TENNESSEE AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-1531

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

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

Date Issued: Draft

Permit Number: 560146

Date Expires: Draft

Issued To:

Nyrstar Clarksville, Inc.

Installation Address:

1800 Zinc Plant Road
Clarksville

Installation Description:
Manufacture of zinc, sulfuric acid, and cadmium
(40 CFR Part 63 Subpart GGGGGG)
(40 CFR Part 63 Subpart JJJJJJ)
See next page

Emission Source Reference No.: 63-0092

Renewal Application Due Date:
Between 180 and 270 days

Primary SIC: 10

Responsible Official:
Name: Darin Cooper
Title: General Manager

Facility Contact Person:
Name: Chad Crocker
Title: Environmental Specialist
Phone: (931) 552-4200 ext. 3277

Information Relied Upon:
See next page

(continued on the next page)

TECHNICAL SECRETARY

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

POST OR FILE AT INSTALLATION ADDRESS

Installation Description (Continued from 1st page):

63-0092-01-(1-6): Materials Handling
63-0092-03-(1-3): Acid Plant Tail Gas stack / Calcine Process Baghouse and Calcine Storage Silos Baghouse
63-0092-06-(1-14): Zinc Electrolysis (2 Purification Cooling Towers / 11 Electrolyte Cooling Towers)
63-0092-07-(1,1A,1B): Zinc Electrolysis (Anode Casting / Silver Lead Alloy Furnace / Pure Lead Furnace)
63-0092-08-(2-4): Melting/Casting (Zinc Melting Furnace / Zinc Dust Atomization / Zinc Dust Screening)
63-0092-09: Dross Handling and Zinc Dust Furnace Baghouse
63-0092-11: Cadmium Melt Furnace Baghouse
63-0092-12-(1-3): Auxiliary Boiler / Roaster Preheater / Primary Acid Plant Preheater
63-0092-14-(1-3): Leach/Purification
63-0092-20: Scrap Zinc Furnace & Alloy Furnace Baghouse
63-0092-24: Secondary Acid Plant Preheater
63-0092-25: Lead Anode Pre-Coating Operation
63-0092-99: General Facility Permit (Addressed in general conditions)

Information Relied Upon (Continued from 1st page):

Administrative Amendment1 dated: May 17, 2002
Administrative Amendment2 dated: June 24, 2003
Administrative Amendment3 dated: June 7, 2004
Administrative Amendment4 dated: September 8, 2004
Application for Title V Renewal dated: October 1996
Application for Minor Modification #1 dated: December 31, 2003
Application for Minor Modification dated: May 7, 2004
Application for Minor Modification dated: May 18, 2005
Application for Administrative Amendment dated: January 25, 2006
Application for T5 permit renewal dated: July 7, 2006
Application for Significant Modification dated: March 21, 2007
Application for Minor Modification dated: September 14, 2006
Application for Administrative Amendment dated: January 25, 2007
Application for Administrative Amendment dated: July 16, 2007
Application for Minor Modification dated: February 12, 2008
Application for Minor Modification dated: April 11, 2008
Application for Administrative Amendment dated: October 15, 2008
Application for Administrative Amendment dated: February 22, 2010
Application for Administrative Amendment dated: March 8, 2010
Application for Administrative Amendment dated: April 9, 2010
Application for Minor Modification dated: June 10, 2010
Application for Minor Modification dated: July 7, 2010
Application for Minor Modification dated: September 10, 2010
Application for Administrative Amendment dated: December 5, 2011
Application for Administrative Amendment dated: July 19, 2012
Additional Information dated: August 31, 1999
Email dated:5-11-11,
Email dated:5-12-11
Email dated: 3-20-12
Letter dated: April 30, 1997
Letter dated: July 29, 1997
Letter dated: October 16, 2000
Letter dated: October 17, 2000
Letter dated: October 11, 2001
Letter dated: November 1, 2001
Letter dated: May 17, 2002
Letters dated: May 7, 2004 and April 12, 2005
Letter dated June 7, 2004
Letters dated: November 9, 2004 and February 11, 2005

Letter dated: April 12, 2005
Letter dated: October 31, 2006
Letters (2) dated October 21, 2010
Letter dated: January 20, 2012
Letter dated: March 15, 2012
Letter dated: March 16, 2012
Minor Modification dated: December 31, 2003
Minor Modification dated: January 14, 2005
Minor Modification dated: July 26, 2005
Revisions dated: March 1997
Revisions dated: October 11, 2001
Significant Modification dated: March 28, 2007
Significant Modification dated: June 13, 2007
Title V Permit dated: January 7, 2002

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ATTACHMENT 1	**Opacity Matrix Decision Tree for Visible Emission Evaluation by EPA Method 2 dated June 18, 1996**	**2 Pages**
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ATTACHMENT 3	**Dust Control Plan**	**12 Pages**
ATTACHMENT 4	**Applicability of 40 CFR 63 General Provisions To Primary Zinc Production Area Sources (40 CFR Part 63, Subpart GGGGGG, Table 1)**	**3 Pages**
ATTACHMENT 5	**Sampling Locations**	**1 Page**

SECTION A
GENERAL PERMIT CONDITIONS

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

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

TAPCR 1200-03

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

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

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

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

A4. **The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. This permit supersedes any previous permits for sources included in the Title V application.

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

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

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

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

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

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

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

A8. Fee payment.

(a) The permittee shall pay an annual major source emission fee based upon the responsible official's choice of actual emissions or allowable emissions. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A major source annual emission fee will not be charged for emissions in excess of the cap (s) or for carbon monoxide.

(b) Major sources who have filed a timely, complete operating permit application in accordance with 1200-03-09-.02(11), shall pay allowable emission based fees until the beginning of the next annual accounting period following receipt of their major source operating permit. At that time, the permittee shall begin paying their annual emission fee based upon their choice of actual or allowable based fees, or mixed actual and allowable based fees as stated under SECTION E of this permit. Once permitted, altering the existing choice shall be accomplished by a written request of the major source, filed in the office of the Technical Secretary at least one hundred eighty days prior to the expiration or reissuance of the major source operating permit.

(c) Major sources must conform to the following requirements with respect to fee payments:

1. If a major source choosing an allowable based annual emission fee wishes to restructure its allowable emissions for the purposes of lowering its annual emission fees, a mutually agreed upon, more restrictive regulatory requirement may be established to minimize the allowable emissions and thus the annual emission fee. The more restrictive requirement must be specified on the permit, and must include the method used to determine compliance with the limitation. The documentation procedure to be followed by the major source must also be included to insure that the limit is not exceeded. Restructuring the allowable emissions is permissible only in the annual accounting periods of eligibility and only, if the written request for restructuring is filed with the Technical Secretary at least 120 days prior to the beginning of the annual accounting period of eligibility. These periods of eligibility occur upon expiration of the initial major source operating permit, renewal of an expired major source operating permit or reissuance of a major source operating permit.

2. Beginning with the annual accounting period beginning July 1, 1997 to June 30, 1998, major sources paying on allowable based emission fees will be billed by the Division no later than April 1 prior to the end of the accounting period. The major source annual emission fee is due July 1 following the end of the accounting period.

3. Beginning with the annual accounting period beginning July 1, 1997 to June 30, 1998, major sources choosing an actual based annual emission fee shall file an actual emissions analysis with the Technical Secretary which summarizes the actual emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the actual emissions analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

4. Beginning with the annual accounting period beginning July 1,1997 to June 30, 1998, major sources choosing a mixture of allowable and actual based emission fees shall file an actual emissions and allowable emissions analysis with the Technical Secretary which summarizes the actual and allowable emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

The mixed based fee shall be calculated utilizing the 4,000 ton cap specified in subparagraph 1200-03-26-.02(2)(i). In determining the tonnages to be applied toward the regulated pollutant 4,000 ton cap in a mixed based fee, the source shall first calculate the actual emission based fees for a regulated pollutant and apply that tonnage toward the regulated pollutant's cap. The remaining tonnage available in the 4,000 ton category of a regulated pollutant shall be subject to allowable emission based fee calculations for the sources that were not included in the actual emission based fee calculations. Once the 4,000 ton cap has been reached for a regulated pollutant, no additional fee shall be required.

5. Major sources choosing to pay their major source annual emission fee based on actual based emissions or a mixture of allowable and actual based emissions may request an extension of time to file their emissions analysis with the Technical Secretary. The extension may be granted by the Technical Secretary up to ninety (90) days. The request for extension must be postmarked no later than July 1 or the request for extension shall be denied. The request for extension to file must state the reason and give an adequate explanation.

An estimated annual emission fee payment of no less than eighty percent (80%) of the fee due July 1 must accompany the request for extension to avoid penalties and interest on the underpayment of the annual emission fee. A remaining balance due must accompany the emission analysis. If there has been an overpayment, a refund may be requested in writing to the Division or be applied as a credit toward next year's major source annual emission fee. The request for extension of time is not available to major sources choosing to pay their major source annual emission fee based on allowable emissions.

6. Newly constructed major sources or minor existing sources modifying their operations such that they become a major source in the midst of the standard July 1st to June 30th annual accounting period, shall pay allowable based annual emission fees for the fractional remainder of the annual accounting period commencing upon their start-up. At the beginning of the next annual accounting period, the "responsible official" of the source may choose to pay annual emission fees based on actual or allowable emissions or a mixture of the two as provided for in this rule 1200-03-26-.02.

(d) Where more than one (1) allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of paragraph 1200-03-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.

1. Sources that are subject to federally promulgated hazardous air pollutant standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31 will place such regulated emissions in the specific hazardous air pollutant under regulation. If the pollutant is also in the family of volatile organic compounds or the family of particulates, the pollutant shall not be placed in that respective family category.

2. A miscellaneous category of hazardous air pollutants shall be used for hazardous air pollutants listed at part 1200-03-26-.02(2)(i)12 that do not have an allowable emission standard. A pollutant placed in this category shall not be subject to being placed in any other category such as volatile organic compounds or particulates.

3. Each individual hazardous air pollutant and the miscellaneous category of hazardous air pollutants is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

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

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

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

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

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

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

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

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

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

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

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

A11. **Permit shield.**

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

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

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

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

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

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

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

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

(c) Permit shield is granted to the permittee.

A12. Permit renewal and expiration.

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

(b) Provided that the permittee submits a timely and complete application for permit renewal the source will not be considered in violation of paragraph 1200-03-09-.02(11) until the Technical Secretary takes final action on the permit application, except as otherwise noted in paragraph 1200-03-09-.02(11).

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

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

A13. Reopening for cause.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

A16. **Construction permit required.** Except as exempted in TAPCR 1200-03-09-.04, TAPCR 1200-03-09-.02(11)(f)5, and sources considered insignificant under TAPCR 1200-03-09-.04(5), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

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

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

(a) change in air pollution control equipment

(b) change in stack height or diameter

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

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

A18. **Schedule of compliance.** The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis. If the permittee is not in compliance the permittee must submit a schedule for coming into compliance which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

TAPCR 1200-03-09-.02(11)(d)3 and 40 CFR Part 70.5(c)

A19. **Title VI.**

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

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

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

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

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

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

A20. **112 (r).** The permittee shall comply with the requirement to submit to the Administrator or designated State Agency a risk management plan, including a registration that reflects all covered processes, by June 21, 1999, if the permittee's facility is required pursuant to 40 CFR, 68, to submit such a plan.

SECTION B

GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

B1. **Recordkeeping.** Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than at least 180 days.

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

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

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

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

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

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

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

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

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

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

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

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

(b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period;

(c) Whether such method(s) or other means provide continuous or intermittent data. Such methods and other means shall include, at a minimum, the methods and means required by this permit If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;

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

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

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

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

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol.62, No.204, October 22, 1997, pages 54946 and 54947

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

The Technical Secretary
Division of Air Pollution Control
ATTN: Middle Tennessee Permit Program
9th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1531,

and

Air and EPCRA Enforcement Branch
US EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303

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

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

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

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

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

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

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

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

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

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

B8. **Excess emissions reporting.**

(a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in Division 1200-03 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office. The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected. In attainment and unclassified areas if emissions other than from

sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.

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

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

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

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

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

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

TAPCR 1200-03-20-.02

B10. **Sources located in non-attainment areas or having significant impact on air quality in a non-attainment area.** The owner or operator of all sources located in non-attainment areas or having a significant impact on air quality in a non-attainment area (for the pollutant designated) must submit a report to the Technical Secretary within thirty (30) days after the end of each calendar quarter listing the times at which malfunctions, startups and/or shutdowns, which resulted in emissions greater than any applicable emission limits, occurred and the estimated amount of emissions discharged during such times. This report shall also include total emissions during the quarter and be reported in a format specified by the Technical Secretary.

TAPCR 1200-03-20-.04(2)

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

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

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

(c) The time and duration of the emissions;

(d) The nature and cause of such emissions;

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

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

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

Failure to submit the required report within the twenty (20) day period specified shall preclude the admissibility of the data for consideration of excusal for malfunctions.

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

SECTION C
PERMIT CHANGES

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

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

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

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

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

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

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

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

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

(a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or Division 1200-3 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7 day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR 1200-03-09-.02(11)(e)7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.

(b) The written notification must include the following:

1. brief description of the change within the permitted facility;
2. specifies the date on which the change will occur;
3. declares any change in emissions; and
4. declares any permit term or condition that is no longer applicable as a result of the change.

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

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

C3. **Administrative amendment.**

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

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

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

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

C4. Minor permit modifications.

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

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

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

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

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

C5. Significant permit modifications.

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

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

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

C6. New construction or modifications.

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

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

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

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

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

SECTION D
GENERAL APPLICABLE REQUIREMENTS

D1. **Visible emissions.** With the exception of air emission sources exempt from the requirements of TAPCR Chapter 1200-03-05 and air emission sources for which a different opacity standard is specifically provided elsewhere in this permit, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1)hour or more than twenty (20) minutes in any twenty-four (24) hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of twenty (20) percent (6-minute average) except for one six minute period per one (1) hour of not more than forty (40) percent opacity. Sources constructed or modified after July 7, 1992 shall utilize 6-minute averaging.

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

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

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

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

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

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

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

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

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

D7. **Fugitive Dust.**

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

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;

2. Application of asphalt, oil, water, or suitable chemicals on dirt roads, material stock piles, and other surfaces which can create airborne dusts;

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

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

TAPCR 1200-03-08

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

TAPCR 1200-03-04

D9. **Asbestos.** Where applicable, the permittee shall comply with the requirements of 1200-03-11-.02(d) when conducting any renovation or demolition activities at the facility.

TAPCR 1200-03-11-.02(d) and 40 CFR, Part 61

D10. **Annual certification of compliance.** The generally applicable requirements set forth in Section D of this permit are intended to apply to activities and sources that are not subject to source-specific applicable requirements contained in State of Tennessee and U.S. EPA regulations. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related record keeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)1 and compliance requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit compliance certification for these conditions annually.

SECTION E

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

63-0092	**Facility Description:**	Nyrstar Clarksville, Inc. manufactures zinc, sulfuric acid and cadmium. The procedures include 1) roasting zinc sulfide-rich concentrate to produce a zinc oxide (calcine), 2) dissolving the calcine in sulfuric acid to produce a zinc sulfate solution (leaching), 3) purification of the zinc sulfate solution to remove impurities, 4) electrowinning the zinc as a metal from the purified solution, and 5) melting and casting the zinc metal into ingots.

Conditions E1 through E3 apply to all sources in Section E of this permit unless otherwise noted.

E1. Fee payment: allowable emissions basis.

FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCE 63-0092

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	389.1	N/A	Fee emission includes PM10.
PM_{10}	N/A	N/A	Fee emission are included above
SO_2	1058.7	N/A	
VOC	N/A	N/A	For emission fees only
NO_X	50.6	N/A	For emission fees only
CATEGORY OF MISCELLANEOUS HAZARDOUS AIR POLLUTANTS (HAP WITHOUT A STANDARD)*			
VOC FAMILY GROUP	N/A	N/A	
NON-VOC GASEOUS GROUP	2.2		Chlorine
PM FAMILY GROUP	N/A	N/A	Not included in the PM above
CATEGORY OF SPECIFIC HAZARDOUS AIR POLLUTANTS (HAP WITH A STANDARD)**			
VOC FAMILY GROUP	N/A	N/A	
NON-VOC GASEOUS GROUP	N/A	N/A	
PM FAMILY GROUP	N/A	N/A	
CATEGORY OF NSPS POLLUTANTS NOT LISTED ABOVE***			
EACH NSPS POLLUTANT NOT LISTED ABOVE	N/A	N/A	

NOTES

AAP The **Annual Accounting Period** (AAP) is a twelve (12) consecutive month period that **begins each July 1st and ends June 30th of the following year.** The **present Annual Accounting Period began July 1, 2012 and ends June 30, 2013.** The **next Annual Accounting Period begins July 1, 2013 and ends June 30, 2014.**

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

AEAR **AEAR** indicates that an Actual Emissions Analysis is Required to determine the actual emissions of:

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

(2) **each pollutant group** (VOC Family, Non-VOC Gaseous, and Particulate Family), and

(3) the **Miscellaneous HAP Category**

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

* **Category Of Miscellaneous HAP (HAP Without A Standard):** This category is made-up of hazardous air pollutants that do not have a federal or state standard. Each HAP is classified into one of three groups, the **VOC Family** group, **the Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, the **Miscellaneous HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

** **Category Of Specific HAP (HAP With A Standard):** This category is made-up of hazardous air pollutants (HAP) that are subject to Federally promulgated Hazardous Air Pollutant Standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31. Each individual hazardous air pollutant is classified into one of three groups, the **VOC Family** group, **the Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, each individual hazardous air pollutant of the **Specific HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(I).

*** **Category Of NSPS Pollutants Not Listed Above:** This category is made-up of each New Source Performance Standard (NSPS) pollutant whose emissions are not included in the **PM**, **SO_2**, **VOC** or **NO_X** emissions from each source in this permit. **For fee computation**, each **NSPS pollutant not listed above** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

END NOTES

The permittee shall:

(1) Pay annual **allowable based emission fees** for the **present Annual Accounting Period.**

(2) Pay major source annual **allowable based emission fees**, as requested by the responsible official, in accordance with the above **Fee Emissions Summary Table** beginning July 1, **2013** of the **next annual accounting period.**

The Tennessee Air Pollution Control Division will bill the permittee no later than April 1 prior to the end of each **annual accounting period**. The annual emission fee is due July 1 following the end of each **annual accounting period**. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8). Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

Payment of the fee due and the actual emissions analysis shall be submitted to The Technical Secretary at the address in Condition E2(b) of this permit.

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

E2. **Reporting requirements**.

(a) **Semiannual reports.** The first report since the issuance of this permit renewal shall cover the 6-month period from July 1, 2012 to December 31, 2012 and shall be submitted within 60 days after the 6-month period ending December 31, 2012. Subsequent reports shall be submitted within 60 days after the end of each 6-month period following the first report. These semiannual reports shall include:

(1) Reports of any monitoring and recordkeeping required by Conditions E4-1, E5-1, E5-2, E6-1, E7-1, E8-1, E8-2, E8-3, E9-1, E10-1, E11-2, E12-1, E12-2, E12-3, E13-2, E14-7, E14-8, and E15-3 of this permit. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

(2) The visible emission evaluation readings from Condition E3-2, E4-2, E5-5, E5-6, E6-2, E7-3, E8-5, E9-3, E10-2, E11-1, E12-4, E13-3, and E14-6 of this permit if required. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

(3) Identification of all instances of deviations from **ALL PERMIT REQUIREMENTS.**

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

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

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

(1) The identification of each term or condition of the permit that is the basis of the certification;
(2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period;
(3) Whether such method(s) or other means provide continuous or intermittent data. Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;
(4) The status of compliance with the terms and conditions of the permit for the period covered by the certification, based on the method or means designated in E2(b)2 above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an *excursion or **exceedance as defined below occurred; and
(5) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

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

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

The first certification since the issuance of this permit renewal shall cover the 12-month period from July 1, 2012 to June 30, 2013 and shall be submitted within 60 days after the 12-month period ending June 30, 2013. Subsequent certifications shall be submitted within 60 days after the end of each 12-month period following the first certification.

These certifications shall be submitted to:

The Technical Secretary **Division of Air Pollution Control** **ATTN: Middle Tennessee Permit Program** **9th Floor, L & C Annex** **401 Church Street** **Nashville, Tennessee 37243-1531**	**and**	**Air and EPCRA Enforcement Branch** **US EPA Region IV** **61 Forsyth Street, SW** **Atlanta, Georgia 30303**

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol.62, No.204, October 22, 1997, pages 54946 and 54947

E3. General Permit Requirements.

E3-1. Fugitive dust emissions from this facility shall be controlled as specified in Chapter 1200-03-08 of the Tennessee Air Pollution Control Regulations. Specifically, fugitive emissions shall be controlled such that there are no visible emissions beyond the property line of the property on which the emission originate, excluding legitimate malfunctions of equipment, for more than five (5) minutes per hour or twenty (20) minutes per twenty-four hours. Compliance with this standard shall be determined by Tennessee Visible Emission Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986.

TAPCR 1200-03-08

Compliance Method: The permittee shall assure compliance with this condition by adhering to the Nyrstar Dust Control Plan dated October 11, 2001, and updated March 2010.

E3-2. Visible emissions from all roads and parking lots at the facility shall not exceed ten (10) percent opacity. Compliance with this standard shall be determined by Tennessee Visible Emission Evaluation Method 1 as adopted by the Tennessee Air Pollution Control Board on April 29, 1992 and amended on September 29, 1982 and August 24, 1984.

Permit 043752P, Condition 2

Compliance Method: The permittee shall assure compliance with this condition by adhering to the Nyrstar Dust Control Plan dated October 11, 2001, and updated March 2010.

E3-3. The Technical Secretary of the Air Pollution Control Board directs Nyrstar Clarksville, Inc. located on Zinc Plant Road in Clarksville, TN to continue monitoring for PM10 particulate matter and Sulfur Dioxide at the site described below. The source owner or operator shall continue to conduct post-construction PM10 monitoring necessary to determine the effect emissions from the stationary source or modification may have, or are having on air quality. The monitoring sites will continue to be located near the intersection of the UTM coordinates listed below and identified on the attached map by location name.

Location Name for PM 10 Monitor: Site Number A (Co located)

Location Coordinates: Lat: 36.520298 Long: -87.3955

The PM10 monitoring network will continue to be operated and maintained as directed by the Technical Secretary of the Air Pollution Control Board to insure that complete, precise and accurate data are generated and reported. The data submitted shall be judged complete if at least 75% of the samples per site for PM10 are provided. The requirement for accurate and precise data shall continue to be judged as acceptable if a written Quality Assurance Plan should be provided within 30 days of receipt of this permit. If the Quality Assurance Plan was previously submitted, the most recently updated version of the plan should be provided. The plan once accepted must be utilized and employed for all future ambient PM10 monitoring. Any deviation from this Quality Assurance Plan would be considered as evidence of non-compliance with this permit condition.

Air quality data reporting must meet all the requirements set forth in Division Rule 1200-03-12-.02. Data are to be reported in the proper AQS format and must be accompanied by a statement of validation attesting data accuracy. Data are to be reported in standard time only and in units of measurement particular to the pollutant being observed. Failure to meet the requirements of this policy will be regarded as non-compliance. Data should be submitted in magnetic form within one month after the end of the month in which it was collected. Any recorded ambient air quality exceedance shall be reported to the Tennessee Division of Air Pollution Control within 24 hours of its discovery.

The Technical Secretary of the Air Pollution Control Board directs Nyrstar Clarksville, Inc. located on Zinc Plant Road in Clarksville, TN to continue monitoring for Sulfur Dioxide at the site described below. The source owner or operator shall continue to conduct post-construction SO_2 monitoring necessary to determine the effect emissions from the stationary source or modification may have, or are having on air quality. The monitoring sites will continue to be located near intersection of the UTM coordinates listed below and identified on the attached map by location name.

Location Name for SO_2 Monitor: Site Number C

Location Coordinates: Lat: 36.5051 Long: -87.3977

The SO_2 monitoring site will continue to be operated and maintained as directed by the Technical Secretary of the Air Pollution Control Board to insure that complete, precise and accurate data are generated and reported. The data submitted shall be judged complete if at least 75% of the hourly values per site per day and 75% of sampling days each calendar quarter of each year for SO_2 are reported. Additionally, the maximum 5-minute block average SO2 concentration for each of the above required hours must also be reported. The 5-minute data shall be judged complete if at least 75% of the 5-minute block averages in each hour are provided. The requirement for accurate and precise data shall continue to be judged as acceptable if a written Quality Assurance Plan for the SO_2 monitoring network is provided and accepted by this Division. This written Quality Assurance Plan should be provided within 30 days of receipt of this permit. If the Quality Assurance Plan was previously submitted, the most recently updated version of the plan should be provided. The plan once accepted must be

utilized and employed for all future ambient SO2 monitoring. Any deviation from this Quality Assurance Plan would be considered as evidence of non-compliance with this permit condition.

Air quality data reporting must meet all the requirements set forth in Division Rule 1200-03-12-.02. Data are to be reported in the proper AQS format and must be accompanied by a statement of validation attesting data accuracy. Data are to be reported in standard time only and in units of measurement particular to the pollutant being observed. Failure to meet the requirement of this policy will be regarded as non-compliance. Data should be submitted in magnetic form within one month after the end of the month in which it was collected. Any recorded ambient air quality exceedance shall be reported to the Tennessee Division of Air Pollution Control within 24 hours of its discovery.

Permit 043752P, Condition 3

E3-4. This facility is subject to the requirements of 40 CFR, Part 63, Subpart GGGGGG, National Emission Standards for Hazardous Air Pollutants for Primary Nonferrous Metals Area Sources – Zinc, Cadmium, and Beryllium. The following sources at this facility have been identified as being subject to an emission standard contained in Subpart GGGGGG:

Source No.	Stack ID	Description	Condition No.	Federal Rule Citation
63-0092-03	03018-00-ST	Zinc Ore Roaster /Acid Plant Tail Gas Stack	E5-1	63.11162(a)
63-0092-07	13110-00-ST	Anode Casting Furnace Baghouse	E7-1	63.11162(b)(4)
63-0092-08	09400-00-ST	Zinc Melting Furnace Baghouse	E8-1	63.11162(b)(6)
63-0092-09	11008-00-ST	Dross Handling & Zinc Dust Furnace Baghouse	E9-1	63.11162(b)(6)
63-0092-11	14176-00-ST	Cadmium Melting Furnace Baghouse	E10-1	63.11162(b)(5)
63-0092-20	09870-00-ST	Scrap Zinc Furnace and Alloy Furnace Baghouse	E13-2	63.11162(b)(6)

The permittee shall comply with all applicable requirements of 40 CFR, Part 63, Subpart GGGGGG. This includes, but is not limited to, the following:

A. Emission Standard / Periodic Monitoring.

The permittee shall comply with the emission standards and periodic monitoring requirements contained in Conditions E5-1, E7-1, E8-1, E9-1, E10-1, and E13-2.

40 CFR 63.11162(a), (b), and (c)

B. Performance Tests.

For each furnace identified in the table above, the permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard. The Zinc Ore Roaster/Acid Plant Tail Gas Stack is subject to the emission standard outlined in 63.11162(a), as provided in **Condition E5-1,** requiring only that the Zinc Ore Roaster is exhausted to a particulate matter control device followed by a sulfuric acid plant. The performance tests required in **Condition E3-4 Section B** are applicable to those sources with emission standards provided in 63.11162(b)(1) through (6). The performance tests shall be conducted according to 63.7(e)(1) using the test methods and procedures outlined in 63.11163(f)(3)(i) through (v). Subsequent performance tests must be conducted every five (5) years. Results of performance tests shall be submitted to the Technical Secretary within 60 days of the date of the test. If a furnace identified in the table above is not operating on the date that a subsequent performance test is due and subsequently resumes operation, the permittee shall:

1. Notify the Technical Secretary within 30 days of the date of resuming operations on the furnace,

2. Conduct a performance test according to the requirements in 40 CFR 11162(f)(3) within 120 days of the date of resuming operations on the furnace, and

3. Report the results of the performance test within 60 days of the date of the test.

40 CFR 63.11162(f) and (g)

C. Deviations.

The permittee shall submit a notification to the Technical Secretary of any deviation from the requirements of Subpart GGGGGG within thirty (30) days after the deviation. The notification must describe the probable cause of the deviation and any corrective actions or preventative measures taken.

40 CFR 63.11162(h)

D. Recordkeeping / Reporting.

The permittee shall maintain records of all required monitoring data and support information. This includes, but is not limited to, calibration and maintenance records for all monitoring equipment and copies of all reports required by Subpart GGGGGG. Reports shall be submitted semiannually in accordance with the conditions referenced in the table above and Condition E2(a) of this permit.

40 CFR 63.11162(i) and (j)

E. Operation and Maintenance.

The permittee shall maintain and operate all equipment covered under this subpart in a manner that does not cause a deviation from the applicable requirements. Maintenance records shall be retained for each air pollution control device in accordance with the conditions referenced in the table above. In the event of an emergency situation, the permittee shall comply with the requirements of either 40 CFR 63.11162(k)(3) or (4)

40 CFR 63.11162(k)

F. General Requirements.

The permittee shall comply with the General Provisions of 40 CFR, Part 63, Subpart A, according to Table 1 to Subpart GGGGGG of Part 63. The notification of compliance status required by 63.9(h) must include responsible official certification with the work practice standards in 63.11162(a) and must include the results of performance tests, including required monitoring data.

40 CFR 63.11164(a)

E3-5. Upon the malfunction/failure of any emission control device(s) serving this facility, the operation of the process(es) served by the device(s) shall be regulated by Chapter 1200-03-20 of the Tennessee Air Pollution Control Regulations.

E3-6. The permittee shall keep an up to date list of all equipment onsite and not in use, and make this list available to the Technical Secretary or designated representative. Inspection logs shall not be required for equipment on this list and operating equipment shall not be on this list.

63-0092-01	**Source Identification:**	Roaster Feed Material Handling, Barge, Rail, Truck Unloading, Transfer Storage, Screening and Grinding with Fabric Filter Control:			
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**	**Minimum Pressure Drop (inch of Water Column)**
16065-00-BA	Barge Unloading Baghouse	11	3.5 x 2.7	48,000	1.0
01100-00-ST	Rail/Truck Unloading Baghouse	30	4	56,850	0.5
01260-00-ST	Retractable Spout Baghouse	50	1.0	1,750	NA
01120-00-ST	Transfer Tower Baghouse	58	1.5	5,500	1.0
01140-00-DC	Concentrate Storage Building North Baghouse	19	9 x 2	26,375	0.7
01160-00-ST	Concentrate Storage Building South Baghouse	19	9 x 2	26,375	0.7
01180-00-ST	Screening Tower Baghouse	54	1 x 2	6,200	1.0

Conditions E4-1 thru E4-5 - apply to source 63-0092-01.

E4-1. Total particulate matter (PM) emitted from this source (63-0092-01) shall not exceed 0.015 grains per dry standard cubic foot of exhaust gas (21.99 pounds per hour).

TAPCR 1200-03-09-.01(4)(j) PSD Requirement (12/1/76 letter from EPA)

Compliance Method: This source (63-0092-01) shall not operate without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by operating the fabric filters at or higher than the minimum pressure drops corresponding to the exhaust emissions of 0.015 grains per dry standard cubic foot of exhaust gas and the daily recording of the pressure drop across the fabric filters in Barge Unloading Baghouse, Rail/Truck Unloading Baghouse, Transfer Tower Baghouse, Concentrate Storage Building North Baghouse, Concentrate Building South, and Screening Tower Baghouse. For Retractable Spout Baghouse, compliance with the particulate emission limitation shall be assured by proper maintenance of the baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this line is operating without the baghouse system fully operating must be kept.

Compliance with this requirement shall be assured by maintaining a minimum pressure drop of 1.0, 0.5, 1.0, 0.7, 0.7, and 1.0 inch of water column respectively across the fabric filters in Barge Unloading Baghouse, Rail/Truck Unloading Baghouse, Transfer Tower Baghouse, Concentrate Storage Building North Baghouse, Concentrate Building South Baghouse, and Screening Tower Baghouse. The pressure drop shall be recorded once daily when this source is in operation. The days when the source does not operate shall be noted. In the event that all bags are replaced simultaneously, the permittee will record in a separate log, the date complete replacement is made and record daily pressure drop across that particular baghouse until the minimum pressure drop for the baghouse is reached. Once reached, the standard recordings shall be made and a report of the time required to reach the minimum pressure drop shall be calculated. This report shall be included with that current semiannual period submittal. All logs shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. The information obtained from the study shall be incorporated into this permit by administrative permit amendment to set operating parameters while the filter cake is accumulating on the new bag filter. Reports and certifications shall be submitted in accordance with Condition E2 of this permit. The Retractable Spout Baghouse shall not require a report as long as the Retractable Spout is not in use. When in use, the Retractable Spout shall be subject to all relevant permit conditions.

During the time when the concentrate handling process is in operation, it will be considered acceptable to operate either the Concentrate Storage Building North Baghouse exclusively or the Concentrate Storage Building South Baghouse exclusively, or both of these baghouses simultaneously.

E4-2. Visible emissions from stacks at this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01(1)

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E4-3. All conveyor systems and transfer points in this source shall be operated in a manner consistent with keeping fugitive dust emissions to an absolute minimum and shall meet all specifications submitted to this Division in permit applications and supplementary material.

Permit 037096P, Condition 6

Compliance Method: The permittee shall assure compliance with this condition by adhering to the Dust Control Plan dated October 11, 2001 and updated March 2010.

E4-4. Visible emissions from the zinc oxide process feed material storage building shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 2.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E4-5. The Retractable Spout Baghouse is subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for particulate matter. The following table summarizes, but does not necessarily include all of the CAM requirements for the Retractable Spout Baghouse. CAM reporting may be fulfilled through recordkeeping and reporting requirements for **Conditions E4-1, E4-2, and E2(a).**

	Indicator No. 1	**Indicator No. 2**
I. Indicator [64.6(c)(1)(i)]	Inspection/maintenance	Visible emissions
Measurement Approach [64.6(c)(1)(ii)]	Daily inspection according to I/M checklist; maintenance performed as needed.	A certified visible emissions inspector will evaluate visible emissions in accordance with EPA Method 9 and the Opacity Matrix.
II. Indicator Range [64.6(c)(2)]	NA	Visible emissions shall not exceed 20 % opacity. Visible emissions greater than 20% opacity (with due allowance for reader error) are considered deviations.
III. Performance Criteria [64.6(c)(1)(iii)]		
A. Data Representativeness [64.3(b)(1)]	Inspections are performed at the baghouse.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
B. Verification of Operational Status [64.3(b)(2)]	NA	Visible emissions inspector will ensure that the emission unit is operational during the VEE.
C. QA/QC Practices and Criteria [64.3(b)(3)]	Qualified personnel perform inspection.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.

	Indicator No. 1	Indicator No. 2
D. Monitoring Frequency [64.3(b)(4)]	Daily inspection.	If necessary, an initial VEE shall be conducted within a year of permit issuance. Additional VEE's shall be conducted as required by the Opacity Matrix.
Data Collection Procedure	Records are maintained to document the daily inspection and any required maintenance.	As required by EPA Method 9 and the Opacity Matrix.
Averaging Period	NA	As required by EPA Method 9 and the Opacity Matrix.

63-0092-03	**Source Identification**	Zinc Ore Roasting and Sulfuric Acid Plant Production: Acid Plant Stack, Calcine Storage Bins, Dust Collector, and Roaster Plant Baghouse. Part 63 Subpart GGGGGG			
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**	**Minimum Pressure Drop (inch of Water Column)**
03018-00-ST	Acid Plant Tail gas Stack	200	4	40,605	NA
02020-11-ST	Calcine Processing Stack	60	1.33 x 1.25	2,482.8	0.5
05270-00-ST	Calcine Storage Silos	75	0.7 x 0.8	2,000.0	0.5
05019	Calcine Storage Silo #19	71	0.9x0.8	1,482	0.5

Condition E5-1thru E5- 17 apply to source 63-0092-03

E5-1. Off-gases from the Zinc Ore Roaster must be exhausted to a particulate matter (PM) control device and to a sulfuric acid plant, including during the charging of the roaster. Total particulate matter (PM) emitted from the Acid Plant Tail Gas Stack (03018-00-ST) shall not exceed 29.57 pounds per hour. (Note: virtually all PM from this source would be sulfuric acid mist, which falls under the definition of PM at 1200-03-2-.01(ii))

40 CFR 63.11162(a) and TAPCR 1200-03-7-.03(1)

Compliance Method: This source shall not operate without the low velocity mist eliminator. Routine inspections shall be performed on all control devices. Appropriate maintenance logs including inspections, and dates on which maintenance is performed shall be recorded in a suitable permanent form and kept available for inspection. These records must be retained for a period of not less than five (5) years.

E5-2. Total particulate matter (PM) emitted from the Calcine Processing Stack (02020-11-ST), the Calcine Storage Silos Stack (05270-00-ST), and the calcine storage silo #19 (05019) shall not exceed 0.015 grains per dry standard cubic foot of exhaust gas (0.77 pounds per hour).

TAPCR 1200-03-09-.01(4)(j) and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: Compliance with this requirement shall be assured by maintaining a minimum pressure drop of 0.5 inches of water across the calcine processing stack, calcine storage silos stack baghouses, and calcine storage silo #19. The pressure drop for each baghouse shall be recorded once daily when the source is in operation. The days when the source does not operate shall be noted.

For lower pressure drop reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure drop reading(s) which follow replacement of bags provided the permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

E5-3. All calcine conveyor systems, except the ball mill conveyor system, and the conveyor system between the intermediate storage bin and the main storage bins, shall be non-pneumatic systems and all calcine conveyor systems shall be completely enclosed with no emissions to the atmosphere.

Permit 044790P, Condition 2

E5-4. The source owner or operator shall comply with the notification and record-keeping requirements set forth in paragraph 1200-03-16-.01(7) of the Tennessee Air Pollution Control Regulations.

Permit 044790P, Condition 5

E5-5. Visible emissions from the Acid Plant Tail Gas Stack (03018-00-ST) shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

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

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 2.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E5-6. Visible emissions from the calcine processing baghouse stack (02020-11-ST) and the calcine storage baghouse stacks (05270-00-ST and 05019) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E5-7. The acid plant bypass on the zinc ore roaster shall not be opened while concentrate is being fed to the roaster. This bypass is to be used for the purposes of: 1) preheating or cooling the roaster, or 2) maintaining adequately high temperatures in the acid plant converter during brief shutdowns to avoid the necessity of a preheater assisted startup.

Permit 044790P, Condition 9

E5-8. The sulfur dioxide concentration in the acid plant tail gas stack shall not exceed 650 parts per million (0.065 percent by dry volume basis) maximum 2 hour average nor 233 pounds per hour of sulfur dioxide emissions.

Compliance Method: Compliance with this emission standard shall be determined through the use of continuous in-stack monitoring for sulfur dioxide.

Consistent with the provisions of Rule 1200-03-20-.06 of the Tennessee Air Pollution Control Regulations, no notice of violation shall be automatically issued unless the specified de minimums level of one (1) 24-hour period per year of sulfur dioxide emissions in excess of the applicable sulfur dioxide emissions standard, as measured by the continuous in-stack sulfur dioxide emissions monitoring system, is exceeded. This exemption is applicable provided that good operational and maintenance practices are utilized for both the process equipment and the associated air pollution control equipment, and the 90 percent operational availability of the sulfur dioxide monitoring system is maintained.

Written responses to the quarterly reports of excess emissions shall constitute prima facie evidence of compliance with the applicable sulfur dioxide emission standard. For purposes of annual certification of compliance with the applicable visible

emissions condition, the acceptance, by the Division, of the quarterly reports of excess emissions shall be the basis of said certification.

TAPCR 1200-03-16-.24(4)(a)

E5-9. Quality Assurance Condition for the Sulfur Dioxide Monitoring System.

Quality assurance checks shall be performed on the sulfur dioxide monitoring system on a biennial calendar basis. The quality assurance checks shall consist of a repetition of the relative accuracy portion of the Performance Specification Test. Written reports of the quality assurance checks shall be submitted to the Technical Secretary.

Within ninety (90) days of each major modification or major repair of the sulfur dioxide emissions monitor, a repeat of the performance specification test shall be conducted. A written report of the performance specification test shall be submitted to the Technical Secretary as proof of the continuous operation of the sulfur dioxide emissions monitoring system within acceptable limits.

TAPCR 1200-03-10-.02(1)(a)

E5-10. From the emissions data generated by the continuous in-stack sulfur dioxide monitoring system, quarterly reports of excess sulfur dioxide emissions shall be generated. The format of these quarterly reports shall meet the requirements of Paragraph 1200-03-10-.02(2) of the Tennessee Air Pollution Control Regulations. These reports shall be submitted to the Division no later than thirty (30) days after the end of each calendar quarter.

TAPCR 1200-03-10-.02(2) and TAPCR 1200-03-09-.02(11)(e)1(iii)

E5-11. Operational Availability Condition for the Sulfur Dioxide Monitoring System

The use of continuous in-stack monitoring for sulfur dioxide is the method by which this source proves continual compliance with the applicable sulfur dioxide emission limitation. Therefore, for this source to demonstrate continual compliance with the applicable sulfur dioxide emission limitation, the sulfur dioxide monitoring system shall be fully operational for at least ninety-five (95) percent of the operational time of the monitored unit during each month of the calendar quarter. An operational availability level of less than this amount may be considered the basis for declaring the fuel burning installation in noncompliance with the applicable monitoring requirements, unless the reasons for the failure to maintain these levels of operational availability are accepted by the Division as being legitimate malfunctions of the instruments or due to limited operation of the monitored units.

TAPCR 1200-03-10-.02(1)(a)

E5-12. For sulfur dioxide, two-hour averages shall be calculated from eight or more equally spaced data averages over each two-hour period, except during periods when calibration, quality assurance, or maintenance are being performed. A valid one-hour average shall consist of at least two data points with each representing a fifteen minutes time period. Hourly sulfur dioxide emission rates are not calculated if the affected facility is operated less than 30 minutes in a one-hour period.

Here a day is defined as the twenty-four hour time period from midnight to midnight and an hour is defined as any one of the twenty-four successive sixty minute time blocks beginning at midnight.

Data recorded during periods of monitoring system breakdown, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages.

TAPCR 1200-03-09-.02(11)(e)(1)(iii); 1200-03-10-.02(1)(a); and 1200-03-10-.02(2)

E5-13. For sulfur dioxide monitoring, the reports referenced in condition E5-10 shall consist of:

(A) Emission averages, in the units of the applicable standard, for each averaging period during operation of the source.

(B) Identification of each averaging period in which the applicable standard was exceeded and the nature and cause of excess emissions, if known;

(C) The date and time identifying each period during which the system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. The Technical Secretary may require proof of system performance whenever system repairs or adjustments have been made; and

(D) When no excess emissions have occurred and the system has not been inoperative, repaired, or adjusted, such information shall be included in the report.

TAPCR 1200-03-10-.02(2) and 1200-03-09-.02(11)(e)1(iii)

E5-14. For fee purposes, the maximum NOx emitted from the Tail Gas Stack (03018-00-ST) shall not exceed 38 tons per any consecutive 12-month period.

Compliance Method: Compliance with this condition will be satisfied when permittee roasts no more than 36% high nitrogen concentrate (i.e. , Century concentrate) or blends thereof in any 12-month averaged period. A log of Century concentrate usage, in a form that readily shows compliance with the aforementioned 36% usage limit, will be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five years.

Sample Calculation:

Tested emission rate: 7.10 lb/hr NOx at 36% Century Concentrate

NOx emissions = 7.10 lb/hr x 8760 hr/yr /2000 lb/ton
NOx emissions = 31.1 ton/yr x ~ 25% safety factor
NOx emissions = 38 ton/yr

TAPCR 1200-03-26-.02(d)3

E5-15. The Sulfuric Acid Plant is subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for sulfur dioxide. The following table summarizes, but does not necessarily include all of the CAM requirements for the Sulfuric Acid Plant. CAM reporting may be fulfilled through recordkeeping and reporting requirements for **Conditions E5-1, E5-5, and E2(a)**.

	Indicator No. 1	**Indicator No. 2**
I. Indicator [64.6(c)(1)(i)]	Outlet (Tail Gas Stack) SO_2 Concentration	Visible emissions
Measurement Approach [64.6(c)(1)(ii)]	The SO_2 concentration is measured with a CEMS meeting 40 CFR 60 Appendix B, Performance Specifications.	A certified visible emissions inspector will evaluate visible emissions in accordance with EPA Method 9 and the Opacity Matrix.
II. Indicator Range [64.6(c)(2)]	An excursion is defined as a 2-hr average greater than 650 ppm (emission limit); excursions trigger an inspection, corrective action, and a report on the inspection and corrective action.	Visible emissions shall not exceed 20 % opacity. Visible emissions greater than 20% opacity (with due allowance for reader error) are considered deviations.
III. Performance Criteria [64.6(c)(1)(iii)]		
A. Data Representativeness [64.3(b)(1)]	The system meets 40 CFR 60 Appendix B, Performance Specification 2 criteria.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
B. Verification of Operational Status [64.3(b)(2)]	Not applicable	Visible emissions inspector will ensure that the emission unit is operational during the VEE.

	Indicator No. 1	Indicator No. 2
C. QA/QC Practices and Criteria [64.3(b)(3)]	Calibration drift will be automatically checked every day by zero air and span gas. Quality assurance checks shall be performed on the sulfur dioxide monitoring system on a biennial calendar basis, and within ninety (90) days of each major modification or major repair of the sulfur dioxide emissions monitor, as required in **Condition E5-9**.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
D. Monitoring Frequency [64.3(b)(4)]	SO_2 concentration is measured continuously.	If necessary, an initial VEE shall be conducted within a year of permit issuance. Additional VEE's shall be conducted as required by the Opacity Matrix.
Data Collection Procedure	The sulfur dioxide monitoring system records the average of live readings for one-minute. The system calculates a two-hour average using the one-minute averages during the two-hour period.	As required by EPA Method 9 and the Opacity Matrix.
Averaging Period	Two-hour averages shall be calculated from eight or more equally spaced data averages over each two-hour period, except during periods when calibration, quality assurance, or maintenance are being performed. A valid one-hour average shall consist of at least two data points with each representing a fifteen minutes time period. Hourly sulfur dioxide emission rates are not calculated if the affected facility is operated less than 30 minutes in a one-hour period.	As required by EPA Method 9 and the Opacity Matrix.

E5-16. The Calcine Processing Stack (02020-00-ST), and the Calcine Storage Silos Stack (05270-00-ST) are subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for particulate matter. The following table summarizes, but does not necessarily include all of the CAM requirements for the baghouses on the Calcine Processing Stack (02020-00-ST), and the Calcine Storage Silos Stack (05270-00-ST) CAM reporting may be fulfilled through recordkeeping and reporting requirements for **Conditions E5-2, E5-6, and E2(a)**.

	Indicator No. 1	Indicator No. 2
I. Indicator [64.6(c)(1)(i)]	Pressure drop	Visible emissions from baghouse stacks
Measurement Approach [64.6(c)(1)(ii)]	Pressure drop across the baghouse is measured with a differential pressure gauge.	A certified visible emissions inspector will evaluate visible emissions in accordance with EPA Method 9 and the Opacity Matrix.
II. Indicator Range [64.6(c)(2)]	The minimum pressure drop value for compliance assurance has been incorporated into this permit.	Visible emissions shall not exceed 20 % opacity. Visible emissions greater than 20% opacity (with due allowance for reader error) are considered deviations; and trigger an inspection of the baghouses, corrective action, and a reporting requirement.
III. Performance Criteria [64.6(c)(1)(iii)]		
A. Data Representativeness [64.3(b)(1)]	Pressure taps are located at the baghouse inlet and outlet and have been installed by an authorized equipment representative.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.

	Indicator No. 1	Indicator No. 2
B. Verification of Operational Status [64.3(b)(2)]	NA	Visible emissions inspector will ensure that the emission unit is operational during the VEE.
C. QA/QC Practices and Criteria [64.3(b)(3)]	The pressure gauge is calibrated, maintained, and operated in accordance with manufacturer's instructions.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
D. Monitoring Frequency [64.3(b)(4)]	Pressure drop is monitored continuously.	If necessary, an initial VEE shall be conducted within a year of permit issuance. Additional VEE's shall be conducted as required by the Opacity Matrix.
Data Collection Procedure	Pressure drop is manually recorded daily.	As required by EPA Method 9 and the Opacity Matrix.
Averaging Period	None	As required by EPA Method 9 and the Opacity Matrix.

E5-17. The Calcine Storage Silo #19 Stack (05019) is subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for particulate matter. The following table summarizes, but does not necessarily include all of the CAM requirements for the baghouse on the Calcine Storage Silo #19 Stack (05019). CAM reporting may be fulfilled through recordkeeping and reporting requirements for **Conditions E5-2, E5-6, and E2(a)**.

	Indicator No. 1	Indicator No. 2
I. Indicator [64.6(c)(1)(i)]	Pressure drop	Visible emissions from baghouse stacks
Measurement Approach [64.6(c)(1)(ii)]	Pressure drop across the baghouse is measured with a differential pressure gauge.	A certified visible emissions inspector will evaluate visible emissions in accordance with EPA Method 9 and the Opacity Matrix.
II. Indicator Range [64.6(c)(2)]	The minimum pressure drop value for compliance assurance has been incorporated into this permit.	Visible emissions shall not exceed 20 % opacity. Visible emissions greater than 20% opacity (with due allowance for reader error) are considered deviations; and trigger an inspection of the baghouses, corrective action, and a reporting requirement.
III. Performance Criteria [64.6(c)(1)(iii)]		
A. Data Representativeness [64.3(b)(1)]	Pressure taps are located at the baghouse inlet and outlet and have been installed by an authorized equipment representative.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
B. Verification of Operational Status [64.3(b)(2)]	NA	Visible emissions inspector will ensure that the emission unit is operational during the VEE.
C. QA/QC Practices and Criteria [64.3(b)(3)]	The pressure gauge is calibrated, maintained, and operated in accordance with manufacturer's instructions.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
D. Monitoring Frequency [64.3(b)(4)]	Pressure drop is monitored continuously.	If necessary, an initial VEE shall be conducted within a year of permit issuance. Additional VEE's shall be conducted as required by the Opacity Matrix.
Data Collection Procedure	Pressure drop is manually recorded daily.	As required by EPA Method 9 and the Opacity Matrix.
Averaging Period	None	As required by EPA Method 9 and the Opacity Matrix.

63-0092-06	Source Identification	Zinc Electrolysis Emission Points: two (2) Purification Cooling Towers with particulate (as sulfuric acid mist) emissions, Cell House Building Eleven (11) Electrolyte Cooling Towers.		
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**
08280-00-ST	Purification Cooling Tower	82	26 x 13	128,992
08281-00-ST	Purification Cooling Tower	82	26 x 13	128,992
08001-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08002-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08003-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08004-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08005-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08006-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08007-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08008-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08009-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08010-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125
08011-00-ST	Electrolyte Cooling Tower	82	13.2 x 26.5	128,125

Condition E6-1thru E6-3 apply to source 63-0092-06

E6-1. Particulate matter as sulfuric acid mist emitted from the source (63-0092-06) shall not exceed a drift loss of 0.0015% and 84.95 tons during all interval of any 12 consecutive months.

TAPCR 1200-03-7-.04(1) and agreement letter dated November 1, 2001

Compliance Method: In order to maintain vendor's guarantee of 0.001% drift loss and to demonstrate compliance with the applicable particulate emission limit, the mist eliminators shall be maintained, kept in good operating condition and operated whenever this source is in use. The mist eliminators will be inspected at least once every two months, and damaged mist eliminators will be repaired or replaced. Records documenting these inspections and any necessary maintenance will be maintained for at least five years.

E6-2. Visible emissions from this source (63-0092-06) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E6-3. The purification cooling towers and the electrolyte cooling towers are subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for particulate matter. The following table summarizes, but does not necessarily include all of the CAM requirements for the low velocity mist eliminators on the purification cooling towers and the electrolyte cooling towers. CAM reporting may be fulfilled through recordkeeping and reporting requirements for **Conditions E6-1, E6-2, and E2(a)**.

	Indicator No. 1	Indicator No. 2
I. Indicator [64.6(c)(1)(i)]	Inspection/maintenance of the low velocity mist eliminators	Visible emissions from cooling towers
Measurement Approach [64.6(c)(1)(ii)]	Inspect at least once every other calendar month according to I/M checklist; maintenance (repair or replacement) performed as needed.	A certified visible emissions inspector will evaluate visible emissions in accordance with EPA Method 9 and the Opacity Matrix.
II. Indicator Range [64.6(c)(2)]	NA	Visible emissions shall not exceed 20 % opacity. Visible emissions greater than 20% opacity (with due allowance for reader error) are considered deviations; and trigger an inspection of the low velocity mist eliminators (before the end of the calendar month following the month with the high opacity reading), corrective action, and a reporting requirement.
III. Performance Criteria [64.6(c)(1)(iii)]		
A. Data Representativeness [64.3(b)(1)]	Inspections are performed at the cooling towers.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
B. Verification of Operational Status [64.3(b)(2)]	NA	Visible emissions inspector will ensure that the emission unit is operational during the VEE.
C. QA/QC Practices and Criteria [64.3(b)(3)]	Qualified personnel perform inspection.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
D. Monitoring Frequency [64.3(b)(4)]	Inspect at least once every other calendar month.	If necessary, an initial VEE shall be conducted within a year of permit issuance. Additional VEE's shall be conducted as required by the Opacity Matrix.
Data Collection Procedure	Records are maintained to document the inspection and any required maintenance.	As required by EPA Method 9 and the Opacity Matrix.
Averaging Period	NA	As required by EPA Method 9 and the Opacity Matrix.

63-0092-07	Source Identification	Anode Cleaning & Casting with Baghouse Control. Part 63 Subpart GGGGGG			
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**	**Minimum Pressure Drop (inch of Water Column)**
13110-00-ST	Anode Casting Baghouse	10	2.25 x 3.25	8,169.3	0.5
13105-01-BL	Silver Lead Alloy Furnace (combustion only)	61	1.25	850	NA
13104-01-BL	Pure Lead Furnace (combustion only)	61	1	340	NA

Condition E7-1thru E7-4 apply to source 63-0092-07

E7-1. Particulate matter emitted from the Anode Casting Baghouse (stack 13110-00-ST) shall not exceed 0.014 grains per dry standard cubic foot of exhaust gas (0.98 lb/hr).

40 CFR 63.11162(b)(4), TAPCR 1200-03-09-.01(4)(j), and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: This source (63-0092-07) shall not be operated without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by operating the fabric filters at or higher than the minimum pressure drop corresponding to the exhaust emissions of 0.014 grains per dry standard cubic foot of exhaust gas and by the daily

recording of the pressure drop across the fabric filters in Anode Casting Baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this line is operating without the baghouse system fully operating must be kept.

Compliance with this requirement shall be assured by maintaining a minimum pressure drop of 0.5 inches of water column across the fabric filters in the Anode Casting Baghouse. The pressure drop shall be recorded once daily when this source is in operation. The days when the source does not operate shall be noted. In the event that all bags are replaced simultaneously, the permittee will record in a separate log, the date complete replacement is made and record daily pressure drop across that particular baghouse until the minimum pressure drop for the baghouse is reached. Once reached, the standard recordings shall be made and a report of the time required to reach the minimum pressure drop shall be calculated. This report shall be included with that current semiannual period submittal. All logs shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. The information obtained from the study shall be incorporated into this permit by administrative permit amendment to set operating parameters while the filter cake is accumulating on the new bag filter. Reports and certifications shall be submitted in accordance with Condition E2 of this permit.

E7-2. Particulate matter emitted from the 3.89 MMBtu/hr Silver Lead Alloy Furnace (13105-01-BL) and the Pure Lead Furnace (13104-01-BL) shall not exceed 0.6 pound per million Btu (2.33 lb/hr).

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

Compliance Method: The potential to emit particulate matter from this source is less than five tons per year. In accordance with TAPCR 1200-03-09-.04(5)(c)3. and by annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit annually a compliance certification for particulate matter from source (63-0092-07 for fuel combustion).

E7-3. Visible emissions from this source (63-0092-07) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E7-4. Only propane shall be used as fuel for this source.

63-0092-08	Source Identification	Zinc Melting and Casting Operations and Zinc Dust Plant Points			
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**	**Minimum Pressure Drop (inch of Water Column)**
09400-00-ST	Zinc Melting Furnace Baghouse (8-2)	50	3	15,600	4.5
10032-00-ST	Zinc Dust Atomization Baghouse (8-3)	60	3	12,780	0.5
10033-00-ST	Zinc Dust Screening Baghouse (8-4)	60	2	3,312	0.5

Condition E8-1thru E8-6 apply to source 63-0092-08

E8-1. Particulate matter emitted from the Zinc Melting Furnace Baghouse (stack 09400-00-ST) shall not exceed 0.005 grains per dry standard cubic foot of exhaust gas (0.67 lb/hr).

40 CFR 63-11162(b)(6), APCR 1200-03-09-.01(4)(j), and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: This source (63-0092-08) shall not be operated without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by operating the fabric filters at or higher than the minimum pressure drops corresponding to the exhaust emissions of 0.005 grains per dry standard cubic foot of exhaust gas and the daily recording of the pressure drop across the fabric filters in Zinc Melting Furnace Baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this line is operating without the baghouse system fully operating must be kept.

Compliance with this requirement shall be assured by maintaining a minimum pressure drop of 4.5 inches of water column across the fabric filters in Zinc Melting Furnace Baghouse. The pressure drop shall be recorded once daily when this source is in operation. The days when the source does not operate shall be noted. In the event that all bags are replaced simultaneously, the permittee will record in a separate log, the date complete replacement is made and record daily pressure drop across that particular baghouse until the minimum pressure drop for the baghouse is reached. Once reached, the standard recordings shall be made and a report of the time required to reach the minimum pressure drop shall be calculated. This report shall be included with that current semiannual period submittal. All logs shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. The information obtained from the study shall be incorporated into this permit by administrative permit amendment to set operating parameters while the filter cake is accumulating on the new bag filter. Reports and certifications shall be submitted in accordance with Condition E2 of this permit.

E8-2. Particulate matter emitted from the Zinc Dust Atomization Baghouse (stack 10032-00-ST) shall not exceed 0.042 grains per dry standard cubic foot of exhaust gas (4.60 lb/hr).

TAPCR 1200-03-09-.01(4)(j), and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: This source (63-0092-08) shall not be operated without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by maintaining a minimum pressure drop across the fabric filter of 0.5 inches of water column, and the daily recording of the pressure drop across the fabric filters in Zinc Dust Atomization Baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, days of operation, and time of

use of the emergency/standby venting from fabric filters. A log of the operation hours when this line is operating without the baghouse system fully operating must be kept.

In the event that all bags are replaced simultaneously, the permittee will record in a separate log, the date complete replacement is made and record daily pressure drop across that particular baghouse until the minimum pressure drop for the baghouse is reached. Once reached, the standard recordings shall be made and a report of the time required to reach the minimum pressure drop shall be calculated. This report shall be included with that current semiannual period submittal. All logs shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. The information obtained from the study shall be incorporated into this permit by administrative permit amendment to set operating parameters while the filter cake is accumulating on the new bag filter. Reports and certifications shall be submitted in accordance with Condition E2 of this permit.

E8-3. Particulate matter emitted from the Zinc Dust Screening Baghouse (stack 10033-00-ST) shall not exceed 0.02 grains per dry standard cubic foot of exhaust gas (0.57 lb/hr).

TAPCR 1200-03-09-.01(4)(j) and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: This source (63-0092-08) shall not be operated without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by maintaining a minimum pressure drop across the fabric filter of 0.5 inches of water column, and the daily recording of the pressure drop across the fabric filters in the Zinc Dust Screening Baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, days of operation, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this line is operating without the baghouse system fully operating must be kept.

In the event that all bags are replaced simultaneously, the permittee will record in a separate log, the date complete replacement is made and record daily pressure drop across that particular baghouse until the minimum pressure drop for the baghouse is reached. Once reached, the standard recordings shall be made and a report of the time required to reach the minimum pressure drop shall be calculated. This report shall be included with that current semiannual period submittal. All logs shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. The information obtained from the study shall be incorporated into this permit by administrative permit amendment to set operating parameters while the filter cake is accumulating on the new bag filter. Reports and certifications shall be submitted in accordance with Condition E2 of this permit.

E8-4. Any pneumatic conveyance of zinc dust shall have conveying air vented to a baghouse.

Permit 017460P, Condition 4

E8-5. Visible emissions from this source (63-0092-08) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E8-6. The Zinc Dust Atomization Baghouse (stack 10032-00-ST), and the Zinc Dust Screening Baghouse (stack 10033-00-ST) are subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for particulate matter. The following table summarizes, but does not necessarily include all of the CAM requirements for the baghouses on the Zinc Dust Atomization Baghouse (stack 10032-00-ST), and the Zinc Dust Screening Baghouse (stack 10033-00-ST). CAM reporting may be fulfilled through recordkeeping and reporting requirements for **Conditions E8-2, E8-3, E8-5, and E2(a)**.

	Indicator No. 1	Indicator No. 2
I. Indicator [64.6(c)(1)(i)]	Pressure drop	Visible emissions from baghouse stacks
Measurement Approach [64.6(c)(1)(ii)]	Pressure drop across the baghouse is measured with a differential pressure gauge.	A certified visible emissions inspector will evaluate visible emissions in accordance with EPA Method 9 and the Opacity Matrix.
II. Indicator Range [64.6(c)(2)]	The minimum pressure drop value for compliance assurance has been incorporated into this permit.	Visible emissions shall not exceed 20 % opacity. Visible emissions greater than 20% opacity (with due allowance for reader error) are considered deviations; and trigger an inspection of the baghouses, corrective action, and a reporting requirement.
III. Performance Criteria [64.6(c)(1)(iii)]		
A. Data Representativeness [64.3(b)(1)]	Pressure taps are located at the baghouse inlet and outlet and have been installed by an authorized equipment representative.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
B. Verification of Operational Status [64.3(b)(2)]	NA	Visible emissions inspector will ensure that the emission unit is operational during the VEE.
C. QA/QC Practices and Criteria [64.3(b)(3)]	The pressure gauge is calibrated, maintained, and operated in accordance with manufacturer's instructions.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
D. Monitoring Frequency [64.3(b)(4)]	Pressure drop is monitored continuously.	If necessary, an initial VEE shall be conducted within a year of permit issuance. Additional VEE's shall be conducted as required by the Opacity Matrix.
Data Collection Procedure	Pressure drop is manually recorded daily.	As required by EPA Method 9 and the Opacity Matrix.
Averaging Period	None	As required by EPA Method 9 and the Opacity Matrix.

63-0092-09	**Source Identification**	Dross Handling Operations Emission Points: Dross Handling Baghouse, Dross Building. Part 63 Subpart GGGGGG			
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**	**Minimum Pressure Drop (inch of Water Column)**
11008-00-ST	Dross Handling and Zinc Dust Furnace Baghouse	60	1	16,560	3.0

Condition E9-1 thru E9-3 apply to source 63-0092-09

E9-1. Particulate matter emitted from this source shall not exceed 0.005 grains per dry standard cubic foot of exhaust gas (0.7. lb/hr).

TAPCR 1200-03-09-.01(4)(j), 40 CFR 63.11162(b)(6), and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: This source (63-0092-09) shall not be operated without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by installing and operating a bag leak detection system in accordance with the requirements described in 40 CFR 63.11163(d) and the site-specific monitoring plan that is to be developed per 40 CFR 63.11163(d)(2).

Compliance with this requirement shall be assured by installing and operating a bag leak detection system on the Dross Handling and Zinc Dust Furnace Baghouse. A site-specific monitoring plan for the bag leak detection system will be developed and submitted to the Technical Secretary. The bag leak detection system will be operated and maintained according to the site-specific monitoring plan at all times. The monitoring plan will address the following items: 1) Installation of the bag leak detection system; 2) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established; 3) Operation of the bag leak detection system, including quality assurance procedures; 4) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list; 5) How the bag leak detection system output will be recorded and stored; and 6) Corrective action procedures. The days when the source does not operate shall be noted. Additionally, records of the following information for the bag leak detection system will be maintained: 1) Records of the bag leak detection system output; 2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and 3) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, if procedures were initiated within 1 hour of the alarm, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and if the alarm was alleviated within 3 hours of the alarm. All records shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. Reports and certifications shall be submitted in accordance with Condition E2 of this permit.

E9-2. Dumpsters shall be covered during dross transport.

Permit 017461P, Condition 3

E9-3. Visible emissions from this source (63-0092-09) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

63-0092-11		Source Identification		Cadmium Melting & Casting Furnace, Liquid Propane Fuel, Baghouse Control & Dross Chute Duct. Part 63 Subpart GGGGGG	
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**	**Minimum Pressure Drop (inch of Water Column)**
14176-00-ST	Cadmium Melt Furnace	54	1.4	3655.2	0.5

Condition E10-1 and E10-2 apply to source 63-0092-11

E10-1. Particulate matter emitted from this source shall not exceed 0.015 grains per dry standard cubic foot of exhaust gas (0.47 lb/hr).

TAPCR 1200-03-09-.01(4)(j), 40 CFR 63.11162(b)(5), and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: This source (63-0092-11) shall not be operated without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by operating the fabric filters at or higher than the minimum pressure drops corresponding to the exhaust emissions of 0.015 grains per dry standard cubic foot of exhaust gas and the daily recording of the pressure drop across the fabric filters in the Cadmium Melting Baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this line is operating without the baghouse system fully operating must be kept.

Compliance with this requirement shall be assured by maintaining a minimum pressure drop of 0.5 inches of water column across the fabric filters in the Cadmium Melting Baghouse. The pressure drop shall be recorded once daily when this source is in operation. The days when the source does not operate shall be noted. In the event that all bags are replaced simultaneously, the permittee will record in a separate log, the date complete replacement is made and record daily pressure drop across that particular baghouse until the minimum pressure drop for the baghouse is reached. Once reached, the standard recordings shall be made and a report of the time required to reach the minimum pressure drop shall be calculated. This report shall be included with that current semiannual period submittal. All logs shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. The information obtained from the study shall be incorporated into this permit by administrative permit amendment to set operating parameters while the filter cake is accumulating on the new bag filter. Reports and certifications shall be submitted in accordance with Condition E2 of this permit.

E10-2. Visible emissions from this source (63-0092-11) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

63-0092-12	Source Identification	Auxiliary Boiler and Roaster Preheater (80 MM Btu per hour Total), No. 2 Fuel Oil Fired. The roaster preheater will not operate while the acid plant in 63-0092-03 is operating. Part 63 Subpart JJJJJJ

Condition E11-1 thru E11-14 apply to source 63-0092-12

E11-1. Visible emissions from this source (63-0092-12) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E11-2. Operating time for Auxiliary Boiler and Roaster Preheater shall not exceed the limit set in the following table:

Agreement letter dated October 11, 2001 and the Significant Modification application dated December 14, 2006

Compliance Method: A log of the operating hours, in a form that readily shows compliance with this condition, must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be maintained for a period of not less than five years. All data must be entered in the log no later than 7 days from the end of the day for which the data is required.

Daily Operating Time log, Source 63-0092-12

Equipment	**Auxiliary Boiler**		**Roaster Preheater**	
Limit	**2500 hours***		**480 hours***	
Date	**Daily Hours of Operation (hours/day)**	**Cumulative Total Hours of Operation (hours)**	**Daily Hours of Operation (hours/day)**	**Cumulative Total Hours of Operation (hours)**

* during all intervals of 12 consecutive months

E11-3. Only no. 2 oil, with maximum sulfur content of 0.5 % by weight, shall be used for this source.

E11-4. Particulate matter emitted from this source shall not exceed the following:

Source	**Heat Input Value (MMBtu/hr)**	**PM limitation(lb/MMBtu)**	**lb/hr**
Auxiliary Boiler	45	0.26	11.7
Roaster Preheater	35	0.30	10.5

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

Compliance Method: Compliance with this condition will be achieved through compliance with Condition E11-3. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11) (e)1.(iii) and 1200-03-10-.04(2)(b)1 and the compliance requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit compliance certification for this source annually.

E11-5. Sulfur dioxide emitted from this source shall not exceed 5 pounds per MMBtu.

TAPCR 1200-03-14-.02(2)(a)

Compliance Method: Compliance with this condition will be achieved through compliance with Condition E11-3. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11) (e)1.(iii) and 1200-03-10-.04(2)(b)1 and the compliance requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit compliance certification for this source annually.

E11-6. For fee purposes, the maximum actual emissions for NO_x have been determined to be 11.43 pounds per hour and 9.2 tons for all intervals of twelve (12) consecutive months.

TAPCR 1200-03-26-.02(2)(d)3

E11-7. The maximum actual emissions for Carbon Monoxide (CO) have been determined to be 2.86 pounds per hour and 2.3 tons for all intervals of twelve (12) consecutive months.

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

E11-8. This condition addresses applicability to 40 CFR 63, Subpart JJJJJJ. 63-0092 is considered an area source of HAP emissions. Pursuant to 40 CFR §63.11194(a)(1), the auxiliary boiler is considered to be an existing affected source in the oil subcategory. In order to comply with 40 CFR 63, Subpart JJJJJJ, the boiler must comply with **Conditions E11-9 through E11-14** of this permit.

E11-9. The permittee shall comply with this condition no later than March 21, 2012 pursuant to 40 CFR §63.11196(a)(1). Pursuant to 40 CFR §63.11201(b), the permittee shall conduct a tune-up of the auxiliary boiler biennially as specified in §63.11223. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. The tune-up must include:

(a) As applicable, inspect the burners, and clean or replace any components of the burners as necessary (the permittee may delay the burner inspection until the next scheduled unit shutdown, but the permittee must inspect each burner at least once every 36 months).

(b) Inspect the flame pattern, as applicable, and adjust the burners as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.

(c) Inspect the systems controlling the air-to-fuel ratio, as applicable, and ensure that they are correctly calibrated and functioning properly.

(d) Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available.

(e) Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made).

(f) Maintain onsite and submit, if requested by the Technical Secretary, biennial report containing the information in paragraphs (i) through (iii) of this condition.

  (i) The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured before and after the tune-up of the boiler.

  (ii) A description of any corrective actions taken as a part of the tune-up of the boiler.

  (iii) The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler.

(g) If the units are not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.

E11-10. The permittee shall comply with this condition no later than March 21, 2014 pursuant to 40 CFR §63.11196(a)(3). Pursuant to 40 CFR §63.11201(b), the auxiliary boiler must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this condition satisfies the energy assessment requirement. The energy assessment must include:

(a) A visual inspection of the boiler system.
(b) An evaluation of operating characteristics of the facility, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints,
(c) Inventory of major systems consuming energy from affected boiler(s),
(d) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage,
(e) A list of major energy conservation measures,
(f) A list of the energy savings potential of the energy conservation measures identified,
(g) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments

E11-11. Pursuant to 40 CFR §63.11205, at all times the permittee must operate and maintain the auxiliary boiler, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Technical Secretary that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

E11-12. Pursuant to 40 CFR §63.11225(a)(2) and §63.9(b)(2), the permittee must submit an Initial Notification to the Technical Secretary for the auxiliary boiler no later than September 17, 2011.

E11-13. Pursuant to 40 CFR §63.11225(a)(4) and §63.9(h), the permittee must submit a Notification of Compliance Status to the Technical Secretary for the auxiliary boiler no later than 120 days after the applicable compliance date specified in **Conditions E11-9 and E11-10**. In addition to the information required in 40 CFR §63.9(h)(2), the notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

(i) "This facility complies with the requirements in 40 CFR §63.11214 to conduct an initial tune-up of the boiler."
(ii) "This facility has had an energy assessment performed according to 40 CFR §63.11214(c)."

E11-14. Pursuant to 40 CFR §63.11225(c), the permittee must maintain the records specified in paragraphs(a) through (d) of this condition for the auxiliary boiler.

(a) As required in 40 CFR §63.10(b)(2)(xiv), the permittee must keep a copy of each notification and report that was submitted to comply with 40 CFR 63, subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted.
(b) The permittee must keep records to document conformance with the work practices, emission reduction measures, and management practices required by 40 CFR §63.11214 as specified in paragraphs (i) and (ii) of this condition.
    (i) Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.
    (ii) Records documenting the fuel type(s) used monthly by each boiler, including, but not limited to, a description of the fuel, including whether the fuel has received a non-waste determination by you or EPA, and the total fuel usage amount with units of measure. If the permittee combusts non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR §241.3(b)(1), the permittee must keep a record which documents how the secondary material meets each of the legitimacy criteria. If the permittee combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR §241.3(b)(2), the permittee must keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR §241.2. If the fuel received a non-waste determination pursuant to the petition process submitted under 40 CFR §241.3(c), the permittee must keep a record that documents how the fuel satisfies the requirements of the petition process.
(c) Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.

(d) Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFRR §63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.

63-0092-14	**Source Identification**	Lime and Limestone Unloading and Storage Two (2) Bulk Material Silos with Baghouse Control One (1) Limestone Feed Hoppers with Baghouse Control		
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**
15500-00-ST	Lime Storage Silo Baghouse	70	.92	1,860
15901-02-ST	Limestone Feed Hopper Baghouse	44	.5	550
15812-00-DT	Limestone Storage Silo Baghouse	58	.75	1,300

Condition E12-1thru E12- 5 apply to source 63-0092-14

E12-1. Particulate matter emitted from the Lime Storage Silo Baghouse (stack 15500-00-ST) shall not exceed 0.015 grains per dry standard cubic foot of exhaust gas (0.24 lb/hr).

TAPCR 1200-03-09-.01(4)(j) and PSD Requirement (12/1/76 letter from EPA)

Compliance Method: Compliance with the particulate emission limitation shall be assured by proper maintenance of each baghouse. A monthly log of maintenance at each baghouse shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from the baghouse. A log of the operation hours when this source is operating without the baghouse system fully operating must be kept. These logs shall be retained for a period of not less than 5 years. Monthly log entries shall be reported semiannually and annually in accordance with Condition E2.

E12-2. Particulate matter emitted from the Limestone Feed Hopper Baghouse (stack 15901-02-ST) shall not exceed 0.25 grains per dry standard cubic foot of exhaust gas (1.18 lb/hr) and 2.5 tons per year.

TAPCR 1200-03-07-.01(5) and Permit 993067P

Compliance Method: Compliance with the particulate emission limitation shall be assured by proper maintenance of the baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this source is operating without the baghouse system fully operating must be kept. These logs shall be retained for a period of not less than 5 years. Monthly log entries shall be reported semiannually and annually in accordance with Condition E2.

E12-3. Particulate matter emitted from the Limestone Storage Silo Baghouse (stack 15812-00-ST) shall not exceed 0.25 grains per dry standard cubic foot of exhaust gas (2.79 lb/hr) and is not to exceed 2.5 tons per year.

TAPCR 1200-03-07-.01(5) and Permit 993068P

Compliance Method: Compliance with the particulate emission limitation shall be assured by proper maintenance of the baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this source is operating without the baghouse system fully operating must be kept. These logs shall be retained for

a period of not less than 5 years. Monthly log entries shall be reported semiannually and annually in accordance with Condition E2.

E12-4. Visible emissions from this source (63-0092-14) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E12-5. The Lime Storage Silo Baghouse (stack 15500-00-ST), the Limestone Feed Hopper Baghouse (stack 15301-02-ST), and the Limestone Storage Silo Baghouse (stack 15812-00-ST) are subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for particulate matter. The following table summarizes, but does not necessarily include all of the CAM requirements for the Lime Storage Silo Baghouse (stack 15500-00-ST), the Limestone Feed Hopper Baghouse (stack 15301-02-ST), and the Limestone Storage Silo Baghouse (stack 15812-00-ST). CAM reporting may be fulfilled through recordkeeping and reporting requirements for **Conditions E12-1 through E12-3, and E2**.

	Indicator No. 1	**Indicator No. 2**
I. Indicator [64.6(c)(1)(i)]	Inspection/maintenance	Visible emissions
Measurement Approach [64.6(c)(1)(ii)]	Daily inspection according to I/M checklist; maintenance performed as needed.	A certified visible emissions inspector will evaluate visible emissions in accordance with EPA Method 9 and the Opacity Matrix.
II. Indicator Range [64.6(c)(2)]	NA	Visible emissions shall not exceed 20 % opacity. Visible emissions greater than 20% opacity (with due allowance for reader error) are considered deviations.
III. Performance Criteria [64.6(c)(1)(iii)] A. Data Representativeness [64.3(b)(1)]	Inspections are performed at the baghouse.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
B. Verification of Operational Status [64.3(b)(2)]	NA	Visible emissions inspector will ensure that the emission unit is operational during the VEE.
C. QA/QC Practices and Criteria [64.3(b)(3)]	Qualified personnel perform inspection.	Visible emissions inspector will observe the requirements of EPA Method 9 and the Opacity Matrix.
D. Monitoring Frequency [64.3(b)(4)]	Daily inspection.	If necessary, an initial VEE shall be conducted within a year of permit issuance. Additional VEE's shall be conducted as required by the Opacity Matrix.
Data Collection Procedure	Records are maintained to document the daily inspection and any required maintenance.	As required by EPA Method 9 and the Opacity Matrix.

	Indicator No. 1	Indicator No. 2
Averaging Period	NA	As required by EPA Method 9 and the Opacity Matrix.

63-0092-20		Source Identification		Scrap Zinc Electric Induction Melting Furnace and Alloy Furnace with Baghouse Control	
Stack ID	**Location**	**Height above grade (ft)**	**Inside diameter at outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**	**Minimum Pressure Drop (inch of Water Column)**
09870-00-ST	Scrap Zinc Electric Furnace and Alloy Furnace with Baghouse	51	3	17,493	2.0

Condition E13-1 thru E13-3 apply to source 63-0092-20

E13-1. Capacity for the scrap zinc melting furnace shall not exceed 6,000 pounds per hour. The Technical Secretary may require the permittee to demonstrate the status of compliance.

Permit 032607P, Condition 1

E13-2. Particulate matter emitted from the Scrap Zinc Electric Furnace and Alloy Furnace Baghouse (stack 09870-00-ST) shall not exceed 0.005 grains per dry standard cubic foot of exhaust gas (0.75 lb/hr).

40 CFR 63.11162(b)(6)

Compliance Method: This source (63-0092-20) shall not be operated without the use of air pollution control device(s) (fabric filters), except in accordance with TAPCR 1200-03-20. Compliance with this condition shall be assured by operating the fabric filters at or higher than the minimum pressure drops corresponding to the exhaust emissions of 0.75 pounds per hour and the daily recording of the pressure drop across the fabric filters in the Scrap Zinc electric Furnace and Alloy Furnace Baghouse. A monthly log of maintenance shall indicate what maintenance and repair was done, when it was done, by whom, and when problems were rectified, showing time and date. This information shall include, but is not limited to, filter inspections, filter replacement, and time of use of the emergency/standby venting from fabric filters. A log of the operation hours when this line is operating without the baghouse system fully operating must be kept.

Compliance with this requirement shall be assured by maintaining a minimum pressure drop of 2.0 inches of water column across the fabric filters in the Scrap Zinc Electric Furnace and Alloy Furnace Baghouse. The pressure drop shall be recorded once daily when this source is in operation. The days when the source does not operate shall be noted. In the event that all bags are replaced simultaneously, the permittee will record in a separate log, the date complete replacement is made and record daily pressure drop across that particular baghouse until the minimum pressure drop for the baghouse is reached. Once reached, the standard recordings shall be made and a report of the time required to reach the minimum pressure drop shall be calculated. This report shall be included with that current semiannual period submittal. All logs shall be recorded in a suitable permanent form and kept available for inspection and be used to certify compliance with this condition and in the reporting requirements of E2 of this permit, and must be retained for a period of not less than five years. The information obtained from the study shall be incorporated into this permit by administrative permit amendment to set operating parameters while the filter cake is accumulating on the new bag filter. Reports and certifications shall be submitted in accordance with Condition E2 of this permit.

E13-3. Visible emissions from this source (63-0092-20) shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-

four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count).

TAPCR 1200-03-05-.01

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

63-0092-24	**Source Identification**	No. 2 Fuel Oil Fired Secondary Acid Plant Preheater: Input Rate: 38 MM Btu per hour

Condition E14-1thru E14-9 apply to source 63-0092-24

E14-1. The maximum heat input rate for this source shall not exceed 38 million BTU per hour (MMBTU/hr).

Permit 946934F, Condition 2

E14-2. Particulate matter (TSP) emitted from this source shall not exceed 0.3 pounds per million BTU (11.4 pounds per hour).

TAPCR 1200-03-06-.01(7) and the letter dated March 21, 2007 from the permittee

Compliance Method: Compliance is assured based on:

- The maximum heat input rate of 38 MMBtu/hr (**Condition E14-1**),
- The use of No. 2 fuel oil (**Condition E14-9**),
- The No. 2 fuel oil heating value of 140,000 Btu per gallon (Btu/gal), contained in the Fifth Edition of AP 42 "Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources," Appendix A, Miscellaneous Data And Conversion Factors,
- The particulate matter emission factors of 2 pounds of filterable particulate matter per 1,000 gallons of fuel oil combusted, and 1.3 pounds of condensable particulate matter per 1,000 gallons of fuel oil combusted, contained in AP-42, Sec. 1.3 (dated 5/10), Tables 1.3-1 and 1.3-2.

E14-3. Sulfur Dioxide (SO_2) emitted from this source shall not exceed 19.2 pounds per hour.

TAPCR 1200-03-14-.01(3) and the letter dated March 21, 2007 from the permittee

Compliance Method: Compliance is assured based on:

- The maximum heat input rate of 38 MMBtu/hr (**Condition E14-1**),
- The use of No. 2 fuel oil (**Condition E14-9**),
- The No. 2 fuel oil heating value of 140,000 Btu per gallon (Btu/gal), contained in the Fifth Edition of AP 42 "Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources," Appendix A, Miscellaneous Data And Conversion Factors,
- The maximum fuel oil sulfur content of 0.5 percent (**Condition E14-8**),
- The SO_2 emission factor of 142S pounds of SO_2 per 1,000 gallons of fuel oil combusted (where S is the fuel sulfur content in percent), contained in AP-42, Sec. 1.3 (dated 5/10), Table 1.3-1.

E14-4. Carbon monoxide (CO) emitted from this source shall not exceed 4.2 pounds per hour.

TAPCR 1200-03-06-.01(7) and the letter dated March 21, 2007 from the permittee

Compliance Method: Compliance is assured based on:

- The maximum heat input rate of 38 MMBtu/hr (**Condition E14-1**),
- The use of No. 2 fuel oil (**Condition E14-9**),
- The No. 2 fuel oil heating value of 140,000 Btu per gallon (Btu/gal), contained in the Fifth Edition of AP 42 "Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources," Appendix A, Miscellaneous Data And Conversion Factors,
- The vendor-supplied CO emission factor of 5 pounds of CO per 1,000 gallons of fuel oil combusted.

E14-5. Nitrogen dioxides (NO_X) emitted from this source shall not exceed 7.4 pounds per hour.

TAPCR 1200-03-06-.01(7) and the letter dated March 21, 2007 from the permittee

Compliance Method: Compliance is assured based on:

- The maximum heat input rate of 38 MMBtu/hr (**Condition E14-1**),
- The use of No. 2 fuel oil (**Condition E14-9**),
- The No. 2 fuel oil heating value of 140,000 Btu per gallon (Btu/gal), contained in the Fifth Edition of AP 42 "Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources," Appendix A, Miscellaneous Data And Conversion Factors,
- The vendor-supplied NO_X emission factor of 24 pounds of NO_X per 1,000 gallons of fuel oil combusted.

E14-6. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

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

Compliance Method: Compliance with this opacity limitation shall be certified through utilization of the Division's Opacity Matrix dated June 18, 1996, using EPA Method 9.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E14-7. Operating time for this source shall not exceed 1000 hours during any period of 12 consecutive months.

Letter dated March 21, 2007, from the permittee.

Compliance Method: Logs of the operating hours, in a form that readily show compliance with this condition, must be maintained at the source location and kept available for inspection by the Technical Secretary of his representative. These logs must be maintained for a period of not less than five years.

Monthly operating time log for Source 63-0092-24					
Month and Year:					
Day	Daily Hours of Operation (hours/day)	Day	Daily Hours of Operation (hours/day)	Day	Daily Hours of Operation (hours/day)
1		11		21	
2		12		22	
3		13		23	
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	
				31	
			TOTAL FOR MONTH:		

12-consecutive months operating time log for Source 63-0092-24		
Month and Year	Hours of Operation (hours/month)	Hours of Operation (hours/12-consecutive months)

* The hours per 12-consecutive months value is the sum of the operating hours in the 11 months preceding the month just completed + the operating hours in the month just completed. If data is not available for the 11 months preceding the initial use of this Table, this value will be equal to the value for operating hours per month. For the second month it will be the sum of the first month and the second month. Indicate in parentheses the number of months summed [i.e., 6 (2) represents 6 operating hours in 2 months].

E14-8. The sulfur content of the fuel oil shall not exceed 0.5 percent by weight.

Permit 946934F, Condition 9 and 11

Compliance Method: A log of the shipment receipts from the fuel supplier for each shipment of No.2 oil delivered, in a form that readily shows compliance with Condition E14-8, must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five years. Alternatively, the vendor may supply a statement certifying that all fuel oil shipment to this source will comply with the maximum 0.5% sulfur by weight limit.

E14-9. Only No 2 fuel oil shall be used as fuel for this source.

Permit 946934F, Condition 10

63-0092-25	Source Identification Lead Anode Pre-Coating Operation			
Stack ID	**Process Description**	**Height above grade (ft)**	**Inside Diameter at Outlet (ft)**	**Exhaust flowrate at dry standard condition (dscfm)**
13050-00-ST	Lead Anode is pre-coated in spent electrolyte. Exhaust through a ventilation hood	60	0.83	2519

Condition E15-1 thru E15-2 apply to source 63-0092-25

E15-1. The maximum production rate shall not exceed 49 lead anodes per batch using electrolyte bath tank.

E15-2. Chlorine (Cl_2) emitted from this source shall not exceed 0.5 pounds per hour and 2.2 tons during any consecutive twelve month period.
TAPCR 1200-03-07-.07(2)

Compliance Method: Record keeping for anodes being pre-coated per batch as well as the time per batch along with other chemical usage (type and frequency of make-up replenishment) logs shall be maintained.

Based on company calculations, taking into consideration the inherent design criteria and capacity of this process, the emission rate of chlorine will not exceed 0.5 lbs/hr when the number of lead anodes coated does not exceed 49 pieces per batch. A log of the number of anodes per batch being processed and the time per batch must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. These logs must be retained for a period of not less than five years.

END OF PERMIT NUMBER: 560146

ATTACHMENT 1

OPACITY MATRIX DECISION TREE for VISIBLE EMISSION EVALUATION METHOD 2 dated JUNE 18, 1996

Notes:

PM = Periodic Monitoring required by 1200-3-9-.02(11)(e)(iii)

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring requirements of Title V for demonstrating compliance with the visible emission standards in paragraph 1200-3-5-.01. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly refferred to as Enhanced Monitoring - Proposed 40 CFR 64).

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

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

Visible Emission Evaluations (VEEs) are to be conducted utilizing Tennessee Visible Emission Evaluation Method 2. The observer must be properly certified according to the criteria specified in EPA Method 9 to conduct TVEE Method 2 evaluations.

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

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

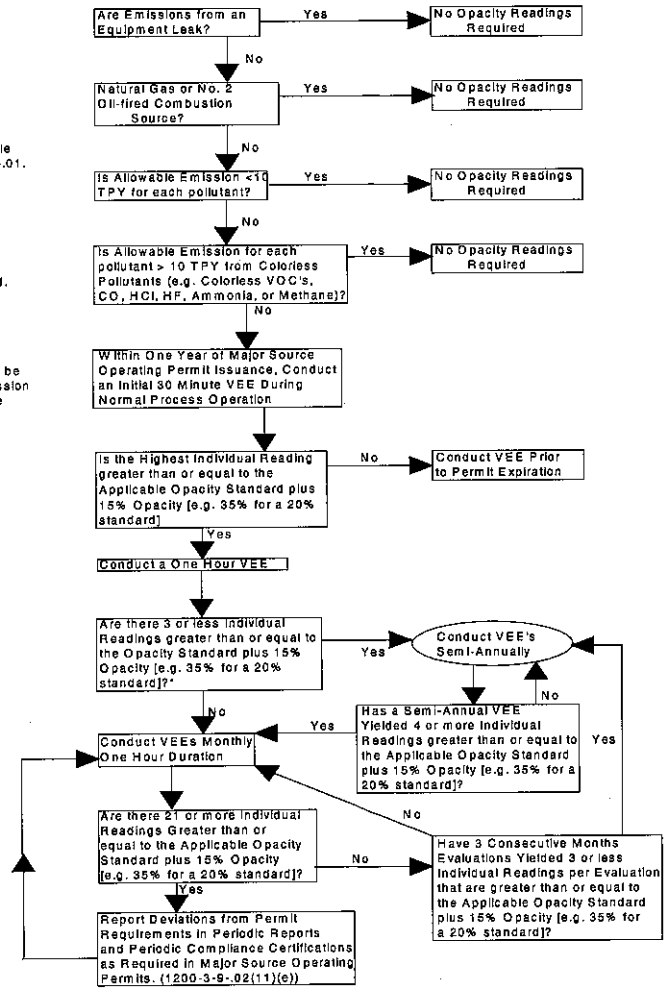
A VEE conducted by TDAPC personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error
TVEE Method 2: The TDAPC declares non-compliance when 21 observations are read at the standard plus 15% opacity (e.g. 35% for a 20% standard).

*The rationale for this is the fact that Rule 1200-3-5-.01 allows for an exemption of 5 minutes (20 readings) per hour and up to 20 minutes (80 readings) per day. With 4 or more excessive individual readings per hour the possibility of a daily exceedance exists.

Note: A company could mutually agree to have all of it's sources regulated by EPA Method 9. Caution: Agreement to use Method 9 could potentially place some sources in non-compliance with visible emission standards. Please be sure before you agree.

Decision Tree PM for Opacity for Sources Subject To Rule 1200-3-5-.01 Utilizing TVEE Method 2



ATTACHMENT 2

OPACITY MATRIX DECISION TREES for VISIBLE EMISSION EVALUATION EPA METHOD 9

Notes:

PM = Periodic Monitoring required by 1200-3-9-.02(11)(e)(1)(iii)

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emissions standards in paragraph 1200-3-5-.01. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly refferred to as Enhanced Monitoring - Proposed 40 CFR 64).

Examine each emission source using this Decision Tree to determine PM required.

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

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

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

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

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

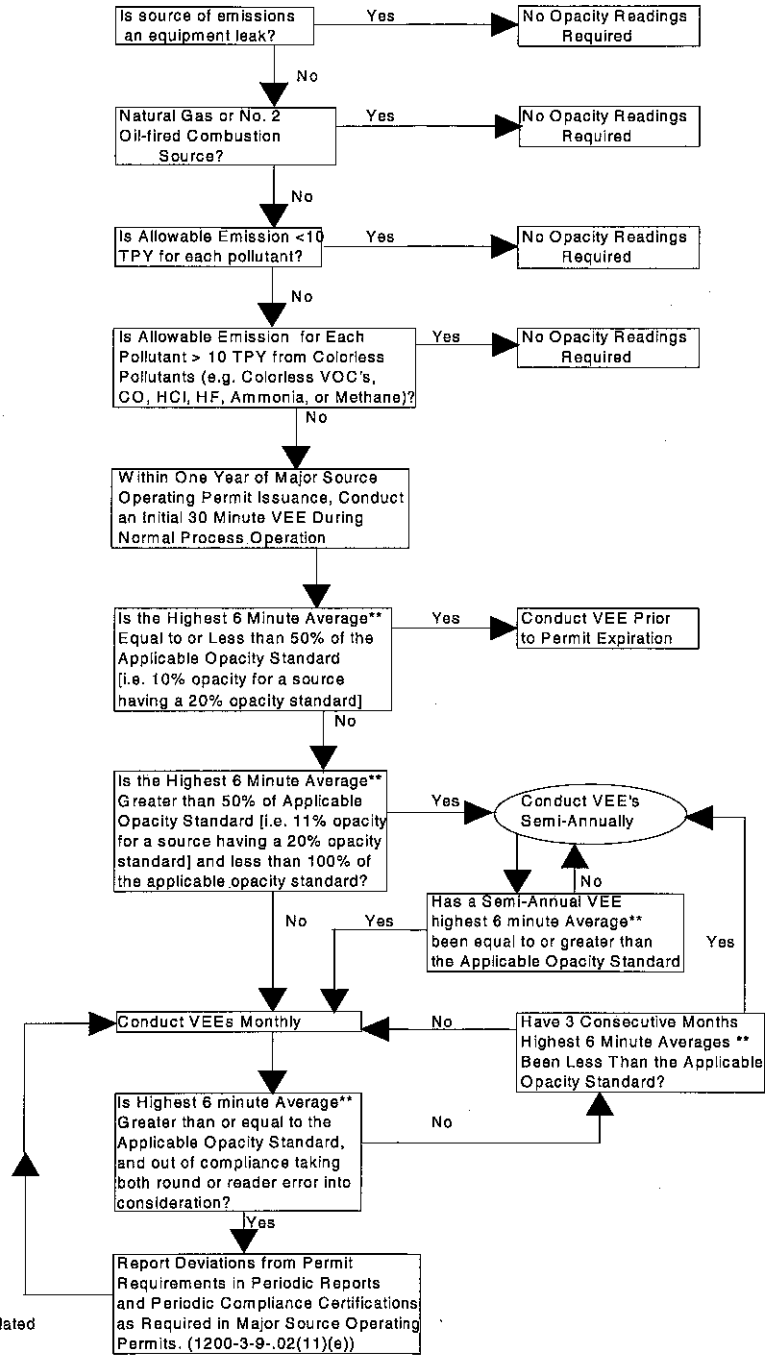
Reader Error
EPA Method 9, Non-NSPS or Neshaps stipulated opacity standards:
The TDAPC guidance is to declare non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

EPA Method 9, NSPS or NESHAPS Stipulated Opacity Standards:
EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not Applicable to Asbestos Manufacturing Subject to 40 CFR 61.142

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

Decision Tree PM for Opacity for Sources Utilizing EPA Method 9



ATTACHMENT 3

DUST CONTROL PLAN

Updated March 2010

DUST CONTROL PLAN

Prepared for

Nyrstar Clarksville, Inc.
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Clarksville, Tennessee 37040

Prepared by

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October 2001

Updated by Nyrstar Clarksville, Inc. March 2010

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1.0 INTRODUCTION

Nyrstar Clarksville, Inc. operates an electrolytic zinc processing facility in Clarksville, Montgomery County, Tennessee. Air emissions from the facility were initially permitted under a Prevention of Significant Deterioration (PSD) permit in December of 1976. Currently, the facility holds a Part 70 Major Source Operating Permit, commonly called a Title V Permit. Both of these permits mandate specific fugitive dust abatement procedures and performance parameters. It is the purpose of this document to document those abatement procedures to ensure compliance with the performance parameters.

2.0 LOCATION/PHYSICAL DESCRIPTION

The Nyrstar Clarksville facility is located 1.0 mile southwest of the City of Clarksville in Montgomery County, Tennessee. The approximate center of the facility is located at N 36° 31' 00" latitude and W 87° 24' 30" longitude, and Universal Transverse Mercator (UTM) coordinates 4041000N and 463500E. The company currently owns 1,365 acres of property situated in a bend of the Cumberland River. Additional location information can be found in the Title V application.

The R.J. Corman Railroad transects the facility property. Approximately 45% of the facility property lies west of the railroad, within the flood plain of the Cumberland River. The remaining 55±% of the property consists of eastern uplands. The portions of the property not directly involved with manufacturing operations are used variously for crops, pastures, set-aside areas, woodlands, and wildlife areas. The facility contains approximately 3.5 miles of paved roads and 1.7 miles of unpaved roads. Additional parking and lay-down areas comprise approximately 3 acres.

3.0 PROCESS DESCRIPTION

The primary product of the Nyrstar Clarksville facility is slab zinc. However, the plant also produces zinc dust, cadmium metal, sulfuric acid and synthetic gypsum. The basic beneficiation steps applied in the plant are as follows: 1) roasting zinc sulfide-rich concentrate to produce a zinc oxide (calcine), 2) dissolving the calcine in sulfuric acid to produce a zinc sulfate solution (leaching), 3) purification of the zinc sulfate solution to remove impurities, 4) electrowinning the zinc as a metal from the purified solution, and 5) melting and casting the zinc metal into ingots. More detailed information regarding each successive step in the process is presented below and on Figure 2.

3.1 Roasting

Concentrates containing 60 - 65% zinc (in the form of zinc sulfide), 30% sulfur, 5 - 10% other elements, and 3 - 10% moisture are off-loaded from barges, by means of a clam shell, into a hopper, and transferred via a 2,700 foot-long covered overland trestle conveyor to the concentrate storage building. The facility also receives concentrates by truck or by rail, although the majority of concentrate comes by barge. Concentrate is transported to the Concentrate Storage Building where it is blended with small amounts of dross and other recycle material. The blended concentrates are then fed to the Screening Tower and thence transferred to the roaster feed bin via covered conveyors.

In the fluid bed roaster, concentrates are roasted (calcined) at 1,700 - 1,800°F. This process is exothermic when the roasting chamber reaches 1742 °F and the process generates enough heat to self-perpetuate. The Auxiliary Boiler is used to provide process steam when the Roaster plant is shut down. The roasting of the concentrate produces zinc oxide calcine and SO_2 gas.

The gaseous SO_2 is treated at the Roaster to recycle particulate calcine and conveyed to the sulfuric acid plant. The gas is cooled and cleaned before entering a double contact, double absorption acid plant where SO_2 is converted to SO_3 which is then absorbed in sulfuric acid to produce the desired acid grade. The emissions from this process exit through the Acid Plant Tail

Gas Stack. The heat required for startup of this process is supplied by the Primary and Secondary Acid Plant Preheaters.

The roasted calcine is cooled and conveyed to a ball mill where it is ground and then transported to a product storage bin via a bucket elevator. Calcine is pneumatically conveyed to the Calcine Storage Silos located in the leaching area.

3.2 Leaching

Leaching is the process by which calcine is dissolved in sulfuric acid to form a zinc sulfate solution. In the leaching circuit, the calcine is first mixed - in a series of tanks - with return spent electrolyte-containing sulfuric acid, in order to dissolve the zinc. This "neutral leach", which is conducted at ambient temperature and a pH of 5, dissolves most of the calcine. Undissolved material is ground and subjected to a second "weak acid leach" at a pH of 3. The resultant solution is then filtered, and the filtrate is returned to the neutral leach process. The filter cake, containing the undissolved residue, is "repulped" and pumped to a sulfide flotation circuit. There, zinc sulfide (along with other floatable metal sulfides) is recovered and recycled back to the roasting process.

3.3 Purification

The leach filtrate is subjected to a series of chemical process steps to remove impurities that would compromise the purity of the zinc product and/or interfere with the electrowinning process. The first step in the purification process is "cold" purification in which zinc dust is used to precipitate out cadmium and copper. The second step is "hot" purification using zinc dust, copper sulfate and antimony tartrate to precipitate out the remaining impurities such as cobalt, nickel, and germanium. The purified zinc sulfate solution is settled, acidified and cooled prior to its use in the Cell House for electrolysis.

The cadmium and copper in the cold purification cake are separated with cadmium sulfate solution routed to the cadmium electrolytic process and the copper concentrate sold as a by-

product. The hot purification cake (cobalt cake) is leached to partially recover the zinc. The cake is then sold as a byproduct.

3.4 Electrolysis

Electrowinning is the process by which the zinc ions are plated onto cathodes. This process takes place in the Cell House. Electrical current is passed from lead/silver alloy anodes through the purified zinc sulfate solution and the aluminum cathode. The zinc in the solution dissociates and, due to its electrochemical charge, plates out on the cathodes. This reaction generates heat in the electrolyte, which is dissipated by circulating the solution through forced-draft cooling towers. The spent electrolyte is then recycled back to the leaching process.

The cathodes are removed on either a 36, 44 or 48-hour cycle and automatically stripped of zinc. The zinc, which is 99.9% pure at this stage of the process, is removed in sheets and stored for eventual transport to the Cast House.

A separate - and much smaller - cell house/cast house operation is maintained in the Cadmium Plant. Here cadmium (from the purification process) is electrowinned from the solution. Cadmium cathodes are then placed in the Cadmium Melt Furnace for casting into cadmium balls.

3.5 Melting and Casting

In the Cast House, sheets of zinc received from the Cell House are melted in an induction furnace, alloyed, and cast into marketable shapes. Also, a portion of the zinc is processed into zinc dust that is used at various stages of the purification process, as described previously. The metal product is shipped by truck and rail to various purchasers.

During the melting of the cathodes and casting of the zinc metal, dross and metallic skimming are formed. The dross is skimmed off and put through a dross screening and grinding operation in an adjacent area in which the oxide is separated from the metal. The oxide is returned to the concentrate storage area and the metal is returned to the melting furnace.

Scrap materials generated during casting are remolded in the scrap zinc furnace and recycled to product. An Alloy Furnace is used to alloy various customer metal orders.

3.6 Other Processes

3.6.1 Metals Recovery

In the metals recovery (wastewater treatment plant) acidic process wastewater and spent bleed electrolyte are neutralized with limestone and/or a lime slurry to provide a treated effluent discharged to the Cumberland River. The wastewater sludge containing metal hydroxides is filtered and acidified producing a marketable gypsum by-product. The acidified metals solution is recycled to the zinc leaching circuit.

3.6.2 Zinc Dust Production

A zinc dust production unit with three crucibles produces zinc dust for zinc and cadmium purification. Feed for this process enters the Zinc Dust Melting Furnace where the metal temperature is maintained at 500 °C. An air pump in the furnace pumps the metal into a circulating launder, which maintains a constant level of molten zinc in three crucibles. The zinc is then atomized with pressurized air, and the aerosoled metal immediately solidifies to form dust that is carried into the air stream. The settled zinc dust is then screened to generate two grades of dust that is used as a reagent in the zinc purification process or sold as a by-product.

3.6.3 Leach Residue Recycle

Ore concentrates containing elevated levels of germanium are campaigned to produce a germanium enriched concentrate. This concentrate is dewatered in a plate and frame press and trucked to an on-site storage area to await truck, rail, or barge shipment as a by-product.

3.7 Fugitive Dust Control Requirements

The following items are contained in the 1976 USEPA PSD Determination and address actions to be taken to control fugitive dust.

Item 1

Provide for application of and apply when required water, oil, or suitable chemicals on unpaved roads, material stockpiles or other surfaces that can create fugitive dust.

Item 2

Install and use hoods, fans, and fabric filters to enclose and vent the handling of dusty materials, or use water sprays or other measures to suppress the dust during handling. Where fabric filters are used the particulate emissions shall not exceed .015 gr/scf as measured by EPA approved test methods. *(Authors note: The specified grain loading has been modified, on a source-by-source basis by more recent permitting activities.)*

Item 3

Open bodied trucks transporting materials likely to become airborne shall be covered at all times when in motion.

Item 4

Paved roads, parking lots, or other paved areas shall be maintained in a clean condition to minimize the occurrence of fugitive dust.

Item 5

Discharge chutes at the zinc ore storage area shall be designed to permit discharge points to be close to the surface of the storage pile.

The following conditions are included in the Title V permit for the facility and address specific actions to be taken to control fugitive dust.

Condition D7

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

    a. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;

    b. Application of asphalt, oil, water, or suitable materials on dirt roads, material stockpiles, and other surfaces which can create airborne dusts;

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

2. The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted is such a manner to exceed five (5) minutes per hour or twenty (20) minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-3-20.

3.8 Fugitive Dust Control Procedures

To ensure compliance with the above-mentioned requirements, Nyrstar Clarksville, Inc. implements many fugitive dust control procedures. It is important to note, that while these procedures exist, Nyrstar is an adequately complex facility so as to limit the efficacy of rigid

procedures. More important than these procedures is a philosophy of clean operations so that each opportunity for fugitive dust generation is assessed on a case-by-case basis to determine the best abatement method for each specific situation. That being said, procedures are as follows:

- All pneumatic conveying systems are baghouse controlled.

- All paved areas are swept on a regular basis. During periods, which are especially prone to fugitive dust generation, the sweeping schedule in intensified. Likewise, during periods where natural dust suppression is adequate (i.e. rain) the schedule is relaxed.

- All non-pneumatic conveying systems such as belt conveyors of bucket systems are either fully contained or covered to prevent wind entrainment.

- Materials that are handled in the open, such as concentrate from barges or waste residues, contain adequate inherent moisture so as to prevent wind entrainment. If necessary, water is added to ensure the desired moisture content.

- All potentially dusty material transported to or on the site is transported in covered containers.

- Chemical dust suppressants are applied to gravel roads and unpaved parking areas as needed.

- Chemical dust suppressants are applied to residue piles as needed.

-

ATTACHMENT 4

APPLICABILITY OF 40 CFR 63 GENERAL PROVISIONS TO PRIMARY ZINC PRODUCTION AREA SOURCES

(40 CFR Part 63, Subpart GGGGGG, Table 1)

Table 1 to Subpart GGGGGG of Part 63—Applicability of General Provisions to Primary Zinc Production Area Sources

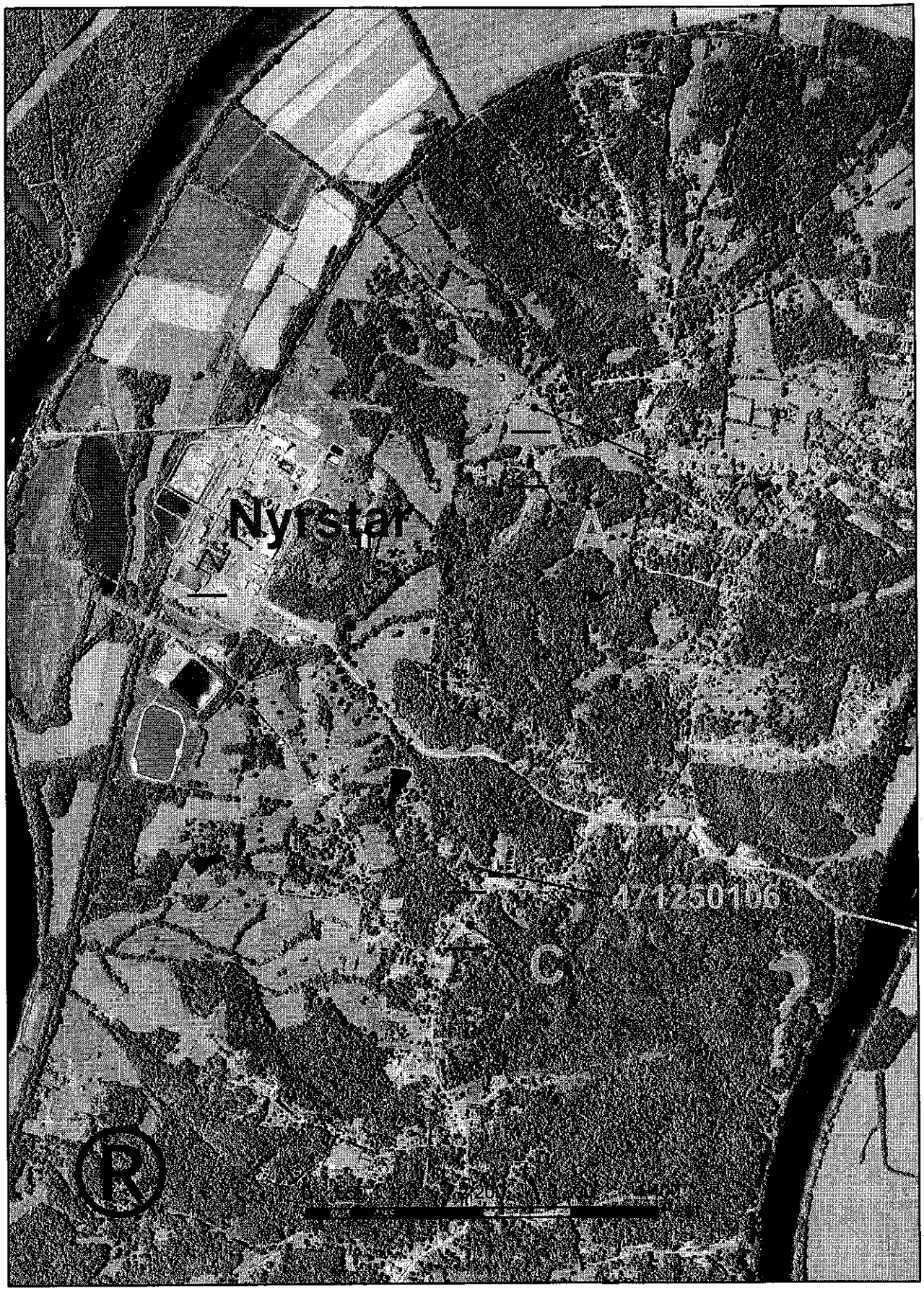
As required in §63.11164(a) and (b), you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) as shown in the following table.

Citation	Subject	Applies to subpart GGGGGG	Explanation
63.1(a)(1), (a)(2), (a)(3), (a)(4), (a)(6), (a)(10)–(a)(12), (b)(1), (b)(3), (c)(1), (c)(2), (c)(5), (e)	Applicability	Yes.	
63.1(a)(5), (a)(7)–(a)(9), (b)(2), (c)(3), (c)(4), (d)	Reserved	No.	
63.2	Definitions	Yes.	
63.3	Units and Abbreviations	Yes.	
63.4	Prohibited Activities and Circumvention	Yes.	
63.5	Preconstruction Review and Notification Requirements	No.	
63.6(a), (b)(1)–(b)(5), (b)(7), (c)(1), (c)(2), (c)(5)	Compliance with Standards and Maintenance Requirements—Applicability Compliance Dates	Yes.	
63.6(e)	Operation and Maintenance Requirements	Yes/No	Operation and maintenance requirements do not apply to existing sources except that the startup, shutdown, and malfunction requirements in §63.6(e)(3) are allowed as an alternative to the rule requirements for emergency situations. Operation and maintenance requirements apply to new sources except that the rule

			requirements for emergency situations are allowed as an alternative to the startup, shutdown, and malfunction requirements in §63.6(e)(3).
63.6(f), (g), (i), (j)	Compliance with Nonopacity Emission Standards	Yes.	
63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv)	Reserved	No.	
63.6(h)(1)–(h)(4), (h)(5)(i)–(h)(5)(iii), (h)(6)–(h)(9)		Yes.	
63.7(a), (e), (f), (g), (h)	Performance Testing Requirements	Yes.	
63.7(b), (c)		Yes/No	Notification of performance tests and quality assurance program apply to new sources but not existing sources.
63.8(a)(1), (a)(2), (b), (c), (f), (g)	Monitoring Requirements	Yes	Requirements in §63.6(c)(4)(i)–(ii), (c)(5), (c)(6), (d), (e), (f)(6), and (g) apply if a COMS is used.
63.8(a)(3)	Reserved	No.	
63.8(a)(4)		No	Subpart GGGGGG does not require flares.
63.8(d), (e)		Yes/No	Requirements for quality control program and performance evaluations apply to new sources but not existing sources.
63.9(a), (b)(1), (b)(2), (b)(5), (c), (d), (f), (g), (h)(1)–(h)(3), (h)(5), (h)(6), (i), (j)	Notification Requirements	Yes/No	Notification of performance tests and opacity or visible emissions observations apply to new sources but not existing sources.
63.9(b)(3), (h)(4)	Reserved	No.	
63.9(b)(4)		No.	
63.10(a), (b)(1), (b)(2)(i)–(v),	Recordkeeping and Reporting	Yes.	

(d)(4), (d)(5)(i), (f)	Requirements		
63.10(b)(2), (b)(3), (c)(1), (c)(5)–(c)(8), (c)(10)–(c)(15), (d)(1)–(d)(3), (d)(5)(ii), (e)(1), (e)(2), (e)(4)		Yes/No	Recordkeeping and reporting requirements apply to new sources but not existing sources.
63.10(c)(2)–(c)(4), (c)(9)	Reserved	No.	
63.10(e)(3)		Yes/No	Reporting requirements apply to new sources but not existing sources.
63.11	Control Device Requirements	No	Subpart GGGGGG does not require flares.
63.12	State Authorities and Delegations	Yes.	
63.13	Addresses	Yes.	
63.14	Incorporations by Reference	Yes.	
63.15	Availability of Information and Confidentiality	Yes.	
63.16	Performance Track Provisions	Yes.	

ATTACHMENT 5

SAMPLING LOCATIONS

NYRSTAR Air Monitoring Sites