PUBLIC NOTICE

Cardinal FG Company has applied to the Tennessee Department of Environment and Conservation, Division of Air Pollution Control for renewal of their major source (Title V) operating permit subject to the provisions of Tennessee Air Pollution Control Regulations 1200-03-09-.02(11) (Title V Regulations). A major source operating permit is required by both the Federal Clean Air Act and Tennessee's air pollution control regulations. However, it should be noted that this facility has a current major source operating permit.

The applicant is **Cardinal FG Company** with a site address of 600 Cardinal Way Road, Church Hill, TN 37642. They have applied for renewal of their existing major source (Title V) operating permit for their flat glass manufacturing operation.

EPA has agreed to treat this draft Part 70 permit as a proposed Part 70 permit and to perform its 45-day review provided by the law concurrently with the public notice period. If any substantive comments are received, EPA's 45-day review period will cease to be performed concurrently with the public notice period. In this case, EPA's 45-day review period will start once the public notice period has been completed and EPA receives notification from the Tennessee Air Pollution Control Division that comments have been received and resolved. The status regarding EPA's 45-day review of these permits and the deadline for submitting a citizen's petition can be found at the following website address:

https://www.epa.gov/caa-permitting/tennessee-proposed-title-v-permits

Copies of the application materials and draft permits are available for public inspection during normal business hours at the following locations:

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
Johnson City Environmental Field Office
2305 Silverdale Road,
Johnson City, TN 37601

and

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
Davy Crockett Tower, 7th Floor
500 James Robertson Parkway
Nashville, TN 37243

Electronic copies of the draft permits are available by accessing the TDEC internet site located at:

https://www.tn.gov/environment/ppo-public-participation/ppo-public-participation/ppo-air.html

Questions concerning the source(s) may be addressed to Travis Blake at (615) 306-1990 or by e-mail at travis.blake@tn.gov.

Interested parties are invited to review these materials and comment. In addition, a public hearing may be requested at which written or oral presentations may be made. To be considered, written comments or requests for a public hearing must be received no later than 4:30 PM on **March 16, 2026**. To assure that written comments are received and addressed in a timely manner, written comments must be submitted using one of the following methods:

1. **Mail, private carrier, or hand delivery:** Address written comments to Ms. Michelle W. Owenby, Director, Division of Air Pollution Control, Davy Crockett Tower, 500 James Robertson Parkway, 7th Floor, Nashville, TN 37243.

2. **E-mail**: Submit electronic comments to air.pollution.control@tn.gov.

A final determination will be made after weighing all relevant comments.

Individuals with disabilities who wish to review information maintained at the above-mentioned depositories should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such review. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the public comment period to allow time to provide such aid or services. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, Davy Crockett Tower, 6th Floor, 500 James Robertson Parkway, Nashville, TN 37243, (615) 532-0211. Hearing impaired callers may use the Tennessee Relay Service, 1-(800)-848-0298.

Air Pollution Control
Assigned to – Travis Blake

DATE: FEBRUARY 11, 2026

Draft/Proposed Title V Operating Permit 579372

STATE OF TENNESSEE
AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243

OPERATING PERMIT (TITLE V) Issued Pursuant to Tennessee Air Quality Act

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated thereunder at 40 CFR Part 70. (FR Vol. 57, No. 140, Tuesday, July 21, 1992 p.32295-32312). This permit is issued in accordance with the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations (TAPCR). The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Date Issued:

Permit Number:

Date Expires:

579372

Issued To:

Cardinal FG Company

Installation Address:

600 Cardinal Way Road
Church Hill

Installation Description:

Flat Glass Manufacturing:

Emission Point	Description
01	Batch House Handling of Raw Materials
02	Plant Buildings
03	Glass Melting Furnace No. 1
05	Annealing Lehr and Cutting Section No. 2
06	Annealing Lehr and Cutting Section No. 1
08	Glass Melting Furnace No. 2

Emission Point	Description
10	Tin Bath No. 1 of Float Glass Line No. 1
11	Glass Tempering Process (HT-3)
21	Truck Unloading of Raw Materials
24	Tin Bath No. 2 of Float Glass Line No. 2
26	Emergency Engines

Facility ID: 37-0026

Renewal Application Due Date:

Between ******* and *******

Primary SIC: 3211

Information Relied Upon:

Renewal Application dated September 14, 2021. Application dated August 7, 2023 (Minor Modification #4 to permit 570858).

(continued on the next page)

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

POST AT INSTALLATION ADDRESS

CONTENTS

SECTION A
GENERAL PERMIT CONDITIONS

SECTION B
GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

CONTENTS

SECTION C
PERMIT CHANGES

SECTION D
GENERAL APPLICABLE REQUIREMENTS

CONTENTS

SECTION E

SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS

SECTION A
GENERAL PERMIT CONDITIONS

A permit issued under the provisions of Tennessee Air Pollution Control Regulations (TAPCR) paragraph 1200-03-09-.02(11) is a permit issued pursuant to the requirements of Title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR, Part 70.

A1. **Definitions.** Terms not otherwise defined in the permit shall have the meaning assigned to such terms in the referenced regulations.

TAPCR 1200-03 and 0400-30

A2. **Compliance requirement.** All terms and conditions in a permit issued pursuant to TAPCR paragraph 1200-03-09-.02(11), including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act. The permittee shall comply with all conditions of its permit. Except for requirements specifically designated herein as not being federally enforceable (State Only), non-compliance with the permit requirements is a violation of the Federal Act and the Tennessee Air Quality Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Non-compliance with permit conditions specifically designated herein as not being federally enforceable (State Only) is a violation of the Tennessee Air Quality Act and may be grounds for these actions.

TAPCR 1200-03-09-.02(11)(e)2(i) and 1200-03-09-.02(11)(e)1(vi)(I)

A3. **Need to halt or reduce activity.** The need to halt or reduce activity is not a defense for noncompliance. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations.

TAPCR 1200-03-09-.02(11)(e)1(vi)(II)

A4. **The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

TAPCR 1200-03-09-.02(11)(e)1(vi)(III)

A5. **Property rights.** The permit does not convey any property rights of any sort, or any exclusive privilege.

TAPCR 1200-03-09-.02(11)(e)1(vi)(IV)

A6. **Submittal of requested information.** The permittee shall furnish to the Technical Secretary, within a reasonable time, any information that the Technical Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Technical Secretary copies of records required to be kept by the permit. If the permittee claims that such information is confidential, the Technical Secretary may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the information is desired by EPA, the permittee may mail the information directly to EPA. Any claims of confidentiality for federal purposes will be determined by EPA.

TAPCR 1200-03-09-.02(11)(e)1(vi)(V)

A7. **Severability clause.** The requirements of this permit are severable. A dispute regarding one or more requirements of this permit does not invalidate or otherwise excuse the permittee from their duty to comply with the remaining portion of the permit.

TAPCR 1200-03-09.02(11)(e)1(v)

A8. **Fee payment.**

(a) The permittee shall pay an annual Title V fee in accordance with TAPCR 1200-03-26-.02(9) based upon the applicable base fee; the applicable permit modification fee(s); the responsible official's choice of actual emissions, allowable emissions, or a combination of actual and allowable emissions; and on the responsible official's choice of annual accounting period. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A Title V annual emission fee will not be charged for emissions in excess of the cap. Title V annual emission fees will not be charged for carbon monoxide or for greenhouse gas pollutants solely because they are greenhouse gases.

(b) Title V sources shall pay allowable based emission fees until the beginning of the next annual accounting period following receipt of their initial Title V operating permit. At that time, the permittee shall begin paying their Title V fee based upon the applicable base fee; the applicable permit modification fee(s); and their choice of actual or allowable based fees, or mixed actual and allowable based fees. Once permitted, the Responsible Official may revise their existing fee choice by submitting a written request to the Division no later than December 31 of the annual accounting period for which the fee is due.

(c) When paying annual Title V emission fees, the permittee shall comply with all provisions of TAPCR Rule 1200-03-26-.02 and paragraph 1200-03-09-.02(11) applicable to such fees.

(d) Where more than one allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of TAPCR paragraph 1200-03-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.

1. Emissions of hazardous air pollutants (HAP) that are included in the particulate matter (including PM_{10}) category or the volatile organic compound category shall be included in those categories.

2. HAP that are not included in either the particulate matter category or volatile organic compound category shall be included in the category of Hazardous Air Pollutants Not Included Above.

3. Each individual HAP is subject to the 4,000 ton cap provisions of TAPCR subparagraph 1200-03-26-.02(2)(i).

4. Major sources that wish to pay annual emission fees for PM_{10} on an allowable emission basis may do so if they have a specific PM_{10} allowable emission standard. If a major source has a total particulate emission standard, but wishes to pay annual emission fees on an actual PM_{10} emission basis, it may do so if the PM_{10} actual emission levels are proven to the satisfaction of the Technical Secretary. The method to demonstrate the actual PM_{10} emission levels must be made as part of the source's major source operating permit in advance in order to exercise this option. The PM_{10} emissions reported under these options shall not be subject to fees under the family of particulate emissions. The 4,000 ton cap provisions of TAPCR subparagraph 1200-03-26-.02(2)(i) shall also apply to PM_{10} emissions.

(e) Emissions of pollutants that do not fall in one of the listed categories shall be included in the category of Miscellaneous Pollutants Not Listed Above. Each miscellaneous pollutant is subject to the 4,000-ton cap provisions.

TAPCR 1200-03-26-.02 and 1200-03-09-.02(11)(e)1(vii)

A9. **Permit revision not required.** A permit revision will not be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or process for changes that are provided for in the permit.

TAPCR 1200-03-09-.02(11)(e)1(viii)

A10. **Inspection and entry.** Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Secretary or an authorized representative to perform the following for the purposes of determining compliance with the permit applicable requirements:

(a) Enter upon, at reasonable times, the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) As authorized by the Clean Air Act and Chapter 1200-03-10 of the TAPCR, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(e) "Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, TAPCR Division 1200-03 or any permit issued pursuant thereto and the Technical Secretary specifically authorizes an inspector to inspect a facility at any other time.

TAPCR 1200-03-09-.02(11)(e)3(ii)

A11. Permit shield.

(a) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date of permit issuance, provided that:

1. Such applicable requirements are included and are specifically identified in the permit; or

2. The Technical Secretary, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

(b) Nothing in this permit shall alter or affect the following:

1. The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. §68-201-109 (emergency orders) including the authority of the Governor under the section;

2. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Federal Act; or

4. The ability of EPA to obtain information from a source pursuant to section 114 of the Federal Act.

(c) Permit shield is granted to the permittee.

(d) The permit shield does not apply to permit changes made under the minor permit modification procedures of TAPCR subpart 1200-03-09-.02(11)(f)5(ii) nor the administrative permit amendment procedures of TAPCR part 1200-03-09-.02(11)(f)4, except that the permit shield may be extended for administrative permit amendments that meet the relevant requirements of TAPCR subparagraph 1200-03-09-.02(11)(e), subparagraph 1200-03-09-.02(11)(f) and subparagraph 1200-03-09-.02(11)(g) for significant permit modifications.

(e) The permit shield does not apply to off-permit changes made under the operational flexibility provisions of TAPCR part 1200-03-09-.02(11)(a)4.

TAPCR 1200-03-09-.02(11)(e)6 and 1200-03-09-.02(11)(f)4(iv)

A12. Permit renewal and expiration.

(a) An application for permit renewal must be submitted at least 180 days, but no more than 270 days, prior to the expiration of this permit. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted.

(b) If the permittee submits a timely and complete application for permit renewal the source will not be considered to be operating without a permit until the Technical Secretary takes final action on the permit application, except as otherwise noted in TAPCR paragraph 1200-03-09-.02(11).

(c) This permit, its shield provided in Condition A11, and its conditions will be extended and effective after its expiration date provided that the source has submitted a timely, complete renewal application to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)2 and 3, 1200-03-09-.02(11)(d)1(i)(III), and 1200-03-09-.02(11)(a)2

A13. Reopening for cause.

(a) A permit shall be reopened and revised prior to the expiration of the permit under any of the circumstances listed below:

1. Additional applicable requirements under the Federal Act become applicable to the sources contained in this permit provided the permit has a remaining term of 3 or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the permit expiration date of this permit, unless the original has been extended pursuant to TAPCR part 1200-03-09-.02(11)(a)2.

2. Additional requirements become applicable to an affected source under the acid rain program.

3. The Technical Secretary or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

4. The Technical Secretary or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(b) Proceedings to reopen and issue a permit shall follow the same proceedings as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and not the entire permit. Such reopening shall be made as expeditiously as practicable.

(c) Reopenings for cause shall not be initiated before a notice of such intent is provided to the permittee by the Technical Secretary at least 30 days in advance of the date that the permit is to be reopened except that the Technical Secretary may provide a shorter time period in the case of an emergency. An emergency shall be established by the criteria of T.C.A. 68-201-109 or other compelling reasons that public welfare is being adversely affected by the operation of a source that is in compliance with its permit requirements.

(d) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit as identified in A13, he is required under federal rules to notify the Technical Secretary and the permittee of such findings in writing. Upon receipt of such notification, the Technical Secretary shall investigate the matter in order to determine if he agrees or disagrees with the Administrator's findings. If he agrees with the Administrator's findings, the Technical Secretary shall conduct the reopening in the following manner:

1. The Technical Secretary shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. If the Administrator grants additional time to secure permit applications or additional information from the permittee, the Technical Secretary shall have the additional time period added to the standard 90-day time period.

2. EPA will evaluate the Technical Secretary's proposed revisions and respond as to their evaluation.

3. If EPA agrees with the proposed revisions, the Technical Secretary shall proceed with the reopening in the same manner prescribed under Condition A13(b) and Condition A13(c).

4. If the Technical Secretary disagrees with either the findings or the Administrator that a permit should be reopened or an objection of the Administrator to a proposed revision to a permit submitted pursuant to Condition A13(d), he shall bring the matter to the Board at its next regularly scheduled meeting for instructions as to how he should proceed. The permittee shall be required to file a written brief expressing their position relative to the Administrator's objection and have a responsible official present at the meeting to answer questions for the Board. If the Board agrees that EPA is wrong in their demand for a permit revision, they shall instruct the

Technical Secretary to conform to EPA's demand, but to issue the permit under protest preserving all rights available for litigation against EPA.

TAPCR 1200-03-09-.02(11)(f)6 and 7

A14. **Permit transference.** An administrative permit amendment allows for a change of ownership or operational control of a source where the Technical Secretary determines that no other change in the permit is necessary, provided that the following requirements are met:

(a) Transfer of ownership permit application is filed consistent with the provisions of TAPCR paragraph 1200-03-09-.03(6), and

(b) written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)4(i)(IV) and 1200-03-09-.03(6)

A15. **Air pollution alert.** When the Technical Secretary has declared that an air pollution alert, an air pollution warning, or an air pollution emergency exists, the permittee must follow the requirements for that episode level as outlined in TAPCR paragraph 1200-03-09-.03(1) and TAPCR Rule 1200-03-15-.03.

A16. **Construction permit required.** Except as exempted in TAPCR Rule 1200-03-09-.04, or excluded in TAPCR subparagraph 1200-03-02-.01(1)(aa) or TAPCR subparagraph 1200-03-02-.01(1)(cc), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

TAPCR 1200-03-09-.01(1)(a)

A17. **Notification of changes.** The permittee shall notify the Technical Secretary 30 days prior to commencement of any of the following changes to an air contaminant source which would not be a modification requiring a construction permit.

(a) change in air pollution control equipment

(b) change in stack height or diameter

(c) change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

TAPCR 1200-03-09-.02(7)

A18. **Schedule of compliance.** The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis and no later than required by the provisions of the new applicable requirement. If the permittee is not in compliance the permittee must submit a schedule for coming into compliance which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

TAPCR 1200-03-09-.02(11)(d)3, 1200-03-09-.03(8), 0400-30-38, 0400-30-39, and 40 CFR Part 70.5(c)

A19. **Title VI.**

(a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.

2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.

3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.

(b) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

(c) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR, Part 82, Subpart G, Significant New Alternatives Policy Program.

TAPCR 1200-03-09-.03(8)

A20. **112 (r).** Sources which are subject to the provisions of Section 112(r) of the federal Clean Air Act or any federal regulations promulgated thereunder, shall annually certify in writing to the Technical Secretary that they are properly following their accidental release plan. The annual certification is due in the office of the Technical Secretary no later than January 31 of each year. Said certification will be for the preceding calendar year.

TAPCR 1200-03-32-.03(3)

SECTION B
GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

B1. **Recordkeeping.** Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than every six months.

(a) Where applicable, records of required monitoring information include the following:

1. The date, place as defined in the permit, and time of sampling or measurements;
2. The date(s) analyses were performed;
3. The company or entity that performed the analysis;
4. The analytical techniques or methods used;
5. The results of such analyses; and
6. The operating conditions as existing at the time of sampling or measurement.

(b) Digital data accumulation which utilizes valid data compression techniques shall be acceptable for compliance determination as long as such compression does not violate an applicable requirement and its use has been approved in advance by the Technical Secretary.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B2. **Retention of monitoring data.** The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)(II)II

B3. **Reporting.** Reports of any required monitoring and record keeping shall be submitted to the Technical Secretary in accordance with the frequencies specified in the permit conditions for each individual permit unit. Reports shall be submitted within 60 days of the close of the reporting period unless otherwise noted. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. Reports required under "State only requirements" are not required to be certified by a responsible official.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B4. **Certification.** Except for reports required under “State Only” requirements, any application form, report or compliance certification submitted pursuant to the requirements of this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

TAPCR 1200-03-09-.02(11)(d)4

B5. **Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;

(c) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in B5(b) above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion* or exceedance** as defined below occurred; and

(d) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667

B6. **Submission of compliance certification.** The compliance certification shall be submitted to:

The Tennessee Department of Environment and Conservation Environmental Field Office specified in Section E of this permit	and	Air Enforcement Branch US EPA Region IV 61 Forsyth Street, SW Atlanta, Georgia 30303

TAPCR 1200-03-09-.02(11)(e)3(v)(IV)

B7. **Emergency provisions.** An emergency constitutes an affirmative defense to an enforcement action brought against this source for noncompliance with a technology-based emission limitation due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(a) The affirmative defense of the emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the probable cause(s) of the emergency. "Probable" must be supported by a credible investigation into the incident that seeks to identify the causes and results in an explanation supported by generally accepted engineering or scientific principles.

2. The permitted source was at the time being properly operated. In determining whether or not a source was being properly operated, the Technical Secretary shall examine the source's written standard operating procedures which were in effect at the time of the noncompliance and any other code as detailed below that would be relevant to preventing the noncompliance. Adherence to the source's standard operating procedures will be the test of adequate preventative maintenance, careless operation, improper operation or operator error to the extent that such adherence would prevent noncompliance. The source's failure to follow recognized standards of practice to the extent that adherence to such a standard would have prevented noncompliance will disqualify the source from any claim of an emergency and an affirmative defense.

3. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.

4. The permittee submitted notice of the emergency to the Technical Secretary according to the notification criteria for malfunctions in rule 1200-03-20-.03. For the purposes of this condition, "emergency" shall be substituted for "malfunction(s)" in rule 1200-03-20-.03 to determine the relevant notification threshold. The notice shall include a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(c) The provisions of this condition are in addition to any emergency, malfunction or upset requirement contained in Division 1200-03 or other applicable requirement.

TAPCR 1200-03-09-.02(11)(e)7

B8. **Excess emissions reporting.**

(a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in TAPCR Division 1200-03 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown, the probable cause of the deviation, and any corrective actions or preventative measures taken. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office. The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected. In attainment and unclassified areas if emissions other than from sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.

(b) Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Division's Nashville office at (615) 532-0554 and to the State Civil Defense.

(c) A log of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in TAPCR Division 1200-03 or any permit issued thereto must be kept at the plant. All information shall be entered in the log no later than twenty-four (24) hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change. This log must record at least the following:

1. Stack or emission point involved
2. Time malfunction, startup, or shutdown began and/or when first noticed
3. Type of malfunction and/or reason for shutdown
4. Time startup or shutdown was complete or time the air contaminant source returned to normal operation
5. The company employee making entry on the log must sign, date, and indicate the time of each log entry

The information under items 1. and 2. must be entered into the log by the end of the shift during which the malfunction or startup began. For any source utilizing continuous emission(s) monitoring, continuous emission(s) monitoring collection satisfies the above log keeping requirement.

TAPCR 1200-03-20-.03 and .04

B9. **Malfunctions, startups and shutdowns - reasonable measures required.** The permittee must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions. These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means. Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions. This provision does not apply to standards found in 40 CFR, Parts 60 (Standards of performance for new stationary sources), 61(National emission standards for hazardous air pollutants) and 63 (National emission standards for hazardous air pollutants for source categories).

TAPCR 1200-03-20-.02

B10. Reserved.

B11. **Report required upon the issuance of a notice of violation for excess emissions.** The permittee must submit, within twenty days after receipt of the notice of violation, the data required below. If this data has been made available to the Technical Secretary prior to the issuance of the notice of violation no further action is required of the violating source. However, if the source desires to submit additional information, then this must be submitted within the same 20-day time period. The minimum data requirements are:

(a) The identity of the stack and/or other emission point where the excess emission(s) occurred;

(b) The magnitude of the excess emissions expressed in pounds per hour and the units of the applicable emission limitation(s) and the operating data and calculations used in determining the magnitude of the excess emissions;

(c) The time and duration of the emissions;

(d) The nature and cause of such emissions;

(e) For malfunctions, the steps taken to correct the situation and the action taken or planned to prevent the recurrence of such malfunctions;

(f) The steps taken to limit the excess emissions during the occurrence reported, and

(g) If applicable, documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good operating practices for minimizing emissions.

Failure to submit the required report within the 20-day period specified shall preclude the admissibility of the data for determination of potential enforcement action.

TAPCR 1200-03-20-.06(2), (3) and (4)

SECTION C
PERMIT CHANGES

C1. **Operational flexibility changes.** The source may make operational flexibility changes that are not addressed or prohibited by the permit without a permit revision subject to the following requirements:

(a) The change cannot be subject to a requirement of Title IV of the Federal Act or TAPCR Chapter 1200-03-30.

(b) The change cannot be a modification under any provision of Title I of the federal Act or TAPCR Division 1200-03.

(c) Each change shall meet all applicable requirements and shall not violate any existing permit term or condition.

(d) The source must provide contemporaneous written notice to the Technical Secretary and EPA of each such change, except for changes that are below the threshold of levels that are specified in TAPCR Rule 1200-03-09-.04.

(e) Each change shall be described in the notice including the date, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change.

(f) The change shall not qualify for a permit shield under the provisions of TAPCR part 1200-03-09-.02(11)(e)6.

(g) The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. The records shall be retained until the changes are incorporated into subsequently issued permits.

TAPCR 1200-03-09-.02(11)(a)4(ii)

C2. **Section 502(b)(10) changes.**

(a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or TAPCR Division 1200-03 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7-day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR part 1200-03-09-.02(11)(e)7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.

(b) The written notification must be signed by a facility Title V responsible official and include the following:

1. a brief description of the change within the permitted facility;
2. the date on which the change will occur;
3. a declaration and quantification of any change in emissions;
4. a declaration of any permit term or condition that is no longer applicable as a result of the change; and
5. a declaration that the requested change is not a Title I modification and will not exceed allowable emissions under the permit.

(c) The permit shield provisions of TAPCR part 1200-03-09-.02(11)(e)6 shall not apply to Section 502(b)(10) changes.

TAPCR 1200-03-09-.02(11)(a)4(i)

C3. **Administrative amendment.**

(a) Administrative permit amendments to this permit shall be in accordance with TAPCR part 1200-03-09-.02(11)(f)4. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

(b) The permit shield shall be extended as part of an administrative permit amendment revision consistent with the provisions of TAPCR part 1200-03-09-.02(11)(e)6 for such revisions made pursuant to item (c) of this condition which meet the relevant requirements of TAPCR subparagraph 1200-03-09-.02(11)(e), TAPCR subparagraph 1200-03-09-.02(11)(f) and TAPCR subparagraph 1200-03-09-.02(11)(g) for significant permit modifications.

(c) Proceedings to review and grant administrative permit amendments shall be limited to only those parts of the permit for which cause to amend exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)4

C4. Minor permit modifications.

(a) The permittee may submit an application for a minor permit modification in accordance with TAPCR subpart 1200-03-09-.02(11)(f)5(ii).

(b) The permittee may make the change proposed in its minor permit modification immediately after an application is filed with the Technical Secretary.

(c) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

(d) Minor permit modifications do not qualify for a permit shield.

TAPCR 1200-03-09-.02(11)(f)5(ii)

C5. Significant permit modifications.

(a) The permittee may submit an application for a significant modification in accordance with TAPCR subpart 1200-03-09-.02(11)(f)5(iv).

(b) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)5(iv)

C6. New construction or modifications.

Future construction at this facility that is subject to the provisions of TAPCR Rule 1200-03-09-.01 shall be governed by the following:

(a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Secretary shall use that information to prepare the operating permit application submittal deadlines in their construction permit.

(b) Sources desiring the permit shield shall choose the administrative amendment route of TAPCR part 1200-03-09-.02(11)(f)4 or the significant modification route of TAPCR subpart 1200-03-09-.02(11)(f)5(iv).

(c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of TAPCR subpart 1200-03-09-.02(11)(f)5(ii) or group processing of minor modifications under the provisions of TAPCR subpart 1200-03-09-.02(11)(f)5(iii) as applicable to the magnitude of their construction.

TAPCR 1200-03-09-.02(11)(d)1(i)(V)

SECTION D
GENERAL APPLICABLE REQUIREMENTS

D1. **Visible emissions.**

(a) With the exception of air emission sources exempt from the requirements of TAPCR Chapter 1200-03-05 and air emission sources for which a different opacity standard is specifically provided elsewhere in this permit, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than 20 minutes in any twenty-four (24) hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of 20 percent (6-minute average) except for one six minute period per one hour of not more than 40 percent opacity. Sources constructed or modified after July 7, 1992, shall utilize 6-minute averaging.

(b) Consistent with the requirements of TAPCR Chapter 1200-03-20, due allowance may be made for visible emissions in excess of that permitted under TAPCR Chapter 1200-03-05 which are necessary or unavoidable due to routine startup and shutdown conditions. The facility shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended and that such record shall be available to the Technical Secretary or an authorized representative upon request.

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.02(1)

D2. **General provisions and applicability for non-process gaseous emissions.** Any person constructing or otherwise establishing a non-portable air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize the best equipment and technology currently available for controlling such gaseous emissions.

TAPCR 1200-03-06-.03(2)

D3. **Non-process emission standards.** The permittee shall not cause, suffer, allow, or permit particulate emissions from non-process sources in excess of the standards in TAPCR Chapter 1200-03-06.

D4. **General provisions and applicability for process gaseous emissions.** Any person constructing or otherwise establishing an air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary.

TAPCR 1200-03-07-.07(2)

D5. **Particulate emissions from process emission sources.** The permittee shall not cause, suffer, allow, or permit particulate emissions from process sources in excess of the standards in TAPCR part 1200-03-07.

D6. **Sulfur dioxide emission standards.** The permittee shall not cause, suffer, allow, or permit sulfur dioxide emissions from process and non-process sources in excess of the standards in TAPCR Chapter 1200-03-14. Regardless of the specific emission standard, new process sources shall utilize the best available control technology as deemed appropriate by the Technical Secretary of the Tennessee Air Pollution Control Board.

D7. **Fugitive Dust.**

(a) The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;
2. Application of asphalt, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which can create airborne dusts;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

(b) The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five (5) minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in TAPCR Chapter 1200-03-20.

TAPCR 1200-03-08

D8. **Open burning.** The permittee shall comply with the TAPCR Chapter 1200-03-04 for all open burning activities at the facility.

TAPCR 1200-03-04

D9. **Asbestos.** Where applicable, the permittee shall comply with the requirements of 40 CFR Part 61 when conducting any renovation or demolition activities at the facility.

TAPCR 0400-30-38-.01(2) and 40 CFR, Part 61

D10. **Annual certification of compliance.** The generally applicable requirements set forth in Section D of this permit are intended to apply to activities and sources that are insignificant emission units or activities. By annual certification of compliance with the conditions in this Section the permittee shall be considered to meet the monitoring and related record keeping and reporting requirements of TAPCR subpart 1200-03-09-.02(11)(e)1(iii) and part 1200-03-10-.04(2)(b)1 and the compliance requirements of TAPCR subpart 1200-03-09-.02(11)(e)3(i). The permittee shall submit compliance certification for these conditions annually.

D11. **Emission Standards for Hazardous Air Pollutants.** The permittee shall comply with all applicable requirements of TAPCR Chapter 0400-30-38 for all emission sources subject to a requirement contained therein.

D12. **Standards of Performance for New Stationary Sources.** The permittee shall comply with all applicable requirements of TAPCR 0400-30-39 for all emission sources subject to a requirement contained therein.

D13. **Gasoline Dispensing Facilities.** The permittee shall comply with all applicable requirements of TAPCR Rule 1200-03-18-.24 for all emission sources subject to a requirement contained therein.

D14. **Internal Combustion Engines.**

(a) All stationary reciprocating internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR Rule 0400-30-38-.01.

(b) All stationary compression ignition internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR Chapter 0400-30-39.

(c) All stationary spark ignition internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR Chapter 0400-30-39.

TAPCR 0400-30-38 and 39

D15. The permittee shall maintain and repair each emission source, associated air pollution control device(s), and compliance assurance monitoring equipment as required to maintain and assure compliance with the specified emission limits.

TAPCR 1200-03-09-.03(8)

SECTION E

SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS

37-0026	**Facility Description:**	Cardinal manufactures soda-lime flat glass at its Church Hill Plant. Raw materials including sand, soda ash, dolomite, limestone, and cullet (broken glass for recycling) are received and stored in silos and bins. The materials are weighed and mixed to a specific recipe and the "batch" is conveyed to the melting furnaces. The Church Hill plant has two natural gas-fired, side-port regenerative melting furnaces (G1 and G2) for soda lime float glass production. Flat glass production begins when the molten glass is carefully added to the top of a bath of molten tin over which the glass is drawn and formed. After the glass leaves the tin bath, it enters the lehr (a temperature-controlled kiln for annealing glass), and the molten glass is annealed by cooling gradually from a temperature just below the solidification point of the glass. A portion of the glass produced may also receive a low-E coating to improve the insulating quality of the glass. The glass is then cut to size to produce the finished product. This facility most commonly produces clear glass, but the plant is able to produce bronze and gray tinted glass through the addition of metals to the batch material mix.

Sections E1 through E3 apply to all sources in this permit unless otherwise noted.

E1. Fee payment

FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCE 37-0026

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	232.51	AEAR	Includes PM HAP from source 03.
SO_2	582.21	AEAR	
VOC	114.92	AEAR	
NO_X	2,450.19	AEAR	
Facility-Wide Total HAP Limit	N/A	AEAR	
Facility-Wide Individual HAP Limit	N/A	AEAR	
HAZARDOUS AIR POLLUTANTS (HAPs) NOT INCLUDED ABOVE*			
MISCELLANEOUS POLLUTANTS NOT LISTED ABOVE**			
EACH MISC POLLUTANT NOT LISTED ABOVE			
Nonmethane Hydrocarbon (NMHC) plus NO_X	7.69	AEAR	40 CFR 60 Subpart IIII (37-0026-26)

NOTES

AAP The **Annual Accounting Period** (**AAP**) is a 12 consecutive month period that **either (a) begins each July 1st and ends June 30th of the following year when fees are paid on a fiscal year basis, or (b) begins January 1st and ends December 31st of the same year when paying on a calendar year basis.** The **AAP** at the time of renewal issuance began **July 1, 2025,** and ends **June 30, 2026.** The next AAP begins **July 1, 2026,** and ends **June 30, 2027,** unless a request to change the annual accounting period is submitted by the responsible official as required by subparagraph 1200-03-26-.02(9)(b) of the TAPCR and approved by the Technical Secretary**.** If the permittee wishes to revise their annual accounting period or their annual emission fee basis as allowed by subparagraph 1200-03-26-.02(9)(b) of the TAPCR, the responsible official must submit the request to the Division in writing on or before December 31 of the annual accounting period for which the fee is due. If a change in fee basis from allowable emissions to actual emissions for any pollutant is requested, the request from the responsible official must include the methods that will be used to determine actual emissions. **Changes in fee bases must be made using the Title V Fee Selection form, form number APC 36 (CN-1583), included as an attachment to this permit and available on the Division of Air Pollution Control's website**.

N/A **N/A** indicates that no emissions are specified for fee computation.

AEAR If the permittee is paying annual emission fees on an actual emissions basis, **AEAR** indicates that an **A**ctual **E**missions **A**nalysis is **R**equired to determine the actual emissions of:

(1) **each regulated pollutant** (Particulate matter [PM], SO_2, VOC, NO_X and so forth. See TAPCR 1200-03-26-.02(2)(i) for the definition of a regulated pollutant.),

(2) the "**HAP Not Included Above" Category (non-VOC and non-PM HAP not included in a facility-wide limit)**, and

(3) the **Miscellaneous Category**

under consideration during the **Annual Accounting Period**.

* **Hazardous Air Pollutants Not Included Above:** This category is made-up of hazardous air pollutants that are not included in the VOC or PM category, such as HCl and HF, and are not included in a facility-wide HAP emission limitation. **For fee computation**, each individual hazardous air pollutant is subject to the 4,000-ton cap provisions of subparagraph 1200-03-26-.02(2)(i) of the TAPCR.

** **Miscellaneous Pollutants Not Listed Above:** This category is for pollutants that are not included in one of the other categories but for which an emission limitation has been established in this permit (including NSPS pollutants). **For fee computation**, each pollutant in this category is subject to the 4,000-ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

END NOTES

The permittee shall:

(1) Pay Title V **annual fees** (including the emissions fee, base fee, significant modification fee, & minor modification fee), on the emissions and year bases requested by the responsible official and approved by the Technical Secretary, for each annual accounting period (AAP) by the payment deadline(s) established in TAPCR 1200-03-26-.02(9)(a). Fees may be paid on an **actual**, **allowable**, or **mixed** emissions basis, and on either a **state fiscal year** or a **calendar year**, provided the requirements of TAPCR 1200-03-26-.02(9)(b) are met. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within 15 days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8).

(2) Sources paying annual fees on an allowable emissions basis: pay annual fees for each AAP no later than April 1 of each year pursuant to TAPCR 1200-03-26-.02(9)(d). TAPCR 1200-03-26-.02(9)(a)2(i)

(3) Sources paying annual fees on a calendar year basis and an actual or mixed emissions basis: pay annual allowable based emission fees for each AAP no later than April 1 of each year pursuant to TAPCR 1200-03-26-.02(9)(d), except as allowed by TAPCR 1200-03-26-.02(9)(g)3.
TAPCR 1200-03-26-.02(9)(a)2(ii)

(4) Sources paying annual fees on a fiscal year basis and an actual or mixed emissions basis: for each AAP, pay an estimated 65% of the fee due no later than April 1 of the current fiscal year. The remainder of the fee for each annual accounting period is due no later than August 1 of each year pursuant to TAPCR 1200-03-26-.02(9)(d), except as allowed by TAPCR 1200-03-26-.02(9)(g)3.
TAPCR 1200-03-26-.02(9)(a)2(iii)

(5) Sources paying annual fees on an actual emissions basis: prepare an **actual emissions analysis** for each AAP and pay **actual based emission fees** pursuant to TAPCR 1200-03-26-.02(9)(d). The **actual emissions analysis** shall include:

(a) the completed **Fee Emissions Summary Table**,

(b) each **actual emissions analysis** required**,** and

(c) the actual emission records for each pollutant and each source as required for actual emission fee determination, or a summary of the actual emission records required for fee determination, as specified by the Technical Secretary or the Technical Secretary's representative. The summary must include sufficient information for the Technical Secretary to determine the accuracy of the calculations. These calculations must be based on the Fee Year basis approved by the Technical Secretary (a state fiscal year [July 1 through June 30] or a calendar year [January 1 through December 31]). These

records shall be used to complete the **actual emissions analyses** required by the above **Fee Emissions Summary Table**.

TAPCR 1200-03-26-.02(9)(g)2

(6) Sources paying annual fees on a Fee Choice of a mixed emissions basis: for all pollutants and all sources for which the permittee has chosen an actual emissions basis, prepare an **actual emissions analysis** for each AAP and pay **actual based emission fees** pursuant to TAPCR 1200-03-26-.02(9)(d). The **actual emissions analysis** shall include:

(a) the completed **Fee Emissions Summary Table**,

(b) each **actual emissions analysis** required**,** and

(c) the actual emission records for each pollutant and each source as required for actual emission fee determination, or a summary of the actual emission records required for fee determination, as specified by the Technical Secretary or the Technical Secretary's representative. The summary must include sufficient information for the Technical Secretary to determine the accuracy of the calculations. These calculations must be based on the Fee Year basis approved by the Technical Secretary (a state fiscal year [July 1 through June 30] or a calendar year [January 1 through December 31]). These records shall be used to complete the **actual emissions analysis**.

For all pollutants and all sources for which the permittee has chosen an allowable emissions basis, pay allowable based emission fees pursuant to TAPCR 1200-03-26-.02(9)(d).

TAPCR 1200-03-26-.02(9)(g)2

(7) When paying on an actual or mixed emissions basis, submit the **actual emissions analyses** at the time the fees are paid in full or earlier.

TAPCR 1200-03-26-.02(9)(g)2

(8) Include with each required AEAR report the following statement signed by the Responsible Official: *"I have reviewed this document in its entirety, and to the best of my knowledge, based on information and belief formed after reasonable inquiry, the statements and information contained in this document are true, accurate, and complete."*

TAPCR 1200-03-09-.02(11)(d)4

The annual fee due dates are specified in TAPCR 1200-03-26-.02(9)(a) and are dependent on the Responsible Official's choice of fee bases as described above. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within 15 days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8). Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

Payment of the fee due and the actual emissions analysis (if required) shall be submitted to the Technical Secretary at the following address:

Payment of Fee to:
Tennessee Department of Environment and Conservation
Division of Fiscal Services
Consolidated Fee Section – APC
Davy Crockett Tower, 6th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

and

Actual Emissions Analyses to:
A "Title V Emissions Summary Form" and the AEAR must be submitted electronically as directed by the Division. Additional information can be found at https://www.tn.gov/environment/air/inventory.html

TAPCR 1200-03-26-.02(3), (8), and (9), and TAPCR 1200-03-09-.02(11)(e)1(vii)

E2. **Reporting requirements**.

(a) **Semiannual reports.** Semiannual reports shall cover the six-month periods from **April 1** to **September 30** of each calendar year and from **October 1** of each calendar year to **March 31** of the following calendar year. These reports shall be submitted within 60 days after the end of each six-month period. Subsequent reports shall be submitted within 60 days after the end of each six-month period following the first report. The first semiannual report following issuance of this permit shall cover the following permits and reporting periods:

Permit Number	Reporting Period Begins	Reporting Period Ends
570858	1st day of SAR period (with year)	day before new permit issuance (with year)

579372	Issuance Date of new permit (with year)	end of SAR period (with year)

These semiannual reports shall include:

(1) Any monitoring and recordkeeping required by Conditions ***E4-2, E5-2, E6-1, E6-2, E7-3, E7-4, E7-5, E8-3, E9-2, E9-3, E10-1, E11-3, E12-2, E12-3, E13-1, E14-2(c), E14-2(d), E14-2(f), E14-6(b), E14-6(c), E14-6(f), E14-6(g) and E15-1*** of this permit. A summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

(2) The visible emission evaluation readings from Conditions ***E3-2, E5-1, and E15-2*** of this permit if required. A summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

(3) Identification of all instances of deviations from **ALL PERMIT REQUIREMENTS**. The record of deviations/excursions shall include, at a minimum, the time the deviation/excursion was discovered, the corrective action taken, and the time that the deviation/excursion was rectified.

These reports must be certified by a responsible official consistent with condition B4 of this permit and shall be submitted to The Technical Secretary at the address in Condition E2(b) of this permit.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

(b) **Annual compliance certification.** The permittee shall submit annually compliance certifications with each term or condition contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(1) The identification of each term or condition of the permit that is the basis of the certification;

(2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;

(3) The status of compliance with each term or condition of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in E2(b)2 above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion* or exceedance** as defined below occurred; and

(4) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

Annual compliance certifications shall cover the 12-month period from **October 1** of each calendar year to **September 30** of the following calendar year and shall be submitted within 60 days after the end of each 12-month period. The first annual compliance certification following issuance of this permit shall cover the following permits and reporting periods:

Permit Number	Reporting Period Begins	Reporting Period Ends
570858	1st day of ACC period (with year)	day before new permit issuance (with year)

579372	Issuance Date of new permit (with year)	end of ACC period (with year)

These certifications shall be submitted to: TN APCD and EPA

Division of Air Pollution Control
Johnson Environmental Field Office
2305 Silverdale Drive
Johnson City, TN 37601-2162

or

e-mail an electronic submittal in Portable document format (PDF) to:
APC.JCEFO@tn.gov

and

Air Enforcement Branch
U. S. EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303
or
Through the EPA CDX
(https://cdx.epa.gov/)

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667
TAPCR 1200-03-09-.02(11)(e)3.(v)

TAPCR 1200-03-09-.02(11)(e)1.(iii)(II)II

E3. General Facility Requirements

E3-1. Data Entry and Retention

(a) For sources required to maintain monthly logs, all data, including all required calculations, must be entered in the log no later than 30 days from the end of the month for which the data is required.

(b) For sources required to maintain weekly logs, all data, including all required calculations, must be entered in the log no later than seven days from the end of the week for which the data is required.

(c) For sources required to maintain daily logs, all data, including all required calculations, must be entered in the log no later than seven days from the end of the day for which the data is required.

(d) Records of all repair and maintenance activities required by this permit shall be recorded in a suitable permanent form and kept available for inspection by the Division. These records must be retained for a period of not less than five years. The date each maintenance and repair activity began shall be entered in the log no later than seven days following the start of the repair or maintenance activity, and the completion date shall be entered in the log no later than seven days after activity completion.

(e) All records required by any condition in Section E of this permit must be retained for a period of not less than five years, in accordance with condition B2. These records shall be kept available for inspection by the Technical Secretary or an authorized representative.

TAPCR 1200-03-09-.02(11)(e)1.(iii)(II)II

E3-2. Visible Emissions Limitations – General Requirements

(a) Visible emissions from the sources at this facility, unless otherwise noted, shall not exhibit greater than 20% opacity except for one six-minute period per any one-hour period and for no more than four six-minute periods in any 24-hour period. Visible emissions from these sources shall be determined by EPA Method 9, as published in 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6), TAPCR 1200-03-10-.02(1)(a)

(b) No person shall cause, suffer, allow or permit discharge of visible emissions from any fugitive dust source with opacity in excess of 10% for an aggregate of 15 minutes. Readings are to be taken across the narrower direction if the generation site is rectangular or oblong and are to be perpendicular to the wind direction (± 30°). Readings will be taken approximately every 15 seconds for any consecutive 15-minute period and an arithmetic average used to determine compliance. Any other items not covered here will be in accordance with the general specifications of EPA Method 9, as published in 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-08-.02 and 1200-03-19-.05, condition 2 of SIP permit 010781P

(c) No person shall cause, suffer, allow or permit discharge of visible emissions from the disposal of any material collected by any air pollution control system with opacity in excess of 10% for an averaging time of 15 continuous minutes. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A.

TAPCR 1200-03-08-.02 and 1200-03-19-.05, condition 3 of SIP permit 010781P.

(d) For all emission sources that use opacity matrix decision trees to comply with any visible emissions requirement, including emission sources for which visible emissions are not required by the opacity matrix, if the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-05

Compliance Method: Compliance with **Condition E3-2(a)** shall be determined by the procedures of the Division's opacity Matrix dated June 18, 1996, and amended September 11, 2013 (Attachment 1). Visible emissions evaluations are required as indicated in **Table E3-2**. For fugitive emission sources subject to **Conditions E3-2(b) and E3-2(c)**, readings shall be conducted as required by the Technical Secretary.

Table E3-2: Visible Emissions Evaluation Requirements

Emission Source	Description	VEE Required?	Reason for Exemption
37-0026-01	Batch House	Yes	N/A
37-0026-02	Plant Buildings	Yes	N/A
37-0026-03	Glass Melting Furnace No. 1	Yes	N/A
37-0026-05	Annealing Lehr and Cutting Section of Float Glass Line No. 2	No	Allowable emissions less than 10 tons/year
37-0026-06	Annealing Lehr and Cutting Section of Float Glass Line No. 1	No	Allowable emissions less than 10 tons/year
37-0026-08	Glass Melting Furnace No. 2	Yes	N/A
37-0026-10	Tin Bath No. 1 of Float Glass Line No. 1	No	Allowable emissions less than 10 tons/year
37-0026-11	Glass Tempering Process	No	Allowable emissions less than 10 tons/year
37-0026-21	Truck Unloading of Raw Materials	No	Allowable emissions less than 10 tons/year
37-0026-24	Tin Bath No. 2 of Float Glass Line No. 2	No	Allowable emissions less than 10 tons/year
37-0026-26	Emergency Engines	No	Natural gas or No. 2 oil-fired combustion source
37-0026-29	Shot Blasting Operation	No	Allowable emissions less than 10 tons/year

E3-3. Insignificant Activities

Insignificant activities identified by the permittee in the Title V Application are listed in **Table E3-3**. Additional insignificant activities may be added and operated at any time with the provision that a written notification shall be submitted to the Technical Secretary including an updated APC V.2 application form along with a truth, accuracy, and completeness statement signed by a responsible official. The permit may be updated to include additional insignificant activities by administrative amendment.

Table E3-3: Insignificant Activities

Activity	ESRN	Rule Citation
Ground water remediation system (PCE emissions)	N/A	1200-03-09-.04(5)(a)4.(i)
Malic Acid Application	N/A	1200-03-09-.04(5)(a)4.(i)
Cullet Storage Piles	N/A	1200-03-09-.04(5)(a)4.(i)

Table E3-3: Insignificant Activities		
Activity	**ESRN**	**Rule Citation**
Cullet Silos/Bins	N/A	1200-03-09-.04(5)(a)4.(i)
Cullet Hauling and Dumping	N/A	1200-03-09-.04(5)(a)4.(i)
330-gallon Kerosene AST	N/A	1200-03-09-.04(5)(a)4.(i)
Automatic Glass Stackers	N/A	1200-03-09-.04(5)(a)4.(i)
Batch Component Mixing	N/A	1200-03-09-.04(5)(a)4.(i)
Ammonia Tank 1	N/A	1200-03-09-.04(5)(a)4.(i)
Ammonia Tank 2	N/A	1200-03-09-.04(5)(a)4.(i)
SO_2 Injection in Tempering	N/A	1200-03-09-.04(5)(a)4.(i)
55 hp GM SI emergency engine (for 35 kW Generac generator)	37-0026-26	1200-03-09-.04(5)(a)4.(i), 0400-30-38-.01(1)(b)102.
1,490 hp Cummins Emergency Engine	37-0026-27	1200-03-09-.04(5)(a)4.(i), 0400-30-38-.01(1)(b)102.
1,490 hp Cummins Emergency Engine	37-0026-28	1200-03-09-.04(5)(a)4.(i), 0400-30-38-.01(1)(b)102.
1,494 hp Kohler Generator #3	37-0026-31	1200-03-09-.04(5)(a)4.(i), 0400-30-38-.01(1)(b)102.
7,500-gallon vertical diesel Tank 1	N/A	1200-03-09-.04(5)(f)17.
7,500-gallon vertical diesel Tank 2	N/A	1200-03-09-.04(5)(f)17.
550-gallon diesel dispensing tank	N/A	1200-03-09-.04(5)(f)17.
550-gallon gasoline dispensing tank	N/A	1200-03-09-.04(5)(f)17.

Compliance Method: Compliance shall be assured by annual certification, as required in **Condition E2(b)**.

E3-4. Operational Availability for Monitoring

The monitoring methods specified in this permit must have at least a 95% operational availability rate to prove compliance directly or indirectly with the applicable requirements unless otherwise stipulated by the Technical Secretary in the permit. An operational availability level of less than this amount may be considered the basis for declaring the monitored source in noncompliance with the applicable monitoring requirements, unless the reasons for the failure to maintain this level of operational availability are accepted by the Division as being legitimate malfunctions of the instruments or due to limited operation of the source.

TAPCR 1200-03-10-.04(2)(a)2.

E3-5. Identification of Responsible Official, Technical Contact, and Billing Contact

(a) The application that was utilized in the preparation of this permit is dated September 14, 2021, and signed by Responsible Official Michael L. Barry, Plant Manager of the permitted facility. If this person terminates employment or is assigned different duties and is no longer a Responsible Official for this facility as defined in part 1200-03-09-.02(11)(b)21 of the Tennessee Air Pollution Control Regulations, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within 30 days of the change. The notification shall include the name and title of the new Responsible Official and certification of truth and accuracy. All representations, agreement to terms and conditions, and covenants made by the former Responsible Official that were used in the establishment of the permit terms and conditions will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements, and/or covenants.

(b) The application that was utilized in the preparation of this permit is dated September 14, 2021, and identifies Lucas Hughes, Environmental Engineer as the Principal Technical Contact for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the Principal Technical Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within 30 days of the change. The notification shall include the name and title of the new Principal Technical Contact and certification of truth and accuracy.

(c) The application that was utilized in the preparation of this permit is dated September 14, 2021, and identifies James Hatcher, EH&S Manager, as the Billing Contact for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the Billing Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within 30 days of the change. The notification shall include the name and title of the new Billing Contact and certification of truth and accuracy.

37-0026-21	**Source Description:**	**Truck Unloading of Raw Materials:** Dolomite and limestone are delivered by truck. Limestone is dumped through a hatch along the road on the southwest side of Plant Building and conveyed to the Batch House for immediate use. Dolomite is unloaded at the southwest corner of the Plant Building and is stored in bins prior to use. Sand is unloaded from dump trailers into a hopper in a three-sided shed. The hopper is discharged to a covered conveyor which discharges to bins for stock storage. Emissions from sand dumping are uncontrolled. Source 21 includes the following control devices:

Vent ID	Manufacturer	Nominal Flow (CFM)
P-645 (Limestone Unloading)	Alanco (bin vent filter)	650
P-650D (Dolomite Unloading)	Alanco (bin vent filter)	650

Conditions E4-1 through E4-4 apply to source 37-0026-21

E4-1. The stated material input rate of this source is 100,000 pounds per hour of glass stabilizer (e.g., limestone, dolomite) and glass former (e.g., sand). Should the permittee need to modify the source in a manner that increases the stated material input rate, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V), as applicable, prior to making the change.

TAPCR 1200-03-09-.03(8)

Compliance Method: The permittee shall maintain documentation to demonstrate the material input rate for the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

E4-2. PM emitted from this source shall not exceed 1.45 lb/hr (daily average).

TAPCR 1200-03-07-.01(5), agreement letter dated May 7, 1992 (Attachment 2).

Compliance Method: Compliance with this condition shall be assured as follows:

(a) The permittee shall operate and maintain the bin vent filters to control PM emissions, and the source shall not operate unless the baghouse is in operation. The permittee shall inspect the baghouse on a monthly basis during source operation, as follows:

(1) Inspect, as applicable, each baghouse fan, bearings, belts, sheaves, impeller, motor, and base;
(2) Inspect the filters, housing, and differential pressure gauge; and
(3) Inspect the ductwork, including all seals, of the baghouse.

The permittee shall initiate corrective action within 24 hours and complete the corrective action as expediently as practical if the permittee finds any problem during inspection of the baghouse. Inspection records shall be kept and shall include the initials of the person performing the inspection(s) and corrective action(s), along with the date(s), time(s), and any relevant comments. These records shall be maintained in accordance with **Condition E3-1** of this permit**.**

(b) The raw materials unloading rate and operating hours shall be recorded in a monthly log, and the PM emission rate for glass former (i.e., sand dumping) shall be calculated using the following equations:

Equation I[1]:

$$E = k(0.0032)\ [(U/5)^{1.3}/(M/2)^{1.4}]$$

Where:

E = emission factor (lb/ton)
k = particle size multiplier: (k = 0.48 for source)
U = mean wind speed (miles per hour)
M = material moisture content (%): (M = 0.2% for source)

[1] Equation I is from AP-42, 5th Edition, 1/95, Section 13.2.4.

Equation II:

P = [E (tons of material unloaded per month)] / monthly operating hours

Where:

P = PM emission rate (lb/hr)

E4-3. All conveyors used by this source shall be totally enclosed.

TAPCR 1200-03-09-.02(6), condition 4 of operating permit 027600P.

Compliance Method: Compliance shall be assured by annual certification in accordance with **Condition E2(b)**.

E4-4. The collection hopper for this source shall be enclosed on the top and three sides.

TAPCR 1200-03-09-.02(6), condition 5 of operating permit 027600P.

Compliance Method: Compliance shall be assured by annual certification in accordance with **Condition E2(b)**.

37-0026-02	**Source Description:**	**Plant Buildings:** Various raw materials, including glass former, glass fluxes, and glass stabilizers are unloaded from railcars via belly dump into multiple hoppers. Source 02 includes the following control devices:

Vent ID	Manufacturer	Nominal Flow (CFM)
P-650 A	Alanco Bin Vent	1,010
P-650 B	Alanco Bin Vent	1,010
P-650 C	Alanco Bin Vent	1,010

Conditions E5-1 and E5-2 apply to source 37-0026-02

E5-1. No person shall cause, suffer, allow or permit discharge of visible emissions from any plant building with opacity in excess of 10% for an averaging time of 15 continuous minutes. Visible emissions from these sources shall be determined by EPA Method 9, as published in 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.01(3) and 1200-03-19-.05(2)

Compliance Method: Compliance with this condition shall be determined by the procedures of the Division's opacity Matrix dated June 18, 1996, and amended September 11, 2013 (Attachment 1).

E5-2. PM emitted from the plant buildings shall not exceed 0.25 grains per dry standard cubic foot of exhaust gas (6.5 lb/hr on a daily average basis).

TAPCR 1200-03-07-.04(2)

Compliance Method: Compliance with this condition shall be assured as follows:

1. The permittee shall operate and maintain all dust collectors to control PM emissions during railcar unloading. The permittee shall inspect the dust collectors on a monthly basis during source operation, as follows:

   (1) Inspect, as applicable, each baghouse fan, bearings, belts, sheaves, impeller, motor, and base;
   (2) Inspect the filters, housing, and differential pressure gauge of each baghouse; and
   (3) Inspect the ductwork, including all seals, of each baghouse.

   The permittee shall initiate corrective action within 24 hours and complete the corrective action as expediently as practical if the permittee finds any problem during inspection of the dust collectors. Inspection records shall be kept and shall include the initials of the person performing the inspection(s) and corrective action(s), along with the date(s), time(s), and any relevant comments. These records shall be maintained in accordance with **Condition E3-1** of this permit**.**

2. Compliance with this condition shall also be assured by compliance with **Condition E5-1** of this permit.

37-0026-01	**Source Description:**	**Batch House Handling of Raw Materials:** Includes the transfer, storage, weighing and mixing of raw materials for the glass batch use in glass manufacturing. These activities are conducted inside the Batch House building. Various transfer points, storage bins, and hoppers that generate particulate matter are controlled by one of ten dust collectors. This source includes ten fabric filter dust collectors which operate under negative pressure and exhaust inside the batch house building. Source 01 includes the following control devices:

Vent ID	Manufacturer	Nominal Flow (CFM)
N-645	Flex Kleen	4,000
N-645 A	Donaldson	850
N-645 B	Alanco Bin Vent	610
N-689 A	Torit Cartridge Filter	900
N-689 B	Torit Cartridge Filter	900
N-689 C	Donaldson	850
N-689 D	Donaldson	850
N-689 E	Donaldson	850
N-689 F	Donaldson	850
N-689 G	Donaldson	850
N-689 H	Donaldson	850
N-689 I	Donaldson	850
N-688 A	DCE Voke	1,500
N-688 B	DCE Voke	500
N-688 C	DCE Voke	500

Conditions E6-1 and E6-2 apply to source 37-0026-01

E6-1. The maximum raw material input for this source shall not exceed 3,870,894 pounds per day.

TAPCR 1200-03-09-.03(8)

Compliance Method: A daily log of the material input rate shall be maintained at the source location and kept available for inspection by the Technical Secretary or an authorized representative (see **Table E6-1** for example). All data and calculations shall be entered and maintained in accordance with **Condition E3-1** of this permit.

Table E6-1: Example Log for Raw Material Input	
Date	**Raw Material Input (lb)****
** Total input of glass former, glass fluxes, glass stabilizers, carbon, rouge, colorant, cullet, and calumite.	

E6-2. Particulate Matter (PM) emitted from this source shall not exceed 2.51 pounds per hour (lb/hr) on a daily average basis.

TAPCR 1200-03-07-.01(5), agreement letter dated May 7, 1992 (Attachment 2), 40 CFR Part 64

Compliance Method: Compliance with this condition shall be assured as follows:

1. The permittee shall operate and maintain all dust collectors to control PM emissions, and the Batch House shall not operate unless the dust collectors are in operation. The permittee shall inspect the dust collectors on a monthly basis during source operation, as follows:

   (1) Inspect, as applicable[1], each baghouse fan, bearings, belts, sheaves, impeller, motor, and base;
   (2) Inspect the filters, housing, and differential pressure gauge of each baghouse; and
   (3) Inspect the ductwork, including all seals, of each baghouse.

   The permittee shall initiate corrective action within 24 hours and complete the corrective action as expediently as practical if the permittee finds any problem during inspection of the dust collectors. Inspection records shall be kept and shall include the initials of the person performing the inspection(s) and corrective action(s), along with the date(s), time(s), and any relevant comments. These records shall be maintained in accordance with **Condition E3-1** of this permit**.**

2. The permittee shall comply with the applicable provisions of 40 CFR Part 64 (Compliance Assurance Monitoring) and with the CAM plan submitted for the dust collectors (**Attachment 3**).

37-0026-03	**Source Description:**	**Glass Melting Furnace No. 1:** This source consists of one natural gas fired furnace rated at 170.9 million Btu per hour (MMBtu/hr) nominal heat input, with supplemental heat provided by electric boost. Batch materials are charged to the furnace and melted, refined, and temperature conditioned to form molten glass. This furnace is also permitted to produce tinted glass through the addition of selenium, cobalt oxide, and nitre (sodium nitrate). Emissions from the furnace are controlled by a multimedia control device system consisting of a ceramic filter for PM control, dry sorbent injection for sulfur dioxide (SO_2), and selective catalytic reduction (SCR) for nitrogen oxides (NO_X). The outlet of the control system is equipped with continuous emission monitoring systems (CEMS) for NO_X and SO_2. The performance of the ceramic filter is monitored using an electronic leak detection system.

Conditions E7-1 through E7-6 apply to source 37-0026-03

E7-1. The stated design heat input capacity of this source is 170.9 MMBtu/hr. Should the permittee need to modify the Glass Production Furnace No. 1 in a manner that increases the stated design heat input rate, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change.

TAPCR 1200-03-09-.03(8), Condition 3 of construction permit 969564.

Compliance Method: The permittee shall maintain documentation to demonstrate the heat input rate for the Glass Production Furnace No. 1. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating

[1] For all permit conditions requiring baghouse inspection, the specific baghouse inspection requirements may vary for individual units. For example, periodic inspection is not required for sealed bearings that require no lubrication, and no inspection is required for fan belts and sheaves if the baghouse fan is connected to a direct-drive motor.

manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

E7-2. The stated production capacity of this source shall not exceed 650 tons of glass per day when producing clear glass and shall not exceed 625 tons of glass per day when producing tinted glass. Should the permittee need to modify the Glass Production Furnace No. 1 in a manner that increases the stated design production capacity or the production capacity when producing tinted glass, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change.

TAPCR 1200-03-09-.03(8), Condition 2 of construction permit 969564.

Compliance Method: Compliance with this condition shall be assured by compliance with the recordkeeping requirements of **Condition E7-3.A** of this permit.

E7-3. The permittee shall comply with the following emission limits:

A. PM emitted from this source, including PM hazardous air pollutants (HAPs), shall not exceed the limits in **Table E7-3.1**.

Table E7-3.1: PM Emission Limits	
Uncontrolled PM Emission Limit**	27.71 lb/hr on a daily average basis
Controlled PM Emission Limit	9.12 lb/hr on a daily average basis
Annual PM Emission Limit	34.12 tons during any period of 12 consecutive months
**Due to the nature of the glass melting process, up to 30 days are required for startup, and emissions during startup are uncontrolled.	

TAPCR 1200-03-07-.01(5), agreement letter dated August 1, 2024 (Attachment 2). Condition 4 of construction permit 969564.

Compliance Method: Compliance with this condition shall be assured by recordkeeping and compliance with **Conditions D15 and E7-5** of this permit. The glass pull rate shall be recorded in a log, and PM emissions shall be calculated and recorded in a log for hourly emissions on a daily average basis, monthly emissions, and emissions per 12 consecutive months). Calculations shall be made using the equations below. Periods where emissions are uncontrolled shall be recorded in a log that clearly shows the time and date along with the emissions during the period(s) when emissions are uncontrolled.

$$P_{hour} = [\Sigma\ (G_{day})\ (E_{i\text{-}n})\ (F_{i\text{-}n})]/\ (24\ \text{hours/day})$$

Where:

P_{hour} = PM emissions per hour (lb/hr) on a daily average basis
G_{day} = Glass pull rate (tons/ day)
$E_{i\text{-}n}$ = Emission factor for particulates (lb/ton of glass) in operating condition$_{i\text{-}n}$ (from **Table E7-3.2** below)
$F_{i\text{-}n}$ = Fraction of operating day in operating condition$_{i\text{-}n}$ (from **Table E7-3.2** below)

$$P_{month} = (\Sigma\ P_{hour}\ \text{for each day of each calendar month})\ (24\ \text{hours/day})$$

Where:

P_{month} = Particulate emissions for each month (lb/month)

$$P_{12months} = (\Sigma\ P_{month}\ \text{for each period of 12 consecutive months})\ (1\ \text{ton}/2{,}000\ \text{lb})$$

Where:

$P_{12months}$ = Particulate emissions for each 12 consecutive month interval (tons/12 months)

Table E7-3.2: PM Emission Factors			
Factor/ Operating Condition	**Color of Glass Produced**	**Controlled or Uncontrolled Emissions**	**PM Emission Factor Value (lb/ton of glass)**
E_i	Clear	Controlled	0.21 (1)
E_j	Clear	Uncontrolled	0.59 (2)
E_k	Bronze	Controlled	0.35 (Overdoping) (3) 0.28 (Steady Addition) (4)
E_l	Bronze	Uncontrolled	1.06 (Overdoping) 0.83 (Steady Addition)
E_m	Gray	Controlled	0.34 (Overdoping) 0.275 (Steady Addition)
E_n	Gray	Uncontrolled	1.04 (Overdoping) 0.815 (Steady Addition)

(1) Value for controlled clear glass emission factor from test dated January 16, 2013.

(2) Value includes condensable particulate matter for uncontrolled clear glass emission factor (1998 test data)

(3) Overdoping consists of the addition to the glass melting furnace raw materials of an excess of elemental selenium (Se), cobalt oxide (Co_3O_3), and sodium nitrate ($NaNO_3$), to achieve tinted glass production. Overdoping occurs for approximately 24 hours during changeover from clear glass to tinted glass (either bronze or gray) production or between tinted glass products to establish the desired raw material mixture in the glass melting furnace (this permit does not specify a time limit for the changeover in production to occur). Tinted glass production results in the emission of the hazardous air pollutants selenium dioxide (SeO_2), and cobalt oxide.

(4) Steady addition indicates that the changeover in production from clear glass to on-specification tinted glass has occurred with the desired raw material mixture in the glass melting furnace having been attained.

B. Volatile organic compounds (VOC) emitted from this source shall not exceed 11.86 tons during any period of 12 consecutive months.

TAPCR 1200-03-07-.01(5), agreement letter dated August 1, 2024 (Attachment 2). Condition 5 of construction permit 969564.

Compliance Method: Compliance with this condition shall be assured by recordkeeping. The glass pull rate shall be recorded in a log, and VOC emissions shall be calculated using the following equations and recorded in a monthly log:

$$P_{month} = (G_{month})\ (E)$$

$$A = (\Sigma\ P_{month} \text{ for each month for 12 consecutive months})\ (1\ ton/2{,}000\ lb)$$

Where:

P_{month} = VOC emissions (lb/month)
G_{month} = Glass pull rate (tons/month)
E = Emission factor for VOC = 0.1 lb/ton glass pulled[2]
A = Sum of monthly VOC emissions (P_{month}) per 12 consecutive month interval (tons)

C. Sulfur Dioxide (SO_2) emitted from this source shall not exceed the following limits (**Table E7-3.3**):

Table E7-3.3: SO_2 Emission Limits	
Uncontrolled SO_2 Emission Limit**	75.82 lb/hr on a daily average basis
Controlled SO_2 Emission Limit	32.5 lb/hr on a daily average basis
Annual SO_2 Emission Limit	148.59 tons during any period of 12 consecutive months
**Due to the nature of the glass melting process, up to 30 days are required for startup, and emissions during startup are uncontrolled.	

[2] Emission factor from AP-42, Table 11.15-2 (flat glass production with uncontrolled VOC emissions).

TAPCR 1200-03-14-.01(3), agreement letter dated August 1, 2024 (Attachment 2). Condition 6 of construction permit 969564.

Compliance Method: Compliance with this condition shall be assured by compliance with **Condition E7-5** and by continuous emissions monitoring, as follows:

(a) The permittee shall operate a continuous emission monitoring system (CEMS) for SO_2 emissions according to the procedures in Performance Specification 2 (Specifications and Test Procedures for SO_2 and NO_X Continuous Emission Monitoring Systems in Stationary Sources), 40 CFR Part 60, Appendix B.

(b) The permittee shall assure the quality of the data produced by the SO_2 CEMS in accordance with Procedure 1 (Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination), 40 CFR Part 60, Appendix F.

(c) The permittee shall continuously record the output from the CEMS using electronic or other means (e.g., using a strip chart recorder or a data logger).

(d) The permittee shall make the necessary calculations for compliance comparison with the emission limits described above. These calculations shall be recorded in a log. Periods where emissions are uncontrolled shall be recorded in a log that clearly shows the time and date along with the emissions during the period.

(e) The SO_2 monitoring system shall be fully operational for at least 95% of the operational time of the monitored source during each semiannual reporting period TAPCR 1200-03-10-.04(2)(a)2. An operational availability level of less than this amount may be considered the basis for declaring the source in noncompliance with the applicable monitoring requirements, unless the reasons for the failure to maintain this level of operational availability are accepted by the Division as being legitimate malfunctions of the instruments.

D. Nitrogen Oxides (NO_X) emitted from this source shall not exceed the following limits (**Table E7-3.4**):

Table E7-3.4: NO_X Emission Limits	
Uncontrolled NO_X Emission Limit**	514.0 lb/hr on a daily average basis
Controlled NO_X Emission Limit	216.7 lb/hr on a daily average basis
Annual NO_X Emission Limit	544.70 tons during any period of 12 consecutive months
**Due to the nature of the glass melting process, up to 30 days are required for startup, and emissions during startup are uncontrolled.	

TAPCR 1200-03-07-.01(5), agreement letter dated August 1, 2024 (Attachment 2). Condition 7 of construction permit 969564.

Compliance Method: Compliance with this condition shall be assured by compliance with **Condition E7-5** of this permit and by continuous emissions monitoring, as follows:

(a) The permittee shall operate a continuous emission monitoring system (CEMS) for NO_X emissions according to the procedures in Performance Specification 2 (Specifications and Test Procedures for SO_2 and NO_X Continuous Emission Monitoring Systems in Stationary Sources), 40 CFR Part 60, Appendix B.

(b) The permittee shall assure the quality of the data produced by the NO_X CEMS in accordance with Procedure 1 (Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination), 40 CFR Part 60, Appendix F.

(c) The permittee shall continuously record the output from the CEMS using electronic or other means (e.g., using a strip chart recorder or a data logger).

(d) The permittee shall make the necessary calculations for compliance comparison with emission limits described above. These calculations shall be recorded in a log. Periods where emissions are uncontrolled shall be recorded in a log that clearly shows the time and date along with the emissions during the period.

(e) The NO_X monitoring system shall be fully operational for at least 95% of the operational time of the monitored source during each semiannual reporting period TAPCR 1200-03-10-.04(2)(a)2. An operational

availability level of less than this amount may be considered the basis for declaring the source in noncompliance with the applicable monitoring requirements, unless the reasons for the failure to maintain this level of operational availability are accepted by the Division as being legitimate malfunctions of the instruments.

E. Carbon Monoxide (CO) emitted from this source shall not exceed 287.07 tons during any period of 12 consecutive months.

TAPCR 1200-03-07-.01(5), agreement letter dated August 1, 2024 (Attachment 2). Condition 8 of construction permit 969564.

Compliance Method: Compliance with this condition shall be assured by recordkeeping. The glass pull rate shall be recorded in a log, and CO emissions shall be calculated using the following equations and recorded in a monthly log:

$$P_{month} = (G_{month})\ (E)$$

$$A = (\Sigma\ P_{month} \text{ for each month for 12 consecutive months})\ (1 \text{ ton} / 2000 \text{ lb})$$

Where:

P_{month} = CO emissions (lb/ month)
G_{month} = Glass pull rate (tons/ month)
E = Emission factor for CO, controlled emission factor of 0.16 lb/ton of glass pulled[3]
A = Sum of monthly CO emissions (P_{month}) per 12 consecutive month interval (tons)

E7-4. PM HAPs emitted from this source shall not exceed 9.0 tons of any single PM HAP during all periods of 12 consecutive months. Total emissions of all PM HAPs from this source shall not exceed 24.0 tons during all periods of 12 consecutive months.

TAPCR 1200-03-07-.01(5), agreement letter dated August 1, 2024 (Attachment 2). Condition 9 of construction permit 969564.

Compliance Method: Compliance with this condition shall be assured by recordkeeping. The glass pull rate shall be recorded in a log and PM HAP emissions shall be calculated and recorded in a log for hourly emissions, monthly emissions, and emissions per 12 consecutive months for each HAP and for combined HAPs. Periods where emissions are uncontrolled shall be recorded in a log that clearly shows the time and date along with the emissions during the period. Calculations shall be made using the following equations:

$$PM\text{-}HAP_{hour} = [\Sigma\ (G_{day})\ (E_{k\text{-}n})\ (F_{k\text{-}n})] / (24 \text{ hours/ day})$$

Where:

$PM\text{-}HAP_{hour}$ = HAP particulate emissions (lb/hr) on a daily average basis
G_{day} = Glass pull rate (tons/ day)
$E_{k\text{-}n}$ = Emission factor for HAP particulate, lb/ton of glass, in operating condition $_{k\text{-}n}$ (see **Table E7-4** below)
$F_{k\text{-}n}$ = Fraction of Operating Day in operating condition$_{k\text{-}n}$ (see **Table E7-2** for an explanation of overdoping and steady-state addition)

$PM\text{-}HAP_{month}$ = Sum of daily PM-HAP emissions for each calendar month (lb)
calculated by: (Σ $PM\text{-}HAP_{hour}$ per each day of each month) (24 hours per day)

Where:

$PM\text{-}HAP_{month}$ = HAP particulate emissions for each month (lb/month)

$PM\text{-}HAP_{12months}$ = Sum of 12 consecutive months PM-HAP emissions (tons)
calculated by: (Σ $PM\text{-}HAP_{month}$ for each month for 12 consecutive months) (1 ton/2,000 lb)

Where:

$PM\text{-}HAP_{12months}$ = HAP particulate emissions for each 12 consecutive month interval (tons/12 months)

[3] The emission factor for CO is based on performance testing conducted on January 16, 2013.

Table E7-4: PM HAP Emission Factors			
Factor/ Operating Condition	**Color of Glass Produced**	**Controlled or Uncontrolled Emissions**	**HAP Particulate Emission Factor Value (lb/ton of glass)**
E_k	Bronze	Controlled	SeO_2: 0.14 (Overdoping) Co_3O_3: 0.001 (Overdoping) SeO_2: 0.07 (Steady Addition) Co_3O_3: 0.0005 (Steady Addition)
E_l	Bronze	Uncontrolled	SeO_2: 0.46 (Overdoping) Co_3O_3: 0.01 (Overdoping) SeO_2: 0.23 (Steady Addition) Co_3O_3: 0.005 (Steady Addition)
E_m	Gray	Controlled	SeO_2: 0.13 (Overdoping) Co_3O_3: 0.002 (Overdoping) SeO_2: 0.06 (Steady Addition) Co_3O_3: 0.001 (Steady Addition)
E_n	Gray	Uncontrolled	SeO_2: 0.43 (Overdoping) Co_3O_3: 0.02 (Overdoping) SeO_2: 0.21 (Steady Addition) Co_3O_3: 0.01 (Steady Addition)

E7-5. This source shall not operate without the use of the air pollution control device (multimedia catalytic ceramic filter for PM control, dry sorbent injection scrubber system for SO_2 control, and selective catalytic reduction system (SCR) for NO_X control), except as described during startup and control device maintenance. The control device shall be equipped with continuous emission monitoring systems (CEMS) for monitoring NO_x and SO_2 emissions to assure compliance with **Conditions E7-3.C** and **E7-3.D**.

The permittee shall operate and maintain a leak detection system on the ceramic filter portion of the control device. The leak detection system and its operation shall meet the following specifications and requirements:

(a) The leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.0005 grains per dry standard cubic foot or less. The permittee shall maintain vendor documentation of the performance specification at the facility; however, there is no requirement to demonstrate a direct correlation between signal response and the actual exhaust PM concentration.

(b) The leak detection system sensor must provide output of relative PM loadings. The permittee shall continuously record the output from the leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger). The permittee has elected to use leak detection system sensor output data in picoamps for the indication of relative PM loadings per the permittee's CAM Plan (enclosed as Appendix 8)**;** however, there is no requirement to demonstrate a direct correlation between signal response and the actual exhaust PM concentration.

(c) The leak detection system must be equipped with an alarm system that triggers when the system detects an increase in relative particulate loading over the alarm set point specified in the permittee's CAM Plan (Attachment 3).

(d) The permittee shall log the date and time of all leak detection system alarms and the date and time the alarm was alleviated. Alarms shall be investigated and if required from investigation, corrective actions shall be initiated. The time of initiation of each alarm investigation and commencement and completion of corrective actions shall be recorded in the log. Also, the corrective action measures shall be recorded in the log.

(e) The multimedia catalytic ceramic filter shall comply with the applicable provisions of 40 CFR Part 64 (Compliance Assurance Monitoring) and with requirements of the CAM plan (Attachment 3).

TAPCR 1200-03-10-.04(2), Condition S1-7 of construction permit 981790

E7-6. The exhaust gases from this source shall be discharged unobstructed vertically upwards to the ambient air from a stack with an exit diameter of 8.5 feet and not less than 215.5 feet above ground level per the air dispersion modeling dated August 14, 2012, and approved by the Technical Secretary in the letter dated November 6, 2012.

TAPCR 1200-03-09-.01(1)(f) and TAPCR 1200-03-03-.03(1)(a). Condition 19 of construction permit 969564.

37-0026-10	**Source Description:**	**Tin Bath No. 1 of Float Glass Line No. 1:** The heart of the glass making process is the tin bath where molten glass flows from the melting furnace onto a shallow bath of molten tin. Tin Bath No. 1 follows Furnace G1. The glass spreads out over the tin to form a flat, smooth ribbon. In order to improve the quality of the glass by avoiding surface imperfections, sulfur dioxide is injected into the lehr to form a dry lubricant coating on the glass and to form a barrier between the glass and the rollers. This protective layer is formed through a reaction between sodium ions in the glass and the injected SO_2 creating a sodium sulfate powder. Emissions from the tin bath operation are uncontrolled.

Conditions E8-1 through E8-3 apply to source 37-0026-10

E8-1. The stated material input rate of this source is 27.0 tons per hour of glass, based on a daily average. This condition is a statement of the capacity for the source. Should the permittee need to modify the source in a manner that increases the stated material input rate, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V), as applicable, prior to making the change.

TAPCR 1200-03-09-.03(8)

Compliance Method: The permittee shall maintain documentation to demonstrate the material input rate for the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

E8-2. PM emitted from this source shall not exceed 0.5 lb/hr on a daily average basis.

TAPCR 1200-03-07-.01(5), agreement letter dated May 7, 1992 (Attachment 2).

Compliance Method: This is a process emission source where the potential to emit is less than 5 tons/year of particulate matter. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of subpart 1200-03-09-.02(11)(e)3.(i). Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E8-3. SO_2 emitted from this source shall not exceed 2.0 lb/hr on a daily average basis.

TAPCR 1200-03-14-.01(3), agreement letter dated May 7, 1992 (Attachment 2).

Compliance Method: Compliance with this condition shall be assured by recordkeeping. SO_2 usage shall be recorded in a daily log, and SO_2 emissions shall be calculated daily with the following equation:

$$S = (E * U) / [(D) (24 \text{ hours/day})]$$

Where:

S = SO_2 emitted (lb/hr), daily average
E = weight fraction of SO_2 input emitted from process = 0.11[1]
U = SO_2 usage (pounds/month)
D = days per month

[1] This value is based on company test data from another facility with a similar operation. The test was conducted in March 1997.

These calculations shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. These records shall be retained in accordance with **Condition E3-1** of this permit.

37-0026-06	**Source Description:**	**Annealing Lehr and Cutting Section of Float Glass Line No. 1:** Once the molten glass leaves the furnace and tin bath, it is drawn onto the rollers of the Lehr. The lehr is a roller hearth oven designed to cool the glass at a controlled rate. After the molten glass leaves the furnace and lehr, it is cut to size. Cutting oil is applied to the glass prior to scoring the glass. The cutting oil used on Line #1 is a purchased blend and used "as delivered" the no further blending or dilution. PM emissions from the Lehr Operation are controlled with a baghouse. PM emissions from the Lehr Operation are controlled with a baghouse (CS-624, Torit dust collection unit with filter cartridge, 35,450 cfm capacity), and VOC emissions are uncontrolled. All of the oil applied in the cutting operation is assumed to evaporate.

Conditions E9-1 through E9-3 apply to source 37-0026-06

E9-1. The stated material input rate of this source is 27.08 tons per hour of glass, based on a daily average. This condition is a statement of the capacity for the source. Should the permittee need to modify the source(s) in a manner that increases the stated material input rate, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V), as applicable, prior to making the change.

TAPCR 1200-03-09-.01(1)(d), Condition 1 of construction permit 9C1458P (modified in Minor Modification #2 to Title V Operating Permit 562859)

Compliance Method: The permittee shall maintain documentation to demonstrate the material input rate for the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

E9-2. PM emitted from this source shall not exceed 1.45 lb/hr on a daily average basis.

TAPCR 1200-03-07-.01(5), agreement letter dated May 7, 1992 (Attachment 2).

Compliance Method: This source shall not operate without the use of air pollution control equipment (baghouse), except in accordance with TAPCR 1200-03-20. The permittee shall inspect the cullet return baghouse on a monthly basis, as follows:

(1) Inspect, as applicable, the baghouse fan, bearings, belts, sheaves, impeller, motor, and base;
(2) Inspect the filters, housing, and differential pressure gauge; and
(3) Inspect the ductwork, including all seals, of the baghouse.

The permittee shall initiate corrective action within 24 hours and complete the corrective action as expediently as practical if the permittee finds any problem during inspection of the dust collectors. Inspection records shall be kept and shall include the initials of the person performing the inspection(s) and corrective action(s), along with the date(s), time(s), and any relevant comments. These records shall be maintained in accordance with **Condition E3-1** of this permit**.**

E9-3. VOC emitted from this source shall not exceed 36.3 tons during any period of 12 consecutive months.

TAPCR 1200-03-07-.07(2)

Compliance Method: Purchase orders and/or invoices for all VOC- and HAP-containing materials, along with current safety data sheets (SDS) or vendor formulation data, shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. The SDS or vendor formulation data must explicitly list the VOC and HAP content by weight for all VOC- and HAP-containing materials. Electronic records may be used to fulfill this requirement. The permittee shall calculate the actual quantities of VOC and HAP emitted during each calendar month and each period of 12 consecutive months using the following equations:

$$EV_{T/M} = (C)\ (W)\ (VOC)/2{,}000 \text{ lb/ton}$$
$$EV_{T/12\text{-}mo} = \sum EV_{T/M}$$

Where:
$EV_{T/M}$ = VOC emission (tons per month)
C = amount of material used per month (gallons/month)
W = density of material (lb/gal)
VOC = VOC content in material (weight %)

$EV_{T/12\text{-}mo}$ = sum of the monthly VOC emissions during any period of 12 consecutive months

$$EH_{T/M} = (C)\ (W)\ (HAP)/2{,}000 \text{ lb/ton},$$
$$EH_{T/12\text{-}mo} = \sum EH_{T/M}$$

Where:
$EH_{T/M}$ = HAP emission (tons per month)
C = amount of material used per month (gallons/month)
W = density of material (lb/gal)
HAP = HAP content in material (weight %)
$EH_{T/12\text{-}mo}$ = sum of the monthly HAP emissions during any period of 12 consecutive months

These calculations shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. These records shall be retained in accordance with **Condition E3-1** of this permit.

37-0026-08	**Source Description:**	**Glass Melting Furnace No. 2:** This source consists of one natural gas-fired furnace rated at 188.0 MMBtu/hr nominal heat input. Batch materials are charged into the furnace where it is melted, refined, and temperature conditioned to form molten glass. Emissions from this furnace are uncontrolled.

Condition E10-1 applies to source 37-0026-08

E10-1. The permittee shall comply with the following emission limits (**Table E10-1a**):

Table E10-1a: Emission Limits for 37-0026-08

Pollutant	Emission Limit	Rule Citation
PM	29.0 lb/hr on a daily average basis	TAPCR 1200-03-07-.01(5), agreement letter dated August 1, 2024 (Attachment 2).
SO_2	95.0 lb/hr on a daily average basis	TAPCR 1200-03-14-.01(3), agreement letter dated August 1, 2024 (Attachment 2).
NO_X	427.0 lb/hr on a daily average basis	TAPCR 1200-03-07-.07(2), agreement letter dated August 1, 2024 (Attachment 2).
VOC	5.0 lb/hr on a daily average basis	TAPCR 1200-03-07-.07(2), agreement letter dated August 1, 2024 (Attachment 2).
CO	60.0 lb/hr on a daily average basis	TAPCR 1200-03-07-.07(2), agreement letter dated August 1, 2024 (Attachment 2).

Compliance Method: Compliance with this condition shall be assured by recordkeeping. The glass pull rate shall be recorded in a log, and emissions of each pollutant shall be calculated using the following equation.

$$P = (G)\ (E) / (24 \text{ hours/day})$$

Where:
P = Pollutant emissions (lb/hr) on a daily average basis
G = material records of average glass pull rate (tons/day)
E = emission factor for each pollutant (see **Table E10-1b**)

Table E10-1b: Emission Factors for 37-0026-08		
Pollutant	**Emission Factor**	**Basis**
PM	0.57 lb/ton of glass pulled	Stack test conducted September 22, 1998
SO_2	2.8 lb/ton of glass pulled	
NO_X	15.24 lb/ton of glass pulled	
VOC	0.1 lb/ton of glass pulled	AP-42, Table 11.15-2
CO	0.81 lb/ton of glass pulled	Stack test conducted September 22, 1998

These calculations shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. These records shall be retained in accordance with **Condition E3-1** of this permit.

37-0026-24	**Source Description:**	**Tin Bath No. 2 of Float Glass Line No. 2:** The heart of the glass making process is the tin bath where molten glass flows from the melting furnace onto a shallow bath of molten tin. Tin Bath No. 2 follows Furnace G2. The glass spreads out over the tin to form a flat, smooth ribbon. In order to improve the quality of the glass by avoiding surface imperfections, sulfur dioxide is injected into the lehr to form a dry lubricant coating on the glass and to form a barrier between the glass and the rollers. This protective layer is formed through a reaction between sodium ions in the glass and the injected SO_2 creating a sodium sulfate powder. Emissions from the tin bath operation are uncontrolled.

Conditions E11-1 through E11-3 apply to source 37-0026-24

E11-1. The stated material input rate of this source is 27.0 tons per hour of glass, based on a daily average. This condition is a statement of the capacity for the source. Should the permittee need to modify the source in a manner that increases the stated material input rate, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V), as applicable, prior to making the change.

TAPCR 1200-03-09-.03(8)

Compliance Method: The permittee shall maintain documentation to demonstrate the material input rate for the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

E11-2. PM emitted from this source shall not exceed 0.5 lb/hr on a daily average basis.

TAPCR 1200-03-07-.01(5), agreement letter dated May 7, 1992 (Attachment 2).

Compliance Method: This is a process emission source where the potential to emit is less than 5 tons/year of particulate matter. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of subpart 1200-03-09-.02(11)(e)3.(i). Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

E11-3. SO_2 emitted from this source shall not exceed 2.0 lb/hr on a daily average basis.

TAPCR 1200-03-14-.01(3), agreement letter dated May 7, 1992 (Attachment 2).

Compliance Method: Compliance with this condition shall be assured by recordkeeping. SO_2 usage shall be recorded in a daily log, and SO_2 emissions shall be calculated daily with the following equation:

$$S = (E * U) / [(D)\ (24\ \text{hours/day})]$$

Where:

S = SO_2 emitted (lb/hr), daily average

E = weight fraction of SO_2 input emitted from process = 0.11[1]

U = SO_2 usage (pounds/month)
D = days per month

[1] This value is based on company test data from another facility with a similar operation. The test was conducted in March 1997.

These calculations shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. These records shall be retained in accordance with **Condition E3-1** of this permit.

37-0026-05	**Source Description:**	**Annealing Lehr and Cutting Section of Float Glass Line No. 2:** Once the molten glass leaves the furnace and tin bath, it is drawn onto the rollers of the Lehr. The lehr is a roller hearth oven designed to cool the glass at a controlled rate. After the molten glass leaves the furnace and lehr, it is cut to size. Cutting oil (a 14:1 blend of hydrotreated petroleum distillates and kerosene) is applied to the glass prior to scoring the glass. PM emissions from the Lehr Operation are controlled with a baghouse (CN-624, Johnson March baghouse with 35,000 cfm capacity), and VOC emissions are uncontrolled. All of the oil applied in the cutting operation is assumed to evaporate.

Conditions E12-1 through E12-3 apply to source 37-0026-05

E12-1. The stated material input rate of this source is 27.0 tons per hour of glass, based on a daily average. This condition is a statement of the capacity for the source. Should the permittee need to modify the source(s) in a manner that increases the stated material input rate, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V), as applicable, prior to making the change.

TAPCR 1200-03-09-.01(1)(d), Condition 1 of construction permit 9C1458P

Compliance Method: The permittee shall maintain documentation to demonstrate the material input rate for the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

E12-2. PM emitted from this source shall not exceed 1.0 lb/hr on a daily average basis.

TAPCR 1200-03-07-.01(5), agreement letter dated May 7, 1992 (Attachment 2).

Compliance Method: This source shall not operate without the use of air pollution control equipment (baghouse), except in accordance with TAPCR 1200-03-20. The permittee shall inspect the cullet return baghouse on a monthly basis, as follows:

(1) Inspect, as applicable, the baghouse fan, bearings, belts, sheaves, impeller, motor, and base;
(2) Inspect the filters, housing, and differential pressure gauge; and
(3) Inspect the ductwork, including all seals, of the baghouse.

The permittee shall initiate corrective action within 24 hours and complete the corrective action as expediently as practical if the permittee finds any problem during inspection of the dust collectors. Inspection records shall be kept and shall include the initials of the person performing the inspection(s) and corrective action(s), along with the date(s), time(s), and any relevant comments. These records shall be maintained in accordance with **Condition E3-1** of this permit**.**

E12-3. VOC emitted from this source shall not exceed 36.3 tons during any period of 12 consecutive months.

TAPCR 1200-03-07-.07(2)

Compliance Method: Purchase orders and/or invoices for all VOC- and HAP-containing materials, along with current safety data sheets (SDS) or vendor formulation data, shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. The SDS or vendor formulation data must explicitly list the VOC and HAP content by weight for all VOC- and HAP-containing materials. Electronic records may be used to fulfill this requirement.

The permittee shall calculate the actual quantities of VOC and HAP emitted during each calendar month and each period of 12 consecutive months using the following equations:

$$EV_{T/M} = (C)\ (W)\ (VOC)/2{,}000 \text{ lb/ton}$$
$$EV_{T/12\text{-mo}} = \sum EV_{T/M}$$

Where:

$EV_{T/M}$ = VOC emission (tons per month)
C = amount of material used per month (gallons/month)
W = density of material (lb/gal)
VOC = VOC content in material (weight %)
$EV_{T/12\text{-mo}}$ = sum of the monthly VOC emissions during any period of 12 consecutive months

$$EH_{T/M} = (C)\ (W)\ (HAP)/2{,}000 \text{ lb/ton},$$
$$EH_{T/12\text{-mo}} = \sum EH_{T/M}$$

Where:

$EH_{T/M}$ = HAP emission (tons per month)
C = amount of material used per month (gallons/month)
W = density of material (lb/gal)
HAP = HAP content in material (weight %)
$EH_{T/12\text{-mo}}$ = sum of the monthly HAP emissions during any period of 12 consecutive months

These calculations shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. These records shall be retained in accordance with **Condition E3-1** of this permit.

37-0026-11	**Source Description:**	**Glass Tempering Process (HT-3):** The tempering process relies on electric heating. A bevel is ground on the edges of the sheets of glass, and dust generated from the grinding operation is collected by a baghouse. Source 11 includes the following control device:

Vent ID	Manufacturer	Nominal Flow (CFM)
F-621	Farr	12,000

Condition E13-1 applies to source 37-0026-11

E13-1. PM emitted from this source shall not exceed 0.82 lb/hr on a daily average basis.

TAPCR 1200-03-19-.05, Condition 1 of SIP permit 010811P

Compliance Method: The permittee shall operate and maintain the baghouse to control PM emissions, and the source shall not operate unless the baghouse is in operation. The permittee shall inspect the baghouse on a monthly basis during source operation, as follows:

(1) Inspect, as applicable, each baghouse fan, bearings, belts, sheaves, impeller, motor, and base;
(2) Inspect the filters, housing, and differential pressure gauge; and
(3) Inspect the ductwork, including all seals, of the baghouse.

The permittee shall initiate corrective action within 24 hours and complete the corrective action as expediently as practical if the permittee finds any problem during inspection of the baghouse. Inspection records shall be kept and shall include the initials of the person performing the inspection(s) and corrective action(s), along with the date(s), time(s), and any relevant comments. These records shall be maintained in accordance with **Condition E3-1** of this permit**.**

37-0026-26	Source Description:	**Emergency Engines:** Four diesel-fired compression-ignition emergency engines subject to 40 CFR 60 Subpart IIII or 40 CFR 63 Subpart ZZZZ.

Conditions E14-1 through E14-6 apply to source 37-0026-26

E14-1. The stated capacity of each emergency engine is listed in **Table E14-1**. This condition is a statement of the capacity for the source(s). Should the permittee need to modify the source(s) in a manner that increases the capacity, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change.

Table E14-1: Stated Capacity of Emergency Engines

Engine ID	Rated Horsepower	Engine Build Year
1,000 kW Cummins Generator	1,490	Prior to 1994
1,000 kW Kohler Generator #1	1,550	Prior to 1994
1,000 kW Kohler Generator #2	1,550	2000
2,000 kW Kohler Generator #4	2,923	2023

TAPCR 1200-03-09-.03(8) and the applications dated September 14, 2021, and February 1, 2023 (Minor Modification to permit 570858), and April 11, 2023 (Minor Modification to permit 570858).

Compliance Method: The permittee shall maintain documentation to demonstrate the stated capacity of each emergency engine. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

E14-2. The 2,000 kW Kohler Generator #4 is subject to and shall comply with the applicable requirements of 40 CFR 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines), as follows:

(a) The provisions of Subpart IIII are applicable to owners and operators of stationary compression ignition internal combustion engines (CI ICE) that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

TAPCR 1200-03-09-.03(8), 40 CFR §60.4200(a)(2)(i)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

(b) PM, CO, NO_X, and nonmethane hydrocarbon (NMHC) emitted from this source shall not exceed the limits in **Table E14-2(b)**. The permittee must operate and maintain the stationary CI ICE to achieve these emission standards over the entire life of the engine.

Table E14-2(b): NSPS Emission Limits, 2000 kW Kohler Generator #4

Rated Power (hp)	Rated Power (kW)	Emission Limit (g/kWh)		
		NO_X plus Nonmethane Hydrocarbon (NMHC)	CO	PM
2,923	2179.7	6.4	3.5	0.20

TAPCR 1200-03-09-.03(8), 40 CFR §60.4200(a)(2)(i), §60.4205(b), 40 CFR part 1039, appendix I, §60.4206

Compliance Method: Compliance with this condition shall be assured by compliance with **Condition E14-2(d)**.

(c) The permittee must purchase diesel fuel that meets the requirements of §60.4207(b) and 40 CFR §1090.305, as follows:

(1) Sulfur content shall not exceed 15 ppm maximum for nonroad diesel fuel.
(2) Cetane index or aromatic content, as follows:
(i) A minimum cetane index of 40; or
(ii) A maximum aromatic content of 35 volume percent.

Compliance Method: Records verifying compliance with the above parameters shall be maintained for each fuel shipment, or a statement from the vendor that all fuel supplied complies with the above requirements shall be maintained onsite and kept available for inspection by the Technical Secretary or an authorized representative.

(d) The permittee shall operate and maintain the stationary CI ICE and control device (if present) pursuant to 40 CFR §60.4211(a):

(1) Operate and maintain the stationary CI ICE and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR part 1068, as they apply.

TAPCR 1200-03-09-.03(8), 40 CFR §60.4211(a)

Compliance Method: Compliance shall be assured by compliance with **Condition D15,** by maintaining documentation from the manufacturer for specified emissions-related maintenance that is required, and by maintaining records of maintenance in accordance with **Condition E3-1(d)**.

(e) The permittee must comply with the emission standards specified in **Condition E14-2(b)** by purchasing an engine certified to the emission standards in §60.4205(b) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in §60.4211(g) and Condition **E14-2(g)**.

TAPCR 1200-03-09-.03(8), 40 CFR §60.4211(a)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b)**.

(f) The permittee shall operate according to the following requirements:

(1) There is no time limit on the use of emergency CI ICE in emergency situations.

(2) The permittee may operate the emergency CI ICE for maintenance checks and readiness testing for a maximum of 100 hours per calendar year, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the EPA Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. Any non-emergency operation as allowed by **Condition E14-2(f)(3)** counts as part of the 100 hours per calendar year allowed by this condition.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in **Condition E14-2(f)(2)**. Except as provided in this condition, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

TAPCR 1200-03-09-.03(8), 40 CFR §60.4211(f)

Compliance Method: A record of the operating hours (see **Table E14-2(f)** for example log) shall be maintained at the source location and kept available for inspection by the Technical Secretary or a Division representative. These records shall be retained in accordance with **Condition E3-1** of this permit.

Table E14-2(f): Operating Hours Log for Calendar Year _____

Month	Operating Hours			Comments*
	Maintenance Checks and Readiness Testing	Other Non-Emergency Operation	Emergency Operation	
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
Subtotal				
Total Non-Emergency Hours				
Total Emergency Hours				
Total Operating Hours				

*The permittee must document the number of hours spent for emergency operation including what classified the operation as emergency and the number of hours spent for non-emergency operation.

(g) The owner or operator that does not install, configure, operate, and maintain an engine and control device according to the manufacturer's emission-related written instructions, or an owner or operator that changes the emission-related settings in a way that is not permitted by the manufacturer, must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the owner or operator must conduct an initial performance test to demonstrate compliance with the applicable emission standards within one year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within one year after changing the emission-related settings in a way that is not permitted by the manufacturer. The owner or operator must conduct subsequent performance testing every 8,760 hours of engine operation or three years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

TAPCR 1200-03-09-.03(8), 40 CFR §60.4211(g)

Compliance Method: Compliance with this condition shall be assured by annual certification, as required in **Condition E2(b),** or (if the owner or operator does not install, configure, operate, and maintain an engine and control device according to the manufacturer's emission-related written instructions) by compliance with the maintenance, monitoring, and recordkeeping requirements of §60.4211(g).

(h) The permittee shall comply with the applicable General Provisions of 40 CFR Part 60 (§§60.1. through 60.19) as indicated in Attachment 4 of this permit.

TAPCR 1200-03-09-.03(8), 40 CFR §60.4218(a) and Table 8 to 40 CFR 60 Subpart IIII

E14-3. PM emitted from each engine identified in **Table E14-3** shall not exceed 0.6 lb/MMBtu of heat input (maximum emission rate of 18.79 lb/hr from all three engines).

Table E14-3: PM Emission Limits for Non-NSPS Engines		
Engine ID	**Rated Horsepower**	**Engine Build Year**
1,000 kW Cummins Generator	1,490	Prior to 1994
1,000 kW Kohler Generator #1	1,550	Prior to 1994
1,000 kW Kohler Generator #2	1,550	2000

TAPCR 1200-03-06-.02(2)

Compliance Method: Compliance with this condition is based on the PM emission factor of 0.0007 lb/hp-hr from AP-42, Chapter 3, Table 3.4-1 and shall be assured by compliance with the applicable operation, maintenance, recordkeeping, and reporting provisions specified by 40 CFR 63 Subpart ZZZZ (**Condition E14-6)**.

E14-4. SO_2 emitted from this source shall not exceed the values specified in the table below.

Table E14-4: SO_2 Emission Limits		
Engine ID	**Rated Horsepower**	**Allowable SO_2 Emissions (lb/hr)**
1,000 kW Cummins Generator	1,490	0.02
1,000 kW Kohler Generator #1	1,550	0.02
1,000 kW Kohler Generator #2	1,550	0.02
2,000 kW Kohler Generator #4	2,923	0.04

TAPCR 1200-03-09-.03(8), TAPCR 1200-03-14-.03(5), and 40 CFR §63.6604

Compliance Method: Compliance with this condition shall be assured by compliance with **Conditions E14-2(c) and E14-6(c)**.

E14-5. CO, VOC, and NO_X emitted from each engine identified in **Table E14-5** shall not exceed the following limits:

Table E14-5: CO, VOC, and NO_X Emission Limits for Non-NSPS Engines			
	Annual Emissions (tons/year)		
Engine ID	**CO**	**VOC**	**NO_X**
1,000 kW Cummins Generator	2.05	0.26	8.94
1,000 kW Kohler Generator #1	2.13	0.27	9.30
1,000 kW Kohler Generator #2	2.13	0.27	9.30
Total	**6.31**	**0.80**	**27.54**

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with this condition is based on the emission factors of 0.00550 lb/hp-hr for CO, 0.000705 lb/hp-hr for VOC (as total organic carbon), and 0.024 lb/hp-hr for NO_X, as specified in AP-42, Chapter 3, Table 3.4-1 and shall be assured by compliance with the applicable operation, maintenance, recordkeeping, and reporting provisions specified by 40 CFR 63 Subpart ZZZZ (**Condition E14-6)**.

E14-6. The permittee is subject to and shall comply with the applicable requirements of 40 CFR 63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines), as follows:

(a) Subpart ZZZZ applies to each existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if it commenced construction or reconstruction of the stationary RICE before June 12, 2006. A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) A stationary RICE located at an area source of HAP emissions is new if it commenced construction on or after June 12, 2006. A new or reconstructed stationary RICE located at an area source meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines. No further requirements apply for such engines under Subpart ZZZZ.

TAPCR 1200-03-09-.03(8), §§63.6590(a)(1)(iii) and (iv), §63.6590(a)(2)(iii), §63.6590(c)

Compliance Method: Compliance shall be assured as shown in in **Table E14-6(a)**:

Table E14-6(a): Applicability and Compliance Requirements, 40 CFR 63 Subpart ZZZZ		
Engine ID	**Engine Build Year**	**Compliance Method**
1000 kW Cummins Generator	Prior to 1994	Comply with the requirements of this condition.
1000 kW Kohler Generator #1	Prior to 1994	
1000 kW Kohler Generator #2	2000	
2000 kW Kohler Generator #4	2023	Comply with **Condition E14-2**

(b) Each existing stationary RICE located at an area source of HAP emissions must comply with the requirements in **Table E14-6(b)-1.**

Table E14-6(b)-1: Requirements for Existing Stationary RICE Located at Area Sources of HAP (Table 2d to Subpart ZZZZ)	
For Each…	**Comply with the Following Requirements**
Emergency stationary CI RICE and black start stationary CI RICE[4]	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first. Sources have the option to utilize an oil analysis program as described in §63.6625(i) in order to extend the specified oil change requirement[5].

[4] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

[5] The oil analysis must be performed at the same frequency specified for changing the oil and filter in Table 2d to Subpart ZZZZ and must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30% of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20% from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil and filter. If any of the limits are exceeded, the engine owner or operator must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil and filter within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine.

	b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and
	c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.

TAPCR 1200-03-09-.03(8), §63.6603(a), Table 2d to Subpart ZZZZ, §63.6625(i)

Compliance Method: The permittee shall demonstrate continuous compliance with the requirements of **Table E14-6(b)-1** by compliance with the requirements specified in **Table E14-6(b)-2**.

Table E14-6(b)-2: Continuous Compliance with Work Practice Requirements (§63.6640(b) and Table 6 to Subpart ZZZZ)	
For Each…	**Demonstrate Continuous Compliance by…**
Existing emergency and black start stationary RICE located at an area source of HAP and complying with the work or management practices established by Subpart ZZZZ	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or
	ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
	Report each instance in which you did not meet each operating limitation in **Table E14-6(b)-1**. These instances are deviations from the emission and operating limitations in Subpart ZZZZ. These deviations must be reported according to the requirements in §63.6650 (see **Condition E14-6(g)**).

Pursuant to §§63.6655(d) and (e), the permittee must keep records to show continuous compliance with each operating limitation in **Table E14-6(b)-2**. The permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that each stationary RICE was operated and maintained according to the manufacturer's emission-related operation and maintenance instructions or the permittee's maintenance plan.

TAPCR 1200-03-09-.03(8), §§63.6640(a) and (b), Table 6 to Subpart ZZZZ, §§63.6655(d) and (e),

(c) An existing emergency CI stationary RICE with a site rating of more than 100 brake hp and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates for the purpose specified in §63.6640(f)(4)(ii) (50 hours/year of non-emergency operation, see **Condition E14-6(f)(3)**) must use diesel fuel that meets the requirements in 40 CFR §1090.305 for nonroad diesel fuel, as follows:

(1) Sulfur content shall not exceed 15 ppm maximum for nonroad diesel fuel.
(2) Cetane index or aromatic content, as follows:
  (i) A minimum cetane index of 40; or
  (ii) A maximum aromatic content of 35 volume percent.

TAPCR 1200-03-09-.03(8), §63.6604(b)

Compliance Method: Records verifying compliance with the above parameters shall be maintained for each fuel shipment, or a statement from the vendor that all fuel supplied complies with the above requirements shall be maintained onsite and kept available for inspection by the Technical Secretary or an authorized representative.

(d) The permittee must comply with the applicable emission limitations, operating limitations, and other requirements in Subpart ZZZZ at all times. At all times the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information

available to the Technical Secretary, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

TAPCR 1200-03-09-.03(8), §§63.6605(a) and (b)

Compliance Method: Compliance with this requirement shall be assured by compliance with **Conditions E14-6(b), (c), (e), (f), (g), and (h).**

(e) Each existing emergency stationary RICE located at an area source of HAP emissions must install a non-resettable hour meter if one is not already installed.

TAPCR 1200-03-09-.03(8), §63.6625(f), §63.6655(f)

Compliance Method: Pursuant to §63.6655(f), an existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purpose specified in §63.6640(f)(4)(ii) (see **Condition E14-6(f)(4)**), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(f) The permittee must operate the emergency stationary RICE according to the following requirements. In order for the engine to be considered an emergency stationary RICE under Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in **Condition E14-6(f)(1) through (4)**, is prohibited. If the permittee does not operate the engine according to these requirements, the engine will not be considered an emergency engine under Subpart ZZZZ, and the permittee must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) The permittee may operate each emergency stationary RICE for the purpose specified in **Condition E14-6(f)(2)(i)** for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by **Condition E14-6(f)(3)** counts as part of the 100 hours per calendar year allowed by this condition.

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(3) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in **Condition E14-6(f)(2)**. Except as provided in this condition, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

TAPCR 1200-03-09-.03(8), §63.6640(f), §63.6655(f)

Compliance Method: Pursuant to §63.6655(f), the permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter (**Condition E14-6(e)**). The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

If the engine is used for the purpose specified in **Condition E14-6(f)(4)**, the permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes and must submit an annual report according to the following requirements:

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating in brake hp, year construction of the engine commenced (as defined in §63.2, where the exact year is not known, provide the best estimate), and type of engine (CI, SI 2SLB, SI 4SLB, or SI 4SRB).

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours spent for operation for the purpose specified in **Condition E14-6(f)(4)**, including the date, start time, and end time for engine operation for the purposes specified in **Condition E14-6(f)(4)**. The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(vi) If there were no deviations from the fuel requirements in **Condition E14-6(c)** that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(vii) If there were deviations from the fuel requirements in **Condition E14-6(c)** that apply to the engine (if any), information on the number, duration (in hours), and cause of deviations, and the corrective action taken.

(2) Each annual report must cover the calendar year and must be submitted no later than March 31 of the following calendar year.

(3) Beginning on February 26, 2025, or one year after the report becomes available in CEDRI, whichever is later for all other semiannual or annual reports, submit all semiannual and annual subsequent compliance reports using the appropriate electronic report template on the CEDRI website (https://www.epa.gov/electronic-reporting-air-emissions/cedri) for Subpart ZZZZ and following the procedure specified in §63.9(k), except any CBI must be submitted according to the procedures in §63.6645(h). The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports, the report must be submitted by the deadline specified in Subpart ZZZZ, regardless of the method in which the report is submitted.

TAPCR 1200-03-09-.03(8), §63.6655(f), §63.6650(h) and Table 7 to Subpart ZZZZ

(g) The permittee must report all deviations from Subpart ZZZZ in the semiannual monitoring report required by **Condition E2(a)**. If the permittee submits a compliance report pursuant to **Condition E14-6(f)(4)** along with, or as part of, the semiannual monitoring report required by **Condition E2(a)** and the compliance report includes all required information concerning deviations from any emission or operating limitation in Subpart ZZZZ, submission of the compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority. The permittee must also report each instance in which they did not meet the applicable requirements of 40 CFR 63 Subpart A (**Attachment 5**).

TAPCR 1200-03-09-.03(8), §63.6640(e), §63.6650(f)

(h) All records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1). The permittee must keep each record readily accessible in hard copy or electronic form and must keep each record for five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site.

TAPCR 1200-03-09-.03(8), §63.6660

END OF PERMIT NUMBER 579372

ATTACHMENT 1

OPACITY MATRIX DECISION TREES FOR VISIBLE EMISSION EVALUATION METHOD 9 DATED SEPTEMBER 11, 2013

Decision Tree PM for Opacity for Sources Utilizing EPA Method 9*

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards set forth in the permit. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PM required.*

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

Typical Pollutants
Particulates, VOC, CO, SO_2, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

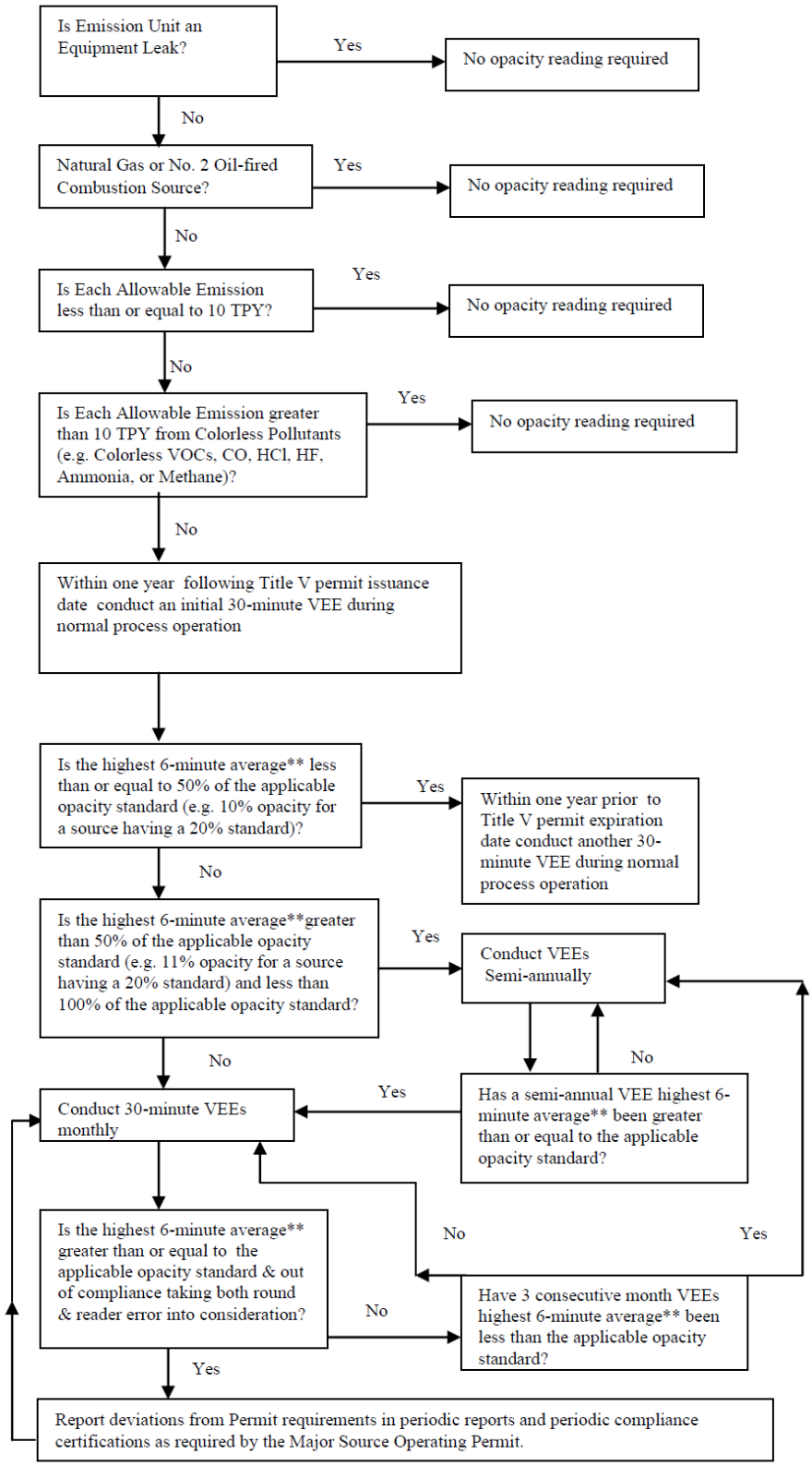
Reader Error
EPA Method 9, Non-NSPS or NESHAPS stipulated opacity standards:
The TAPCD guidance is to declares non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

EPA Method 9, NSPS or NESHAPS stipulate opacity standards:
EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not applicable to Asbestos manufacturing subject to 40 CFR 61.142

**Or second highest six-minute average, if the source has an exemption period stipulated in either the regulations or in the permit.

Dated June 18, 1996
Amended September 11, 2013



ATTACHMENT 2
AGREEMENT LETTERS

MAY-06-'92 WED 14:57 ID:TN H & ENV. APC/SWM TEL NO:615 741 4666 #407 P02

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Air Pollution Control
701 Broadway, Customs House, Nashville, TN 37243-1531

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Tom Dougherty, Plant Manager
APG Industries, Inc., Greenland Plant
PO Box 929
Kingsport, TN 37662

RE: 37-0026-CL ANNUAL EMISSION FEE - REASSESSMENT AGREEMENT

Dear Mr. Dougherty:

Your annual emission fee has been reassessed in accordance with the provisions of Division Rule 1200-3-26-.02(6)(b), per letter dated May 1, 1992. This reassessment will remain in effect providing that you comply with the following limitations at your facility. The following limitation(s) are included in your operating permit(s):

37-0026-01, 02 Material Handling

1) Particulate emitted from this source shall not exceed 2.51 pounds per hour.

2) Visible emissions emitted from this source shall not exceed 20 percent or greater opacity as determined by EPA Method 9, as published in the Federal Register, Volume 39, No. 219 on November 12, 1974. (6 Minute Average)

37-0026-03 Furnace #1

1) Particulate emitted from this source shall not exceed 29.0 pounds per hour.

2) Sulfur dioxide emitted from this source shall not exceed 95.0 pounds per hours.

3) Nitrogen oxides emitted from this source shall not exceed 427.0 pounds per hour.

4) Carbon monoxide emitted from this source shall not exceed 60.0 pounds per hour.

5) Volatile organic compounds emitted from this source shall not exceed 5.0 pounds per hour.

6) Visible emissions emitted from this source shall not exceed 20 percent or greater opacity as determined by EPA Method 9, as published in the Federal Register, Volume 39, No. 219 on November 12, 1974. (6 Minute Average)

CERTIFIED MAIL
AFG Industries, Inc.(37-0026 CL)
Page 2

37-0026-05 Lehr & Cutting Line #2

1) Particulate emitted from this source shall not exceed 1.0 pounds per hour.

2) Visible emissions emitted from this source shall not exceed 20 percent or greater opacity as determined by EPA Method 9, as published in the Federal Register, Volume 39, No. 219 on November 12, 1974. (6 Minute Average)

37-0026-06 Lehr & Cutting Line #1

1) Particulate emitted from this source shall not exceed 1.45 pounds per hour.

2) Visible emissions emitted from this source shall not exceed 20 percent or greater opacity as determined by EPA Method 9, as published in the Federal Register, Volume 39, No. 219 on November 12, 1974. (6 Minute Average)

37-0026-08 Furnace #2

1) Particulate emitted from this source shall not exceed 29.0 pounds per hour.

2) Sulfur dioxide emitted from this source shall not exceed 95.0 pounds per hours.

3) Nitrogen oxides emitted from this source shall not exceed 427.0 pounds per hour.

4) Carbon monoxide emitted from this source shall not exceed 60.0 pounds per hour.

5) Volatile organic compounds emitted from this source shall not exceed 5.0 pounds per hour.

6) Visible emissions emitted from this source shall not exceed 20 percent or greater opacity as determined by EPA Method 9, as published in the Federal Register, Volume 39, No. 219 on November 12, 1974. (6 Minute Average)

37-0026-10 Tin Bath Lines 1 & 2

1) Particulate emitted from each line shall not exceed 0.5 pounds per hour.

2) Sulfur dioxide emitted from each line shall not exceed 2.0 pounds per hours.

3) Visible emissions emitted from each line shall not exceed 20 percent or greater opacity as determined by EPA Method 9, as published in the Federal Register, Volume 39, No. 219 on November 12, 1974. (6 Minute Average)

CERTIFIED MAIL
AFG Industries, Inc.(37-0026 CL)
Page 3

37-0026-21 Sand Unloading

1) Particulate emitted from this source shall not exceed 1.45 pounds per hour.

2) Visible emissions emitted from this source shall not exceed 20 percent or greater opacity as determined by EPA Method 9, as published in the Federal Register, Volume 39, No. 219 on November 12, 1974. (6 Minute Average)

Your annual emission fee has been recalculated on 5449 tons per year of regulated pollutants. The adjusted fee of $24,615.00 is based on the recalculation of allowable emissions for your facility. Your adjusted allowable ton per year emission totals are as follows:

PART	VOC	SO2	NOX	CO	MISC	EXEMPT	TPY TOTALS
289	44	850	3740	526	0	0	5449

RECALCULATED ANNUAL EMISSION FEE

5449 - 526 (CO) = 4923 X $5.00 = $24,615.00 Emission Fee

Please submit the $24,615.00 adjusted annual emission fee by May 15, 1992, and include your company name and reference number (REF), or a copy of this letter with your payment.

In the future, if you wish to increase or change any of the above limitations a construction permit will be required, and your annual emission fee will be reassessed accordingly. All construction permits issued will be subject to any restrictions which apply to new sources at the time.

To signify your agreement to the above limitations, please sign below and return this letter to Vicki L. Lowe, Tennessee Division of Air Pollution Control, Customs House, 701 Broadway, Nashville, TN 37243-1531.

Since we have already received your verbal agreement to the above limitations, the enclosed permit(s) will be valid as of the issue date, provided your signed agreement is received by the Tennessee Division of Air Pollution Control within ten(10) days of its receipt.

CERTIFIED MAIL
AFG Industries, Inc. (37-0026 CL)
Page 4

If you have any questions concerning this agreement or your annual emission fee, please contact Vicki L. Lowe at 615-741-3931. Your cooperation in this matter is greatly appreciated.

Sincerely,

Vicki L. Lowe

for John W. Walton, P.E.
Technical Secretary
Tennessee Air Pollution Control Board

Enclosure

cc: Johnson City Field Office

Mr. Tom Dougherty hereby agrees to the above limitations, in behalf of AFG Industries, Incorporated, and represents that he has the necessary corporate authority to enter into such an agreement.

Signature: Mark Pollitt for Tom Dougherty

Title: Engineering Mgr. Plant Mgr

Date: 5-7-92 5-7-92

600 Cardinal Way Road
Church Hill, TN 37642
423-357-2400 phone
423-357-2476 fax

CARDINAL FG

A CARDINAL GLASS INDUSTRIES COMPANY

August 1, 2024

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Avenue
Nashville, TN 37243

RE: Permit Agreement Letter
Cardinal FG Greenland
600 Cardinal Way, Church Hill, TN 37642
Emission Source Reference No. 37-0026-03,08 / Permit No. 570858

Dear Ms. Kefauver:

On behalf of Cardinal FG Greenland, the following permitted emission limitations are agreed upon for Glass Melting Furnace No. 1 (G1) (37-0026-03) and Glass Melting Furnace No. 2 (G2) (37-0026-08), located at the above-referenced facility. The limits listed below are consistent with the requirements in the facility's current Title V permit (Permit No. 570858), except for carbon monoxide (CO). This updated agreement letter is being submitted as requested by TDEC as part of construction permit application processing for a construction permit originally submitted to TDEC on September 19, 2023 to resolve the historical omission of CO emission limits and compliance demonstrations for G2 in the facility's Title V permit.

Glass Melting Furnace No. 1 (G1) (37-0026-03)		**Reference:**
Particulate matter (PM):	Controlled: 9.12 pounds per hour on a daily average basis Uncontrolled: 27.71 pounds per hour on a daily average basis Annual: 34.12 tons per all intervals of 12 consecutive months	Permit 570858, Condition E7-3
Volatile organic compounds (VOC):	11.86 tons per 12-consecutive months	Permit 570858, Condition E7-4
Sulfur dioxide (SO2):	Controlled: 32.5 pounds per hour on a daily average basis and 148.59 tons per 12-consecutive months Uncontrolled: 75.82 pounds per hour on a daily average basis	Permit 570858, Condition E7-5
Nitrogen oxides (NOx):	Controlled: 216.7 pounds per hour on a daily average basis Uncontrolled: 514 pounds per hour on a daily average basis Annual: 544.70 tons per 12-consecutive months	Permit 570858, Condition E7-6
Carbon monoxide (CO):	287.07 tons per 12-consecutive months	Permit 570858, Condition E7-7
Hazardous air pollutants (HAP):	9.0 tons single PM-HAPs per 12-consecutive months 24 tons all PM-HAPs per 12-consecutive months	Permit 570858, Condition E7-8

Glass Melting Furnace No. 2 (G2) (37-0026-08)		**Reference:**
Particulate matter (PM):	29.0 pounds per hour on a daily average basis	Permit 570858, Condition E10-1
Volatile organic compounds (VOC):	5.0 pounds per hour on a daily average basis	Permit 570858, Condition E10-4
Sulfur dioxide	95.0 pounds per hour on a daily average basis	Permit 570858,

600 Cardinal Way Road
Church Hill, TN 37642
423-357-2400 phone
423-357-2476 fax

CARDINAL FG
A CARDINAL GLASS INDUSTRIES COMPANY

(SO2):		Condition E10-2
Nitrogen oxides (NOx):	427.0 pounds per hour on a daily average basis	Permit 570858, Condition E10-3
Carbon monoxide (CO):	60.0 pounds per hour on a daily average basis	Proposed limit based on Permit 546485, Condition E28

Cardinal FG Greenland shall demonstrate compliance with these limitations as noted in the table below, consistent with requirements in the facility's current Title V permit.

Glass Melting Furnace No. 1 (G1) (37-0026-03)		**Reference:**
Particulate matter (PM):	Calculated and recorded in a log for hourly emissions on a daily average basis, monthly emissions, and emissions per 12-consecutive months using glass pull rate and the following emission factors based on 1/16/2013 (controlled) and 1998 (uncontrolled) performance tests: • Clear Controlled: 0.21 lb/ton of glass pulled • Clear Uncontrolled: 0.59 lb/ton of glass pulled • Bronze Controlled: 0.35 lb/ton of glass pulled (overdoping) and 0.28 lbs/ton of glass pulled (steady addition) • Bronze Uncontrolled: 1.06 lb/ton of glass pulled (overdoping) and 0.83 lbs/ton of glass pulled (steady addition) • Gray Controlled: 0.34 lb/ton of glass pulled (overdoping) and 0.275 lbs/ton of glass pulled (steady addition) • Gray Uncontrolled: 1.04 lb/ton of glass pulled (overdoping) and 0.815 lbs/ton of glass pulled (steady addition)	Permit 570858, Condition E7-3, Table 1
Volatile organic compounds (VOC):	Calculated and recorded in a log using glass pull rate and the following emission factors from AP-42, Table 11.15-2: • 0.1 lb/ton of glass pulled	Permit 570858, Condition E7-4
Sulfur dioxide (SO2):	Continuous emission monitoring system (CEMS)	Permit 570858, Condition E7-5
Nitrogen oxides (NOx):	Continuous emission monitoring system (CEMS)	Permit 570858, Condition E7-6
Carbon monoxide (CO):	Calculated and recorded in a log using glass pull rate and the following emission factors based on 1/16/2013 performance test: • 0.16 lb/ton of glass pulled	Permit 570858, Condition E7-7

Hazardous air pollutants (HAP):	Calculated and recorded in a log using glass pull rate and the following emission factors from 1/28/2015 agreement letter:
	• Bronze Controlled:
	  ○ SeO2: 0.14 lb/ton of glass pulled (overdoping) and 0.07 lbs/ton of glass pulled (steady addition)
	  ○ Co3O3: 0.001 lb/ton of glass pulled (overdoping) and 0.0005 lbs/ton of glass pulled (steady addition)
	• Bronze Uncontrolled:
	  ○ SeO2: 0.46 lb/ton of glass pulled (overdoping) and 0.23 lbs/ton of glass pulled (steady addition)
		Permit 570858, Condition E7-8, Table 2

600 Cardinal Way Road
Church Hill, TN 37642
423-357-2400 phone
423-357-2476 fax

CARDINAL FG
A CARDINAL GLASS INDUSTRIES COMPANY

	○ Co3O3: 0.01 lb/ton of glass pulled (overdoping) and 0.005 lbs/ton of glass pulled (steady addition) • Gray Controlled: ○ SeO2: 0.13 lb/ton of glass pulled (overdoping) and 0.06 lbs/ton of glass pulled (steady addition) ○ Co3O3: 0.002 lb/ton of glass pulled (overdoping) and 0.001 lbs/ton of glass pulled (steady addition) • Gray Uncontrolled: ○ SeO2: 0.43 lb/ton of glass pulled (overdoping) and 0.21 lbs/ton of glass pulled (steady addition) ○ Co3O3: 0.02 lb/ton of glass pulled (overdoping) and 0.01 lbs/ton of glass pulled (steady addition)	

Glass Melting Furnace No. 2 (G2) (37-0026-08)		**Reference:**
Particulate matter (PM):	Calculated and recorded in a log using glass pull rate and the following emission factors based on 9/22/1998 performance test: • 0.57 lb/ton glass pulled	Permit 570858, Condition E10-1
Volatile organic compounds (VOC):	Calculated and recorded in a log using glass pull rate and the following emission factors from AP-42, Table 11.15-2: • 0.1 lb/ton of glass pulled	Permit 570858, Condition E10-4
Sulfur dioxide (SO2):	Calculated and recorded in a log using glass pull rate and the following emission factors based on 9/22/1998 performance test: • 2.8 lb/ton glass pulled	Permit 570858, Condition E10-2
Nitrogen oxides (NOx):	Calculated and recorded in a log using glass pull rate and the following emission factors based on 9/22/1998 performance test: • 15.24 lb/ton glass pulled	Permit 570858, Condition E10-3
Carbon monoxide (CO):	Calculated and recorded in a log using glass pull rate and the following emission factors based on 9/22/1998 performance test: • 0.81 lb/ton glass pulled	Proposed compliance demonstration

On behalf of Cardinal FG Greenland, I agree to the above limitations. I am authorized to represent and bind the facility in environmental affairs.

Signature: _____

Name (printed): Shaun Banner

Title: Plant Manager

Date: 7/1/24

CARDINAL GLASS INDUSTRIES INC.
Shaun Banner
Greenland Plant Manager

cc: Jamie Smith, Director of Environmental Compliance
Butch Hatcher, Greenland EH&S Manager
John Peterson, Greenland G1 Technical Manager
Greenland Environmental Compliance File

ATTACHMENT 3
COMPLIANCE ASSURANCE MONITORING (CAM) PLANS

Compliance Assurance Monitoring General Requirements

The following requirements apply to all pollutant-specific emissions units subject to 40 CFR Part 64.

Commencement of monitoring: The owner or operator shall conduct the monitoring required under this part upon issuance of a Title V permit that includes such monitoring, or by such later date specified in the permit. If the monitoring proposed by the owner or operator requires installation, testing or final verification of operational status, the Title V permit shall include an enforceable schedule with appropriate milestones for completing such installation, testing, or final verification consistent with the requirements in § 64.4(e)[6]. 40 CFR §§64.6(d) and 64.7(a)

Proper maintenance: At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. 40 CFR §64.7(b)

Continued operation: Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR §64.7(c)

Response to excursions or exceedances: Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. §64.7(d)

Documentation of need for improved monitoring: The owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the Title V permit to address necessary monitoring changes if either of the following circumstances occur:

(1) The owner or operator identifies a failure to comply with an emission limitation or standard, for which the monitoring provided valid data but did not indicate an excursion or exceedance; or

(2) The results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions.

The permit modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. §64.7(e)

Minimum data availability: The permit shall specify, if appropriate, a minimum data availability requirement for valid data collection for each averaging period, and, if appropriate, a minimum data availability requirement for the averaging periods in a reporting period. Pursuant to TAPCR 1200-03-10-.04(2)(a)2, the monitoring methods subject to 40 CFR Part 64 must have at least a 95% operational availability rate to prove compliance directly or indirectly with the applicable requirements unless otherwise stipulated by the Technical Secretary in the permit. Missing data in excess of these levels shall be grounds for enforcement action. 40 CFR §64.6(c)(4), TAPCR 1200-03-10-.04(2)(a)2.

[6] If the monitoring requires installation, testing, or other necessary activities prior to use of the monitoring, the owner or operator shall include an implementation plan and schedule for installing, testing and performing any other appropriate activities prior to use of the monitoring. The implementation plan and schedule shall provide for use of the monitoring as expeditiously as practicable after approval of the monitoring, but in no case shall the schedule for installation and operation exceed 180 days after approval of the permit.

Quality Improvement Plan (QIP): Based on the results of a determination made under §64.7(d)(2)[7], the EPA Administrator or the permitting authority may require the owner or operator to develop and implement a QIP. The permittee shall comply with the provisions of §64.8 upon written notice from the Technical Secretary. 40 CFR §64.8.

Reporting requirements: On and after the date by which the owner or operator must commence monitoring, the owner or operator shall submit monitoring reports to the permitting authority in accordance with **Condition E2(a)** of this permit. At a minimum, the report shall include the information required under §70.6(a)(3)(iii)[8] and the following information, as applicable:

(1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

(3) A description of any actions taken to implement a QIP during the reporting period.

40 CFR §64.9(a)

Recordkeeping requirements: The owner or operator shall comply with the recordkeeping requirements specified in §70.6(a)(3)(ii)[9]. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement the plan, and other supporting information (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Instead of paper records, the owner or operator may maintain records on alternative media, provided that the use of alternative media allows for expeditious inspection and review and does not conflict with other applicable recordkeeping requirements. 40 CFR §64.9(b).

[7] Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

[8] With respect to reporting, the permit shall incorporate all applicable reporting requirements and require the following: (A) Submittal of reports of any required monitoring at least every 6 months. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with § 70.5(d) of this part. (B) Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The permitting authority shall define "prompt" in relation to the degree and type of deviation likely to occur and the applicable requirements.

[9] The permit shall incorporate all applicable recordkeeping requirements and require, where applicable, the following: (1) the date, place as defined in the permit, and time of sampling or measurements; (2) the date(s) analyses were performed; (3) the company or entity that performed the analyses; (4) the analytical techniques or methods used; (5) the results of such analyses; and (6) the operating conditions as existing at the time of sampling or measurement. The permit shall require retention of records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

<table>
<tr><th colspan="2">CAM Plan: 37-0026-01</th></tr>
<tr><td>Stack or Flow Diagram Points</td><td>Vents N-645, N-645 A, N-645 B, N-689 A, N-689 B, N-689 C, N-689 D, N-689 E, N-689 F, N-689 G, N-689 H, N-689 I, N-688 A, N-688 B, and N-688 C.</td></tr>
<tr><td>Pollutant</td><td>PM</td></tr>
<tr><td>Description of Monitoring Protocol</td><td>Source 01 includes fifteen dust collectors, which operate under negative pressure and exhaust inside the batch house building, and one dust collector on the salt cake storage bin (N-690).

The key operating parameters that indicate fabric filter performance are pressure drop and visible emissions. Dust collectors are designed to operate at a relatively constant pressure drop, and when the dust collectors are operating properly, there will be no visible emissions from the dust collectors or the building. A decrease in pressure drop or an increase invisible emissions may indicate problems such as holes, tears or missing, broken, or loose filters. The pressure drop across the dust collectors also serves to indicate that there is air flow through each control device.</td></tr>
<tr><td>Equipment and Installation</td><td>The pressure drop across each dust collector will be measured with a differential pressure gauge. Pressure taps are located at the dust collector inlet and outlet. Analog pressure gauges shall have minimum graduations of 0.2 inches H_2O and have a minimum accuracy of 0.2 inches H_2O when compared to a calibration standard.

Method 22 readings will be performed at the following Batch House emission points:
North side, 3rd floor: door and double door;
North side, 6th floor: air intake fan;
South side, 3rd floor: two doors and double door;
South side, 4th floor: double door;
South side, 5th floor: door;
South side, 6th floor: door and air intake fan; and
Roof: door.</td></tr>
<tr><td>Measurement Frequency</td><td>Pressure drop across each dust collector will be measured with a differential pressure gauge. Visible emissions from the Batch House building will be monitored twice per week using EPA Method 22 (six-minute reading at each emission point).</td></tr>
<tr><td>Indicators</td><td>The following indicators are established:

1. Minimum pressure drop reading for each dust collector, as indicated in the following table.

<table>
<tr><th>Baghouse</th><th>Minimum Pressure Drop (inches of water)</th></tr>
<tr><td>N-688A</td><td>3.5</td></tr>
<tr><td>N-688B</td><td>5.0</td></tr>
<tr><td>N-688C</td><td>4.0</td></tr>
<tr><td>N-689A</td><td>4.0</td></tr>
<tr><td>N-645</td><td>2.0</td></tr>
<tr><td>N-645A</td><td>1.5</td></tr>
<tr><td>N-645B</td><td>3.0</td></tr>
<tr><td>N-689B</td><td>2.0</td></tr>
<tr><td>N-689C</td><td>1.5</td></tr>
<tr><td>N-689D</td><td>1.5</td></tr>
<tr><td>N-689E</td><td>1.5</td></tr>
<tr><td>N-689F</td><td>1.5</td></tr>
<tr><td>N-689G</td><td>1.5</td></tr>
<tr><td>N-689H</td><td>1.5</td></tr>
<tr><td>N-689I</td><td>1.5</td></tr>
</table>

2. Visual determination of fugitive emissions using EPA Method 22 (six-minute reading).</td></tr>
</table>

CAM Plan: 37-0026-01	
	An excursion is defined as: (1) any pressure drop reading below the minimum value established for each dust collector; or (2) the presence of visible emissions observed during any Method 22 reading. All excursions and all corrective actions shall be documented in the facility's daily records, and corrective action shall be initiated to identify and correct the cause of the deviation. All excursions shall be reported as deviations in the semiannual report required by **Condition E2(a)**. For lower pressure drop reading(s) resulting from the replacement of bags, the facility will record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of the bags.
Recordkeeping	Pressure drop readings shall be recorded once per day in a written or electronic log. Visual determinations of fugitive emissions shall be documented in accordance with Method 22.
QA/QC Practices	Pressure gauges will be calibrated annually according to manufacturer specifications. Pressure taps will be checked for plugging monthly during routine maintenance. To ensure that visual determinations are properly conducted and documented, the observer will be familiar with the requirements of Method 22.

CAM Plan: 37-0026-03	
Stack or Flow Diagram Points	Glass Melting Furnace G1
Pollutant	PM
Description of Monitoring Protocol	Glass Melting Furnace G1 uses a ceramic filter system for control of PM emissions. The ceramic filter leak monitor operates using the principles of frictional electrification (triboelectricity) and charge transfer or induction. As particles in the exhaust gas stream collide with the sensor rod mounted in the exhaust duct, an electrical charge is transferred, generating a small current that is measured and amplified by the triboelectric monitor. With induction monitors, as particles flow over a sensing probe, a charge is induced into the probe creating small currents in the picoamp (pA) range, and the signal is processed into an output proportional to mass. The signal produced by the triboelectric monitor is generally proportional to the particulate mass flow, and an increase in the triboelectric signal indicates an increase in particulate emissions from the ceramic filter. A trend of increasing readings indicates a reduction in the efficiency of the filter.
Equipment and Installation	A triboelectric or equivalent induction monitor is installed in the filter exhaust duct, and an alarm is triggered when the signal remains over a preset limit for one minute to indicate a potential leak or failure of the ceramic filter.
Measurement Frequency	The triboelectric signal shall be continuously monitored.
Indicators	The following indicator is established: triboelectric signal of greater than 300 picoamps for one minute triggers an alarm. An excursion is defined as a signal greater than two times the reading established during the cleaning cycle in leak-free operation which is confirmed not to be the result of a false alarm.
Recordkeeping	The output from the leak detection system shall be stored electronically as one-minute averages.
QA/QC Practices	The probes are factory-calibrated and there are no manufacturer-recommended QA/QC activities. Proper operation of the probes shall be checked weekly via signal trend review. The triboelectric probes are sensitive to changes in temperature and can be damaged or destroyed by thermal shock when pulled. To avoid damage, proper operation of the probe is remotely monitored daily, and the signal trend is used to determine if there has been a condition change. If a condition change is detected by the trend analysis, an inspection of the baghouse is performed. If no issues are found during the visual inspection of the baghouse filters and the probe continues to report readings outside the normal trend the probe is replaced. Removed probes are sent to the manufacturer for repairs or replacement[10].

[10] March 7, 2024, e-mail from Lucas Hughes, Cardinal FG, to Candace Justice, TDEC APC.

ATTACHMENT 4
APPLICABILITY OF NSPS GENERAL PROVISIONS
(40 CFR 60 SUBPART A)

NSPS General Provisions Applicability to 40 CFR 60 Subpart IIII			
General provisions citation	**Subject of citation**	**Applies to subpart**	**Explanation**
§60.1	General applicability of the General Provisions	Yes ☒ No ☐	
§60.2	Definitions	Yes ☒ No ☐	Additional terms defined in §60.4219.
§60.3	Units and abbreviations	Yes ☒ No ☐	
§60.4	Address	Yes ☒ No ☐	
§60.5	Determination of construction or modification	Yes ☒ No ☐	
§60.6	Review of plans	Yes ☒ No ☐	
§60.7	Notification and Recordkeeping	Yes ☒ No ☐	Except that §60.7 only applies as specified in §60.4214(a).
§60.8	Performance tests	Yes ☒ No ☐	Except that §60.8 only applies to stationary CI ICE with a displacement of ≥30 liters per cylinder and engines that are not certified.
§60.9	Availability of information	Yes ☒ No ☐	
§60.10	State Authority	Yes ☒ No ☐	
§60.11	Compliance with standards and maintenance requirements	Yes ☐ No ☒	Requirements are specified in Subpart IIII.
§60.12	Circumvention	Yes ☒ No ☐	
§60.13	Monitoring requirements	Yes ☒ No ☐	Except that §60.13 only applies to stationary CI ICE with a displacement of ≥30 liters per cylinder.
§60.14	Modification	Yes ☒ No ☐	
§60.15	Reconstruction	Yes ☒ No ☐	
§60.16	Priority list	Yes ☒ No ☐	
§60.17	Incorporations by reference	Yes ☒ No ☐	
§60.18	General control device requirements	Yes ☐ No ☒	
§60.19	General notification and reporting requirements	Yes ☒ No ☐	

ATTACHMENT 5
APPLICABILITY OF NESHAP GENERAL PROVISIONS (40 CFR 63 SUBPART A)

NESHAP General Provisions Applicability to 40 CFR 63 Subpart ZZZZ			
General Provisions Citation	**Subject of Citation**	**Applies to Subpart**	**Explanation**
§63.1	Applicability	Yes ☒ No ☐	
§63.2	Definitions	Yes ☒ No ☐	Additional terms defined in §63.6675.
§63.3	Units and Abbreviations	Yes ☒ No ☐	
§63.4	Prohibited Activities and Circumvention	Yes ☒ No ☐	
§63.5	Preconstruction Review and Notification Requirements	Yes ☒ No ☐	
§63.6(a), (b), (c)	Compliance with Standards and Maintenance Requirements—Applicability Compliance Dates	Yes ☒ No ☐	
§63.6(e)	Operation and Maintenance Requirements	Yes ☐ No ☒	
§63.6(f)(1)	Applicability of standards	Yes ☐ No ☒	
§63.6(f)(2)	Methods for determining compliance	Yes ☒ No ☐	
§63.6(f)(3)	Finding of compliance	Yes ☒ No ☐	
§63.6(g)(1)-(3)	Use of alternate standard	Yes ☒ No ☐	
§63.6(h)	Opacity and visible emission standards	Yes ☐ No ☒	Subpart ZZZZ does not contain opacity or visible emission standards.
§63.6(i)	Compliance extension procedures and criteria	Yes ☒ No ☐	
§63.6(j)	Presidential compliance exemption	Yes ☒ No ☐	
§63.7(a)(1)-(2)	Performance test dates	Yes ☒ No ☐	Subpart ZZZZ contains performance test dates at §§63.6610, 63.6611, and 63.6612.
§63.7(a)(3)	CAA section 114 authority	Yes ☒ No ☐	
§63.7(b)(1)	Notification of performance test	Yes ☒ No ☐	Except that §63.7(b)(1) only applies as specified in §63.6645.
§63.7(b)(2)	Notification of rescheduling	Yes ☒ No ☐	Except that §63.7(b)(2) only applies as specified in §63.6645.
§63.7(c)	Quality assurance/test plan	Yes ☒ No ☐	Except that §63.7(c) only applies as specified in §63.6645.
§63.7(d)	Testing facilities	Yes ☒ No ☐	
§63.7(e)(1)	Conditions for conducting performance tests	Yes ☐ No ☒	Subpart ZZZZ specifies conditions for conducting performance tests at §63.6620.
§63.7(e)(2)	Conduct of performance tests and reduction of data	Yes ☒ No ☐	Subpart ZZZZ specifies test methods at §63.6620.
§63.7(e)(3)	Test run duration	Yes ☒ No ☐	
§63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes ☒ No ☐	
§63.7(f)	Alternative test method provisions	Yes ☒ No ☐	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes ☒ No ☐	
§63.7(h)	Waiver of tests	Yes ☒ No ☐	
§63.8(a)(1)	Applicability of monitoring requirements	Yes ☒ No ☐	Subpart ZZZZ contains specific requirements for monitoring at §63.6625.
§63.8(a)(2)	Performance specifications	Yes ☒ No ☐	

NESHAP General Provisions Applicability to 40 CFR 63 Subpart ZZZZ			
General Provisions Citation	**Subject of Citation**	**Applies to Subpart**	**Explanation**
§63.8(a)(4)	Monitoring for control devices	Yes ☐ No ☒	
§63.8(b)(1)	Monitoring	Yes ☒ No ☐	
§63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes ☒ No ☐	
§63.8(c)(1)	Monitoring system operation and maintenance	Yes ☒ No ☐	
§63.8(c)(1)(i)	Routine and predictable SSM	Yes ☐ No ☒	
§63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes ☒ No ☐	
§63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	Yes ☐ No ☒	
§63.8(c)(2)-(3)	Monitoring system installation	Yes ☒ No ☐	
§63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes ☒ No ☐	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§63.8(c)(5)	COMS minimum procedures	Yes ☐ No ☒	Subpart ZZZZ does not require COMS.
§63.8(c)(6)-(8)	CMS requirements	Yes ☒ No ☐	Except that subpart ZZZZ does not require COMS.
§63.8(d)	CMS quality control	Yes ☒ No ☐	
§63.8(e)	CMS performance evaluation	Yes ☒ No ☐	Except for §63.8(e)(5)(ii), which applies to COMS. Except that §63.8(e) only applies as specified in §63.6645.
§63.8(f)(1)-(5)	Alternative monitoring method	Yes ☒ No ☐	Except that §63.8(f)(4) only applies as specified in §63.6645.
§63.8(f)(6)	Alternative to relative accuracy test	Yes ☒ No ☐	Except that §63.8(f)(6) only applies as specified in §63.6645.
§63.8(g)	Data reduction	Yes ☒ No ☐	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§63.6635 and 63.6640.
§63.9(a)	Applicability and State delegation of notification requirements	Yes ☒ No ☐	
§63.9(b)(1)-(5)	Initial notifications	Yes ☒ No ☐	Except that §63.9(b)(3) is reserved. Except that §63.9(b) only applies as specified in §63.6645.
§63.9(c)	Request for compliance extension	Yes ☒ No ☐	Except that §63.9(c) only applies as specified in §63.6645.
§63.9(d)	Notification of special compliance requirements for new sources	Yes ☒ No ☐	Except that §63.9(d) only applies as specified in §63.6645.
§63.9(e)	Notification of performance test	Yes ☒ No ☐	Except that §63.9(e) only applies as specified in §63.6645.
§63.9(f)	Notification of visible emission (VE)/opacity test	Yes ☐ No ☒	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(1)	Notification of performance evaluation	Yes ☒ No ☐	Except that §63.9(g) only applies as specified in §63.6645.
§63.9(g)(2)	Notification of use of COMS data	Yes ☐ No ☒	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes ☒ No ☐	If alternative is in use. Except that §63.9(g) only applies as specified in §63.6645.

NESHAP General Provisions Applicability to 40 CFR 63 Subpart ZZZZ			
General Provisions Citation	**Subject of Citation**	**Applies to Subpart**	**Explanation**
§63.9(h)(1)-(6)	Notification of compliance status	Yes ☒ No ☐	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved. Except that §63.9(h) only applies as specified in §63.6645.
§63.9(i)	Adjustment of submittal deadlines	Yes ☒ No ☐	
§63.9(j)	Change in previous information	Yes ☒ No ☐	
§63.9(k)	Electronic reporting procedures	Yes ☒ No ☐	Only as specified in §§63.9(j), 63.6620, 63.6625, 63.6645, and 63.6650.
§63.10(a)	Administrative provisions for recordkeeping/reporting	Yes ☒ No ☐	
§63.10(b)(1)	Record retention	Yes ☒ No ☐	Except that the most recent 2 years of data do not have to be retained on site.
§63.10(b)(2)(i)-(v)	Records related to SSM	Yes ☐ No ☒	
§63.10(b)(2)(vi)-(xi)	Records	Yes ☒ No ☐	
§63.10(b)(2)(xii)	Record when under waiver	Yes ☒ No ☐	
§63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes ☒ No ☐	For CO standard if using RATA alternative.
§63.10(b)(2)(xiv)	Records of supporting documentation	Yes ☒ No ☐	
§63.10(b)(3)	Records of applicability determination	Yes ☒ No ☐	
§63.10(c)	Additional records for sources using CEMS	Yes ☒ No ☐	Except that §63.10(c)(2)-(4) and (9) are reserved.
§63.10(d)(1)	General reporting requirements	Yes ☒ No ☐	
§63.10(d)(2)	Report of performance test results	Yes ☒ No ☐	
§63.10(d)(3)	Reporting opacity or VE observations	Yes ☐ No ☒	Subpart ZZZZ does not contain opacity or VE standards.
§63.10(d)(4)	Progress reports	Yes ☒ No ☐	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	Yes ☐ No ☒	
§63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes ☒ No ☐	
§63.10(e)(2)(ii)	COMS-related report	Yes ☐ No ☒	Subpart ZZZZ does not require COMS.
§63.10(e)(3)	Excess emission and parameter exceedances reports	Yes ☐ No ☒	Excess emissions and exceedance reporting is specified in §63.6650.
§63.10(e)(4)	Reporting COMS data	Yes ☐ No ☒	Subpart ZZZZ does not require COMS.
§63.10(f)	Waiver for recordkeeping/reporting	Yes ☒ No ☐	
§63.11	Control Device Requirements	Yes ☐ No ☒	
§63.12	State Authorities and Delegations	Yes ☒ No ☐	
§63.13	Addresses	Yes ☒ No ☐	
§63.14	Incorporations by Reference	Yes ☒ No ☐	
§63.15	Availability of Information and Confidentiality	Yes ☒ No ☐	
§63.16	Performance Track Provisions	Yes ☒ No ☐	

ATTACHMENT 6
TITLE V FEE SELECTION FORM APC 36 (CN-1583)

DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
Davy Crockett Tower, 7th Floor
500 James Robertson Parkway, Nashville, TN 37243
Telephone: (615) 532-0554, Email: Air.Pollution.Control@TN.gov

TITLE V FEE SELECTION

Type or print and submit to the email address above.

FACILITY INFORMATION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)]

2. Site name (if different from legal name)

3. Site address (St./Rd./Hwy.)	County name
City	Zip code

4. Emission source reference number	**5.** Title V permit number

FEE SELECTION

This fee selection is effective beginning January 1, _____. When approved, this selection will be effective until a new Fee Selection form is submitted. Fee Selection forms must be submitted on or before December 31 of the annual accounting period.

6. Payment Schedule (choose one):

Calendar Year Basis (January 1 – December 31) ☐ Fiscal Year Basis (July 1 – June 30) ☐

7. Payment Basis (choose one):

Actual Emissions Basis ☐ Allowable Emissions Basis ☐ Combination of Actual and Allowable Emissions Basis ☐

8. If Payment Basis is "Actual Emissions" or "Combination of Actual and Allowable Emissions", complete the following table for each permitted source and each pollutant for which fees are due for that source. See instructions for further details.

Source ID	Pollutant	Allowable or Actual Emissions	If allowable emissions: Specify condition number and limit. If actual emissions: Describe calculation method and provide example. Provide condition number that specifies method, if applicable.

8. (Continued)

Source ID	Pollutant	Allowable or Actual Emissions	If allowable emissions: Specify condition number and limit. If actual emissions: Describe calculation method and provide example. Provide condition number that specifies method, if applicable.

CONTACT INFORMATION (BILLING)

9. Billing contact			Phone number with area code
Mailing address (St./Rd./Hwy.)			Fax number with area code
City	State	Zip code	**Email address**

SIGNATURE BY RESPONSIBLE OFFICIAL

Based upon information and belief formed after reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in the submittal is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

10. Signature		Date
Signer's name (type or print)	**Title**	Phone number with area code

Statement of Basis for Draft/Proposed Title V Operating Permit 579372

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

FACILITY CATEGORY

This facility is a major source of emissions for Title V applicability and a major stationary source for PSD applicability. The facility-wide potential-to-emit (PTE) of particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), and nitrogen oxides (NO_X) is at or above the Prevention of Significant Deterioation (PSD) and Title V major source thresholds[1]. The PSD applicability threshold for this facility is 250 tons/year because it is not one of the 28 listed source categories in the PSD regulations. This facility is a synthetic minor source of hazardous air pollutant (HAP) emissions.

FACILITY DESCRIPTION

Cardinal manufactures soda-lime flat glass at its Church Hill Plant. The manufacture of soda lime glass occurs in four phases: preparation of material, melting in a furnace, forming, and finishing. Raw materials including sand, soda ash, dolomite, limestone, and cullet (broken glass for recycling) are received and stored in silos and bins. The materials are weighed and mixed to a specific recipe and the batch is conveyed to the melting furnaces. The Church Hill plant has two natural gas-fired, side-port regenerative melting furnaces for soda lime float glass production, Glass Production Furnaces G1 and G2. Flat glass production begins when the molten glass is carefully added to the top of a bath of molten tin over which the glass is drawn and formed. After the glass leaves the tin bath, it enters the lehr (a temperature-controlled kiln for annealing glass)[2]. A portion of the glass produced may also receive a low emissivity (low-E) coating to improve the insulating quality of the glass. The glass is then cut to size to produce the finished product.

PROJECT DESCRIPTION

Cardinal FG is requesting a Title V Operating Permit renewal. The facility is also subject to construction permit 981790, issued August 2, 2024, for modification of existing emission sources 37-0026-03 (Glass Production Furnace No. 1) and 37-0026-08 (Glass Production Furnace No. 2). Cardinal FG must apply for a Title V modification to incorporate the requirements of permit 981790 into the Title V permit following startup of the modified emission sources.

COMPLIANCE STATUS

1. This facility is located in an attainment area for all criteria pollutants.

2. The date of the last inspection occurred on March 13, 2024. The facility was in compliance with the applicable requirements of the permit, and no violations of permit conditions were observed.

3. The facility is current on Title V fees as of November 21, 2025.

COLLOCATION DETERMINATION

Collocation is not applicable to this facility.

PUBLIC NOTICE

1 Volatile organic compounds (VOC) emissions are greater than 100 tons/year but less than 250 tons/year.

2 Rapid cooling of molten glass generates an uneven temperature distribution in the body of the glass, and the resulting mechanical stress is sufficient to cause cracking before the object has reached ambient temperature, or to increase susceptibility to cracking in later use. To prevent this, objects manufactured from molten glass are annealed by cooling gradually in a lehr from a temperature just below the solidification point of the glass.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

This Title V Renewal will undergo a 30-day public notice period and a 45-day EPA comment period in accordance with TAPCR 1200-03-09-.02(11). The notice was published on the TDEC website on February 13, 2026.

ADDITIONAL PUBLIC PARTICIPATION

This section will be completed following the end of the public comment period:

There were no public/epa comments for this permit.

There were comments on this permit as follows: (include any comments from the public/EPA)

A public hearing was held for this permit on <date>.

A public meeting was held for this permit on <date>.

Permit Registry notification: not applicable to Hawkins County.

Table 1A: **FACILITY EMISSION SOURCES**

Source Number	Source Description	Permitted	Exempt or Insignificant	PBR
01	Batch House Handling of Raw Materials	X		
02	Plant Buildings	X		
03	Glass Melting Furnace No. 1	X		
05	Annealing Lehr and Cutting Section of Float Glass Line No. 2	X		
06	Annealing Lehr and Cutting Section of Float Glass Line No. 1	X		
08	Glass Melting Furnace No. 2	X		
10	Tin Bath No. 1 of Float Glass Line No. 1	X		
11	Glass Tempering Process (HT-3)	X		
21	Truck Unloading of Raw Materials	X		
24	Tin Bath No. 2 of Float Glass Line No. 2	X		
26	Emergency Engines[3]	X	X	
27	1,490 hp Cummins Emergency Engine		X	
28	1,490 hp Cummins Emergency Engine		X	
31	1,494 hp Kohler Generator #3		X	
N/A	Ground water remediation system (PCE emissions)		X	
N/A	Adipic Acid Application		X	
N/A	Cullet Storage Piles		X	

3 Source 26 includes four permitted emergency engines and one insignificant emergency engine.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

Source Number	Source Description	Permitted	Exempt or Insignificant	PBR
N/A	Cullet Silos/Bins		X	
N/A	Cullet Hauling and Dumping		X	
N/A	Storage Tank (AST)		X	
N/A	330-gallon Kerosene AST		X	
N/A	Automatic Glass Stackers		X	
N/A	Batch Component Mixing		X	
N/A	Ammonia Tank 1		X	
N/A	Ammonia Tank 2		X	
N/A	SO_2 Injection in Tempering		X	
N/A	7,500-gallon vertical diesel Tank 1		X	
N/A	7,500-gallon vertical diesel Tank 2		X	
N/A	550-gallon diesel dispensing tank		X	
N/A	550-gallon gasoline dispensing tank [4]		X	

Table 1B: **CHANGES SINCE LAST PERMIT ISSUANCE**

Description	Date
Source 26 (Emergency Engines) was modified to add an 890 hp compression ignition engine and a 55 hp spark ignition engine. Minor Modification #1 to Title V permit 570858.	2/27/2018
Source 26 (Emergency Engines) was modified to remove 55 hp and 85 hp spark ignition natural gas-fired emergency engines. These units qualify as insignificant activities based upon the revision of TAPCR 1200-03-09-.04(5)(c) and the addition of TAPCR 0400-30-38-.01(2), 0400-30-39-.01(2) and .02(2). Source 29 (Shot Blasting Operation) and Source 30 (Low-E Glass Sputter Coating Operation) were modified to designated Source 30 as an insignificant emissions unit. Minor Modification #2 to Title V permit 570858.	3/15/2019
Facility-wide requirements were updated to remove the accidental release plan requirement in Condition E3-9. AGC is not subject to the accidental release plan requirements of CAA §112(r) because the facility does not store regulated substances above threshold quantity of 10,000 lb. Minor Modification #3 to Title V permit 570858.	7/15/2019
Source 03 (Glass Melting Furnace No. 1) and Source 08 (Glass Melting Furnace No. 2) were modified to upgratde the existing multimedia control device system on Glass Melting Furnace No. 1 to achieve higher control efficiencies and and to install a new multimedia control system on Glass Melting Furnace No. 2. Construction permit 981790.	8/2/2024

4 The application identifies this tank as subject to 40 CFR 63 Subpart CCCCCC, but the exemption at TAPCR 1200-03-09-.04(5)(f)17 still applies.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

REGULATORY APPLICABILITY REVIEW

Regulations	Comments/ Requirements (Monitoring/Recordkeeping/Reporting/Testing)
Chapter 6 TAPCR 1200-03-06-.02(2)	**Applicable:** This facility has internal combustion engines subject to the PM emission standards of Chapter 6. Compliance is assured by proper operation and maintenance of the engines, as required by 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ.
Chapter 7 TAPCR 1200-03-07-.01(5) TAPCR1200-03-07-.04(2) TAPCR 1200-03-07-.07(2)	**Applicable:** This facility has process emission sources. Compliance is assured by the following: control device inspection and maintenance, emission factors, continuous emissions monitoring, material balance calculations
Chapter 10 TAPCR 1200-03-10-.02(1)(a) TAPCR 1200-03-10-.04	**Applicable:** This facility is subject to the monitoring, recordkeeping, and reporting requirements outlined in this chapter.
Chapter 14 TAPCR 1200-03-14-.01(3) TAPCR 1200-03-14-.03(5)	**Applicable:** This facility has sources that emit SO_2. Compliance is assured by the following: calculations/recordkeeping and continuous emissions monitoring.
Chapter 19	**Applicable:** This facility contains sources subject to TAPCR 1200-03-19. TAPCR 1200-03-19-.05(2) requires operating permits for sources impacting the Kingsport Additional Control Area to specify reasonably available control technology (RACT) and reasonable limitations on operating hours as necessary to achieve and maintain the ambient air quality standards.
Chapters 18, 22, 25, 27, 30, 31, 32	**Not Applicable:** This facility does not contain sources subject to these chapters.
40 CFR 60	**Applicable:** One emergency engine in Source 26 is subject to 40 CFR 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). 40 CFR 60 Subpart CC (Standards of Performance for Glass Manufacturing Plants) applies to each glass melting furnace that commences construction or modification after June 15, 1979. Furnaces G1 and G2 were constructed prior to 1979, and the application states that these furnaces have not been modified or reconstructed since startup. 40 CFR §60.292(c) states that rebricking and the cost of rebricking is not considered reconstruction. Therefore, the furnaces are not subject to Subpart CC.
40 CFR 61	**Not Applicable:** This facility is not subject to the requirements of 40 CFR Part 61.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

REGULATORY APPLICABILITY REVIEW

Regulations	Comments/ Requirements (Monitoring/Recordkeeping/Reporting/Testing)
40 CFR 63	**Applicable:** Three emergency engines in Source 26 are subject to 40 CFR 60 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines). 40 CFR 63 Subpart SSSSSS (National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources) applies to glass manufacturing facilities that use one or more continuous furnaces to produce glass that contains compounds of one or more glass manufacturing metal HAP (arsenic, cadmium, chromium, lead, manganese, and nickel) as raw materials in the glass manufacturing batch formulation are HAP area sources (see §63.11448 and §63.11459). This facility does not produce gass that contains compounds of glass manufacturing metal HAP, as defined in §63.11459, and Subpart SSSSSS does not apply.
40 CFR 68	**Not Applicable:** The facility uses and/or stores chemical identified in §68.130 (ammonia), but the facility is below the threshold quantity of 10,000 pounds.
40 CFR 64	**Applicable:** Compliance Assurance Monitoring (CAM) is applicable to the Pollutant Specific Emissions Units (PSEUs). These PSEUs: (1) are subject to an emission limitation or standard; (2) use a control device to achieve compliance; and (3) has potential pre-control emissions of one or more pollutants that meet or exceed the applicable major source threshold(s). **Emission Source** / **Pollutant(s)** / **Control Device(s)** 37-0026-01 (Batch House) / PM / Baghouses 37-0026-03 (Glass Melting Furnace No. 1) / PM / Multimedia Catalytic Ceramic Filter Potential pre-control device emissions of SO_2 and NO_X from 37-0026-03 are greater than the major source threshold (100 tons/year), and the source uses control devices to achieve compliance (dry sorbent injection for SO_2 and selective catalytic reduction for NO_X), but these pollutants are exempt from CAM pursuant to 40 CFR 64.2(b)(1)(vi) (emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method [CEMS], as defined in § 64.1)[5].
Special Conditions, Monitoring, Limits	**Not Applicable:** This facility does not have any special conditions, monitoring, or testing requirements.
Modeling Review	**Not Applicable:** This facility does not emit Pb, HCl or HF.

5 *Continuous compliance determination method* (40 CFR §64.1) means a method, specified by the applicable standard or an applicable permit condition, which: (1) Is used to determine compliance with an emission limitation or standard on a continuous basis, consistent with the averaging period established for the emission limitation or standard; and (2) Provides data either in units of the standard or correlated directly with the compliance limit.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

REGULATORY APPLICABILITY REVIEW	
Regulations	**Comments/ Requirements (Monitoring/Recordkeeping/Reporting/Testing)**
Previous Permit Number(s)	Title V Operating Permit 570858 (issued March 16, 2017), construction permit 981790 (issued August 2, 2024, for modification of sources 03 and 08 [glass melting furnaces]).

EMISSION SUMMARY

Table 2: SOURCE SPECIFIC EMISSIONS

Permit Emissions: PM/PM_{10}/$PM_{2.5}$ (Hourly)					
Source	**Actual Emissions**	**Regulatory Allowable Emissions**	**Uncontrolled Emissions**	**Potential to Emit[6]**	**Permitted Allowable**
01	1.42 lb/hr	34.94 lb/hr (TAPCR 1200-03-07-.03(1))	284 lb/hr	34.94 lb/hr	2.51 lb/hr
02	0.52 lb/hr	0.25 grains/dscf (6.5 lb/hr) (TAPCR 1200-03-07-.04(2))	6.5 lb/hr	6.5 lb/hr	0.25 grains/dscf (6.5 lb/hr)
03	7.21 lb/hr[7]	29.34 lb/hr (TAPCR 1200-03-07-.03(1))	22.61 lb/hr	22.61 lb/hr	27.71 lb/hr (uncontrolled)[8]
					9.12 lb/hr (controlled)
05	0.75 lb/hr	29.3 lb/hr (TAPCR 1200-03-07-.03(1))	75 lb/hr	29.3 lb/hr	1.0 lb/hr
06	1.31 lb/hr	29.3 lb/hr (TAPCR 1200-03-07-.03(1))	1,305 lb/hr	29.3 lb/hr	1.45 lb/hr
08	7.50 lb/hr	29.3 lb/hr (TAPCR 1200-03-07-.03(1))	15.93 lb/hr	15.93 lb/hr	29.0 lb/hr
10	Negligible	17.6 lb/hr (TAPCR 1200-03-07-.03(1))	Negligible	Negligible	0.5 lb/hr
11	Negligible	0.82 lb/hr (SIP limit)	Negligible	Negligible	0.82 lb/hr
21	1.35 lb/hr	32.4 lb/hr (TAPCR 1200-03-07-.03(1))	3.75 lb/hr	3.75 lb/hr	1.45 lb/hr
24	Negligible	29.3 lb/hr (TAPCR 1200-03-07-.03(1))	Negligible	Negligible	0.5 lb/hr

6 For PM and SO_2, potential to emit is calculated as the lesser of uncontrolled emissions or the regulatory allowable.
7 Actual emissions for sources 03 and 08 include both controlled and uncontrolled emissions.
8 Emissions are uncontrolled during startup, and are startup hours are restricted by an annual emission limit.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

Permit Emissions: PM/PM_{10}/$PM_{2.5}$ (Hourly)					
Source	**Actual Emissions**	**Regulatory Allowable Emissions**	**Uncontrolled Emissions**	**Potential to Emit[6]**	**Permitted Allowable**
26	3.41 lb/hr[9]	0.6 lb/MMBtu for non-NSPS engines and 0.2 g/kWh for the NSPS engine (19.75 lb/hr total)	3.41 lb/hr	3.41 lb/hr	0.6 lb/MMBtu for non-NSPS engines and 0.2 g/kWh for NSPS engine (4.17 lb/hr total)

Permit Emissions: PM/PM_{10}/$PM_{2.5}$ (Annual)				
	PM Emissions (tons/year)			
Source	**Actual**	**Uncontrolled**	**Potential**	**Allowable**
01	6.22	1243.92	153.04	10.99
02	2.28	28.47	28.47	28.47
03	31.57	99.04	99.04	34.12
05	3.29	328.50	128.33	4.38
06	5.74	5715.90	128.33	6.35
08	69.77	69.77	69.77	127.02
10	0.00	0.00	0.00	2.19
11	0.00	0.00	0.00	3.59
21	5.91	16.43	16.43	6.35
24	0.00	0.00	0.00	2.19
26	0.85	0.85	0.85	1.04
Totals	**125.63**	**7502.89**	**624.27**	**226.70**

9 Acutal emissions for non-NSPS emissions plus PM allowable for NSPS engine.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

Permit Emissions: SO_2 (Hourly)					
Source	**Actual Emissions**	**Regulatory Allowable Emissions**	**Uncontrolled Emissions**	**Potential to Emit**	**Permitted Allowable**
03	32.58 lb/hr[10]	2,000 ppmv (898 lb/hr) (TAPCR 1200-03-14-.03(3))	75.83 lb/hr	75.83 lb/hr	75.82 lb/hr (uncontrolled) 32.5 lb/hr (controlled)
08	75.60 lb/hr	2,000 ppmv (2,050 lb/hr) (TAPCR 1200-03-14-.03(3))	75.60 lb/hr	75.60 lb/hr	95.0 lb/hr
10	2.00 lb/hr	N/A (no dedicated stack)	2.00 lb/hr	2.00 lb/hr	2.0 lb/hr
24	2.00 lb/hr	N/A (no dedicated stack)	2.00 lb/hr	2.00 lb/hr	2.0 lb/hr
26	0.1 lb/hr	Burn only diesel containing less than 15 ppmw sulfur (40 CFR §60.4207(b) and §63.6604)	0.1 lb/hr	0.1 lb/hr	0.1 lb/hr

Permit Emissions: SO_2 (Annual)				
	SO_2 Emissions (tons/year)			
Source	**Actual**	**Uncontrolled**	**Potential**	**Allowable**
03	142.70	332.14	332.14	148.59
08	331.13	331.13	331.13	416.10
10	8.76	8.76	8.76	8.76
24	8.76	8.76	8.76	8.76
26	0.44	0.44	0.44	0.44
Totals	**491.79**	**681.22**	**681.22**	**582.65**

Permit Emissions: CO, VOC, NO_X, and NMHC												
	Actual Emissions (tons/year)				**Potential Emissions (tons/year)**				**Allowable Emissions (tons/year)**			
Source	**CO**	**VOC**	**NO_X**	**NMHC + NO_X**	**CO**	**VOC**	**NO_X**	**NMHC + NO_X**	**CO**	**VOC**	**NO_X**	**NMHC + NO_X**
03	287.07	11.86	264.00	0	287.07	11.86	1807.85	0	287.07	11.86	544.7	0
05	0	36.3	0	0	0	36.3	0	0	0	36.3	0	0
06	0	36.3	0	0	0	36.3	0	0	0	36.3	0	0
08	119.44	11.83	263.19	0	119.44	11.83	1802.28	0	287.07	21.9	1870.26	0
26	10.52	8.50	35.23	7.69	10.52	8.50	35.23	7.69	10.52	8.50	35.23	7.69
Totals	**417.03**	**104.79**	**562.41**	**7.69**	**417.03**	**104.79**	**3645.36**	**7.69**	**584.66**	**114.86**	**2450.19**	**7.69**

10 Actual emissions for sources 03 and 08 include both controlled and uncontrolled emissions.

Facility Name:	Cardinal FG Company	**Facility ID Number:**	37-0026
Permit Number:	579372	**Date Application Received:**	September 15, 2021
Permit Writer:	Travis Blake	**Date Application Complete:**	September 15, 2021

Permit Emissions: HAP Emissions from Tinted Glass Production									
	Actual Emissions (tons/year)			**Potential Emissions (tons/year)**			**Allowable Emissions (tons/year)**		
Source	**SeO_2**	**Co_3O_3**	**Total HAP**	**SeO_2**	**Co_3O_3**	**Total HAP**	**SeO_2**	**Co_3O_3**	**Total HAP**
03	8.08	0.13	8.21	25.57	0.98	26.55	9.9	9.9	24.9

Permit Emissions: HAP Emissions from Natural Gas Combustion				
	Max. Actual/Potential/Allowable Emissions (tons/year)			
Source	**Formaldehyde**	**Hexane**	**Toluene**	**Total HAP**
03	0.06	1.32	0.002	1.38
08	0.06	1.45	0.003	1.52

Table 3: FACILITY WIDE EMISSIONS

FACILITY WIDE EMISSIONS			
Pollutant	**Actual Emissions (tons/year)**	**Uncontrolled Emissions (tons/year)**	**Potential to Emit (PTE) (tons/year)**
$PM/PM_{10}/PM_{2.5}$	93.18	7669.18	702.57
SO_2	242.13	681.22	681.22
NO_x	562.41	3645.36	3645.36
CO	417.03	417.03	417.03
VOC	32.19	32.19	32.19
Single HAP	8.21 (SeO_2) 0.13 (Co_3O_3) 0.12 (Formaldehyde) 2.77 (Hexane) 0.005 (Toluene)	25.57 (SeO_2) 0.98 (Co_3O_3) 0.12 (Formaldehyde) 2.77 (Hexane) 0.005 (Toluene)	25.57 (SeO_2) 0.98 (Co_3O_3) 0.12 (Formaldehyde) 2.77 (Hexane) 0.005 (Toluene)
Total HAPs	11.24	29.45	29.45

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.

<table>
<tr><th colspan="2">Addendum to Statement of Basis: Changes Made in Title V Renewal 579372</th></tr>
<tr><th>Permit Condition or Section</th><th>Change</th></tr>
<tr><td>D15, E3-5 (permit 570858)</td><td>Added routine maintenance requirements to Title V permit shell and removed the corresponding requirements from Section E3.</td></tr>
<tr><td>E1</td><td>Updated fee requirements to match current template</td></tr>
<tr><td>E2</td><td>Updated reporting requirements</td></tr>
<tr><td>E3-2, Attachment 1</td><td>Updated the compliance method to state that visible emission readings specified by Conditions E3-2(b) and E3-2(c) shall be conducted as required by the Technical Secretary and deleted the TVEE Method 2 opacity matrix from Attachment 1. The visible emissions requirements of Conditions E3-2(b) and E3-2(c) were established to ensure that total suspended particulate emissions from this facility do not impact the Kingsport Additional Control Area pursuant to TAPCR 1200-03-19, and the compliance method is consistent with the requirements established for comparable facilities subject to these requirements.</td></tr>
<tr><td>E3-3</td><td>Updated fugitive dust restrictions to reference the current version of EPA Method 9 (previous permit reference was deleted from the regulations). No changes to existing compliance method.</td></tr>
<tr><td>E3-5</td><td>Updated the list of insignificant activities to match the current application.</td></tr>
<tr><td>E3-7</td><td>Updated contact information to match the current application.</td></tr>
<tr><td>Sections E4 through E14</td><td>Source-specific permit conditions were reordered to remove reserved sections and to arrange the permit conditions to match the process flow, as follows:
<table>
<tr><th>Section Number</th><th>Description (Title V Permit 570858)</th><th>Description (Title V Permit 579372)</th></tr>
<tr><td>E4</td><td>Reserved</td><td>37-0026-21, Truck Unloading of Raw Materials</td></tr>
<tr><td>E5</td><td>37-0026-01, Batch House Handling of Raw Materials</td><td>37-0026-02, Plant Buildings</td></tr>
<tr><td>E6</td><td>37-0026-02, Plant Buildings</td><td>37-0026-01, Batch House Handling of Raw Materials</td></tr>
<tr><td>E7</td><td>37-0026-03, Glass Melting Furnace No. 1</td><td>37-0026-03, Glass Melting Furnace No. 1</td></tr>
<tr><td>E8</td><td>37-0026-05, Annealing Lehr and Cutting Section of Float Glass Line No. 2</td><td>37-0026-10, Tin Bath No. 1 of Float Glass Line No. 1</td></tr>
<tr><td>E9</td><td>37-0026-06, Annealing Lehr and Cutting Section of Float Glass Line No. 1</td><td>37-0026-06, Annealing Lehr and Cutting Section of Float Glass Line No. 1</td></tr>
<tr><td>E10</td><td>37-0026-08, Glass Melting Furnace No. 2</td><td>37-0026-08, Glass Melting Furnace No. 2</td></tr>
<tr><td>E11</td><td>37-0026-10, Tin Bath No. 1 of Float Glass Line No. 1</td><td>37-0026-24, Tin Bath No. 2 of Float Glass Line No. 2</td></tr>
<tr><td>E12</td><td>37-0026-11, Glass Tempering Process (HT-3)</td><td>37-0026-05, Annealing Lehr and Cutting Section of Float Glass Line No. 2</td></tr>
<tr><td>E13</td><td>Reserved</td><td>37-0026-11, Glass Tempering Process (HT-3)</td></tr>
<tr><td>E14</td><td>37-0026-21, Truck Unloading of Raw Materials</td><td>37-0026-26, Emergency Engines</td></tr>
<tr><td>E15</td><td>37-0026-24, Tin Bath No. 2 of Float Glass Line No. 2</td><td>N/A</td></tr>
</table></td></tr>
</table>

	<table><tr><td>E16</td><td>37-0026-25, Surface Coating Operation</td><td>Removed from the permit. The application states that this source has been removed from the site.</td></tr><tr><td>E17</td><td>37-0026-26, Emergency Engines</td><td>N/A</td></tr><tr><td>E18</td><td>Reserved</td><td>N/A</td></tr><tr><td>E19</td><td>37-0026-29, Shot Blasting Operation</td><td>Removed from the permit. During draft permit review, the permittee indicated that this source is no longer operational.</td></tr></table>
E4-1	Added a compliance method for stated design capacity.
E4-2	Updated recordkeeping to require tracking of operating hours.
E5-1	Updated visible emissions SIP requirement to reference the current version of EPA Method 9 (previous permit reference was deleted from the regulations). No changes to existing compliance method.
E6-1	Updated the compliance method for source 01 design capacity to add recordkeeping requirement. No changes to existing limit.
E6-2, Attachment 3	Updated baghouse inspection requirements to a standard format. Updated CAM plan to add minimum requirements for pressure gauge graduations.
E7-1	Updated heat input limit to add compliance method (documentation of maximum heat input).
E7-2	Updated as follows: "The stated ~~design~~ production capacity of this source shall not exceed ~~is~~ 650 tons of glass per day when producing clear glass and ~~.~~ ~~Production capacity~~ shall not exceed 625 tons of glass per day when producing tinted glass." The language was updated to avoid having a mix of enforceable and non-enforceable requirements in the same condition. Moved the compliance method (recordkeeping of glass production) from E7-3 to E7-1.
E7-3	Updated SO_2 and NO_X emission limits to include the uncontrolled emission rates, per the agreement letter dated August 1, 2024.
E8-1	Added a compliance method for stated design capacity.
E8-2, E8-3	Updated PM and SO_2 emission limits to apply to "this source" rather than "each process line in this source." In the original agreement, "each process line" referenced two different emission sources (tin bath #1 and #2, [sources 10 and 24]).
E11-1	Added a compliance method for stated design capacity.
E11-2, E11-3	Updated PM and SO_2 emission limits to apply to "this source" rather than "each process line in this source." In the original agreement, "each process line" referenced two different emission sources (tin bath #1 and #2, [sources 10 and 24]).
E12-3	Updated VOC emission limit from "tons per year" to tons "during any period of 12 consecutive months."
Section E14	Updated stationary engine requirements to include all applicable provisions of 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ.
Attachment 3	Updated Compliance Assurance Monitoring (CAM) plans to add CAM general requirements for all sources. Updated all CAM plans to tabular format and to remove information not required by 40 CFR §64.6(c).