTION

SGCI is proposing a modification to their existing glass production plant that will increase the glass production rate. The modification will include the following:

- Installation of an electrostatic precipitator (ESP) for the control of PM emissions and a semi-dry scrubber for the control of SO₂ emissions for both Furnaces 20 and 21. A single semi-dry scrubber and ESP control system will control the combined emissions from both furnaces and vented through a new combined stack.
- Installation of two silos for the storage of the soda ash scrubbing agent and the dust removed by the ESP. Material will be pneumatically conveyed into these silos. Each silo will be equipped with a bin vent dust collector for the control of PM emissions.
- Modification of the electric boost systems on Furnaces 20 and 21 to increase heat input. This will be accomplished by replacing and adding electrodes and replacing the existing transformer.
- Replacement of the burners on Furnace 20.
- Re-bricking of Furnace 20.
- Installation of a continuous opacity monitoring system (COMS) on the combined stack for Furnaces 20 and 21.
- Installation of a continuous emissions monitoring system (CEMS) for SO₂ and NO_x for Furnaces 20 and 21.
- Installation of a new 750 kW diesel-fired emergency generator to provide back-up power for the ESP blower and the data acquisition system.

Although the glass pull rate is expected to increase by 84 additional tons per day for each furnace, SGCI has requested a production limit of 332 tons per day for Furnace 20 and 480 tons per day for Furnace 21.

EMISSIONS/CONTROLS EVALUATION

To determine if the proposed modification to the existing equipment will result in a significant emissions increase, SGCI has proposed the use of the actual-to-projected-actual applicability test as outlined in 40 CFR 52.21(a)(2)(iv)(c). The baseline actual emissions, as defined in paragraphs (b)(48)(i) and (ii) of the same section, were based on the 24-month period of February 2004 through January 2006. For emission units that did not have reported throughputs in the 2004 and 2005 EIQs, the baseline actual emissions for those emission units were assumed to be zero.

In determining the projected actual emissions of this project, a glass pull rate of 332 tons glass pull per day for Furnace 20 and 480 tons glass pull per day for Furnace 21 was proposed by SGCI. There are no federal or state regulations that became effective during or after the baseline period that would cause a change in the emissions during that period. In addition, demand growth is not being considered. Therefore, only projected actual emissions and baseline actual emissions were considered during this review.

Projected future actual emissions are calculated using emission factors obtained from stack testing and applicable emission limits, including those in the GCD. CO and VOC emissions are determined using EPA document AP-42, Fifth Edition emission factors. PM, PM₁₀, PM_{2.5}, and NO_x emissions are based on applying the GCD-imposed emission limits to the projected future actual Furnace production rates. Projected future actual emissions of SO₂ are based on an emission factor derived from the GCD-imposed concentration limit (45 ppmv) and 2010 SO₂ stack test data. Projected future actual emissions of SAM are based on applying a safety factor to a stack test data emission factor at a similar Saint-Gobain facility operating with oxy-fuel Furnaces and a semi-dry scrubber. Projected future actual emissions from the scrubbing reagent silo and the ESP dust silo were based on the applicant information on the amount of soda ash required to treat the maximum pre-control emission rate of SO₂. A list of the emission units reviewed under this project along with maximum hourly design rates, emission factors, and a summary of the emission points reported in the EIQ can be found in Appendix C.

As a requirement of the GCD, SGCI will be installing NO_x and SO₂ CEMs and COMs on the furnace stack. In addition, the stack testing conditions of this construction permit were based on the requirements of the GCD.

The haul roads associated with the installation are existing paved and unpaved haul roads that were not included in previous permits or EIQs. The haul road emissions have been considered in this permit review. The emission factor used for the haul roads were taken from the AP-42, Section 13.2.1, *Paved Roads* (1/11) and Section 13.2.2 *Unpaved Roads* (11/06).

Greenhouse gas (GHG) emissions were calculated using the calculations methodology of 40 CFR Part 98 Subpart N for glass production.

Emissions from the cooling towers were estimated using AP-42, Section 13.4 *Wet Cooling Towers* (1/95). The applicant proposed a drift factor of 1.7 pounds per 1,000 gallons and a total dissolved solids (TDS) fraction of 2,500 ppm. The applicant will be required to test the TDS as a part of this construction permit.

The following table provides an emissions summary for this project. Existing potential emissions were taken from Permit Number 062009-010. Existing actual emissions were taken from the installation's 2011 Emission Inventory Questionnaire (EIQ). Projected actual emissions of the application represent the potential of the project, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Baseline Actual Emissions Nov 2006-Oct 2008	Projected Actual Emissions of the Application	Projected Actual – Baseline Actual Emissions
PM	25.0	N/D	N/D	89.15	111.55	23.94
PM ₁₀	15.0	Major	90.86	85.36	84.29	-0.43
PM _{2.5}	10.0	N/D	87.03	82.82	70.50	-12.19
SO _x	40.0	Major	149.07	244.77	118.66	-126.11
NO _x	40.0	Major	107.21	215.27	209.40	-5.87
VOC	40.0	N/D	26.35	25.75	30.64	4.88
CO	100.0	<Major	9.23	8.50	43.55	35.06
GHG	75,000*	N/D	N/D	76,853	90,146	13,293
H ₂ SO ₄	7.0	N/D	N/D	25.28	14.82	-10.46
HAPs	10.0/25.0	N/D	2.80	N/A	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

*Based on carbon dioxide equivalence

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants for this project are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Saint-Gobain Containers, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Glass Manufacturing Plants*, 40 CFR Part 60 Subpart CC
- *New Source Performance Regulations*, 10 CSR 10-6.070 – *NSPS for Stationary Compression Ignition Internal Combustion Engines*, 40 CFR 60 Subpart IIII
- *Control of Emissions of Nitrogen Oxides*, 10 CSR 10-5.510. Although this rule applies to the operations at SGCI, the NO_x limit set forth in this construction permit is more stringent.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260. Although this rule applies to the operations at SGCI, the SO_x limit set forth in this construction permit is more stringent.
- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-6.405

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Emily Wilbur
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 15, 2012, received May 21, 2012, designating Saint-Gobain Containers, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Global Consent Decree Civil Action Case No. 2:10-cv-00121-TSZ. W.D. Washington

Appendix A – Reference Equations for NO_x and SO₂ Limits

Saint-Gobain Containers, Inc.
Jefferson County
Project Number: 2012-05-078
Installation ID Number: 099-0068

Special Condition 2 NO_x Limits

- For NO_x:

$$30\text{-day average } \frac{lb\ E}{ton} = \frac{COD_E(lbs) + P29D_E(lbs)}{COD_{PROD}(tons) + P29D_{PROD}(tons)}$$

Where:

30-day average (lb E/ton) = The Emission Rate 30-Day Rolling Average

E = Emissions of NO_x

COD = Current Operating Day where the relevant Emission Rate 30-Day Rolling Average is the applicable limit.

COD_E = the daily Emissions as measured by a CEMS on the COD, in pounds.

COD_{PROD} = Daily glass production on the COD, in tons of glass.

P29D = The Previous 29 Operating Days where the relevant Emission Rate 30-Day Rolling Average is the applicable limit.

P29D_E = the sum of the daily NO_x Emissions as measured by a CEMS during the P29D, in pounds.

P29D_{PROD} = the sum of the daily glass production during the P29D, in tons of glass.

Special Condition 3 SO₂ Limits

- For SO₂, when daily Inlet 24-hour Block Average concentration <300 ppmvd:

$$30\text{-day average } C(\text{ppmvd}) = \frac{COD_C(\text{ppmvd}) + P29D_C(\text{ppmvd})}{30}$$

Where:

30-day average C (ppmvd) = The Scrubber Outlet 30-Day Rolling Average Concentration

C = Scrubber outlet concentration of SO₂

COD = Current Operating Day where the relevant Outlet 30-Day Rolling Average is the applicable limit.

COD_C = the Outlet 24-hour Block Average concentration as measured by a CEMS on the COD, in ppmvd.

$P29D$ = The Previous 29 Operating Days where the relevant Outlet 30-Day Rolling Average is the applicable limit.

$P29D_C$ = the sum of the Outlet 24-hour Block Average SO_2 concentrations as measured by a CEMS during the $P29D$, in ppmvd.

- For SO_2 , when daily Inlet 24-hour Block Average ≥ 300 ppmvd:

$$30 - day\ average\ \eta(\%) = \frac{COD_{\eta}(\%) + P29D_{\eta}(\%)}{30}$$

Where:

$30 - day\ average\ \eta(\%)$ = The Scrubber Removal Efficiency 30-Day Rolling Average.

η = Scrubber removal efficiency of SO_2 .

COD = Current Operating Day where the relevant Removal Efficiency 30-Day Rolling Average is the applicable limit.

COD_{η} = the removal efficiency 24-hour Block Average on the COD as measured by the two CEMS, in %.

$P29D$ = The Previous 29 Operating Days where the relevant Removal Efficiency 30-Day Rolling Average is the applicable limit.

$P29D_{\eta}$ = the sum of the SO_2 removal efficiency 24-hour Block Averages as measured by a CEMS during the $P29D$, in %.

Appendix B – List of Definitions

Saint-Gobain Containers, Inc.
Jefferson County
Project Number: 2012-05-078
Installation ID Number: 099-0068

For both Furnaces 20 and 21, the following definitions have been incorporated into this construction permit as stated in the Global Consent Decree (GCD):

“24-hour Block Average” shall be calculated by averaging the 24 one-hour relevant data outputs (concentration or pounds) for a given day and using the daily glass production rates (tons) on that Operating Day where applicable. [GCD Citation III.6.a]

“Abnormally Low Production Rate” shall mean a glass production rate at or below the production rate (P) set forth below, unless production capacity is increased through a permit modification. [GCD Citation III.6.c and IV.10]:

For Furnace 20: 116 tons per day (tpd)

For Furnace 21: 168 tpd

Note: Per GCD IV.10, when production is increased by a permit, the Abnormally Low Production Rate Day Threshold is reset at 35 percent of the new permitted production rate. The production rates shown here have been revised to reflect the revised capacity limit for each furnace as described in this application.

“Abnormally Low Production Rate Day” shall mean any Operating Day where production falls into the range of Abnormally Low Production Rate for the Furnace, for at least one continuous hour. [GCD Citation III.6.d]

“CEMS Certification Event” shall mean an event that triggers the requirement to complete a subsequent CEMS Certification. Events that will trigger subsequent CEMS Certification include a Furnace startup. SGCI shall commence such recertification no later than 30 Days after the Furnace startup period concludes (but not later than 70 days after Furnace startup commences). [GCD Citation III.6.h]

“Control Device Startup” shall mean the period of time from commencement of operation of an SCR, Scrubber System, ESP, CCSS, or similar add-on control device until the operation of the device has been stabilized and the device has achieved normal operating conditions. Such period shall not exceed thirty (30) days. [GCD Citation III.6.o]

“Day” shall mean a calendar day unless expressly stated to be a working day or unless a State rule requires that CEMS data be reported on Standard time (with no change for Daylight Savings Time). [GCD Citation III.6.r]

“Emission Rate 30-day Rolling Average” shall be expressed for NO_x as emission rate (pounds of NO_x per ton of glass produced). It shall be calculated at the Furnace in question in accordance with the following formulas and paragraphs 1 and 2 below:
For NO_x:

$$30\text{-day average } \frac{\text{lb } E}{\text{ton}} = \frac{COD_E (\text{lbs}) + P29D_E (\text{lbs})}{COD_{PROD} (\text{tons}) + P29D_{PROD} (\text{tons})}$$

Where:

30-day average (lb E/ton) = The Emission Rate 30-Day Rolling Average

E = Emissions of NO_x

COD = Current Operating Day where the relevant Emission Rate 30-Day Rolling Average is the applicable limit.

COD_E = the daily Emissions as measured by a CEMS on the COD, in pounds.

COD_{PROD} = Daily glass production on the COD, in tons of glass.

P29D = The Previous 29 Operating Days where the relevant Emission Rate 30-Day Rolling Average is the applicable limit.

P29D_E = the sum of the daily NO_x Emissions as measured by a CEMS during the P29D, in pounds.

P29D_{PROD} = the sum of the daily glass production during the P29D, in tons of glass.

“Furnace” means, for the purposes of NSPS only, a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass which includes foundations, superstructure and retaining walls, raw material charger system, heat exchanger, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming apparatuses. For all other purposes, “Furnace” means a unit comprised of a refractory-lined vessel in which raw materials are charged and melted at high temperature to produce molten glass. [GCD Citation III.6.x]

“Furnace Startup” means the period of time while a Furnace’s refractory is being heated up from ambient temperature and includes the Initial Heating Phase, Refractory Soak and Seal Phase, and Furnace Stabilization. [GCD Citation III.6.y]

“Initial Heating Phase” means the slow heating of the Furnace refractory using portable natural-gas burners placed in the opening of the Furnace. This phase typically lasts no longer than four days and ends when the main Furnace burners commence operation. [GCD Citation III.6.y.i]

“Refractory Soak and Seal Phase” means the phase of the Furnace Startup following the Initial Heating Phase when the Furnace is filled with molten glass, the temperature of the Furnace reaches operating conditions, and the refractory components reach thermal equilibrium. This phase typically lasts no longer than 21 days and ends when the joints between the refractory components are sealed and the Furnace is closed to the atmosphere. [GCD Citation III.6.y.ii]

“Furnace Stabilization Phase” means the phase of Furnace Startup following the Refractory Soak and Seal Phase when the Furnace operation is being stabilized. This phase will end no later than 70 days after the beginning of the Initial Heating Phase. [GCD Citation III.6.y.iii]

“**Hot Spot Temperature**” shall mean the highest temperature of the Furnace breastwall refractory. Breastwall refractory is the refractory sidewall between the tuck stone (about 18 inches above the glass line) and the crown skew (where the Furnace crown meets the Furnace sidewall). [GCD Citation III.6.z]

“**Inlet**” shall be the emission concentration (in parts per million by volume dry) measured prior to the control device. [GCD Citation III.6.aa]

“**Maintenance**” shall mean activities necessary to keep the system or equipment working in its normal operating condition. [GCD Citation III.6.cc]

“**Malfunction**” shall mean, consistent with 40 CFR 60.2, any sudden, infrequent, and not reasonably preventable failure of the air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in part by poor maintenance or careless operation. [GCD Citation III.6.ee]

“**Operating Day**” shall mean any Day where any fuel is fired into the Furnace. The Day starts at 12:00 a.m. and ends at 11:59 p.m. [GCD Citation III.6.kk]

“**Outlet**” shall mean the emission concentration (in parts per million by volume dry) measured after a control device. [GCD Citation III.6.ll]

“**Oxyfuel Furnace**” shall mean a Furnace in which the gas that provides the oxidant for combustion of the fuel is composed of greater than or equal to 90% oxygen. [GCD Citation III.6.nn].

Appendix C – List of Equipment at the Installation

Saint-Gobain Containers, Inc.
 Jefferson County
 Project Number: 2012-05-078
 Installation ID Number: 099-0068

Emission Unit ID	DESCRIPTION	STATUS IN EIQ	MHDR	MHDR Units	CO			NOx			PM10			PM25			SOx			VOC			HAP		
					EF	EF Units	EF citation	EF	EF Units	EF citation	EF	EF Units	EF citation	EF	EF Units	EF citation	EF	EF Units	EF citation	EF	EF Units	EF citation	EF	EF Units	EF citation
2	Glass Melting Furnace Number 20	Active	17.33	TONS	0.2	LBS./TONS	AP42, Table 11.15-2	1.3	LBS./TONS	GCD	0.37	LBS./TONS	GCD	0.3	LBS./TONS	GCD	0.95	LBS./TONS	GCD	0.2	LBS./TONS	AP42, Table 11.15-2	0.1	lb H2SO4/ton	Tests from other sites
3	Glass Melting Furnace Number 21	Active	22.67	TONS	0.2	LBS./TONS	AP42, Table 11.15-2	1.3	LBS./TONS	GCD	0.37	LBS./TONS	GCD	0.3	LBS./TONS	GCD	0.7	LBS./TONS	GCD	0.2	LBS./TONS	AP42, Table 11.15-2	0.1	lb H2SO4/ton	Tests from other sites
4	Annealing Lehrs Number 20*	Active	0.008693	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
5	Annealing Lehrs Number 21*	Active	0.009664	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
6	Raw Material Handling	INSIGNIFIC	39.48	TONS							0.0034	LBS./TONS	Engineering Calculations	0.0034	LBS./TONS	Engineering Calculations									
7	Mold Swabbing	Active	0.0016	TONS							1800	LBS./TONS	MSDS/Mass balance	1800	LBS./TONS	MSDS/Mass balance									
12	Cullet Crushing System	Active	9.85	TONS							0.015	LBS./TONS	AP-42 Table 11.19.2.2	0.012	LBS./TONS	AP-42 Table 11.19.2.2									
13	Space Heaters	INSIGNIFIC	0.001475	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
14	Parts Washers (aqueous-based)	INSIGNIFIC	N/D	GALLONS																					
15	Mold Preheat Ovens	INSIGNIFIC	0.0046	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
16	Hot Melt Glue	Active	N/D	TONS																80	LBS./TONS	MSDS	0.01	lb diethanolamine /TONS	MSDS
17	Distributor Number 20*	Active	0.002743	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
18	Distributor Number 21*	Active	0.005712	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
19	Hot End Coating Number 20	Active	0.001045	TONS							646	LBS./TONS	Engineering Estimate/Mass Engineering Estimate/Mass	618.8	LBS./TONS	Engineering Estimate/Mass Engineering Estimate/Mass							420	LBS./TONS	Engineering Estimate/Mass Engineering Estimate/Mass
20	Hot End Coating Number 21	Active	0.001375	TONS							646	LBS./TONS	Engineering Estimate/Mass Engineering Estimate/Mass	618.8	LBS./TONS	Engineering Estimate/Mass Engineering Estimate/Mass							420	LBS./TONS	Engineering Estimate/Mass Engineering Estimate/Mass
21	Forehearth Number 20*	INSIGNIFIC	0.002113	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
22	Forehearth Number 21*	Active	0.003071	MILLION CUBIC FEET	84	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	100	LBS./MILLION CUBIC FEET	AP42, Table 1.4-1	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	7.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	0.6	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2	5.5	LBS./MILLION CUBIC FEET	AP42, Table 1.4-2			
23	Laser Jet Date Coders	INSIGNIFIC	N/D	TONS							0.0001	LBS./TONS	Engineering calculations	0.0001	LBS./TONS	Engineering calculations									
27	1,100 gpm cooling water tower (mold shop)	Active	578,160	GALLONS							0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4	0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4									
28	ASTs	INSIGNIFIC	N/D	GALLONS																0.522	LBS./1000 GALLONS	Engineering calculations			
29	488 gpm cooling water tower (mold shop)	Active	256,493	GALLONS							0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4	0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4									
30	Carton Coding	INSIGNIFIC	N/D	TONS																1020	LBS./TONS	Engineering calculations			
32	Paved Haul Road	New	4.46	VMT							0.405	lbs/VMT	AP42 Section 13.2.1	0.0994	lbs/VMT	AP42 Section 13.2.1									
33	Unpaved Haul Road	New	0.54	VMT							1.75	lbs/VMT	AP42 Section 13.2.2	0.175	lbs/VMT	AP42 Section 13.2.2									
34	Emergency Generator	New	750	KW	0.007718	lb/kW-hr	40 CFR 89.112 Table 1	0.01411	lb/kW-hr	40 CFR 89.112 Table 1	0.00044	lb/kW-hr	AP-42 Table 11.26-1	0.00044	lb/kW-hr	AP-42 Table 11.26-1	0.0028	lb/kW-hr	AP-42 Table 3.3-1	0.002867	lb/kW-hr	AP-42 Table 3.3-1			
35	ESP Dust Silo	New	0.55	tons							0.0018	lb/1000 lb	AP-42 Table 11.26-1	0.0018	lb/1000 lb	AP-42 Table 11.26-1									
36	Soda Ash Scrubber Silo	New	0.55	tons							0.0018	lb/1000 lb	AP-42 Table 11.26-1	0.0018	lb/1000 lb	AP-42 Table 11.26-1									
11	Video Jet Ink Printer	Inactive	N/D	TONS																					
24	473 gpm cooling water tower (warehouse)	Dismantled	248,609	MILLION GALLONS							0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4	0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4									
25	450 gpm cooling water tower	Dismantled	236,520	MILLION GALLONS							0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4	0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4									
26	400 gpm cooling water tower (east lean-to)	Inactive	210,240	MILLION GALLONS							0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4	0.00425	LBS./MILLION GALLONS	AP-42 Section 13.4									

*Based on projected actual usage.

GCD – Global Consent Decree

N/D – Not Determined

Mr. Alexander Winters
Manager, Energy and Environmental
Saint-Gobain Containers, Inc.
1500 St. Gobain Drive
Pevely, MO 63070

RE: New Source Review Permit - Project Number: 2012-05-078

Dear Mr. Winters:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Emily Wilbur, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:ewl

Enclosures

c: St. Louis Regional Office
PAMS File: 2012-05-078

Permit Number: