

217/782-2113

"REVISED"
TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT¹

PERMITTEE

Big River Zinc Corporation
Attn: George Obeldobel, General manager
Route 3 & Monsanto Avenue
Sauget, Illinois 62201

<u>Application No.:</u> 96030107	<u>I.D. No.:</u> 163121AAK
<u>Applicant's Designation:</u>	<u>Date Received:</u> March 07, 1996
<u>Operation of:</u> Zinc, Cadmium & Sulfuric Acid Production	
<u>Date Issued:</u> August 1, 2001	<u>Expiration Date</u> ² : August 1, 2006
<u>Source Location:</u> Route 3 & Monsanto Avenue, Sauget, St. Clair County	
<u>Responsible Official:</u> George Obeldobel, General Manager	

This permit is hereby granted to the above-designated Permittee to OPERATE a Zinc, Cadmium & Sulfuric Acid Production Plant, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

Revision Date Received: June 5, 2002
Revision Date Issued: March 4, 2004
Purpose of Revision: Minor Modification

This minor modification revises permit condition 7.2.6(a)(ii) based on a special condition from Permit #72121233 issued later than a Construction Permit #93040022. In addition a gasoline storage tank Section 7.4 is removed from the Title V permit since the tank was removed from the source in 1996.

This document only contains those portions of the entire CAAPP permit that have been revised as a result of this permitting action. If a conflict exists between this document and previous versions of the CAAPP permit, this document supersedes those terms and conditions of the permit for which the conflict exists. The previous version of the permit is incorporated herein by reference.

If you have any questions concerning this permit, please contact Jonathan Sperry at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JS:psj

cc: Illinois EPA, FOS, Region 3

¹ This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the CAA and regulations promulgated thereunder, including 40 CFR 52.21 - federal PSD and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within this permit.

² Except as provided in Condition 8.7 of this permit.

TABLE OF CONTENTS

	<u>PAGE</u>
1.0 SOURCE IDENTIFICATION	4
1.1 Source	
1.2 Owner/Parent Company	
1.3 Operator	
1.4 General Source Description	
2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT	5
3.0 INSIGNIFICANT ACTIVITIES	7
3.1 Identification of Insignificant Activities	
3.2 Compliance with Applicable Requirements	
3.3 Addition of Insignificant Activities	
4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE	9
5.0 OVERALL SOURCE CONDITIONS	11
5.1 Source Description	
5.2 Applicable Regulations	
5.3 Non-Applicability of Regulations of Concern	
5.4 Source-Wide Operational and Production Limits and Work Practices	
5.5 Source-Wide Emission Limitations	
5.6 General Recordkeeping Requirements	
5.7 General Reporting Requirements	
5.8 General Operational Flexibility/Anticipated Operating Scenarios	
5.9 General Compliance Procedures	
6.0 NOT APPLICABLE TO THIS PERMIT	17
7.0 UNIT SPECIFIC CONDITIONS	18
7.1 Unit 01 Roasters and acid plant	
7.2 Unit 02 Process emission sources	
7.3 Unit 03 Fugitive emission sources	
8.0 GENERAL PERMIT CONDITIONS	41
8.1 Permit Shield	
8.2 Applicability of Title IV Requirements	
8.3 Emissions Trading Programs	
8.4 Operational Flexibility/Anticipated Operating Scenarios	
8.5 Testing Procedures	
8.6 Reporting Requirements	
8.7 Obligation to Comply with Title I Requirements	

PAGE

9.0	STANDARD PERMIT CONDITIONS	46
9.1	Effect of Permit	
9.2	General Obligations of Permittee	
9.3	Obligation to Allow Illinois EPA Surveillance	
9.4	Obligation to Comply with Other Requirements	
9.5	Liability	
9.6	Recordkeeping	
9.7	Annual Emissions Report	
9.8	Requirements for Compliance Certification	
9.9	Certification	
9.10	Defense to Enforcement Actions	
9.11	Permanent Shutdown	
9.12	Reopening and Reissuing Permit for Cause	
9.13	Severability Clause	
9.14	Permit Expiration and Renewal	
10.0	ATTACHMENTS	
10.1	Attachment 1 - Particulate Matter Emission Table New Emission Units	1-1
10.2	Attachment 2 - Emissions netting exercise Construction permit # 97090029	2-1
10.3	Attachment 3 - Example Certification by a Responsible Official	3-1
10.4	Attachment 4 - Guidance on Revising This Permit	4-1
10.5	Attachment 5 - Form 199-CAAPP, Application For Construction Permit (For CAAPP Sources Only)	5-1
10.6	Attachment 6 - Guidance on Renewing This Permit	6-1

1.0 SOURCE IDENTIFICATION

1.1 Source

Big River Zinc Corporation
Attn: George Obeldobel, General manager
Route 3 & Monsanto Avenue
Sauget, Illinois 62201
PHONE # 618/274-5000

I.D. No.: 163121AAK
Standard Industrial Classification: 3339, Primary Metal Industry

1.2 Owner/Parent Company

Big River Zinc Corporation
Route 3 & Monsanto Avenue
Sauget, Illinois 62201

1.3 Operator

Big River Zinc Corporation
Attn: George Obeldobel, General manager
Route 3 & Monsanto Avenue
Sauget, Illinois 62201
PHONE # 618/274-5000

1.4 General Source Description

The Big River Zinc is located at Route 3 & Monsanto Avenue, Sauget in St. Clair County. The source operates an electrolytic zinc refinery. Raw materials consisting of zinc sulfide concentrates are obtained from various mines. The company produces and sells refined zinc metal, zinc alloys, zinc powders, zinc sulfate monohydrate, zinc oxide, cadmium oxide and electrolytic and commercial grade sulfuric acid.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
Btu	British thermal unit
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
Cd	Cadmium
CFR	Code of Federal Regulations
CO	Carbon Monoxide
°F	degrees Fahrenheit
Ft ³	cubic foot
Gal	Gallon
Gm	Gram
HAP	Hazardous Air Pollutant
Hp	horse power
Hr	Hour
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
°K	degrees Kelvin
Kg	kilo gram
KW	Kilowatts
Lb	Pound
MACT	Maximum Available Control Technology
Mmcf	Million cubic feet
MG	Mega Gram
M	Meter
mmBtu	Million British thermal units
Mo	Month
MW	Mega Watts
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
OM	Organic Material
PM	Particulate Matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
Psia	pounds per square inch absolute
RMP	Risk Management Plan
scf	standard cubic foot
SO ₂	Sulfur Dioxide
T	Ton

T1	Title I - identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New - identifies Title I conditions that are being established in this permit
T1R	Title I Revised - identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOL	Volatile Organic Liquid
VOM	Volatile Organic Material
Wt.	Weight
Yr	Year
ZN	Zinc
ZSM	Zinc Sulfate Monohydrate

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

- 3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

- Engineering building heater (1 mmBtu/hr)
- Maintenance building heater (1 mmBtu/hr)
- Office building heater (0.7 mmBtu/hr)
- Laboratory building heater (0.75 mmBtu/hr)
- Laboratory building heater (0.235 mmBtu/hr)
- Locker room heater (0.75 mmBtu/hr)
- 45 small radiant heaters (each 60,000 Btu/hr)
- 6000 gallon diesel oil tank
- 100 HP Portable backup air compressor

- 3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

- Preleach building heater (2.7 mmBtu/hr)
- Header bar tinning pot
- Anode welding station
- 7-20% Acid tanks

- 3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Gas turbines and stationary reciprocating internal combustion engines of between 112 kW and 1,118 kW

(150 and 1,500 horsepower) power output that are emergency or standby units [35 IAC 201.210(a)(16)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.

3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Plant Emission Unit	Description	Date Constructed	Emission Control Equipment
01	EU-1	#1 Lurgi roaster	1967, modified 1990	#1 Waste heat boiler, #1 Multiclone (4 Cyclones), #1 ESP and Roaster exhaust to the sulfuric acid plant
	EU-2	#2 Lurgi roaster	"	#2 Waste heat boiler, #2 Multiclone (4 Cyclones), #2 ESP and Roaster exhaust to the sulfuric acid plant
	EU-3	Sulfuric acid plant	"	-
	EU-4	Sulfuric acid plant preheater	"	-
02	EU-5	2-5000 ton sulfuric acid storage tanks	"	-
	EU-6	2-1000 ton sulfuric acid storage tanks	"	-
	EU-7	8 Calcine storage silos	"	-
	EU-8	2-GRP Purified solution cooling towers	1997	Mist Eliminator
	EU-9	10-TCA Electrolyte cooling towers	"	Mist Eliminator
	EU-10	Electro-winning cell room	"	-
	EU-11	ZSM granulator dryer	1988	Cyclone, Ventury scrubber
	EU-12	ZN Cathode preheater (1.2 mmBtu/hr Natural gas)	1965, modified 1990	Building (Settling)
	EU-13, EU-14	ZN cathode melting furnaces	"	ZN Casting Baghouse
	EU-15	Holding furnace	"	Building (Settling)
	EU-16	Exit furnace	"	"
	EU-17	Zinc casting	"	"
	EU-18	Zinc dust holding furnace	1978, modified 1990	Baghouse
	EU-19	Zinc dust process	"	Baghouse
	EU-20	Special casting melt furnace	1954, modified 1990	Building (Settling)
	EU-21	Special casting pouring furnace	1954, modified 1990	Building (Settling)
	EU-22	Special casting	"	"
EU-23	T-Metal furnace	"	T-Metal Baghouse	
EU-24	T-Metal casting	"	Building (Settling)	

Emission Unit	Plant Emission Unit	Description	Date Constructed	Emission Control Equipment
02 Cont.	EU-25	Skimming processing	"	Skimming Baghouse
	EU-26	Cd melting furnace	1975, 1990	Baghouse
	EU-27	Cd molding	"	Baghouse
	EU-28	Cd holding furnace	"	-
	EU-29	Cd oxidizing furnace	"	-
	EU-30	Cd oxidizing chamber	"	Cd Oxide Baghouse
	EU-31	Cd oxide room ventilation	"	Ventilation Baghouse
	EU-32	West Lead Furnace	"	Lead Baghouse
	EU-33	East Lead Furnace	"	Lead Baghouse
	EU-34	Lead Casting	"	Building (Settling)
	EU-35	WWTP Lime Silo	"	Silo Baghouse
	EU-Sec	Zinc Oxide receiving & Washing	1998	Baghouse
03	FUG-1 to FUG-15	Fugitive emission sources		

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

- 5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of PM and SO₂ emissions.
- 5.1.2 This permit is issued based on the source not being a major source of HAPs.

5.2 Applicable Regulations

- 5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.
- 5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:
 - a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.
 - b. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.
- 5.2.3 Fugitive Particulate Matter Operating Program
 - a. This source shall be operated under the provisions of an operating program prepared by the Permittee and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions [35 IAC 212.309(a)].
 - b. The operating program shall be amended from time to time by the Permittee so that the operating program is current. Such amendments shall be consistent with the requirements set forth by this Condition and shall be submitted to the Illinois EPA [35 IAC 212.312].
 - c. All normal traffic pattern roads and parking facilities located at this source shall be paved or

treated with water, oils, or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils, or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program [35 IAC 212.306].

5.2.4 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

5.2.5 Risk Management Plan

Should this stationary source, as defined in 40 CFR Section 68.3, become subject to the Accidental Release Prevention regulations in 40 CFR Part 68, then the owner or operator shall submit [40 CFR 68.215(a)(2)(i) and (ii)]:

- a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or
- b. A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan (RMP), as part of the annual compliance certification required by 40 CFR Part 70 or 71.

- 5.2.6 a. Should this stationary source become subject to a regulation under 40 CFR Parts 60, 61, or 63, or 35 IAC after the date issued of this permit, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable

requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by 40 CFR Part 70 or 71.

- b. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with all applicable requirements of any potentially applicable regulation which was promulgated after the date issued of this permit.

5.2.7 Episode Action Plan

- a. If the source is required to have an episode action plan pursuant to 35 IAC 244.142, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.
- b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared.
- c. If a change occurs at the source which requires a revision of the plan (e.g., operational change, change in the source contact person), a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA.
- d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:
 - i. Illinois EPA, Compliance Section; and
 - ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control; or
 - iii. For sources located within the city of Chicago: Chicago Department of Environmental Control.

5.2.8 CAM Plan

This stationary source has a pollutant-specific emissions unit that is subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources. The source must submit a CAM plan for each affected pollutant-specific emissions unit upon application for renewal of the initial CAAPP permit, or upon a significant modification to the CAAPP permit for the construction or modification of a large pollutant-specific emissions unit which has the potential post-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

5.3 Non-Applicability of Regulations of Concern

None

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

None

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.5.1) are set for the purpose of establishing fees and are not federally enforceable.

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	1.20
Sulfur Dioxide (SO ₂)	2631.36
Particulate Matter (PM)	819.46
Nitrogen Oxides (NO _x)	38.00
HAP, not included in VOM or PM	---
TOTAL	3490.02

5.5.2 Emissions of Hazardous Air Pollutants

This permit is issued based on the emissions of HAPs as listed in Section 112(b) of the CAA not being equal to or exceeding 10 tons per year of a single HAP or 25 tons per year of any combination of such HAPs, so that this source is considered a minor source for HAPs.

5.5.3 Other Source-Wide Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to either the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.6 General Recordkeeping Requirements

5.6.1 Emission Records

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

Total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions) of this permit.

5.6.2 Retention and Availability of Records

- a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the source with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year.

5.8 General Operational Flexibility/Anticipated Operating Scenarios

N/A

5.9 General Compliance Procedures

5.9.1 General Procedures for Calculating Emissions

Compliance with the source-wide emission limits specified in Condition 5.5 shall be based on the recordkeeping and reporting requirements of Conditions 5.6 and 5.7, and compliance procedures in Section 7 (Unit Specific Conditions) of this permit.

6.0 NOT APPLICABLE TO THIS PERMIT

7.0 UNIT SPECIFIC CONDITIONS

7.1 Unit 01 - Roasters and acid plant

7.1.1 Description

Pre processed ore with high zinc concentrations, called concentrate is conveyed to two roasters where it is roasted at an approximate temperature of 970 degrees Celsius to convert the sulfur into gaseous SO_2 . The result product from the roaster, called calcine (zinc oxide), is conveyed to eight calcine silos for storage or conveyed directly to the Leach Building for processing. The gasses exhausted from the process contain a large amount of particulate and SO_2 . Particulates are removed from the gas stream through a series of particulate control devices, waste heat boiler, multi-cyclone, and an Electro Static Precipitator (ESP). Each roaster has its own particulate control equipment. Collected particulates are mixed with the solids recovered from the roasters to form the calcine product.

During normal operation, no fuel is required to maintain the roaster operating temperature. However, during start-up, natural gas combustion is used to bring the roaster up to the operating temperature. A natural gas fired preheater is used to provide process heat for the sulfuric acid plant during startup.

Gasses leaving the two roasters are combined and delivered to the sulfuric acid plant. In the acid plant, the gas is first scrubbed and cooled further in a series of scrubbers. The gas first is scrubbed in a venturi scrubber. It then passes to the Peabody scrubber, which consists of two scrubbing and cooling sections. The gas then passes to high efficiency mist precipitators to remove any entrained mist from the scrubbers.

The gas free from dust passes through a packed tower to be dried with sulfuric acid and then through mist eliminator. From the drying tower, the gas passes through catalyst packed converter. The purpose of the converter is to convert the sulfur dioxide in the gas to sulfur trioxide.

From the converter, the sulfur trioxide gas passes through the packed absorbing tower in which the sulfur trioxide is absorbed in to 93% sulfuric acid. Any mist from the packed tower is collected in high efficiency mist eliminators on top of the absorbing tower. Exhaust gasses from the sulfuric acid plant are released through an elevated stack.

7.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
EU-1	#1 Lurgi roaster (Start-up mode* & Normal mode)	#1 Waste heat boiler, #1 Multiclone (4 Cyclones), #1 ESP and Roaster exhaust to the sulfuric acid plant (EU-3)
EU-2	#2 Lurgi roaster (Start-up mode* & Normal mode)	#2 Waste heat boiler, #2 Multiclone (4 Cyclones), #2 ESP and Roaster exhaust to the sulfuric acid plant (EU-3)
EU-3 EU-4	Sulfuric acid plant and preheater**	-

*During the normal operational mode, no fuel is required to maintain the roaster operating temperature. However, during start-up of the roaster, natural gas combustion (25 mmBtu/hr) is used to bring the roaster up to the operating temperature.

**Preheater fired with natural gas (25 mmBtu/hr) is used for indirect heating of roaster gas stream to converter during start-up of the acid plant.

7.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected roaster and acid plant" for the purpose of these unit-specific conditions is an emission unit described in conditions 7.1.1 and 7.1.2.
- b. The affected roaster and acid plant is subject to 35 IAC 212.321, which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (see also Attachment 1) [35 IAC 212.321(a)].

- c. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from an affected process emission source, except as provided in Sections 219.302, 219.303, 219.304 of this Part and the following exception: If no odor nuisance exists the limitation of this

Subpart shall apply only to photochemically reactive material [35 IAC 219.301].

- d. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].

7.1.4 Non-Applicability of Regulations of Concern

- a. The affected roaster and acid plant is not subject to 35 IAC 217.121 for emissions of nitrogen oxides from new fuel combustion emission sources, because affected roaster and acid plant is not by definition a fuel combustion emission unit.
- b. The affected roaster and acid plant is not subject to 35 IAC 217.301, emissions of nitrogen oxides from process emission sources, because this rule only applies to the new industrial processes producing products of organic nitrations and/or oxidations using nitric acid.
- c. The affected roaster and acid plant is not subject to 35 IAC 216.121, emissions of Carbon Monoxide from fuel combustion emission units, because affected roaster and acid plant is not by definition a fuel combustion emission unit.

7.1.5 Operational and Production Limits and Work Practices

Zinc sulfide concentrate throughput shall not exceed quantity specified by Condition 7.1.6.

7.1.6 Emission Limitations

In addition to Conditions 5.2 2, 7.1.3 and the source-wide emission limitations in Condition 5.5, the affected roaster and acid plant is subject to the following:

- 1a. i. SO₂ concentrations from roaster/acid plant shall be monitored by a continuous emissions monitor system meeting the requirements of 40 CFR 60, Appendix B, performance Specification 2 and capable of monitoring concentrations up to 6,000 ppm. The monitor shall provide a reading of SO₂ concentration in ppm at least every fifteen minutes. The monitor shall be equipped with strip chart recorder or disk storage and shall be capable of recording SO₂ concentrations in ppm on a 15 minute and an hourly average basis [T1].
- ii. The monitor shall be installed pursuant to a written monitoring plan approved in advance by

the Illinois EPA, which describes the instrument, location and methodology for monitoring [T1].

- b. i. The monitor system shall be operated and maintained pursuant to written monitoring procedures. These procedures shall be prepared prior to startup of the new or upgraded monitor system and be kept up to date [T1].
 - ii. A summary of these procedures as related to quality control and quality assurance shall be submitted to the Illinois EPA for review prior to startup of the new or upgraded monitor system [T1].
 - c. i. The performance of the new or upgraded monitor system shall be tested for compliance with the performance Specification 2 within 90 days after the monitor=s startup and within 90 days of a subsequent written request from the Illinois EPA. The Illinois EPA will provide additional time for this testing upon request by the Permittee that shows that it is not feasible to perform representative testing within this time [T1].
 - ii. Within 30 days of the end of each quarter, an excess emission and monitoring system performance report and summary report form shall be submitted to the Illinois EPA. This report shall include the information listed in 35 Ill. Adm. code 201.405 [T1].
2. Total zinc sulfide concentrates throughput of the roasters shall not exceed 20,800 tons/month and 208,000 tons/year [T1].
3. Sulfur dioxide (SO₂) emissions from the roaster/acid plant shall not exceed 630.2 lbs/hr and 2,669.05 tons/year. The hourly emission limit is derived from allowable SO₂ emission rate 2,000 parts per million (ppm) and exhaust airflow 38,000 standard cubic foot per minute (scfm). The annual SO₂ emission limit is based upon average emission of two typical operating years (year 1995 and year 1996) indicated in the permit application [T1].

The above limitations were established in Construction permit #97090029, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major

source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

An Attachment #2 provides emissions netting exercise included in the construction permit #97090029.

7.1.7 Testing Requirements

Testing requirements are found in the standard conditions of Section 8.

7.1.8 Monitoring Requirements

The Permittee shall monitor SO₂ concentrations from the affected roaster and acid plant as required by Condition 7.1.6.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected roaster and acid plant to demonstrate compliance with Conditions 5.5.1, 7.1.3 and 7.1.6 pursuant to Section 39.5(7)(b) of the Act:

- a. The operating schedules of the affected roaster and acid plant (hrs/day, hrs/year).
- b.
 - i. Roasters throughput (tons/day, tons/month and tons/year);
 - ii. SO₂ concentrations (ppm) as required by Condition 7.1.6;
 - iii. SO₂ emissions (tons/day, tons/month and tons/year); and
 - iv. Operation, calibration, maintenance, and repair of the SO₂ continuous monitor system.
- c. Records for Startup of the acid plant
 - i. Date and duration of each startup of the roaster & acid plant, i.e., start time and time normal operation achieved; and
 - ii. SO₂ emissions during startup in ppm

7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected roaster and acid plant with the permit requirements as follows,

pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

- a. If there is a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report within 30 days after the deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the deviation and efforts to reduce emissions and future occurrences.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

None

7.1.12 Compliance Procedures

- a. Compliance with the SO₂ emission limitation of Condition 7.1.3(d) by the affected roaster and acid plant is addressed by the monitoring in accordance with Condition 7.1.8, testing in accordance with Conditions 7.1.7 and the recordkeeping required by Conditions 7.1.9.
- b. To verify compliance with the opacity limitations of 5.2.2, the Permittee shall conduct a qualitative visible emissions observation once each day to observe for the presence of abnormal visible emissions.

If abnormal visible emissions are observed, the Permittee shall initiate corrective actions to eliminate the abnormal visible emissions. If the Permittee cannot eliminate the abnormal visible emissions within 24 hours, the Permittee shall conduct a Method 9 test within three days after the qualitative observation showing abnormal emissions.

- c. Compliance with the emission limits in Condition 5.5, 7.1.3(b) and 7.1.6 from the affected roaster and acid plant shall be based on the recordkeeping requirements in Condition 7.1.9 and the emission rates and formulas listed below:

<u>Pollutant</u>	<u>Emission Rates (lb/hr)</u>
PM	0.76
PM-10	0.76
NO _x	6.70
SO ₂ (normal)	620.00
SO ₂ (startup)	1396.00
Acid mist	2.13

The emission rates are from the application based on engineering estimate.

Emissions (ton) = Emission Rates (lbs/hr) x Hours of Operation (hrs)/(2,000 lb/ton).

- d. Compliance with the emission limits in Condition 5.5, 7.1.3(c) and 7.1.6 from the preheater during start-up of the roasters and acid plant shall be based on the recordkeeping requirements in Condition 7.1.9 and the emission rates and formulas listed below:

Pollutant	Emission Factor lbs/10 ⁶ scf	Emission rates lbs/hr
NO _x	100	2.50
PM	7.6	0.19
VOM	5.5	0.14
SO ₂	0.6	0.02

The emission factors for natural gas fired units are from Tables 1.4-1 and 1.4-2, AP-42 Fifth Edition, Volume 1, Supplement D, March 1998. The hourly rates are calculated from above factors and natural gas combustion rate 25 mmBtu/hr.

Emissions (ton) = Emission Rates (lbs/hr) x Hours of Operation (hrs)/(2,000 lb/ton).

7.2 Unit 02 - Process emission sources

7.2.1 Description

Leaching:

Calcine (impure zinc oxide) conveyed to the Leach Building is slurried and processed through a series of leaching and purification tanks. Zinc and other metals present in the calcine are dissolved into solution. Cobalt, Copper, Nickel, and Cadmium are then precipitated and removed from the solution by plate and frame filter presses. The filter cake sludge is sold as a recyclable product. The resulting solution, called purified solution, is primarily zinc sulfate.

Zinc Separation by Electrowinning:

Purified solution is sent to cooling towers and then to electrowinning cells to remove the zinc. Zinc, which is electrically attracted to the cell plates, is stripped from the plates and sent to the zinc casting department for finishing. The electrolyte from the process is sent to cooling towers and then reused in the process. Dilute sulfuric acid is continuously generated throughout the process.

Disassociation of water during the electrowinning process results in gas production (hydrogen and oxygen) and subsequent acid mist release with the gas bubbles. The cell room is continuously ventilated by multiple side wall ventilation fans to remove the gasses and acid mist.

ZSM Production:

Purified solution is also sent to the ZSM (zinc sulfate monohydrate) Granulator Dryer for production of zinc sulfate granules. The unit produces ZSM granules by spraying zinc sulfate into a natural gas fired drying chamber. Granules are collected by both a bottom conveyor within the drying chamber and a cyclone on the unit exhaust. A venturi scrubber removes additional particulate matter prior to atmospheric release of the exhaust through a roof stack. The ZSM granules are separated into coarse and fine product and conveyed by elevators to storage hoppers for truck loading.

Zinc Melting/Casting:

Zinc plates produced in the electrowinning process are preheated over a natural gas fired flame and then charged into the electric Zinc Cathode Melting Furnace. Air exhausted from the furnace is sent to the Casting Baghouse to remove particulates prior to atmospheric release

through a roof stack. The collected particles from the baghouse are mixed with furnace skimming and sent to the Skimming Plant for processing.

Melted zinc flows through heated launders (natural gas) to a closed electric holding furnace, and ultimately to casting molds. Small electric inlet and outlet furnaces are located on each side of the holding furnace. Melted zinc may also be transferred to natural gas heated ladles for allow processing or transport to the Special Casting Furnace. Lead bars may be added directly to the molds or launders for incorporation into the product. Lead allow is a very small percentage of the product and is not expected to result in significant lead emissions.

Zinc Powder Production:

Melted zinc also flows through heated launders to the Zinc Powder Holding Furnace. Molten zinc from the furnace is sprayed by pressurized air into a chamber where it cools and produces zinc powder. The product is collected by both a bottom conveyor within the chamber and by the Zinc Dust Baghouse. The resulting product is loaded into hoppers or totes.

Ventilation for the Zinc Powder Holding Furnace is exhausted through the Zinc Casting Baghouse for particulate removal.

Special Casting Furnace Melting/Casting:

The Special Casting Furnace is used to process zinc alloys or to cast zinc into special molds. Zinc is delivered to the furnace in ladles. After melting, the molten metal is discharged into a pouring furnace that tilts to pour metal into the special casting molds.

Both the melting and the pouring furnaces are electrically heated and are exhausted to the building atmosphere.

T-Metal Furnace Melting/Casting:

The T-Metal Furnace is used to melt Big River Zinc zinc dust and zinc chips, or offsite zinc material. A hopper and conveyor is used to load the zinc material into the furnace. After melting, the molten metal is pumped directly into the casting molds. The air exhausted from the furnace is ducted to a baghouse for particulate removal.

Hammermill Processing:

Skimming from the zinc melting operations are loaded and stored in piles next to the Skimming Plant. A front-end

loader is used to transport the skimming to a conveyor, which carries the material to a hammermill located inside the Skimming Plant building. The hammermill is used to crush the incoming material. Exhaust air from the hammermill is directly ducted to the Skimming Baghouse. An open top conveyor transports the skimming from the hammermill to an enclosed elevator, which lifts and discharges the skimming into a storage hopper.

Rollmill Processing:

A completely closed screw auger (no emissions) carries the skimming to another elevator, which transports the skimming to a rollmill. The rollmill, used to further reduce the size of the skimming through grinding action, is exhausted through a cyclone and then the Skimming Baghouse. Product from the rollmill is stored in hoppers for subsequent loading into totes. Product collected in the baghouse is also loaded into totes. All enclosed support equipment, including the elevators, screen, and hoppers are exhausted to the baghouse.

Cadmium Melting/Cadmium Oxide Production:

Cadmium briquettes, made from recovered cadmium in the leaching process, are discharged into the Cadmium Melting Furnace. This furnace is a natural gas fired kettle, which is exhausted to a baghouse. Melted cadmium is poured into lug molds for storage and subsequent use.

Lug molds are remelted in the Cd holding furnace, also a natural gas fired kettle pot with natural draft exhaust to the atmosphere. Molten cadmium leaving the holding furnace is sent to the Cadmium Oxidizing Furnace, which in conjunction with the oxidizing chamber is used to convert the molten material into cadmium oxide. The oxidizing furnace is also natural gas fired, but the chamber containing the cadmium is sealed.

The Cadmium Oxide Baghouse is used to recover the cadmium oxide produced in the previous step. The recovered material is screened and packaged in an enclosed room. This room is ventilated through the Cadmium Ventilation Baghouse to control cadmium emissions to the atmosphere.

Lead Melting/Casting:

Lead bars are melted in one of two identical natural gas fired kettle pot furnaces. The exhaust from these furnaces passes through the lead baghouse. Molten lead is casted into anode plates or small sticks, or used to coat anode header bars. A small portable natural gas fired melting pot is used to melt small quantities of lead for casting

into lead sticks. Lead sticks are used to produce zinc alloys.

The anode plates and header bars are welded together at a lead welding station. This area is ventilated to the anode fabrication baghouse.

Secondary Zinc Oxide Receiving and Washing Plant:

The second major source of feed for the refinery consists of oxidic secondary materials. The material is received as wet filter cake delivered in bulk or dry material delivered in supersacks for roaster feed. The dry material is mixed with water to wash out soluble content. The filter cake of washed secondary is in the form of a damp sand and easy to handle. The solids are blended with the concentrates inside an enclosed blending building to produce a blend of roaster feed.

7.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
EU-5	2-5000 Ton Sulfuric acid storage tanks	-
EU-6	2-1000 Ton Sulfuric acid storage tanks	-
EU-7	Calcine storage unit (8 silos-only one is used at time)	-
EU-8	2-GRP Purified ZN sulfate solution cooling towers	Mist Eliminator
EU-9	10-TCA Electrolyte cooling towers	Mist Eliminator
EU-10	Electro-winning cell room	-
EU-11	ZSM granulator dryer (5.0**)	Cyclone, Ventury scrubber
EU-12	ZN Cathode preheater (1.2**)	Building (Settling)
EU-13, EU-14	ZN cathode melting furnaces*	ZN casting Baghouse
EU-15	ZN Holding Entrance furnace*	Building (Settling)
EU-16	ZN Holding Exit furnace*	"
EU-17	Zinc casting	"
EU-18	Zinc powder holding furnace*	Baghouse
EU-19	Zinc powder process baghouse	Baghouse
EU-20	Special casting melt furnace*	Building (Settling)
EU-21	Special casting pouring furnace*	"

Emission Unit	Description	Emission Control Equipment
EU-22	Special casting	"
EU-23	T-Metal furnace*	T-Metal furnace Baghouse
EU-24	T-Metal casting	Building (Settling)
EU-25	Skimming processing	Skimming Baghouse
EU-26	Cd Melting furnace(0.72**)	Lead Baghouse
EU-27	Cd Molding	Lead Baghouse
EU-28	Cd Holding furnace((0.72**)	-
EU-29	Cd Oxidizing furnace(0.72**)	
EU-30	Cd Oxidizing chamber	Cd Oxide Baghouse
EU-31	Cd Oxide room ventilation	ventilation Baghouse
EU-32	West Lead furnace(0.158**)	Lead Baghouse
EU-33	East Lead furnace(0.158**)	Lead Baghouse
EU-34	Lead casting	Building (Settling)
EU-35	WWTP Lime silo	Lime silo Baghouse
EU-Sec	Zinc Oxide receiving & Washing	Baghouse

* Electrical furnace

** mmBtu/hr Natural gas fired

7.2.3 Applicability Provisions and Applicable Regulations

- a. An "affected process emission source" for the purpose of these unit-specific conditions is an emission unit described in conditions 7.2.1 and 7.2.2.
- b. Each affected process emission source is subject to 35 IAC 212.321, which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (see also Attachment 1) [35 IAC 212.321(a)].
- c. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from an affected process emission source, except as provided in Sections 219.302, 219.303, 219.304 of this Part and the following exception: If no odor nuisance exists the limitation of this Subpart shall apply only to photochemically reactive material [35 IAC 219.301].

- d. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].

7.2.4 Non-Applicability of Regulations of Concern

- a. The affected process emission source is not subject to 35 IAC 217.221 for emissions of Nitrogen Oxides from new fuel combustion emission sources, because affected process emission source is not by definition a fuel combustion emission unit.
- b. The affected process emission source is not subject to 35 IAC 216.121, emissions of Carbon Monoxide from fuel combustion emission units, because affected process emission source is not by definition a fuel combustion emission unit.

7.2.5 Operational and Production Limits and Work Practices

The Permittee shall operate, maintain each baghouse in a manner that assures compliance with the conditions of this section.

7.2.6 Emission Limitations

In addition to Conditions 5.2.2, 7.2.3 and the source-wide emission limitations in Condition 5.5, the affected process emission source is subject to the following:

- a. T-Metal furnace Construction Permit #93040022 and Permit #72121233:
 - i. Emissions of particulate matter from the T-Metal furnace/baghouse (EU-23) shall not exceed 0.44 T/yr. This limit is based on maximum controlled particulate matter emissions (0.1 lbs/hr, maximum process weight rate (2100 lbs/hr) and maximum hours of operation (8736 hrs/yr) indicated in the permit application (T1).
 - ii. The Permittee is allowed to process secondary zinc generated at facilities other than Big River Zinc Sauget plant as long as the characteristics of the material are similar to material processed from the Big River Zinc Plant. Analysis of off-site materials must be conducted to demonstrate compliance with this condition (T1).
- b. Wet Section Improvements Construction Permit #97040096:

- i. This permit is issued based on emission increase of particulate matter PM-10 (2.15 T/yr) and acid mist (3.59 T/yr) from the cell room (EU-10) as indicated in the permit application (T1).
 - ii. Emissions from the natural gas fired cell room heaters shall not increase PM-10 (0.12 T/yr), NO_x (2.32 T/yr, and CO (0.58 T/yr) as indicated in the permit application (T1).
- c. Zinc Alloy furnace Construction Permit #97020024:
 - i. Emissions of PM-10 from the zinc alloy furnace shall not exceed 0.11 T/yr as indicated in the permit application (T1).
- d. Secondary Zinc oxide Receiving and Washing plant Construction Permit #98070057:
 - i. Emissions of particulate matter from the Secondary Zinc oxide Receiving and Washing plant shall not exceed 1.68 T/yr as indicated in the permit application (T1).
 - ii. This permit is issued based upon negligible NO_x and CO emissions from the natural gas fired heaters.

The above limitations were established in the construction permits, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.2.7 Testing Requirements

Testing requirements are in the standard conditions of Section 8.

7.2.8 Monitoring Requirements

The Permittee shall monitor the differential pressure across each baghouse controlling an affected process emission source.

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected process emission source to demonstrate compliance with Conditions 5.5.1 and 7.2.6 pursuant to Section 39.5(7) (b) of the Act:

- a. The operating schedules of the affected process emission source (hrs/day, hrs/year).

7.2.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected process emission source with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. If there is a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report within 30 days after the deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the deviation and efforts to reduce emissions and future occurrences.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

None

7.2.12 Compliance Procedures

- a. To verify compliance with the opacity limitations of 5.2.2, the Permittee shall conduct a qualitative visible emissions observation once each day to observe for the presence of abnormal visible emissions.

If abnormal visible emissions are observed, the Permittee shall initiate corrective actions to eliminate the abnormal visible emissions. If the Permittee cannot eliminate the abnormal visible emissions within 24 hours, the Permittee shall conduct a Method 9 test within three days after the qualitative observation showing abnormal emissions.

- b. Compliance with the emission limits in Condition 5.5.1 from the affected process emission source shall be based on the recordkeeping requirements in Condition 7.2.9 and the emission rates and formulas listed below:

Emission Unit	Description	Emission rate lbs/hr
EU-5	2-5000 Ton Sulfuric acid storage tanks	PM 1.5
EU-6	2-1000 Ton Sulfuric acid storage tanks	PM 0.5

Emission Unit	Description	Emission rate lbs/hr
EU-7	Calcine storage unit (8 silos-only one is used at time)	PM 2.35
EU-8	2-GRP Purified ZN sulfate solution cooling towers	PM 0.50
EU-9	10-TCA Electrolyte cooling towers	PM 0.50
EU-10	Electro-winning cell room	PM 5.85 Acid mist 2.36
EU-11	ZSM granulator dryer (5.0**)	PM 0.04 NO _x 0.50 VOM 0.03 SO ₂ 0.002
EU-12	ZN Cathode preheater (1.2**)	PM 0.002 NO _x 0.12 VOM 0.01 SO ₂ 0.001
EU-13, EU-14	ZN cathode melting furnace*	PM 0.93
EU-15	ZN Holding Entrance furnace*	PM 0.65
EU-16	ZN Holding Exit furnace*	PM 0.65
EU-17	Zinc casting	PM 7.75
EU-18	Zinc powder holding furnace*	
EU-19	Zinc powder process baghouse	PM 2.50
EU-20	Special casting melt furnace*	PM 0.13
EU-21	Special casting pouring furnace*	PM 0.13
EU-22	Special casting	PM 1.50
EU-23	T-Metal furnace*	PM 0.1
EU-24	T-Metal casting	PM 1.26
EU-25	Skimming processing	PM 0.17
EU-26	Cd Melting furnace (0.72**)	***
EU-27	Cd Molding	PM 0.06
EU-28	Cd Holding furnace ((0.72**)	PM 0.01 NO _x 0.07 VOM 0.004 SO ₂ 0.001
EU-29	Cd Oxidizing furnace (0.72**)	PM 0.01 NO _x 0.07 VOM 0.004 SO ₂ 0.001
EU-30	Cd Oxidizing chamber	PM 0.18
EU-31	Cd Oxide room ventilation	PM 0.01
EU-32	West Lead furnace (0.158**)	PM 0.03

Emission Unit	Description	Emission rate lbs/hr
EU-33	East Lead furnace(0.158**)	NO _x 0.11 VOM 0.014 SO ₂ 0.001
EU-34	Lead casting	PM 0.05
EU-35	WWTP Lime silo	PM 0.15
EU-Sec	Zinc Oxide receiving & Washing	PM 0.38

* Electrical furnace

** mmBtu/hr Natural gas fired furnace

*** Emissions accounted in EU-32 & EU-33

The emission rates are from the application.

Emissions (ton) = Emission Rates (lbs/hr) x Hours of Operation (hrs)/(2,000 lb/ton).

7.3 Unit 03 - Fugitive emissions

7.3.1 Description

Fugitive emissions are defined as those emissions, which would not reasonably pass through a stack, vent or other functionally equivalent opening.

7.3.2 List of Emission Units and Pollution Control Equipment

Description	Control Method
FUG-1 Concentrate pile loading	None
FUG-2 Concentrate storage pile	None
FUG-3 Front loader transfer	None
Concentrate pile to Preleach	None
Preleach to roaster	Building
FUG-4 Concentrate Conveying	
To Preleach	Covered
From Preleach to Roaster	Covered
FUG-5 Preleach pile loading	Building
FUG-6 Calcine conveying	Covered
FUG-7 ZSM elevators	Covered
FUG-8 ZSM truck loading	
Coarse	None
Fine	None
Fug-9 Sulfuric acid truck loading	
SO _x mist emissions	
FUG-10 ZN dust/chip hopper	Building
FUG-11 Skimming pile loading	None
FUG-12 Skimming storage pile	None
FUG-13 Skimming conveyor front loader	None
FUG-14 Skimming transfer conveyor	Building
FUG-15 11,475 Vehicle Miles Travelled (VMT)/yr on Unpaved Roads	None

Control Efficiency: Building 50%
Covered 90%

7.3.3 Applicability Provisions and Applicable Regulations

- a. The "affected fugitive emission sources" for the purpose of these unit-specific conditions, are emission sources described in Conditions 7.3.1 and 7.3.2.

7.3.4 Non-Applicability of Regulations of Concern

- a. The affected fugitive emission sources of PM are not subject to the requirements of 35 IAC 212.321, Emissions of Particulate Matter from Process Emission Units, because due to the unique nature of this process, such rules cannot reasonably be applied.

7.3.5 Operational and Production Limits and Work Practices

None

7.3.6 Emission Limitations

In addition to Condition 5.2.2 and the source-wide emission limitations in Condition 5.5, the fugitive emission sources are subject to the following:

None

7.3.7 Testing Requirements

None

7.3.8 Inspection Requirements

None

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected fugitive emission sources to demonstrate compliance with Conditions 5.5.1 and 7.3.7, pursuant to Section 39.5(7) (b) of the Act:

- a. Quantity of material handled in each activity listed in Condition 7.3.2 (T/mo, T/yr);
- b. Hours of operation for each activity (hrs/mo, hrs/yr); and
- c. Emissions as calculated by Condition 7.3.12 (T/mo, T/yr)

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected fugitive emission source with the permit requirements as follows, pursuant to Section 39.5(7) (f) (ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Notification within 60 days of operation of the affected fugitive emission sources that may not have been in compliance with the requirements of the Condition 7.3.3(b).

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.3.12 Compliance Procedures

Compliance with the limits in Conditions 5.5.1 shall be based on the recordkeeping requirements in Condition 7.3.9 and the emission factors listed below:

a. Emission factors for the material handling activity:

Description	Uncontrolled Emission Factor Lbs/ton	
	PM	PM ₁₀
FUG-1 Concentrate pile loading	0.4	0.23
FUG-3 Front loader transfer		
Concentrate pile to Preleach	4.0	3.4
Preleach to roaster	4.0	3.4
FUG-4 Concentrate Conveying		
To Preleach	0.01	0.006
From Preleach to Roaster	0.01	0.006
FUG-5 Preleach pile loading	0.13	0.06
FUG-6 Calcine conveying	0.12	0.06
FUG-7 ZSM elevators	0.12	0.06
FUG-8 ZSM truck loading		
Coarse	1.5	1.0
Fine	0.76	0.58
Fug-9 Sulfuric acid truck loading		
SO _x mist emissions	0.1	0.1
FUG-10 ZN dust/chip hopper	0.12	0.06
FUG-11 Skimming pile loading	0.12	0.06
FUG-13 Skimming conveyor front loader	4.0	3.4
FUG-14 Skimming transfer conveyor	0.12	0.06

b. Emission factors for material storage:

Description	Emission rate Lbs/acre/day	
	PM	PM ₁₀
FUG-2 Concentrate storage pile 5 acres	25.07	25.07
FUG-12 Skimming storage pile 0.52 acres	13.99	13.99

c. Emission factors for Vehicular Mile Traveled (VMT) on unpaved roads FUG-15:

PM or PM₁₀ emissions 15.58 lbs/VMT

The above emission factors and rates are from the application derived from various USEPA publications such as AP-42, Control of Open Dust Sources (EPA-450/3-88-008) and AIRS.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after June 13, 2001 (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

As of the date of issuance of this permit, there are no such economic incentive, marketable permit or emission trading programs that have been approved by USEPA.

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this

permit, provided that [Section 39.5(12)(a)(i) of the Act]:

- a. The changes do not violate applicable requirements;
- b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;
- c. The changes do not constitute a modification under Title I of the CAA;
- d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and
- e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:
 - i. Describe the physical or operational change;
 - ii. Identify the schedule for implementing the physical or operational change;
 - iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;
 - iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and
 - v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

If monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

- a. The name and identification of the affected unit(s);
- b. The person(s) who will be performing sampling and analysis and their experience with similar tests;
- c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;
- d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;
- e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;
- f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and

- g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

- a. The name and identification of the affected unit(s);
- b. The date and time of the sampling or measurements;
- c. The date any analyses were performed;
- d. The name of the company that performed the tests and/or analyses;
- e. The test and analytical methodologies used;
- f. The results of the tests including raw data, and/or analyses including sample calculations;
- g. The operating conditions at the time of the sampling or measurements; and
- h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

- a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:
 - i. Illinois EPA - Air Compliance Section
Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276
 - ii. Illinois EPA - Air Regional Field Office
Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AR - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

- b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 ("Title I provisions") and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

- a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;
- b. 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;
- c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and
- d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7)(a) and (p)(ii) of the Act and 415 ILCS 5/4]:

- a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control

equipment), practices, or operations regulated or required under this permit;

- d. Sample or monitor any substances or parameters at any location:
 - i. At reasonable times, for the purposes of assuring permit compliance; or
 - ii. As otherwise authorized by the CAA, or the Act.
- e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and
- f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any

loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7) (o) (iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12) (b) (iv) of the Act].

9.6.3 Retention of Records

- a. Records of all monitoring data and support information shall be retained 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, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7) (e) (ii) of the Act].
- b. Other records required by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7) (p) (v) of the Act, the Permittee shall submit annual compliance certifications. The compliance

certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 - Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

- a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.
- b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.
- c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the 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 this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

- a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:
 - i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency.

Normally, an act of God such as lightning or flood is considered an emergency;

- ii. The permitted source was at the time being properly operated;
 - iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.
- b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7) (o) (iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15) (a) of the Act]:

- a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;
- b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;
- c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations, or other terms or conditions of this permit; and
- d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15) (b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7) (o) (v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements

underlying these provisions shall remain in force [Section 39.5(7) (i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal application. For a renewal to be timely it must be submitted no later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5) (1), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1: Emissions of Particulate Matter from New Process Emission Units

10.1.1 Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972

- a. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].
- b. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.321(b)]:

$$E = A(P)^B$$

Where:

P = Process weight rate; and
E = Allowable emission rate; and,

- i. Up to process weight rates of 408 Mg/hr (450 ton/hr):

	Metric	English
P	Mg/hr	ton/hr
E	kg/hr	lb/hr
A	1.214	2.54
B	0.534	0.534

- ii. For process weight rate greater than or equal to 408 Mg/hr (450 ton/hr):

	Metric	English
P	Mg/hr	ton/hr
E	kg/hr	lb/hr
A	11.42	24.8
B	0.16	0.16

- c. Limits for Process Emission Units for Which Construction or Modification Commenced On or After April 19, 1972 [35 IAC 212.321(c)]:

Metric		English	
P	E	P	E
Mg/hr	kg/hr	ton/hr	lb/hr
0.05	0.25	0.05	0.55
0.1	0.29	0.10	0.77
0.2	0.42	0.2	1.10
0.3	0.64	0.30	1.35
0.4	0.74	0.40	1.58
0.5	0.84	0.50	1.75
0.7	1.00	0.75	2.40
0.9	1.15	1.00	2.60
1.8	1.66	2.00	3.70
2.7	2.1	3.00	4.60
3.6	2.4	4.00	5.35
4.5	2.7	5.00	6.00
9.0	3.9	10.00	8.70
13.0	4.8	15.00	10.80
18.0	5.7	20.00	12.50
23.0	6.5	25.00	14.00
27.0	7.2	30.00	15.60
32.0	7.7	35.00	17.00
36.0	8.2	40.00	18.20
41.0	8.8	45.00	19.20
45.0	9.3	50.00	20.50
90.0	13.4	100.00	29.50
140.0	17.0	150.00	37.00
180.0	19.4	200.00	43.00
230.0	22.0	250.00	48.50
270.0	24.0	300.00	53.00
320.0	26.0	350.00	58.00
360.0	28.0	400.00	62.00
408.0	30.1	450.00	66.00
454.0	30.4	500.00	67.00

10.2 Attachment 2 - Emissions netting exercise Construction permit # 97090029

Actual emissions (tons/year) from the affected sources prior to this project (average of year 1995 and year 1996):

<u>PM-10</u>	<u>PM</u>	<u>NO_x</u>	<u>SO₂</u>	<u>Lead</u>
22.00	27.49	27.23	2,683.09	0.21

Potential emissions (tons/year) from affected sources in accordance with conditions of this permit:

<u>PM-10</u>	<u>PM</u>	<u>NO_x</u>	<u>SO₂</u>	<u>Lead</u>
25.81	32.89	34.96	2,686.71	0.25

Contemporaneous actual emissions (tons/year) decreases:

<u>PM-10</u>	<u>PM</u>
2.09	2.09

Emissions (tons/year) increases which could occur from the project:

<u>PM-10</u>	<u>PM</u>	<u>NO_x</u>	<u>SO₂</u>	<u>Lead</u>
1.72	3.31	7.73	3.62	0.04

This summary is prepared from the emission information included in Section 5 of the construction permit application # 97090029 for each affected source. As per explanation in the permit application, the SO₂ emission from the acid plant will not change due to this modification. The increase in SO₂ emission above is from sulfuric acid storage and handling at the plant [T1].

10.3 Attachment 3 Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

10.4 Attachment 4 Guidance on Revising This Permit

The Permittee must submit an application to the Illinois EPA using the appropriate revision classification in accordance with Sections 39.5(13) and (14) of the Act and 35 IAC 270.302. Specifically, there are currently three classifications for revisions to a CAAPP permit. These are:

1. Administrative Permit Amendment;
2. Minor Permit Modification; and
3. Significant Permit Modification.

The Permittee must determine, request, and submit the necessary information to allow the Illinois EPA to use the appropriate procedure to revise the CAAPP permit. A brief explanation of each of these classifications follows.

1. Administrative Permit Amendment

- Corrects typographical errors;
- Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- Requires more frequent monitoring or reporting by the Permittee;
- Allows for a change in ownership or operational control of the source where no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the Illinois EPA;
- Incorporates into the CAAPP permit a construction permit, provided the conditions of the construction permit meet the requirements for the issuance of CAAPP permits; or
- Incorporates into the CAAPP permit revised limitations or other requirements resulting from the application of an approved economic incentives rule, marketable permits rule, or generic emissions trading rule.

2. Minor Permit Modification

- Do not violate any applicable requirement;

- Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- Do not require a case-by-case determination of an emission limitation or other standard, or a source-specific determination of ambient impacts, or a visibility or increment analysis;
- Do not seek to establish or change a permit term or condition for which there is no corresponding underlying requirement and which avoids an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the CAA; and
 - An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA.
- Are not modifications under any provision of Title I of the CAA; and
- Are not required to be processed as a significant permit modification.

An application for a minor permit modification shall include the following:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
- The source's suggested draft permit/conditions;
- Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
- Information as contained on form 271-CAAPP for the Illinois EPA to use to notify USEPA and affected States.

3. Significant Permit Modification

- Applications that do not qualify as either minor permit modifications or as administrative permit amendments;

- Applications requesting a significant change in existing monitoring permit terms or conditions;
- Applications requesting a relaxation of reporting or recordkeeping requirements; and
- Cases in which, in the judgment of the Illinois EPA, action on an application for modification would require decisions to be made on technically complex issues.

An application for a significant permit modification shall include the following:

- A detailed description of the proposed change(s), including all physical changes to equipment, changes in the method of operation, changes in emissions of each pollutant, and any new applicable requirements which will apply as a result of the proposed change. Note that the Permittee need only submit revised forms for equipment and operations that will be modified.

The Illinois EPA requires the information on the following appropriate forms to be submitted in accordance with the proper classification:

- Form 273-CAAPP, REQUEST FOR ADMINISTRATIVE PERMIT AMENDMENT FOR CAAPP PERMIT; or
- Form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT; or
- Form 200-CAAPP, APPLICATION FOR CAAPP PERMIT (for significant modification).

Application forms can be obtained from the Illinois EPA website at <http://www.epa.state.il.us/air/forms>.

Note that the request to revise the permit must be certified for truth, accuracy, and completeness by a responsible official.

Note that failure to submit the required information may require the Illinois EPA to deny the application. The Illinois EPA reserves the right to require that additional information be submitted as needed to evaluate or take final action on applications pursuant to Section 39.5(5)(g) of the Act and 35 IAC 270.305.



Illinois Environmental Protection Agency
 Division Of Air Pollution Control -- Permit Section
 P.O. Box 19506
 Springfield, Illinois 62794-9506

Application For Construction Permit (For CAAPP Sources Only)	For Illinois EPA use only
	ID number:
	Permit number:
	Date received:

This form is to be used by CAAPP sources to supply information necessary to obtain a construction permit. Please attach other necessary information and completed CAAPP forms regarding this construction/modification project.

Source Information		
1. Source name:		
2. Source street address:		
3. City:	4. Zip code:	
5. Is the source located within city limits? <input type="checkbox"/> Yes <input type="checkbox"/> No		
6. Township name:	7. County:	8. ID number:

Owner Information		
9. Name:		
10. Address:		
11. City:	12. State:	13. Zip code:

Operator Information (if different from owner)		
14. Name		
15. Address:		
16. City:	17. State:	18. Zip code:

Applicant Information	
19. Who is the applicant? <input type="checkbox"/> Owner <input type="checkbox"/> Operator	20. All correspondence to: (check one) <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Source
21. Attention name and/or title for written correspondence:	
22. Technical contact person for application:	23. Contact person's telephone number:

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Summary Of Application Contents	
24. Does the application address whether the proposed project would constitute a new major source or major modification under each of the following programs: a) Non-attainment New Source Review – 35 IAC Part 203; b) Prevention of Significant Deterioration (PSD) – 40 CFR 52.21; c) Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources – 40 CFR Part 63?	<input type="checkbox"/> Yes <input type="checkbox"/> No
25. Does the application identify and address all applicable emissions standards, including those found in the following: a) Board Emission Standards – 35 IAC Chapter I, Subtitle B; b) Federal New Source Performance Standards – 40 CFR Part 60; c) Federal Standards for Hazardous Air Pollutants – 40 CFR Parts 61 and 63?	<input type="checkbox"/> Yes <input type="checkbox"/> No
26. Does the application include a process flow diagram(s) showing all emission units and control equipment, and their relationship, for which a permit is being sought?	<input type="checkbox"/> Yes <input type="checkbox"/> No
27. Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?	<input type="checkbox"/> Yes <input type="checkbox"/> No
28. Does the application include the information as contained in completed CAAPP forms for all appropriate emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements, and identifying and describing any outstanding legal actions by either the USEPA or the Illinois EPA? Note: The use of "APC" application forms is not appropriate for applications for CAAPP sources. CAAPP forms should be used to supply information.	<input type="checkbox"/> Yes <input type="checkbox"/> No
29. If the application contains TRADE SECRET information, has such information been properly marked and claimed, and have two separate copies of the application suitable for public inspection and notice been submitted, in accordance with applicable rules and regulations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable, No TRADE SECRET information in this application

Note 1: Answering "No" to any of the above may result in the application being deemed incomplete.

Signature Block	
This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.	
30. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete. Authorized Signature:	
_____ AUTHORIZED SIGNATURE	_____ TITLE OF SIGNATORY
_____ TYPED OR PRINTED NAME OF SIGNATORY	_____ / _____ / _____ DATE

Note 2: An operating permit for the construction/modification permitted in a construction permit must be obtained by applying for the appropriate revision to the source's CAAPP permit, if necessary.

10.6 Attachment 6 Guidance on Renewing This Permit

Timeliness - Pursuant to Section 39.5(5)(n) of the Act and 35 IAC 270.301(d), a source must submit to the Illinois EPA a complete CAAPP application for the renewal of a CAAPP permit not later than 9 months before the date of permit expiration of the existing CAAPP permit in order for the submittal to be deemed timely. Note that the Illinois EPA typically sends out renewal notices approximately 18 months prior to the expiration of the CAAPP permit.

The CAAPP application must provide all of the following information in order for the renewal CAAPP application to be deemed complete by the Illinois EPA:

1. A completed form 200-CAAPP, APPLICATION FOR CAAPP PERMIT.
2. A completed compliance certification for the source. For this purpose, the Illinois EPA will accept a copy of the most recent form 401-CAAPP, ANNUAL COMPLIANCE CERTIFICATION submitted to the Illinois EPA.
3. If this is the first time this permit is being renewed and this source has not yet addressed CAM, the application should contain the information on form 464-CAAPP, COMPLIANCE ASSURANCE MONITORING (CAM) PLAN.
4. Information addressing any outstanding transfer agreement pursuant to the ERMS.
5.
 - a. If operations of an emission unit or group of emission units remain unchanged and are accurately depicted in previous submittals, the application may contain a letter signed by a responsible official that requests incorporation by reference of existing information previously submitted and on file with the Illinois EPA. The boxes should be marked yes on form 200-CAAPP, APPLICATION FOR CAAPP PERMIT, as existing information is being incorporated by reference.
 - b. If portions of current operations are not as described in previous submittals, then in addition to the information above for operations that remain unchanged, the application must contain the necessary information on all changes, e.g., discussion of changes, new or revised CAAPP forms, and a revised fee form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT, if necessary.

The Illinois EPA will review all applications for completeness and timeliness. If the renewal application is deemed both timely and complete, the source shall continue to operate in accordance

with the terms and conditions of its CAAPP permit until final action is taken on the renewal application.

Notwithstanding the completeness determination, the Illinois EPA may request additional information necessary to evaluate or take final action on the CAAPP renewal application. If such additional information affects your allowable emission limits, a revised form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT must be submitted with the requested information. The failure to submit to the Illinois EPA the requested information within the time frame specified by the Illinois EPA, may force the Illinois EPA to deny your CAAPP renewal application pursuant to Section 39.5 of the Act.

Application forms may be obtained from the Illinois EPA website at <http://www.epa.state.il.us/air/forms.html>.

If you have any questions regarding this matter, please contact a permit analyst at 217/782-2113.

Mail renewal applications to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506