



PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 9-0638-00078/00056
Mod 0 Effective Date: 03/19/1998 Expiration Date: No expiration date.
Mod 1 Effective Date: 05/20/1998 Expiration Date: No expiration date.
Mod 2 Effective Date: 11/05/2002 Expiration Date: No expiration date.
Mod 3 Effective Date: 03/27/2008 Expiration Date: No expiration date.
Mod 5 Effective Date: 09/25/2007 Expiration Date: No expiration date.
Mod 6 Effective Date: 08/25/2010 Expiration Date: No expiration date.
Mod 7 Effective Date: 12/13/2010 Expiration Date: No expiration date.

Permit Issued To: RHI MONOFRAX LLC
1870 NEW YORK AVE
FALCONER, NY 14733-1797

Contact: JOE M LETKO
RHI MONOFRAX LTD
1870 NEW YORK AVE
FALCONER, NY 14733-1797
(716) 483-7217

Facility: RHI MONOFRAX LTD
1870 NEW YORK AVE
FALCONER, NY 14733-1797

Contact: JOE M LETKO
RHI MONOFRAX LTD
1870 NEW YORK AVE
FALCONER, NY 14733-1797
(716) 483-7217

Description:

RHI Monofrax, LTD Modification 7

RHI Monofrax LTD is a ceramic foundry that manufactures fused cast refractory and is located in the Town of Ellicott, Chautauqua County. Ceramic making materials are blended, then melted in four electric arc furnaces and cast into molds. The resulting castings are then cut and ground to meet customer specifications. This Air State Facility permit is Modification (Mod) 7 and includes the following permit modification:



1.) The baghouse associated with the mold making slab and carousel line, emission point 0037A, will be replaced in November 2010 with a new and more efficient baghouse. The new unit is made by Advanced Integrated Resources, Inc. (AIR) and is model 1212JPJ15. Because the new unit is more efficient the PM-10 emission factor in the PM-10 capping condition was changed from 0.83 lb/hr to 0.42 lb/hr. This is the only modification to the permit.

The permit continues to contain the federally enforceable permit conditions that cap annual PM-10, NO_x and hexavalent chromium (Cr+6) emissions. This permit limits both NO_x and PM-10 emissions to 80 tons for each rolling 12 month period in order to avoid Title V permitting requirements. Limiting NO_x to 80 tons per year also enables the facility to avoid the applicability of NO_x RACT (Reasonably Available Control Technology) requirements contained in 6 NYCRR 227-2. The Cr+6 cap will keep the modeled emission impacts of Cr+6 in the ambient air below the Annual Guidance Concentrations (AGC) in the department's DAR-1 policy, Guidelines for the Control of Toxic Ambient Air Contaminants.

For the Title V permitting program, the regulated particulate species is PM-10, particulate matter less than ten microns in aerodynamic diameter. PM-10 consists of a filterable fraction and a condensable fraction of particulate matter less than 10 micron in diameter. All particulate emissions from handling or processing of raw material are considered to be filterable because these emissions are at or near ambient conditions and as such would contain a negligible amount of condensable particulate matter. Therefore, PM-10 emission estimates based on filterable particulate emission factors are considered accurate for demonstrating compliance with the PM-10 emission cap.

The history of the facility's Air State permits follows:

Mod 0 -The original permit was for the modification of the Crushing Department, where crushers, elevators, conveyors, screens and a baghouse, EP 20, replaced the existing equipment. Mod 0 contained EU 0-00006 which was later renamed EU 0- 00004 in Mod 2 along with all the associated processes, emission points, and emission sources/controls.

Mod 1- This second permit and covered the replacement of 'C' furnace with a new and larger 'C' furnace. Mod 1 contained EU 0-00007 which was later renamed EU 0-00005 in Mod 2 along with all associated processes, emission points, and emission sources/controls

Mod 2 - Mod 2 is the first complete Facility wide Air State Facility permit, and it incorporates the previously issued permits. This permit contains facility wide PM-10 and oxides of nitrogen (NO_x) emission factors that are used to determine annual emissions.

Mod 3 - This permit application was for the expansion of the 'D' and 'E' furnace baghouse, EP 45. This was the first phase of possibly a two phase a dust collection improvement project. The application was withdrawn by the applicant on March 27, 2008 because the changes were intended to be incorporated into Mod 5. However, the changes are actually in Mod 6.

Mod 4 - No application was received for a Mod 4 and no Mod 4 permit was issued. This is a place holder.

Mod 5 - This permit modification was implemented to change the name from Vesuvius Monofrax, Inc. to RHI Monofrax LTD. It was intended to include the modifications applied for in Mod 3, but it did not.

Mod 6 - Permit modification 6 incorporated a variety of projects:



- 1.) The 2006 expansion of the baghouse that serves both "D" and "E" furnaces which exhausts through the existing emission point (EP) 45.
- 2.) The 2008 addition of a new baghouse dedicated to exhausting the crusher process which exhausts out new EP 00047.
- 3.) Some of the emission factors and operating parameters that are tracked for the PM-10 emission capping permit condition were updated to reflect changes in equipment or processes, to incorporate stack test results or to correct erroneous emission factors.
- 4.) The addition of an emission cap to limit hexavalent chromium (Cr+6) emissions from the manufacturing of chrome based refractory.
- 5.) The 2010 replacement of the D & E Flasking Station baghouse with a new pulse jet Pulse II Dust Collector that exhausts through EP 33.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: DOUGLAS E BORSCHEL
 270 MICHIGAN AVE
 BUFFALO, NY 14203-2915

Authorized Signature: _____ Date: ____ / ____ / ____



Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.



LIST OF CONDITIONS

DEC GENERAL CONDITIONS

General Provisions

- Facility Inspection by the Department
- Relationship of this Permit to Other Department Orders and Determinations
 - Applications for permit renewals, modifications and transfers
 - Permit modifications, suspensions or revocations by the Department
 - Permit modifications, suspensions or revocations by the Department

Facility Level

- Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS



DEC GENERAL CONDITIONS
****** General Provisions ******
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 4: Facility Inspection by the Department

Applicable State Requirement: ECL 19-0305

Item 4.1:

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 4.2:

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 4.3:

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2-2: Relationship of this Permit to Other Department Orders and Determinations

Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2-2.1:

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 6-1: Applications for permit renewals, modifications and transfers

Applicable State Requirement: 6 NYCRR 621.11

Item 6-1.1:

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 6-1.2:

The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

Item 6-1.3:

Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.



Condition 6-2: Permit modifications, suspensions or revocations by the Department

Applicable State Requirement: 6 NYCRR 621.13

Expired by Mod No: 7

Item 6-2.1:

The Department reserves the right to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

- a) materially false or inaccurate statements in the permit application or supporting papers;
- b) failure by the permittee to comply with any terms or conditions of the permit;
- c) exceeding the scope of the project as described in the permit application;
- d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

Condition 6-3: Permit modifications, suspensions or revocations by the Department

Applicable State Requirement: 6 NYCRR 621.13

Item 6-3.1:

The Department reserves the right to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

- a) materially false or inaccurate statements in the permit application or supporting papers;
- b) failure by the permittee to comply with any terms or conditions of the permit;
- c) exceeding the scope of the project as described in the permit application;
- d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

**** Facility Level ****

Condition 6-4: Submission of application for permit modification or renewal-REGION 9

HEADQUARTERS

Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 6-4.1:

Submission of applications for permit modification or renewal are to be submitted to:

NYSDEC Regional Permit Administrator
Region 9 Headquarters
Division of Environmental Permits
270 Michigan Avenue
Buffalo, NY 14202-2015



(716) 851-7165



Permit Under the Environmental Conservation Law (ECL)

**ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY
PERMIT**

IDENTIFICATION INFORMATION

Permit Issued To: RHI MONOFRAX LLC
1870 NEW YORK AVE
FALCONER, NY 14733-1797

Facility: RHI MONOFRAX LTD
1870 NEW YORK AVE
FALCONER, NY 14733-1797

Authorized Activity By Standard Industrial Classification Code:
3297 - NONCLAY REFRACTORIES

Mod 0 Permit Effective Date: 03/19/1998 date.	Permit Expiration Date: No expiration date.
Mod 1 Permit Effective Date: 05/20/1998 date.	Permit Expiration Date: No expiration date.
Mod 2 Permit Effective Date: 11/05/2002 date.	Permit Expiration Date: No expiration date.
Mod 5 Permit Effective Date: 09/25/2007 date.	Permit Expiration Date: No expiration date.
Mod 6 Permit Effective Date: 08/25/2010 date.	Permit Expiration Date: No expiration date.
Mod 7 Permit Effective Date: 12/13/2010 date.	Permit Expiration Date: No expiration date.



LIST OF CONDITIONS

FEDERALLY ENFORCEABLE CONDITIONS

Facility Level

- 6-1 6 NYCRR 201-7.2: Facility Permissible Emissions
- *6-2 6 NYCRR 201-7.2: Capping Monitoring Condition
- *6-3 6 NYCRR 201-7.2: Capping Monitoring Condition
- *7-1 6 NYCRR 201-7.2: Capping Monitoring Condition
- 6-5 6 NYCRR 212.3 (b): Compliance Demonstration
- 6-6 6 NYCRR 212.4 (c): Compliance Demonstration
- 6-7 6 NYCRR 212.6 (a): Compliance Demonstration

STATE ONLY ENFORCEABLE CONDITIONS

Facility Level

- 2-45 ECL 19-0301: Contaminant List
- 6-8 6 NYCRR 201-1.4: Unavoidable noncompliance and violations
- 4 6 NYCRR Subpart 201-5: Emission Unit Definition
- 6-9 6 NYCRR 211.2: Air pollution prohibited

Emission Unit Level

- 11 6 NYCRR Subpart 201-5: Emission Point Definition By Emission Unit
- 12 6 NYCRR Subpart 201-5: Process Definition By Emission Unit

NOTE: * preceding the condition number indicates capping.



FEDERALLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

This section contains terms and conditions which are federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Sealing - 6 NYCRR 200.5

The Commissioner may seal an air contamination source to prevent its operation if compliance with 6 NYCRR Chapter III is not met within the time provided by an order of the Commissioner issued in the case of the violation.

Sealing means labeling or tagging a source to notify any person that operation of the source is prohibited, and also includes physical means of preventing the operation of an air contamination source without resulting in destruction of any equipment associated with such source, and includes, but is not limited to, bolting, chaining or wiring shut control panels, apertures or conduits associated with such source.

No person shall operate any air contamination source sealed by the Commissioner in accordance with this section unless a modification has been made which enables such source to comply with all requirements applicable to such modification.

Unless authorized by the Commissioner, no person shall remove or alter any seal affixed to any contamination source in accordance with this section.

Item B: Acceptable Ambient Air Quality - 6 NYCRR 200.6

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Item C: Maintenance of Equipment - 6 NYCRR 200.7

Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications,



required to operate such device effectively.

Item D: Unpermitted Emission Sources - 6 NYCRR 201-1.2

If an existing emission source was subject to the permitting requirements of 6 NYCRR Part 201 at the time of construction or modification, and the owner and/or operator failed to apply for a permit for such emission source then the following provisions apply:

- (a) The owner and/or operator must apply for a permit for such emission source or register the facility in accordance with the provisions of Part 201.
- (b) The emission source or facility is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing sources or facilities.

Item E: Emergency Defense - 6 NYCRR 201-1.5

An emergency constitutes an affirmative defense to an action brought for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

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

- (1) An emergency occurred and that the facility owner and/or operator can identify the cause(s) of the emergency;
- (2) The equipment at the permitted facility causing the emergency was at the time being properly operated;
- (3) During the period of the emergency the facility owner and/or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- (4) The facility owner and/or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner and/or operator seeking to establish the occurrence of an emergency has the burden of proof.



(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item F: Recycling and Salvage - 6 NYCRR 201-1.7

Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of 6 NYCRR.

Item G: Prohibition of Reintroduction of Collected Contaminants to the Air - 6 NYCRR 201-1.8

No person shall unnecessarily remove, handle, or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Item H: Proof of Eligibility for Sources Defined as Exempt Activities - 6 NYCRR 201-3.2 (a)

The owner and/or operator of an emission source or unit that is eligible to be exempt, may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item I: Proof of Eligibility for Sources Defined as Trivial Activities - 6 NYCRR 201-3.3 (a)

The owner and/or operator of an emission source or unit that is listed as being trivial in 6 NYCRR Part 201 may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item J: Required Emission Tests - 6 NYCRR 202-1.1



An acceptable report of measured emissions shall be submitted, as may be required by the Commissioner, to ascertain compliance or noncompliance with any air pollution code, rule, or regulation. Failure to submit a report acceptable to the Commissioner within the time stated shall be sufficient reason for the Commissioner to suspend or deny an operating permit. Notification and acceptable procedures are specified in 6 NYCRR Subpart 202-1.

Item K: Open Fires Prohibitions - 6 NYCRR 215.2

Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

Item L: Permit Exclusion - ECL 19-0305

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item M: Federally Enforceable Requirements - 40 CFR 70.6 (b)

All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

FEDERAL APPLICABLE REQUIREMENTS
The following conditions are federally enforceable.

Condition 6-1: Facility Permissible Emissions



Effective between the dates of 08/25/2010 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR 201-7.2

Item 7-1.1:

The sum of emissions from the emission units specified in this permit shall not equal or exceed the following

Potential To Emit (PTE) rate for each regulated contaminant:

CAS No: 0NY075-00-5 (From Mod 7) PTE: 160,000 pounds
per year
Name: PM-10

Condition 6-2: Capping Monitoring Condition

Effective between the dates of 08/25/2010 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR 201-7.2

Item 6-2.1:

Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Part 212

Item 6-2.2:

Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 6-2.3:

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 6-2.4:

On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 6-2.5:

The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 6-2.6:



The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 018540-29-9 CHROMIUM(VI)

Item 6-2.7:

Compliance Demonstration shall include the following monitoring:

Capping: Yes

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

Chromium Emission CAP

1.) Limit - Total facility use of chromic oxide (Cr₂O₃) containing materials in refractory mixes shall not exceed 712.1 tons per 12 month period. Based on Department Policy DAR-1, Guidelines for the Control of Toxic Ambient Air Contaminants, modeling the annual emission of hexavalent chromium (Cr+6) from refractory made with Cr₂O₃ materials is protective of the ambient air and below the Cr+6 Annual Guidance Concentration (AGC) in DAR-1. Cr+6 emissions are A rated. This facility is being capped under the provisions of Part 201-7.2, "Emissions capping using synthetic minor permits" to avoid further emission impact analysis evaluations.

Background: A May 1994 emission test of emission point 19 during the production of Monofrax K-3 reported that the total chromium emission rate was 0.00179 pounds per hour. For purposes of this evaluation it is assumed that all of these emissions are Cr+6. Modeling performed using DAR-1 shows that an annual emission rate of 3.42 pounds of Cr+6 has an annual ambient concentration below the Cr+6 AGC. Using the mass of Cr₂O₃ in the K-3 refractory mix and the emission rate of Cr+6 from the emission test, the total allowable mass of Cr₂O₃ that can be used in refractory production cannot exceed 712.1 tons per 12 month period.

2.) Record keeping- The monthly use of chromic oxide material in refractory mixes shall be calculated using the equations and monitored parameters below, recorded and a rolling 12 month total shall be calculated for each month. This log shall be made available to the department during normal business hours upon request.

3.) Reporting-

a.) Any exceedances of the 712.1 ton limit shall be reported to the department by fax within 48 hours of the exceedance at 716-851-7009.

b.) Annually, submit a certification that the facility



has operated within the emission limits imposed by this cap. The certification shall include a summary of the emissions for each month and the 12-month total emissions calculated monthly.

4.) The emission of pollutants in exceedance of the emission cap contained in this permit constitutes a violation of this permit.

5.) Calculations - Cr₂O₃ is only used in Monofrax K-3 and E mixes at this time. The following equations shall be updated if the refractory recipe, Cr₂O₃ content of the materials or any other relevant information changes. The following equations shall be used to calculate the monthly Cr₂O₃ usage:

a.) Monofrax K-3 Cr₂O₃ lbs = lbs of Chrome Sand x 47% + lbs of Chromic Oxide (Accrox C) x 98% + lbs of scrap K-3 x % Cr₂O₃ in K-3

b.) Monofrax E Cr₂O₃ (pounds) = lbs of Chrome Sand x 47% + lbs of Chromic Oxide (Accrox C) x 98% + lbs of scrap E x % Cr₂O₃ in E

c.) Tons of Cr₃O₃ used per month = (Monofrax K-3 Cr₂O₃ (lbs) + Monofrax E Cr₂O₃ (lbs))/2000 lb/ton

Work Practice Type: PROCESS MATERIAL THRUPUT

Process Material: MATERIAL

Upper Permit Limit: 712.1 tons

Monitoring Frequency: MONTHLY

Averaging Method: 12-month total, rolled monthly

Reporting Requirements: ANNUALLY (ANNIVERSARY)

Initial Report Due: 04/17/2011 for the period 08/25/2010 through 03/18/2011

Condition 6-3: Capping Monitoring Condition
Effective between the dates of 08/25/2010 and Permit Expiration Date

Applicable Federal Requirement: 6 NYCRR 201-7.2

Item 6-3.1:

Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR 201-6.1 (a)

6 NYCRR Subpart 227-2

Item 6-3.2:

Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.



Item 6-3.3:

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 6-3.4:

On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 6-3.5:

The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 6-3.6:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 6-3.7:

Compliance Demonstration shall include the following monitoring:

Capping: Yes

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

- 1.) Total facility emissions of oxides of nitrogen (NO_x) shall be limited to less than 80 tons for any 12 month period. These emissions will be calculated on a total rolling 12 month basis. By accepting these limitations on NO_x emissions (as well as accepting conditions limiting the potential to emit of PM-10) the facility avoids the requirements of Title V permitting in 6 NYCRR Part 201-6. This facility is being capped under the provisions of Part 201-7.2, "Emissions capping using synthetic minor permits."
- 2.) Tracking and recording of monthly NO_x emissions shall be performed and a rolling 12-month total shall be calculated each month using the emission factors and parameters monitored below. The facility shall record emissions data on spread sheet/ log. This log shall be made available to the department upon request during normal business hours.



3.) Reporting-

a.) Any exceedances of the 80 tpy limit shall be reported to the department by fax within 48 hours of the exceedance at 716-851-7009.

b.) Annually, submit a certification that the facility has operated within the emission limits imposed by this cap. The certification shall include a summary of the emissions for each month and the 12-month total emissions calculated monthly.

4.) The emission of pollutants in exceedance of the emission cap contained in this permit constitutes a violation of this permit, Part 201-6 and of the Act.

5.) The following factors shall be used in calculating facility-wide emissions:

EU 0-00004 EP 00019 - The quantity of Sodium Nitrate (NaNO₃) used in the refractory melt mixes. Monthly NO_x emissions are calculated by multiplying the pounds of NaNO₃ used per month by an emission factor of 0.557 lb NO_x/lb NaNO₃ used.

EU 0-00004 EP 00045 - The quantity of Sodium Nitrate (NaNO₃) used in the refractory melt mixes. Monthly NO_x emissions are calculated by multiplying the pounds of NaNO₃ used per month by an emission factor of 0.557 lb NO_x/lb NaNO₃ used.

Parameter Monitored: OXIDES OF NITROGEN

Upper Permit Limit: 80 tons

Monitoring Frequency: MONTHLY

Averaging Method: 12-month total, rolled monthly

Reporting Requirements: ANNUALLY (ANNIVERSARY)

Initial Report Due: 04/17/2011 for the period 08/25/2010 through 03/18/2011

Condition 7-1: Capping Monitoring Condition
Effective between the dates of 12/13/2010 and Permit Expiration Date

Applicable Federal Requirement: 6 NYCRR 201-7.2

Replaces Condition(s) 6-4

Item 7-1.1:

Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR 201-6.1 (a)



Item 7-1.2:

Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 7-1.3:

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 7-1.4:

On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 7-1.5:

The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 7-1.6:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 0NY075-00-5 PM-10

Item 7-1.7:

Compliance Demonstration shall include the following monitoring:

Capping: Yes

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

1.) Total facility emissions of PM-10 shall be limited to less than 80 tons for any 12 month period. These emissions will be calculated on a total rolling 12 month basis. By accepting these limitations on PM-10 emissions (as well as accepting conditions limiting the PTE of NOx) the facility avoids the requirements of Title V permitting in 6 NYCRR Part 201-6. This facility is being capped under the provisions of Part 201-7.2, "Emissions capping using synthetic minor permits."

2.) Tracking and recording of monthly PM-10 emissions shall be performed and a rolling 12 month total shall be calculated each month using the emission factors and parameters monitored below. The facility shall record emissions data on spread sheet/ log. This log shall be



made available to the department during normal business hours upon request.

3.) Reporting-

a.) Any exceedances of the 80 tpy limit shall be reported to the department by fax within 48 hours of the exceedance (716-851-7009).

b.) Annually, submit a certification that the facility has operated within the emission limits imposed by this cap. The certification shall include a summary of the emissions for each month and the 12-month total emissions calculated monthly.

4.) The emission of pollutants in excess of the emission cap contained in this permit constitutes a violation of this permit, Part 201-6 and of the Act.

5.) The following factors shall be used in calculating facility-wide emissions:

Emission Unit 0-00001

Emission Point 00004, Mold Room dust collector (D.C.), hours of operation of mold room dust collector fan X 0.14 lb/hr.

Emission Point 00043, Mold Release Station, hours of operation of mold release exhaust fan motor X 0.007lb/hr.

Emission Point 0037A, Sand Molding D.C., hours of operation of sand molding dust collector fan motor X 0.42 lb/hr.

Emission Unit 0-00002

Emission Point 000025A, Swing Frame Grinder, hours of operation of swing frame #1 grinder fan motor X 0.33 lb/hr

Emission Point 0025B, Swing Frame Grinder, hours of operation of swing frame #3 grinder fan motor X 0.33 lb/hr.

Emission Point 0025C, Swing Frame Grinder, hours of operation of hand grinder station fan motor X 0.92 lb/hr.

Emission Point 00042, Research Cut Off Saw, hours of



operation of research cut off saw exhaust fan X 0.10
lb/hr.

Emission Unit 0-00003

Emission Point 00022, Old Box Dump & Sand Blast D.C.,
hours of operation of dump ore conveyor motor operation X
6.6 lb/hr.

Emission Point 00022, Old Box Dump & Sand Blast D.C.,
number of days at least one furnace operates (this assumes
sand blast booth operates 3 shifts per day) X 24 hours per
day X 1.6 lb/hr.

Emission Point 00023, Rotex Screens D.C. hours of
operation of Rotex screen motor X 0.385 lb/hr.

Emission Point 00026, New Box Dump D.C., hours of new dump
box west dust collector fan motor operation X 0.174
lb/hr.

Emission Point 00027, New Box Dump East Dust collector,
hours of dump box east Rotex screen motor operation X 0.5
lb/hr.

Emission Point 00031, Sand Silo Reclaim, hours of
operation of sand silo reclaim 400 system transporter X
0.02 lb/hr.

Emission Point 00032, Sand Silo, hours of operation of
sand silo new 100 system transporter X 0.342
lb/hr.

Emission Point 00033, D & E Flasking D.C., hours of
operation of D and E annealing dust collector fan
(furnaces) X 1.6 lb/hr

Emission Point 00036, Sand Silo, hours of operation of
sand silo, annealing 500 system transporter X 0.10
lb/hr.

Emission Unit 0-00004

Emission Point 00017, D & E Annealing, hours of operation
of D and E annealing dust collector fan X 0.32
lb/hr.

Emission Point 00019, A & B furnaces, hours of operation



of A furnace dust collector fan X 1.58 lb/hr.

Emission Point 00019, C Annealing, hours of operation C annealing fan motor x 0.61 lb/hr.

Emission Point 00020, C Furnace D.C., hours of operation of C furnace dust collector fan X 0.95 lb/hr.

Emission Point 00021, Lab Dust Collector, hours of operation of lab dust collector X 0.0001 lb/hr.

Emission Point 00021, 350 Lab furnace, hours of operation of the 350 lab furnace X 0.34 lb/hr.

Emission Point 00021, 150 Lab Furnace, hours of operation of the 150 lab furnace X 0.11 lb/hr.

Emission Point 00038, 700 System Transporter, hours of operation of 700 system transporter fan X 0.8 lb/hr.

Emission Point 00044, Maintenance Welding, hours of operation of maintenance welding exhaust fan X 0.1 lb/hr.

Emission Point 00045, D Furnace, hours of operation of D furnace X 0.043 lb/hr

Emission Point 00045, E Furnace, hours of operations of E furnace X 0.067 lb/hr

Emission Unit 0-00005

Emission Point 00003, Weigh & Mix Dust Collector, number of chrome batches X 3 minutes per batch / 60 minutes per hour X 0.01 lb/hr.

Emission Point 00003, Weigh & Mix Dust Collector, number of non-chrome batches X 3 minutes per batch / 60 minutes per hour X 0.032 lb/hr.

Emission Point 00003, Weigh & Dust Collector, number of hours of elevator #1 operation (rail car unloading) X 0.13 lb/hr.

Emission Point 00018, Car Unloading, number of tons of alumina unloaded X 8.8 lb/100 tons.

Emission Point 00018, Car Unloading, number of tons of

New York State Department of Environmental Conservation

Permit ID: 9-0638-00078/00056

Facility DEC ID: 9063800078



zircon and zirconia unloaded X 1.44 lb/100 tons.

Emission Point 00018, Car Unloading, number of tons of soda ash unloaded X 2.24 lb/100 tons.

Emission Point 00046, Block Breaker Dust Collector, number of hours that dust collector fan operates X 0.321 lb/hr.

Emission Point 00047, New Crushing Dust Collector, number of hours that the dust collector fan operates X 0.275 lb/hr

Parameter Monitored: PM-10

Upper Permit Limit: 80 tons

Reference Test Method: EPA Method 5 or 201/202

Monitoring Frequency: MONTHLY

Averaging Method: 12-month total, rolled monthly

Reporting Requirements: ANNUALLY (ANNIVERSARY)

Initial Report Due: 04/17/2011 for the period 12/13/2010 through 03/18/2011

Condition 6-5: Compliance Demonstration

Effective between the dates of 08/25/2010 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR 212.3 (b)

Item 6-5.1:

The Compliance Demonstration activity will be performed for the facility:

The Compliance Demonstration applies to:

Emission Unit: 0-00003

Emission Point: 00022

Emission Unit: 0-00004

Emission Point: 00017

Emission Unit: 0-00004

Emission Point: 00019

Emission Unit: 0-00004

Emission Point: 00020

Emission Unit: 0-00005

Emission Point: 00003

Emission Unit: 0-00005

Emission Point: 00018

Regulated Contaminant(s):

CAS No: 0NY075-00-0 PARTICULATES

Item 6-5.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL



DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

- 1.) Emissions of solid particulates are limited to less than 0.15 grains of particulates per cubic foot of exhaust gas, corrected for dilution air and expressed at standard conditions on a dry gas basis.
- 2.) Compliance with this standard has been previously established through the use of appropriate emission factors, material balance or stack testing etc. However, from time to time or as determined necessary by the Department, the facility shall review such factors to determine whether more current factors are appropriate.
- 3.) The facility shall observe the emissions from each emission point weekly for visible emissions. The observer should be trained in and familiar with EPA Method 9 for making opacity readings (sun location, condensing plume, background, etc.) and follow the Method 9 procedures to make their visible emission evaluation. The observation should last at least a minute, but does not need to last for 6 minutes as prescribed by Method 9. Should visible emissions, excluding condensed water vapor, be present the facility shall inspect the process and control equipment, if any, for possible corrective action to reduce emissions. Corrective action shall be taken where ever necessary. The facility shall maintain on site a log of weekly observations and any corrective actions. The log shall be made available to the Department upon request during normal business hours.
- 4.) In the event the department has reason to believe an exceedance of the particulate emission limit is occurring, the facility may be requested to perform a stack test to determine compliance. Such a request will be made in writing and testing shall commence with 60 days of Department approval of a stack test protocol. A stack test report shall be submitted to the Department for review and approval within 60 days of testing.

Parameter Monitored: PARTICULATES

Upper Permit Limit: 0.15 grains per dscf

Reference Test Method: EPA Method 5

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: 1-HOUR AVERAGE

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 6-6: Compliance Demonstration
Effective between the dates of 08/25/2010 and Permit Expiration Date



Applicable Federal Requirement:6 NYCRR 212.4 (c)

Item 6-6.1:

The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: 0-00001	Emission Point: 00004
Emission Unit: 0-00001	Emission Point: 00043
Emission Unit: 0-00001	Emission Point: 0037A
Emission Unit: 0-00002	Emission Point: 00042
Emission Unit: 0-00002	Emission Point: 0025A
Emission Unit: 0-00002	Emission Point: 0025B
Emission Unit: 0-00002	Emission Point: 0025C
Emission Unit: 0-00003	Emission Point: 00023
Emission Unit: 0-00003	Emission Point: 00026
Emission Unit: 0-00003	Emission Point: 00027
Emission Unit: 0-00003	Emission Point: 00031
Emission Unit: 0-00003	Emission Point: 00032
Emission Unit: 0-00003	Emission Point: 00033
Emission Unit: 0-00003	Emission Point: 00036
Emission Unit: 0-00004	Emission Point: 00021
Emission Unit: 0-00004	Emission Point: 00038
Emission Unit: 0-00004	Emission Point: 00044
Emission Unit: 0-00004	Emission Point: 00045
Emission Unit: 0-00005	Emission Point: 00046
Emission Unit: 0-00005	Emission Point: 00047

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 6-6.2:

Compliance Demonstration shall include the following monitoring:



Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

- 1.) Emissions of solid particulates are limited to less than 0.050 grains of particulates per cubic foot of exhaust gas, corrected for dilution air and expressed at standard conditions on a dry gas basis.
- 2.) Compliance with this standard has been previously established through the use of appropriate emission factors, material balance or stack testing etc. However, from time to time or as determined necessary by the Department, the facility shall review such factors to determine whether more current factors are appropriate.
- 3.) The facility shall observe the emission from each emission point weekly for visible emissions. The observer should be trained in and familiar with EPA Method 9 for making opacity readings (sun location, condensing plume, background, etc.) and follow the Method 9 procedures to make their visible emission evaluation. The observation should last at least a minute, but does not need to last for 6 minutes as prescribed by Method 9. Should visible emissions, excluding condensed water vapor, be present the facility shall inspect the process and control equipment, if any, for possible corrective action to reduce emissions. Corrective action shall be taken where ever necessary. The facility shall maintain on site a log of weekly observations and any corrective actions. The log shall be made available to Department staff upon request during normal business hours.
- 4.) In the event the Department has reason to believe an exceedance of the particulate emission limit is occurring, the facility may be requested to perform a stack test to determine compliance. Such a request will be made in writing and testing shall commence with 60 days of Department approval of a stack test protocol. A stack test report shall be submitted to the Department for review and approval within 60 days of testing.

Parameter Monitored: PARTICULATES

Upper Permit Limit: 0.050 grains per dscf

Reference Test Method: EPA Method 5

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING
DESCRIPTION

Averaging Method: 1-HOUR AVERAGE

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 6-7: Compliance Demonstration
Effective between the dates of 08/25/2010 and Permit Expiration Date



Applicable Federal Requirement:6 NYCRR 212.6 (a)

Item 6-7.1:

The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: 0-00001	Emission Point: 00004
Emission Unit: 0-00001	Emission Point: 00043
Emission Unit: 0-00001	Emission Point: 0037A
Emission Unit: 0-00002	Emission Point: 00042
Emission Unit: 0-00002	Emission Point: 0025A
Emission Unit: 0-00002	Emission Point: 0025B
Emission Unit: 0-00002	Emission Point: 0025C
Emission Unit: 0-00003	Emission Point: 00022
Emission Unit: 0-00003	Emission Point: 00023
Emission Unit: 0-00003	Emission Point: 00026
Emission Unit: 0-00003	Emission Point: 00027
Emission Unit: 0-00003	Emission Point: 00031
Emission Unit: 0-00003	Emission Point: 00032
Emission Unit: 0-00003	Emission Point: 00033
Emission Unit: 0-00003	Emission Point: 00036
Emission Unit: 0-00004	Emission Point: 00017
Emission Unit: 0-00004	Emission Point: 00019
Emission Unit: 0-00004	Emission Point: 00020
Emission Unit: 0-00004	Emission Point: 00021
Emission Unit: 0-00004	Emission Point: 00038
Emission Unit: 0-00004	Emission Point: 00044
Emission Unit: 0-00004	Emission Point: 00045
Emission Unit: 0-00005	Emission Point: 00003



Emission Unit: 0-00005	Emission Point: 00018
Emission Unit: 0-00005	Emission Point: 00046
Emission Unit: 0-00005	Emission Point: 00047

Item 6-7.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

No person shall cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any process emission source, except only the emission of uncombined water. The Department reserves the right to perform or require the performance of a Method 9 opacity evaluation at any time during facility operation.

The permittee will conduct observations of visible emissions from the emission unit, process, etc. to which this condition applies at the monitoring frequency stated below while the process is in operation. The permittee will investigate, in a timely manner, any instance where there is cause to believe that visible emissions have the potential to exceed the opacity standard.

The permittee shall investigate the cause, make any necessary corrections, and verify that the excess visible emissions problem has been corrected. If visible emissions with the potential to exceed the standard continue, the permittee will conduct a Method 9 assessment within the next operating day of the sources associated with the potential noncompliance to determine the degree of opacity and will notify the NYSDEC if the method 9 test indicates that the opacity standard is not met.

Records of visible emissions observations (or any follow-up method 9 tests), investigations and corrective actions will be kept on-site. Should the Department determine that permittee's record keeping format is inadequate to demonstrate compliance with this condition, it shall provide written notice to the permittee stating the inadequacies, and permittee shall have 90 days to revise its prospective record keeping format in a manner acceptable to the Department.

Reference Test Method: EPA Method 9

Monitoring Frequency: WEEKLY

Averaging Method: 6 MINUTE AVERAGE

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION





STATE ONLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Public Access to Recordkeeping for Facilities With State Facility Permits - 6 NYCRR 201-1.10 (a)

Where emission source owners and/or operators keep records pursuant to compliance with the operational flexibility requirements of 6 NYCRR Subpart 201-5.4(b)(1), and/or the emission capping requirements of 6 NYCRR Subparts 201-7.2(d), 201-7.3(f), 201-7.3(g), 201-7.3(h)(5), 201-7.3(i) and 201-7.3(j), the Department will make such records available to the public upon request in accordance with 6 NYCRR Part 616 - Public Access to Records. Emission source owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department of receipt of the request.

Item B: General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5

Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

STATE ONLY APPLICABLE REQUIREMENTS

The following conditions are state only enforceable.



Condition 2-45: Contaminant List

Effective between the dates of 11/05/2002 and Permit Expiration Date

Applicable State Requirement:ECL 19-0301

Item 2-45.1:

Emissions of the following contaminants are subject to contaminant specific requirements in this permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 018540-29-9
Name: CHROMIUM(VI)

CAS No: 0NY075-00-0
Name: PARTICULATES

CAS No: 0NY075-00-5
Name: PM-10

CAS No: 0NY210-00-0
Name: OXIDES OF NITROGEN

Condition 6-8: Unavoidable noncompliance and violations

Effective between the dates of 08/25/2010 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 201-1.4

Replaces Condition(s) 2-46

Item 6-8.1:

At the discretion of the commissioner a violation of any applicable emission standard for necessary scheduled equipment maintenance, start-up/shutdown conditions and malfunctions or upsets may be excused if such violations are unavoidable. The following actions and recordkeeping and reporting requirements must be adhered to in such circumstances.

(a) The facility owner and/or operator shall compile and maintain records of all equipment maintenance or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the commissioner's representative when requested to do so in writing or when so required by a condition of a permit issued for the corresponding air contamination source except where conditions elsewhere in this permit which contain more stringent reporting and notification provisions for an applicable requirement, in which case they supercede those stated here. Such reports shall describe why the violation was unavoidable and shall include the time, frequency and duration of the maintenance and/or start-up/shutdown activities and the identification of air contaminants, and the estimated emission rates. If a facility owner and/or operator is subject to continuous stack monitoring and quarterly reporting requirements, he need not submit reports for equipment maintenance or start-up/shutdown for the facility to the commissioner's representative.

(b) In the event that emissions of air contaminants in excess of any emission standard in 6 NYCRR Chapter III Subchapter A occur due to a malfunction, the facility owner and/or operator shall report such malfunction by telephone to the commissioner's representative as soon



as possible during normal working hours, but in any event not later than two working days after becoming aware that the malfunction occurred. Within 30 days thereafter, when requested in writing by the commissioner's representative, the facility owner and/or operator shall submit a written report to the commissioner's representative describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates. These reporting requirements are superseded by conditions elsewhere in this permit which contain reporting and notification provisions for applicable requirements more stringent than those above.

(c) The Department may also require the owner and/or operator to include in reports described under (a) and (b) above an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions depending on the deviation of the malfunction and the air contaminants emitted.

(d) In the event of maintenance, start-up/shutdown or malfunction conditions which result in emissions exceeding any applicable emission standard, the facility owner and/or operator shall take appropriate action to prevent emissions which will result in contravention of any applicable ambient air quality standard. Reasonably available control technology, as determined by the commissioner, shall be applied during any maintenance, start-up/shutdown or malfunction condition subject to this paragraph.

(e) In order to have a violation of a federal regulation (such as a new source performance standard or national emissions standard for hazardous air pollutants) excused, the specific federal regulation must provide for an affirmative defense during start-up, shutdowns, malfunctions or upsets.

Condition 4: Emission Unit Definition
Effective between the dates of 03/19/1998 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 4.1(From Mod 7):

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: 0-00001

Emission Unit Description:

Molding Department consists of a mold room, slab line, carousel and core making. For and molds sand is mixed with a furfuryl alcohol or silicate binder system and placed in wooden patterns sprayed with a heptane/aluminum mixture (mold release). Cores are made in a similar manner, but dried in a core oven. Graphite molds are made using graphite lumber. (The baghouse associated with the slab line and carousel, EP 0037A, was replaced with a new unit in November 2010. At that time (Mod 7) the PM-10 emission factor was changed from 0.83 lb/hr to 0.42 lb/hr because the new filter is more efficient.)

Building(s): 1

Item 4.2(From Mod 6):

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: 0-00002



Emission Unit Description:

Sawing & Grinding - After the castings have cooled to the point where they can be handled, they are removed from the bins they are stored in and sent to the saw & grind department for finishing. Finishing consists of several steps, as described in the process description section (process 201).

Building(s): 1

Item 4.3(From Mod 6):

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: 0-00003

Emission Unit Description:

Cleaning & Mold Set - The mold set department prepares molds for the furnaces and the casting process. The cleaning department is where the cooled castings are recovered and given a brief cleaning in preparation for the finishing process. The mold set department prepares both graphite and sand molds for the casting process. After castings have cooled, the bins containing the blocks are transported to the cleaning department for casting recovery. Two methods are used to recover the castings, one for blocks annealed in alumina and another for blocks annealed in sand. Separate processes assure materials are not commingled, which allows as much recycling as possible.

Building(s): 1

Item 4.4(From Mod 6):

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: 0-00004

Emission Unit Description:

Furnace Department - Consists of four furnaces (A, C, D and E) and two main processes. The furnacing process (raw material melting and fusing in the electric arc furnaces, followed by casting), and "annealing" (covering the newly poured castings with 'annealing ore' (aluminum oxide or sand to control the cooling rate). 'A' and 'C' furnaces have dedicated dust collectors; 'D' and 'E' furnaces share one baghouse. 'A' furnace has a canopy type hood while the other three have slot-type collectors mounted immediately above the furnace pot. A laboratory furnace with fabric collector is operated as required.

Building(s): 1

Item 4.5(From Mod 6):

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: 0-00005

Emission Unit Description:



Weigh Mix and Crush Department - Receives and stores most of the high volume raw materials, prepares the furnace batches for melting and crushes all the 'scrap' (rejected blocks, heaters, pigs, etc.).

Building(s): 1

Condition 6-9: Air pollution prohibited
Effective between the dates of 08/25/2010 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 211.2

Replaces Condition(s) 6

Item 6-9.1:

No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

****** Emission Unit Level ******

Condition 11: Emission Point Definition By Emission Unit
Effective between the dates of 03/19/1998 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 11.1(From Mod 7):

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 0-00001

Emission Point: 0037A

Height (ft.): 29 Diameter (in.): 30
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00004

Height (ft.): 16 Diameter (in.): 32
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00043

Height (ft.): 30 Diameter (in.): 18
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 0012A

Height (ft.): 28 Diameter (in.): 15
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 0013A



Height (ft.): 28 Diameter (in.): 15
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Item 11.2(From Mod 6):

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 0-00002

Emission Point: 00042
Height (ft.): 4 Length (in.): 18 Width (in.): 18
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 0025A
Height (ft.): 26 Diameter (in.): 21
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 0025B
Height (ft.): 26 Diameter (in.): 21
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 0025C
Height (ft.): 26 Diameter (in.): 21
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Item 11.3(From Mod 6):

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 0-00003

Emission Point: 00022
Height (ft.): 40 Diameter (in.): 66
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00023
Height (ft.): 38 Length (in.): 26 Width (in.): 24
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00026
Height (ft.): 40 Diameter (in.): 51
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00027
Height (ft.): 33 Diameter (in.): 51
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00031
Height (ft.): 69 Diameter (in.): 11
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00032
Height (ft.): 69 Diameter (in.): 11
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1



Emission Point: 00033
Height (ft.): 16 Diameter (in.): 20
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00036
Height (ft.): 66 Diameter (in.): 11
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Item 11.4(From Mod 6):

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 0-00004

Emission Point: 00017
Height (ft.): 45 Diameter (in.): 41
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00019
Height (ft.): 45 Diameter (in.): 80
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00020
Height (ft.): 45 Diameter (in.): 86
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00021
Height (ft.): 21 Diameter (in.): 19
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00038
Height (ft.): 28 Length (in.): 12 Width (in.): 10
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00044
Height (ft.): 10 Diameter (in.): 15
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00045
Height (ft.): 45 Diameter (in.): 63
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Item 11.5(From Mod 6):

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 0-00005

Emission Point: 00003
Height (ft.): 48 Diameter (in.): 20
NYTMN (km.): 4671. NYTME (km.): 154.3 Building: 1

Emission Point: 00018



Height (ft.): 27 NYTMN (km.): 4671.	Diameter (in.): 16 NYTME (km.): 154.3	Building: 1
Emission Point: 00046 Height (ft.): 17 NYTMN (km.): 4671.	Diameter (in.): 20 NYTME (km.): 154.3	Building: 1
Emission Point: 00047 Height (ft.): 44 NYTMN (km.): 4671.	Diameter (in.): 32 NYTME (km.): 154.3	Building: 1

Condition 12: Process Definition By Emission Unit
Effective between the dates of 03/19/1998 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 12.1(From Mod 7):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00001
Process: 102 Source Classification Code: 3-05-027-60
Process Description:

Slab and Carousel Line – this is where the sand mold pieces are made. Silica sand is mixed with a resin and catalyst, poured into a pattern then allowed to harden. The vast majority of the pieces created in this area are simple rectangular shapes (slabs). After curing, the pattern is stripped from the molded piece. The pattern is either reassembled or stored for future use. The slab goes on to another area where it is used to assemble the final mold.

The baghouse associated with the mold making slab and carousel line, emission point 0037A, was replaced in November 2010 with a new and more efficient baghouse. The new unit is made by Advanced Integrated Resources, Inc. (AIR) and is model 1212JPJ15 (Emission Source/Control 13700).

Emission Source/Control: 13700 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 13701 - Process

Emission Source/Control: 13702 - Process

Item 12.2(From Mod 7):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00001
Process: 103 Source Classification Code: 3-05-005-05
Process Description:

Carousel - The carousel is a large, horizontal circular



machine used to fabricate large sand mold pieces. It consists of several stations, with a different function performed at each station. Every few minutes it rotates several degrees, allowing the work to advance from one station to the next. The process begins when large patterns are placed on the carousel at the first station. The patterns are then filled with a sand/resin/catalyst mixture at another station, cured under heat lamps at the next station, covered with a larger piece of thick plywood at the next, then inverted and separated from the mold at the next. The mold piece is then transported to the same area as the slabs for construction of the final mold. Occasionally, the insides of the patterns are sprayed with mold release to enhance the mold removal step. Mold release is added immediately prior to the addition of the sand mixture. The solvent from the mold release flashes off and is exhausted directly to the atmosphere.

The baghouse associated with the mold making slab and carousel line, emission point 0037A, was replaced in November 2010 with a new and more efficient baghouse. The new unit is made by Advanced Integrated Resources, Inc. (AIR) and is model 1212JPJ15 (Emission Source/Control 13700).

Emission Source/Control: 13700 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 13701 - Process

Emission Source/Control: 14300 - Process
Design Capacity: 200 gallons per year

Item 12.3(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00001

Process: 101

Source Classification Code: 3-05-005-05

Process Description:

Mold Room - The mold room is where the graphite molds and the wooden patterns used to make sand molds are fabricated. Graphite molds are made from graphite 'lumber' and are used primarily for our high alumina products. The patterns are used to make sand mold pieces, which are then used to assemble the final sand mold. Sand molds are used for our 'AZS' (alumina, zirconia, silica) products. Typical machinery in this area consists of table saws, planers, jointers, band saws, drills, etc.

Emission Source/Control: 10400 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 10401 - Process



Item 12.4(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00001

Process: 104

Source Classification Code: 3-05-005-04

Process Description:

Core Ovens - The core ovens are natural gas fired drying ovens used to cure inserts prepared for various molds.

The inserts are used to create holes, curves, notches or other unusual characteristics in a casting.

Emission Source/Control: 11200 - Process

Design Capacity: 7,000 pounds per day

Emission Source/Control: 11300 - Process

Design Capacity: 7,000 pounds per day

Item 12.5(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00002

Process: 201

Source Classification Code: 3-05-005-05

Process Description:

Swing Frame - The very first finishing step for many castings is a preliminary grinding step to deal with imperfections in a casting that do not require the precision of the large grinders. Tools used include hand grinders and larger grinding wheels mounted on a special frame that allows the operator to swing the wheel back and forth over the castings. This work is conducted in a booth in order to confine the debris removed from the castings. Water is applied by the operator as needed to cleanse the area being worked on. Each booth (there are two which have the swing frame grinders) is connected to an exhaust fan which discharges the exhausted air to the atmosphere.

Saw & Grind - Many castings are cooled with an extra piece, called a 'header'. These headers must be removed prior to the next finishing step. Other castings may need special cuts made in them. This work is done using industrial saws with diamond-tipped blades. The blade is continuously sprayed with water during cutting to cool the blade, wash away 'saw dust' and to help reduce noise levels. Most castings require grinding to meet customer specifications. The grinding process is continuously flushed with water. The grinding pads are also made up of industrial diamonds. The grinding operation is partially enclosed. The emission controls on these machines are the water sprays.

New York State Department of Environmental Conservation

Permit ID: 9-0638-00078/00056

Facility DEC ID: 9063800078



Research - A small cutoff saw is used in the Research Department to prepare specimens for testing. The emissions are controlled by water spray and then exhausted.

Emission Source/Control: 22503 - Control
Control Type: DUST SUPPRESSION BY WATER SPRAY

Emission Source/Control: 22504 - Control
Control Type: DUST SUPPRESSION BY WATER SPRAY

Emission Source/Control: 22505 - Control
Control Type: DUST SUPPRESSION BY WATER SPRAY

Emission Source/Control: 24201 - Control
Control Type: DUST SUPPRESSION BY WATER SPRAY

Emission Source/Control: 22500 - Process

Emission Source/Control: 22501 - Process

Emission Source/Control: 22502 - Process

Emission Source/Control: 24200 - Process
Design Capacity: 2,475 cubic feet per minute

Item 12.6(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003

Process: 301

Source Classification Code: 3-05-005-05

Process Description:

Old Box Dump - Blocks annealed in alumina are sent to the 'old box dump' where the bin tops are removed using a chain and an overhead crane and hoist. As a bin tip is removed, the annealing ore falls onto a pan located under the roller conveyor on which the bin is resting. The ore is screened to remove lumps, which are sent to a delumper for size reduction. This material, along with the remaining alumina, is sent to storage prior to additional screening by rotex screens. The recovered alumina is then returned to the furnace department for reuse. The casting is retrieved using a chain or special tongs and the overhead crane. Any alumina that has fused to the casting is removed using air chisels. This process is conducted at cleaning stations connected to dust collectors. The bin bottom is then tipped over to remove the remaining ore. The tipping is done inside a dust collection hood. The blocks are directed to the inspection area prior to finishing.

Emission Source/Control: 32200 - Control



Control Type: FABRIC FILTER

Emission Source/Control: 32203 - Process
Design Capacity: 15,000 pounds per hour

Item 12.7(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003
Process: 302 Source Classification Code: 3-05-005-05
Process Description:
Sand Blast - An aluminum oxide abrasive blasting system used to remove gross imperfections and to provide additional cleaning of the blocks prior to inspection.

Emission Source/Control: 32201 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 32202 - Process
Design Capacity: 6,000 pounds per day

Item 12.8(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003
Process: 303 Source Classification Code: 3-05-005-02
Process Description:
Rotex Screening - The alumina retrieved from the old box dump is screened to remove over and under-sized alumina. Over/under sized sand is sent to a landfill. Cleaned, properly sized alumina is returned to bins at the flasking operation, to the A & C furnaces annealing system, or to storage in a silo.

Emission Source/Control: 32300 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 32301 - Process
Design Capacity: 15,000 pounds per hour

Emission Source/Control: 32302 - Process
Design Capacity: 12 tons per hour

Emission Source/Control: 32303 - Process
Design Capacity: 12 tons per hour

Item 12.9(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003
Process: 304 Source Classification Code: 3-05-005-05
Process Description:



The New Box Dump - Blocks annealed in sand are sent to the 'new box dump' where the entire bin is picked up and tipped over, allowing the castings and the sand to fall onto a special shaker table/conveyor. This conveyor contains thousands of small diameter holes which allow the free-flowing sand to pass through. The sand that passes through continues on to storage and additional screening. Recovered sand is sent to various areas for reuse. Discarded sand (over-and undersized) is collected and sent offsite for reuse in the blacktop industry. The casting is recovered using chains or tongs and directed to sandblast booth where gross imperfections are removed using an aluminum oxide abrasive blasting system.

Emission Source/Control: 32600 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 32700 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 32601 - Process
Design Capacity: 10 tons per hour

Item 12.10(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003

Process: 305

Source Classification Code: 3-05-005-05

Process Description:

Flasking - Sand molds are sent to mold setting from the mold department. The mold setters take the assembled molds and place them on a layer of sand inside a steel bin 'bottom'. Bin 'tops' (four-sided steel enclosures) are then placed on top of the bin bottom to bring the total height of the bin equal to the height of the mold. The annular space between the mold and the bin is then filled with sand using a special loading chute - sand stored in an overhead bin is dropped down the center of the chute while a countercurrent flow of air collects the fines and transports them to a dust collector. Once this 'annealing' sand has been added, the mold is ready for casting and is transported to the furnace department using a fork lift.

Emission Source/Control: 32700 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 33303 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 33301 - Process
Design Capacity: 60 tons per hour



Item 12.11(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003

Process: 306

Source Classification Code: 3-05-027-60

Process Description:

Reclaim Sand Silo - The reclaimed sand is pneumatically conveyed into the storage silo, which is vented to equalize the silo pressure during operation. The air is vented through a filter.

Emission Source/Control: 33101 - Control

Control Type: FABRIC FILTER

Emission Source/Control: 33100 - Process

Item 12.12(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003

Process: 307

Source Classification Code: 3-05-027-60

Process Description:

New Sand Silo - The new sand is pneumatically conveyed into the storage silo, which is vented to equalize the silo pressure during operation. The air is vented through a filter.

Emission Source/Control: 33201 - Control

Control Type: FABRIC FILTER

Emission Source/Control: 33200 - Process

Item 12.13(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00003

Process: 308

Source Classification Code: 3-05-027-60

Process Description:

Annealing Sand Silo - The annealing sand is pneumatically conveyed into the storage silo, which is vented to equalize the silo pressure during operation. The air is vented through a filter.

Emission Source/Control: 33601 - Control

Control Type: FABRIC FILTER

Emission Source/Control: 33600 - Process

Item 12.14(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:



Emission Unit: 0-00004
Process: 401 Source Classification Code: 3-05-005-03

Process Description:
D & E Annealing - Products manufactured on the 'D' & 'E' furnaces are cast into molds that have already been set inside a metal bin and surrounded with annealing ore (sand) prior to pouring. After casting is completed, the entire bin is moved to the annealing area for that furnace where the top is covered with more ore. The addition of annealing ore (sand) for the 'D' and 'E' furnaces is by use of special loading chutes that collect dust as the material is being added to the bin.

Emission Source/Control: 41700 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 41701 - Process

Item 12.15(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00004
Process: 402 Source Classification Code: 3-05-005-03

Process Description:
'A' furnace is 10ft in diameter and has a canopy type hood and it's own dust collector. 'A' furnace is used to produce chromium containing products. Each furnace consists of a refractory-lined steel pot and three graphite electrodes. The electrodes are all mounted above the pot and generate the intense heat needed to melt and fuse the materials. The outside of each pot is cooled by continually spraying water on it. Products manufactured in 'A' furnace are cast into molds that have already been set inside a metal bin and surrounded with annealing ore (alumina) prior to pouring. After casting, the entire bin is moved to the annealing area for that furnace and the top is covered with more ore. The addition of annealing ore is conducted in front of side draft hoods, or by using special loading chutes that collect dust as the material is being added to the bin. After the addition of annealing ore is completed, the bin is stored in a large room and the casting is allowed to cool.

Emission Source/Control: 41900 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 41901 - Process
Design Capacity: 2 tons per hour

Item 12.16(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:



Emission Unit: 0-00004

Process: 403

Source Classification Code: 3-05-005-03

Process Description:

'C' Furnace Operations - Each furnace consists of a refractory-lined steel pot and three graphite electrodes. The 'C' furnace diameter is 12 ft. After the furnace mixes are prepared, they are transported by fork lift and placed on a platform next to the appropriate furnace. The raw batch is then loaded into the furnace using a combination of conveyors and elevators. The outside of each furnace pot is cooled by continually spraying water on it. The electrodes are all mounted above the pot and generate the intense heat needed to melt and fuse the materials. Melt temperatures range from 3500 F to 3600 F. 'C' furnace produces high alumina and magnesium aluminate products and has a dedicated dust collector. After melting is completed the liquid ceramic is cast into the molds. For blocks cast on 'C' furnace, the entire block is removed from the free-standing graphite mold it was cast into and placed into a metal bin, then completely covered with alumina. After the addition of annealing ore is completed, the bin is stored in a large room and the casting is allowed to cool (i.e. anneal).

Emission Source/Control: 42000 - Control

Control Type: FABRIC FILTER

Emission Source/Control: 42001 - Process

Design Capacity: 2.5 tons per hour

Item 12.17(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00004

Process: 405

Source Classification Code: 3-05-005-03

Process Description:

Sand Waste Disposal - the pneumatic transport system for the Sand Box Dump. Here castings poured into sand molds are recovered. Initial screening of the contents of the 'box' on a large vibrating table is followed by additional screening of the free flowing sand using Rotex screens. The properly sized sand is reused, and the oversized and undersized sand is pneumatically transported to a storage bin, that is vented by EP 38.

Emission Source/Control: 43800 - Control

Control Type: FABRIC FILTER

Emission Source/Control: 43801 - Process

Item 12.18(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:



Emission Unit: 0-00004
Process: 406 Source Classification Code: 3-05-005-03

Process Description:
'D' & 'E' furnaces - The 'D' furnace is 8 ft in diameter and the 'E' furnace is 10 ft in diameter, these two furnaces share one baghouse and have slot-type collectors mounted immediately above the furnace pots. Each furnace consists of a refractory-lined steel pot and three graphite electrodes. Melt temperatures range from 3200 F to 4500 F, depending on the product. The 'D' & 'E' furnaces are used to produce alumina-zirconia-silica (AZS) and high zirconia products. After the block has been cast, the top must be covered with annealing ore to control the rate of cooling, this is Process 401, as described previously.

Emission Source/Control: 44500 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 44501 - Process
Design Capacity: 2 tons per hour

Emission Source/Control: 44502 - Process
Design Capacity: 3 tons per hour

Item 12.19(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00004
Process: 407 Source Classification Code: 3-05-005-03

Process Description:
Laboratory Furnaces - Two small electric arc furnaces, similar to the production furnaces described in Processes 402 and 403 are used to prepare experimental refractories.

Emission Source/Control: 42101 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 42100 - Process

Item 12.20(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00004
Process: 408 Source Classification Code: 3-09-005-00

Process Description:
Maintenance Welding - Welding repairs are made on Equipment in all parts of the plant.

Emission Source/Control: 44400 - Process



Item 12.21(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00005

Process: 501

Source Classification Code: 3-05-005-02

Process Description:

Crushing System - A crushing and screening system is used to prepare 'headers' and scrapped blocks for reuse as raw material in the furnace mixes; ('Headers' are that part of each block that is removed prior to annealing or cut off in the saw & grind department as part of the finishing process. Headers act as reservoirs for molten ceramic and supply additional melt to the interior portions of the blocks as they cool and contract. This helps reduce the size and prevalence of cavities in the center of the castings.) The headers, scrapped blocks, and any other materials are sent directly to the primary crusher. The primary (jaw) crusher is fed via a skip hoist and vibratory feeder table. Crushed material is conveyed to a screen. The properly sized material goes directly to an overhead storage bin via a belt conveyor. Undersize material is discarded. Oversize material is directed to the secondary (cone) crusher for additional size reduction, then directed back to the screen.

The sources listed under Process 501 will be ducted to a new baghouse ("New Crushing Dust Collector") defined as Emission Source 54700 and Emission Point 00047. New emission sources 54616, 54617, 54618, 54619 and 54620 will be ducted to the new baghouse, emission source 54700, also. These new sources are additional pick up points on the crusher to control dust.

The sources listed under Processes 502, 503 and 504 will remain ducted to the existing baghouse ("Weigh and Mix Dust Collector") defined as Emission Source 50300 and Emission Point 00003.

Emission Source/Control: 54700 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 54701 - Process

Emission Source/Control: 54702 - Process

Emission Source/Control: 54703 - Process

Emission Source/Control: 54704 - Process

Emission Source/Control: 54705 - Process



Emission Source/Control: 54706 - Process

Emission Source/Control: 54707 - Process

Emission Source/Control: 54708 - Process

Emission Source/Control: 54709 - Process

Emission Source/Control: 54710 - Process

Emission Source/Control: 54711 - Process

Emission Source/Control: 54712 - Process

Emission Source/Control: 54713 - Process

Emission Source/Control: 54714 - Process

Emission Source/Control: 54715 - Process

Emission Source/Control: 54716 - Process
Design Capacity: 7.5 tons per hour

Emission Source/Control: 54717 - Process
Design Capacity: 7.5 tons per hour

Emission Source/Control: 54718 - Process
Design Capacity: 7.5 tons per hour

Emission Source/Control: 54719 - Process
Design Capacity: 7.5 tons per hour

Emission Source/Control: 54720 - Process
Design Capacity: 7.5 tons per hour

Item 12.22(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00005

Process: 502

Source Classification Code: 3-05-005-02

Process Description:

Chrome Blender - The chrome blender is used to mix the raw materials that make up a furnace batch for all the chrome products. The raw materials are gathered and transferred to a mix hopper, which is then placed above the blender. The contents of the hopper are transferred to the blender, where they are mixed. The blender discharges to another hopper, which is then transported to the proper furnace. Emissions are generated only during the material transfer operations.

Emission Source/Control: 50300 - Control



Control Type: FABRIC FILTER

Emission Source/Control: 50316 - Process
Design Capacity: 12 tons per hour

Item 12.23(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00005
Process: 503 Source Classification Code: 3-05-005-02
Process Description:

Non-Chrome Blender - The non-chrome blender is used to mix the raw materials that make up a furnace batch for all the non-chrome products. The raw materials are gathered and transferred to a mix hopper, which is then placed above the blender. The contents of the hopper are transferred to the blender, where they are mixed. The blender discharges to another hopper, which is then transported to the proper furnace. Emissions are generated only during the material transfer operations.

Emission Source/Control: 50300 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 50317 - Process
Design Capacity: 22 tons per hour

Item 12.24(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00005
Process: 504 Source Classification Code: 3-05-005-02
Process Description:

Raw Material Bin Loading - High volume raw materials (solids) are shipped to the facility in bulk and stored in overhead bins. An elevator and several vibratory conveyors are used to move the materials. The tops of the storage bins and the material transfer points (i.e. conveyor-to-conveyor transfers, conveyor-to-bin transfers) are connected to the emission point 003 baghouse.

Emission Source/Control: 50300 - Control
Control Type: FABRIC FILTER

Emission Source/Control: 50318 - Process

Emission Source/Control: 50319 - Process

Emission Source/Control: 50320 - Process

Item 12.25(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:



Emission Unit: 0-00005

Process: 505

Source Classification Code: 3-05-005-02

Process Description:

Car Unloading - Most of the high-volume raw materials arrive by railcar or bulk hopper truck. Materials to be stored in the overhead bins (e.g. alumina, zircon, zirconia, soda ash, and some sand) are unloaded by parking the car or truck over a hopper that feeds a conveyor and elevator system, then emptying the material into the transport system which directs it to the proper storage bin. New silica sand is unloaded into separate pneumatic transport system which blows the material into a nearby silo (the new sand silo). A second sand silo is used to temporarily store excess used sand (i.e. 'Annealing' sand - stored in the reclaim sand silo). A second sand silo is used to temporarily store excess used sand (i.e. 'annealing' sand - is stored in the reclaim sand silo). The annealing sand is also transported pneumatically, both the incoming (excess from the process) and the outgoing (sand needed by the process).

Emission Source/Control: 51800 - Control

Control Type: FABRIC FILTER

Emission Source/Control: 51801 - Process

Item 12.26(From Mod 6):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 0-00005

Process: 506

Source Classification Code: 3-05-005-02

Process Description:

Block Breaker - A crushing and screening system is used to prepare 'headers' and scrapped blocks for reuse as raw material in the furnace mixes; ('headers' are that part of each block that are removed prior to annealing or cut off in the saw & grind department as part of the finishing process. Headers act as reservoirs for molten ceramic and supply additional melt to the interior portions of the blocks as they cool and contract. This helps reduce the size and prevalence of cavities in the center of the castings.) The headers, scrapped blocks, and any other materials to be reused are sent to the crushing area from the furnace department and the saw & grind department. The larger pieces must first be reduced in size using a hydraulic hammer (block breaker) prior to being sent to the primary crusher.

Emission Source/Control: 54600 - Control

Control Type: FABRIC FILTER



Emission Source/Control: 54601 - Process
Design Capacity: 11,000 pounds per hour

