

Draft CAAPP PERMIT
May 23, 2007

217/782-2113

"Renewal"
CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT

PERMITTEE:

PQ Corporation
Attn: EHS Specialist
340 East Grove Street
Utica, Illinois 61373

I.D. No.: 099833AAB
Application No.: 96030149

Date Received: May 4, 2006
Date Issued: To Be Determined
Expiration Date¹: To Be Determined

Operation of: Inorganic Chemical Manufacturing Operations
Source Location: 340 East Grove Street, Utica, LaSalle County, 61373
Responsible Official: Larry Masaro, Manager, U.S. Plant Operations

This permit is hereby granted to the above-designated Permittee to OPERATE a inorganic chemical manufacturing operation, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

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

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

ECB:DGP:psj

cc: Illinois EPA, FOS, Region 2
CES
Lotus Notes

¹ Except as provided in Conditions 1.5 and 8.7 of this permit.

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1.0 INTRODUCTION

1.1 Source Identification

PQ Corporation
340 East Grove Street
Utica, Illinois 61373
815/667-4241

I.D. No.: 099833AAB
County: LaSalle
Standard Industrial Classification: 2819, Inorganic Chemical
Manufacturing

1.2 Owner/Parent Company

PQ Corporation
Post Office Box 840
Valley Forge, Pennsylvania 19482

1.3 Operator

PQ Corporation
340 East Grove Street
Utica, Illinois 61373

Stanley Slusser, Plant Manager
815/667-4241

1.4 Source Description

The PQ Corporation manufacturing operation is located at 340 East Grove Street in Utica. The source manufactures sodium silicate, two types of metasilicate and Epsom salt. In addition, the source has fuel combustion emission units for producing process heat and steam.

Note: This narrative description is for informational purposes only and is not enforceable.

1.5 Title I Conditions

As generally identified below, this CAAPP permit contains certain conditions for emission units at this source that address the applicability of permitting programs for the construction and modification of sources, which programs were established pursuant to Title I of the Clean Air Act (CAA) and regulations thereunder. These programs include PSD and MSSCAM, and are implemented by the Illinois EPA pursuant to Sections 9, 9.1, 39(a) and 39.5(7)(a) of the Illinois Environmental Protection Act (Act). These conditions continue in effect, notwithstanding the expiration date specified on the first page of this permit, as their authority derives from Titles I and V of the CAA, as well as Titles II and X of the Act. (See also Condition 8.7.)

- a. This permit contains Title I conditions that reflect Title I requirements established in permits previously issued for this source, which conditions are specifically designated as "T1."

2.0 LIST OF ABBREVIATIONS AND ACRONYMS COMMONLY USED

ACMA	Alternative Compliance Market Account
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
ATU	Allotment Trading Unit
BACT	Best Available Control Technology
BAT	Best Available Technology
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dscf	Dry Standard Cubic Foot
ERMS	Emissions Reduction Market System
°F	degrees Fahrenheit
ft ³	cubic feet
gal	gallon
gr	grains
HAP	Hazardous Air Pollutant
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
LAER	Lowest Achievable Emission Rate
lb	pound
MACT	Maximum Achievable Control Technology
Mg	Megagram
mmBtu	Million British thermal units
MSSCAM	Major Stationary Sources Construction and Modification (35 IAC 203, New Source Review for non-attainment areas)
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
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
PM _{2.5}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration (40 CFR 52.21, New Source Review for attainment areas)
RMP	Risk Management Plan
SO ₂	Sulfur Dioxide

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
VOM	Volatile Organic Material

3.0 CONDITIONS FOR 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:

Metasilicate Process^a - Enclosed Units

MA-03 Anhydrous Screen
MP-02 Pentahydrate Screen
MA-04 Anhydrous Crusher
MP-03 Pentahydrate Crusher
Transfer from Sand Hopper to Belt Scale
Transfer from Surge Hopper to Furnace Charger

^a MA = Anhydrous Line
 MP = Pentahydrate Line

- 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:

Sodium Silicate Process

Discharge from Sand Silo to Screw Conveyor^a
Discharge from Soda Ash to Silo to Lump Crusher^a
Batch Elevator Discharge to Pneumatic Transporter Surge Hopper^a
Discharge from Screw to Bucket Elevator^b
Transfer from Bucket Elevator to Sand Silo^b
Transfer from Bucket Elevator to Soda Ash Silo^b
Transfer from Screw to Belt Conveyor^b
Discharge from Belt Conveyor into Sand Hopper^b
Discharge from Scale to Incline Screw Conveyor^b
Transfer from Screw to Batch Elevator^b
Discharge from Lump Crusher to Screw Conveyor^b
Transfer from Screw to Bucket Elevator #1^b
Transfer from Bucket Elevator #2 to Screw Conveyor^b
Discharge to Soda Ash Scale Hopper^b
Transfer from Soda Ash Hopper to Belt Scale^b
Dense Phase Pneumatic Transporter of Sand and Soda Ash^b

^a These units each have a passive fabric filter but PM emissions in absence of the filter would be under 0.1 lb/hr.

^b All of these units are vented to one main baghouse, BH-SS01, but PM emissions of each would be less than 0.1 lb/hr and/or 0.44 ton/year prior to the baghouse.

Sodium Silicate Settling Tank
Sodium Silicate Production Storage Tanks
Enclosed De-Agglomerator
Anhydrous Holding Tank
Anhydrous Liquor Make-Up Tank^c
Pentahydrate Liquor Tank^c
Evaporator Tank (M-04)
Magnesium Hydroxide Tank
Sulfuric Acid Tank
Water Vapor Emitting Units in Epsom Salt Production
Bagging of Epsom Salt Product
Bulk Loading of Epsom Salt Product
MgO Slurry Tanks
Filter Feed Tank
Cake Wash Tank
Filter Press
Filter Hold Tank
Product Storage Tank
Filter Cake Dumpster
Miscellaneous Plant Storage Tanks
Numerous Enclosed Discharge/Transfer Points

^c These units have demisters but emissions are less than 0.1 lb/hr and/or 0.44 tons/yr in the absence of control equipment.

Metasilicate Process^a - Enclosed Units

MA08 Dry Feed Bin Discharge to Kiln
MA09 Kiln Discharge to Screw Conveyor
MA10 Transfer from Screw to Bucket Elevator
MA11 Discharge to Screen
MA12 Undersize Discharge to Fines Return Screw
MA13 Oversize Discharge to 42" Crusher
MA14 Crusher Discharge to Fines Return Screw
MA15 Transfer from Screw to Dry Feed Bin
MA16 Finished Product Size Discharge to Cooler
MA17 Product Transfer from Cooler to Screw
MA18 Screw Discharge into Bucket Elevator into Product Silo
MP06 Dry Feed Bin Discharge to Kiln
MP07 Kiln Discharge to Screw Conveyor
MP08 Discharge to Screen
MP10 Undersize Discharge to Fines Return Screw
MP11 Oversize Discharge to 36" Crusher
MP12 Crusher Discharge to Fines Return Screw
MP13 Transfer from Screw to Dry Feed Bin

^a MA = Anhydrous Line
MP = Penthydrate Line

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:

Equipment used for filling drums, pails, or other packaging containers, excluding aerosol cans, with soaps, detergents, surfactants, lubricating oils, waxes, vegetable oils, greases, animal fats, glycerin, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a)(8)].

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)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

Loading and unloading systems for railcars, tank trucks, or watercraft that handle only the following liquid materials, provided an organic solvent has not been mixed with such materials: soaps, detergents, surfactants, lubricating oils, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a)(18)].

- 3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b). Note: These activities are not required to be individually listed.

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 5.3.2), the Permittee shall comply with the following requirements, as applicable:

- 3.2.1 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 (see Attachment 2) and 35 IAC Part 266. 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.
- 3.2.2 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, which requires that organic material emissions not exceed 8.0 pounds per hour or, if no odor nuisance exists, do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.2.3 For each open burning activity, the Permittee shall comply with 35 IAC Part 237, including the requirement to obtain a permit for open burning in accordance with 35 IAC 237.201, if necessary.

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	Description	Date Constructed	Emission Control Equipment
Section 7.1 Sodium Silicate Process			
SS22	#3 Sodium Silicate Furnace, 21.2 mmBtu/hr Firing Rate/Waste Heat Boiler	1970 ^a	None
SS23	#3 Mammoth	1970 ^a	Mist Eliminator (S-SS23)
Section 7.2 Metasilicate Process			
MA-01	Anhydrous Drying Kiln	1968	To Wet Wash Tank (MC-05) which then vents through Scrubber (MC-07)
MP-01	Pentahydrate Kiln	1968	To Wet Wash Tank (MC-05) which then vents through Scrubber (MC-07)
M-08A	Bagging (for Both Anhydrous and Pentahydrate)	1968	Cyclone then to Wet Wash Tank (MC-05) which then vents through Scrubber (MC-07)
M-08B	Bulk Loading (for Both Anhydrous and Pentahydrate)	1968	Dust Collector (MC-09)
MA-02	Air Heater, Gas or Oil Fired, 11.3 mmBtu/hr	1968	Scrubber (MC-08)
MA-06	Product Cooler	1968	Baghouse (MAC-06), which vents to a tank of water
Metso #1 and #2	Two Metso Boilers , Natural Gas/Fuel Oil #2 Backup, 7.9 mmBtu/hr, each	2006	None
MA-10	Discharge Screw/Elevator	1968	Old Baghouse (MAC-1) then to Scrubber (MC-08)

Section 7.3 Epsom Salt Process			
ES03	Reactor	1989	Mist Eliminator (C-ES03)
ES11	Crystallization Condenser	1989	Demister Pad (No vent to atmosphere)
ES14	Dryer/Cooler	1989	Dust Collector (BH-ES14)
ES21	Surge Bin	1989	Dust Collector (BH-ES19)
ES22	Bulk Loading	1989	Dust Collector (BH-ES22) followed by Filter (F-ES22)
ES24/25	Product Silo/Packaging	1989	Dust Collector (BH-ES24)
ES31	Gas or Oil Fired Boiler (10.0 mmBtu/hr)	1989	None
ESL02	Magnesium Oxide Storage Silo	1989	Baghouse (BH-ESL02)
ESL03	Magnesium Oxide Transport System from Silo to Bin	2003	Dust Collector (DC-ESL03)
ESL05	Reactor Tank	1989	Mist Eliminator (ESLC-05)

^a The process was constructed in 1970 but modified in 1994.

5.0 OVERALL SOURCE CONDITIONS

5.1 Applicability of Clean Air Act Permit Program (CAAPP)

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of PM and NO_x emissions.

5.2 Area Designation

This permit is issued based on the source being located in an area that, as of the date of permit issuance, is designated attainment or unclassifiable for the National Ambient Air Quality Standards for all criteria pollutants (CO, lead, NO₂, ozone, PM_{2.5}, PM₁₀, SO₂).

5.3 Source-Wide Applicable Provisions and Regulations

5.3.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions for Specific Emission Units) of this permit.

5.3.2 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. Pursuant to 35 IAC 212.123(a), 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, except as allowed by 35 IAC 212.123(b) and 212.124.

5.3.3 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)]. The Permittee shall comply with the fugitive particulate matter operating program, submitted to the Illinois EPA and incorporated by reference into this permit, and any amendments to the program submitted pursuant to paragraph b below.
- 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].

5.3.4 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.

5.3.5 Risk Management Plan (RMP)

Should this stationary source, as defined in 40 CFR 68.3, become subject to the federal regulations for Chemical Accident Prevention in 40 CFR Part 68, then the owner or operator shall submit the items below. This condition is imposed in this permit pursuant to 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 RMP, as part of the annual compliance certification required by Condition 9.8.

5.3.6 Future Emission Standards

- a. Should this stationary source become subject to a new or revised regulation under 40 CFR Parts 60, 61, 62, or 63, or 35 IAC Subtitle B 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 Condition 9.8. This permit may also have to be revised or reopened to address such new or revised regulations (see Condition 9.12.2).

- b. This permit and the terms and conditions herein do not affect the Permittee's past and/or continuing obligation with respect to statutory or regulatory requirements governing major source construction or modification under Title I of the CAA. Further, neither the issuance of this permit nor any of the terms or conditions of the permit shall alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance.

5.3.7 Episode Action Plan

- a. Pursuant to 35 IAC 244.141, 244.142, and 244.143, 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 and is incorporated by reference into this permit.
- b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared by the Director of the Illinois EPA or his or her designated representative.
- c. If an operational change occurs at the source which invalidates the plan, a revised plan shall be submitted to the Illinois EPA for review within 30 days of the change, pursuant to 35 IAC 244.143(d). Such plans shall be further revised if disapproved by the Illinois EPA.

5.4 Source-Wide Non-Applicability of Regulations of Concern

Source-wide non-applicability of regulations of concern are not set for this source. However, there are terms for unit specific non-applicability of regulations of concern set forth in Section 7 of this permit.

5.5 Source-Wide Control Requirements and Work Practices

Source-wide control requirements and work practices are not set for this source. However, there are requirements for unit specific control requirements and work practices set forth in Section 7 of this permit.

5.6 Source-Wide Production and Emission Limitations

5.6.1 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 5.6.1) are set for the purpose of establishing fees and are not federally enforceable (see Section 39.5(18) of the Act).

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	4.50
Sulfur Dioxide (SO ₂)	7.14
Particulate Matter (PM)	295.84 ^a
Nitrogen Oxides (NO _x)	150.00
HAP, not included in VOM or PM	----
Total	457.48

^a Includes 4.67 tons/yr of sulfuric acid mist

5.6.2 Emissions of Hazardous Air Pollutants

Pursuant to Section 39.5(7)(a) of the Act, the emissions of HAPs from the source shall be less than 10 tons/year for each individual HAP and 25 tons/year for all HAPs combined. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total). This condition is being imposed so that the source is not a major source of HAP emissions.

5.6.3 Other Source-Wide Production and Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to the federal rules for PSD, state rules for MSSCAM, 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.

5.7 Source-Wide Testing Requirements

5.7.1 Pursuant to 35 IAC 201.282 and Section 4(b) of the Act, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:

- a. Testing by Owner or Operator: The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests [35 IAC 201.282(a)].
- b. Testing by the Illinois EPA: The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary [35 IAC 201.282(b)].
- c. Any such tests are also subject to the Testing Procedures of Condition 8.5 set forth in the General Permit Conditions of Section 8.

5.8 Source-Wide Monitoring Requirements

Source-wide monitoring requirements are not set for this source. However, there are provisions for unit specific monitoring set forth in Section 7 of this permit.

5.9 Source-Wide Recordkeeping Requirements

5.9.1 Annual Emission Records

The Permittee shall maintain records of total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit to demonstrate compliance with Condition 5.6.1, pursuant to Section 39.5(7)(b) of the Act.

5.9.2 Records for HAP Emissions

The Permittee shall maintain records of HAP emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit, pursuant to Section 39.5(7)(b) of the Act.

- a. The Permittee shall maintain records of individual and combined HAP emissions on a monthly and annual basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit to

demonstrate compliance with Condition 5.6.2, pursuant to Section 39.5(7)(b) of the Act.

5.9.3 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.

5.10 Source-Wide Reporting Requirements

5.10.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the source with the permit requirements within 30 days, 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. There are also reporting requirements for unit specific emission units set forth in Section 7 of this permit.

5.10.2 Annual Emissions Report

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

5.11 Source-Wide Operational Flexibility/Anticipated Operating Scenarios

Source-wide operational flexibility is not set for this source. However, there are provisions for unit specific operational flexibility set forth in Section 7 of this permit.

5.12 Source-Wide Compliance Procedures

5.12.1 Procedures for Calculating Emissions

Except as provided in Condition 9.1.3, compliance with the source-wide emission limits specified in Condition 5.6 shall be addressed by the recordkeeping and reporting requirements of Conditions 5.9 and 5.10, and compliance procedures in Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit.

6.0 CONDITIONS FOR EMISSIONS CONTROL PROGRAMS

This section is reserved for emissions control programs. As of the date of issuance of this permit, there are no such programs applicable to this source.

7.0 UNIT SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS

7.1 Sodium Silicate Manufacturing Process

7.1.1 Description

Sodium silicate is produced by the fusion of soda ash (sodium carbonate) and sand (silica, silicon dioxide) at over 2000°F. Heat must be supplied by natural gas or distillate fuel oil combustion. Waste heat is recovered by a boiler.

The molten sodium silicate is dissolved in water using a rotary atmospheric dissolver. The liquid is pumped to storage tanks for either outside customers or feedstock for the metasilicate operation.

Note: This narrative description is for informational purposes only and is not enforceable.

7.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
SS22	#3 Sodium Silicate Furnace, 21.2 mmBtu/hr Firing Rate/Waste Heat Boiler	1970 ^a	None
SS23	#3 Mammoth	1970 ^a	Mist Eliminator, S-SS23

^a The process was constructed in 1970 but modified in 1994.

7.1.3 Applicable Provisions and Regulations

- a. The "affected sodium silicate manufacturing process" for the purpose of these unit-specific conditions, is a process in which sodium silicate is manufactured and then dissolved in water and described in Conditions 7.1.1 and 7.1.2.
- b. Emissions of PM shall not exceed the allowable of 35 IAC 212.321. This rule is written out in Attachment 2.
- c. Each affected unit is subject to the opacity emission limits identified in Condition 5.3.2(b).
- d. The furnace is subject to 35 IAC 214.301. This rule states that no person shall cause or allow the emission of SO₂ into the atmosphere from any process emission unit to exceed 2000 ppm.

7.1.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected burners in the furnace when using fuel oil not being subject to 35 IAC 214.304, because the affected process line is not located in the Chicago or St. Louis major metropolitan areas. This rule requires that fuel oil used in a process emission unit meet the same SO₂ emission rate per million Btus as a fuel combustion emission unit. Although not required to meet this limit of 0.3 lb/mmBtu for the No. 2 fuel oil used as a backup fuel, the Permittee voluntarily complies with it as this also assures compliance with 35 IAC 214.301.
- b. This permit is issued based on the affected furnace not being subject to any rules for fuel combustion units (e.g., 35 IAC 216.121 for CO emissions) although the flue gas may vent through a waste heat boiler because the furnace is a process emission unit and not a fuel combustion emission unit.
- c. This permit is issued based on the affected sodium silicate production line not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the Furnace (SS22) does not use an add-on control device to achieve compliance with an emission limitation or standard and the Mammoth (SS23) does not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

7.1.5 Control Requirements and Work Practices

The mist eliminator shall be operated so that the process complies with Condition 7.1.3(b) and (c).

7.1.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected sodium silicate manufacturing process is subject to the following:

Emissions from the affected #3 sodium silicate furnace (SS22) shall not exceed the following limits:

PM Emissions	
<u>(Ton/Month)</u>	<u>(Ton/Year)</u>
2.2	26.3

These limits are based on the maximum rate.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The above limitations were established in Permit 96030149, pursuant to PSD, 40 CFR 52.21. 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 40 CFR 52.219. In addition, the above limitations contain revisions to previously issued Permit 72100813, as reflected in this Title V permit issued on January 30, 2002. Specifically, the allowed emissions have been adjusted up from the allowable in the construction permit to the allowable pursuant to the applicable rule, 35 IAC 212.321. This source was not major stationary source pursuant to PSD at the time and thus an emission rate that would be a significant increase did not apply. The hourly pursuant to the applicable has also been adjusted to a monthly rate. [T1]

7.1.7 Testing Requirements

Testing requirements are not set for the affected sodium silicate manufacturing process. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.1.8 Monitoring and Inspection Requirements

- a. The mist eliminator shall be inspected quarterly to determine if it is in good enough condition to perform its function.
- b. Twice yearly the baghouses on the discharge/transfer points shall be inspected to determine if the bags should be replaced.
- c. An observation for visible emissions from the mist eliminator discharge shall be made on a monthly basis.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected sodium silicate manufacturing process to demonstrate compliance with Conditions 5.6.1, 7.1.3, 7.1.6 and 7.1.8, pursuant to Section 39.5(7)(b) of the Act:

- a. Records of semi-annual baghouse and quarterly mist eliminator inspections;
- b. Mist eliminator visible emissions observations;
- c. Process weight rate for each unit so that an allowable PM emission rate may be calculated;

- d. Weight percent sulfur of each shipment of fuel oil received;
- e. Monthly fuel gas and fuel oil usage; and
- f. NO_x, SO₂, PM and CO emissions on a monthly and annual basis and sufficient to determine compliance with Condition 7.1.3(b).

7.1.10 Reporting Requirements

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected sodium silicate manufacturing process 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:

- i. Emissions of PM from the affected sodium silicate manufacturing process in excess of the limits specified in Condition 7.1.6 within 30 days of such occurrence.
 - ii. Operation of the affected sodium silicate manufacturing process in excess of the limits specified in Conditions 7.1.3(b), (c) or (d) within 30 days of such occurrence.
- b. If the fuel oil used exceeds 0.3 weight percent sulfur, a calculation must be performed and submitted to the Illinois EPA demonstrating that SO₂ emissions do not exceed 2000 ppm [Condition 7.1.3(d)].

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected sodium silicate manufacturing process.

7.1.12 Compliance Procedures

- a. Compliance with Conditions 7.1.3(b) and (c)) is addressed by the requirements of Condition 7.1.5, the monitoring requirements in Condition 7.1.8 and the records and reports required in Conditions 7.1.9 and 7.1.10.
- b. Compliance with Condition 7.1.3(d) is addressed by the records and reports required in Conditions 7.1.9(d) and 7.1.10(b).

- c. Compliance with Condition 7.1.6 is addressed by the records and reports required in Conditions 7.1.9(f) and 7.1.10(a)(i).
- d. The manufacture of sodium silicate at this source is similar to glass manufacturing and therefore the emission factors for uncontrolled glass manufacturing in AP-42, Table 11.15-1 and 11.15-2, as follows, shall be used:

<u>Pollutant</u>	<u>Emissions (lb/ton)</u>
PM	1.4
NO _x	6.2
CO	0.2

$$\text{PM emissions} = \text{tons/product} \times \text{emissions factor} \times (1 - \text{control efficiency})$$

$$\text{NO}_x \text{ and CO emissions} = \text{tons product} \times \text{emission factor}$$

SO₂ emissions are negligible when using natural gas and for use of fuel oil are as follows:

$$\text{SO}_2 \text{ Emissions (ton/mo)} = \text{gallons of fuel oil} \times \text{density of oil} \times \text{wt. \% sulfur} \times 2 \text{ lb SO}_2/\text{pound of sulfur} \div 2000 \text{ lb/ton.}$$

7.2 Metasilicate Manufacturing Process

7.2.1 Description

Two products are manufactured in the metasilicate plant. One line manufactures pentahydrate metasilicate and the other line anhydrous metasilicate. Both begin with the sodium silicate manufactured by the process described in Section 7.1. One common vessel, an evaporator tank, is used for both lines. The primary difference is that for the anhydrous process the temperature in the kiln is much higher.

Note: This narrative description is for informational purposes only and is not enforceable.

7.2.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
MA-01	Anhydrous Drying Kiln ^a	1968	To Wet Wash Tank (MC-05) which then vents through Scrubber (MC-08)
MP-01	Pentahydrate Kiln ^a	1968	To Wet Wash Tank (MC-05) which then vents through Scrubber (MC-08)
M-08A	Bagging (for Both Anhydrous and Pentahydrate)	1968	Cyclone then to Wet Wash Tank (MC-05) which then vents through Scrubber (MC-08)
MC-08B	Bulk Loading (for Both Anhydrous and Pentahydrate)	1968	Dust Collector (MC-09)
MA-02	Air Heater, Gas or Oil Fired, 11.3 mmBtu/hr	1968	Scrubber (MC-08)
MA-06	Product Cooler	1968	Baghouse (MAC-06), which vents to a tank of water
Metso #1 and #2	Two Metso Boilers , Natural Gas/Fuel Oil #2 Backup, 7.9 mmBtu/hr, each	2006	None
MA-10	Discharge Screw/Elevator	1968	Old Baghouse (MAC-1) then to Scrubber (MC-08)

^a The anhydrous kiln can manufacture pentahydrate by not using the air heater, but the reverse is not true, i.e. the pentahydrate kiln cannot make the anhydrous product. Also, there are vessels besides those listed that effectively emit only water.

7.2.3 Applicable Provisions and Regulations

- a. The "affected metasilicate manufacturing process" for the purpose of these unit-specific conditions, is a process vessel for manufacturing one or more types of metasilicate, other than the air heater or boiler, and described in Conditions 7.2.1 and 7.2.2.
- b. The "affected fuel combustion units" for the purpose of these unit-specific conditions, is a boiler or air heater described in Condition 7.1.2 and 7.2.2.
- c. Each metasilicate manufacturing process unit is subject to 35 IAC 212.322. This rule is written out in Attachment 2.
- d. Each affected metasilicate manufacturing process and fuel combustion unit is subject to the emission limits identified in Condition 5.3.2(b).
- e. Emissions from each affected fuel combustion unit, while burning oil, shall not exceed the following standards, which apply on an hourly basis:

Pollutant	Standard	Limit
SO ₂	35 IAC 214.122(b)(2)	0.3 lb/mmBtu
PM	35 IAC 212.206 and 212.207	0.10 lb/mmBtu
CO (Air heater only)	35 IAC 216.121	200 ppm, corrected to 50% excess air

7.2.4 Non-Applicability of Regulations of Concern

- a. The affected air heater and boiler are not subject to 35 IAC 217.141, emissions of NO_x from existing fuel combustion emission unit in a major metropolitan areas, because the actual heat input of each affected boiler is less than 250 mmBtu/hr, and is not located in a major metropolitan area.
- b. The affected boilers are not subject to the New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subparts Dc, because each affected boiler is proposed to have a maximum design heat input capacity less than 10 mmBtu/hour.
- c. The affected boilers are not subject to 35 IAC 216.121, the CO emission standard, because each affected boiler is proposed to have a maximum design heat input capacity less than 10 mmBtu/hour.
- d. The affected metasilicate manufacturing processes, excluding the product cooler and its associated baghouse are not subject to 40 CFR Part 64, Compliance Assurance

Monitoring (CAM) for Major Stationary Sources, because the affected metasilicate manufacturing processes do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

- e. The affected fuel combustion units are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected fuel combustion units either are not subject to an emission limitation or standard for the applicable regulated air pollutant and/or do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.2.5 Control Requirements and Work Practices

- a. Natural gas and distillate oil shall be the only fuels fired in the affected fuel combustion units.
- b. Operation of the affected boilers while firing with distillate fuel oil (#2) shall not exceed 1,350 hours/year, combined. [T1]
- c. The Permittee shall not use distillate fuel oil (Grades No. 1 and 2 fuels) in the affected air heater or boiler with a sulfur content greater than the larger of the following two values:
 - i. 0.28 weight percent, or
 - ii. The Wt percent given by the formula:
$$\text{Maximum Wt. percent sulfur} = (0.000015) \times (\text{Gross heating value of oil, Btu/lb}).$$
- d. Each baghouse, cyclone or demister shall be operated in accordance with the good manufacturing practices and manufacturer's recommendations. These procedures and preventative maintenance schedules will be determined by the Permittee so as to reduce emissions to comply with 35 IAC 212.322 [Condition 7.2.3(c) and (d)]. Such procedures, practices and schedules will be available to the Illinois EPA upon request.

7.2.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected metasilicate manufacturing process and associated fuel combustion units are subject to the following:

- a. Emissions of PM from the affected bulk loading operation (MC-08B) dust collector shall not exceed 0.7 tons/year. This limits are based on the maximum rate.

The above limitation was established in Permit 03060075, 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 is a natural minor source and 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].

- b. Emissions from each of the affected Metso boilers shall not exceed the following limits. These emission limits are based on the information provided in the permit application.

Pollutant	Emissions			
	Natural Gas		Distillate Fuel	
	(Lbs/Hr) (Each)	(Tons/Yr) (Total)	(Lbs/Hr) (Each)	(Tons/Yr) (Total)
NO _x	0.8	7.0	1.1	0.8
CO	0.7	6.0	0.3	0.2
VOM	0.1	0.9	0.1	0.1
PM/PM ₁₀	0.1	0.9	0.1	0.1
SO ₂	0.1	0.9	1.6	1.0
Individual HAP ^a	0.05	0.5	0.05	0.05
Total HAP	0.1	0.9	0.1	0.1

^a Individual HAP such as Formaldehyde, Benzene, Toluene, etc.

- c. Compliance with the annual limitations shall be determined from a running total of 12 months of data.
- d. The above limitations (b and c) were established in Permit 06090053, pursuant to PSD. These limits ensure that the construction and/or modification addressed in the aforementioned permit are natural minor emission units and do not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for PSD [T1].

7.2.7 Testing Requirements

Testing requirements are not set for the affected metasilicate manufacturing process and associated fuel combustion units. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.2.8 Monitoring Requirements

- a. Compliance Assurance Monitoring (CAM) Requirements

The affected baghouse (MAC-06), the control device for the product cooler, is subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources.

The Permittee shall comply with the monitoring requirements of the Compliance Assurance Monitoring (CAM) Plan described in Attachment 3, Table 3A, pursuant to 40 CFR Part 64 as submitted in the Permittee's CAM plan application. At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment [40 CFR 64.7(a) and (b)].

- b. The mist eliminator shall be inspected quarterly to determine if it is in good enough condition to perform its function.
- c. Twice yearly the baghouses shall be inspected to determine if the bags should be replaced.
- d. The Permittee shall observe the stacks of the following units for visible emissions on a daily basis: Scrubbers MC-08 and Dust Collector MC-09.

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected metasilicate manufacturing process and associated fuel combustion units to demonstrate compliance with Conditions 5.6.1, 7.2.3, and 7.2.5 through 7.2.8, pursuant to Section 39.5(7)(b) of the Act:

- a. Semi-annual baghouse and quarterly demister inspection results;
- b. visible emissions observations specified in Condition 7.2.8;
- c. PM emissions (lb/mo and aggregate annual) from each unit;
- d. Monthly natural gas and fuel oil usage;
- e. Sulfur content of each shipment of fuel oil; and
- f. Monthly NO_x, CO, PM, VOM and SO₂ emissions from fuel combustion units and aggregate annual.
- g. Records for Compliance Assurance Monitoring (CAM) Requirements

The Permittee shall maintain records of the monitoring data, monitor performance data, corrective actions taken, monitoring equipment maintenance, and other supporting information related to the monitoring requirements in Condition 7.3.8(a), as required by 40 CFR 64.9(b)(1).

7.2.10 Reporting Requirements

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of an affected metasilicate manufacturing process and associated fuel combustion units 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:

- i. Emissions of any of the pollutants listed in Condition 7.2.6(b) from the affected Metso boilers in excess of the limits specified in Condition 7.2.6(b) within 30 days of such occurrence.
- ii. Operation of the affected metasilicate manufacturing process and associated fuel combustion units in excess of the limits specified in Conditions 7.2.3 within 30 days of such occurrence.
- iii. Use of a fuel oil in the affected Metso boilers with a sulfur concentration exceeding the specifications in Condition 7.2.5(c) or exceeding the hours on fuel oil specified in Condition 7.2.5(b).

b. Reporting of Compliance Assurance Monitoring (CAM)

The Permittee shall submit monitoring reports to the Illinois EPA in accordance with Condition 8.6.1 and shall include, at a minimum, the information required under Condition 8.6.1 and the following information:

- i. Summary information on the number, duration, and cause of excursions or exceedances, and the corrective actions taken [40 CFR 64.6(c)(3) and 64.9(a)(2)(i)]; and
- ii. Summary information on the number, duration, and cause for monitoring equipment downtime incidents, other than downtime associated with calibration checks [40 CFR 64.6(c)(3) and 64.9(a)(2)(ii)].

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected metasilicate manufacturing process without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

The line designated anhydrous may manufacture pentahydrate by not using the higher temperature in the kiln. Since the pentahydrate kiln is not currently equipped with a heat source it may not manufacture anhydrous material without obtaining a construction permit for an air heater.

7.2.12 Compliance Procedures

- a. Compliance with Conditions 7.2.3(c) and (d) is addressed by the requirements of Condition 7.2.5(d), the monitoring requirements of Condition 7.2.8 and the records and reports required in Conditions 7.2.9 and 7.2.10.
- b. Compliance with Condition 7.2.3(e) is addressed by the requirements of Conditions 7.2.5(b) and (c) and the records and reports required in Conditions 7.2.9 and 7.2.10.
- c. Compliance with Condition 7.2.6 is addressed by the records and reports required in Conditions 7.2.9 and 7.2.10.
- d. Emissions of PM and PM₁₀ from the kilns shall be calculated using the AP-42, Section 11.20-2, emission factor of 0.78 and 0.29 lb/ton of feed (after scrubber control), respectively.
- e. i. A. Emission factors for the affected air heater and boilers when fired by natural gas:

Emission Factors	
<u>Pollutant</u>	<u>(lb/mmscf)</u>
VOM	5.5
SO ₂	0.6
NO _x	100
CO	84

The emission factors (lb/mmscf) are for Natural Gas-Fired Small Boilers (<100 mmBtu/hr Heat Input) from AP-42 Section 1.4 (dated 3/98).

- B. Emission formula for the affected boiler when fired by natural gas:

(Boiler Emissions, lb) = (The Appropriate Emission Factor, lb/mmscf) x (Natural Gas Usage, mmscf)

- ii. A. Emission factors for the affected air heater and boilers when fired by distillate fuel oil:

Emission Factors	
<u>Pollutant</u>	<u>(lb/1,000 gal)</u>
VOM	0.2

SO ₂	142(s)
NO _x	20
CO	5

The emission factors (lb/1000 gal) are for Distillate Oil Fired Small Boilers (<100 mmBtu/hr Heat Input) from AP-42 Section 1.3 (dated 9/98). Note: (S) is the Sulfur content of the distillate fuel oil (wt. %).

- B. Emission formula for the affected boiler when fired by distillate fuel oil:

(Boiler Emissions, lb) = (The Appropriate Emission Factor, lb/1,000 gal) x (Distillate Fuel Oil Consumed (1,000 gal))

7.3 Epsom Salt Manufacturing Process

7.3.1 Description

Epsom salt, magnesium sulfate heptahydrate in crystal form, is produced by a batch reaction beginning with either magnesium oxide or hydroxide and sulfuric acid. After the initial reaction there are various steps to separate the crystals from the solution, drying of the crystals, screening to size the product and packaging.

The liquid Epsom Salts process is a micro-processing unit which uses advanced technology to produce Epsom salts in a liquid form. The principal raw materials are sulfuric acid and magnesium oxide. The sulfuric acid is shipped by tank truck and an acid unloading procedure is in place for both safety and spill containment. The magnesium oxide is shipped by railcar. The process begins with the sulfuric acid and magnesium oxide being pumped into a reactor. The two ingredients react. The Epsom is then sent to the filter press for filtering out any impurities and to tanks for liquid shipments. Any wastewater generated by this process is reused into the process.

Note: This narrative description is for informational purposes only and is not enforceable.

7.3.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
ES03	Reactor ^a	1989	Mist Eliminator (C-ES03)
ES11	Crystallization Condenser	1989	Demister Pad (No vent to atmosphere)
ES14	Dryer/Cooler	1989	Dust Collector (BH-ES14)
ES21	Surge Bin	1989	Dust Collector (BH-ES19)
ES22	Bulk Loading	1989	Dust Collector (BH-ES22) followed by filter (F-ES22)
ES24/25	Product Silo/Packaging	1989	Dust Collector (BH-ES24)
ES31	Gas or Oil Fired Boiler (10.0 mmBtu/hr)	1989	None
ESL02	Magnesium Oxide Storage Silo	1989	Baghouse (BH-ESL02)
ESL03	Magnesium Oxide Transport System from Silo to Bin ^b	2003	Dust Collector (DC-ESL03)

Emission Unit	Description	Date Constructed	Emission Control Equipment
ESL05	Reactor Tank	1989	Mist Eliminator (ESLC-05)

- a. There are numerous vessels between the reactor and prior to handling of dry crystals that emit only water and are not listed here. These include, but are not limited to, aging tanks, filter press, feed tank, mother liquor tank, and neutralization tank.
- b. Included in this unit are minor amount of emissions as MgO drops from the bin to water into the slaker which feeds the reactor tank.

7.3.3 Applicable Provisions and Regulations

- a. The "affected Epsom salt manufacturing process" for the purpose of these unit-specific conditions, is a process consisting of multiple steps, some of which are salts in solution and some a crystalline powder and described in Conditions 7.3.1 and 7.3.2.
- b. The "affected fuel combustion unit (ES31)" for the purpose of these unit-specific conditions, is a gas or oil-fired boiler described in Condition 7.2.2.
- c. The affected Epsom salt manufacturing processes and fuel combustion unit are subject to the emission limits identified in Condition 5.3.2(b).
- d. The reactor is subject to 35 IAC 214.303. This rule states that no person using sulfuric acid shall cause or allow the emission of sulfuric acid and/or sulfur trioxide from all other similar emission sources at a plant or premises to exceed:
 - i. 0.1 lbs/hr for sulfuric acid usage less than 1300 T/yr (100 percent acid basis); and
 - ii. 0.5 lbs/T for sulfuric acid usage greater than 1300 T/yr (100 percent acid basis).
- e. Emissions of PM from each process emission unit shall not exceed the allowable of 35 IAC 212.321. This rule is written out in Attachment 2.
- f. The affected dryer/cooler (ES14) is subject to an NSPS, 40 CFR 60 Subpart UUU, for dryers in the mineral industries.
 - i. Emissions of PM from the dust collector on the dryer/cooler shall not exceed 0.025 grams per dry standard cubic foot (gr/dscf).

- ii. The dryer/cooler vent shall not exhibit an opacity greater than 10 percent.
- g. i. The boiler is subject to 35 IAC 216.121. This rule states that no person shall cause or allow the emission of CO into the atmosphere from any fuel combustion emission unit with actual heat input greater than 10 mmBtu/hr to exceed 200 ppm, corrected to 50 percent excess air.
- ii. The emissions of particulate matter (PM) into the atmosphere in any one hour period shall not exceed 0.10 lb/mmBtu of actual heat input from any fuel combustion emission unit using liquid fuel exclusively [35 IAC 212.206].
- iii. The emission of sulfur dioxide (SO₂) into the atmosphere in any one hour period from any existing fuel combustion emission unit, burning liquid fuel exclusively shall not exceed 0.3 lb/mmBtu of actual heat input when distillate fuel oil is burned [35 IAC 214.161(b)].

7.3.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected Epsom salt manufacturing process not being subject to the New Source Performance Standards (NSPS) for nonmetallic mineral processing plants, 40 CFR Part 60, Subpart OOO, because the list of affected minerals in §60.671 does not include any magnesium compounds.
- b. This permit is issued based on the affected Epsom salt manufacturing processes, excluding the dryer/cooler and bulk loading operations not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected Epsom salt manufacturing processes do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.
- c. The affected boiler is not subject to 35 IAC 217.141, emissions of NO_x from existing fuel combustion emission units in major metropolitan areas, because the actual heat input of each affected boiler is less than 250 mmBtu/hr, and is not located in a major metropolitan area.
- d. Although subject to the NSPS Subpart UUU, the dryer/cooler is not subject to the monitoring requirements of Subpart UUU due to the limitation taken in and explained in Condition 7.3.6(a).

7.3.5 Control Requirements and Work Practices

- a. The mist eliminator, demister and baghouses/dust collectors shall be operated in accordance with the manufacturer's instructions so as to achieve compliance with Condition 7.3.3(d), (e) and (f).
- b. The affected boiler shall only be operated with natural gas or distillate fuel oil as the fuels.
- c. The Permittee shall not use distillate fuel oil (Grades No. 1 and 2 fuels) in the affected boiler with a sulfur content greater than the larger of the following two values:
 - i. 0.28 weight percent, or
 - ii. The Wt. percent given by the formula:
$$\text{Maximum Wt. percent sulfur} = (0.000015) \times (\text{Gross heating value of oil, Btu/lb}).$$

7.3.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected Epsom salt manufacturing process is subject to the following:

- a. Emissions from the dryer/cooler shall not exceed 11.0 tons/year. This limit is necessary in order that the dryer/cooler be exempt from NSPS monitoring requirements. This exemption was issued by the USEPA on January 10, 1997 in Document Control Number 9700071. Previous emission testing has demonstrated an emission rate well below 1 ton/year.
- b. Throughput of magnesium oxide in Emission Unit ESL03 shall not exceed 5 tons/hour and 43,800 tons/year.
- c. Emissions from the affected Epsom salt manufacturing process shall not exceed the following limits:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>Emissions (lb/mo)</u>	<u>(T/Yr)</u>	<u>Construction Permit No.</u>
Epsom Salt Dryer/Cooler	PM	2000	10.9	96030149 (original issuance)
Reactor	SO ₂	525	3.10	89060059
Reactor/Sulfuric Acid Mist	H ₂ SO ₄	1050	4.65	89060059

<u>Emission Unit</u>	<u>Pollutant</u>	<u>Emissions (lb/mo)</u>	<u>(T/Yr)</u>	<u>Construction Permit No.</u>
Sulfuric Acid usage in tons		2250 ton/mo	20,000	89060059
Reactor and Silo Bin Vent (BH-ES24) Combined	PM		3.0	95050010
Magnesium Oxide Transport System	PM	2400	13.4	02080010

These limits are based on the maximum rate.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations in (a) and the Dryer/Cooler in (c) were established in the original issuance of this permit and the limits from Construction Permits had the hourly values changed to monthly. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. [T1].

7.3.7 Testing Requirements

Testing requirements are not set for the affected Epsom salt manufacturing process. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.3.8 Monitoring Requirements

a. Compliance Assurance Monitoring (CAM) Requirements

The affected ES14 and ES 22 units (dryer/cooler and bulk loading operations) are subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources. The Permittee shall comply with the monitoring

requirements of the Compliance Assurance Monitoring (CAM) Plan described in Attachment 3, Tables 3B and 3C, pursuant to 40 CFR Part 64 as submitted in the Permittee's CAM plan application. At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment [40 CFR 64.7(a) and (b)].

- b. The baghouse (BH-ES14) on the dryer/cooler shall be equipped with a Triboflow unit or an equivalent type of device for measuring particle flow in a qualitative manner so that it can be used as an indicator of bag breakage.
- c. In the event of failure of the Triboflow unit the opacity of the dryer/cooler baghouse shall be read twice daily for six (6) minutes each time (Method 9)[See CAM plan secondary method if there are visible emissions].
- d. All other baghouses (dust collectors) that operate continuously and discharge outdoors shall have a visual reading for opacity twice daily (Method 9). The operator who performs the opacity reading need not be certified but must have some training on the difference between less than 10% opacity, and 20 and 30 percent. If the baghouse discharges inside a building the operator need only verify abnormal emissions since a Method 9 test cannot be done indoors. If a baghouse operates only intermittently (such as during loading), an opacity reading need only be done during loading.

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected Epsom salt manufacturing process and associated fuel combustion unit to demonstrate compliance with Condition 5.6.1, 7.1.3, 7.1.5, 7.1.6 and 7.1.8, pursuant to Section 39.5(7)(b) of the Act:

- a. Triboflow readings (continuous);
- b. Opacity readings (daily);
- c. Natural gas and fuel oil usage (scf or therms/month and gallons/month);
- d. Sulfur content of each shipment of fuel oil;
- e. Sulfuric acid mist, PM, NO_x, and CO emissions (lb/mo and aggregate annual); and
- f. Records for Compliance Assurance Monitoring (CAM) Requirements.

The Permittee shall maintain records of the monitoring data, monitor performance data, corrective actions taken, monitoring equipment maintenance, and other supporting information related to the monitoring requirements in Condition 7.3.8(a), as required by 40 CFR 64.9(b)(1).

7.3.10 Reporting Requirements

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of affected Epsom salt manufacturing process and associated fuel combustion unit 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:

- i. Emissions of PM from the affected Epsom salt manufacturing process in excess of the limits specified in Condition 7.3.6 within 30 days of such occurrence.
- ii. Operation of the affected Epsom salt manufacturing process or associated fuel combustion unit in excess of the limits specified in Condition 7.3.3 or 7.3.5 within 30 days of such occurrence.

b. Reporting of Compliance Assurance Monitoring (CAM)

The Permittee shall submit monitoring reports to the Illinois EPA in accordance with Condition 8.6.1 and shall include, at a minimum, the information required under Condition 8.6.1 and the following information:

- i. Summary information on the number, duration, and cause of excursions or exceedances, and the corrective actions taken [40 CFR 64.6(c)(3) and 64.9(a)(2)(i)]; and
- ii. Summary information on the number, duration, and cause for monitoring equipment downtime incidents, other than downtime associated with calibration checks [40 CFR 64.6(c)(3) and 64.9(a)(2)(ii)].

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to affected Epsom salt manufacturing process without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting

construction or modification of the source, as defined in 35 IAC 201.102:

The process may begin with either magnesium oxide or magnesium hydroxide.

7.3.12 Compliance Procedures

- a. Compliance with Conditions 7.3.3(c), (e) and (f) is addressed by the requirements of Condition 7.3.5(a) and (b), the monitoring requirements in Condition 7.3.8, the records required in Condition 7.3.9, and the reports required in Condition 7.3.10.
- b. Compliance with Condition 7.3.3(d) is addressed by the records and reports required in Conditions 7.3.9 and 7.3.10.
- c. Compliance with the CO emission limitation of Condition 7.3.3(g)(i) is addressed by the fuel records required in Condition 7.3.9(c), the reports required in Condition 7.3.10(), and emission calculations using the emission factor in USEPA's Compilation of Air Pollutant Emission Factors, AP-42, for uncontrolled CO emissions from a gas-fired boiler.
- d. Compliance with Condition 7.3.3(g)(iii) is addressed by the requirements of Condition 7.3.5(c) and the records and reports required in Conditions 7.3.9(c) and 7.3.10.
- e. Emissions from the boiler shall be calculated from the records required in Conditions 7.3.9(c) and the emission factors and formulas listed below:
 - i. A. Emission factors for the affected boiler when fired by natural gas:

Emission Factors	
<u>Pollutant</u>	<u>(lb/mmscf)</u>
VOM	5.5
PM	7.6
SO ₂	0.6
NO _x	100
CO	84

The emission factors (lb/mmscf) are for Natural Gas-Fired Small Boilers (<100 mmBtu/hr Heat Input) from AP-42 Section 1.4 (dated 3/98).

- B. Emission formula for the affected boiler when fired by natural gas:

(Boiler Emissions, lb) = (The Appropriate Emission Factor, lb/mmscf) x (Natural Gas Usage, mmscf)

- ii. A. Emission factors for the affected boiler when fired by distillate fuel oil:

<u>Pollutant</u>	<u>Emission Factors</u> <u>(lb/1,000 gal)</u>
VOM	0.2
PM	2
SO ₂	142(s)
NO _x	20
CO	5

The emission factors (lb/1000 gal) are for Distillate Oil Fired Small Boilers (<100 mmBtu/hr Heat Input) from AP-42 Section 1.3 (dated 9/98). Note: (S) is the Sulfur content of the distillate fuel oil (wt. %).

- B. Emission formula for the affected boiler when fired by distillate fuel oil:

(Boiler Emissions, lb) = (The Appropriate Emission Factor, lb/1,000 gal) x (Distillate Fuel Oil Consumed (1,000 gal))

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 _____ **Error! Bookmark not defined.** (the date of issuance of the proposed 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].

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 if applicable test methods are not specified by the applicable regulations or otherwise identified in the conditions of this permit.

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 Conditions 8.6.3 and 8.6.4.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

Reports summarizing required monitoring as specified in the conditions of this permit shall be submitted to the Illinois EPA

every six months as follows, unless more frequent submittal of such reports is required in Sections 5 or 7 of this permit [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 determinations of emissions and operation that are intended to be made, including sampling and monitoring locations;
- e. The test method(s) that 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. Unless otherwise specified in the particular provision of this permit or in the written instructions distributed by the Illinois EPA for particular reports, reports and notifications shall be sent to the Illinois EPA - Air Compliance Unit with a copy sent to the Illinois EPA - Air Regional Field Office.
- b. As of the date of issuance of this permit, the addresses of the offices that should generally be utilized for the submittal of reports and notifications are as follows:

- i. Illinois EPA - Air Compliance Unit

Illinois Environmental Protection Agency
Bureau of Air
Compliance & Enforcement Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276

- ii. Illinois EPA - Air Quality Planning Section

Illinois Environmental Protection Agency
Bureau of Air
Air Quality Planning Section (MC 39)
P.O. Box 19276
Springfield, Illinois 62794-9276

iii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

iv. USEPA Region 5 - Air Branch

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

- c. Permit applications should be addressed to the Air Permit Section. As of the date of issuance of this permit, the address of the Air Permit Section is as follows:

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

8.7 Title I Conditions

Notwithstanding the expiration date on the first page of this CAAPP permit, Title I conditions in this permit, which are identified by a T1, T1N, or T1R designation, remain in effect until such time as the Illinois EPA takes action to revise or terminate them in accordance with applicable procedures for action on Title I conditions. This is because these conditions either: (a) incorporate conditions of earlier permits that were issued by the Illinois EPA pursuant to authority that includes authority found in Title I of the CAA (T1 conditions), (b) were newly established in this CAAPP permit pursuant to authority that includes such Title I authority (T1N conditions), or (c) reflect a revision or combination of conditions established in this CAAPP permit (T1R conditions). (See also Condition 1.5.)

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.

9.1.2 In particular, this permit does not alter or affect the following [Section 39.5(7)(j)(iv) of the Act]:

- 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, pursuant to Section 39.5(7)(j) and (p) of the Act, 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, or 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 this permit provides for such continued operation consistent with the Act and applicable Illinois Pollution Control Board regulations [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 there under.

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 as may be required by law and in accordance with constitutional limitations, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Sections 4 and 39.5(7)(a) and (p)(ii) of the Act]:

- 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 applicable requirements; 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 regulated 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. At 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 including any logs, plans, procedures, or instructions required to be kept 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, Air Quality Planning 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 Unit, 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 and applicable regulations [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as Attachment 1 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 [Section 39.5(7)(k) of the Act]:

- 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.

Note: For this purpose, emergency means a situation arising from sudden and reasonably unforeseeable events beyond the control of the source, as further defined by Section 39.5(7)(k)(iv) of the Act.

- 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 [Section 39.5(7)(k)(iv) of the Act].

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, revoked, reopened and reissued, or terminated for cause in accordance with applicable provisions of Section 39.5 of the Act. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [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 that inaccurate statements were made in establishing the emission standards or limitations, or other terms or conditions of this permit.

- d. The Illinois EPA or USEPA determines that this permit must be revised or revoked to ensure compliance with the applicable requirements.

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 and reissuance under Section 39.5(15) of the Act, pursuant to Sections 39.5(5)(e) and (i) 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. In the event of a challenge to any portion of the permit, other portions of the permit may continue to be in effect. Should any portion of this permit be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected and 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

Upon the expiration of this permit, if the source is operated, it shall be deemed to be operating without a permit unless a timely and complete CAAPP application has been submitted for renewal of this permit. However, if a timely and complete application to renew this CAAPP permit has been submitted, the terms and all conditions of this CAAPP permit will remain in effect until the issuance of a renewal permit [Section 39.5(5)(l) and (o) of the Act].

Note: Pursuant to Sections 39.5(5)(h) and (n) of the Act, upon submittal of a timely and complete renewal application, the permitted source may continue to operate until final action is taken by the Illinois EPA on the renewal application, provided, however, that this protection shall cease if the applicant fails to submit any additional information necessary to evaluate or take final action on the renewal

application as requested by the Illinois EPA in writing. For a renewal application to be timely, it must be submitted no later than 9 months prior to the date of permit expiration.

9.15 General Authority for the Terms and Conditions of this Permit

The authority for terms and conditions of this permit that do not include a citation for their authority is Section 39.5(7)(a) of the Act, which provides that the Illinois EPA shall include such provisions in a CAAPP permit as are necessary to accomplish the purposes of the Act and to assure compliance with all applicable requirements. Section 39.5(7)(a) of the Act is also another basis of authority for terms and conditions of this permit that do include a specific citation for their authority.

Note: This condition is included in this permit pursuant to Section 39.5(7)(n) of the Act.

10.0 ATTACHMENTS

Attachment 1 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: _____

Attachment 2 Emissions of Particulate Matter from Process Emission Units

- a. New Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972 [35 IAC 212.321].
- i. 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 which, 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)].
- ii. 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,

A. Up to process weight rates of 408 Mg/hr (450 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.214	2.54
B	0.534	0.534

B. For process weight rate greater than or equal to 408 Mg/hr (450 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	11.42	24.8
B	0.16	0.16

iii. 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
<u>Mg/hr</u>	<u>kg/hr</u>	<u>T/hr</u>	<u>lb/hr</u>
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	7.1	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

iv. For process weight rates of less than 100 pounds per hour, the allowable rate is 0.5 pounds per hour [35 IAC 266.110].

b. Existing Process Emission Units for Which Construction or Modification Prior to April 14, 1972 [35 IAC 212.322].

i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 [35 IAC 212.322(a)].

ii. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.322(b)]:

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

where:

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

A. Up to process weight rates up to 27.2 Mg/hr (30 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.985	4.10
B	0.67	0.67
C	0	0

B. For process weight rate in excess of 27.2 Mg/hr (30 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	25.21	55.0
B	0.11	0.11
C	- 18.4	- 40.0

iii. Limits for Process Emission Units For Which Construction or Modification Commenced Prior to April 14, 1972 [35 IAC 212.322(c)]:

Metric P <u>Mg/hr</u>	E <u>kg/hr</u>	English P <u>T/hr</u>	E <u>lb/hr</u>
0.05	0.27	0.05	0.55
0.1	0.42	0.10	0.87
0.2	0.68	0.2	1.40
0.3	0.89	0.30	1.83
0.4	1.07	0.40	2.22
0.5	1.25	0.50	2.58
0.7	1.56	0.75	3.38
0.9	1.85	1.00	4.10
1.8	2.9	2.00	6.52
2.7	3.9	3.00	8.56
3.6	4.7	4.00	10.40
4.5	5.4	5.00	12.00
9.0	8.7	10.00	19.20
13.0	11.1	15.00	25.20
18.0	13.8	20.00	30.50
23.0	16.2	25.00	35.40
27.2	18.15	30.00	40.00
32.0	18.8	35.00	41.30
36.0	19.3	40.00	42.50
41.0	19.8	45.00	43.60
45.0	20.2	50.00	44.60
90.0	23.2	100.00	51.20
140.0	25.3	150.00	55.40
180.0	26.5	200.00	58.60
230.0	27.7	250.00	61.00
270.0	28.5	300.00	63.10
320.0	29.4	350.00	64.90
360.0	30.0	400.00	66.20
400.0	30.6	450.00	67.70
454.0	31.3	500.00	69.00

iv. For process weight rates of less than 100 pounds per hour, the allowable rate is 0.5 pounds per hour [35 IAC 266.110].

Attachment 3 Compliance Assurance Monitoring (CAM) Plans

Table 3A. PSEU Designation:	Product Cooler (MA-06)
Significant Emission Unit Section:	7.2
Pollutant:	PM/PM ₁₀ /PM _{2.5}

Indicators:	#1: Visible Emissions	#2: Opacity
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GENERAL CRITERIA

THE MONITORING APPROACH USED TO MEASURE THE INDICATORS:	Method 22 Twice Daily	If visible emissions present then perform Method 9
THE INDICATOR RANGE WHICH PROVIDES A REASONABLE ASSURANCE OF COMPLIANCE:	No visible emissions	Opacity less than 20%
QUALITY IMPROVEMENT PLAN (QIP) THRESHOLD LEVELS:	N/A	N/A

PERFORMANCE CRITERIA

THE SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA:	Follow Method 22 practices	Follow Method 9 practices
VERIFICATION PROCEDURES TO CONFIRM THE OPERATIONAL STATUS OF THE MONITORING:	Follow Method 22 practices	Follow Method 9 practices
QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES THAT ENSURE THE VALIDITY OF THE DATA:	Follow Method 22 practices	Follow Method 9 practices
THE MONITORING FREQUENCY:	Twice daily	As needed if visible emissions are present
THE DATA COLLECTION PROCEDURES THAT WILL BE USED:	Log book	Log book
THE DATA AVERAGING PERIOD FOR DETERMINING WHETHER AN EXCURSION OR EXCEEDANCE HAS OCCURRED:	Follow Method 22 practices	Follow Method 9 practices

Table 3B. PSEU Designation:	Dryer/Cooler (ES14)
Significant Emission Unit Section:	7.3
Pollutant:	PM/PM ₁₀ /PM _{2.5}

Indicators:	#1: Visible Emissions	#2: Opacity
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GENERAL CRITERIA

THE MONITORING APPROACH USED TO MEASURE THE INDICATORS:	Method 22 Twice Daily	If visible emissions present then perform Method 9
THE INDICATOR RANGE WHICH PROVIDES A REASONABLE ASSURANCE OF COMPLIANCE:	No visible emissions	Opacity less than 10%
QUALITY IMPROVEMENT PLAN (QIP) THRESHOLD LEVELS:	N/A	N/A

PERFORMANCE CRITERIA

THE SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA:	Follow Method 22 practices	Follow Method 9 practices
VERIFICATION PROCEDURES TO CONFIRM THE OPERATIONAL STATUS OF THE MONITORING:	Follow Method 22 practices	Follow Method 9 practices
QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES THAT ENSURE THE VALIDITY OF THE DATA:	Follow Method 22 practices	Follow Method 9 practices
THE MONITORING FREQUENCY:	Twice daily	As needed if visible emissions are present
THE DATA COLLECTION PROCEDURES THAT WILL BE USED:	Log book	Log book
THE DATA AVERAGING PERIOD FOR DETERMINING WHETHER AN EXCURSION OR EXCEEDANCE HAS OCCURRED:	Follow Method 22 practices	Follow Method 9 practices

Table 3C. PSEU Designation:	Bulk Loading (ES22)
Significant Emission Unit Section:	7.3
Pollutant:	PM/PM ₁₀ /PM _{2.5}

Indicators:	#1: Visible Emissions	#2: Opacity
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GENERAL CRITERIA

THE MONITORING APPROACH USED TO MEASURE THE INDICATORS:	Method 22 Twice Daily	If visible emissions present then perform Method 9
THE INDICATOR RANGE WHICH PROVIDES A REASONABLE ASSURANCE OF COMPLIANCE:	No visible emissions	Opacity less than 10%
QUALITY IMPROVEMENT PLAN (QIP) THRESHOLD LEVELS:	N/A	N/A

PERFORMANCE CRITERIA

THE SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA:	Follow Method 22 practices	Follow Method 9 practices
VERIFICATION PROCEDURES TO CONFIRM THE OPERATIONAL STATUS OF THE MONITORING:	Follow Method 22 practices	Follow Method 9 practices
QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES THAT ENSURE THE VALIDITY OF THE DATA:	Follow Method 22 practices	Follow Method 9 practices
THE MONITORING FREQUENCY:	Twice daily	As needed if visible emissions are present
THE DATA COLLECTION PROCEDURES THAT WILL BE USED:	Log book	Log book
THE DATA AVERAGING PERIOD FOR DETERMINING WHETHER AN EXCURSION OR EXCEEDANCE HAS OCCURRED:	Follow Method 22 practices	Follow Method 9 practices

Attachment 4 Guidance

The Illinois has prepared guidance for sources on the Clean Air Act Permit Program (CAAPP) that is available on the Internet site maintained by the Illinois EPA, www.epa.state.il.us. This guidance includes instructions on applying for a revision or renewal of the CAAPP permit.

Guidance On Revising A CAAPP Permit:

www.epa.state.il.us/air/caapp/caapp-revising.pdf

Guidance On Renewing A CAAPP Permit:

www.epa.state.il.us/air/caapp/caapp-renewing.pdf

The application forms prepared by the Illinois EPA for the CAAPP are also available from the Illinois EPA's Internet site:

www.epa.state.il.us/air/caapp/index.html

These CAAPP application forms should also be used by a CAAPP source when it applies for a construction permit. For this purpose, the appropriate CAAPP application forms and other supporting information, should be accompanied by a completed Application For A Construction Permit form (199-CAAPP) and Fee Determination for Construction Permit Application form (197-FEE):

www.epa.state.il.us/air/caapp/199-caapp.pdf

www.epa.state.il.us/air/permits/197-fee.pdf

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