



PART 70 PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

Operating Permit Number: OP2011-058
Expiration Date: NOV 24 2016
Installation ID: 510-0066
Project Number: 2006-10-125

Installation Name and Address

Elementis Specialties, Inc.
5548 Manchester Avenue
St. Louis, MO 63110
St. Louis City County

Parent Company's Name and Address

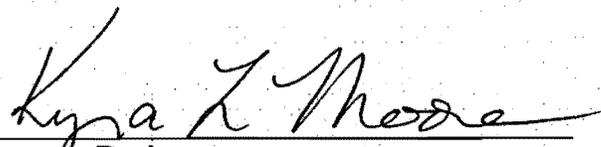
Elementis Specialties, Inc.
329 Wyckoffs Mill Road
Hightstown, NJ 08520

Installation Description:

Elementis Specialties, Inc. is a St. Louis company that specializes in the production of rheological agents. Rheological agents change the flow characteristics of liquids. Elementis Specialties, Inc. uses several varieties of clay, polyethylene waxes, oils, amines and solvents in different combinations and processes to produce their line of agents. The processes are Wet Process Bentone Manufacturing, Dry Process Bentone Manufacturing, Paste and Gel Manufacturing, and Nalzin Manufacturing.

NOV 25 2011

Effective Date



Director or Designee
Department of Natural Resources

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I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

Elementis Specialties, Inc. is a St. Louis company that specializes in the production of rheological agents. Rheological agents change the flow characteristics of liquids. Elementis Specialties, Inc. uses several varieties of clay, polyethylene waxes, oils, amines and solvents in different combinations and processes to produce their line of agents. The processes are the Wet Process Bentone Manufacturing, Dry Process Bentone Manufacturing, Bentone Paste and Gel Manufacturing and Nalzin Manufacturing.

The installation is a potential major source of particulate matter less than ten microns (PM₁₀) and volatile organic compound (VOC) emissions. The installation is an area source of hazardous air pollutant (HAP) emissions.

Reported Air Pollutant Emissions, tons per year					
Pollutants	2010	2009	2008	2007	2006
Particulate Matter ≤ Ten Microns (PM ₁₀)	12.6	9.9	12.2	13.6	13.5
Particulate Matter ≤ 2.5 Microns (PM _{2.5})	0.3	0.3	0.4	0.4	0.7
Sulfur Oxides (SO _x)	0.0	0.0	0.1	0.0	0.1
Nitrogen Oxides (NO _x)	4.4	4.2	8.1	7.9	9.4
Volatile Organic Compounds(VOC) ¹	61.4	40.3	55.9	57.3	53.6
Carbon Monoxide (CO)	3.7	3.5	6.8	6.6	7.9
Lead (Pb)	--	--	--	--	--
Hazardous Air Pollutants (HAPs) ²	0.4	0.3	0.4	0.4	0.4
Ammonia (NH ₃)	0.1	0.1	0.3	0.3	0.3

¹ These values do not include the HAP emissions, as they do in the annual fee report.

² These amounts are reported as a part of the VOC totals for the annual fee report.

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation that emits air pollutants and that are identified as having unit-specific emission limitations.

Emission Unit	Emission Unit Description
EU0040	Parkson Filter Press
EU0050	Bentone Central Vacuum System
EU0060	Bentone Dispersion Tanks
EU0070	Bentone Gel Reactor
EU0080	Bentone "A" Packing System
EU0090	Bentone Reaction Tanks
EU0100	Clay Receiver #1
EU0110	Clay Receiver #2
EU0120	Clay Storage Silos
EU0140	Wet Process Day Silo
EU0150	Bentone Flash Dryer #1
EU0160	Bentone Flash Dryer #2
EU0170	Nalzin Kiln Dryer
EU0180	Bentone Milling
EU0190	Nalzin Formation Tank Vent
EU0200	Nalzin Mill
EU0210	Nalzin Packing System East
EU0220	Nalzin Packing System West
EU0230	Bentone Packing Baghouse
EU0240a	Bentone Pneumatic Transfer
EU0250	Polyethylene Wax Storage Silos
EU0260	Salt Unloading
EU0270	South Horizontal Belt Filter Vacuum Pump
EU0280	North Horizontal Belt Filter Vacuum Pump
EU0290	Nalzin Zinc Oxide Transfer
EU0410	PUG Mill Day Silo
EU0430	PUG Mill Baghouse Receiver
EU0440	PUG Mill Bag Dump Station
EU0450	Bentone "B" Packing System
EU0600	Powerhouse Boiler
EU0620	Therminol Hot Oil System - Paste & Gel
EU0630	Comfort Space Heating
EU0640	Amine Storage Tank Heaters (3)

EMISSION UNITS WITHOUT LIMITATIONS

The following list provides a description of the equipment that does not have unit specific limitations at the time of permit issuance.

Emission Unit	Emission Unit Description	Equipment Number
EU0300	Amine Tank #4 (10,000-gallon tank, Pre-1970's)	EP 6
EU0310	Amine Tank #8 (10,000-gallon tank, Pre-1970's)	EP 7
EU0320	Amine Tank #7 (17,600-gallon tank, Pre-1970's)	EP 8
EU0330	Toluene Storage Tank (10,000-gallon tank, March 1991)	EP 20
EU0340	Mineral Spirits Storage Tank (10,000-gallon tank, March 1991)	EP 21
EU0345	Spent Mineral Spirits Storage (500-gallon tank)	EP 30
EU0350	Xylene Storage Tank (10,000-gallon tank, March 1991)	EP 22
EU0360	Butanol Storage Tank (10,000-gallon tank, March 1991)	EP 23
EU0380	East Amine Storage Tank (7,500-gallon tank, January 1998)	EP70
EU0390	West Amine Storage Tank (7,500-gallon tank, January 1998)	EP72
EU0500	Paste Reactor	EP 25
EU0510	Paste Hold Tank	EP 26
EU0520	Paste Drumming	EP 27
EU0530	Seal Water/Hot Water Tank System	EP 36
EU0540	P & G Drum Pump Room Vent	EP 51
EU0550	P & G Reactor Bag Dump	EP 52
EU0560	Bentone Spill Tanks	EP 56
EU0570	Gel Drumming	EP 59
EU0580	TDI Room Vent	EP 48
EU0590	Fugitive Piping Emissions	EP 100

DOCUMENTS INCORPORATED BY REFERENCE

These documents have been incorporated by reference into this permit.

- 1) 10 CSR 10-5.520 RACT Proposal, Approved March 5, 2001
- 2) St. Louis City APC Source Registration SR02.028, Issued July 2, 2002
- 3) St. Louis City APC Construction Permit 05-09-008, Issued December 8, 2005 (Missouri Air Pollution Control Program project number: 2005-12-033)
- 4) Missouri Department of Natural Resources Construction Permit 012007-018, Issued January 29, 2007 (Missouri Air Pollution Control Program project number: 2006-10-012)
- 5) St. Louis City APC Construction Permit 07-08-014, Issued October 1, 2007 (Missouri Air Pollution Control Program project number: 2007-09-020)
- 6) St. Louis City APC Construction Permit 09-06-014, Issued September 21, 2009 (Missouri Air Pollution Control Program project number: 2009-09-001)

II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

PERMIT CONDITION PW001

Monitoring:

The permittee shall calibrate, maintain and operate all instruments and control equipment according to the manufacturer's recommendations and according to good engineering practices.

Recordkeeping:

The permittee shall record all required recordkeeping (i.e. inspections and corrective actions) in the appropriate format. Records may be kept electronically using database or workbook systems, as long as all required information is readily available for compliance determinations.

Reporting³:

- 1) The permittee shall report any exceedance of any of the terms imposed by this permit, or any malfunction which could cause an exceedance any of the terms imposed by this permit, no later than ten (10) days after the exceedance or event causing the exceedance (unless otherwise specified in the specific condition), to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102
- 2) The permittee shall submit an annual certification⁴ that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. All deviations and Part 64 exceedances and excursions must be included in the compliance certifications. These certifications shall be submitted annually by **April 1st**, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, and the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102

³Refer to Section V. General Permit Requirements, 10 CSR 10-6.065(6)(C)1.C General Recordkeeping and Reporting Requirements, page 23, for additional details, including semi-annual reporting of monitoring data.

⁴ Refer to Section V. General Permit Requirements, 10 CSR 10-6.065(6)(C)3 Compliance Requirements, page 25, for more details.

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

Visible Emission Sources (EU0050 – EU0070, EU0100 – EU-0250, EU0290, EU0410, and EU0440 – EU0450)		
Emission Unit	Stack ID	Description
EU0050	S-34	Bentone Central Vacuum System
EU0060	S-45	Bentone Dispersion Tanks
EU0070	S-29	Bentone Gel Reactor
EU0100	S-3	Clay Receiver #1
EU0110	S-4	Clay Receiver #2
EU0120	S-1	Clay Storage Silos
EU0140	S-2	Wet Process Day Silo
EU0150	S-9	Bentone Flash Dryer #1
EU0160	S-10	Bentone Flash Dryer #2
EU0170	S-15	Nalzin Kiln Dryer
EU0180	S-12	Bentone Milling
EU0190	S-33	Nalzin Formation / Tank Vent
EU0200	S-17	Nalzin Mill
EU0210	S-18	Nalzin Packing System East
EU0220	S-19	Nalzin Packing System West
EU0230	S-14	Bentone Packing Baghouse
EU0240a	S-13	Bentone Pneumatic Transfer
EU0250	S-24	Polyethylene Wax Storage Silos
EU0260	Fugitive	Salt Unloading
EU0290	S-16	Nalzin Zinc Oxide Transfer
EU0410	S-66	PUG Mill Day Silo
EU0440	S-68	PUG Mill Bag Dump Station
EU0450	S-71	Bentone "B" Packing System
EU0600	S-5	Powerhouse Boiler

<p>Visible Emission Sources Permit Condition 1 (EU0050 – EU0070, EU0100 – EU-0250, EU0290, EU0410, and EU0440 – EU0450) 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants St. Louis City Ordinance 68657, Section Fifteen, Restriction of Visible Air Emissions</p>
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Emission Limitations:

The permittee shall not discharge into the ambient air from any source, not exempted under 10 CSR 10-6.220, any air contaminant of opacity greater than twenty (20%) percent. A source with a 20 percent

opacity limit may emit air contaminants with opacity over 20 percent, but not greater than 40 percent for an aggregate length of time not to exceed six (6) minutes in any 60 minutes. Where the presence of uncombined water is the only reason for failure of an emission to meet the opacity requirements, the opacity requirements shall not apply.

Monitoring / Recordkeeping:

The permittee will follow the monitoring and recordkeeping requirements listed in Section IV. Core Permit Requirements for 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants, starting on page 20.

Thermal Oxidizer Group (EU0040, EU0090, EU0270, EU0280, and EU0430)		
Emission Unit	Description	Manufacturer / Model #
CD-64	Regenerative thermal oxidizer control device; final discharge point to the atmosphere for all units	
EU0040	Parkson Filter Press, vented to CD-64	Model MP60 / Installed ca 1980's
EU0090	Bentone Reaction Tanks, vented to CD-64	Field Fabricated Tanks / Installed 2008
EU0270	South Horizontal Belt Filter Vacuum Pump, vented to CD-64	Panevis -Model RT / Installed 2008
EU0280	North Horizontal Belt Filter Vacuum Pump, vented to CD-64	Panevis - Model RT / Installed 2008
EU0430	PUG Mill and Baghouse Receiver, vented through CD-67 and then to CD-64	Installed 2007

Thermal Oxidizer Group Permit Condition 1 (EU0040, EU0090, EU0270, EU0280, and EU0430)
10 CSR 10-5.520 Control of Volatile Organic Compound Emissions From Existing Major Sources 10 CSR 10-5.520 RACT Proposal, Approved March 5, 2001 10 CSR 10-6.060 Construction Permits Required, Construction Permit 012007-018 10 CSR 10-6.060 Construction Permits Required, St. Louis City Construction Permit 05-09-008 St. Louis City Ordinance 68657, Section Twenty, Source Registration Permits Required, SR02.028

Emission / Operational Limitations:

- 1) The exhaust streams from EU0040, EU0090, EU0270, and EU0280 shall be vented to the thermal oxidizer at all times except during start-up, shut down, and malfunction.
- 2) The thermal oxidizer shall be in use at all times that the PUG Mill is in operation or any time that regulated volatile organic compounds (VOC) emissions are possible from EU0430.
- 3) The destruction efficiency of the thermal oxidizer shall be at least 95 percent.
- 4) Bed 1 and Bed 2 of the oxidizer shall have a temperature set point of 1500 F, controlled by the manufacturer.

Monitoring:

- 1) The oxidizer's **Average Chamber Temperature** shall be continuously monitored.
- 2) The oxidizer shall be inspected periodically to verify proper function when the associated equipment is in operation.

- 3) The permittee shall conduct a performance test on the oxidizer every five years to verify control efficiency using the methodologies set forth in 40 CFR Part 60 Appendix A, Methods 1 through 4 and 25A.

Recordkeeping:

- 1) The permittee shall record the **Average Chamber Temperature** every 15 minutes.
 - a) Samples of the recordkeeping format are provided in Attachments G and H.
- 2) The permittee shall maintain operating and maintenance records for the oxidizer using Attachment D (or its equivalent) which records the following:
 - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - b) Maintenance activities, with inspection schedule, repair actions, and replacements or additions of components.

Particulate Emission Sources Group (EU0050, EU0080, EU0100 – EU0120, EU0140 – EU0160, EU0180, EU0200 – EU0220, EU0240a, EU0250, EU0290, EU0410 and EU0430 – EU0450)		
Emission Unit	Description	Control Device
<i>EU0050</i>	Bentone Central Vacuum System	CD-34
<i>EU0080</i>	Bentone "A" Packing System	CD-47
<i>EU0120</i>	Clay Storage Silos	CD-1
<i>EU0140</i>	Wet Process Day Silo	CD-2
<i>EU0150</i>	Bentone Flash Dryer #1	CD-9
<i>EU0160</i>	Bentone Flash Dryer #2	CD-11
<i>EU0170</i>	Nalzin Kiln Dryer	CD-15
<i>EU0180</i>	Bentone Milling	CD-12
<i>EU0200</i>	Nalzin Mill	CD-17
<i>EU0210</i>	Nalzin Packing System East	CD-18
<i>EU0220</i>	Nalzin Packing System West	CD-19
<i>EU0240a</i>	Bentone Pneumatic Transfer	CD-13
<i>EU0290</i>	Nalzin Zinc Oxide Transfer	CD-16
<i>EU0410</i>	PUG Mill Day Silo	CD-66
<i>EU0430</i>	PUG Mill Baghouse Receiver	CD-67
<i>EU0440</i>	PUG Mill Bag Dump Station	CD-68
<i>EU0450</i>	Bentone "B" Packing System	CD-71

Particulate Emission Sources Group Permit Condition 1 (EU0050, EU0080, EU0100 – EU0120, EU0140 – EU0160, EU0180, EU0200 – EU0220, EU0240a, EU0250, EU0290, EU0410 and EU0430 – EU0450)

10 CSR 10-6.400 Restriction of Emission of Particulate Matter from Industrial Processes
10 CSR 10-6.060 Construction Permits Required, Construction Permit 012007-018
10 CSR 10-6.060 Construction Permits Required, Construction Permit 07-08-014
10 CSR 10-6.060 Construction Permits Required, Construction Permit 09-06-014

Emission Limitation:

The permittee shall operate the fabric filters or baghouses whenever the associated emission units are operating.⁵

Monitoring / Recordkeeping:

The permittee shall keep maintenance logs, using Attachment D (or its equivalent), for the *Baghouses* group, which shall include the following:

- 1) Incidents of malfunction with impact on emissions, duration of event, probable cause, and corrective action.
- 2) Maintenance activities, inspection schedule, repair actions, and replacements, etc.

Particulate Emission Sources Group Permit Condition 2 (EU0210, EU0220, EU0290, and EU0440)

10 CSR 10-6.400 Restriction of Emission of Particulate Matter from Industrial Processes

Emission Limitation:

The permittee shall not emit particulate matter from EU0210, EU0220, EU0290, or EU0440 in excess of the limits listed below, nor in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases:

Emission Unit	Allowable Emission Rate, (lbs/hr)
EU0210	0.44
EU0220	0.44
EU0290	0.88
EU0440	0.72

Monitoring / Recordkeeping:

No monitoring or recordkeeping is required for this condition since the emission units have demonstrated that they will always be in compliance (reference Attachment E, Compliance Demonstration for 10 CSR 10-6.400, page 33).

⁵ For some of the emission units, this emission limit establishes a federal requirement for the control device and thus provides an exemption from the pound per hour limit.

Particulate Emission Sources Group Permit Condition 3 (EU0410, EU0440, EU0080, and EU0450)

10 CSR 10-6.060 Construction Permits Required, Construction Permit 012007-018
10 CSR 10-6.060 Construction Permits Required, Construction Permit 07-08-014

Emission / Operational Limitation:

- 1) During proper operation of the control devices for EU0410, EU0440, EU0080, and EU0450, no visible emissions are expected from the emission units. When visible emissions are noted, corrective actions shall be taken.
- 2) The permittee shall keep replacement filters for the baghouses on hand at all times. The filters shall be made of fibers appropriate for the operating conditions that are expected to occur (i.e. temperature limits, acidic or alkali resistance, and abrasion resistance).

Monitoring / Recordkeeping:

- 1) The permittee shall perform a daily visible emissions observation on the exhaust from EU0410, EU0440, EU0080, and/or EU0450 when the associated process is in operation:
 - a) Observations shall be made using an U.S. EPA Method 22 trained observer and U.S. EPA Method 22 like procedures.
 - b) The duration of the observation shall be for a two minute time period.
- 2) The observation of visible emissions from an emission unit is considered an excursion and corrective actions shall be implemented within a reasonable period. An excursion does not necessarily indicate a violation of the applicable requirement.
- 3) The permittee shall maintain records of the observations performed and corrective actions taken using the form in Attachment B, Opacity Emission Observations, page 30 or its equivalent.
- 4) When the level of excursions exceed three percent of the total number of observations performed during a six month period and corrective actions fail to return the emission unit to a no visible emission condition, the permittee shall perform source testing within 90 days of the last excursion to demonstrate compliance with 10 CSR 10-6.400.
- 5) If the source test demonstrates noncompliance with 10 CSR 10-6.400, the permittee shall propose a schedule to implement further corrective actions to bring the emission unit into compliance and demonstrate that compliance.

Particulate Emission Sources Group Permit Condition 4 (EU0240a)

10 CSR 10-6.060 Construction Permits Required, Construction Permit 09-06-014

Emission / Operational Limitation:

The permittee shall maintain the operating pressure drop for the baghouse for EU0240a (CD-13) within the design conditions specified by the manufacturer's warranty.

Monitoring / Recordkeeping:

- 1) The permittee shall check and record pressure drop across the baghouse on a daily basis when the associated process is in operation.
- 2) The permittee shall conduct and document a quarterly inspection and maintenance of the baghouse for structural component failures, for leaks and wear, and for the cleaning sequence of the baghouse.
- 3) If leaks or abnormal conditions are detected, the permittee shall implement appropriate measures for remediation within eight (8) hours. The permittee shall document that the equipment was not in use during the time period between the detection of abnormal conditions and the remediation.

Indirect Heating Sources (EU0600 and EU0620 – EU0640)	
Emission Unit	Description
<i>EU0600</i>	Powerhouse Boiler
<i>EU0620</i>	Therminol Hot Oil System - Paste & Gel
<i>EU0630</i>	Comfort Space Heating
<i>EU0640</i>	Amine Storage Tank Heaters (3)

Indirect Heating Sources Permit Condition 1 (EU0600, EU0620, EU0630, and EU0640)

10 CSR 10-6.405 Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating

Emission Limitation:

The permittee shall not emit particulate matter in excess of 0.28 pounds per million BTU of heat input.

Monitoring / Recordkeeping:

No monitoring or recordkeeping is required for this condition since the emission unit has demonstrated that it will always be in compliance (reference Attachment F, Compliance Demonstration for 10 CSR 10-6.405, page 34).

IV. Core Permit Requirements

The installation shall comply with each of the following regulations or codes. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued. The following is only an excerpt from the regulation or code, and is provided for summary purposes only.

10 CSR 10-6.045 Open Burning Requirements

- 1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
- 2) Refer to the regulation for a complete list of allowances. The following is a listing of exceptions to the allowances:
 - a) Burning of household or domestic refuse. Burning of household or domestic refuse is limited to open burning on a residential premises having not more than four dwelling units, provided that the refuse originates on the same premises, with the following exceptions:
 - i) Kansas City metropolitan area. The open burning of household refuse must take place in an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of Kansas City and every contiguous municipality;
 - ii) Springfield-Greene County area. The open burning of household refuse must take place outside the corporate limits of Springfield and only within areas zoned A-1, Agricultural District;
 - iii) St. Joseph area. The open burning of household refuse must take place within an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of St. Joseph; and
 - iv) St. Louis metropolitan area. The open burning of household refuse is prohibited;
 - b) Yard waste, with the following exceptions:
 - i) Kansas City metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation shall require an open burning permit;
 - ii) Springfield-Greene County area. The City of Springfield requires an open burning permit for the open burning of trees, brush or any other type of vegetation. The City of Springfield prohibits the open burning of tree leaves;
 - iii) St. Joseph area. Within the corporate limits of St. Joseph, the open burning of trees, tree leaves, brush or any other type of vegetation grown on a residential property is allowed during the following calendar periods and time-of-day restrictions:
 - (1) A three (3)-week period within the period commencing the first day of March through April 30 and continuing for twenty-one (21) consecutive calendar days;
 - (2) A three (3)-week period within the period commencing the first day of October through November 30 and continuing for twenty-one (21) consecutive calendar days;
 - (3) The burning shall take place only between the daytime hours of 10:00 a.m. and 3:30 p.m.; and
 - (4) In each instance, the twenty-one (21)-day burning period shall be determined by the Director of Public Health and Welfare of the City of St. Joseph for the region in which the City of St. Joseph is located provided, however, the burning period first shall receive the approval of the Department Director; and

- iv) St. Louis metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation is limited to the period beginning September 16 and ending April 14 of each calendar year and limited to a total base area not to exceed sixteen (16) square feet. Any open burning shall be conducted only between the hours of 10:00 a.m. and 4:00 p.m. and is limited to areas outside of incorporated municipalities;
- 3) Certain types of materials may be open burned provided an open burning permit is obtained from the Director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.
- 4) Elementis Specialties, Inc. may be issued an annually renewable open burning permit for open burning provided that an air curtain destructor or incinerator is utilized and only tree trunks, tree limbs, vegetation or untreated wood waste are burned. Open burning shall occur at least two hundred (200) yards from the nearest occupied structure unless the owner or operator of the occupied structure provides a written waiver of this requirement. Any waiver shall accompany the open burning permit application. The permit may be revoked if Elementis Specialties, Inc. fails to comply with the provisions or any condition of the open burning permit.
- a) In a nonattainment area, as defined in 10 CSR 10-6.020, Paragraph (2)(N)5., the Director shall not issue a permit under this section unless the owner or operator can demonstrate to the satisfaction of the Director that the emissions from the open burning of the specified material would be less than the emissions from any other waste management or disposal method.
- 5) Reporting and Recordkeeping. New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart CCCC establishes certain requirements for air curtain destructors or incinerators that burn wood trade waste. These requirements are established in 40 CFR 60.2245-60.2260. The provisions of 40 CFR Part 60 Subpart CCCC promulgated as of September 22, 2005, shall apply and are hereby incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401. To comply with NSPS 40 CFR 60.2245-60.2260, sources must conduct an annual Method 9 test. A copy of the annual Method 9 test results shall be submitted to the Director.
- 6) Test Methods. The visible emissions from air pollution sources shall be evaluated as specified by 40 CFR Part 60, Appendix A–Test Methods, Method 9–Visual Determination of the Opacity of Emissions from Stationary Sources. The provisions of 40 CFR Part 60, Appendix A, Method 9 promulgated as of December 23, 1971, is incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions

- 1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the Director within two business days, in writing, the following information:
- a) Name and location of installation;
- b) Name and telephone number of person responsible for the installation;
- c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
- d) Identity of the equipment causing the excess emissions;
- e) Time and duration of the period of excess emissions;
- f) Cause of the excess emissions;
- g) Air pollutants involved;
- h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;

- i) Measures taken to mitigate the extent and duration of the excess emissions; and
 - j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 2) The permittee shall submit the Paragraph 1 information list to the Director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the Director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
 - 3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under Section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the Paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the Director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under Section 643.080 or 643.151, RSMo.
 - 4) Nothing in this rule shall be construed to limit the authority of the Director or commission to take appropriate action, under Sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
 - 5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(6)(B)1.A(V)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources' personnel upon request. [10 CSR 10-6.065(6)(C)3.B]

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

- 1) The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.

- 2) The permittee shall conduct monitoring to demonstrate compliance with registration, certification, notification, and Abatement Procedures and Practices standards as specified in 40 CFR Part 61, Subpart M.

10 CSR 10-6.100 Alternate Emission Limits

Proposals for alternate emission limitations shall be submitted on Alternate Emission Limits Permit forms provided by the Department. An installation owner or operator must obtain an Alternate Emission Limits Permit in accordance with 10 CSR 10-6.100 before alternate emission limits may become effective.

10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information

- 1) The permittee shall complete and submit an Emission Inventory Questionnaire (EIQ) annually.
- 2) The permittee may be required by the Director to file additional reports.
- 3) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
- 4) The permittee shall pay an annual emission fee per ton of regulated air pollutant emitted according to the schedule in the rule. This fee is an emission fee assessed under authority of RSMo. 643.079 to satisfy the requirements of the Federal Clean Air Act, Title V.
- 5) The permittee shall complete required reports on state supplied EIQ forms or in a form satisfactory to the Director and the reports shall be submitted to the Director by April 1 after the end of each reporting period.
- 6) The reporting period shall end on December 31 of each calendar year. Each report shall contain the required information for each emission unit for the twelve (12)-month period immediately preceding the end of the reporting period.
- 7) The permittee shall collect, record and maintain the information necessary to complete the required forms during each year of operation of the installation.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.165 Restriction of Emission of Odors

This requirement is not federally enforceable.

No person may cause, permit, or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one (1) volume of odorous air is diluted with seven (7) volumes of odor-free air for two (2) separate trials not less than fifteen (15) minutes apart within the period of one (1) hour.

10 CSR 10-6.170

Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

Emission Limitation:

- 1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the Director.
- 2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
- 3) Should it be determined that noncompliance has occurred, the Director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
 - a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
 - b) Paving or frequent cleaning of roads, driveways and parking lots;
 - c) Application of dust-free surfaces;
 - d) Application of water; and
 - e) Planting and maintenance of vegetative ground cover.

Monitoring:

The permittee shall conduct inspections of its facilities sufficient to determine compliance with this regulation. If the permittee discovers a violation, the permittee shall undertake corrective action to eliminate the violation.

The permittee shall maintain the following monitoring schedule⁶:

- 1) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
- 2) Should no violation of this regulation be observed during this period then-
 - a) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
 - b) If a violation is noted, monitoring reverts to weekly.
 - c) Should no violation of this regulation be observed during this period then-
 - i) The permittee may observe once per month.
 - ii) If a violation is noted, monitoring reverts to weekly.
- 3) If the permittee reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner to the initial monitoring frequency.

Recordkeeping:

The permittee shall document all readings on Attachment A, or its equivalent, noting the following:

- 1) Whether air emissions (except water vapor) remain visible in the ambient air beyond the property line of origin.
- 2) Whether the visible emissions were normal for the installation.
- 3) Whether equipment malfunctions contributed to an exceedance.

⁶ The reissuance of this operating permit will not affect the frequency of monitoring. The permittee may continue their current monitoring schedule for all affected emission units.

- 4) Any violations and any corrective actions undertaken to correct the violation.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

- 1) The Director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The Director may specify testing methods to be used in accordance with good professional practice. The Director may observe the testing. All tests shall be performed by qualified personnel.
- 2) The Director may conduct tests of emissions of air contaminants from any source. Upon request of the Director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
- 3) The Director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-5.040 Use of Fuel in Hand-Fired Equipment Prohibited

It shall be unlawful to operate any hand-fired fuel-burning equipment in the St. Louis, Missouri metropolitan area. This regulation shall apply to all fuel-burning equipment including, but not limited to, furnaces, heating and cooking stoves and hot water furnaces. It shall not apply to wood-burning fireplaces and wood-burning stoves in dwellings, nor to fires used for recreational purpose, nor to fires used solely for the preparation of food by barbecuing. Hand-fired fuel-burning equipment is any stove, furnace, or other fuel-burning device in which fuel is manually introduced directly into the combustion chamber.

**10 CSR 10-5.060 Refuse Not to be Burned in Fuel Burning Installations
(Contained in State Implementation Plan)**

No person shall burn or cause or permit the burning of refuse in any installation which is designed for the primary purpose of burning fuel.

10 CSR 10-5.240 Additional Air Quality Control Measures May be Required When Sources Are Clustered in a Small Land Area

The Air Conservation Commission may prescribe more restrictive air quality control requirements that are more restrictive and more extensive than provided in regulations of general application for:

- 1) Areas in which there are one or more existing sources and/or proposed new sources of particulate matter in any circular area with a diameter of two miles (including sources outside metropolitan area) from which the sum of particulate emissions allowed from these sources by regulations of general application are or would be greater than 2000 tons per year or 500 pounds per hour.
- 2) Areas in which there are one or more existing sources and/or proposed new sources of sulfur dioxide in any circular area with a diameter of two miles from which the sum of sulfur dioxide emissions from these sources allowed by regulations of general application are or would be greater than 1000 tons for any consecutive three months or 1000 pounds per hour.

10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants

Emission Limitation:

No owner or other person shall cause or permit to be discharged into the atmosphere from any source any visible emissions in excess of the limits specified by this rule. This permit will contain the opacity limits identified (10, 20 or 40 percent) for the specific emission units.

Monitoring:

- 1) The permittee shall conduct opacity readings on each emission unit using the procedures contained in U.S. EPA Test Method 22. The permittee is only required to take readings when the emission unit is operating and when the weather conditions allow. If the permittee observes no visible or other significant emissions using these procedures, then no further observations are required. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
- 2) The permittee must maintain the following monitoring schedule⁷:
 - a) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
 - b) Should the permittee observe no violations of this regulation during this period then-
 - i) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
 - ii) If a violation is noted, monitoring reverts to weekly.
 - iii) Should no violation of this regulation be observed during this period then-
 - (1) The permittee may observe once per month.
 - (2) If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

The permittee shall maintain records of all observation results using Attachment B (or its equivalent), noting:

- 1) Whether any air emissions (except for water vapor) were visible from the emission units;
- 2) All emission units from which visible emissions occurred;
- 3) Whether the visible emissions were normal for the process;
- 4) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
- 5) The permittee shall maintain records of all U.S. EPA Method 9 opacity tests performed.

10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the Department to monitor training provided to employees. Each individual who works in asbestos abatement projects must first obtain certification for the appropriate occupation from the Department.

⁷ The reissuance of this operating permit will not affect the frequency of monitoring. The permittee may continue their current monitoring schedule for all affected emission units.

Each person who offers training for asbestos abatement occupations must first obtain accreditation from the Department. Certain business entities that meet the requirements for state-approved exemption status must allow the Department to monitor training classes provided to employees who perform asbestos abatement.

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

- 1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
 - a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
 - b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
 - c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
 - d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
- 2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
 - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §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 §82.158.
 - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
 - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
 - e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
 - f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
- 3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR Part 82, Subpart A, Production and Consumption Controls.
- 4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.

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

10 CSR 10-6.280 Compliance Monitoring Usage
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| <p>1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:</p> <ul style="list-style-type: none">a) Monitoring methods outlined in 40 CFR Part 64;b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; andc) Any other monitoring methods approved by the Director. <p>2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:</p> <ul style="list-style-type: none">a) Monitoring methods outlined in 40 CFR Part 64;b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; andc) Compliance test methods specified in the rule cited as the authority for the emission limitations. <p>3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:</p> <ul style="list-style-type: none">a) Applicable monitoring or testing methods, cited in:<ul style="list-style-type: none">i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";ii) 10 CSR 10-6.040, "Reference Methods";iii) 10 CSR 10-6.070, "New Source Performance Standards";iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; orb) Other testing, monitoring, or information gathering methods, if approved by the Director, that produce information comparable to that produced by any method listed above. |
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V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued,

10 CSR 10-6.065(6)(C)1.B Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

10 CSR 10-6.065(6)(C)1.C General Recordkeeping and Reporting Requirements

- 1) Recordkeeping
 - a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
 - b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
- 2) Reporting
 - a) All reports shall be submitted to the Air Pollution Control Program's Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
 - b) The permittee shall submit a report of all required monitoring by:
 - i) October 1st for monitoring which covers the January through June time period, and
 - ii) April 1st for monitoring which covers the July through December time period.
 - iii) Exception. Monitoring requirements which require reporting more frequently than semi-annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
 - c) Each report shall identify any deviations from emission limitations, monitoring, recordkeeping, reporting, or any other requirements of the permit, this includes deviations or Part 64 exceedances.
 - d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
 - i) Notice of any deviation resulting from an emergency (or upset) condition as defined in Paragraph (6)(C)7.A of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.

- ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.
- iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's semi-annual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.
- e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.
- f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

- 1) June 21, 1999;
- 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
- 3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(6)(C)1.F Severability Clause

In the event of a successful challenge to any part of this permit, all uncontested permit conditions shall continue to be in force. All terms and conditions of this permit remain in effect pending any administrative or judicial challenge to any portion of the permit. If any provision of this permit is invalidated, the permittee shall comply with all other provisions of the permit.

10 CSR 10-6.065(6)(C)1.G General Requirements

- 1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
- 2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
- 3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- 4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
- 5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to

the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 10 CSR 10-6.065(6)(C)1.

10 CSR 10-6.065(6)(C)1.H Incentive Programs Not Requiring Permit Revisions

No permit revision will be required for any installation changes made under any approved economic incentive, marketable permit, emissions trading, or other similar programs or processes provided for in this permit.

10 CSR 10-6.065(6)(C)1.I Reasonably Anticipated Operating Scenarios

None

10 CSR 10-6.065(6)(C)3 Compliance Requirements

- 1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
- 2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
 - a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, 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, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
 - d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
- 3) All progress reports required under an applicable schedule of compliance shall be submitted semi-annually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
 - a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
 - b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
- 4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, as well as the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and Part 64 exceedances and excursions must be included in the compliance certifications. The compliance certification shall include the following:
 - a) The identification of each term or condition of the permit that is the basis of the certification;
 - b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;

- c) Whether compliance was continuous or intermittent;
- d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
- e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065(6)(C)6 Permit Shield

- 1) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date that this permit is issued, provided that:
 - a) The application requirements are included and specifically identified in this permit, or
 - b) The permitting authority, in acting on the permit revision or permit application, determines in writing that other requirements, as specifically identified in the permit, are not applicable to the installation, and this permit expressly includes that determination or a concise summary of it.
- 2) Be aware that there are exceptions to this permit protection. The permit shield does not affect the following:
 - a) The provisions of Section 303 of the Act or Section 643.090, RSMo concerning emergency orders,
 - b) Liability for any violation of an applicable requirement which occurred prior to, or was existing at, the time of permit issuance,
 - c) The applicable requirements of the acid rain program,
 - d) The authority of the Environmental Protection Agency and the Air Pollution Control Program of the Missouri Department of Natural Resources to obtain information, or
 - e) Any other permit or extra-permit provisions, terms or conditions expressly excluded from the permit shield provisions.

10 CSR 10-6.065(6)(C)7 Emergency Provisions

- 1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
 - a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
 - b) That the installation was being operated properly,
 - c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
 - d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
- 2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(6)(C)8 Operational Flexibility

An installation that has been issued a Part 70 operating permit is not required to apply for or obtain a permit revision in order to make any of the changes to the permitted installation described below if the changes are not Title I modifications, the changes do not cause emissions to exceed emissions allowable

under the permit, and the changes do not result in the emission of any air contaminant not previously emitted. The permittee shall notify the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, at least seven days in advance of these changes, except as allowed for emergency or upset conditions. Emissions allowable under the permit means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

- 1) Section 502(b)(10) changes. Changes that, under Section 502(b)(10) of the Act, contravene an express permit term may be made without a permit revision, except for changes that would violate applicable requirements of the Act or contravene federally enforceable monitoring (including test methods), recordkeeping, reporting or compliance requirements of the permit.
 - a) Before making a change under this provision, The permittee shall provide advance written notice to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, describing the changes to be made, the date on which the change will occur, and any changes in emission and any permit terms and conditions that are affected. The permittee shall maintain a copy of the notice with the permit, and the Air Pollution Control Program shall place a copy with the permit in the public file. Written notice shall be provided to the EPA and the Air Pollution Control Program as above at least seven days before the change is to be made. If less than seven days notice is provided because of a need to respond more quickly to these unanticipated conditions, the permittee shall provide notice to the EPA and the Air Pollution Control Program as soon as possible after learning of the need to make the change.
 - b) The permit shield shall not apply to these changes.

10 CSR 10-6.065(6)(C)9 Off-Permit Changes

- 1) Except as noted below, the permittee may make any change in its permitted operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Insignificant activities listed in the application, but not otherwise addressed in or prohibited by this permit, shall not be considered to be constrained by this permit for purposes of the off-permit provisions of this section. Off-permit changes shall be subject to the following requirements and restrictions:
 - a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is subject to any requirements under Title IV of the Act or is a Title I modification;
 - b) The permittee must provide written notice of the change to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, no later than the next annual emissions report. This notice shall not be required for changes that are insignificant activities under 10 CSR 10-6.065(6)(B)3. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change.
 - c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes; and

- d) The permit shield shall not apply to these changes.

10 CSR 10-6.020(2)(R)12 Responsible Official

The application utilized in the preparation of this permit was signed by Jeff Rehm, Site Leader. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065(6)(E)6 Reopening-Permit for Cause

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MDNR) receives notice from the Environmental Protection Agency (EPA) that a petition for disapproval of a permit pursuant to 40 CFR § 70.8(d) has been granted, provided that the reopening may be stayed pending judicial review of that determination,
- 2) The Missouri Department of Natural Resources or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
- 3) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
 - a) The permit has a remaining term of less than three years;
 - b) The effective date of the requirement is later than the date on which the permit is due to expire;
or
 - c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
- 4) The installation is an affected source under the acid rain program and additional requirements (including excess emissions requirements), become applicable to that source, provided that, upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit;
or
- 5) The Missouri Department of Natural Resources or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

Attachments follow.

Attachment C

Method 9 Opacity Emissions Observations								
Company					Observer			
Location					Observer Certification Date			
Date					Emission Unit			
Time					Control Device			
Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
SUMMARY OF AVERAGE OPACITY								
Set Number	Time				Opacity			
	Start	End	Sum	Average				

Readings ranged from _____ to _____ % opacity.

Was the emission unit in compliance at the time of evaluation? _____
 YES NO Signature of Observer

Attachment E
Compliance Demonstration for 10 CSR 10-6.400

Emission Unit	Emission Unit Description	Control Device	Calculated Maximum PM Emission Rate Controlled (pounds per hour)	PM Emission Limit Established In Rule (pounds per hour)	Controlled PTE < Limit?	PTE as % of Allowable
EU0210	Nalzin Packing System East	CD-18	0.31	0.44	Yes	70%
EU0220	Nalzin Packing System West	CD-19	0.31	0.44	Yes	70%
EU0290	Nalzin Zinc Oxide Transfer	CD-16	0.86	0.88	Yes	98%
EU0440	PUG Mill Bag Dump Station	CD-68	0.64	0.72	Yes	89%

Attachment F
 Compliance Demonstration for 10 CSR 10-6.405

	EU0600	EU0620	EU0630	EU0640
	Powerhouse Boiler	Therminol Hot Oil System – P&G	Comfort Space Heating	Amine Tank Heaters (3 total)
Rated Capacity (MMBtu/hr.)	12.56	4.12	13.39	0.93
Date	1984	1991		2007
Type (New / Existing?)	N	N	N	N
Calculated Limits (lbs. / MMBtu)	0.28	0.28	0.28	0.28
Max Potential Emission Rate for Natural Gas (lbs. / MMBtu)	0.007	0.007	0.007	0.007

Attachment G
 Oxidizer Monitoring Log – Example of Electronic Recordkeeping

(Excel Spreadsheet, export from automatic Data Logger recording the Average Chamber Temperature every 15 minutes)

id	_NAME	_VALUE	_TIMESTAMP	_QUALITY
1041219	Chamber Average	1639	01/01/20xx 12:04:53 AM	192
1041224	Chamber Average	1694	01/01/20xx 12:19:53 AM	192
1041229	Chamber Average	1650	01/01/20xx 12:34:53 AM	192
1041234	Chamber Average	1660	01/01/20xx 12:49:53 AM	192
1041239	Chamber Average	1692	01/01/20xx 1:04:53 AM	192
1041244	Chamber Average	1640	01/01/20xx 1:19:53 AM	192
1041249	Chamber Average	1692	01/01/20xx 1:34:53 AM	192
1041254	Chamber Average	1646	01/01/20xx 1:49:53 AM	192
1041259	Chamber Average	1653	01/01/20xx 2:04:53 AM	192
1041264	Chamber Average	1697	01/01/20xx 2:19:53 AM	192
1041269	Chamber Average	1675	01/01/20xx 2:34:53 AM	192
1041274	Chamber Average	1660	01/01/20xx 2:49:53 AM	192
1041279	Chamber Average	1673	01/01/20xx 3:04:53 AM	192
1041284	Chamber Average	1640	01/01/20xx 3:19:53 AM	192
1041289	Chamber Average	1695	01/01/20xx 3:34:53 AM	192
1041294	Chamber Average	1646	01/01/20xx 3:49:53 AM	192
1041299	Chamber Average	1658	01/01/20xx 4:04:53 AM	192
1041304	Chamber Average	1689	01/01/20xx 4:19:53 AM	192
1041309	Chamber Average	1639	01/01/20xx 4:34:53 AM	192
1041314	Chamber Average	1692	01/01/20xx 4:49:53 AM	192
1041319	Chamber Average	1641	01/01/20xx 5:04:53 AM	192
1041324	Chamber Average	1652	01/01/20xx 5:19:53 AM	192
1041329	Chamber Average	1696	01/01/20xx 5:34:53 AM	192
1041334	Chamber Average	1671	01/01/20xx 5:49:53 AM	192
1041339	Chamber Average	1658	01/01/20xx 6:04:53 AM	192
1041344	Chamber Average	1680	01/01/20xx 6:19:53 AM	192
1041348	Chamber Average	1642	01/01/20xx 6:34:53 AM	192
1041354	Chamber Average	1694	01/01/20xx 6:49:53 AM	192
1041359	Chamber Average	1660	01/01/20xx 7:04:53 AM	192
1041364	Chamber Average	1658	01/01/20xx 7:19:53 AM	192
1041370	Chamber Average	1691	01/01/20xx 7:34:53 AM	192
1041374	Chamber Average	1631	01/01/20xx 7:49:53 AM	192
1041379	Chamber Average	1691	01/01/20xx 8:04:53 AM	192
1041384	Chamber Average	1640	01/01/20xx 8:19:53 AM	192
1041389	Chamber Average	1652	01/01/20xx 8:34:53 AM	192
1041394	Chamber Average	1696	01/01/20xx 8:49:53 AM	192
1041399	Chamber Average	1667	01/01/20xx 9:04:53 AM	192
1041404	Chamber Average	1658	01/01/20xx 9:19:53 AM	192
1041409	Chamber Average	1668	01/01/20xx 9:34:53 AM	192
1041414	Chamber Average	1641	01/01/20xx 9:49:53 AM	192
1041419	Chamber Average	1695	01/01/20xx 10:04:53 AM	192
1041424	Chamber Average	1667	01/01/20xx 10:19:53 AM	192
1041429	Chamber Average	1658	01/01/20xx 10:34:53 AM	192

STATEMENT OF BASIS

Permit Reference Documents

These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

- 1) Part 70 Operating Permit Application, received October 26, 2006; and updated applications received April 7, 2008 and April 2, 2010;
- 2) Emissions Inventory Questionnaire, most recent year of data 2009; and
- 3) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

Project Reference Listing

- 1) Project#: EX199705022, Completed September 12, 2001, Permit # OP2001-107, Description: Rheological agent manufacturing, Status: Part 70 Operating Permit Issued, Expired September 13, 2006.
- 2) Project#: EX199812062, Completed January 15, 1999, Permit # 98-07-048, Description: Plant rebagging station Status: Construction Permit Issued
- 3) Project#: AP200201096, Completed November 9, 2006, Description: Rheological agent manufacturing-Reopen for cause, Status: Closed out, per policy, Expired January 24, 2007.
- 4) Project#: AP200205173, Completed March 3, 2004, Description: not subject to 112J, Status: AP: Closed out, per policy, Permit Type: Part 70 Operating Permit 112J Revision
- 5) Project#: AP200205143, Completed June 12, 2002, Description: HAP < Major, Status: AP: Closed out, per policy, Permit Type: Part 70 Operating Permit 112J Revision
- 6) Project#: AP200512033, Completed January 10, 2006, Permit # 05-09-008, Description: Raw material change, Status: Local Construction Permit Issued
- 7) Project#: AP200610012, Completed January 29, 2007, Permit # 012007-018, Description: PUG Mill Production, Status: Section 5 Construction Permit Issued
- 8) Project#: AP200612027, Completed December 14, 2006, Description: Thermal oxidizer system, Status: Closed out, per policy
- 9) Project#: AP200709020, Completed October 2, 2007, Permit # 07-08-014, Description: Packing System, Status: Local Construction Permit Issued
- 10) Project#: AP200804021, Completed May 18, 2009, Status: OP Application Replaced by New Submittal, Permit Type: Part 70 Operating Permit Off-Permit Change
- 11) Project#: AP200804094, Completed May 18, 2009, Description: Add construction permit, Status: OP Application Replaced by New Submittal, Permit Type: Part 70 Operating Permit Off-Permit Change
- 12) Project#: AP200909001, Completed September 17, 2009, Permit # 09-06-014, Description: Pneumatic Transfer System, Status: Local Construction Permit Issued
- 13) Project#: AP201004007, Completed May 10, 2010, Status: OP Application Replaced by New Submittal, Permit Type: Part 70 Operating Permit Off-Permit Change

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits

In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

None

Other Air Regulations Determined Not to Apply to the Operating Permit

The Air Pollution Control Program (APCP) has determined the following requirements to not be applicable to this installation at this time for the reasons stated.

10 CSR 10-5.120, *Information on Sales of Fuels to be Provided and Maintained.*

The permittee does not buy, transport or sell coal or residual fuel oil, therefore this regulation is not applicable.

10 CSR 10-5.130, *Certain Coals to be Washed.*

The permittee does not buy, transport or sell coal, therefore this regulation is not applicable.

10 CSR 10-5.290, *More Restrictive Emission Limitations for Particulate Matter in the South St. Louis Area.*

The permittee is not located in the area defined by this regulation, therefore this regulation is not applicable.

10 CSR 10-5.300, *Control of Emissions From Solvent Metal Cleaning.*

This regulation does not apply because the cold cleaner uses an aqueous cleaning compound that does not contain VOC.

10 CSR 10-5.455, *Control of Emission from Industrial Solvent Cleaning Operations.*

This regulation does not apply because the emissions from solvent cleaning operations are less than 3 tons of VOC per any consecutive 12-month period.

10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds.*

This regulation does not apply because all combustion units use exclusively pipeline grade natural gas.

Calculations and Determinations for 10 CSR 10-6.400

Refer to Enclosure A following this Statement of Basis. This enclosure documents emission units that are exempt from the rule because at maximum design capacity they have a potential to emit less than one-half (0.5) pounds per hour of particulate matter or because they are equipped with a control device that has an overall control efficiency of greater than 90 percent. This enclosure also shows the process weight limit for those emission units that are not exempt from the rule. Those emission units that are exempt from 6.400 because the control device is federally required and greater than 90 percent have a permit condition that requires monitoring of the control device.

Construction Permit Revisions

The following revisions were made to construction permits for this installation:

St. Louis City Construction Permit 98-07-048, Issued December 10, 1998

This construction permit was not included in the Operating Permit because the permitted equipment is no longer in service.

Missouri Department of Natural Resources Construction Permit 012007-018, Issued January 29, 2007

This stated that “*During proper operation no visible emissions are expected from this emission unit*”. However, one of the baghouses (control device CD67 for EP68 in the construction permit, now labeled EU0430 in this permit) does not actually vent to the atmosphere, but rather to the thermal oxidizer. The “zero” opacity limit was not intended to apply to the thermal oxidizer. Therefore, the visible emissions limit for the thermal oxidizer is as listed in this operating permit.

New Source Performance Standards (NSPS) Applicability

40 CFR Part 60, Subpart Dc: *Standards of Performance for Small Industrial-Commercial-Industrial Steam Generating Units.*

This regulation does **not** apply to this facility because the natural gas boiler was installed before June 9, 1989 and is therefore a grandfathered unit.

40 CFR Part 60, Subpart Kb: *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.*

This regulation does **not** apply because all VOL storage tanks are below the limit of 75 m³ (19,813 gallons).

40 CFR Part 60, Subpart OOO: *Standards of Performance for Nonmetallic Mineral Processing Plants.*

This regulation does **not** apply because the permittee does not crush or grind clay at this facility and therefore, by definition, is not considered a Nonmetallic Mineral Processing Plant

Maximum Available Control Technology (MACT) Applicability

40 CFR Part 63, Subpart T: *National Emission Standards for Halogenated Solvent Cleaning.*

This regulation does **not** apply because the installation does not use the halogenated solvents listed in 40 CFR 63.460.

40 CFR Part 63 Subpart FFFF: *National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing.*

This regulation does **not** apply because the installation is not a major source of HAP.

40 CFR 63 Subpart VVVVVV: *National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources.*

This regulation does **not** apply because the installation does not use any of the HAPs listed in Table 1 to the Subpart in amounts greater than 0.1 percent for carcinogens or greater than 1.0 percent for non-carcinogens.

40 CFR Part 63 Subpart BBBB: *National Emission Standards for Hazardous Air Pollutants for Area Sources: Chemical Preparations Industry.*

This regulation does **not** apply although the facility's operations are described by the NAICS code 325998. The installation does not use or manufacture materials which contain the target HAP's listed in the rule in amounts greater than or equal to the relevant de minimis levels.

40 CFR Part 63 Subpart JJJJJ: *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.*

This regulation does **not** apply because EU0600, the Powerhouse Boiler, burns pipeline grade natural gas only.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

40 CFR Part 61, Subpart M: *National Emission Standard for Asbestos.*

This regulation applies to the installation.

Compliance Assurance Monitoring (CAM) Applicability

40 CFR Part 64, *Compliance Assurance Monitoring (CAM)*

The CAM rule applies to each pollutant specific emission unit that:

- Is subject to an emission limitation or standard, and

- Uses a control device to achieve compliance, and
- Has pre-control emissions that exceed or are equivalent to the major source threshold.

40 CFR Part 64 is **not** applicable because none of the pollutant-specific emission units uses a control device to achieve compliance with a relevant standard.

Greenhouse Gas Emissions (GHG)

This installation is **not** a major source for greenhouse gases. While Part 70 permits generally do not establish new emissions limits, they consolidate applicable requirements, as defined in Missouri State Regulations 10 CSR 10 6.020(2)(A)23, into a comprehensive air permit. At the time of permit issuance, there were no applicable GHG requirements for this source.

Note that this source is **not** subject to the Greenhouse Gas Reporting Rule. In addition, Missouri regulations do not require the installation to report CO₂ emissions in their Missouri Emissions Inventory Questionnaire; therefore, the installation's CO₂ emissions were not included within this permit.

Other Regulatory Determinations

10 CSR 10-5.520, Control of Volatile Organic Compound Emissions From Existing Major Sources

The Reasonably Available Control Technology (RACT) plan submitted by the permittee to satisfy state rule 10 CSR 10-5.520, and incorporated by reference into this permit, contains this statement: "*Records of the hours of operation for this emission unit shall be kept.*" This statement is not included in the operating permit conditions because it is not relevant to compliance of the thermal oxidizer.

The primary control device under the RACT plan is the thermal oxidizer. Two enclosures have been included with this Statement of Basis, Enclosures B & C. Enclosure B shows the flow diagram to and through the thermal oxidizer. Enclosure B also shows the temperature monitoring schematic. Enclosure C gives information on: Oxidizer Operating Parameters; Oxidizer Range for Normal Operations; Performance Criteria for Monitoring Elements; Monitoring Activities; and, Supplemental Information on Oxidizer Operations and Procedures.

As a part of the capital project to install the thermal oxidizer, the cost effectiveness for each emission unit to be controlled was reviewed. As discussed with St. Louis City Air Pollution Control Program and the Missouri Department of Natural Resources in the period of December 2001 – January 2002, the cost of installing a thermal oxidizer to control VOC emissions from EU0150, Bentone Flash Dryer #1 and EU0160, Bentone Flash Dryer #2 exceeded the RACT cost effectiveness requirements and it was determined that there was no RACT available for these units.

10 CSR 10-6.165, Restriction of Emission of Odors.

The previous operating permit and the application contained reference to 10 CSR 10-5.160, Control of Odors in the Ambient Air. This rule was rescinded November 30, 2010 and replaced by the statewide rule 10 CSR 10-6.165. Section IV, Core Permit Requirements, was updated to show the current rule.

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons:

- 1) The specific pollutant regulated by that rule is not emitted by the installation;

- 2) The installation is not in the source category regulated by that rule;
- 3) The installation is not in the county or specific area that is regulated under the authority of that rule;
- 4) The installation does not contain the type of emission unit which is regulated by that rule;
- 5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the Air Pollution Control Program a schedule for achieving compliance for that regulation(s).

Prepared by:

Randy E. Raymond
Environmental Engineer

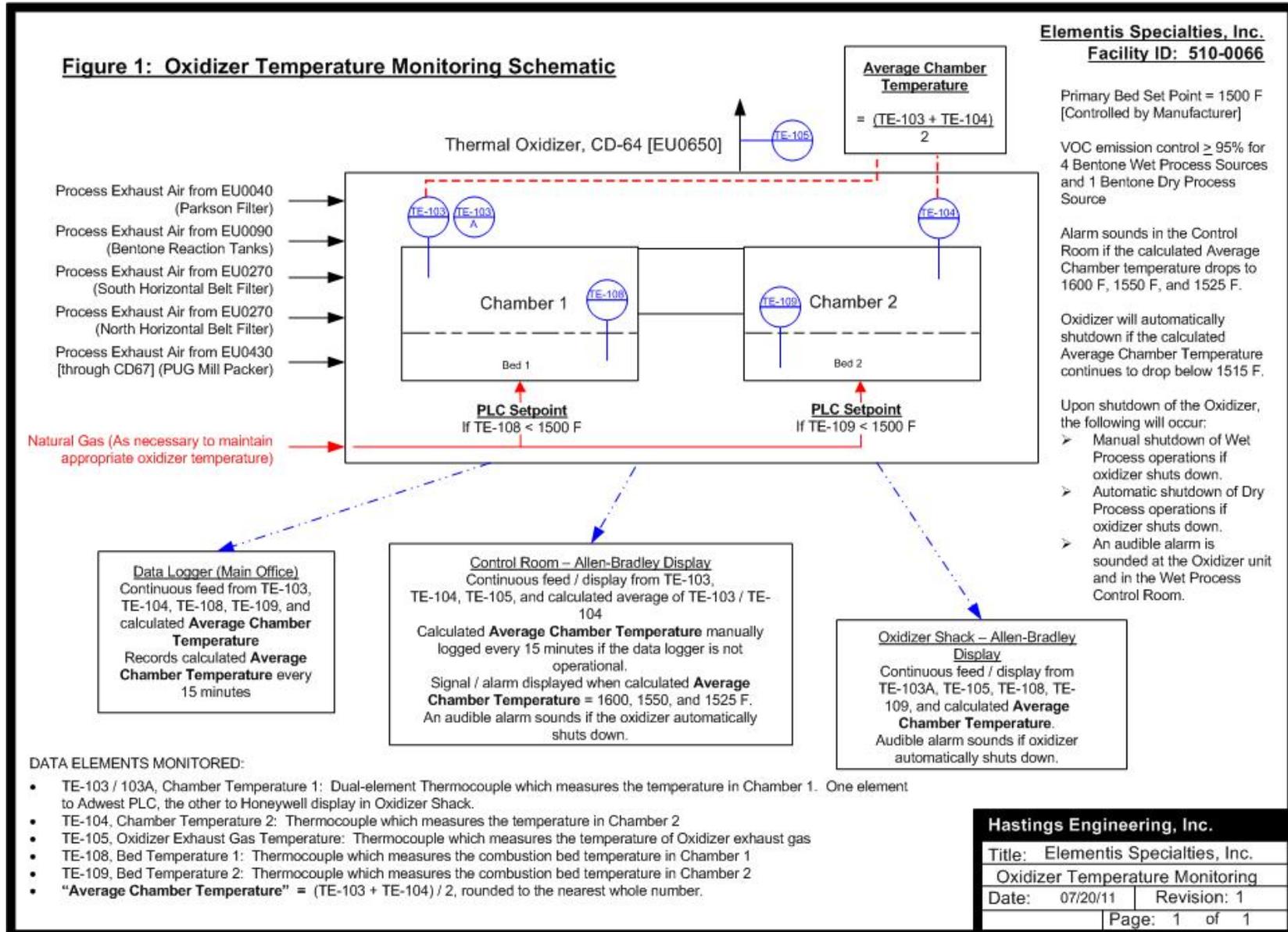
Enclosure A, Review of Particulate Emission Sources for Applicability of 10 CSR 10-6.400

Emission Unit	Emission Unit Description	Maximum Design Capacity (tons/hr)	PM Emission Factor (lbs/ton)	Calculated Maximum PM Emission Rate Uncontrolled (pounds / hr)	Control Device	Overall Control Efficiency	Calculated Maximum PM Emission Rate Controlled (pounds / hr)	PM Emission Limit Established In Rule (pounds / hr)
Uncontrolled Emissions < 0.5 tons per hour								
EU0060	Bentone Dispersion Tanks	5.900000	0.0498	0.2938	None		0.2938	13.47
EU0190	Nalzin Formation Tank Vent	2.000000	0.0498	0.0996	None		0.0996	6.52
EU0230	Bentone Packing Baghouse	0.004167	17.0000	0.0708	CD-14	49.50%	0.0358	0.10
EU0550	P & G Reactor Bag Dump	0.062500	0.0498	0.0031	None		0.0031	0.64
Uncontrolled Emissions < Calculated PWR limit								
EU0070	Bentone Gel Reactor	0.760000	2.0000	1.5200	CD-27	99.00%	0.0152	3.41
EU0100	Clay Receiver #1	2.950000	2.5000	7.3750	CD-3	99.00%	0.0738	8.46
EU0110	Clay Receiver #2	2.950000	2.5000	7.3750	CD-4	99.00%	0.0738	8.46
EU0250	Wax Storage Silos	11.860000	0.0498	0.5906	CD-24	99.00%	0.0059	21.50
EU0410	PUG Mill Day Silo	0.688000	2.5000	1.7200	CD-66	99.00%	0.0172	3.19
Control Device Efficiency > 90%								
EU0050	Bentone Central Vacuum System	0.021000	1,174.0000	24.6540	CD-34	99.00%	0.2465	0.31
EU0080	Bentone Packing System "A"	2.000000	17.0000	34.0000	CD-47	99.00%	0.3400	6.52
EU0120	Clay Storage Silos	29.230000	2.5000	73.0750	CD-1	99.00%	0.7308	39.34
EU0140	Wet Process Day Silo	13.490000	2.5000	33.7250	CD-2	99.00%	0.3373	23.44
EU0150	Bentone Flash Dryer #1, Total all PM	0.972000	234.8153	228.2405	CD-9	99.00%	2.2824	4.02
	Bentone Flash Dryer #1 (Product Conveying & Drying)	0.972000	1,174.0000	1,141.1280	CD-8	99.00%	228.2256	4.02
	Bentone Flash Dryer #1 (Natural Gas Combustion, Direct Heating)	10.000000	0.0075	0.0745	CD-8	99.00%	0.0149	

Emission Unit	Emission Unit Description	Maximum Design Capacity (tons/hr)	PM Emission Factor (lbs/ton)	Calculated Maximum PM Emission Rate Uncontrolled (pounds / hr)	Control Device	Overall Control Efficiency	Calculated Maximum PM Emission Rate Controlled (pounds / hr)	PM Emission Limit Established In Rule (pounds / hr)
EU0160	Bentone Flash Dryer #2, Total all PM	0.972000	234.8153	228.2405	CD-11	99.00%	2.2824	4.02
	Bentone Flash Dryer #2 (Product Conveying & Drying)	0.972000	1,174.0000	1,141.1280	CD-10	99.00%	228.2256	4.02
	Bentone Flash Dryer #2 (Natural Gas Combustion, Direct Heating)	10.000000	0.0075	0.0745	CD-10	99.00%	0.0149	
EU0170	Nalzin Kiln Dryer, Total all PM	0.766000	15.0000	11.5212	CD-15	99.00%	0.1152	3.43
	Nalzin Kiln Dryer (Product Conveying & Drying)	0.766000	15.0000	11.4900	CD-15	99.00%	0.1149	3.43
	Nalzin Kiln Dryer (Natural Gas Combustion, Direct Heating)	4.185000	0.0075	0.0312	CD-15	99.00%	0.0003	
EU0180	Bentone Milling	1.940000	17.0000	32.9800	CD-12	99.00%	0.3298	6.39
EU0200	Nalzin Mill	1.040000	17.0000	17.6800	CD-17	99.00%	0.1768	4.21
EU0240a	Bentone Pneumatic Transfer	2.500000	17.0000	42.5000	CD-13	99.00%	0.4250	7.58
EU0430	PUG Mill Baghouse Receiver	1.008500	17.0000	17.1445	CD-67	99.00%	0.1714	4.12
EU0450	Bentone Packing System "B"	3.000000	17.0000	51.0000	CD-71	99.00%	0.5100	8.56
Subject to Rule, but controlled emissions < calculated PWR limit								
EU0210	Nalzin Packing System East	0.035750	17.0000	0.6078	CD-18	49.50%	0.3069	0.44
EU0220	Nalzin Packing System West	0.035750	17.0000	0.6078	CD-19	49.50%	0.3069	0.44
EU0290	Nalzin Zinc Oxide Transfer	0.100000	17.0000	1.7000	CD-16	49.50%	0.8585	0.88
EU0440	PUG Mill Bag Dump Station	0.075000	17.0000	1.2750	CD-68	49.50%	0.6439	0.72

Enclosure B, Oxidizer Temperature Monitoring Schematic

Figure 1: Oxidizer Temperature Monitoring Schematic



Enclosure C, Outline of Operating and Monitoring Parameters To Ensure Proper Operation of the Thermal Oxidizer

Goal: To ensure that the oxidizer meets the desired minimum 95 percent DRE required for compliance with RACT for the following emission units:

EU0040 (Parkson Filter); EU0090 (Bentone Reaction Tanks); EU0270 (South Horizontal Belt Filter); EU0280 (North Horizontal Belt Filter); and EU00430 (PUG Mill Packer)

	Operating Temperature	Inspections	Performance Testing
I. Oxidizer Operating Parameters			
Indicator	Oxidizer Set Point Oxidizer Average Chamber Temperature	The oxidizer, including alarms and automatic cutoffs, is in a condition to ensure proper operations.	Performance test demonstrating a minimum 95% control efficiency
Measurement Approach	Set point is proprietary and controlled by solely by the manufacturer (Adwest Technologies Inc). Continuously monitor the Average Chamber Temperature .	Standard operating practices, inspections and preventive maintenance activities.	Conduct an emissions test in accordance with USEPA methodologies.
II. Oxidizer Range for Normal Operations			
Indicator Range	The oxidizer operates at a temperature set point of 1500 °F for both Bed 1 and Bed 2, controlled by the manufacturer. The temperature of each chamber is expected to vary between 1450 and 2000 °F, with the typical Average Chamber Temperature between 1500 °F to 1750 °F.	Oxidizer is structurally intact. Oxidizer alarms and interlocks are operating as designed.	The oxidizer was installed to provide a minimum of 95% control efficiency, as per the facility's RACT analysis.
Corrective Action	<ol style="list-style-type: none"> The oxidizer is equipped with an automatic monitoring and control system. It will automatically "fault" and shut off flow from emission sources if a condition is detected that will not control emissions. * Elementis has added an additional fault which triggers an automatic shut off of flow from emission sources when the Average Chamber Temperature drops to 1515 °F or below. Any automatic shut off of flow from emission sources results in the following: 	Repair the oxidizer or associated alarms and interlocks as required in the event that a non-standard item is identified.	Inspect the oxidizer and repair as indicated, in consultation with the manufacturer, in the event that any performance test indicates a less than 95% control efficiency.

	Operating Temperature	Inspections	Performance Testing
	a) An alarm sounds in the Wet Process Control Room which triggers a manual shutdown of the wet bentone manufacturing process. b) The dry bentone manufacturing process automatically goes to a recycle mode, during which no VOCs are emitted. c) Corrective action is initiated to resolve or repair the cause of the problem. * The monitored criteria that trigger a fault and automatic shutdown are described in Part V, A.5.		
III. Performance Criteria for Monitoring Elements			
Data Representativeness	The thermocouples used to measure oxidizer temperatures will be accurate to within ± 5 °F.	The oxidizer will be inspected for structural integrity and for performance effectiveness as per manufacturer's recommendations.	A test protocol will be prepared and approved (as required) to determine the destruction efficiency of the oxidizer.
Verification of Operation Status	Oxidizer temperatures are displayed in the control room. The Average Chamber Temperature is recorded electronically. Automatic alarms and shutdown if the oxidizer is non-operational.	Inspection records.	Not applicable
QA / QC Practices and Criteria	Validation of: <ul style="list-style-type: none"> • Thermocouple accuracy • Data logger adequacy • Automatic shutdown 	Not applicable	As per the approved protocol
IV. Monitoring Activities			
Monitoring Frequency	Temperature is measured and displayed continuously.	<u>Elementis:</u> a) Daily informal observation of oxidizer to verify operations. b) Semi-annual external inspection of	Performance tests will be conducted every 5 years.

	Operating Temperature	Inspections	Performance Testing
		<p>the oxidizer to confirm integrity.</p> <p>c) Semi-annual inspection / replacement (as needed) of mist eliminator elements.</p> <p>d) Semi-annual test of alarms and interlocks.</p> <p>e) Annual validation of the temperature recording system.</p> <p><u>Manufacturer (Ad-West):</u></p> <p>a) Annual internal inspection of oxidizer, including the accuracy of the various oxidizer monitoring devices.</p>	
Data Collection Procedures	<p><u>Electronic:</u> The Average Chamber Temperature is recorded electronically on the data logger every 15 minutes.</p> <p><u>Manual Backup:</u> In the event of a problem with the data logger, the Average Chamber Temperature is recorded in the operating log every 15 minutes while either Department is operating.</p>	<p>Maintains records of inspections, along with any corrective action taken.</p> <p>Maintain records of repairs and replacements.</p>	As per the approved test methods.
Recordkeeping	Electronic data records and paper records are maintained for a minimum of 5 years.	Electronic data records and paper records are maintained for a minimum of 5 years.	Electronic data records and paper records are maintained for a minimum of 5 years.
Reporting	<p>Malfunctions that result in excess emissions will be reported within 24 hours. A written follow-up report will be submitted as specified in the Title V operating permit. The malfunction will be included in the semi-annual compliance reports, as specified in the Title V operating permit.</p> <p>Malfunctions that do not result in excess emissions will be included in the semi-annual compliance reports, as specified in the Title V operating permit.</p>	Not applicable	<p>The test protocol will be submitted to St. Louis City and the MDNR as least 30 days prior to the test.</p> <p>The test report will be submitted to St. Louis City and the MDNR within 60 days following the completion of the test.</p>

V. Supplemental Information on Oxidizer Operations and Procedures

Also refer to Figure 1, Oxidizer Temperature Monitoring Schematic

A. OXIDIZER OPERATIONS:

Operating at a set point of 1500 °F for Bed 1 and Bed 2 automatically maintains the operating temperatures within the ranges necessary to achieve complete combustion and a destruction efficiency of greater than 95%. The **Average Chamber Temperature** is used as the primary indicator because it demonstrates that the oxidizer is operating as designed, within the desired set point.

The Average Chamber Temperature is defined to be the arithmetic average of the instantaneous Chamber 1 and Chamber 2 temperatures, rounded to the nearest whole number. It is calculated as $(TE-103 + TE-104) / 2$.

Oxidizer chamber temperatures constantly fluctuate based on the set point, the upper temperature limit of 2000 °F, and other process parameters:

1. One bed is active while the other regenerates. Once the second bed is finished regenerating and is now active, the first bed begins regenerating. The process air flows through each bed, from the low temperature bed to the higher temperature bed. The direction of flow reverses on average every 4 minutes.
2. The oxidizer uses natural gas at start up until the oxidizer reaches "Run Mode" with both beds greater than 1300 °F.
3. The oxidizer will continue to maintain the bed temperatures above the set point using the VOC in the process air as the primary fuel. Natural gas flow is adjusted and fed as needed to maintain the oxidizer temperature above the set point any time either bed temperature is less than 1500 °F. As a safeguard, if either chamber temperature is greater than 1700 °F, natural gas will shut off, regardless of the bed temperatures.
4. In addition to the reversal of the air flow direction, process variability can affect the bed and chamber temperatures because higher or lower VOC levels in the process air can require supplemental natural gas to be used or the natural gas to be cut off. The temperature variation does not affect the control efficiency as long as the bed and chamber temperatures remain within the range indicated by the selected set point.
5. The oxidizer automatically faults and shuts off process air when chamber or bed temperatures are such that the oxidizer cannot achieve normal operation. Other variables, including a power failure, a high differential temperature, low compressed air pressure, low/high fuel gas pressure, combustion blower failure, etc. which indicate problems with normal operations of the oxidizer will also trigger a fault and an automatic shutdown of the unit.
6. Elementis is adding a new fault trigger which will activate once the **Average Chamber Temperature** drops below 1600 °F and then subsequently drops below 1515 °F.
7. The oxidizer was demonstrated to control emissions to greater than 95% efficiency, even with a set point as low as 1450 °F. [The most recent stack test (December 2010) showed a 97.8% control efficiency at a set point of 1500 °F and a 97.7% control efficiency at 1450 °F.]

B. FACILITY PROCEDURES

1. The facility does not vent process operations to the oxidizer until the oxidizer has reached "Run Mode" and can accept process air.
2. The facility will not operate the affected wet process or dry process operations unless process air from these operations is venting to the oxidizer and the oxidizer is operational.
3. As per A.5. above, the oxidizer PLC controller continuously monitors a variety of parameters associated with oxidizer operations and will automatically shut down the oxidizer when it is not operating as designed. This triggers the following:

- a. An alarm sounds in the Wet Process Control Room, which triggers a manual shutdown of wet process operations.
 - b. The dry process automatically goes into recycle mode, with no VOC emissions.
 - c. Elementis personnel investigate and correct the cause of the problem before restarting the oxidizer.
 - d. Wet process / dry process operations are not restarted until the oxidizer is operating normally and can accept process air.
4. As an additional practice to ensure that affected production operations will not run when the oxidizer cannot control emissions to at least a 95% DRE, the facility will install an additional warning system and automatic fault logic to the PLC. An alarm will sound when the oxidizer **Average Chamber Temperature** reaches 1600 °F; 1550 °F; and 1525 °F. The wet process control room operator must acknowledge each alarm.
- a. At 1600 °F, a wet process control room operator will begin monitoring the **Average Chamber Temperature** closely.
 - b. At 1550 °F, the wet process control room operator will alert the dry process control room operator and supervision to potential problems with the oxidizer.
 - c. At 1525 °F, the wet process control room operator will alert supervision and the dry process control room operator that the temperature is continuing to drop.
 - d. The oxidizer will automatically fault and shut down if the **Average Chamber Temperature** continues to drop and drops below 1515 F.
 - e. The same procedures described in B.3., above, will be followed if the oxidizer shuts down.

C. MONITORING COMMENTS:

The combination of the continuous monitoring of oxidizer parameters, including **Average Chamber Temperature**, along with automatic oxidizer shut down, and facility response practices, ensure that recording the average chamber temperature every 15 minutes will sufficiently document that the oxidizer operated effectively during the time period.