Louisville Metro Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137

Federally Enforceable District Origin Operating Permit (FEDOOP)

Permit No.: O-1264-16-F Plant ID: 1264

Effective Date: Click here to enter a date. Expiration Date: Click here to enter a date.

Permission is hereby given by the Louisville Metro Air Pollution Control District to operate the process(es) and equipment described herein which are located at:

Owner: Zeochem, LLC
Source: Zeochem, LLC
1314 South 12th Street
Louisville, KY 40232

The applicable procedures of District Regulation 2.17 regarding review by the U.S. EPA and public participation have been followed in the issuance of this permit. Based on review of the application on file with the District, permission is given to operate under the conditions stipulated herein. If a renewal permit is not issued prior to the expiration date, the owner or operator may continue to operate in accordance with the terms and conditions of this permit beyond the expiration date, provided that a complete renewal application is submitted to the District no earlier than twelve (12) months and no later than ninety (90) days prior to the expiration date.

Emission limitations to qualify for non-major status:

Pollutant:	PM_{10}	Single HAP	Total HAP
Tons/year:	25	5	12.5

Application No.: DM 18783 & 18781 Application Received: 2/21/2006

Permit Writer: Virginia Rhodes

Public Notice Date: 9/9/2016

{manager1}
Air Pollution Control Officer
{date1}

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Permit Revisions/Changes

Permit No.	Issue Date	Type	Page No.	Description
N/A	02/14/2001	Initial	Entire permit	Initial Permit Issuance
192-01-F(R1)	08/15/2003	Significant	Entire permit	Added construction permits 140-03 and 141-03.
O-1264-16-F	xx/xx/16	Renewal	Entire Permit	Permit Renewal Incorporating construction permits 234-08-C, 203-07-C, 204-07-C, 205-07-C, 542-07-C, 541-07-C, 279-06-C, 108-04-C, 109-04-C, 172-79-C(R1), 173-79-C(R1), 584-91-C(R1), 651-92-C(R1), 652-92-C(R1), 653-92-C(R1), 655-92-C(R1), 656-92-C(R1), 657-92-C(R1).

Construction Permits

Permit No.	Issue Date	Description
108-04-C	9/30/2005	One (1) Scott ribbon blender and one (1) Scott bag dump station.
109-04-C	9/30/2005	Two (2) dust collectors; one (1) MAC DC-412 and one (1) MAC DC-413.
279-06-C	11/30/2006	One (1) 9,000 gallon storage tank (T-25) for hydrochloric acid (37%) with Tigg Econosorb-V adsorber canister.
203-07-C	6/15/2007	Two (2) storage silos (V-222 and V-223) for storing molecular sieve powder.
204-07-C	6/15/2007	Two (2) dust collectors to control PM emissions from storage silos V-222 and V-223 and from one dense surge hopper.
205-07-C	6/15/2007	One (1) dense phase surge hopper, one (1) dense phase conveying pot, and one (1) ball wheel system.
541-07-C	10/31/2007	One (1) Pannevis belt filter press, one (1) synthesis tank (T-15), one (1) dense phase conveyor/surge hopper, and one (1) Ring Dryer.
542-07-C	10/31/2007	One (1) fabric filter dust collector designated as DC-215 to control PM emissions from the Ring Dryer and dense phase conveyor/surge hopper.
234-08-C	3/26/2008	Two (2) 24,000 gallon sulfuric acid storage tanks (T-182 & T-183)
679-08-C	11/30/2008	Modification to Plant A Dryer and Plant B Dryer/Calciner to allow production of a product that contains 1% ethanol by weight. This permit is voided.
172-79-C(R1)	09/06/2016	Correcting PM limits for E-003A (Fluid-Bed Dryer, Y-19) and E-003B (Calciner Y-20).
173-79-C(R1)	09/06/2016	Correcting PM limits for E-002A through E-002N.
584-91-C(R1)	08/04/2016	Correcting PM limits for re-work storage silo pneumatic conveying system (U-012/E-012 A Plant Rework System).
651-92-C(R1)	08/04/2016	Correcting PM limits for powder unloading/ conveying system including a bulk bag unloading station, V-105, to convey sodium aluminosilicates to silo V-100 (U-013/E-013) controlled by dust collector C-011 & silo V-101 (U-013/E-014) controlled by dust collector C-012.
652-92-C(R1)	08/04/2016	Correcting PM limits for dense phase conveying system to convey sodium aluminosilicates to silo V-111 (U-014/E-015) controlled by dust collector C-013 & silo V-110 (U-014/E-016) controlled by dust collector C-014.

Permit No.	Issue Date	Description
653-92-C(R1)	09/06/2016	Correcting PM limits for U-015 B Plant Nauta System consisting of E-017A (Mixer MX-115), E-017B (Mixer-116), E-017C (Ball Wheel BW-129), and E-017D (Ball Wheel BW-121).
655-92-C(R1)	08/04/2016	Correcting PM limits for Pneumatic conveying system to convey sodium aluminosilicates to B-Plant storage hoppers V-120 (U-016/E-018), V-121 (U-016/E-019A), & V-122 (U-016/E-019B).
656-92-C(R1)	08/04/2016	Correcting PM limits for B-Plant U-017/E20 Bag Dump Station (Ribbon Blender) (MX-112) equipped with a fabric filter dust collection unit (DC - 112).
657-92-C(R1)	09/06/2016	Correcting PM limits for (E-021A) B-Plant Fluid Bed Dryer DR-150 and (E-021B) B Plant Calciner HE-150.

Acronyms and Abbreviations

AP-42	- AP-42, Compilation of Air Pollutant Emission Factors, published by USEPA
APCD	- Louisville Metro Air Pollution Control District
BAC	- Background Ambient Concentration
BACT	- Best Available Control Technology
Btu	- British thermal unit
CEMS	- Continuous Emission Monitoring System
CFR	- Code of Federal Regulations
CO	- Carbon monoxide
District	- Louisville Metro Air Pollution Control District
EA	- Environmental Acceptability
FEDOOP	- Federally Enforceable, District Origin Operating Permit
gal	- U.S. fluid gallons
GHG	- Greenhouse Gas
HAP	- Hazardous Air Pollutant
HCl	- Hydrogen chloride
Hg	- Mercury
hr	- hour
in.	- inches
lbs	- pounds
l	- liter
LMAPCD	- Louisville Metro Air Pollution Control District
mm_{Hg}	- millimeters of mercury column height
MM	- million
NAICS	- North American Industry Classification System
NO_x	- Nitrogen oxides
PM	- Particulate Matter
PM_{10}	- Particulate Matter less than 10 microns
$PM_{2.5}$	- Particulate Matter less than 2.5 microns
ppm	- parts per million
PSD	- Prevention of Significant Deterioration
psia	- pounds per square inch absolute
QA	- Quality Assurance
SIC	- Standard Industrial Classification
SIP	- State Implementation Plan
SO_2	- Sulfur dioxide
STAR	- Strategic Toxic Air Reduction
TAC	- Toxic Air Contaminant
UTM	- Universal Transverse Mercator
VOC	- Volatile Organic Compound
w.c.	- water column
year	- any period of twelve consecutive months, unless "calendar year" is specified
yr	- year, or any 12 consecutive-month period, as determined by context

Preamble

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. Any permit shall be considered invalid if timely payment of annual fees is not made. The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

General Conditions

1. The owner or operator shall comply with all General Conditions herein and all terms and conditions in the referenced process/process equipment list.

2. All terms and conditions in this FEDOOP are enforceable by EPA, except those terms and conditions specified as District-only enforceable, and those which are not required pursuant to the Clean Air Act Amendments of 1990 (CAAA) or any of the Act's applicable requirements.

3. All application forms, reports, compliance certifications, and other relevant information submitted to the District shall be certified by a responsible official. If a change in the responsible official (RO) occurs during the term of this permit, or if an RO is added, the owner or operator shall provide written notification (Form AP-100A) to the District within 30 calendar days of such change or addition.

4. The owner or operator shall submit an annual compliance certification, signed by the responsible official, to the District, on or before April 15 of the year following the year for which the certification applies. This certification shall include completion of District Form 9440-0.

5. Periodic testing, instrumental monitoring, or non-instrumental monitoring, which may include record keeping, shall be performed to the extent necessary to yield reliable data for purposes of demonstrating continuing compliance with the terms and conditions of this permit.

6. The owner or operator shall retain all records required by the District or any applicable requirement, including all required monitoring data and supporting information, for a period of five years from the date of the monitoring, sampling, measurement, report, or application, unless a longer time period for record retention is required by the District or an applicable requirement. Records shall be retrievable within a reasonable time and made available to the District, Kentucky Division for Air Quality, or the EPA upon request.

7. The owner or operator shall provide written notification to the District, and receive approval, prior to making any changes to equipment or processes that would result in emissions of any regulated pollutant in excess of the allowable emissions specified in this permit.

8. This permit may be reissued, revised, reopened, or revoked pursuant to District Regulation 2.17. Repeated violations of permit conditions are sufficient cause for revocation of this permit. The filing of a request by the owner or operator for any reissuance, revision, revocation, termination, or a notification of planned changes in equipment or processes, or an anticipated noncompliance shall not alter any permit requirement.

9. Except as otherwise specified or limited herein, the owner or operator shall not allow or cause the emissions to equal or exceed either 10 tons per year, or such lesser quantity as the EPA has established by rule, of any one Hazardous Air Pollutant (HAP) or 25 tons per year of all HAPs combined. Fugitive HAP emissions shall be included in this limit. HAPs are listed in Section 112(b) of the CAAA and as amended in 40 CFR 63, Subpart C.

10. Except as otherwise specified or limited herein, the owner or operator shall not allow or cause the emissions to equal or exceed 100 tons per year of any regulated pollutant, including particulate matter, PM_{10}, $PM_{2.5}$, sulfur dioxide, carbon monoxide, nitrogen oxides, lead, hydrogen sulfide, gaseous fluorides, total fluorides, or Volatile Organic Compounds (VOC); any pollutant subject to any standard in District Regulation 7.02; any substance listed in sections 112(r), 602(a) and 602(b) of the CAAA; or any combination of greenhouse gasses whose combined global warming potential equals or exceeds 100,000 tons CO_2-equivalent, as defined in 40 CFR 98 (except that prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include biogenic carbon dioxide emissions defined in 40 CFR 52.21(b)(49)(ii)(a)). Fugitive emissions shall be included in these limits for source categories listed in District Regulation 2.16.

11. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.

12. Unless specified elsewhere in this permit, the owner or operator shall submit annual reports demonstrating compliance with the emission limitations specified. The report shall contain monthly and consecutive 12-month totals for each pollutant that has a federally enforceable limitation on the potential to emit. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement or a declaration that there were no such deviations. All annual compliance reports shall include the statement "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete" and the signature and title of a responsible official of the company. The report must be postmarked no later than March 1 of the year following the calendar year covered in the annual report.

13. The owner or operator shall comply with all applicable requirements of the following federally enforceable District Regulations:

Regulation	Title
1.01	General Application of Regulations and Standards
1.02	Definitions
1.03	Abbreviations and Acronyms
1.04	Performance Tests
1.05	Compliance with Emissions Standards and Maintenance Requirements
1.06	Source Self-Monitoring, Emissions Inventory Development and Reporting
1.07	Excess Emissions During Startups, Shutdowns, and Upset Conditions
1.08	Administrative Procedures
1.09	Prohibition of Air Pollution
1.10	Circumvention
1.11	Control of Open Burning
1.14	Control of Fugitive Particulate Emissions
2.01	General Application (Permit Requirements)
2.02	Air Pollution Regulation Requirements and Exemptions
2.03	Permit Requirements - Non-Title V Construction and Operating Permits and Demolition/Renovation Permits
2.07	Public Notification for Title V, PSD, and Offset Permits; SIP Revisions; and Use of Emission Reduction Credits
2.09	Causes for Permit Modification, Revocation, or Suspension

Regulation	Title
2.10	Stack Height Considerations
2.11	Air Quality Model Usage
2.17	Federally Enforceable District Origin Operating Permits
4.01	General Provisions for Emergency Episodes
4.02	Episode Criteria
4.03	General Abatement Requirements
4.07	Episode Reporting Requirements
6.01	General Provisions (Existing Affected Facilities)
6.02	Emission Monitoring for Existing Sources
7.01	General Provisions (New Affected Facilities)

14. The owner or operator shall comply with all applicable requirements of the following District-only enforceable regulations:

Regulation	Title
1.12	Control of Nuisances
1.13	Control of Objectionable Odors in the Ambient Air
2.08	Fees
5.00	Definitions
5.01	General Provisions
5.02	Adoption and Incorporation by Reference of National Emission Standards for Hazardous Air Pollutants
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant
5.21	Environmental Acceptability for Toxic Air Contaminants
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant
5.23	Categories of Toxic Air Contaminants
7.02	Adoption of Federal New Source Performance Standards

15. The owner or operator shall submit emission inventory reports, as required by Regulation 1.06, if so notified by the District.

16. The owner or operator shall submit timely reports of abnormal conditions or operational changes that may cause excess emissions, as required by Regulation 1.07.

17. Applications, reports, test data, monitoring data, compliance certifications, and any other document required by this permit shall be submitted to:

Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, KY 40203-3137

Source-Wide Conditions

S1. **Standards (Regulation 2.17, section 5.1)**

a. **PM/PM_{10}**

The owner or operator shall not allow *plant-wide* PM/PM_{10} emissions to exceed 25 tons per consecutive 12-month period.[1] (Regulation 2.17, section 5.1)

b. **Opacity**

The owner or operator shall not allow or cause visible emissions to equal or exceed twenty percent (20%) opacity. (Regulation 7.08, section 3.1.1)

c. **HAP[2]**

i. The owner or operator shall not allow *plant-wide* single HAP emissions to exceed 5 tons per consecutive 12-month period for each HAP.[1]

ii. The owner or operator shall not allow *plant-wide* total HAP emissions to exceed 12.5 tons per consecutive 12-month period.[1]

S2. **Monitoring and Record Keeping (Regulation 2.17, section 5.2)**

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM/PM_{10}**

i. For each PM emission point, the owner or operator shall monthly monitor and maintain records of monthly throughput of each raw material during each calendar month.

ii. The owner or operator shall monthly calculate and record *plant-wide* consecutive 12-month PM/PM_{10} emissions, for each month in the reporting period. (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

b. **Opacity**

i. For each referenced PM emission point, the owner or operator shall conduct a monthly one-minute visible emissions survey during normal process operation of each PM emission point. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is wholly within a building.

ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall

[1] On February 26, 2014, the source requested to be exempt from the requirements of STAR by accepting the following limits: 25 tons per year of a regulated air pollutant, 5 tons per year of a single HAP, and 12.5 tons per year of combined HAPs.

[2] 40 CFR 63 Subpart VVVVVV is not applicable since this Company does not process or use any of the HAPs listed in Table 1 to 40 CFR 63 Subpart VVVVVV.

perform or cause to be performed a Method 9 within 24 hours of the initial observation.

iii. The owner or operator shall maintain monthly records of the results of all visible emissions surveys and Methods 9 tests performed. The records shall include the date of each survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

c. **HAP**

i. The owner or operator shall maintain a copy of the Safety Data Sheet SDS) for each HAP-containing material.

ii. The owner or operator shall monthly monitor and maintain records of the monthly throughput of each HAP-containing raw material, the HAP content, and the consecutive 12-month throughput of each HAP-containing raw material.

iii. The owner or operator shall monthly calculate and record the plant-wide consecutive 12-month emissions of each single HAP and total HAP for each month in the reporting period. (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

S3. **Reporting (Regulation 2.17, section 5.2)**

The owner or operator shall submit annual compliance reports in accordance with General Condition 12.

a. **PM/PM_{10}**

The owner or operator shall report the *plant-wide* consecutive 12-month PM/PM_{10} emissions for each month in the reporting period.

b. **Opacity**

i. The date and time of each VE Survey where visible emissions were observed and the results of the Method 9 test performed;

ii. Identification of all periods of exceeding the opacity standard;

iii. Description of any corrective action taken for each exceedance of an opacity standard specified in this permit; and

iv. Any deviation from the requirement to perform or record the results of the required monthly VE surveys or Method 9 tests or report a negative declaration.

c. **HAP**

i. The owner or operator shall report the *plant-wide* consecutive 12-month emissions of each single HAP for each month in the reporting period.

ii. The owner or operator shall report the *plant-wide* consecutive 12-month emissions of total HAP for each month in the reporting period.

S4. **Testing (Regulation 2.17, section 5.2)**

a. **PM/PM_{10}**

i. The owner or operator shall perform an EPA Reference Method 5 PM performance test on the inlet and outlet of the control device or emission point to determine the emission rate and control efficiency within 180 days of permit issuance. The test shall be performed at 90% or higher of maximum capacity or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test, at maximum capacity or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit.[3]

ii. The owner or operator shall submit written compliance test plans (protocol) for the control efficiency. They shall include the EPA test methods that will be used for PM compliance testing, the process operating parameters that will be monitored during the performance test, and the control device performance indicators (e.g. pressure drop) that will be monitored during the performance test. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the performance test. Attachment B includes a Protocol Checklist for a Performance Test with the information to be submitted in the protocol.

iii. The owner or operator shall provide the District at least 10 days prior notice of any performance test to afford the District the opportunity to have an observer present.

iv. The owner or operator shall furnish the District with a written report of the results of the performance test within 60 days following the actual date of completion of the performance test.

b. **Opacity**

There are no testing requirements for this pollutant.

c. **HAP**

There are no testing requirements for this pollutant.

[3] The company may test one type of control device to represent similar types of control devices based on make and model of the control device and product handled.

A Plant Emission Units

U-001 Intermediate Storage Tank D-36
U-002 A Plant Bead System
U-003 A Plant Fluid Bed Dryer and Calciner
U-005 A Plant Dryer Gas Burner (A Plant Rotary Calciner)
U-006 Rotary Calciner with Bag Dump Feed
U-007 A Plant Powder Storage Silo (D-36)
U-009 A Plant Prater Mill System
U-012 A Plant Rework System
U-019 A Plant Classifier System
U-026 A Plant Ribbon Blender System
U-037 Pneumatic Conveying feed system

A Plant Applicable Regulations

Federally Enforceable Regulations		
Regulation	**Title**	**Applicable Sections**
2.17	Federally Enforceable District Origin Operating Permits	1 through 9
7.06	Standards of Performance for New Indirect Heat Exchangers	1 through 5
7.08	Standards of Performance for New Process Operations	1 through 3

A Plant Emission Points

EU	EP ID	Description	Previous Attachment/ Permit	Applicable Regulation	Control Device	Stack ID
U-001	E-001	Intermediate Storage Tank V-6 for zeolite powder (formerly D-6)	210-97 170-79-C	7.08	C-001	S-001
U-002	E-002A	Ribbon Blender (formerly T-12 Binder Feeder)	212-97 173-79-C(R1)	7.08	C-002	S-002
	E-002B	Nauta Mixer MX-8 (formerly Y-8 Premix)				
	E-002C	Nauta Mixer MX-9				
	E-002D	V-36 Powder Storage Hopper (formerly D-36)				
	E-002E	Bin Vibrator V-278 (formerly T-18 Spheradizer weigh hopper)				
	E-002F	Bin Vibrator V-279				
	E-002G	Spheradizer feed chute, 1979				
	E-002H	Ball Wheel 11 (formerly Y-11 Spheradizer Granulator)				
	E-002I	Ball Wheel 12				
	E-002J	Ball Wheel 13				
	E-002K	Seed tanks, product silos and “overs” supersack (formerly Hoppers D-44 through D-47)				
	E-002L					
	E-002M					
	E-002N					

U-003	E-003A	One Fluid-Bed Dryer, Y-19, 1979	214-97 172-79-C(R1)	7.08	C-020	S-017
	E-003B	One Calciner, Y-20, with blowers designated as K-3, 1979		7.08		
	E-003C	Natural Gas 4.5 MMBtu/hr		7.06		
U-037	E-005	Pneumatic Conveying feed system serving a rotary dryer used in molecular sieve production for pneumatic conveying system, includes V-250 to DC-251, rotary dryer Y-260	220-97 307-87-C	7.08	C-004	S-004
U-005	E-041A	Rotary Drying Calciner (Y-260)	221-97 308-87-C	7.08	None	S-035
	E-041B	Gas Burner (Indirect) 4 MMBtu/hr, 1987		7.06		
U-006	E-006	Bag Dump Feed (DC-255) used in molecular sieve production		7.08	C-005	S-005
U-007	E-007	Custom designed storage bin (V-230) to store zeolite powder (formerly 15,000 lb Storage Silo)	224-97 335-87-C	7.08	C-006	S-006
U-009	E-009A	Prater Mill System 1979 — One (1) grinder/ classifier	228-97 145-90-C	7.08	C-008	S-008
	E-009B	One (1) Cyclone Collector				
U-012	E-012	A Plant Rework System 1987 — One rework storage silo pneumatic conveying system to convey material from a mill to a rework storage silo.	232-97 584-91-C(R1)	7.08	C-010	S-010
U-019	E-022A	A Plant pneumatic Classifier (V-235) System "MS-20" 1989 — One (1) storage tank (V-230) (250 ft^3)	242-97	7.08	C-021	S-018
	E-022B	One (1) progressive Industries cyclone separator (DC-236)				
U-026	E-029A	A Plant Ribbon Blender MX-412, 2005	108-04-C	7.08	C-027	S-024
	E-029B	One bag dump station			C-029	Fugitive

A Plant Controls

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-001	Bag Filter for DC-105 for tank (V-6) (Replaced Y-105)	NA	99%	S-001
C-002	DC-12B Dust Collector (formerly Y-102)	213-97 174-79-C	99%	S-002
C-004	A Plant rotary calciner dust collector (fabric filter – bag type) (DC-251)	222-97	99%	S-004
C-005	Dust Collector DC-252 (Fabric Filter – Bag type)	222-97	99%	S-005
C-006	A Plant powder storage silo bin vent (fabric filter – bag type), Y-36	225-97 336-87-C	99%	S-006

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-008	Prater Mill dust collector (DC-244) (Fabric Filter – Bag Type)	228-97	99%	S-008
C-010	A Plant system dust collector (fabric filter – bag type), Y-75	232-97	99%	S-010
C-020	A Plant fluid bed dryer dust collector (DC-25) fan blower #240 (RTF-23)	241-97	99%	S-017
C-021	A Plant classifier system dust collector DC-238	242-97	99%	S-018
C-027	A Plant Ribbon Blender Dust Collector (DC-413)	109-04-C	99%	S-024
C-029	Bin vent for A Plant Ribbon Blender which discharges into room (DC-412)		99%	Fugitive

A Plant Specific Conditions

S1. **Standards (Regulation 2.17, section 5.1)**

a. **PM/PM_{10}**

i. For U-001/E-001; the owner or operator shall not allow PM emissions to exceed 8.74 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permits 171-79 & 170-79 effective 7/21/82)[4]

ii. For U-002/E-002A through U-002/E-002N each; the owner or operator shall not allow PM emissions to exceed 3.2 lb/hr from each piece of equipment based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permits 173-79-C(R1) effective 09/06/16)[4]

iii. For U-003/E-003A and U-003/E-003B each:

1) The owner or operator shall not allow PM emissions to exceed 2.34 lb/hr from each piece of equipment based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permit 172-79-C(R1) effective 09/06/16))[5]

2) The owner or operator shall operate and maintain control device C-020 at all times while U-003/E-003A or U-003/E-003B is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

iv. For the indirect gas burner E-003A, the owner or operator shall not cause to be discharged into the atmosphere from that affected facility particulate matter in excess of 0.56 pounds per million BTU actual heat input. (Regulation 7.06, Section 4.1.1)[6]

v. For U-037/E-005; the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permit 307-87 effective 10/9/1987)[4]

vi. For U-005/E-041A Calciner Y-260 & U-006/E-006 Bag Dump Feed; the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr combined based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permits 308-87 & 309-87 effective 10/9/1987)[4]

vii. For the indirect gas burner U-005/E-041B, the owner or operator shall not cause to be discharged into the atmosphere from that affected facility

[4] This equipment cannot exceed the Regulation 7.08 PM standard uncontrolled.
[5] This equipment cannot exceed the Regulation 7.08 PM standard controlled.
[6] A one-time PM compliance demonstration for this equipment using AP-42 emission factors shows that the emission standards cannot be exceeded. Therefore, there are no monitoring, record keeping, and reporting requirements for this equipment with respect to Regulation 7.06 PM emission limits.

particulate matter in excess of 0.56 pounds per million BTU actual heat input. (Regulation 7.06, Section 4.1.1)[7]

viii. For U-007/E-007, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permit 335-87-C)[8]

ix. For U-009/E-009:

1) The owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permit 145-90 effective 11/30/1989)[9]

2) The owner or operator shall operate and maintain control device C-008 at all times U-009/E-009 is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

x. For U-012/E-012; the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permit 584-91-C(R1) effective 8/4/16)[8]

xi. For U-019/E-022:

1) The owner or operator shall not allow PM emissions to exceed 4.72 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[9]

2) The owner or operator shall operate and maintain control device C-021 at all times while U-019/E-022 is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

xii. For U-026/E-029:

1) The owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Permit 108-04-C effective 9/30/05)[9]

2) The owner or operator shall operate and maintain control devices C-027 & C-029 at all times while U-026/E-029 is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet

[7] A one-time PM compliance demonstration for this equipment using AP-42 emission factors shows that the emission standards cannot be exceeded. Therefore, there are no monitoring, record keeping, and reporting requirements for this equipment with respect to PM emission limits.
[8] This equipment cannot exceed the PM standard uncontrolled.
[9] This equipment cannot exceed the PM standard controlled.

the standards. (Regulation 7.08, section 3.1.2) (Permit 108-04-C effective 9/30/05)

xiii. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.

c. **SO_2**

For U-003/E-003A, U-003/E-003B, and U-005/E-041, the owner or operator shall not cause to be discharged into the atmosphere from each affected facility any gases which contain sulfur dioxide in excess of 1.0 pounds per million BTU actual heat input for combustion of gaseous fuels. (Regulation 7.06, Section 5.1.1)[10]

S2. **Monitoring and Record Keeping (Regulation 2.17, section 5.2)**

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM/PM_{10}**

i. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of C-008, C-020, C-021, C-027 & C-029 for signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.

ii. For emission points U-003/E-003, U-009/E-009, U-019/E-022, U-026/E-029; for any period of time when the process was operating and a PM control device, C-020, C-008, C-021, C-027 & C-029 respectively, was not operating, the owner or operator shall maintain the following records:

1) The duration of the control device downtime;

2) The process throughput during the control device downtime;

3) The emissions of PM (lb/hr) and PM/PM_{10} (tons); and (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

4) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

iii. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.

[10] A one-time SO_2 compliance demonstration for this equipment, using AP-42 emission factors for combusting natural gas, and the pounds per million BTU emission standards cannot be exceeded. Therefore, there are no monitoring, record keeping, and reporting requirements for this boiler with respect to SO_2 emission limits.

c. **SO_2**

There are no monitoring or record keeping requirements for this pollutant.

S3. **Reporting (Regulation 2.17, section 5.2)**

The owner or operator shall submit annual compliance reports in accordance with General Condition 12.

a. **PM/PM_{10}**

i. The owner or operator shall report any failure to perform the visual inspection of the structural and mechanical integrity.

ii. For emission points U-003/E-003, U-009/E-009, U-019/E-022, U-026/E-029; identification of all periods when a process was operating and an associated control device C-020, C-008, C-021, C-027 & C-029 respectively, was not operating, including the information below, or a negative declaration if the control device was operating at all times the process was operating during the reporting period.

1) The duration of the control device downtime;

2) The process throughput during the control device downtime;

3) The emissions of PM (lb/hr) and PM/PM_{10} (tons); and (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

4) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

iii. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.

c. **SO_2**

There are no reporting requirements for this pollutant.

S4. **Testing (Regulation 2.17, section 5.2)**

a. **PM/PM_{10}**

See Source-Wide Condition S4.

b. **Opacity**

There are no testing requirements for this pollutant.

c. **SO_2**

There are no testing requirements for this pollutant.

B Plant Emission Units

U-013 U-014, & U-016 B Plant Conveying System
U-015 B Plant Nauta System
U-017 B Plant Ribbon Blender
U-018 B Plant Fluid Bed Dryer/Calciner
U-020 B Plant Pneumatic Conveying System
U-021 & U22 B Plant Ring Dryer System
U-024 B Plant Rework System
U-025 B Plant Powder Storage Silo V-221

B Plant Applicable Regulations

Federally Enforceable Regulations		
Regulation	**Title**	**Applicable Sections**
2.03	Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements	1, 2, 4, 5, 6
2.17	Federally Enforceable District Origin Operating Permits	1 through 9
7.06	Standards of Performance for New Indirect Heat Exchangers	1 through 5
7.08	Standards of Performance for New Process Operations	1 through 3

B Plant Emission Points

EU	EP ID	Description		Previous Attachment/ Permit	Applicable Regulation	Control Device	Stack ID
U-013	E-013	Powder unloading/ conveying system including a bulk bag unloading station, V-105, to convey sodium aluminosilicates to silos V-100 & V-101, 1994	Silo V-100	233-97 651-92-C(R1)	7.08	C-011	S-011
	E-014a		Silo V-101		7.08	C-012	S-034
	E-014b		Bulk Bag Unloading Station				
U-014	E-015	Dense phase conveying system to convey sodium aluminosilicates to silos V-111 & V-110, 1994	Silo V-111	234-97 652-92-C(R1)	7.08	C-013	S-012
	E-016		Silo V-110		7.08	C-014	S-035
U-015	E-017A	B Plant Nauta System 1994	Mixer MX-115	235-97 653-92-C(R1)	7.08	C-015	S-013
	E-017B		Mixer MX-116				
	E-017C		Ball Wheel BW-129 (formerly Granulator 120)				
	E-017D		Ball Wheel BW-121 (formerly Granulator 121)				
U-016	E-018	Pneumatic conveying system to convey sodium aluminosilicates to storage hoppers V-120, V-121, & V-122, 1994	Hopper V-120	237-97(R1) 655-92-C(R1)	7.08	C-016	S-014
	E-019A		Hopper V-121		7.08	C-017	S-036
	E-019B		Hopper V-122				
U-017	E-020	Bag Dump Station (Ribbon Blender) (MX-112) equipped with a fabric filter dust collection unit (DC -112), 1994		238-97 656-92-C(R1)	7.08	C-030	S-015
U-018	E-021A	B Plant Fluid Bed Dryer DR-150,1994		239-97 657-92-C(R1)	7.08	C-019	S-016
	E-021B	B Plant Calciner (HE-150), (Formerly DR-160) 1994					
U-020	E-023A	B Plant Pneumatic Conveying System to Silos T-5 & T-10, 1995		243-97	7.08	C-022	S-019
	E-023B						

U-021	E-024A	B Plant Ring Dryer System (Flash Dryer) 1995	One Custom made Paddle Mixer MX-200	245-97	7.08	C-023	S-020
	E-024B		One Screw Conveyor SC-211				
	E-024C		One Ring Dryer (2.84 MMBtu/hr) (Formerly Dryer D-1 burner AH-200)		7.06		
U-022	E-025A	One Pneumatic Conveying System	Silo Y-6	246-97 176-79-C	7.08	C-023	S-020
	E-025B		Custom Silo V-210				
	E-025C		Screw Conveyor				
	E-025D		Dense Phase conveyor Y-3				
U-024	E-027A	B Plant rework system for off-spec zeolites, 1998	One (1) Inclined Belt Conveyor	14-99	7.08	C-025	S-022
	E-027B		One (1) Hopper (V-19)				
	E-027C		One (1) Hopper (H-193)				
	E-027D		One (1) Grinder (M-192)				
	E-027E		One (1) Screw Feeder (SC-193) for B Plant rework System				
U-025	E-028	B Plant Powder Storage Silo (V-221) with one SC-221 silo discharge conveyor and one SC221A transfer conveyor.		142-03 294-01-C	7.08	C-026	S-023
U-038	E-041	Storage Silo V-222, 6,000 lb/hr	B Plant Molecular Sieve Production System	203-07-C	7.08	C-031	S-035
	E-042	Storage Silo V-223, 6,000 lb/hr			7.08		
	E-043A	One (1) dense phase surge hopper Y-222A, 6,000 lb/hr		205-07-C	7.08	C-032	S-036
	E-043B	One (1) dense phase conveying pot Y-222B, 6,000 lb/hr			7.08		
	E-043C	One (1) ball wheel system BW-122D			7.08		
U-039	E-045A	One (1) dense phase conveyor/surge hopper 6,000 lb/hr	Belt press and dryer system for molecular sieve powder production	541-07-C	7.08	C-033	S-037
	E-045B	One (1) Ring Dryer 3,200 lb/hr			7.08		

B Plant Controls

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-011	B Plant conveying system dust collector (1 of 2), DC-100	233-97	99%	S-011
C-012	B Plant conveying system dust collector (2 of 2), DC-101		99%	S-034
C-013	B Plant conveying system dust collector (1 and 2), DC-110	234-97	99%	S-012
C-014	B Plant conveying system dust collector (2 of 2), DC-111		99%	S-035
C-015	B Plant Nauta Dust Collector (fabric filter bag type), DC-141	236-97	99%	S-013
C-016	B Plant conveying system dust collector (1 of 2), DC-120	237-97	99%	S-014
C-017	B Plant conveying system dust collector (2 of 2), DC-121		99%	S-036
C-019	One fabric dust collector D-140	240-97	99%	S-016
C-022	Dust Collector (BV-1) (Formerly B Plant T-5 bin vent)	244-97	99%	S-019
C-023	B Plant ring dryer dust collector (DC-210)	246-97	99%	S-020
C-025	B Plant Rework System Dust Collector (DC-191)	15-99	99%	S-022
C-026	B Plant Powder Storage Silo Dust Collector (DC-221)	295-01-C	99%	S-023
C-030	Bin vent for B Plant Ribbon Blender with discharge into room (DC-112)	238-97 656-92-C(R1)	99%	S-015

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-031	Two (2) dust collectors to control PM from storage silos V-222 and V-223 and from one dense phase surge hopper	204-07-C	99%	S-035
C-032				S-036
C-033	One (1) fabric filter dust collector designated as DC-215 to control PM emissions from the Ring Dryer and dense phase conveyor/surge hopper (4,746 cfm).	542-07-C	99. %[11]	S-037

Equipment Otherwise Not Regulated

EU	EP ID	Description	Stack ID
U-039	E-044	One (1) Pannevis belt filter press, 10,677 lb/hr. There are no PM emissions from the belt filter press which is used to remove water from product (air and water only).	F
	E-046	One (1) synthesis tank (T-15), 5,000 gallons. No regulated air pollutants, sodium silicate solution and sodium aluminate solution only.	S-038
	E-047	Silica Premix Tank T-71, 2.600 gallons. No regulated air pollutants, sodium silicate solution and sodium aluminate solution only.	S-039
	E-048	Alumina Premix Tank T-72, 2,600 gallons. No regulated air pollutants, sodium silicate solution and sodium aluminate solution only.	S-040

[11] EPA ETV Baghouse testing conducted August 2005.

B Plant Specific Conditions

S1. **Standards (Regulation 2.17, section 5.1)**

a. **PM/PM_{10}**

i. For U-013/E-013, U-013/E-014a, and U-013/E-014b each:

1) The owner or operator shall not allow PM emissions to exceed 11.18 lb/hr from each silo based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction 651-92-C(R1) effective 08/04/16)[12]

2) The owner or operator shall operate and maintain control devices C-011 and C-012 at all times U-013/E-013 & U-013/E-014 respectively are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

ii. For U-014/E-015 & U-014/E-016 each:

1) The owner or operator shall not allow PM emissions to exceed 4.12 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction 652-92-C(R1) effective 08/04/16)[12]

2) The owner or operator shall operate and maintain control devices C-013 and C-014 at all times U-014/E-015 & U-014/E-016 respectively are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

iii. For U-015 B Plant Nauta System consisting of E-017A (Mixer MX-115), E-017B (Mixer-116), E-017C (Ball Wheel BW-129), and E-017 D (Ball Wheel BW-121) each:

1) The owner or operator shall not allow PM emissions to exceed 4.12 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction 653-92-C(R1) effective 09/06/16)[12]

2) The owner or operator shall operate and maintain control device C-015 at all times U-015/E-017 are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

[12] This equipment can exceed the PM standard controlled.

iv. For U-016/E-018, U-16/E-019A, and U-016/E-019B each:

1) The owner or operator shall not allow PM emissions to exceed 4.12 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction 655-92-C(R1) effective 08/04/16)[13]

2) The owner or operator shall operate and maintain control devices C-016 and C-017 at all times U-016/E-018, U-16/E-019A, & U-016/E-019B respectively are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

v. For U-017/E-020:

1) The owner or operator shall not allow PM emissions to exceed 4.12 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction 656-92-C(R1) effective 08/04/16)[13]

2) The owner or operator shall operate and maintain control device C-030 at all times U-017/E-020 are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

vi. For U-018/E-021A and U-018/E-021B each:

1) The owner or operator shall not allow PM emissions to exceed 4.12 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction 657-92-C(R1) effective 09/06/16)[13]

2) The owner or operator shall operate and maintain control device C-019 at all times U-018/E-021A or U-018/E-021B are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

vii. For U-020/E-023:

1) The owner or operator shall not allow PM emissions to exceed 2.46 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[13]

2) The owner or operator shall operate and maintain control device C-022 at all times U-020/E-023 are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

[13] This equipment can exceed the PM standard controlled.

viii. For U-021/E-024:

1) For Mixer MX-200, Conveyor SC-211, and the Ring Dryer each, the owner or operator shall not allow PM emissions to exceed 3.12 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) [14]

2) The owner or operator shall operate and maintain control device C-023 at all times U-021/E-024 are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

3) For the burner on the ring dryer, the owner or operator shall not cause to be discharged into the atmosphere from that affected facility particulate matter in excess of 0.52 pounds per million BTU actual heat input. (Regulation 7.06, Section 4.1.1)[15]

ix. For U-022/E-025:

1) The owner or operator shall not allow PM emissions to exceed 2.34 lb/hr for each piece of equipment based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[14]

2) The owner or operator shall operate and maintain control device C-023 at all times U-022/E-025 are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

x. For U-024/E-027:

1) The owner or operator shall not allow PM emissions to exceed 2.47 lb/hr for each piece of equipment based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[14]

2) The owner or operator shall operate and maintain control device C-025 at all times U-024/E-027 are in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

xi. For U-025/E-028:

1) The owner or operator shall not allow PM emissions to exceed 7.09 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permit 294-01-C effective 9/17/01)[14]

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[14] This equipment cannot exceed the PM standard controlled.

[15] A one-time PM compliance demonstration for this equipment using AP-42 emission factors shows that the emission standards cannot be exceeded. Therefore, there are no monitoring, record keeping, and reporting requirements for this equipment with respect to PM emission limits.

2) The owner or operator shall operate and maintain control device C-026 at all times U-025/E-028 is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

xii. For U-038/E-041, E-042, & E-043, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr each based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2) (Construction Permits 203-07-C and 205-07-C)[16]

xiii. For U-039/E-045:

1) The owner or operator shall not allow PM emissions to exceed 2.34 lb/hr each based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)(Construction Permit 541-07-C effective 10/31/07)[17]

2) The owner or operator shall operate dust collector C-033 at all times the U-039/E-045 ring dryer is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2) (Permits 541-07-C & 542-07-C effective 10/31/07)

xiv. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.

c. **SO_2**

For U-021/E-024, the owner or operator shall not cause to be discharged into the atmosphere from that affected facility any gases which contain sulfur dioxide in excess of 1.0 pounds per million BTU actual heat input for combustion of gaseous fuels. (Regulation 7.06, Section 5.1.1)[18]

S2. **Monitoring and Record Keeping (Regulation 2.17, section 5.2)**

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM/PM_{10}**

i. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of C-011, C-012, C-013, C-014, C-015, C-016, C-017, C-019, C-022, C-023, C-025, C-026, C-030 & C-033 for

[16] This equipment cannot exceed the PM standard uncontrolled.

[17] The dense phase conveyor/surge hopper cannot exceed the standard uncontrolled, but the ring dryer can exceed the standard uncontrolled.

[18] A one-time SO_2 compliance demonstration for this equipment, using AP-42 emission factors shows that the emission standards cannot be exceeded. Therefore, there are no monitoring, record keeping, and reporting requirements for this boiler with respect to SO_2 emission limits.

signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.

ii. For control devices C-011, C-012, C-013, C-014, C-015, C-016, C-017, C-019, C-022, C-023, C-025, C-026, C-030 & C-033; for any period of time when the process was operating and the control device was not operating, the owner or operator shall maintain the following records:

1) The duration of the control device downtime;

2) The process throughput during the control device downtime;

3) The emissions of PM (lb/hr) and PM/PM_{10} (tons); and (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

4) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

iii. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.

c. **SO_2**

There are no monitoring or record keeping requirements for this pollutant.

S3. **Reporting (Regulation 2.17, section 5.2)**

The owner or operator shall submit annual compliance reports in accordance with General Condition 12.

a. **PM/PM_{10}**

i. The owner or operator shall report any failure to perform the visual inspection of the structural and mechanical integrity.

ii. For C-011, C-012, C-013, C-014, C-015, C-016, C-017, C-019, C-022, C-023, C-025, C-026, C-030 & C-033; identification of all periods when a process was operating and the associated control device was not operating, including the information below, or a negative declaration if the control device was operating at all times the process was operating during the reporting period.

1) The duration of the control device downtime;

2) The process throughput during the control device downtime;

3) The emissions of PM (lb/hr) and PM/PM_{10} (tons); and (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

4) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

iii. See Source-Wide Conditions.

b. **Opacity**

See Source-Wide Conditions.

c. **SO_2**

There are no reporting requirements for this pollutant.

S4. **Testing (Regulation 2.17, section 5.2)**

a. **PM/PM_{10}**

See Source-Wide Condition S4.

b. **Opacity**

There are no testing requirements for this pollutant.

c. **SO_2**

There are no testing requirements for this pollutant.

C Plant Emission Units

U-023 Phase III Process System
U-036 AH-340 Gas Burner for Phase III Process

C Plant Applicable Regulations

Federally Enforceable Regulations		
Regulation	**Title**	**Applicable Sections**
2.17	Federally Enforceable District Origin Operating Permits	1 through 9
7.06	Standards of Performance for New Indirect Heat Exchangers	1 through 5
7.08	Standards of Performance for New Process Operations	1 through 3

C Plant Emission Points

EU	EP ID	Description		Previous Attachment	Applicable Regulation	Control Device	Stack ID
U-023	E-026A	Phase III Process System, 1996	One V-300 bead storage silo	247-97	7.08	C-024	S-021
	E-026B		One S-330 dewatering screen		7.08		
	E-026C		One V-330 bead storage tank		7.08		
	E-026D		One VF-330 vibratory feeder		7.08		
	E-026E		One DR-330 dewatering dryer		7.08		
	E-026F		V-340 bead storage tank		7.08		
	E-026G		V-341 bead storage tank				
	E-026H		One Escher Weiss fluid dryer (DR-340) (DC-140)		7.08		
	E-026I		Calciner (DR-341)		7.08		
	E-026J		One E-350 cooler		7.08		
	E-026K		One DM-350 product packaging system		7.08		
U-036	E-040		One AH-340 indirect natural gas burner (8 MM Btu/hr), 1996		7.06	None	S-034

C Plant Controls

Control ID	Description	Previous Attachment	PM Control Efficiency	Stack ID
C-024	B Plant Dust Collector (DC-344)	248-97	99%	S-021

Equipment Otherwise Not Regulated

Description
One T-301 dilute ion exchange make-up tank
One ion exchange systems 1 & 2
One evaporator system
One AH-330 air heater (Air & Steam Only)

C Plant Specific Conditions

S1. **Standards (Regulation 2.17, section 5.1)**

a. **PM/PM_{10}**

i. For the V-300 Bead Storage Silo, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

ii. For the S-330 dewatering system, the owner or operator shall not allow PM emissions to exceed 3.22 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

iii. For the V-330 bead storage tank, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

iv. For the VF-330 vibratory feeder, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

v. For DR-330 dewatering system, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

vi. For the V-340 and V-341 storage tanks, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr each based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

vii. For the fluid dryer DR-340 and calciner DR-341, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

viii. For the E-350 cooler, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

ix. For the DM-350 product packaging system, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[19]

x. For U-036/E-040, the owner or operator shall not cause to be discharged into the atmosphere from that affected facility particulate matter in excess of 0.39 pounds per million BTU actual heat input. (Regulation 7.06, Section 4.1.1)[20]

xi. The owner or operator shall operate and maintain control device C-024 at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air

[19] This equipment cannot exceed the PM standard controlled.

[20] A one-time PM compliance demonstration for this equipment using AP-42 emission factors shows that the emission standards cannot be exceeded. Therefore, there are no monitoring, record keeping, and reporting requirements for this equipment with respect to PM emission limits.

pollution control practice to meet the standards. (Regulation 7.08, section 3.1.2)

xii. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.[21]

c. **SO_2**

For U-036/E-040, the owner or operator shall not cause to be discharged into the atmosphere from that affected facility any gases which contain sulfur dioxide in excess of 1.0 pounds per million BTU actual heat input for combustion of gaseous fuels. (Regulation 7.06, Section 5.1.1)[22]

S2. **Monitoring and Record Keeping (Regulation 2.17, section 5.2)**

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM/PM_{10}**

i. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of C-024 for signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.

ii. For emission points V-300, S-330, V-330, VF-330, DR-330, V-340, V-341, DR-340, DR-341, E350, and DM-350; for any period of time when the process was operating and a PM control device C-024 was not operating, the owner or operator shall maintain the following records:

1) The duration of the control device downtime;

2) The process throughput during the control device downtime;

3) The emissions of PM (lb/hr) and PM/PM_{10} (tons); and (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

4) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

iii. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.

[21] The District has determined that indirect natural gas burner (AH-340) will inherently meet the 20% opacity standard; therefore, the Company is not required to perform periodic monitoring to demonstrate compliance with the opacity standard.

[22] A one-time SO_2 compliance demonstration for this equipment, using AP-42 emission factors shows that the emission standards cannot be exceeded. Therefore, there are no monitoring, record keeping, and reporting requirements for this boiler with respect to SO_2 emission limits

c. **SO_2**

There are no monitoring or record keeping requirements for SO_2 compliance.

S3. **Reporting (Regulation 2.17, section 5.2)**

The owner or operator shall submit annual compliance reports in accordance with General Condition 12.

a. **PM/PM_{10}**

i. The owner or operator shall report any failure to perform the visual inspection of the structural and mechanical integrity.

ii. For emission points V-300, S-330, V-330, VF-330, DR-330, V-340, V-341, DR-340, DR-341, E350, and DM-350; identification of all periods when a process was operating and an associated control device C-024 was not operating, including the information below, or a negative declaration if the control device was operating at all times the process was operating during the reporting period.

1) The duration of the control device downtime;

2) The process throughput during the control device downtime;

3) The emissions of PM (lb/hr) and PM/PM_{10} (tons); and (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

4) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

iii. See Source-Wide Condition.

b. **Opacity**

See Source-Wide Condition.

c. **SO_2**

There are no reporting requirements for this pollutant.

S4. **Testing (Regulation 2.17, section 5.2)**

a. **PM/PM_{10}**

See Source-Wide Condition S4.

b. **Opacity**

There are no testing requirements for this pollutant.

c. **SO_2**

There are no testing requirements for this pollutant.

Storage Tank Emission Unit

U-027 Hydrochloric Acid Storage Tank T-25
U-030 Lithium Chloride Storage Tank T-300

Storage Tank Applicable Regulations

Federally Enforceable Regulations		
Regulation	**Title**	**Applicable Sections**
2.17	Federally Enforceable District Origin Operating Permits	1 through 9

Storage Tank Emission Points

EU	EP ID	Description	Previous Permit	Applicable Regulation	Control Device	Stack ID
U-027	E-030	One (1) Hydrochloric acid storage tank (9,000 gallons) (Storage Tank T-25)	279-06-C	2.17	NA	S-025
U-030	E-033	One (1) 24,000 gallon storage tank for 37% Lithium Chloride (Storage Tank T-300)	NA Application dated Jan. 29, 1996		NA	S-028

Equipment Not Otherwise Regulated

ID	Description	Stack ID	Basis
U-028	One (1) 6,500 gallon storage tank for 50% Sodium Hydroxide (Storage Tank T-109)	S-026	No known regulated air pollutants
U-029	One (1) 18,000 gallon storage tank for Sodium Silicate (Tank T-001)	S-027	
U-031	One (1) 9,000 gallon Potassium Hydroxide storage tank (Tank T-003)	S-029	
U-032	One (1) 18,000 gallon storage tank for Sodium Silicate (Tank T-004)	S-030	
U-033	One (1) 18,000 gallon storage tank for Sodium Silicate (Tank T-108)	S-031	
U-034	One (1) 15,000 gallon storage tank for Sodium Aluminate (Tank T-107)	S-032	
U-035	One (1) 18,000 gallon storage tank for Sodium Hydroxide (Tank T-002)	S-033	
U-040	One (1) 24,000 gallon sulfuric acid storage tank T-183 (E-049)	S-041	
	One (1) 24,000 gallon Weak Sulfuric Tank T-182 (E-050)	S-042	

Storage Tank Specific Conditions

S1. **Standards (Regulation 2.17, section 5.1)**

HAP

See Source-Wide Condition.

S2. **Monitoring and Record Keeping (Regulation 2.17, section 5.2)**

HAP

See Source-Wide Condition.

S3. **Reporting (Regulation 2.17, section 5.2)**

HAP

See Source-Wide Condition.

Insignificant Activities Emission Unit

Insignificant Activities Applicable Regulations

Federally Enforceable Regulations		
Regulation	**Title**	**Applicable Sections**
2.17	Federally Enforceable District Origin Operating Permits	1 through 9
7.08	Standards of Performance for New Process Operations	1 through 3

Insignificant Activities Emission Points

ID	Description	Applicable Regulation	Control Device	Stack ID
IA-1	One (1) cooling tower rated at 600 GPM, induced draft, counterflow.	7.08	NA	NA

Insignificant Activities Specific Conditions

S1. **Standards (Regulation 2.17, section 5.1)**

a. **PM/PM_{10}**

i. For the cooling tower, the owner or operator shall not allow PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)[23]

ii. See Source-Wide Condition.

b. **Opacity**

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)[24]

S2. **Monitoring and Record Keeping (Regulation 2.17, section 5.2)**

a. **PM/PM_{10}**

See Source-Wide Condition.

b. **Opacity**

There are no monitoring or recordkeeping requirements for this pollutant.

S3. **Reporting (Regulation 2.17, section 5.2)**

a. **PM/PM_{10}**

See Source-Wide Condition.

b. **Opacity**

There are no reporting requirements for this pollutant.

[23] This equipment cannot exceed the PM standard uncontrolled.
[24] The District has determined that it is highly unlikely that this equipment can exceed the opacity standard.

Insignificant Activities

ID	Description	Quantity	Basis
E-038	Dumpster (44,000 lbs) 1979	1	Regulation 1.02 Appendix A section 3.10.

1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.

2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.

3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.

4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.

5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.

6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

Attachment A - Default Emission Factors, Calculation Methodologies, & Stack Tests

Generally, emissions are calculated by multiplying the throughput (ton, MMCF, gallons, etc) or hours of operation of the equipment by the appropriate emission factor and accounting for any control devices unless otherwise approved in writing by the District.

Table 1 A Plant Emission Points

EU	EP ID	Description	Control Device	Acceptable Emission Factor Sources
U-001	E-001	Intermediate Storage Tank V-6 for zeolite powder (formerly D-6)	C-001	0.0199 lb PM/ton molecular sieve powder transferred[25]
U-002	E-002A	Ribbon Blender (formerly T-12 Binder Feeder)	C-002	
	E-002B	Nauta Mixer MX-8 (formerly Y-8 Premix)		
	E-002C	Nauta Mixer MX-9		
	E-002D	V-36 Powder Storage Hopper (formerly D-36)		
	E-002E	Bin Vibrator V-278 (formerly T-18 Spheradizer weigh hopper)		
	E-002F	Bin Vibrator V-279		
	E-002G	Spheradizer feed chute, 1979		
	E-002H	Ball Wheel 11 (formerly Y-11 Spheradizer Granulator)		
	E-002I	Ball Wheel 12		
	E-002J	Ball Wheel 13		
	E-002K	Seed tanks, product silos & "overs" supersack (formerly Hoppers D-44 through D-47)		
	E-002L			
	E-002M			
	E-002N			
U-003	E-003A	One Fluid-Bed Dryer, Y-19 (Natural Gas 4.5 MMBtu/hr), 1979	C-020	AP-42, Chapter 1.4for Natural Gas Combustion & 1% loss
	E-003B	One Calciner, Y-20, with blowers K-3, 1979		
U-037	E-005	Pneumatic Conveying feed system serving a rotary dryer used in molecular sieve production for pneumatic conveying system, includes V-250 to DC-251, & rotary dryer Y-260	C-004	0.0199 lb PM/ton molecular sieve powder transferred
U-005	E-041	Rotary Drying Calciner (Y-260) Gas Burner (Indirect) (4 MMBtu/hr)	None	AP-42, Chapter 1.4for Natural Gas Combustion & 0.0199 lb PM/ton molecular sieve powder transferred
U-006	E-006	Bag Dump Feed (DC-255) used in molecular sieve production	C-005	0.0199 lb PM/ton molecular sieve powder transferred
U-007	E-007	Custom designed storage bin (V-230) to store zeolite powder (formerly 15,000 lb Storage Silo)	C-006	
U-009	E-009A	Prater Mill System, 1979 — One (1) grinder/classifier	C-008	1% Loss
	E-009B	Prater Mill System, 1979 — One (1) Cyclone Collector		
U-012	E-012	A Plant Rework System, 1987 — One rework storage silo pneumatic conveying system to convey material from a mill to a rework storage silo.	C-010	AP-42 Chapter 13.2.4, Equation 1 or 1% Loss

[25] This emission factor was determined based on particle density and diameter of the final product compared to sand transfer and handling emission factors in AP-42, Table 11.12-1. Zeochem performed a particle size analysis to determine potential worst-case materials. Based on the report received on October, 2, 2003; sieve powder settles 9.5 times more slowly than sand; therefore, it is reasonable to estimate the sieve emission factor to be 9.5 times that of sand transfer/loading (Emission Factor: 0.0021 lb PM/ton (sand) * 9.5 = 0.0199 lb PM/ton molecular sieve powder transferred.)

Table 1 A Plant Emission Points

EU	EP ID	Description		Control Device	Acceptable Emission Factor Sources
U-019	E-022A	A Plant pneumatic Classifier (V-235) System "MS-20" 1989	One (1) storage tank (V-230) 250 ft^3	C-021	1% Loss
	E-022B		One (1) progressive Industries cyclone separator (DC-236)		
U-026	E-029A	A Plant Ribbon Blender MX-412, 2005		C-027	1% Loss
	E-029B	One bag dump station		C-029	1% Loss

Table 2 B Plant Emission Points

EU	EP ID	Description		Control Device	Acceptable Emission Factor Sources
U-013	E-013	Powder unloading/ conveying system including a bulk bag unloading station, V-105, to convey sodium aluminosilicates to silos V-100 and V-101, 1994	Silo V-100	C-011	AP-42 Chapter 13.2.4, Equation 1 or 1% Loss
	E-014		Silo V-101	C-012	
	E-014A		Bulk Bag Unloading Station		
U-014	E-015	Dense phase conveying system to convey sodium aluminosilicates to two silos, V-111 and V-110, 1994	Silo V-111	C-013	AP-42 Chapter 13.2.4, Equation 1 or 1% Loss
	E-016		Silo V-110	C-014	
U-015	E-017A	B Plant Nauta System 1994	Mixer MX-115	C-015	1% Loss
	E-017B		Mixer MX-116		
	E-017C		Ball Wheel BW-129 (Formerly Granulator 120)		
	E-017D		Ball Wheel BW-121 (Formerly Granulator 121)		
U-016	E-018	Pneumatic conveying system to convey sodium aluminosilicates to storage hoppers V-120, V-121, & V-122, 1994	Hopper V-120	C-016	AP-42 Chapter 13.2.4, Equation 1 or 1% Loss
	E-019A		Hopper V-121	C-017	
	E-019B		Hopper V-122		
U-017	E-020	Bag Dump Station (Ribbon Blender) (MX-112) equipped with a fabric filter dust collection unit (DC -112), 1994		C-030	1% Loss
U-018	E-021A	B Plant Fluid Bed Dryer DR-150,1994		C-019	1% Loss
	E-021B	B Plant Calciner (HE-150), (Formerly DR-160) 1994			
U-020	E-023A	B Plant Pneumatic Conveying System to Silos T-5 & T-10, 1995		C-022	AP-42 Chapter 13.2.4, Equation 1 or 1% Loss
	E-023B				
U-021	E-024A	B Plant Ring Dryer System (Flash Dryer) 1995	One Custom made Paddle Mixer MX-200	C-023	1% Loss & AP-42, Chapter 1.4for Natural Gas Combustion
	E-024B		One Screw Conveyor SC-211		
	E-024C		One Ring Dryer (2.84 MMBtu/hr) (formerly Dryer D-1 burner AH-200)		
U-022	E-025A	One pneumatic conveying system for the ring dryer system.	Silo Y-6	C-023	AP-42 Chapter 13.2.4, Equation 1 or 1% Loss
	E-025B		Custom Silo V-210		
	E-025C		Screw Conveyor		
	E-025D		Dense Phase conveyor Y-3		
U-024	E-027A	B Plant rework system for off-spec zeolites, 1998	One (1) Inclined Belt Conveyor	C-025	AP-42 Chapter 13.2.4, Equation 1 or 0.5% Loss
	E-027B		One (1) Hoppers V-191		
	E-027C		One (1) Hopper H-193		
	E-027D		One (1) Grinder (M-192)		
	E-027E		One (1) Screw Feeder (SC-193)		
U-025	E-028	B Plant Powder Storage Silo V-221 with Discharge and SC-221A Transfer conveyor		C-026	AP-42 Chapter 13.2.4, Equation 1 or 1% Loss

U-038	E-041	Storage Silo V-222, 6,000 lb/hr	B Plant Molecular Sieve production system with storage silos and control equipment	C-031	0.0199 lb PM/ton molecular sieve powder transferred
	E-042	Storage Silo V-223, 6,000 lb/hr			
	E-043A	One (1) dense phase surge hopper Y-222A, 6,000 lb/hr		C-032	
	E-043B	One (1) dense phase conveying pot Y-222B, 6,000 lb/hr			
	E-043C	One (1) ball wheel system BW-122D			
U-039	E-045A	One (1) dense phase conveyor/surge hopper 6,000 lb/hr	Belt press/and dryer system for molecular sieve powder production	C-033	0.0199 lb PM/ton molecular sieve powder transferred
	E-045B	One (1) Ring Dryer 3,200 lb/hr			

Table 3 C Plant Emission Points

EU	EP ID	Description		Control Device	Acceptable Emission Factor Sources
U-023	E-026A	Phase III Process System, 1996	One V-300 bead storage silo	C-024	AP-42 Chapter 13.2.4, Equation 1 or 0.5% Loss
	E-026B		One S-330 dewatering screen		
	E-026C		One V-330 bead storage tank		
	E-026D		One VF-330 vibratory feeder		
	E-026E		One DR-330 dewatering dryer		
	E-026F		V-340 bead storage tank		
	E-026G		V-341 bead storage tank		
	E-026H		One Escher Weiss fluid dryer (DR-340) (DC-140) & calciner (DR-341)		
	E-026I		One E-350 cooler		
	E-026J		One DM-350 product packaging system		
U-036	E-040		One AH-340 indirect natural gas burner (8 MM Btu/hr), 1996	None	Natural Gas Combustion (AP-42, Chapter 1.4)

Table 4 Storage Tank Emission Points

EU	EP ID	Description	Control Device	Acceptable Emission Factor Sources
U-027	E-030	One (1) Hydrochloric acid storage tank (9,000 gallons) (Storage Tank T-25)	NA	AP-42 Chapter 7
U-030	E-033	One (1) 24,000 gallon storage tank for 37% Lithium Chloride (Storage Tank T-300)	NA	

Table 5 Insignificant Activities

ID	Description	Control Device	Acceptable Emission Factor Sources
IA-1	One (1) cooling tower rated at 600 GPM, induced draft, counterflow.	NA	AP-42 Chapter 13.4, Table 13.4-1

Attachment B - Protocol Checklist for a Performance Test

A completed protocol should include the following information:

☐ 1. Facility name, location, and ID #;
☐ 2. Responsible Official and environmental contact names;
☐ 3. Permit numbers that are requiring the test to be conducted;
☐ 4. Test methods to be used (i.e. EPA Method 1, 2, 3, 4, and 5);
☐ 5. Alternative test methods or description of modifications to the test methods to be used;
☐ 6. Purpose of the test including equipment and pollutant to be tested; the purpose may be described in the permit that requires the test to be conducted or may be to show compliance with a federal regulation or emission standard;
☐ 7. Tentative test dates (These may change but the District will need final notice at least 10 days in advance of the actual test dates in order to arrange for observation.);
☐ 8. Maximum rated production capacity of the system;
☐ 9. Production-rate goal planned during the performance test for demonstration of compliance (if appropriate, based on limits);
☐ 10.Method to be used for determining rate of production during the performance test;
☐ 11. Method to be used for determining rate of production during subsequent operations of the process equipment to demonstrate compliance;
☐ 12. Description of normal operation cycles;
☐ 13. Discussion of operating conditions that tend to cause worse case emissions; it is especially important to clarify this if worst case emissions do not come from the maximum production rate;
☐ 14. Process flow diagram;
☐ 15. The type and manufacturer of the control equipment, if any;
☐ 16. The control equipment (baghouse, scrubber, condenser, etc.) parameter to be monitored and recorded during the performance test. Note that this data will be used to ensure representative operation during subsequent operations. These parameters can include pressure drops, flow rates, pH, and temperature. The values achieved during the test may be required during subsequent operations to describe what pressure drops, etcetera, are indicative of good operating performance; and
☐ 17. How quality assurance and accuracy of the data will be maintained, including;
- Sample identification and chain-of-custody procedures
- If audit samples are required for this test method, audit sample provider and number of audit samples to be used

☐ 18. Pipe, duct, stack, or flue diameter to be tested;
☐ 19. Distances from the testing sample ports to the nearest upstream and downstream flow disturbances such as bends, valves, constrictions, expansions, and exit points for outlet and additionally for inlet;
☐ 20. Determine number of traverse points to be tested for outlet and additionally for inlet if required using Appendix A-1 to 40 CFR Part 60;
- Method 1 if stack diameter is >12"
- Method 1a if stack diameter is greater than or equal to 4" and less than 12"
- Alternate method of determination for <4"
- If a sample location at least two stack or duct diameters downstream and half a diameter upstream from any flow disturbance is not available then an alternative procedure is available for determining the acceptability of a measurement location. This procedure described in Method 1, Section 11.5 allows for the determination of gas flow angles at the sampling points and comparison of the measured results with acceptability criteria.

21. The Stack Test Review fee shall be submitted with each stack test protocol.