217/782-2113

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

PERMITTEE:

Radiac Abrasives
Attn: David Pryor, President
1015 South College Avenue
Salem, Illinois 62881

I.D. No.: 121045AAF
Application No.: 95090063

Date Received: May 31, 2005
Date Issued: April 28, 2011
Expiration Date[1]: April 28, 2016

Operation of: Grinding Wheel Manufacturing Facility
Source Location: 1015 South College Avenue, Salem, Marion County, 62881
Responsible Official: David Pryor, President

This permit is hereby granted to the above-designated Permittee to OPERATE a grinding wheel manufacturing facility, 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 Ross Cooper at 217/782-2113.

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

ECB:RWC:jws

cc: Illinois EPA, FOS, Region 3
CES
Lotus Notes

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

TABLE OF CONTENTS

		Page
1.0	**INTRODUCTION**	4
	1.1 Source Identification	
	1.2 Owner/Parent Company	
	1.3 Operator	
	1.4 Source Description	
	1.5 Title I Conditions	
2.0	**LIST OF ABBREVIATIONS AND ACRONYMS COMMONLY USED**	6
3.0	**CONDITIONS FOR INSIGNIFICANT ACTIVITIES**	7
	3.1 Identification of Insignificant Activities	
	3.2 Compliance with Applicable Requirements	
	3.3 Addition of Insignificant Activities	
4.0	**SIGNIFICANT EMISSION UNITS AT THIS SOURCE**	9
5.0	**OVERALL SOURCE CONDITIONS**	11
	5.1 Applicability of Clean Air Act Permit Program (CAAPP)	
	5.2 Area Designation	
	5.3 Source-Wide Applicable Provisions and Regulations	
	5.4 Source-Wide Non-Applicability of Regulations of Concern	
	5.5 Source-Wide Control Requirements and Work Practices	
	5.6 Source-Wide Production and Emission Limitations	
	5.7 Source-Wide Testing Requirements	
	5.8 Source-Wide Monitoring Requirements	
	5.9 Source-Wide Recordkeeping Requirements	
	5.10 Source-Wide Reporting Requirements	
	5.11 Source-Wide Operational Flexibility/Anticipated Operating Scenarios	
	5.12 Source-Wide Compliance Procedures	
6.0	**CONDITIONS FOR EMISSIONS CONTROL PROGRAMS**	17
7.0	**UNIT SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS**	18
	7.1 Product Curing Kilns and Ovens	
8.0	**GENERAL PERMIT CONDITIONS**	45
	8.1 Permit Shield	
	8.2 Applicability of Title IV Requirements	
	8.3 Emissions Trading Programs	
	8.4 Operational Flexibility/Anticipated Operating Scenarios	
	8.5 Testing Procedures	

Page

8.6 Reporting Requirements
8.7 Title I Conditions

9.0 STANDARD PERMIT CONDITIONS 50

9.1 Effect of Permit
9.2 General Obligations of Permittee
9.3 Obligation to Allow Illinois EPA Surveillance
9.4 Obligation to Comply with Other Requirements
9.5 Liability
9.6 Recordkeeping
9.7 Annual Emissions Report
9.8 Requirements for Compliance Certification
9.9 Certification
9.10 Defense to Enforcement Actions
9.11 Permanent Shutdown
9.12 Reopening and Reissuing Permit for Cause
9.13 Severability Clause
9.14 Permit Expiration and Renewal
9.15 General Authority for the Terms and Conditions of this Permit

10.0 ATTACHMENTS

1 Example Certification by a Responsible Official 1-1
2 Emissions of Particulate Matter from Process Emission Units 2-1
3 Compliance Assurance Monitoring (CAM) Plan 3-1
4 Guidance 4-1

1.0 INTRODUCTION

1.1 Source Identification

Radiac Abrasives
1015 South College Avenue
Salem, Illinois 62881
618/548-4200

I.D. No.: 121045AAF
County: Marion County
Standard Industrial Classification: 3291, Abrasive Products

1.2 Owner/Parent Company

Tyrolit Schleifmettelwerke Swarovski K.G.
Swarovovskistrasse 8
6130 Schwaz, Austria

1.3 Operator

Radiac Abrasives
1015 South College Avenue
Salem, Illinois 62881

Dan Paddick, Director of Network Engineering
618/548-4200

1.4 Source Description

The source manufactures grinding wheels for commercial and noncommercial applications. The manufacturing process is comprised of raw materials receiving and inspection, abrasive grain mixing (dry type vitreous, wet type vitreous, and organic mixes), mix drying, wheel molding, wheel drying, wheel bonding, wheel firing, finishing and shipping.

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
ERMS	Emissions Reduction Market System
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
MACT	Maximum Achievable Control Technology
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
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:

Resin Storage Bin
Urea Formaldehyde Storage Tank
Sulfur Melting Pots

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:

None

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

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

Furnaces used for melting metals, other than beryllium, with a brim full capacity of less than 450 cubic inches by volume [35 IAC 201.210(a)(6)].

Die casting machines where a metal or plastic is formed under pressure in a die [35 IAC 201.210(a)(12)].

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)].

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
Kiln #1 (401)	3.0 mmBtu/hr Product Kiln[1]	1966	None
Kiln #5 (404)	3.0 mmBtu/hr Product Kiln[1]	09/28/81	None
Kiln #11 (411)	3.0 mmBtu/hr Product Kiln[1]	12/01/86	None
Kiln #12 (412)	3.0 mmBtu/hr Product Kiln[1]	12/01/86	None
Kiln #13 (414)	3.0 mmBtu/hr Product Kiln[1]	12/01/86	None
Kiln #14 (415)	3.0 mmBtu/hr Product Kiln[1]	06/13/88	None
Kiln #15 (416)	3.0 mmBtu/hr Product Kiln[1]	06/13/88	None
Kiln #16 (417)	3.0 mmBtu/hr Product Kiln[1]	06/13/88	None
Kiln #17 (418)	3.0 mmBtu/hr Product Kiln[1]	09/01/94	None
Kiln #18 (419)	3.0 mmBtu/hr Product Kiln[1]	03/97	None
Kiln #19 (420)	15.0 mmBtu/hr Product Kiln[1]	06/98	Thermal Oxidizer TO 1
Kiln #20 (421)	0.25 mmBtu/hr Product Kiln[1]	07/08	Thermal Oxidizer TO 1
Kiln #22 (423)	6 mmBtu/hr Product Kiln[1]	2010	None
Kiln #23 (424)	4 mmBtu/hr Product Kiln[1]	2010	None
Kiln #24 (425)	4 mmBtu/hr Product Kiln[1]	2010	None
Kiln #25 (426)	1 mmBtu/hr Product Kiln[1]	2010	None
Kiln #26 (427)	4 mmBtu/hr Product Kiln[1]	2010	None
Oven #1 (452)	0.5 mmBtu/hr Product Curing Oven[1]	1966	None
Oven #2 (453)	0.5 mmBtu/hr Product Curing Oven[1]	1966	None
Oven #3 (451)	1.0 mmBtu/hr Product Curing Oven[1]	1966	None
Oven #4 (455)	0.4 mmBtu/hr Product Curing Oven[1]	1966	None
Oven #5 (468)	0.5 mmBtu/hr Product Curing Oven[1]	08/01/79	None
Oven #6 (467)	0.5 mmBtu/hr Product Curing Oven[1]	1966	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Oven #9 (456)	1.0 mmBtu/hr Product Curing Oven[1]	08/01/79	None
Oven #10 (461)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #11 (462)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #12 (463)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #13 (464)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #14 (465)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #15 (466)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #17 (443/444)	0.8 mmBtu/hr Product Curing Oven[1]	12/01/86	None
Oven #18 (445/446)	0.8 mmBtu/hr Product Curing Oven[1]	12/01/86	None
Oven #19 (447/448)	0.8 mmBtu/hr Product Curing Oven[1]	12/01/86	None
Oven #23 (439/440)	0.8 mmBtu/hr Product Curing Oven[1]	06/13/88	None
Oven #26 (470/471)	0.8 mmBtu/hr Product Curing Oven[1]	2010	None
Oven #27 (521/522/523)	1.2 mmBtu/hr Product Curing Oven[1]	2010	None
Oven #28 (472/473/474/475)	1.6 mmBtu/hr Product Curing Oven[1]	2010	None
Oven #29 (520)	1.5 mmBtu/hr Product Curing Oven[1]	2010	None

1 Natural Gas-Fired

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_{10}, VOM, and HAP 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, NO_2, ozone, $PM_{2.5}$, PM_{10}, SO_2).

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 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.

5.3.4 Risk Management Plan (RMP)

a. This stationary source, as defined in 40 CFR 68.3, is subject to 40 CFR Part 68, the federal regulations for Chemical Accident Prevention. This condition is imposed in this permit pursuant to 40 CFR 68.215(a)(1).

b. The owner or operator of a stationary source shall revise and update the RMP submitted pursuant to 40 CFR 68.150, as specified in 40 CFR 68.190.

5.3.5 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.

5.3.6 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)	180.0
Sulfur Dioxide (SO_2)	0.16
Particulate Matter (PM)	87.29
Nitrogen Oxides (NO_x)	27.42
HAP, not included in VOM or PM	-
Total	294.88

5.6.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

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.

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.

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.

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.

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 Product Curing Kilns and Ovens

7.1.1 Description

The kilns and ovens are process emission units used for vitreous and organic bonding of abrasive wheels. The kilns and ovens are fired by natural gas.

The thermal oxidizer for Kiln #19 was previously permitted as an odor control device, however with the issuance of Permit #08090053 on June 30, 2009 the thermal oxidizer is now considered a control device for emissions of organic material.

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
Kiln #1 (401)	3.0 mmBtu/hr Product Kiln[1,2]	1966	None
Kiln #5 (404)	3.0 mmBtu/hr Product Kiln[1]	09/28/81	None
Kiln #11 (411)	3.0 mmBtu/hr Product Kiln[1]	12/01/86	None
Kiln #12 (412)	3.0 mmBtu/hr Product Kiln[1]	12/01/86	None
Kiln #13 (414)	3.0 mmBtu/hr Product Kiln[1]	12/01/86	None
Kiln #14 (415)	3.0 mmBtu/hr Product Kiln[1]	06/13/88	None
Kiln #15 (416)	3.0 mmBtu/hr Product Kiln[1]	06/13/88	None
Kiln #16 (417)	3.0 mmBtu/hr Product Kiln[1]	06/13/88	None
Kiln #17 (418)	3.0 mmBtu/hr Product Kiln[1]	09/01/94	None
Kiln #18 (419)	3.0 mmBtu/hr Product Kiln[1]	03/97	None
Kiln #19 (420)	15.0 mmBtu/hr Product Kiln[1]	06/98	Thermal Oxidizer TO 1
Kiln #20 (421)	0.25 mmBtu/hr Product Kiln[1]	07/08	Thermal Oxidizer TO 1
Kiln #22 (423)	6 mmBtu/hr Product Kiln[1]	2010	None
Kiln #23 (424)	4 mmBtu/hr Product Kiln[1]	2010	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Kiln #24 (425)	4 mmBtu/hr Product Kiln[1]	2010	None
Kiln #25 (426)	1 mmBtu/hr Product Kiln[1]	2010	None
Kiln #26 (427)	4 mmBtu/hr Product Kiln[1]	2010	None
Oven #1 (452)	0.5 mmBtu/hr Product Curing Oven[1,2]	1966	None
Oven #2 (453)	0.5 mmBtu/hr Product Curing Oven[1,2]	1966	None
Oven #3 (451)	1.0 mmBtu/hr Product Curing Oven[1,2]	1966	None
Oven #4 (455)	0.4 mmBtu/hr Product Curing Oven[1,2]	1966	None
Oven #5 (468)	0.5 mmBtu/hr Product Curing Oven[1]	08/01/79	None
Oven #6 (467)	0.5 mmBtu/hr Product Curing Oven[1,2]	1966	None
Oven #9 (456)	1.0 mmBtu/hr Product Curing Oven[1]	08/01/79	None
Oven #10 (461)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #11 (462)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #12 (463)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #13 (464)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #14 (465)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #15 (466)	0.5 mmBtu/hr Product Curing Oven[1]	09/28/81	None
Oven #17 (443/444)	0.8 mmBtu/hr Product Curing Oven[1]	12/01/86	None
Oven #18 (445/446)	0.8 mmBtu/hr Product Curing Oven[1]	12/01/86	None
Oven #19 (447/448)	0.8 mmBtu/hr Product Curing Oven[1]	12/01/86	None
Oven #23 (439/440)	0.8 mmBtu/hr Product Curing Oven[1]	06/13/88	None
Oven #26 (470/471)	0.8 mmBtu/hr Product Curing Oven[1]	2010	None
Oven #27 (521/522/523)	1.2 mmBtu/hr Product Curing Oven[1]	2010	None
Oven #28 (472/473/474/475)	1.6 mmBtu/hr Product Curing Oven[1]	2010	None
Oven #29 (520)	1.5 mmBtu/hr Product Curing Oven[1]	2010	None

1 Natural gas-fired

2 Affected unit is considered an existing unit constructed prior to April 14, 1972

7.1.3 Applicable Provisions and Regulations

a. The “affected kilns and ovens” for the purpose of these unit-specific conditions, are kilns and ovens described in Conditions 7.1.1 and 7.1.2.

b. Pursuant to 35 IAC 212.123,

i. 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.

ii. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 1000 ft radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.

c. Pursuant to 35 IAC 212.301, 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 toward the zenith at a point beyond the property line of the source.

d. i. Pursuant to 35 IAC 212.321, 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 determined by using the equation:

$$E = 2.54\ (P)^{0.534}$$

where

P = Process weight rate in T/hr

E = Allowable emission rate in lbs/hr

ii. Pursuant to 35 IAC 212.322, 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 determined by using the equation:

$$E = 4.1\ (P)^{0.67}$$

P = Process weight rate in T/hr
E = Allowable emission rate in lbs/hr

e. Pursuant to 35 IAC 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.

f. i. Pursuant to 35 IAC 215.301, no person shall cause or allow the discharge of more than 8 lbs/hr of organic material into the atmosphere from any emission source, except as provided in Sections 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of this Subpart shall apply only to photochemically reactive material.

ii. Pursuant to 35 IAC 215.302, emissions of organic material in excess of those permitted by Section 215.301 are allowable if such emissions are controlled by one of the following methods:

A. Flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water; or

B. A vapor recovery system which adsorbs and/or condenses at least 85 percent of the total uncontrolled organic material that would otherwise be emitted to the atmosphere; or

C. Any other air pollution control equipment approved by the Agency capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere.

7.1.4 Non-Applicability of Regulations of Concern

a. i. The affected kilns and ovens are not subject to the New Source Performance Standards (NSPS) for Small Industrial- Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc, because the affected kilns and ovens are by definition not steam generating units pursuant to 40 CFR 60.41(c).

ii. The affected kilns and ovens are not subject to the New Source Performance Standards (NSPS) for Calciners and Dryers in Mineral Industries, 40 CFR Part 60, Subpart UUU, because the affected kilns and ovens are not by definition calciners pursuant to 40 CFR 60.731.

b. The affected kilns and ovens are not subject to 35 IAC 216.121 because the affected kilns and ovens are not fuel combustion units, as defined by 35 IAC 211.2470.

c. The affected kilns and ovens are not subject to 35 IAC 217.141 because the affected kilns and ovens are not fuel combustion units, as defined by 35 IAC 211.2470.

d. i. The affected kilns and ovens other than Kiln #19 are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected kilns and ovens do not use an add-on control device to achieve compliance with an emission limitation or standard.

ii. The affected Kiln #19 is not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources for pollutants other than VOM, because the affected Kiln #19 does not use an add-on control device to achieve compliance with an emission limitation or standard for those pollutants.

7.1.5 Control Requirements and Work Practices

a. i. The Permittee shall follow good operating practices for the affected kilns and ovens, including periodic inspection, routine maintenance and prompt repair of defects.

ii. The Permittee shall develop and implement written work procedures for the existing affected kilns as needed to ensure it processes loads of material in the affected kilns in accordance with Condition 7.1.3(f), 7.1.5(d) [T1].

b. Natural gas shall be the only fuel fired in the affected kilns, ovens, and thermal oxidizer.

c. The rated heat input capacity of the burners for affected Kiln #19 and thermal oxidizer shall not exceed 23 million Btu/hour, total. The rated heat input capacity of the burner in Kiln #20 shall not exceed 1 million Btu/hour. These limits were established in Permit 08090053 [T1].

d. Operating requirements for the affected kilns as established in Permit 08090053 [T1]:

i. A. For processing of grinding wheels, the Permittee shall presume that all loads of grinding wheels that contain more than 100 pounds of volatile organic material have the potential to emit more than 8.0 pounds of organic material in an hour and process such loads in a kiln with a control device operating to comply with 35 IAC 215.301.

B. For processing of grinding segments, the Permittee shall presume that all loads of abrasive segments that contain more than 75.7 pounds of volatile organic material have the potential to emit more than 8.0 pounds of organic material in an hour and process such loads in a kiln with a control device operating to comply with 35 IAC 215.301.

C. For processing of loads of grinding wheels that contain between 25 and 100 pounds of volatile organic material and loads of abrasive segments that contain between 18.9 and 75.7 pounds of volatile organic material, the Permittee shall only process such loads in a kiln that is not equipped and operated with a control device to comply with 35 IAC 215.301 <u>if</u> such loads are first subjected to a low-temperature cycle prior to the curing cycle and the maximum temperature of the curing cycle does not exceed 2400°F. The low temperature cycle shall consist of gradual heating of the load over a period of at least 18 hours to a temperature of no more than 300°F.

D. For the purpose of determining the amount of volatile organic material contained in loads of material processed in the affected kilns, the volatile organic material content shall consist of those organic constituents in the raw materials in the load, such as the porosity media, that have the potential to be emitted as organic material when the load is being processed.

ii. A. I. Until emission testing is performed in accordance with Condition 7.1.7(c)(iv), when material is being processed in Kiln #19, the combustion chamber temperature of the thermal oxidizer shall be maintained at least at 900°F, hourly average. See also Condition 7.1.11.

II. The combustion chamber temperature of the thermal oxidizer, hourly average, shall be no lower than the temperature at which the most recent emission testing conducted in accordance with Condition 7 7.1.7(c)(iv)demonstrates that the afterburner would comply with 35 IAC 215.301. See also Condition 7.1.11.

B. The combustion chamber of the thermal oxidizer shall be preheated to the manufacturer's recommended temperature or a temperature that is consistent with the most recent emission test in which compliance was demonstrated prior to starting operation of a kiln controlled by the thermal oxidizer.

C. Notwithstanding the above, for the purpose of evaluation of the affected afterburner and further emission testing, the Permittee may operate the afterburner at a lower combustion chamber temperature in accordance with a detailed plan describing the evaluation and testing program submitted to and approved by the Illinois EPA. See also Condition 7.1.11.

7.1.6 <u>Production and Emission Limitations</u>

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected kilns and ovens are subject to the following:

a. i. The emissions of NSR pollutants other than VOM from this plant shall each not exceed the limits in Condition 5.6.1 of the CAAPP Permit for the plant or, if not limited by Condition 5.5.1, 9 pounds per hour and 40 tons per year [T1].

ii. The production of affected Kiln #20 shall not exceed 17.5 tons per year, determined as cured product [T1].

iii. The above limitations were established in Permit 08090053, pursuant to PSD. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major

source or major modification pursuant to Title I of the CAA, specifically the federal rules for PSD [T1].

b. i. A. This permit is issued based upon a minimal hourly emission rate and negligible annual emissions (less than 0.1 ton/year) of particulate matter, volatile organic material, carbon monoxide, sulfur dioxide, and nitrogen oxides from affected Ovens #17, #18, and #19 [T1].

B. Emissions of nitrogen oxides from affected Oven #23 shall not exceed 0.7 ton/year [T1].

C. The above limitations were established in Permit 86090028, pursuant to PSD. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for PSD [T1].

ii. A. I. Emissions of PM from affected Kiln #5 shall not exceed 3.15 tons/year, combined.

II. The above limitations were established in Permit 95090063, pursuant to PSD. [T1].

B. I. Emissions of PM from affected Kilns #11 through #18 shall not exceed 9.20 tons/year, combined [T1].

II. The above limitations were established in Permit 95090063, pursuant to PSD. [T1].

iii. A. I. Emissions of NO_x from affected Kilns #14, #15, and #16 shall not exceed 0.33 tons per month and 3.94 tons per year [T1].

II. Emissions of NO_x from affected Kilns #17 shall not exceed 0.30 tons per month and 1.31 tons per year [T1].

III. Emissions of NO_x from affected Kilns #18 shall not exceed 0.30 tons per month and 1.31 tons per year [T1].

B. The above limitations were established in Permit 95090063, pursuant to PSD. [T1].

iv. A. Emissions from the affected Kiln #19 and thermal oxidizer shall not exceed the following limits [T1]:

Pollutant	Emissions (lb/hr)	Emissions (ton/year)
PM	0.30	1.29
NO_x	2.77	12.10
CO	0.66	2.90

B. The above limitations were established in Permit 98050016, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD) [T1].

c. i. A. The total rated heat input capacity of the burners of Kiln #22~#25 and Oven #26~#29 shall not exceed 20.1 million Btu/hour [T1].

B. The rated heat input capacity of the burners in an individual Kiln #22~#25 or Oven #26~#29 shall not exceed 6 million Btu/hour [T1].

C. With the expansion authorized by this permit, the plant's production of products whose formulations contain significant amounts of organic porosity media ((i.e., products whose raw material formulations contain 1.0 percent or more by weight of naphthalene or other similar organic materials that are used to create porosity in the finished product, which are released as organic material emissions during the manufacturing process) shall not exceed the following limits:

I. Total production of such products shall not exceed 2000 tons/month and 10,500 tons/year [T1].

II. Production of such products for which emissions of organic material from curing are not controlled by an afterburner, e.g., products cured in affected kilns and existing box kilns, shall not exceed 600 tons/month and 3200 tons/year [T1].

III. With the expansion authorized by this permit, the emissions of volatile organic material (VOM) from the plant shall not exceed 200 tons per year [T1].

D. Particulate matter emissions of Kiln #22~#25 and Oven #26~#29 shall not exceed the following limits:

Emission Unit	Limit	
	Lb/hr	Ton/yr
Kiln #22 (423)	0.90	3.9
Kiln #23 (424)	0.88	3.85
Kiln #24 (425)	0.88	3.85
Kiln #25 (426)	0.86	3.8
Oven #26 (470/471)	1.15	5.00
Oven #27 (521/522/523)	1.15	5.00
Oven #28 (472/473/474/475)	1.15	5.00
Oven #29 (520)	1.15	5.00
		35.6

E. I. The burners of Kiln #22~#25 and Oven #26~#29 shall be designed and maintained to emit no more than 0.1 lb of NO_x/million Btu and 0.084 lb of CO/million Btu.

II. The annual emissions of NO_x and CO from Kiln #22~#25 and Oven #26~#29, in total, shall not exceed 7.25 and 8.63 tons, respectively.

ii. The above limitations were established in Permit 10040015, pursuant to PSD. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for PSD [T1].

d. Compliance with annual limits in Conditions 7.1.6(a) and (b) above 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].

e. i. The total rated heat input capacity of the burners in the Kiln #26 shall not exceed 4 million Btu/hour [T1].

ii. Particulate matter emissions from Kiln #26 shall not exceed 0.88 pounds/hour and 3.67 tons/year [T1].

iii. The burners in Kiln #26 shall be designed and maintained to emit no more than 0.1 lb of NOx/million Btu and 0.084 lb of CO/million Btu [T1].

iv. The annual emissions of NOx and CO from the Kiln #26 shall not exceed 1.72 and 1.44 tons, respectively [T1].

v. With the additional Kiln #26 authorized by this permit, the plant’s production of products whose formulations contain significant amounts of organic

porosity media ((i.e., products whose raw material formulations contain 1.0 percent or more by weight of naphthalene or other similar organic materials that are used to create porosity in the finished product, which are released as organic material emissions during the manufacturing process) shall not exceed the following limits:

i. Total production of such products shall not exceed 2000 tons/month and 10,500 tons/year.

ii. Production of such products for which emissions of organic material from curing are not controlled by an afterburner, e.g., products cured in the affected kiln and existing box kilns, shall not exceed 600 tons/month and 3200 tons/year.

Note: These limits are the same as the limits established in Construction Permit #10040015 and Condition 7.1.6(c)(i)(C), which authorized a plant expansion, including the addition of four similar kilns.

vi. 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].

vii. The above limitations were established in Permit 10080036, pursuant to PSD. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for PSD [T1].

7.1.7 Testing Requirements

a. i. Upon written request by the Illinois EPA, the Permittee shall have the opacity of the exhaust from the affected kiln(s) and ovens(s) tested during representative operating conditions as determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below, pursuant to Section 39.5(7)(d) of the Act.

ii. Such testing shall be conducted for specific engine(s) within 70 calendar days of the request, or on the date kilns and ovens(s) next operates, or on the date agreed upon by the Illinois EPA, whichever is later.

iii. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages)

unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 10.0 percent.

iv. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).

v. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.

vi. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

vii. The Permittee shall submit a written report for this testing within 15 days of the date of testing. This report shall include:

A. Date and time of testing.

B. Name and employer of qualified observer.

C. Copy of current certification.

D. Description of observation conditions.

E. Description of kilns and ovens' operating conditions.

F. Raw data.

G. Opacity determinations.

H. Conclusions.

b. i. Upon written request by the Illinois EPA, the Permittee shall have the particulate matter of the exhaust from the affected kiln(s) and ovens(s) tested during representative operating conditions, as further specified below, pursuant to Section 39.5(7)(d) of the Act.

ii. Such testing shall be conducted for specific kiln(s) and ovens (s) within 70 calendar days of the request, or on the date kiln(s) and oven(s) next operates, or on the date agreed upon by the Illinois EPA, whichever is later.

iii. Measurement of particulate matter emissions shall be in accordance with the procedures of 35 IAC 212.110, below:

A. Measurement of particulate matter emissions from stationary emission units shall be conducted in accordance with 40 CFR Part 60, Appendix A, Methods 5, 5A, 5D, or 5E, as incorporated by reference in 35 IAC 212.113.

B. The volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4, incorporated by reference in 35 IAC 212.113.

C. Such test results shall be submitted to the Agency within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Agency.

I. The Permittee shall submit the test results in a written report which shall include:

Date and time of testing.

Name and employer testing service.

Raw data.

Particulate matter emissions.

Conclusions.

D. A person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Agency of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Agency. Such notification shall state the specific test methods from this Section that will be used.

E. The owner or operator of an emission unit shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.

c. i. Upon written request by the Illinois EPA, the Permittee shall have the organic material emissions of the exhaust from the affected kiln(s) and ovens(s) and/or the efficiency of the affected afterburner tested during representative operating conditions as determined by an approved testing service as further

specified below, pursuant to Section 39.5(7)(d) of the Act and Condition 7 of Construction Permit #08090053.

ii. The particular affected kiln(s) and ovens(s) and specific mode(s) of operation for which testing is conducted shall be as directed in the Illinois EPA's request or as otherwise agreed to by the Illinois EPA.

iii. Such testing shall be conducted for specific affected kiln(s) and ovens(s) within 180 calendar days of the request, or on the date agreed upon by the Illinois EPA, whichever is later.

iv. Measurement of volatile organic material emissions shall be in accordance with the procedures of 35 IAC 215.102 and Construction Permit #08090053, below:

A. Volatile organic material or organic material concentrations in a stream is measured by Method 18, 40 CFR 60, Appendix A, incorporated by reference in Section 215.105, Measurement of Gaseous Organic Compounds incorporated by reference in 215.105 except as follows. ASTM D-4457, incorporated by reference in Section 215.105, may be used for halogenated organic compounds. Method 25, 25A or 25B, 40 CFR 60, Appendix A, incorporated by reference in 215.105 may be substituted for Method 18 provided the source owner or operator submits calibration data and other proof that this method provides the information in the emission units of the applicable standard. The volumetric flow rate and gas velocity is determined in accordance with Methods 1, 1A, 2, 2A, 2C, 2D, 3 and 4, 40 CFR Part 60, Appendix A, incorporated by reference in 215.105. Any other alternate test method must be approved by the Agency, which shall consider data comparing the performance of the proposed alternative to the performance of the approved test method(s). If the Agency determines that such data demonstrates that the proposed alternative will achieve results equivalent to the approved test method(s), the Agency shall approve the proposed alternative.

B. USEPA test methods and procedures shall be used for this testing, including the following methods for measurement of emissions of organic material, unless other methods are approved by the Illinois EPA as part of the approval of the test plan. Refer to 40 CFR 60, Appendix A.

Emissions of Organic Material:
Method 18[a]

Efficiency for Organic Material:
Method 25 or 25Aa[a, b]

Notes:

a. Methane and other compounds that are not defined as organic material by 35 IAC 211.4250 shall be excluded from the results of emission measurements.

b. Method 25 shall be used to measure organic material emissions unless the concentration of organic compounds in the exhaust stream from a unit is less than 50 ppm.

C. Unless otherwise approved by the Illinois EPA, three separate test runs, each nominally one hour in duration, under similar operating conditions shall be conducted for each configuration for which emission measurements are required and the results shall be expressed as the arithmetic average of the results of valid test runs, as provided by 35 IAC Part 283.

D. The Permittee shall submit a written test plan to the Compliance Section of the Division of Air Pollution Control for review and approval at least 60 days prior to the scheduled date of testing. This plan shall describe the specific procedures for testing including at a minimum:

I. The person(s) who will be performing sampling and analysis and their experience with similar tests.

II. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and any changes in the means or manner by which the operating parameters for the emission unit and any control equipment will be determined.

III. The specific determinations of emissions and operation that is intended to be made, including sampling and monitoring locations.

IV. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods.

E. Prior to carrying out these tests, the Illinois EPA shall be notified a minimum of 30 days prior to the expected date of these tests and further notified a minimum of 5 working days prior to the test of the exact date, time and place of these tests, to enable the Illinois EPA to witness these tests.

F. Three copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 60 days after the date of testing. In addition to the information generally required in a report for emissions testing, these reports shall include the following information:

I. For each load of material that was in the affected kiln(s) and ovens(s) during the period of testing, the time at which the load was place in the affected kiln(s) and ovens(s), the type of load, and the organic material content of the load, with supporting calculations.

II. The operating temperature and other significant operating parameters of the affected kiln(s) and ovens(s) during the period of testing.

III. If the affected kiln(s) and ovens(s) are equipped with an afterburner, the combustion chamber temperature and other significant operating parameters of the afterburner as measured during each test run.

7.1.8 Monitoring Requirements

a. Compliance Assurance Monitoring (CAM) Requirements

The affected Kiln #19 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 3.1 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. i. If an affected kiln and oven is routinely operated or exercised to confirm that the affected kilns and ovens will operate when needed, the operation and opacity of the affected kilns and ovens shall be formally observed by operating personnel for the affected kilns and ovens or a member of Permittee's environmental staff on a regular basis to assure that the affected kilns and ovens is operating properly, which observations shall be made at least every six months.

ii. If an affected kilns and ovens is not routinely operated or exercised, i.e., the time interval between operation of an affected kilns and ovens is typically greater than six months, the operation and opacity of the affected engine shall be formally observed as provided above each time the Permittee carries out a scheduled exercise of the affected kiln and oven.

iii. The Permittee shall also conduct formal observations of operation and opacity of an affected engine upon written request by the Illinois EPA. With the agreement of the Illinois EPA, the Permittee may schedule these observations to take place during periods when it would otherwise be operating the affected kiln and oven.

Note: The "formally observation" required above is not intended to be a USEPA Test Method 9 opacity test, nor does the observation require a USEPA Test Method 9 certified observer. It is intended to be performed by personnel familiar with the operation of the affected kiln and oven who would be able to make a determination based from the affected kiln and oven who would be able to make a determination based from the observed opacity as to whether of not the affected kiln and oven was running properly, and subsequently initiate a corrective action if necessary.

c. Pursuant to Construction Permit #08090053:

i. A. The Permittee shall install, operate, and maintain a continuous monitoring system for the temperature in the combustion chamber of the affected afterburner. At a minimum, this system shall display the current temperature and automatically record average hourly values of temperature.

B. The Permittee shall submit semi-annual monitoring reports for this monitoring system

in accordance Condition 8.6.1 of the CAAPP Permit for the plant.

ii. The Permittee shall install, operate and maintain instrumentation on each affected kiln for the operating temperature in the affected kiln. At a minimum, this instrumentation shall display the current temperature.

iii. All required monitoring systems and instrumentation shall be installed, calibrated, and maintained according to the supplier's specifications and/or good industry standards and shall be operated at all times that the affected afterburner is being operated.

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 kilns and ovens to demonstrate compliance with Condition 5.6.1, 7.1.5, and 7.1.6, pursuant to Section 39.5(7)(b) of the Act:

a. i. The Permittee shall keep onsite records of the results of periodic inspections, routine maintenance, and repair of defects. Upon request, these documents shall be made available for inspection and copying by the Illinois EPA.

ii. An operating log for each affected kilns and ovens, which shall include the following information:

A. Information for the observations conducted pursuant to Condition 7.1.7(a) or 7.1.8(b), with date, time, personnel, and findings.

I. The Permittee shall keep records for all opacity measurements made in accordance with USEPA Method 9 for an affected kilns and ovens that it conducts or that are conducted on its behalf by individuals who are qualified to make such observations for Condition 7.1.7(a). For each occasion on which such observations are made, these records shall include the identity of the observer, a description of the various observations that were made, the observed opacity, and copies of the raw data sheets for the observations.

II. The Permittee shall keep records for all formal observations of opacity conducted pursuant to Condition 7.1.8(b). For each

occasion on which observations are made, these records shall include the date, time, identity of the observer, a description of the various observations that were made, whether or not the affected kilns and ovens was running properly, and whether or not corrective action is necessary and was subsequently initiated.

B. Information for the testing conducted pursuant to Condition 7.1.7(b), with date, time, personnel, and findings.

I. The Permittee shall keep records for all particulate matter emissions measurements made in accordance with Condition 7.1.7(b) for affected kilns and ovens that it conducts or that are conducted on its behalf. For each occasion on which such testing is conducted, these records shall include the date and time of testing, name and employer testing service, raw data, particulate matter emissions, and conclusions.

C. Information for the testing conducted pursuant to Condition 7.1.7(c), with date, time, personnel, and findings.

I. The Permittee shall keep records for all organic material emissions measurements made in accordance with Condition 7.1.7(c) for affected kilns and ovens that it conducts or that are conducted on its behalf. For each occasion on which such testing is conducted, these records shall include the date and time of testing, name and employer testing service, raw data, organic material emissions, and conclusions.

iii. Pursuant to 35 IAC 212.110(e) and Section 39.5(7)(e) of the Act, the owner or operator of an emission unit subject 35 IAC Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed and shall include the following:

A. The date, place and time of sampling or measurements.

B. The date(s) analyses were performed.

C. The company or entity that performed the analyses.

D. The analytical techniques or methods used.

E. The results of such analyses.

F. The operating conditions as existing at the time of sampling or measurement.

iv. Recordkeeping requirements pursuant to Construction Permit #08090053:

A. The Permittee shall maintain the following records of the following information related to the determination of the emissions of organic material from the affected kilns and the control efficiency of the affected afterburner. This information shall be retained for at least five years from the date that it is replaced by new information.

I. A copy of the reports for testing the emissions of the affected kilns and the control efficiency of the affected afterburner.

II. Records for all measurements conducted by the Permittee or on its behalf for the emissions of the affected kilns and the efficiency of the affected afterburner, including both measured data and supporting information for the measurements.

III. The emissions profiles for processing of grinding wheels, abrasive segments and other products that are relied upon by the Permittee to determine the emissions of the affected kilns and demonstrate compliance with 35 IAC 215.301, with supporting data and analysis. For this purpose, an emission profile is the relationship between the total amount of volatile organic material contained in a load of material processed in an affected kiln, defined in accordance with Condition 7.1.5(d)(i)(D), and the amount or percentage of this volatile organic material that is released as emissions of organic material, on an hour-by-hour basis in the affected kiln, while the load is being processed. The emission profile shall address the scenario for

processing a load of a particular category of material in an affected kiln that would have greatest release of organic material in a single hour unless separate profiles are developed for subcategories of materials that have different processing scenarios.

IV. The control efficiency(ies) (percent by weight) for the affected afterburner relied upon by the Permittee to determine the emissions of the Kiln #19 and demonstrate compliance with 35 IAC 215.301, with supporting data and analysis.

V. The emission factors generally used by the Permittee to determine emissions from the affected kilns (pounds of emissions per ton of material produced), with supporting data and calculations.

B. The Permittee shall maintain the following records related to the volatile organic material content of loads of material that are processed in the Kiln #1-18. This information shall be retained for at least five years from the date that it is replaced by new information or manufacturing operations change so that information ceases to apply.

I. Records of the volatile organic material content of the raw materials that are constituents in the material processed in the affected kiln (percent by weight), with supporting documentation.

II. Records of the recipes for the different formulations of material that are processed in the affected kiln which provide the total volatile organic material content of the formulation (pound volatile organic material per ton of prepared material, on a dry basis).

III. Records of the following information for each type of load or class of load processed in the affected kilns. For this purpose, the Permittee may address classes of loads with the information for the particular type of load that conservatively represents all other types of loads in the class, presenting the greatest hourly emissions of organic

material for all the loads in the class, provided that all loads in the class are processed in the same manner, as addressed below in Condition 7.1.9(a)(iv)(B)(III)(c).

a. The type of product (grinding wheel, segment or other product, with description), the type of formulation of the load, and whether such loads must be processed in the Kiln #19 because of “basic manufacturing procedures,” separate from consideration of compliance with 35 IAC 215.301.

b. If such loads could be processed in Kiln #1-18 as a matter of basic manufacturing procedures, the maximum weight of such loads, considering the product and packing arrangement that results in the greatest weight (pounds) and the maximum amount of volatile organic material contained in such load (pounds), with supporting calculations.

c. If such loads could be processed in Kiln #1-18, whether such loads must be processed in the Kiln #19 or other controlled kiln, subjected to a low temperature cycle prior to high temperature curing, or otherwise processed in a particular manner to ensure compliance with 35 IAC 215.301, as further provided by Condition 5-1.

C. The Permittee shall maintain operating log(s) or other operating records for the existing box kilns that, at a minimum, include the following information:

I. For periods when affected kilns operate properly, i.e., in accordance with Condition 7.1.5(d)(i), relevant manufacturing information to generally confirm proper operation.

II. For each period when an affected kiln does not operate properly, identification of the period and the particular affected

kiln that is involved with detailed information describing: 1) The actual operation of the affected kiln; 2) The potential consequences for additional organic material emissions from the affected kiln with an estimate of any additional emissions from processing the load, in pounds, with explanation and supporting calculations; 3) Whether 35 IAC 215.301 may have been violated; and 4) The actions taken to restore proper operation; and 5) Any actions taken to prevent similar events in the future.

D. The Permittee shall maintain an operating log or other operating records for the Kiln #19 and Kiln #20 and the affected afterburner that, at a minimum, include the following information:

I. Identification of any periods when an affected kiln was operating and complied by means of “compliant loads” rather than by use of the afterburner, with explanation.

II. For periods when the affected afterburner operated properly, Condition 7.1.5(d)(ii)i.e., in accordance with, relevant information to generally confirm proper operation.

III. For periods when one of these affected kilns was in operation and the affected afterburner was not in operation or did not operate properly, identification of each such period and the affected kilns that were operating, with detailed information describing: 1) The operation of the affected afterburner, including the monitored combustion chamber temperature; 2) The potential consequences for additional emissions of organic material with an estimate of the additional emissions, in pounds, with explanation and supporting calculations; 3) Whether 35 IAC 215.301 may have been violated; 4) The actions taken to restore proper operation; and 5) Any actions taken to prevent similar events in the future.

E. The Permittee shall maintain an inspection, maintenance and repair log or other similar

records for the affected afterburner that, at a minimum, include the following information:

I. Date and time that the activity was performed, with name(s) of the responsible personnel.

II. For inspections, a description of the inspection, the observed condition of the device, a summary of any maintenance or repair that is recommended, and a summary of the observed condition of the device as related to its ability to reliably and effectively control emissions of organic material.

III. For maintenance and repair activity, a description of actions taken, reason for action, e.g., preventative measure or corrective action as a result of inspection, and the condition of device following completion of the activity.

F. The Permittee shall maintain the following records related to the production of the affected kilns, determined as cured product leaving each of the affected kilns (tons/month and tons/year, by class of product, i.e., products whose formulations contain a significant amount of porosity media and other products).

G. The Permittee shall maintain records of the actual organic material emissions of the affected kilns (tons/month and tons/year), with supporting calculations.

b. The Permittee shall keep monthly records of the following items for the affected kilns and ovens:

i. Natural gas usage rates for affected kilns and ovens, mmscf/mo and mmscf/year.

ii. A. The weight of raw materials introduced to the affected kilns and ovens constructed prior to April 14, 1972, lb/mo and ton/yr.

B. The weight of raw materials introduced to the affected kilns and ovens constructed after April 14, 1972, lb/mo and ton/yr.

iii. Hours of operation per affected kilns and ovens, hrs/mo and hrs/year.

c. Records addressing use of good operating practices:

i. Records for periodic inspection of the thermal oxidizer with date, individual performing the inspection, and nature of inspection.

ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.

iii. Records of written work procedures needed to ensure compliant processing of material in the affected kilns.

iv. Emissions from each affected kilns and ovens (i.e., NO_x, CO, SO_2, VOM, PM, HAPs) in tons/month and tons/year with supporting calculations and data as required by Condition 7.1.9 and 7.1.12.

c. 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 7.1.8(a), as required by 40 CFR 64.9(b)(1).

7.1.10 <u>Reporting Requirements</u>

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected kilns and ovens 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 (i.e., SO_2, VOM, PM) from the affected kilns and ovens in excess of the limits specified in Condition 7.1.3 and 7.1.6 within 30 days of such occurrence.

ii. Operation of the affected kilns and ovens in excess of the limits specified in Condition 7.1.5 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)].

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected Kiln #19's thermal oxidizer 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:

a. For the purpose of evaluation of the affected afterburner and further emission testing, the Permittee may operate the thermal oxidizer at a lower combustion chamber temperature in accordance with a detailed plan describing the evaluation and testing program submitted to and approved by the Illinois EPA. This operational flexibility was established in Permit 08090053. See also Condition 7.1.5(d)(ii)(C) [T1].

b. i. Until emission testing is performed in accordance with Condition 7.1.7(c)(iv, when material is being processed in Kiln #19, the combustion chamber temperature of the thermal oxidizer shall be maintained at least at 900 ˚F, hourly average [T1].

ii. The combustion chamber temperature of the thermal oxidizer, hourly average, shall be no lower than the temperature at which the most recent emission testing conducted in accordance with Condition 7.1.7(c)(iv demonstrates that the afterburner would comply with 35 IAC 215.301. This operational flexibility was established in Permit 08090053 [T1].

7.1.12 Compliance Procedures

a. Compliance with the PM emission limitations of Conditions 7.1.3(b), (c), and (d) is addressed by the requirements of Condition 7.1.5, the testing requirements in Condition 7.1.7(a) and (b), the monitoring requirements of Condition 7.1.8(b), the records required in Condition 7.1.9, and the reports required in Condition 7.1.10.

b. i. Compliance with the SO_2 emission limitation of Condition 7.1.3(e) is addressed by the requirements of Condition 7.1.5(b), and the records and reports required in Conditions 7.1.9 and 7.1.10.

ii. For this purpose, complete conversion of sulfur into SO_2 shall be assumed, e.g., SO_2 emissions in lb/mmBtu are twice the sulfur content of the fuel supply, in lb/mmBtu, using the following equation:

$$SO_2 \text{ ppm} = \frac{\text{Fuel sulfur content (lb/mmBtu)} \times 2 \times 1/64 \times 385.2 \times 1{,}000{,}000}{\text{Engine exhaust rate factor (scf/mmBtu)}}$$

Note: Stoichiometric combustion of natural gas with the maximum available sulfur content, i.e., 1.0 grain per 100 scf (1.36E-3 lb/mmBtu), would result in an SO_2 concentration in the exhaust that is well below the 2000 ppm limit in Condition 7.5.3(d), i.e., only about 2 ppm, based on 8,710 scf/mmBtu, the F-factor for natural gas in USEPA's Reference Method 19.

c. Compliance with the VOM emission limitations of Conditions 7.1.3(f) is addressed by the requirements of Condition 7.1.5, the VOM testing requirements in Condition 7.1.7(c), the monitoring requirements in Condition 7.1.8(c), the continuous temperature monitoring requirements in Condition 7.1.8(c), the records required in Condition 7.1.9, and the reports required in Condition 7.1.10.

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

e. Compliance with the emission limits in Conditions 5.6 and 7.1.6 are addressed by the records and reports required in Conditions 7.1.9 and 7.1.10 and the emission factors and formulas listed below if suitable manufacture's emission rate data or Illinois EPA approved stack test data is not available:

i. Emission factors for natural gas combustion for the affected kilns and ovens up to 100 mmBtu/hr heat input:

Pollutant	Emission Factors Uncontrolled Fuel Input (lb/mmscf)
VOM	5.5
PM	7.6
SO_2	0.6
NO_x	100
CO	84

Emissions = Natural Gas Usage x Emission Factor

The emission factors are for Natural Gas Combustion from AP-42 Section 1.4 (dated 07/98).

ii. Emission factors for the production of abrasive products by the affected kilns and ovens:

	PM lb/hr	VOM lb/hr	Naphthalene lb/hr	Phenol lb/hr
Ovens	0.03	3.73	-	0.13
Kilns #1-18 and #20	0.01	1.14	1.14	-
Kiln #19	0.03	27.5	27.5	-

Emissions = Hours of Operation x Emission Factor

The emission factors were developed from stack testing by the source and an additional factor of safety for VOM and HAPs of 10%.

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 March 28, 2011 (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]:

Monitoring Period	Report Due Date
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
2009 Mall Street
Collinsville, Illinois 62234

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 statement 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):

	Metric	English
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):

	Metric	English
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
Mg/hr	kg/hr	T/hr	lb/hr
0.05	0.25	0.05	0.55
0.1	0.29	0.10	0.77
0.2	0.42	0.2	1.10

Metric		English	
P	E	P	E
Mg/hr	kg/hr	T/hr	lb/hr
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):

	Metric	English
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):

	Metric	English
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		English	
P	E	P	E
Mg/hr	kg/hr	T/hr	lb/hr
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) Plan

Table 3.1 PSEU Designation:	Kiln #19 and Thermal Oxidizer
Significant Emission Unit Section:	7.1
Pollutant:	VOC

Indicators:	#1: T.O. Chamber Temperature	#2: Work Practices
GENERAL CRITERIA		
THE MONITORING APPROACH USED TO MEASURE THE INDICATORS:	Temperature monitored with thermocouple	Inspection and maintenance of the burners and continuous UV flame monitoring
THE INDICATOR RANGE WHICH PROVIDES A REASONABLE ASSURANCE OF COMPLIANCE:	Minimum TO temperature of 900 F (testing shows 88% control at that temperature)	Excursion is defined as a failure to perform periodic inspections or weekly flame observations
QUALITY IMPROVEMENT PLAN (QIP) THRESHOLD LEVELS:	Excursion below 900F triggers a QIP	N/A
PERFORMANCE CRITERIA		
THE SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA:	Thermocouple to sense control device temperature	Optical sensor to detect flame
VERIFICATION PROCEDURES TO CONFIRM THE OPERATIONAL STATUS OF THE MONITORING:	Thermocouple installed, calibrated, and maintained according to the supplier's specifications and/or good industry standards	Periodic review and improvement as necessary for inspection and maintenance procedures Optical sensor installed, calibrated, and maintained according to the supplier's specifications and/or good industry standards

QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES THAT ENSURE THE VALIDITY OF THE DATA:	Periodic inspection and maintenance of the thermocouple	Periodic review and improvement as necessary for inspection and maintenance procedures Periodic inspection and maintenance of the optical sensor
THE MONITORING FREQUENCY:	Temperature is monitored continuously with hourly average recorded	Annual burner inspection and maintenance Flame is monitored continuously
THE DATA COLLECTION PROCEDURES THAT WILL BE USED:	Automatically recorded hourly average temperature	Record results of periodic inspections and maintenance Record weekly flame observations
THE DATA AVERAGING PERIOD FOR DETERMINING WHETHER AN EXCURSION OR EXCEEDANCE HAS OCCURRED:	Hourly average	N/A

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

RWC:jws