Appendix G-3

Reasonable Progress Assessment for PCS Phosphate Company, Inc. – Aurora, NC

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Appendix G-3a

Four-Factor Analysis for PCS Phosphate Company, Inc. – Aurora, NC

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Correspondence Record

Date	From	To	Description
May 4, 2020	NCDAQ	PCS Phosphate	Request to review 2028 SO_2 emissions and PSAT modeling, evaluate sources for four-factor analysis
May 14, 2020	PCS Phosphate	NCDAQ	Revised emissions estimates
May 22, 2020	NCDAQ	PCS Phosphate	Request four-factor analysis on three units using updated emissions and revised PSAT modeling results
July 1, 2020	PCS Phosphate	NCDAQ	Four-factor analysis of requested units for SO_2 control
March 2, 2021	NCDAQ	PCS Phosphate	Relaying clarifying question from EPA on PCS Phosphate Four-Factor Analysis

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

MICHAEL ABRACZINSKAS
Director

NORTH CAROLINA
Environmental Quality

May 4, 2020

Mark Johnson
General Manager
PCS Phosphate Company, Inc. – Aurora
1530 NC Highway 306 South
Aurora, NC 27806

Subject: Regional Haze Reasonable Progress Assessment for Second Planning Period

Dear Mr. Johnson:

The North Carolina Division of Air Quality (DAQ) is preparing the North Carolina Regional Haze State Implementation Plan (SIP) for the second planning period (2018 – 2028). The DAQ has worked with the Visibility Improvement State and Tribal Association of the Southeast (VISTAS), of which North Carolina is a member, to identify emission source sectors and facilities that significantly impact visibility impairment in Class I Federal areas within and outside of North Carolina consistent with the regional haze statutory and regulatory requirements and United States Environmental Protection Agency (EPA) guidance. Based on analyses conducted by North Carolina and VISTAS, sulfur dioxide (SO_2) emissions from PCS Phosphate Company, Inc. in Aurora, North Carolina have been shown to contribute ≥1% to visibility impairment at the Swanquarter National Wildlife Refuge.

I am requesting that PCS Phosphate review the projected 2028 SO_2 emissions upon which the DAQ's contribution assessment is based, and either confirm or revise the 2028 emissions for the DAQ to review and determine if it will be necessary for PCS Phosphate to complete a four-factor analysis of its major SO_2 sources. We request that you complete this review and report your conclusions with documentation of any revised emissions to the DAQ by May 15, 2020. The DAQ will review your submittal and notify you by May 22, 2020, if it is necessary for PCS Phosphate to complete a four-factor analysis of its major SO_2 sources.

Part I of this letter provides background on the regional haze program requirements. Part II explains the process that VISTAS followed to identify facilities such as PCS Phosphate for additional analyses. Part II also includes a summary of SO_2 emissions for your facility for your review. Part III explains how to proceed with a four-factor analysis of the major SO_2 sources at PCS Phosphate, if needed.

Please submit all items requested in this letter to the DAQ Planning Section Chief, Randy Strait (randy.strait@ncdenr.gov), within the dates specified. Should you have any questions regarding this request, please feel free to contact me at (919) 707-8447 or Randy Strait at (919) 707-8721.

Sincerely,

Michael A. Abraczinskas, Director
Division of Air Quality, NCDEQ

MAA/rps

cc: Robert Bright, NCDAQ
Betsy Huddleston, NCDAQ
Tammy Manning, NCDAQ
Randy Strait, NCDAQ
Central Files

Part I. Overview of the Regional Haze Program

In Section 169A of the 1977 Amendments to the Clean Air Act (CAA), Congress set forth a program for protecting visibility in Federal Class I areas which calls for the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." In the 1990 Amendments to the CAA, Congress added section 169B and called on the United States Environmental Protection Agency (EPA) to issue regional haze rules. The Regional Haze Rule (RHR) that EPA promulgated on July 1, 1999 (64 FR 35713) revised the existing visibility rule to integrate provisions addressing regional haze impairment and establish a comprehensive visibility protection program for each Class I Federal area that provides for reasonable progress towards achieving natural visibility conditions by 2064.

The regional haze rules are codified at 40 Code of Federal Regulations (CFR) 51.300. Paragraph 40 CFR 51.308(f) (Regional Haze Program Requirements) requires each state to "address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State that may be affected by emissions from within the State." The State of North Carolina submitted its regional haze plan for the first planning period (2008 – 2018) to EPA on December 17, 2007.[1] The North Carolina Division of Air Quality (DAQ) is now preparing the States regional haze plan for the second planning period (2018 – 2028).

The EPA finalized revisions to the RHR in January 2017 (82 FR 3078) to strengthen, streamline, and clarify certain aspects of the agency's regional haze program. Paragraph 40 CFR 51.308(f) of the RHR requires that states must submit a regional haze plan for the second planning period by July 31, 2021. As part of the plan revision, the State of North Carolina must establish a reasonable progress goal (expressed in deciviews) that provides for reasonable progress towards achieving natural visibility conditions by 2064 in the Swanquarter National Wildlife Refuge. The goal "must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the clearest days over the same period."

The State of North Carolina must also submit a long-term strategy that addresses regional haze visibility impairment for Swanquarter National Wildlife Refuge. The long-term strategy must include enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goal established for the Swanquarter National Wildlife Refuge.

In establishing reasonable progress goals, the State must consider the four factors specified in section 169A of the CAA and in paragraph 51.308(f)(2)(i) of the RHR: (1) the cost of compliance, (2) the time necessary for compliance, (3) the energy and non-air quality environmental impacts of compliance, and (4) the remaining useful life of any potentially affected sources.

On August 20, 2019, EPA issued "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period."[2] Among other things, this document provides guidance to states on the selection of sources for analysis, characterization of factors for emission control measures, and decisions on what control measures are necessary to make reasonable progress.

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[1] North Carolina's Round 1 SIP submittals and EPA approval of those submittals is provided on the DAQ's website at: https://deq.nc.gov/about/divisions/air-quality/air-quality-planning/state-implementation-plans/regional-haze-state-sip.

[2] The guidance document is available on EPA's website at: https://www.epa.gov/sites/production/files/2019-08/documents/8-20-2019_-_regional_haze_guidance_final_guidance.pdf.

Part II. Reasonable Progress Assessment

The DAQ has recently completed the reasonable progress assessment for its second Regional Haze SIP. The following explains the DAQ's process for conducting its reasonable progress assessment for the current planning period from 2018 through 2028.

Step l: Determine pollutants of concern.

Using 2013 through 2017 Interagency Monitoring of Protected Visual Environments (IMPROVE) monitoring data for Class I Federal areas in the VISTAS states, VISTAS evaluated the species contribution on the 20% most impaired visibility days and concluded that sulfate accounted for greater than 70% of the visibility impairing pollution associated with anthropogenic emission sources. The VISTAS states concluded that controlling sulfur dioxide (SO_2) emissions was the appropriate step in addressing the reasonable progress assessment for 2028.

Step 2: Determine which source sectors should be evaluated for reasonable progress.

For the 10 VISTAS states, point source SO_2 emissions in 2028 are projected to represent over 80% of the total SO_2 emissions inventory for all sectors. Therefore, the VISTAS states concluded that the focus should be on electricity generating unit (EGU) and non-EGU point sources of SO_2 emissions.

Step 3: Determine which facilities would be evaluated based on impact.

VISTAS initially utilized an Area of Influence (AoI) analysis to help identify the areas and sources most likely contributing to poor visibility in Class I Federal areas. This AoI analysis involved running a backward trajectory model to determine the origin of the air parcels affecting visibility in each Class I Federal area. This information was then spatially combined with emissions data to determine the pollutants, sectors, and individual sources that were most likely contributing to the visibility impairment at each Class I Federal area. North Carolina first used this information to determine that the pollutant and sector with the largest impact on visibility impairment was SO_2 from point sources.

North Carolina then used the results of the AoI analysis for each Class I Federal area to identify sources to select for Particulate Matter Source Apportionment Technology (PSAT) modeling. Point source facilities with an AoI contribution of ≥3% for sulfate and nitrate combined were selected for PSAT modeling (PCS Phosphate's contribution to Swanquarter was 37.9%). PSAT modeling uses "reactive tracers" to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the Comprehensive Air Quality Model with extensions (CAMx) photochemical-grid model to determine visibility impairment due to individual facilities. Use of PSAT modeling is a superior approach to the AoI analyses for determining individual facility contributions to visibility impairment in Class I Federal areas. North Carolina identified facilities with an impact on one or more Class I Federal areas with ≥1% of the total visibility impairment associated with SO_2 on the 20% most impaired days for each Class I Federal area. These sources are being considered for additional reasonable progress analyses.

Based on analyses conducted by North Carolina and VISTAS, SO_2 emissions from PCS Phosphate Company, Inc. in Aurora, North Carolina have been shown to contribute >3% to visibility impairment at the Swanquarter National Wildlife Refuge.

Step 4: Evaluate 2028 emissions.

For the 2028 modeling analysis, the DAQ projected 2028 non-EGU point source emissions from EPA's 2016 modeling platform that includes emissions that North Carolina facilities submitted to the DAQ. The DAQ projected 2028 SO_2 emissions to be about 4,846 tons for PCS Phosphate Company by applying growth and control factors to 2016-year emissions. For each SO_2 emission unit at PCS Phosphate, Table 1 shows historical emissions for 2016-2018, projected 2028 emissions, and the growth and control factors applied to 2016 emissions to estimate 2028 emissions. Table 2 provides a cross-reference between Group and Permit IDs for the SO_2 emission units in Table 1. Please review the 2028 projected emissions and notify the DAQ if these estimates are reasonable or not. If you provide revised 2028 estimates, please explain the methodology and assumptions for the revised estimates. Please respond to this request by May 15, 2020.

If you can document controls or process modifications that have been implemented since 2016 (or will be implemented before 2028) that significantly lower the DAQ's 2028 emission estimates for your facility, the DAQ will use the PSAT modeling results for your facility to determine if the revised emissions will significantly lower the contribution to visibility impairment at Swanquarter. Otherwise, the DAQ is requesting that you complete a four-factor analysis as outlined in Part III of this letter.

Part III. Evaluate the Four Factors

To meet the requirements of Section 51.308(d)(1)(i)(A) of the RHR, the DAQ must consider each of the four statutory factors for emission sources at your facility that are estimated to significantly contribute to visibility impairment in a Class I Federal area. The four factors include: 1) cost of compliance, 2) time necessary for compliance, 3) the energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of the emissions unit. If after completing Part II it is determined that a four factor analysis is necessary, the DAQ requests that you conduct a four-factor analysis on each of the double-absorption sulfuric acid plants (Nos. 5, 6, and 7) at PCS Phosphate. You should submit the requested four-factor analyses by no later than July 31, 2020.

EPA's August 20, 2019, regional haze guidance explains how the four statutory factors can be characterized. To identify control measures with the highest level of control effectiveness that are both technically feasible and cost effective using the minimal amount of effort, the DAQ requests that the analyses be conducted using a "top-down" approach for each emission unit as follows:

Step 1: Identify all control technologies;

Step 2: Eliminate technically infeasible options;

Step 3: Rank remaining control technologies by control effectiveness;

Step 4: Application of the four statutory factors (cost of compliance, time necessary for compliance, energy and non-air quality environmental impacts, remaining useful life of existing source) to control technologies identified in Step 3 and document the results; and

Step 5: Select control technology and control effectiveness

Implementation of the methodology specified in EPA's August 20, 2019, guidance using a top-down approach is provided in the following summary.

Table 1. PCS Phosphate – Aurora (Facility ID 3701300071)
Actual Sulfur Dioxide Emissions for 2016 – 2018 and Projected Emissions for 2028

Unit ID	Unit Description	Annual SO_2 Emissions (Tons)				Control Factor (%)[1]	Growth Factor[2]
		2016	2017	2018	2028		
G-1082	Double-absorption sulfuric acid plant No. 6	1,817.70	873.20	937.00	1,688.83	12.1	1.057
G-1081	Double-absorption sulfuric acid plant No. 5	1,609.20	565.40	1,279.80	1,495.11	12.1	1.057
G-1634	Double-absorption sulfuric acid plant No. 7	1,607.00	1,491.00	1,034.54	1,493.07	12.1	1.057
G-1385	Phosphoric acid plant No. 3	34.10	56.70	50.60	36.04		1.057
G-1386	Phosphoric acid plant No. 4	33.60	49.80	49.30	35.52		1.057
G-1384	Phosphoric acid plant No. 2	26.80	35.10	15.80	28.33		1.057
G-1382	Phosphoric acid plant No. 1	24.50	33.90	14.30	25.90		1.057
G-1423	DAP #2 Plant	16.80	18.00	16.80	17.76		1.057
G-1426	Pug mills and defluorination kiln	9.60	3.00	0.00	10.15		1.057
G-1379	Superphosphoric acid plant Nos. 3 and 4	3.09	2.07	5.94	3.27		1.057
G-1089	Vertical fluidized bed phosphate rock calciner unit No. 2	1.80	1.60	5.70	1.90		1.057
G-1091	Vertical fluidized bed phosphate rock calciner unit No. 4	1.80	1.70	5.50	1.90		1.057
G-1090	Vertical fluidized bed phosphate rock calciner unit No. 3	1.80	1.70	5.30	1.90		1.057
G-1093	Vertical fluidized bed phosphate rock calciner unit No. 6	1.60	1.70	5.80	1.69		1.057
G-1092	Vertical fluidized bed phosphate rock calciner unit No. 5	1.60	1.80	5.70	1.69		1.057
G-1088	Vertical fluidized bed phosphate rock calciner unit No. 1	1.50	1.80	5.70	1.59		1.057
G-1422	DAP #3 Plant	0.90	0.90	1.00	0.95		1.057
G-1148	Superphosphoric acid plant No. 1	0.26	0.28	0.56	0.27		1.057
G-1149	Superphosphoric acid plant No. 2	0.03	0.07	0.02	0.03		1.057
	Totals	**5,193.68**	**3,139.72**	**3,439.36**	**4,845.90**		

[1] Control Factor (CF) was applied to 2016 emissions to estimate 2028 emissions:
CF = 12.1%: Calculated current and post-consent decree emission estimates and compared the total emissions for these three plants under each scenario to calculate an average 12.1% SO_2 emissions reduction from the consent decree (emissions estimates reflect use of current and post-consent emission rates and the maximum allowed production for each plant).

[2] Growth Factor (GF) was applied to 2016 emissions to estimate 2028 emissions:
GF = 1.057: Average of the growth rates in Bulk Chemicals industry (NAICS 325) employment and Agricultural Chemicals industry (NAICS 3252) revenue in the southeast region of the country (region that includes North Carolina).

Table 2. PCS Phosphate – Aurora (Facility ID 3701300071)
Cross-reference between Group and Permit IDs for SO_2 Emission Units in Table 1

Unit ID	Permit ID
G-1082	S-6
G-1081	S-5
G-1634	S-7
G-1385	423-000, 423-325, 423-327, 423-223, 423-218, 423-330, 423-201
G-1386	424-201, 424-325, 424-327, 424-223, 424-218, 424-330
G-1384	422-201, 422-327, 422-223, 422-218, 422-330, 422-000, 422-325
G-1382	421-201, 421-325, 421-327, 421-223, 421-218, 421-330, 421-000
G-1423	505-104, 505-107, 505-114, 505-110, 505-111, 505-123A.09C, 505-103, 505-121, 505-117, 118, 505-143
G-1426	355-116-455 A, 365-135-477
G-1379	451-316 and 451-308, 451-916 and 451-940
G-1089	339-052
G-1091	339-054
G-1090	339-053
G-1093	339-056
G-1092	339-055
G-1088	339-051
G-1422	511-070, 511-032, 511-008, 511-016, 511-038, 511-093, 511-025, 511-107B, 511-103, 511-085, 511-009, 511-010, 511-011, 511-017, 511-039, 511-041, 511-086, 511-094, 511-095, 511-096
G-1148	451-418 and 451-409
G-1149	451-701 and 451-809

Summary of 4-Factor Analysis Methodology Specified in EPA's August 20, 2019, Guidance Using a Top-Down Approach

Determining which emission control measures to consider – You should first identify all technically feasible sulfur dioxide control measures for each source selected for four-factor analysis. You should then rank them in order of highest to lowest control effectiveness. The projected 2028 actual sulfur dioxide emissions from the source should be used as the baseline emission level for estimating control effectiveness of each control measure.

Characterizing the cost of compliance (statutory factor 1) – You should estimate the cost of compliance starting with the control measure with the highest level of control effectiveness. The cost of compliance should be in terms of cost/ton of sulfur dioxide reduced. The cost used as the numerator in the cost/ton metric should be the annualized cost of implementing the control measure and should be determined using methods consistent with United States Environmental Protection Agency's (EPA) Air Pollution Cost Control Manual.[3] Should you use a method that deviates from the Cost Control Manual, you should include that methodology, including all calculations and assumptions, and you should justify why the method used is more appropriate than methods specified in the Cost Control Manual. The emission reduction used as the denominator for the cost/ton metric should be the annual tons of reduction from implementation of the control measure. If your analysis indicates that the control measure should be included as part of North Carolina's long-term strategy for the second implementation period, further analysis is not necessary. If your analysis indicates that the control measure is not cost effective, you should estimate the cost of compliance for the control measure with the next highest level of control effectiveness. This process should be repeated until you have identified a control measure that should be included in North Carolina's long-term strategy or until all control measures have been analyzed.

Characterizing the time necessary for compliance (statutory factor 2) – You should provide an estimate of the time needed to comply with the control measure(s) identified using statutory factor 1. You should specify the source-specific factors used to estimate the time to install the control measure and provide a justification as to why the estimated time is reasonable.

Characterizing energy and non-air environmental impacts (statutory factor 3) – The cost of the direct energy consumption of the control measure should be specified and included in the cost of compliance analysis. If there are any non-air environmental impacts associated with a control measure, such as impacts on nearby water bodies, those impacts should be specified.

Characterizing remaining useful life of the source (statutory factor 4) – The length of the remaining useful life of a source is the number of years prior to the shutdown date during which the new emission control would be operating. If the remaining useful life of the source is less than the useful life of the control system being analyzed, then you should use the remaining useful life of the source in determining the annualized cost in the cost of compliance analysis. Otherwise, you should use the useful life of the control measure in the cost of compliance analysis. If the remaining useful life of a source is relied upon in in a four-factor analysis of a control measure instead of the useful life of the control system, and that control system becomes part of the state's long-term strategy, the shutdown date for the source will need to be included in the Regional Haze SIP and be made federally enforceable.

[3] https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution#cost manual.

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CERTIFIED MAIL

May 14, 2020

Mr. Michael Abraczinskas, Director
Division of Air Quality, NCDEQ
NCDEQ - Division of Air Quality (DAQ)
1641 Mail Service Center
Raleigh, NC 27699

Subject: **Regional Haze Reasonable Progress – Response to Information Request**
PCS Phosphate Company, Inc.[1]
Air Quality Permit No. 04176T60
Facility ID: 0700071

Dear Mr. Abraczinskas:

PCS Phosphate Company, Inc. (PCS) has reviewed the DAQ's 2028 projected SO_2 emissions for the Aurora, North Carolina facility. The purpose of this letter is to provide updated 2028 projected emissions for the facility's Sulfuric Acid Plants (SA Plants) using a conservative emissions estimation methodology based on measured emission factors following recent emission reduction upgrades to all sulfuric acid plants.

DAQ Emissions Estimates

Emissions estimates for the SA Plants provided by DAQ were based on baseline emissions reported in 2016. These emissions were reduced by 12.1%. This reduction was DAQ's projected emissions decrease based on the requirements of section 2.5 in the 2017 revision of our Title V operating permit (04176T54). After applying this reduction, the result was then multiplied by a 1.057% projected "growth factor" to determine projected 2028 emissions.

SA Plants Operation, Emissions Measurements and Plants Upgrades

In an effort to exceed emission level reductions required by the revised operating permit, beginning in 2017, each SA Plant was upgraded during its triennial turnaround period. Based on the measured emissions following these upgrades, PCS expects 2028 emissions to be significantly lower than DAQ estimates.

To achieve these reductions, each of the SA Plants received significant capital upgrades, in large part to improve the performance of the catalytic systems that converts SO_2 to SO_3, which is then followed by a conversion to sulfuric acid (H_2SO_4) using a dual absorption process whereby SO_3

[1] Effective January 1, 2018, PCS Phosphate Company, Inc. is an indirect subsidiary of Nutrien Ltd. PCS Phosphate Company, Inc. remains the legal operating entity

is absorbed into water. The timeline for completion of the upgrade projects along with corresponding emission limits are indicated in Table 1.

Table 1. Timeline for Implementation and Corresponding Permit Limits

Unit ID	Covered Sulfuric Acid Plant	Original SO_2 Limit (lbs SO_2/ton Acid)	Revised 365-day SO_2 Limit (lbs SO_2/ton Acid)	Implementation of Upgrades
G-1081	SA Plant No. 5	4.0	2.5 Effective 1/1/2020	Summer 2019
G-1082	SA Plant No. 6	4.0	2.5 Effective 1/1/2018	Summer 2017
G-1634	SA Plant No. 7	4.0	1.75 Effective 1/1/2019	Summer 2018

SA Plant emissions are measured continuously using certified continuous emissions monitoring systems (CEMS), which are meticulously maintained in accordance with an approved Quality Assurance and Quality Control Plan.

Table 2 summarizes annualized emission factors achieved as determined by the CEMS from 2016 through April 2020. Emission factors were calculated using total SO_2 emissions (in pounds) divided by total tons of sulfuric acid production during each time period. Emission factors are shown for the time periods before and after the upgrades.

As shown, the highest emission factor that has been measured at any SA plant since the upgrades have occurred is 1.4 lb SO_2/ton H_2SO_4 produced. Catalyst is replaced every three years to ensure conversion rates maintain a low emission factor. Because all plants haven't completed their three-year cycle following upgrades, an emission factor of 1.4 should be applied to each plant as a conservative estimate of future emissions.

Table 2. Emission Factors Before and After Plant Upgrades

Unit ID	Unit Description	Emission Factor (lb SO_2/ton Acid)				
		2016	2017	2018	2019	2020 (Jan-Apr)
G-1081	SA Plant No. 5	3.1	2.2	2.5	2.2 **1.1**	**1.4**
G-1082	SA Plant No. 6	3.2	2.8 **1.2**	**1.4**	**1.1**	**1.3**
G-1634	SA Plant No. 7	1.7	1.8	1.8 **1.2**	**1.2**	**1.3**
Shading and bold indicates emission factor after plant upgrades.						

Table 3 presents projected emission rates for 2028, which are calculated by multiplying 1.4 lb SO_2/ton H_2SO_4 by the maximum annual acid production rate (from previous five years) in tons and converted to tons of SO_2 emitted. The last step is applying the growth factor provided by DAQ.

Table 3. Projected Annual Emissions for 2028

Unit ID	Unit Description	Highest Annual Production by Plant (tons) (2015 - 2019)	Post Upgrade Emission Factor (lb SO_2/ton Acid)	Growth Factor	PCS Projected 2028 Emissions (tons)	DAQ Projected 2028 Emissions (tons)
G-1081	SA Plant No. 5	1,070,967 (2018)	1.4	1.057	792	1,689
G-1082	SA Plant No. 6	1,152,020 (2015)	1.4	1.057	852	1,495
G-1634	SA Plant No. 7	1,665,290 (2016)	1.4	1.057	1,232	1,493
				Total	**2,877**	**4,677**

As seen by the resulting PCS projected 2028 emissions in Table 3, our estimates are significantly lower than those provided by DAQ. Because we are using the highest annual emission factor (post upgrade) for all three plants combined with the highest annual production in the last five years for each plant, our updated projections are very conservative. Consequently, PCS requests that DAQ use these revised SO_2 emissions in future regional haze analyses.

Closing

Please do not hesitate to contact us if you have any questions regarding our submission or wish to discuss any matters related to the DAQ's Regional Haze planning efforts. Questions should be directed to Mr. Chris Smith at (252) 322-8263 or christopher.d.smith@nutrien.com.

Respectfully,

Mark Johnson
General Manager

Cc: Environmental Files
Randy Strait, DAQ, NCDEQ
Joe Sullivan, AECOM

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

MICHAEL ABRACZINSKAS
Director

NORTH CAROLINA
Environmental Quality

May 22, 2020

Mark Johnson
General Manager
PCS Phosphate Company, Inc. – Aurora
1530 NC Highway 306 South
Aurora, NC 27806

Subject: Regional Haze Reasonable Progress Assessment for Second Planning Period

Dear Mr. Johnson:

Thank you for your letter dated May 14, 2020, responding to my May 4, 2020 letter. I appreciate you reviewing the North Carolina Division of Air Quality's (DAQ) projected 2028 sulfur dioxide (SO_2) emissions for the Aurora, North Carolina facility and providing revised 2028 SO_2 emissions for the three sulfuric acid plants (Nos. 5, 6, and 7). As noted in your letter, from 2017 through 2019, PCS has completed significant capital upgrades to each sulfuric acid plant in large part to improve the performance of the catalytic system coupled with a dual absorption process. Relative to the DAQ's original 2028 emissions projections, these capital improvements would decrease 2028 SO_2 emissions by 39% (1,801 tons) for the three sulfuric acid plants combined or by 37% for the entire facility.

The DAQ used the revised 2028 SO_2 emissions you provided and recalculated PCS Phosphate's contribution to visibility impairment for the 20% most impaired days at Swanquarter National Wildlife Refuge using the PSAT modeling approach referenced in my May 4, 2020 letter. The revised PSAT results indicate that PCS Phosphate's contribution would be lowered from 3.02% to 1.91% in 2028.

In establishing reasonable progress goals, the North Carolina must consider the four factors specified in section 169A of the Clean Air Act and in paragraph 51.308(f)(2)(i) of the regional haze rule: (1) the cost of compliance, (2) the time necessary for compliance, (3) the energy and non-air quality environmental impacts of compliance, and (4) the remaining useful life of any potentially affected sources. To fulfill this requirement, North Carolina is requesting that facilities that have ≥1.00% sulfate contribution to visibility impairment at a Class I Federal area to complete a four-factor analysis. Although the revised 2028 emissions you provided indicate a reduction in PCS Phosphate's contribution to visibility impairment at Swanquarter, the facility's contribution remains above 1.00%. For this reason, I am requesting that you conduct a four-factor analysis on each of the double-absorption sulfuric acid plants (Nos. 5, 6, and 7) at the PCS Phosphate, Aurora facility as outlined in Part III of my May 4, 2020 letter.

Please submit the requested four-factor analyses to the DAQ Planning Section Chief, Randy Strait (randy.strait@ncdenr.gov) by no later than July 31, 2020. Should you have any questions regarding this request, please feel free to contact me at (919) 707-8447 or Randy Strait at (919) 707-8721.

North Carolina Department of Environmental Quality | Division of Air Quality
217 West Jones Street | 1641 Mail Service Center | Raleigh, North Carolina 27699-1641
919.707.8400

Sincerely,

Michael A. Abraczinskas, Director
Division of Air Quality, NCDEQ

MAA/rps

cc: Robert Bright, NCDAQ
Betsy Huddleston, NCDAQ
Tammy Manning, NCDAQ
Randy Strait, NCDAQ
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CERTIFIED MAIL

July 1, 2020

Mr. Randy Strait, Chief
DAQ Planning Section
Division of Air Quality, NCDEQ
1641 Mail Service Center
Raleigh, NC 27699

Subject: **Regional Haze Four-Factor Analysis**
PCS Phosphate Company, Inc.[1]
Air Quality Permit No. 04176T61
Facility ID: 0700071

Dear Mr. Strait:

PCS Phosphate Company, Inc. (PCS) has completed the requested four-factor analysis and is providing a final report for your review.

Please reach out to Chris Smith at (252) 322-8263 or christopher.d.smith@nutrien.com if you have any questions or wish to schedule a call to review this report.

Respectfully,

Mark Johnson
General Manager

ec: Michael Abraczinskas, NCDAQ
Betsy Huddleston, NCDAQ
Robert Bright, NCDAQ
Tammy Manning, NCDAQ
Joe Sullivan, AECOM
Khalid Alnahdy, PCS (Nutrien)
Environmental Files

[1] Effective January 1, 2018, PCS Phosphate Company, Inc. is an indirect subsidiary of Nutrien Ltd. PCS Phosphate Company, Inc. remains the legal operating entity

FOUR-FACTOR ANALYSIS
PCS PHOSPHATE COMPANY, INC.

Prepared for:

PCS Phosphate Company, Inc.

Aurora, North Carolina

Prepared by:

AECOM Technical Services, Inc.

July 2020

Contents

1.0 Executive Summary

Pursuant to a request by the North Carolina Division of Air Quality (DAQ) on May 22, 2020, PCS Phosphate Company, Inc. (PCS)[1] has conducted a four-factor emission control analysis for sulfur dioxide (SO_2) emissions from the facility's three dual-absorption sulfuric acid plants. In 2014, EPA reviewed and approved dramatically lower SO_2 emission limits for the sulfuric acid plants in a Clean Air Act New Source Review matter, and DAQ implemented the revised limits pursuant to a construction permit issued to PCS on September 24, 2015, Air Quality Permit No. 04176T53 and a revised operating permit issued on December 15, 2017, Air Quality Permit No. 04176T54. The facility achieved the lower emission limits through major upgrades to each plant's catalytic SO_2 conversion system. These upgrades were implemented during annual plant shutdowns occurring from 2017 through 2019. In addition to SO_2 reduction upgrades, there were also improvements to the sulfuric acid mist control system. The total cost of these upgrades was approximately $16 million.

Although the sulfuric acid plants were already operating well below federal New Source Performance Standards (NSPS), PCS has demonstrated dramatic reductions in SO_2 emissions following completion of the upgrade projects. The upgraded catalytic systems represent state-of-the-art pollution controls. Results of the four-factor analysis indicate that no further reduction of SO_2 emissions from sulfuric acid operations at PCS is feasible.

2.0 Overview of Regional Haze Program and Background for Reasonable Progress Analysis

The Clean Air Act established goals for visibility in federally recognized national parks and wilderness areas (Class I Areas). Through the 1977 amendments to the Clean Air Act, Congress set a national goal for visibility as "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." The Amendments required EPA to issue regulations to assure "reasonable progress" toward meeting the national goal by 2064.

On July 1, 1999, EPA promulgated the final Regional Haze Regulation. The final Regional Haze Regulation calls for state and federal agencies to work together to improve visibility in 156 Class I areas by developing and implementing long-term air quality protection plans to reduce pollution that causes visibility impairment in these protected areas. To ensure that "reasonable progress" is made until the 2064 goal is met, states and local agencies are required to submit and implement plans that cover successive ten-year planning periods. The sulfuric acid plants were evaluated in 2006 during the first planning period and were determined to already be implementing best available technology. The sulfuric acid plants have installed additional systems since that time that result in even lower emissions.

[1] Effective January 1, 2018, PCS Phosphate Company, Inc. is an indirect subsidiary of Nutrien Ltd. PCS Phosphate Company, Inc. remains the legal operating entity and permittee.

The DAQ is now preparing the North Carolina Regional Haze State Implementation Plan (SIP) for the second planning period (2018 – 2028). The DAQ has worked with the Visibility Improvement State and Tribal Association of the Southeast (VISTAS) to identify visibility impairment in the Class I Federal areas throughout the southeastern region of the United States including Swanquarter National Wildlife Refuge (Swanquarter NWR), located 52.5 kilometers from the PCS Phosphate facility. As shown in Figure 1, results of recent regional haze modeling indicated that North Carolina is well ahead of its target goal of 18.1 deciview for Swanquarter NWR for the second planning period with a projected impact of 14.8 deciview. In fact, Figure 1 indicates that the 14.8 deciview projection for 2028 would actually meet the goal for 2040 when extrapolated to the deciview "glide path" represented by the purple line on the graph. It should be noted that the projected impact of 14.8 deciview was made prior to reductions in projected 2028 emissions from all SO_2 emission sources included in the regional model. PCS, for instance, projected emissions for the sulfuric acid plants for 2028 to the DAQ that were 38% lower than emission rates used in VISTAS modeling.

Regardless of whether reasonable progress targets have been achieved, EPA has issued guidance that state and local governments must consider whether there are emission sources that are significantly impacting Class I areas that should reduce emissions to ensure that reasonable progress is being made. In the criteria for determining which sources should be evaluated, the DAQ is allowed to consider a range of factors in making its determinations, including whether recent improvements in pollution control make further reductions during the next planning period unreasonable. Although PCS believes that it would qualify for such an exemption from further evaluation due to major improvements to SO_2 controls described later in this report, to ensure consistency with other VISTAS states, DAQ has requested that PCS conduct a reasonable further progress analysis using the four-factor methodology discussed in Section 4.

3.0 Sulfuric Acid Plants and Existing Pollution Controls

Sulfur dioxide is formed at the sulfuric acid plants when elemental sulfur is oxidized in the presence of oxygen at elevated temperature in a horizontal spray-type burner. The SO_2 gas exits the burner compartment at a higher temperature than the optimum for conversion and it enters a heat recovery boiler to be cooled. Upon exiting the recovery boiler, the SO_2-rich gas passes through a catalytic conversion system consisting of four converter "passes." Each pass contains beds of packing media coated with heavy metals that cause conversion of SO_2 to sulfur trioxide (SO_3). The percentage of SO_2 that is converted to SO_3 increases through each pass, such that well over 99% of SO_2 gases passing through the converter system have been converted to SO_3. The converted SO_3 passes through a series of absorption towers containing water to produce concentrated sulfuric acid.

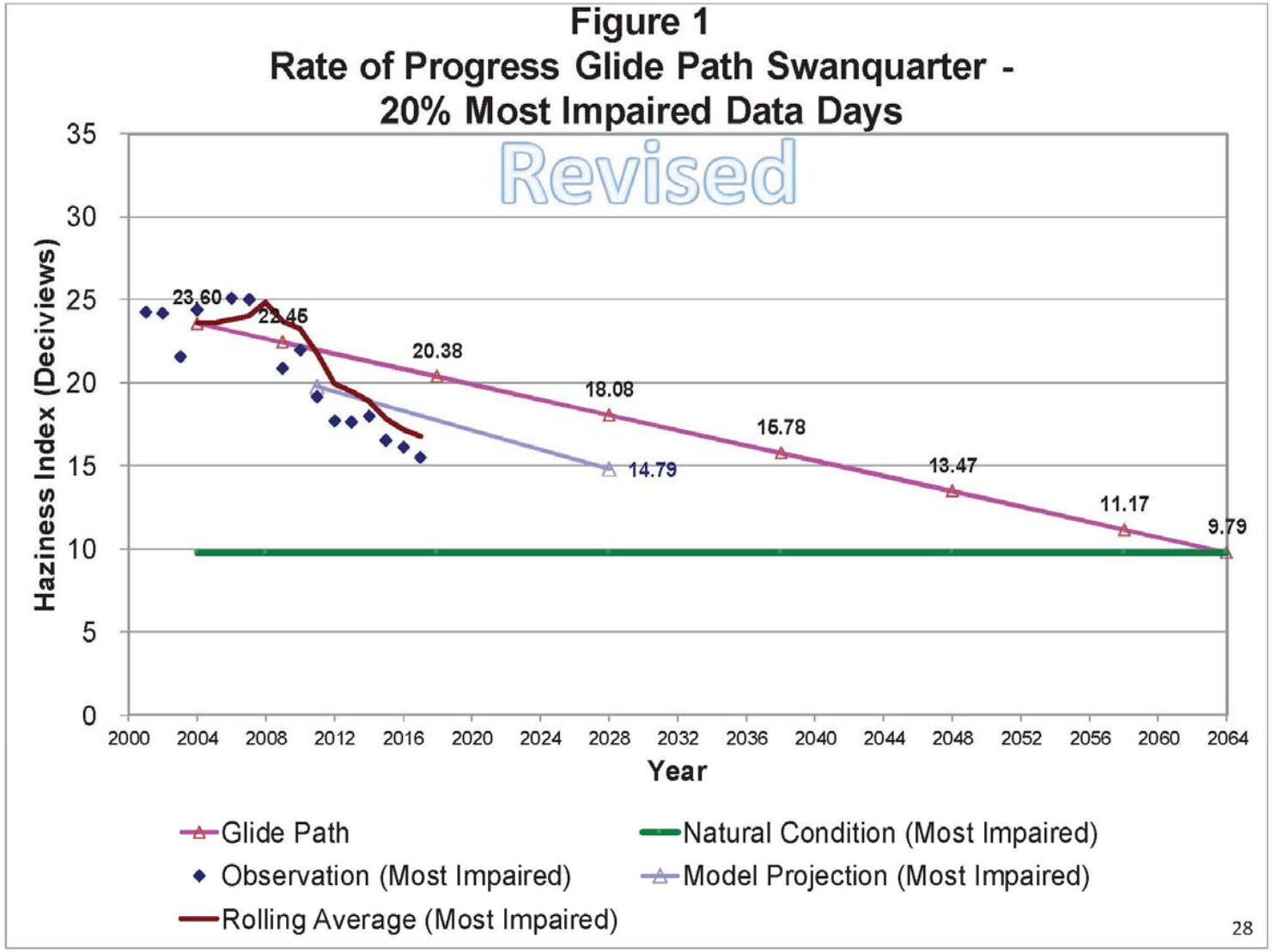
Figure 1
Rate of Progress Glide Path Swanquarter -
20% Most Impaired Data Days
Revised
Haziness Index (Deciviews)
35
30
25
20
15
10
5
0
2000
2004
2008
2012
2016
2020
2024
2028
2032
2036
2040
2044
2048
2052
2056
2060
2064
Year
23.60
22.45
20.38
18.08
16.78
14.79
13.47
11.17
9.79
Glide Path
Natural Condition (Most Impaired)
Observation (Most Impaired)
Model Projection (Most Impaired)
Rolling Average (Most Impaired)
28

Minimization of SO_2 emissions is achieved by increasing the amount of conversion of SO_2 to SO_3. The amount of conversion of SO_2 in each plant is primarily affected by the activity and surface area of the packed bed catalyst. Catalyst reactivity decreases over time. Catalyst is typically replaced on a three-year cycle to maintain desired conversion rates. For many years, vanadium plated catalysts were considered the industry standard for use in all four passes and were used to meet federal emission standards.

Production of catalysts for sulfur-burning sulfuric acid plants is a specialized market because there are a limited number of manufacturing facilities. Perhaps the premier manufacturer of catalysts for sulfur burning, double absorption plants is DuPont, who owns Monsanto Environmental Control Systems (MECS). Over the past decade DuPont MECS has introduced major upgrades to its vanadium catalyst product lines using a media with substantially greatly surface area per unit of catalyst volume and more sustained catalyst activity. DuPont MECS has also introduced a newer "super cesium" catalyst. Super cesium catalyst is a substantially more expensive (and active) catalyst than vanadium and it is designed for use in the last pass to optimize SO_2 conversions not accomplished in earlier passes using vanadium technology.

To satisfy Clean Air Act New Source Review requirements at certain sulfuric acid plants, EPA asked PCS for a reduction in SO_2 emission rates. In response to this request, PCS worked closely with DuPont MECS in implementing significant upgrades to enhance the SO_2 conversions in the catalytic systems on Sulfuric Acid Plants Nos. 5, 6 and 7 pursuant to air quality permitting completed in 2015. These upgrades included utilization of enhanced catalyst and significant increases to the surface area available for reaction in certain passes of the catalytic systems. PCS conducted an evaluation of emissions before and after the catalyst upgrades made between 2017 and 2019. Significant SO2 emission reductions were realized by all three plants. The following table presents average SO_2 emissions estimates obtained from each plant's continuous emission monitoring system (CEMS) for 180-day time periods before and after the catalyst system upgrades. The first row of the table presents emissions after the most recent "standard turnaround" involving refreshing of the older catalyst systems using the same catalyst system and the second row presents emissions after implementation of the new catalyst system. Emissions were reduced by 63%, 51% and 24% in Plants 5, 6 and 7, respectively. Plant 7 had already implemented aspects of the enhanced system, which accounts for this plant having the lowest reduction.

It should be noted that average emissions from all three sulfuric acid plants over the first six months following changeouts were approximately 70 percent below the NSPS limit.

Table 1
Catalyst Performance Before and After Upgrades

Description	Emissions (lb SO_2/ton acid)			% Lower than NSPS (4 lb SO_2/ton acid)		
	Plant 5	Plant 6	Plant 7	Plant 5	Plant 6	Plant 7
180-Day Average Following Standard Turnaround	3.0	2.5	1.6	24%	36%	61%
180-Day Average Following Upgrade Turnaround	1.1	1.2	1.2	72%	69%	70%
Emissions Reduction from Upgrade	63%	51%	24%			

4.0 Four-Factor Analysis

To meet the requirements of Section 51.308(d)(1)(i)(A) of the regional haze rule, DAQ has requested that PCS consider each of four statutory factors for emission sources estimated to significantly contribute to visibility impairment in a Class I Federal area. The four factors include: 1) cost of compliance, 2) time necessary for compliance, 3) the energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of the emissions unit.

In accordance with EPA's August 20, 2019 guidance to permitting agencies regarding the four-factor analysis, DAQ has requested that analyses be conducted using a "top-down" approach for each emission unit subject to review. This process essentially mirrors the top-down approach when conducting "best available control technology (BACT)" evaluations under the major new source review programs. Steps in this process are as follows:

Step 1: Identify all control technologies;

Step 2: Eliminate technically infeasible options;

Step 3: Rank remaining control technologies by control effectiveness;

Step 4: Application of the four statutory factors (cost of compliance, time necessary for compliance, energy and non-air quality environmental impacts, remaining useful life of existing source) to control technologies identified in Step 3 and document the results; and

Step 5: Select control technology and control effectiveness.

The top-down analysis for the three double absorption sulfuric acid plants are discussed below.

4.1 Step 1 - Identify Feasible Technologies.

The first step is to define the spectrum of process and/or add-on control alternatives potentially applicable to the subject emissions units. It should be noted that, according to EPA guidance, technologies which have not yet been applied to full scale operations on a similar process need not be considered commercially available.[2]

A review of EPA's RACT/BACT/LAER Clearinghouse (RBLC) is typically performed as a first step to determine whether potential technologies or limits have been demonstrated for a particular industry. RBLC results presented in Table 2 indicate there have been no relevant federal, state or local determinations that apply to this evaluation. Aside from the Cornerstone Chemical Company determination, none of the projects identified were ever constructed. Additionally, these projects would otherwise be nonapplicable because they involve a different type of process for manufacturing sulfuric acid (e.g., wet method versus sulfur burning). No additional information could be found regarding the Cornerstone determination other than information presented in the RBLC, which suggests that the project would have been permitted at an emission rate higher than the NSPS SO_2 limit. The reader is directed to the Comments column of the table for additional information regarding each of the determinations shown.

[2] New Source Review Workshop Manual, U.S. Environmental Protection Agency, 1990, page B.11.

TABLE 2
EPA RBLC SEARCH RESULTS FOR SO_2 EMISSIONS DETERMINATIONS FOR SULFURIC ACID PLANTS

ID	FACILITY_NAME	CORPORATE_OR_COMPANY_NAME	STATE	DATE ISSUED	PROCESS_NAME	TECHNOLOGY	LIMIT	UNITS	DISCUSSION
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	IN	5/4/2016	TWO (2) WET SULFURIC ACID PLANTS	PEROXIDE SCRUBBER	0.25	LB/T ACID PRODUCED	Sulfuric acid plant not built on this IGCC power plant. Plant not similar to sulfur burning sulfuric acid plant.
LA-0262	SULFURIC ACID REGENERATION PLANT	CORNERSTONE CHEMICAL COMPANY	LA	10/16/2012	SULFURIC ACID PLANT STACK	DOUBLE ABSORPTION TECHNOLOGY	434	LB/H (4.34 lb/ton)	Although this plant should be in compliance with the NSPS limit of 4.0 lb/ton acid, the calculated limit is actually above the NSPS, so this plant needs not be considered.
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	LA	4/28/2017	Wet Sulfuric Acid Plants	H2O2 scrubbers	0.5	LB/TON H2SO4 PROD.	This facility designed to remove sulfur from petcoke has not been built and the plant not similar to sulfur burning sulfuric acid plant.
MS-0090	MISSISSIPPI PHOSPHATES CORPORATION	MISSISSIPPI PHOSPHATES CORPORATION	MS	11/30/2010	No. 2 Sulfuric Acid Plant (Emission Point AA-001)	Dual absorption plant.	3	LB/T OF 100% H2SO4	Plant never built and facility shut down.
MS-0090	MISSISSIPPI PHOSPHATES CORPORATION	MISSISSIPPI PHOSPHATES CORPORATION	MS	11/30/2010	No. 3 Sulfuric Acid Plant (Emission Point AA-017)	Dual absorption plant.	3	LB/T OF 100% H2SO4	Plant never built and facility shut down.

The following technologies have been identified as potentially applicable control technologies for SO_2 emissions from sulfuric acid plants:

- Sodium Sulfite-bisulfite scrubbing
- Molecular sieve
- Ammonia scrubbing
- Dual absorption process with cesium catalyst

Sodium Bisulfite Scrubbing

In the sodium sulfite-bisulfite scrubbing process, SO_2 is removed by scrubbing exhaust gases with a sodium sulfite solution. The resulting sodium bisulfite solution is fed to a heated crystallizer where sodium sulfite crystals are formed with the release of SO_2 and water vapor. These crystals are separated from the mother liquor and dissolved in the recovered condensate for recycle to the absorber. The recovered wet SO_2 is recycled to the acid plant. In all processes employing sulfite-bisulfite absorption even without regeneration, some portion of the sulfite is oxidized to sulfate, from which SO_2 cannot be regenerated in the heating sequence. This sulfate must be purged from the system.

The extent of oxidation is dependent on several factors (some which may be difficult to control) such as the oxygen content of the gas stream, the temperature and residence time of the liquor in the recovery sections, and the presence of contaminants that may act as oxidizing catalysts. The formation of oxides, which readily precipitate from solution, can result in plugging and operational problems. Since promulgation of the NSPS for sulfuric acid manufacturing, two plants have used the sodium sulfite-bisulfite control technology. The sodium sulfite-bisulfite system at one of the plants experienced operational difficulties and was subsequently replaced by an ammonia scrubber. The other plant is a part of an Army ammunition production facility, was not a sulfur burning process, and has not been used since 1994.

Sodium sulfite-bisulfite control technology is rejected from further consideration in this analysis because it has not been demonstrated commercially as providing reliable emissions control at a sulfur-burning sulfuric acid manufacturing plant.

Molecular Sieves

This process utilizes a proprietary molecular sieve system in which SO_2 is adsorbed on synthetic zeolites. The adsorbed material is desorbed by purified hot tail gas from the operating system and sent back to the acid plant. Since the promulgation of the sulfuric acid plant NSPS, one new unit was built with a molecular sieve system to control SO_2. However, extensive operational difficulties with the system caused this plant to be retrofitted with a dual absorption system for SO_2 control. The dual absorption system was retrofitted in January 1979 and has operated satisfactorily since that time.

Since molecular sieve control technology has not been commercially demonstrated, this option is considered technically infeasible for reducing SO_2 emissions and is rejected from further consideration.

Ammonia Scrubbing

The ammonia scrubbing process uses anhydrous ammonia (NH_3) and make-up water in a two-stage scrubbing process to remove SO_2. The typical SO_2 removal efficiency of this control technology is not as high as conventional dual absorption technology; however, several facilities in the U.S. have used this technology to meet the NSPS for sulfuric acid manufacturing plants. According to DuPont MECS, sulfur-burning sulfuric acid manufacturing plants that have used ammonia scrubbing technology have applied the technology as a retrofit to "existing" plants that were using single absorption technology. The combination of a single absorption plant followed by ammonia scrubbing were designed to comply with an NSPS limit of 4.0 lb SO_2/ton of 100 percent H_2SO_4 produced and a more stringent state limit of 3.8 lb SO_2/ton of 100 percent H_2SO_4 produced. Due to operational difficulties and high costs associated with operating ammonia scrubbing systems, all but two single absorption plants using ammonia scrubbing technology had been shut down by the time this technology was reviewed during the best available retrofit control technology (BART) analysis conducted by PCS in 2006 as part of the first regional haze planning period.

Ammonia scrubbing is rejected from further consideration in this analysis because it is commercially undemonstrated on dual absorption plants. First, it is unknown whether the potential for operational difficulties experienced by other facilities could be encountered and, second, because it is unknown whether additional control of SO_2 emissions would be achieved by a retrofit with this type of system.

Dual Absorption Technology

Dual absorption technology utilizing catalytic converter systems is a proven technology for reducing SO_2 emissions. This evaluation includes consideration of significant upgrades that were made to the catalytic systems that have greatly improved performance and corresponding emissions reductions over conventional catalytic system designs.

4.2 Step 2 - Eliminate Technically Infeasible Options

As discussed in the previous step, the only technically feasible option is dual absorption technology using improved catalytic converter systems to reduce SO_2 emissions.

4.3 Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The effectiveness of the current control systems on Sulfuric Acid Plant Nos. 5, 6 and 7, as permitted, are discussed in Section 3.

4.4 Step 4: Application of the Four Statutory Factors

Each of the factors is addressed below.

1. Cost of compliance - as previously stated, control technology upgrades to the sulfuric plants cost approximately $16 million. Additionally, there is a significant increased annual operating cost associated with replacement of catalysts during each three-year turnaround.

2. Time necessary for compliance – compliance has already been achieved.

3. Remaining useful life of source – this is not relevant because this factor was not used to dismiss the control technology upgrade already implemented.

4. Energy and non-air quality environmental impacts – there are no adverse energy impacts associated with use of the improved catalyst systems, and there are no adverse non-air environmental impacts.

4.5 Step 5 - Select Control Technology and Control Effectiveness

The selected technology for each of the dual absorption sulfuric acid plants is use of the already installed and permitted enhanced catalyst systems. The effectiveness of the current systems on Sulfuric Acid Plant Nos. 5, 6 and 7, as permitted, are discussed in Section 3.

In summary, pollution control system upgrades evaluated in this four-factor analysis are achieving emissions well below 2016 baseline emission levels and are believed to be the lowest, cost effective emission levels achievable at the plants. PCS' finding that additional controls are not feasible is consistent with EPA's guidance governing control technology assessments. This guidance states that facilities implementing projects after 2013 to reduce emissions pursuant to the Clean Air Act New Source Review Program are generally not good candidates for additional controls to satisfy reasonable further progress requirements.[3]

[3] Guidance on Regional Haze State Implementation Plans for the Second Implementation Period, U.S. EPA, August 20, 2019, pp. 22, 23.

From: Christopher Smith - Aurora <Christopher.D.Smith@nutrien.com>
Sent: Tuesday, March 02, 2021 6:56 PM
To: Strait, Randy P <randy.strait@ncdenr.gov>
Subject: [External] RE: Regional Haze Reasonable Progress Assessment for Second Planning Period - PCS Phosphate Response to Information Request

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Hi Randy,

We will look into this. I just wanted to drop you a quick note. Mark Johnson passed away in 2020. William Ponton is our new General Manager. Please replace him on this distribution list.

William.Ponton@nutrien.com

Regards,

Chris D. Smith
Senior Environmental Engineer
Environmental Affairs

1530 NC Hwy 306 S.
Aurora, NC 27806
t 252-322-8263 c 252-945-1586

christopher.d.smith@nutrien.com

www.nutrien.com

From: Strait, Randy P <randy.strait@ncdenr.gov>
Sent: Tuesday, March 2, 2021 6:52 PM
To: Christopher Smith - Aurora <Christopher.D.Smith@nutrien.com>; Abraczinskas, Michael <michael.abraczinskas@ncdenr.gov>
Cc: Pjetraj, Michael <michael.pjetraj@ncdenr.gov>; Huddleston, Betsy <betsy.huddleston@ncdenr.gov>; Bright, Robert L <robert.bright@ncdenr.gov>; Manning, Tammy <tammy.manning@ncdenr.gov>; Khalid Alnahdy <Khalid.Alnahdy@nutrien.com>; Mark Johnson - Aurora <Mark.D.Johnson@nutrien.com>; Bartlett, Joshua W <joshua.bartlett@ncdenr.gov>
Subject: [EXT] RE: Regional Haze Reasonable Progress Assessment for Second Planning Period - PCS Phosphate Response to Information Request

WARNING: This email originated from outside of the organization. Exercise caution when viewing attachments, clicking links, or responding to requests.

Hi Chris,

I received the following question from EPA regarding the four-factor analysis.

“The control option of “single absorption with scrubbers” is not included in the list of controls evaluated in this 4FA. While ammonia scrubbing at single absorption plants is discussed, it is our understanding this is different from single absorption with scrubbers. We are interested to determine if single absorption with scrubbers is a technically feasible control option that should be evaluated in this 4FA and if so, we recommend to include it in the controls being evaluated.”

It will be helpful if you can prepare a written response. An email response if fine.

Thank you,
Randy

Randy Strait
Chief, Planning Section
Division of Air Quality
North Carolina Department of Environmental Quality

919 707 8721 office
919 724 8080 mobile
randy.strait@ncdenr.gov

1641 Mail Service Center
217 West Jones Street
Raleigh, NC 27699-1641

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North Carolina Public Records Law and may be disclosed to third parties.

From: Christopher Smith - Aurora <Christopher.D.Smith@nutrien.com>
Sent: Friday, May 15, 2020 1:53 PM
To: Abraczinskas, Michael <michael.abraczinskas@ncdenr.gov>
Cc: Strait, Randy P <randy.strait@ncdenr.gov>; Pjetraj, Michael <michael.pjetraj@ncdenr.gov>; Huddleston, Betsy <betsy.huddleston@ncdenr.gov>; Bright, Robert L <robert.bright@ncdenr.gov>; Manning, Tammy <tammy.manning@ncdenr.gov>; Khalid Alnahdy <Khalid.Alnahdy@nutrien.com>; Mark Johnson - Aurora <Mark.D.Johnson@nutrien.com>
Subject: [External] Regional Haze Reasonable Progress Assessment for Second Planning Period - PCS Phosphate Response to Information Request

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Send all suspicious email as an attachment to report.spam@nc.gov

Dear Mr. Abraczinskas:

Attached is a copy of our response letter submitted to you this afternoon via certified mail.

Regards,

Chris D. Smith
Senior Environmental Engineer
Environmental Affairs

1530 NC Hwy 306 S.
Aurora, NC 27806
t 252-322-8263 c 252-945-1586

christopher.d.smith@nutrien.com

www.nutrien.com [nutrien.com]

From: Strait, Randy P <randy.strait@ncdenr.gov>
Sent: Tuesday, May 5, 2020 8:57 AM
To: Mark Johnson - Augusta <mark.johnson@nutrien.com>
Cc: Khalid Alnahdy <Khalid.Alnahdy@nutrien.com>; Abraczinskas, Michael <michael.abraczinskas@ncdenr.gov>; Pjetraj, Michael <michael.pjetraj@ncdenr.gov>; Huddleston, Betsy <betsy.huddleston@ncdenr.gov>; Bright, Robert L <robert.bright@ncdenr.gov>; Manning, Tammy <tammy.manning@ncdenr.gov>
Subject: [EXT] Regional Haze Reasonable Progress Assessment for Second Planning Period

WARNING: This email originated from outside of the organization. Exercise caution when viewing attachments, clicking links, or responding to requests.

Dear Mr. Johnson:

The North Carolina Division of Air Quality (DAQ) is preparing the North Carolina Regional Haze State Implementation Plan (SIP) for the second planning period (2018 – 2028). Based on analyses conducted by North Carolina and the Visibility Improvement State and Tribal Association of the Southeast (VISTAS), of which North Carolina is a member, sulfur dioxide (SO2) emissions from PCS Phosphate Company, Inc. in Aurora, North Carolina have been shown to have a significant contribution to visibility impairment at the Swanquarter National Wildlife Refuge.

On behalf of Director Michael A. Abraczinskas, please find attached a letter requesting that PCS Phosphate review the projected 2028 SO2 emissions upon which the DAQ’s contribution assessment is based, and either confirm or revise the 2028

emissions for the DAQ to review and determine if it will be necessary for PCS Phosphate to complete a four-factor analysis of its major SO2 sources. We request that you complete this review and report your conclusions with documentation of any revised emissions to the DAQ by May 15, 2020. The DAQ will review your submittal and notify you by May 22, 2020, if it is necessary for PCS Phosphate to complete a four-factor analysis of its major SO2 sources.

Should you have any questions regarding this request, please feel free to contact Director Abraczinskas at (919) 707-8447 or me at (919) 707-8721.

I will appreciate it if you can send a reply to acknowledge receipt of this email and the attached letter.

Best regards,

Randy Strait
Chief, Planning Section
Division of Air Quality
North Carolina Department of Environmental Quality

919 707 8721 office
919 724 8080 mobile
randy.strait@ncdenr.gov

1641 Mail Service Center
217 West Jones Street
Raleigh, NC 27699-1641

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North Carolina Public Records Law and may be disclosed to third parties.

Appendix G-3b

PCS Phosphate - Permit No. 04176T66

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ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
MICHAEL ABRACZINSKAS
Director

NORTH CAROLINA
Environmental Quality

March 3, 2022

William Ponton
General Manager
PCS Phosphate Company, Inc. - Aurora
1530 NC Highway 306 South
Aurora, North Carolina 27806

SUBJECT: Air Quality Permit No. 04176T66
Facility ID: 0700071
PCS Phosphate Company, Inc. - Aurora
Aurora, Beaufort County
Fee Class: Title V
PSD Class: Major

Dear Mr. Ponton:

In accordance with your completed Air Quality Permit Application for a minor modificaiton received January 10, 2022, we are forwarding herewith Air Quality Permit No. 04176T66 to PCS Phosphate Company, Inc. - Aurora, Aurora, North Carolina authorizing the construction and the operation, of the emission sources and associated air pollution control devices specified herein. Additionally, any emissions activities determined from your Air Quality Permit Application as being insignificant per 15A North Carolina Administrative Code 02Q .0503(8) have been identified as such in the permit. Please note the requirements for the annual compliance certification are contained in General Condition P in Section 3. The current owner is responsible for submitting a compliance certification for the entire year regardless of who owned the facility during the year.

These emission sources (ID Nos. 339-051 through 339-056, 505-104, and 511-032) are listed as a minor modification per 15A NCAC 02Q .0515. The annual compliance certification as described in General Condition P is required. Unless otherwise notified by DAQ, the affected terms of this permit (excluding the permit shield as described General Condition R) for these emission sources shall become final on May 2, 2022. Until this date, the affected permit terms herein reflect the proposed operating language that the Permittee shall operate these emission sources under pursuant to 15A NCAC 02Q .0515(f).

As the designated responsible official it is your responsibility to review, understand, and abide by all of the terms and conditions of the attached permit. It is also your responsibility to ensure that any person who operates any emission source and associated air pollution control device subject to any term or condition of the attached permit reviews, understands, and abides by the condition(s) of the attached permit that are applicable to that particular emission source.

If any parts, requirements, or limitations contained in this Air Quality Permit are unacceptable to you, you have the right to file a petition for contested case hearing in the North Carolina Office of Administrative Hearings. Information regarding the right, procedure, and time limit for permittees and other persons aggrieved to file such a petition is contained in the attached "Notice Regarding the Right to Contest A Division of Air Quality Permit Decision."

The construction of new air pollution emission source(s) and associated air pollution control device(s), or modifications to the emission source(s) and air pollution control device(s) described in this permit must be covered under an Air Quality Permit issued by the Division of Air Quality prior to construction unless the Permittee has fulfilled the requirements of NCGS 143-215.108A(b) and received written approval from the Director of the Division of Air Quality to commence construction. Failure to receive an Air Quality Permit or written approval prior to commencing construction is a violation of NCGS 143-215.108A and may subject the Permittee to civil or criminal penalties as described in NCGS 143-215.114A and 143-215.114B.

Beaufort County has triggered increment tracking under PSD for NO_X, SO_2, and PM_{10} emissions However, this permit modification does not consume or expand increments for any pollutants.

This Air Quality Permit shall be effective from March 3, 2022 and shall expire on the earlier of December 31, 2022 or the renewal of Permit No. 04176T53 has been issued or denied. This Air Quality Permit is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein.

Should you have any questions concerning this matter, please contact Betty Gatano, P.E., at (919) 707-8736 or Betty.Gatano@ncdenr.gov.

Sincerely yours,

Mark J. Cuilla, EIT, CPM, Chief, Permitting Section
Division of Air Quality, NCDEQ

Enclosure

c: Michael Sparks, EPA Region 4 (Permit and Review)
Washington Regional Office
Connie Horne (Cover letter only)
Central Files

NOTICE REGARDING THE RIGHT TO CONTEST A DIVISION OF AIR QUALITY PERMIT DECISION

Right of the Permit Applicant or Permittee to File a Contested Case: Pursuant to NCGS 143-215.108(e), a permit applicant or permittee who is dissatisfied with the Division of Air Quality's decision on a permit application may commence a contested case by filing a petition under NCGS 150B-23 in the Office of Administrative Hearings within 30 days after the Division notifies the applicant or permittee of its decision. If the applicant or permittee does not file a petition within the required time, the Division's decision on the application is final and is not subject to review. The filing of a petition will stay the Division's decision until resolution of the contested case.

Right of Other Persons Aggrieved to File a Contested Case: Pursuant to NCGS 143-215.108(e1), a person other than an applicant or permittee who is a person aggrieved by the Division's decision on a permit application may commence a contested case by filing a petition under NCGS 150B-23 within 30 days after the Division provides notice of its decision on a permit application, as provided in NCGS 150B-23(f), or by posting the decision on a publicly available Web site. The filing of a petition under this subsection does not stay the Division's decision except as ordered by the administrative law judge under NCGS 150B-33(b).

General Filing Instructions: A petition for contested case hearing must be in the form of a written petition, conforming to NCGS 150B-23, and filed with the Office of Administrative Hearings, 1711 New Hope Church Road, Raleigh NC, 27609, along with a fee in an amount provided in NCGS 150B-23.2. A petition for contested case hearing form may be obtained upon request from the Office of Administrative Hearings or on its website at https://www.oah.nc.gov/hearings-division/filing/hearing-forms. Additional specific instructions for filing a petition are set forth at 26 NCAC Chapter 03.

Service Instructions: A party filing a contested case is required to serve a copy of the petition, by any means authorized under 26 NCAC 03 .0102, on the process agent for the Department of Environmental Quality:

William F. Lane, General Counsel
North Carolina Department of Environmental Quality
1601 Mail Service Center
Raleigh, North Carolina 27699-1601

If the party filing the petition is a person aggrieved other than the permittee or permit applicant, the party **must also** serve the permittee in accordance with NCGS 150B-23(a).

* * *

Additional information is available at https://www.oah.nc.gov/hearings-division/hearing-process/filing-contested-case. Please contact the OAH at 984-236-1850 or oah.postmaster@oah.nc.gov with all questions regarding the filing fee and/or the details of the filing process.

Summary of Changes to Permit

The following changes were made to Air Permit No. 04176T65:*

Pages	Section	Description of Changes
Cover and throughout	--	Updated all dates and permit revision numbers.
3	--	"List of Acronyms" has been moved to Page 3 of the permit.
4 – 5	Section 1.2	• Added natural gas as a fuel for the calciners (ID Nos 339-051 through 339-056). • Added footnote stating the calciners (ID Nos. 339-051 through 339-056) are listed as a 15A NCAC 02Q .0515 modification.
6 – 8	Section 1.3	• Added No. 2 fuel oil and natural gas as a fuel for the dryer (ID No. 505-104) in the DAP Plant No. 2. • Added No. 2 fuel oil and natural gas as a fuel for the dryer (ID No. 511-032) in the DAP Plant No. 3. • Added footnote stating the dryers (ID Nos. 505-104 and 511-032) are listed as a 15A NCAC 02Q .0515 modification.
21	Section 2.1.1	Removed the term "federally enforceable only" from the regulations table.
134 – 135	Section 2.3	Moved "List of Insignificant Activities" to Section 2.3 in accordance with the updated formatting for TV permits.
136 – 137	Section 2.4	Renamed Section 2.4 to "Other Applicable Requirements" in accordance with the updated formatting for TV permits.
136	2.4.1	• Added natural gas as a fuel for the calciners (ID Nos 339-051 through 339-056). • Added No. 2 fuel oil and natural gas as a fuel for the dryer (ID No. 511-032) in the DAP Plant No. 3.
138	Section 2.5	• Renamed Section 2.5 for consistency with the updated formatting for TV permits. • Removed the term "federally enforceable only" from this section.
141	Section 2.6	Moved "Permit Shield for Non-applicable Requirements" to Section 2.6 in accordance with the updated formatting for TV permits.
142 – 150	Section 3	Updated General Permit Conditions with most current version (version 6.0, 01/07/2022).
151 – 153	Attachment 1	Renamed "Attachment 2" to "Attachment 1" because the "List of Acronyms" has been moved to Page 3 of the permit.
154 – 159	Attachment 2	Renamed "Attachment 3" to "Attachment 2" because the "List of Acronyms" has been moved to Page 3 of the permit.

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

State of North Carolina
Department of Environmental Quality
Division of Air Quality

AIR QUALITY PERMIT

Permit No.	Replaces Permit No.	Effective Date	Expiration Date
04176T66	04176T65	May 2, 2022*	December 31, 2022**

NOTE: Per General Condition K, a permit application for the renewal of this Title V permit shall be submitted no later than June 30, 2022.

*The effective date listed above applies only to changes made as a result of this modification. All other terms and conditions of this permit are applicable as of the issuance date.

**This permit shall expire on the earlier of December 31, 2022 or the renewal of Permit No. 04176T53 has been issued or denied.

Until such time as this permit expires or is modified or revoked, the below named Permittee is permitted to construct and operate, the emission source(s) and associated air pollution control device(s) specified herein, in accordance with the terms, conditions, and limitations within this permit. This permit is issued under the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended, and Title 15A North Carolina Administrative Codes (15A NCAC), Subchapters 02D and 02Q, and other applicable Laws.

Pursuant to Title 15A NCAC, Subchapter 02Q, the Permittee shall not construct, operate, or modify any emission source(s) or air pollution control device(s) without having first submitted a complete Air Quality Permit Application to the permitting authority and received an Air Quality Permit, except as provided in this permit.

Permittee:	**PCS Phosphate Company, Inc. - Aurora**
Facility ID:	**0700071**
Primary SIC Code:	**2874**
NAICS	**325312**
Facility Site Location:	**1530 NC Highway 306 South**
City, County, State, Zip:	**Aurora, Beaufort County, North Carolina, 27806**
Mailing Address:	**1530 NC Highway 306 South**
City, State, Zip:	**Aurora, North Carolina, 27806**
Application Number:	**0700071.22A**
Complete Application Date:	**January 10, 2022.**
Division of Air Quality, Regional Office Address:	**Washington Regional Office 943 Washington Square Mall Washington, NC 27889**

Permit issued this the 3rd day March, 2022.

Mark J. Cuilla, EIT, CPM, Chief, Air Permitting Section
By Authority of the Environmental Management Commission

Table of Contents

List of Acronyms

AOS	Alternative Operating Scenario
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
CSAPR	Cross-State Air Pollution Rule
DAQ	Division of Air Quality
DEQ	Department of Environmental Quality
EMC	Environmental Management Commission
EPA	Environmental Protection Agency
FR	Federal Register
GACT	Generally Available Control Technology
GHGs	Greenhouse Gases
HAP	Hazardous Air Pollutant
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
NAA	Non-Attainment Area
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NCAC	North Carolina Administrative Code
NCGS	North Carolina General Statutes
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_X	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
OAH	Office of Administrative Hearings
PAE	Projected Actual Emissions
PAL	Plantwide Applicability Limitation
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with Nominal Aerodynamic Diameter of 2.5 Micrometers or Less
PM_{10}	Particulate Matter with Nominal Aerodynamic Diameter of 10 Micrometers or Less
POS	Primary Operating Scenario
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
tpy	Tons Per Year
VOC	Volatile Organic Compound

SECTION 1 - PERMITTED EMISSION SOURCE(S) AND ASSOCIATED AIR POLLUTION CONTROL DEVICE(S) AND APPURTENANCES

The following tables contain a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

1. Sulfuric Acid Area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
S-5 **NSPS H**	Sulfuric Acid Plant No. 5: Double-absorption sulfuric acid plant (3,600 tons per day nominal capacity)	415-934	Vertical tube mist eliminator system NOTE: Double absoprtion process provides control of SO_2 from the sulfuric acid plants	103
S-6 **NSPS H**	Sulfuric Acid Plant No. 6: Double-absorption sulfuric acid plant (3,800 tons per day nominal capacity)	406-129	Vertical tube mist eliminator system NOTE: Double absoprtion process provides control of SO_2 from the sulfuric acid plants	104
S-7 **BACT, NSPS H**	Sulfuric Acid Plant No. 7: Double-absorption sulfuric acid plant (5,400 tons per day nominal capacity)	407-258	Vertical tube mist eliminator system NOTE: Double absoprtion process provides control of SO_2 from the sulfuric acid plants	105
BW **NSPS Dc, Case-by-Case MACT 02D .1109**	Auxiliary Boiler - No. 2 fuel oil-fired (99.56 million Btu per hour maximum capacity)	N/A	N/A	110
S-5F[1]	Fugitive emissions from sulfuric acid plant No. 5	N/A	N/A	192
S-6F[1]	Fugitive emissions from sulfuric acid plant No. 6	N/A	N/A	193
S-7F[1]	Fugitive emissions from sulfuric acid plant No. 7	N/A	N/A	194

[1] These are insignificant sources subject to state enforceable only requirements.

2. Mill Area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
339-051[3, 4] **MACT AA**	No. 1 Phosphate Rock Calciner: coal/ coke/"off-spec" used oil/used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed unit (105.1 tons per hour nominal feed)	339-381a 339-381b 339-381c 339-381d	Two duplex cyclones Fixed-throat Venturi wet scrubber Wet electrostatic precipitator	201
339-052[3, 4] **MACT AA**	No. 2 Phosphate Rock Calciner: coal/ coke/"off-spec" used oil/used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed unit (105.1 tons per hour nominal feed)	339-382a 339-382b 339-382c 339-382d	Two duplex cyclones Fixed-throat Venturi wet scrubber Wet electrostatic precipitator	202
339-053[3, 4] **MACT AA**	No. 3 Phosphate Rock Calciner: coal/ coke/"off-spec" used oil/used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed unit (105.1 tons per hour nominal feed)	339-383a 339-383b 339-383c 339-383d	Two duplex cyclones Fixed-throat Venturi wet scrubber Wet electrostatic precipitator	203
339-054[3, 4] **MACT AA**	No. 4 Phosphate Rock Calciner: coal/ coke/"off-spec" used oil/used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed unit (105.1 tons per hour nominal feed)	339-384a 339-384b 339-384c 339-384d	Two duplex cyclones Fixed-throat Venturi wet scrubber Wet electrostatic precipitator	204
339-055[3, 4] **MACT AA**	No. 5 Phosphate Rock Calciner: coal/ coke/"off-spec" used oil/used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed unit (105.1 tons per hour nominal feed)	339-385a 339-385b 339-385c 339-385d	Two duplex cyclones Fixed-throat Venturi wet scrubber Wet electrostatic precipitator	205
339-056[3, 4] **MACT AA**	No. 6 Phosphate Rock Calciner: coal/ coke/"off-spec" used oil/used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed unit (105.1 tons per hour nominal feed)	339-386a 339-386b 339-386c 339-386d	Two duplex cyclones Fixed-throat Venturi wet scrubber Wet electrostatic precipitator	206
332-120[2]	Phosphate Rock Dryer: No. 6 fuel oil-fired rock dryer (250 tons per hour nominal capacity)	332-370a 332-370b	Duplex cyclone Venturi wet scrubber	210
341-300 **NSPS Y**	Coal/coke pulverizer and thermal dryer system (20 tons per hour nominal capacity)	341-310 341-331 341-332	single cyclone exhausted to two parallel bagfilters	215
Belt39 to Belt70.1	Calcined rock CTS	339-821	Enclosed transfer point	220
Belt55 to Belt70.1	Calcined rock CTS Baghouse	339-860	bagfilter	221
Belt21 to Belt23 or Belt24	Storage silo baghouse	333-180	bagfilter	222

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
Belt22 to Belt23 or Belt24	Storage silo baghouse	333-190	bagfilter	222
339-809-464	Calcined/dried rock CTS	N/A	N/A	223
224	polymer storage bin	320-215-478	bagfilter	224
F290[1]	Mill Concentrator Fugitives	N/A	N/A	290
F291[1]	Calciner Plant Area Fugitives	N/A	N/A	291
341-100 **NSPS Y**	Coal/coke railcar unloader (75 tons per hour nominal capacity) with associated curtains, choke feeder, and wet suppression (spray) system	N/A	N/A	294a
341-110, 341-111, 341-112, 341-120 **NSPS Y**	Three parallel conveyor belts with associated wet suppression (spray) system, conveyor skirts at transfer points, and hood covers which transfer to single belt conveyor	N/A	N/A	294b
341-140 **NSPS Y**	Single belt conveyor with associated wet suppression (spray) system and hood covers	N/A	N/A	294c
341-130 **NSPS Y**	Coal/coke crusher (75 tons per hour nominal capacity) with associated wet suppression (spray) system	N/A	N/A	294d
341-200 341-201 **NSPS Y**	Two coal/coke storage silos (1,086 tons, nominal capacity each)	CD341-200 CD341-201	Two filtered bin vents, one per silo	294e
341-230 **NSPS Y**	conveyor belt with associated wet suppression (spray) system and hood covers	N/A	N/A	294f

[1] These are insignificant sources subject to state enforceable only requirements.

[2] This emission source **(ID No. 332-120)** and control devices **(ID Nos. 332-370a and 332-370b)** are listed as a minor modification per 15A NCAC 02Q .0515. The compliance certification as described in General Condition P is required. Unless otherwise notified by NC DAQ, the affected terms of this permit (excluding the permit shield as described General Condition R) for this source shall become final on **July 7, 2019**. Until this date, the affected permit terms herein reflect the proposed operating language that the Permittee shall operate this source pursuant to 15A NCAC 02Q .0515(f).

[3.] These emission sources **(ID Nos. 339-051 through 339-056)** are listed as a 15A NCAC 02Q .0501(b)(2) modification. The Permittee shall file a Title V Air Quality Permit Application on or before 12 months after commencing operation in accordance with General Condition NN.1. The permit shield described in General Condition R does not apply and compliance certification as described in General Condition P is not required.

[4.] Pursuant to applications 0700071.22A, these emission sources **(ID Nos. 339-051 through 339-056)** are listed as a minor modification per 15A NCAC 02Q .0515. The annual compliance certification as described in General Condition P is required. Unless otherwise notified by DAQ, the affected terms of this permit (excluding the permit shield as described General Condition R) for these emission sources shall become final on May 2, 2022. Until this date, the affected permit terms herein reflect the proposed operating language that the Permittee shall operate these emission sources pursuant to 15A NCAC 02Q .0515(f).

3. Fertilizer Production Area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
Diammonium Phosphate Plant No. 2				
505-104[4] **PSD BACT** **MACT BB**	Residual oil/No. 2 fuel oil/natural gas-fired dryer	505-123A 505-125 505-147	dryer duplex cyclone venturi wet scrubber packed tower tail gas scrubber with saddle-type packing and demister pads	303
505-107 505-114 505-110 505-143 **PSD BACT** **MACT BB**	material sizing and handling equipment: eight process screens scalping screen recycle drag conveyor product bin	505-123C 505-117 505-148	equipment cyclone cooler venturi wet scrubber packed tower tail gas scrubber with saddle-type packing and demister pad	303
505-111 **PSD BACT** **MACT BB**	Cooler	505-123B 505-117 505-148	cooler duplex cyclone cooler venturi wet scrubber packed tower tail gas scrubber with saddle-type packing and demister pad	303
505-103[3] 505-121 **PSD BACT** **MACT BB**	Granulator Reactor	505-118 505-148[3]	Granulator-reactor venturi wet scrubber packed tower tail gas scrubber with saddle-type packing and demister pad	303

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
Diammonium Phosphate Plant No. 3				
511-085 511-086 511-070 **PSD BACT** **MACT BB**	first stage reactor second stage reactor granulator	511-107A 511-107B 511-105	saturation chamber and wet cyclonic scrubber installed in series on a cyclonic tail gas scrubber	302
511-032[4] **PSD BACT** **MACT BB**	Residual oil/No. 2 fuel oil/natural gas-fired dryer	511-028 511-103 511-105	dryer quad cyclone and two-stage dryer wet cyclonic scrubber installed in series on a cyclonic tail gas scrubber	302
511-025 **PSD BACT** **MACT BB**	cooler and other miscellaneous material handling points	511-029 511-106 511-105	cooler dual cyclone and cooler wet cyclonic scrubber cyclonic tail gas scrubber	302
 511-008 511-009 511-010 511-011 511-016 511-017 511-038 511-039 511-041 511-093 511-094 511-095 511-096 **PSD BACT** **MACT BB**	process sizing and handling equipment: chain mill chain mill chain mill chain mill screen feed drag conveyor, recycle drag conveyor, recycle elevator, dryer elevator, product elevator, and double-deck product screen double-deck product screen double-deck product screen double-deck product screen	511-030 511-104 511-105	dust dual cyclone and dust cyclonic wet scrubber installed in series on a cyclonic tail gas scrubber	302
Other				
APP-1	Ammonium Polyphosphate Plant (APP)	N/A	N/A	304
454-200[2]	Ammonium Polyphosphate Plant (APP) Line 2	N/A	N/A	306
511-045	GTSP phosphate rock silo	511-035	bagfilter operating only during rock transfer	310
DAP23WH1[1]	Warehouse for DAP 2 or DAP 3	N/A	N/A	390
DAP2WH2[1]	Warehouse No. 2 for DAP 2	N/A	N/A	
DAP3WH3 **MACT BB**	Warehouse No. 3 for DAP 3	N/A	N/A	
F391[1]	Fertilizer Plant Fugitives A	N/A	N/A	391
F392[1]	Fertilizer Plant Fugitives B	N/A	N/A	392
PA Pilot No. 2[1]	Phosphoric Acid Pilot Plant No. 2	116-002	Venturi Scrubber	316

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
318[1]	Technical Services Dust Collection System – Main Laboratory	CD318	bagfilter	318

[1] These are insignificant sources subject to state enforceable only requirements

[2] This emission source **(ID No. 454-200)** is listed as a 15A NCAC 02Q .0501(c)(2) modification. The Permittee shall file a Title V Air Quality Permit Application on or before 12 months after commencing operation in accordance with General Condition NN.1. The permit shield described in General Condition R does not apply and compliance certification as described in General Condition P is not required.

[3] This emission source **(ID No. 505-103)** and control device **(ID No. 505-148)** are listed as a 15A NCAC 02Q .0501(b)(2) modification. The Permittee shall file a Title V Air Quality Permit Application on or before 12 months after commencing operation in accordance with General Condition NN.1. The permit shield described in General Condition R does not apply and compliance certification as described in General Condition P is not required.

[4] Pursuant to applications 0700071.22A, these emission sources **(ID Nos. 505-104and 511-032)** are listed as a minor modification per 15A NCAC 02Q .0515. The annual compliance certification as described in General Condition P is required. Unless otherwise notified by DAQ, the affected terms of this permit (excluding the permit shield as described General Condition R) for these emission sources shall become final on May 2, 2022. Until this date, the affected permit terms herein reflect the proposed operating language that the Permittee shall operate these emission sources pursuant to 15A NCAC 02Q .0515(f).

4. Superphosphoric Acid Production Area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
FPR-1, FPR-2 and FPR-3 **PSD BACT (FPR-3only)**	No.1, No. 2, and No. 3 filter presses	N/A	N/A	305
451-418 and 451-409 **MACT AA**	Superphosphoric Acid Plant No. 1	451-407	Venturi type wet scrubber	330
453-112 **MACT AA**	No. 2 Press Product Tank			
451-701 and 451-809 **MACT AA**	Superphosphoric Acid Plant No. 2	451-807	Venturi type wet scrubber	331
453-409 **MACT AA**	No. 3 Press Product Tank			
451-316 and 451-308 **PSD BACT MACT AA**	Superphosphoric Acid Plant No. 3	451-315	Venturi type wet scrubber	332
451-916 and 451-940 **PSD BACT MACT AA**	Superphosphoric Acid Plant No. 4			
451-1100 and 451-1200[2] **MACT AA**	Superphosphoric acid plant No. 5	451-1300[2]	Venturi type wet scrubber	333
453-1[1]	No. 1 filter press repulp tank	N/A	N/A	335
453-406	No. 2 and No. 3 filter presses repulp tank	N/A	N/A	336
453-485, 453-489, and 453-490	Additive storage silo and No. 1 and No. 2 additive weigh feed hoppers	453-488	Bagfilter	340
453-468	Additive storage silo	453-470	Bagfilter	341

[1] These are insignificant sources subject to state enforceable only requirements.

[2.] This emission source and control device **(ID Nos. 451 1100 and 451 1200 and 451-1300)** are listed as a 15A NCAC 02Q .0501(c)(2) modification. The Permittee shall file a Title V Air Quality Permit Application on or before 12 months after commencing operation in accordance with General Condition NN.1. The permit shield described in General Condition R does not apply and compliance certification as described in General Condition P is not required.

5. Phosphoric Acid Production Area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
Phosphoric Acid Train No. 1				
421-201 **PSD BACT** **MACT AA**	Reactor Train No. 1	421-225	Spray cross-flow packed bed type scrubber	401
421-000 **PSD BACT** **MACT AA**	Tilting pan (Bird) filter No. 1			
421-325 **PSD BACT** **MACT AA**	Tilting pan (Bird) filter No. 1 primary vacuum pump installed on primary vacuum separator			
421-327 **PSD BACT** **MACT AA**	Secondary vacuum pump installed on secondary vacuum separator			
421-223, 421-232 **PSD BACT** **MACT AA**	Two barometric condenser vacuum pumps			
421-218 **PSD BACT** **MACT AA**	Barometric condensers hotwell			
421-330 **PSD BACT** **MACT AA**	Tilting pan (Bird) filter No. 1 seal tanks			
421-225A **PSD BACT** **MACT AA**	Trench hood			
441-000, 441-021, 441-015 **PSD BACT** **MACT AA**	Belt filter No. 1 filtrate separator, Spray tower separator Belt filter No. 1 vacuum pump	NA	NA	402
441-031 441-034 **PSD BACT** **MACT AA**	Belt filter No. 1 seal tanks, Belt filter No. 1 feed hood	442-061	Cyclonic scrubber	403
Phosphoric Acid Train No. 2				
422-201 **PSD BACT** **MACT AA**	Reactor Train No. 2	422-225	Spray cross-flow packed bed type scrubber	404
422-000 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 2			
422-325 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 2 primary vacuum pump installed on primary vacuum separator			

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
422-327 **PSD BACT** **MACT AA**	secondary vacuum pump installed on secondary vacuum separator			
422-223, 422-232 **PSD BACT** **MACT AA**	two barometric condensers vacuum pumps			
422-218 **PSD BACT** **MACT AA**	barometric condensers hotwell			
422-330 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 2 seal tanks			
422-225A **PSD BACT** **MACT AA**	trench hood			
442-000, 442-021, 442-015 **PSD BACT** **MACT AA**	Belt filter No. 2 filtrate separator, Spray tower separator, Belt filter No. 2 vacuum pump	NA	NA	405
442-034 **PSD BACT** **MACT AA**	Belt filter No. 2 feed hood	442-061	Cyclonic scrubber	403
Phosphoric Acid Train No. 3				
423-201 **PSD BACT** **MACT AA**	Reactor Train No. 3	423-225	Spray cross-flow packed bed type scrubber	406
423-000 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 3;			
423-325 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 3 primary vacuum pump installed on primary vacuum separator;			
423-327 **PSD BACT** **MACT AA**	secondary vacuum pump installed on secondary vacuum separator			
423-223, 423-232 **PSD BACT** **MACT AA**	two barometric condensers vacuum pumps			
423-218 **PSD BACT** **MACT AA**	barometric condensers hotwell			
423-330 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 3 seal tanks			

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
443-000, 443-021, 443-015 **PSD BACT** **MACT AA**	Belt filter No. 3 filtrate separator, Spray tower separator, Belt filter No. 3 vacuum pump	NA	NA	407
443-034 **PSD BACT** **MACT AA**	Belt filter No. 3 feed hood	443-061	Cyclonic scrubber	408
Phosphoric Acid Train No. 4				
444-031, 444-034 **PSD BACT** **MACT AA**	Belt filter No. 4 seal tanks, Belt filter No. 4 feed hood	443-061	Cyclonic scrubber	408
424-201 **PSD BACT** **MACT AA**	Reactor Train No. 4	424-225	Spray cross-flow packed bed type scrubber	409
424-000 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 4;			
424-325 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 4 primary vacuum pump installed on primary vacuum separator			
424-327 **PSD BACT** **MACT AA**	secondary vacuum pump installed on secondary vacuum separator			
424-223, 424-232 **PSD BACT** **MACT AA**	two barometric condensers vacuum pumps			
424-218 **PSD BACT** **MACT AA**	barometric condensers hotwell			
424-330 **PSD BACT** **MACT AA**	tilting pan (Bird) filter No. 4 seal tanks.			
444-000, 444-021, 444-015 **PSD BACT** **MACT AA**	Belt filter No. 4 filtrate separator, Spray tower separator, Belt filter No. 4 vacuum pump	NA	NA	410
Other				
433-188 (020)[1], 433-001 (030)[1], 433-010 (031)[1], 433-050 (040)[1]	Four phosphoric acid storage tanks	433-056	Venturi scrubber	421
433-020 (032)[1], 433-030 (033)[1], 433-120 (034)[1], 433-100 (060)[1]	Four phosphoric acid storage tanks	433-036	Venturi scrubber	422

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
433-140[1]	Carbon storage tank			
433-127	Clarifier tank (080)	433-133	Venturi scrubber	423
429-002 421-115 **PSD BACT**	Two phosphate rock jet conveyors on reactor train No. 1	421-103	Bagfilter	430
429-005 422-115 **PSD BACT**	Two phosphate rock jet conveyors on reactor train No. 2	422-103	Bagfilter	431
429-152 429-001 429-004 429-151 **PSD BACT**	Phosphate rock storage silo No. 1 and three transfer points	429-014	Bagfilter	434
429-157 429-158 429-009 429-181 429-183	Phosphate rock storage silo No. 2 and four transfer points	429-164	Bagfilter	435
429-150 **PSD BACT**	Phosphate rock transfer house	429-168	Bagfilter	437
426-156[1] 433-158[1]	Slurry mix tank Clarifier tank (T100)	426-165	Venturi scrubber (operated only during defluorinated acid production)	450
426-154	diatomaceous earth silo	426-161	Bagfilter	451
ES461, ES462 **MACT AA**	Two fans on phosphoric acid recirculation water cooling tower	N/A	N/A	461, 462
GW01	HF Loading and Storage	HFVS-1 HFPB-1 and HFVS-2 HFVS-2	Venturi scrubber in series Packed bed scrubber and Ventrui scrubber in series with Packed bed scrubber	440 441
GW03-A	HF Train 1	HFVS-1 HFPB-1 436-180 (shutdown only)	Venturi scrubber in series with Packed bed scrubber Venturi scrubber	440 447
GW03-B	HF Train 2	HFVS-2 HFPB-2 438-180 (shutdown only)	Venturi scrubber Packed bed scrubber Venturi scrubber	441 448
LS-1	Additive Storage	LSBF-1	Fabric filter	426
LB-1	Additive Bin	LBF-1	Fabric filter	427
CT444	Indirect Contact Cooling Tower	N/A	N/A	428
PAPF	Phosphoric Acid Plant Fugitives	N/A	N/A	491

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
428-440[1], 428-442[1], 428-445[1], 428-450[1]	Four (4) HFSA tanks	N/A	N/A	492
433-183[1]	Carbon day tank	N/A	N/A	492
426-208, 426-232, and 426-200	Process vessel No. 1, process vessel No. 2, and product tank	426-254	Venturi scrubber	493
426-240	Additive storage silo	426-242	Fabric filter	494
426-220	Filter press No. 1 and Filter press No. 2 building vent No. 1	N/A	N/A	495
426-244	Additive weigh feed hopper	426-245	Fabric filter	496
426-226	Filter press No. 1 and Filter press No. 2 building vent No. 2	N/A	N/A	497
FLTR.005.TNK[1] FLTR.010.TNK[1] FLTR.015.TNK[1] FLTR.020.TNK[1] FLTR.025.TNK[1] FLTR.030.TNK[1]	Six (6) filtratation process # 1 process tanks	N/A	N/A	470
FLTR.110.TNK[1] FLTR.115.TNK[1] FLTR.120.TNK[1] FLTR.130.TNK[1]	Four (4) filtratation process # 2 process tanks	N/A	N/A	471

[1]These are insignificant sources subject to state enforceable only requirements.

6. Purified Acid Production (PAP) Area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
Purified Acid Plant No. 1, Trains 1 and 2				
T24 T224 T324 T346 **MACT AA**	scrub acid storage tank scrub acid storage tank scrub acid storage tank discharging through a seal pot	S324 GC-1	packed bed scrubber gas chiller system	501
C10 C20 C210 C220 **MACT AA**	extraction column under nitrogen extraction column under nitrogen extraction column under nitrogen extraction column under nitrogen	GC-1	gas chiller system	
T7, T12, T13, T212, T213, T1, T201, T40, T240, T57 **MACT AA**	ten tanks under nitrogen			
T54, T44, T244, T34 **MACT AA**	four tanks with seal pots under nitrogen			
T8, T15, T215, T315, T58 **MACT AA**	five seal pots under nitrogen			
S53, S43, S243, S253, S33, S5 **MACT AA**	six separators under nitrogen			
S4 **MACT AA**	still under nitrogen			
S42, S242, S32, S52, S54 **MACT AA**	five strippers under nitrogen			
S324 **MACT AA**	scrubber under nitrogen			
S88[1] T70[1]	acid defluorination column and acid concentrator	S92	wet spray tower with a demister pad	502
S118[1] T270[1]	acid defluorination column and acid concentrator	S292	wet spray tower with a demister pad	
S288[1] T100[1]	acid defluorination column and acid concentrator	S122	wet spray tower with a demister pad	
E180 (CT-1) **MACT AA**	direct contact cooling tower No. 1	N/A	N/A	510, 511
E181 (CT-2) **MACT AA**	indirect contact cooling tower No.2	N/A	N/A	512, 513

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
Purified Acid Plant No. 2, Train 3				
T1024, T1324 T1346 **PSD BACT** **MACT AA**	two scrub acid storage tanks, discharging through one (1) vent pot to gas scrubbing system	S1324 GC-2	packed bed scrubber gas chiller system	503
C1010, C1020 **PSD BACT** **MACT AA**	two extraction columns under nitrogen	GC-2	gas chiller system	
T1007, T1012, T1013, T1212, T1001, T1040, T1057 **PSD BACT** **MACT AA**	seven tanks under nitrogen			
T1054, T1044, T1034 **PSD BACT** **MACT AA**	three tanks/seal pots under nitrogen			
T1008, T1015, T1215, T1315, T1058 **PSD BACT** **MACT AA**	five seal pots under nitrogen			
S1043, S1053, S1253, S1033, S1005 **PSD BACT** **MACT AA**	five separators under nitrogen			
S1004 **PSD BACT** **MACT AA**	still under nitrogen			
S1042, S1032, S1052, S1054 **PSD BACT** **MACT AA**	four strippers under nitrogen			
S1324 **PSD BACT** **MACT AA**	scrubber under nitrogen			
S1088 T1070 **PSD BACT**	acid defluorination column and acid concentrator	S1092[2]	wet spray tower with a demister pad	504
S1118 T1100 **PSD BACT**	acid defluorination column and acid concentrator	S1122	wet spray tower with a demister pad	
E1180 **PSD BACT** **MACT AA**	direct contact cooling tower No. 1	N/A	N/A	514, 515

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
E1181 **PSD BACT** **MACT AA**	indirect contact cooling tower No. 3	N/A	N/A	516, 517
Purified Acid Plant No. 2, Train No. 4				
T1524, T1224 T1546 **PSD BACT** **MACT AA**	two scrub acid storage tanks, discharging through one (1) vent pot to gas scrubbing system	S1324 GC-2	packed bed scrubber gas chiller system	503
C1210, C1220 **PSD BACT** **MACT AA**	two extraction columns under nitrogen blanket system	GC-2	gas chiller system	
T1201, T1207, T1213, T1240, T1257 **PSD BACT** **MACT AA**	Five tanks under nitrogen			
T1244 **PSD BACT** **MACT AA**	tank with seal pots under nitrogen			
T1415, T1515 T1208, T1258 T1546 **PSD BACT** **MACT AA**	five emergency vent pots			
S1243, S1205 **PSD BACT** **MACT AA**	two separators under nitrogen			
S1242 **PSD BACT** **MACT AA**	stripper under nitrogen			
S1204 **PSD BACT** **MACT AA**	still under nitrogen			
S1288, T1270 **PSD BACT**	Acid defluorination column and acid concentrator	S1292[2]	wet spray tower with demister pad	506
E1380 **PSD BACT** **MACT AA**	Direct contact cooling tower No. 3	N/A	N/A	518, 519
E1381 **PSD BACT** **MACT AA**	Indirect contact cooling tower No. 4	N/A	N/A	520, 521
Purified Acid Plant Tank Farm				
T3[1], T1003[1]	Two feed acid storage tanks	N/A	N/A	591
T137[1], T1137[1]	Two product under flow acid storage tanks	N/A	N/A	591 593

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
T67[1], T467[1], T267[1], T1067[1], T76[1], T106[1], T295[1], T1125[1], T276[1], T1106[1], T125[1], T1076[1], T95[1], T1095[1], T1267[1], T1467[1], T1276[1], T1295[1]	18 carbon treated low alkali acid tanks	N/A	N/A	591 593
T130[1], T131[1] T132[1], T1130[1] T1131[1], T1132[1] T1133[1]	Seven product low alkali acid storage tanks	N/A	N/A	590
T134A[1], T134B[1] T1134[1], T1134B[1]	Four product high alkali acid storage tanks	N/A	N/A	
T300[1]	Phosbrite/DAB mix tank (blending process)	N/A	N/A	
T301[1]	Dilution tank No. 1 (blending process)	N/A	N/A	
T302[1]	Dilution tank No. 2 (blending process)	N/A	N/A	
T303[1]	Sulfuric acid/DAB storage tank (blending process)	N/A	N/A	
T304[1]	Dilution tank No. 3 (blending process)	N/A	N/A	
T305[1], T306[1]	Two DAB CF mix tanks	N/A	N/A	
T307[1]	Copper carbonate mix tank	N/A	N/A	
T308[1]	One head tank	N/A	N/A	
PAP No. 1 Tank Farm[1]	Purified Acid Plant No. 1 Tank Farm Fugitives	N/A	N/A	591
PAP Fugitives[1]	Purified Acid Plant Fugitives	N/A	N/A	592
PAP No. 2 Tank Farm[1]	Purified Acid Plant No. 2 Tank Farm Fugitives	N/A	N/A	593
PAP1load[1,]	PAP loading no. 1	N/A	N/A	594
PAP2load[1,]	PAP loading no. 2	N/A	N/A	595
PAP3load[1]	PAP loading no. 3	NA	NA	596
PAP4load[1]	PAP loading no. 4	NA	NA	597

1 These are insignificant sources subject to state enforceable only requirements.

2 These control devices **(ID Nos. S1092 and S1292)** are listed as a minor modification per 15A NCAC 02Q .0515. The compliance certification as described in General Condition P is required. Unless otherwise notified by NC DAQ, the affected terms of this permit (excluding the permit shield as described General Condition R) for this source shall become final on **May 25, 2018**. Until this date, the affected permit terms herein reflect the proposed operating language that the Permittee shall operate this source pursuant to 15A NCAC 02Q .0515(f).

7. Calcium Phosphate Production Area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
381.105	Limestone railcar unloading	381.106	Limestone railcar unloading baghouse	759
381.115	No. 1 limestone silo	381.110	No. 1 limestone silo baghouse	760
381.125	No. 2 limestone silo	381.120	No. 2 limestone silo baghouse	761
381.135	No. 3 limestone silo	381.130	No. 3 limestone silo baghouse	762
381.145	Limestone supply weigh hopper	381.150	Limestone supply weigh hopper exhaust filter	765
381.215 381.240	Ultra low sulfur diesel-fired dryer (54 million Btu/hour) Delumper	381.155 381.160 381.165	No. 1 dryer cyclone in parallel with No. 2 dryer cyclone in series with Venturi scrubber	774
381.SCREEN	Screening/conveying operations	381.385 381.390	Cage mill dust collector in parallel with Screen dust collector	777
381.CONVEY	Product conveying operations	381.490	Reclaim dust collector	717
381.FINAL	Final screening operations	381.555	Shipping screener dust collector	783
381.575 381.435	Loadout hopper Conveyor	381.440	Shipping dust collector	718
381.LOAD	Truck/Railcar loadout	381.585	Loadout dust collector	754

[1] These emission sources **(ID Nos. 381.105, 381.115, 381.125, 381.135, 381.145, 381.215, 381.240, 381.SCREEN, 381.CONVEY, 381.FINAL, 381.575, 381.435, and 381.LOAD)** and control devices **(ID Nos. 381.106, 381.110, 381.120, 381.130, 381.150, 381.155, 381.160, 381.165, 381.385, 381.390, 381.490, 381.555, 381.440, and 381.585)** are listed as a 15A NCAC 02Q .0501(b)(2) modification. The Permittee shall file a Title V Air Quality Permit Application on or before 12 months after commencing operation in accordance with General Condition NN.1. The permit shield described in General Condition R does not apply and compliance certification as described in General Condition P is not required.

8. Shipping Operations

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
Ammonia Unloading[1]	Ammonia Railcar and Truck Unloading	N/A	N/A	601, 602, 603, NH3TRK1. NH3TRK2
Ammonia Tanks[1]	Ammonia Storage Tanks	N/A	N/A	604, 605
Sulfur Unloading[1]	Sulfur Railcar Unloading	N/A	N/A	610, 611, 612, 613, 614
Railcar Wash 1[1]	Railcar Wash Station No. 1	N/A	N/A	615
T-002[1] to T-012[1] T-014[1] to T-019[1] T-021[1] to T-029[1] T-044[1] T-050[1] to T-052[1] T-054[1] to T-056[1]	33 phosphoric acid storage tanks (shipping tank farm)	N/A	N/A	616
453-458[1]	Superphosphoric acid process vessel (shipping tank farm)	N/A	N/A	
453-143[1]	Superphosphoric acid process vessel (shipping tank farm)	N/A	N/A	
497-4-105[1]	Superphosphoric acid and additive mix tank (shipping tank farm)	N/A	N/A	
453-412[1] 453-148[1]	No. 2 filter press feed tank No. 3 filter press feed tank	N/A	N/A	
Filtration Tank[1]	5,000 gallon Filtration feed tank	N/A	N/A	
Black Lomag[1]	110,000 gallon Black Lomag tank	N/A	N/A	
Permeate Tank[1]	1,000 gallon permeate tank	N/A	N/A	
Concentrate Tank[1]	1,000 gallon concentrate tank	N/A	N/A	
453-750[2]	LOMAG Aging Tank # 2	N/A	N/A	
453-800[2]	LOMAG Tank # 2	N/A	N/A	
454-240[2]	Filtration Feed Tank # 2	N/A	N/A	
454-280[2]	Filtration Concentration Tank # 2	N/A	N/A	
454-300[2]	Filtration Permeate Tank # 2	N/A	N/A	
558-300[2]	Ammonium Polyphosphate Plant – Shipping Tank # 2	N/A	N/A	
CTP[1]	Concentrate storage pile	N/A	N/A	
552-003[1] 552-005[1] 552-050[1]	Three liquid sulfur storage tanks	N/A	N/A	
Railcar Wash 2[1]	Railcar Wash Station No. 2	N/A	N/A	617
F650	CTS - Grinder Rock Loadout	N/A	Enclosures	650
F651	CTS - Grinder Rock Loadout	N/A	Enclosures	651

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
F652	Rock Loadout Transfer Station	N/A	Enclosures	652
F653	CTS - Phosphate Rock Transfer Station	N/A	Enclosures	653
F655	Chute-Barge Rock Loadout	N/A	Enclosures	655
F656	Chute-Train Rock Loadout	N/A	Enclosures	656
Truckload[1]	Truck loading	N/A	N/A	660
Northload[1]	North rail loading	N/A	N/A	661
Centerload[1]	Center rail loading	N/A	N/A	662
Southload[1]	South rail loading	N/A	N/A	663
APP1load[1]	APP loading no. 1	N/A	N/A	664
APP2load[1]	APP loading no. 2	N/A	N/A	665
APP3load[1,]	APP loading no. 3	N/A	N/A	666
HFSAload[1]	HFSA loading	N/A	N/A	667
DFMGAALoad[1]	Phosphoric acid rail loading station	N/A	N/A	668
Barge1[1]	Barge slip 1 loading	N/A	N/A	672
Barge2[1]	Barge slip 2 loading	N/A	N/A	673

[2] These are insignificant sources subject to state enforceable only requirements.

[3] These emission sources **(ID Nos. 453-750, 453-800, 454-240, 454-280, 454-300, 558-300)** are listed as a 15A NCAC 02Q .0501(c)(2) modification. The Permittee shall file a Title V Air Quality Permit Application on or before 12 months after commencing operation in accordance with General Condition NN.1. The permit shield described in General Condition R does not apply and compliance certification as described in General Condition P is not required.

9. Miscellaneous Sources

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point (ep)
CP No. 1[1] **MACT AA**	Cooling Pond No. 1	N/A	N/A	910
CP No. 2[1] **MACT AA**	Cooling Pond No. 2	N/A	N/A	914
CP No. 1A[1] **MACT AA**	Cooling Pond No. 1A	N/A	N/A	922
GYP Pond No. 5[1] **NESHAP (61-R)** **MACT AA**	Gypsum Stack Pond No. 5	N/A	N/A	950A
GYP Pond No. 6[1] **NESHAP (61-R)** **MACT AA**	Gypsum Stack Pond No. 6	N/A	N/A	954A
GYP Pond No. 4[1] **NESHAP (61-R)** **MACT AA**	Gypsum Stack Pond No. 4	N/A	N/A	955A
957	Mill Pond	N/A	N/A	957
958	Recycle Lake	N/A	N/A	958
R1 to R11 **NESHAP (61-R)**	Reclaim Areas 1 to 11	N/A	N/A	960-970
404-814	Diesel-fired emergency engine for backup power at DPW water pumps in mine (1,961 bhp; 1,360 kW)	N/A	N/A	801
130-458 **MACT ZZZZ**	Diesel-fired emergency engine for backup power at wastewater treatment plant (107 bhp; 80 kW)	NA	NA	
130-457 **MACT ZZZZ**	Diesel-fired emergency engine for backup power at main lift station pumps (40 bhp; 30 kW)	NA	NA	
190-400-484 **MACT ZZZZ** **NSPS JJJJ**	LPG-fired 4SRB emergency engine for backup power at radio tower (94 bhp; 70kW)	NA	NA	
407-401 **MACT ZZZZ** **NSPS JJJJ**	LPG-fired 4SRB emergency engine for backup power for the No. 7 Sulfuric Acid Plant turbine lube oil pump (45 bhp; 25kW)	NA	NA	108
624-231-484 **MACT ZZZZ**	Diesel-fired fire pump engine – PAP plant (375 bhp; 280 kW)	NA	NA	
624-293-484 **MACT ZZZZ**	Diesel-fired fire pump engine – PAP plant (53 bhp; 40 kW)	NA	NA	
365-160-523 **MACT ZZZZ** **NSPS IIII**	Diesel-fired emergency engine for backup power at DFP process water pump (156.9 bhp; 100 kW)	NA	NA	756
365-136-484 **MACT ZZZZ**	Diesel-fired engine for secondary and backup power at DFP kilns (75 bhp; 56 kW)	NA	NA	755
555-218-484 **MACT ZZZZ** **NSPS IIII**	Diesel-fired emergency engine for ammonia emergency deluge system (227 bhp; 170 kW)	NA	NA	

[1]The Permittee was required to prepare and operate in accordance with a gypsum dewatering stack and cooling pond management plan that contains the information specified 40 CFR 63.602(e) beginning on August 19, 2016.

SECTION 2 - SPECIFIC LIMITATIONS AND CONDITIONS

2.1 Emission Sources and Control Devices Specific Limitations and Conditions

The emission sources and associated air pollution control devices and appurtenances listed below are subject to the following specific terms, conditions, and limitations, including the testing, monitoring, recordkeeping, and reporting requirements as specified herein:

2.1.1 Sulfuric Acid Production Area

2.1.1. A Sulfuric Acid Plants

- **Sulfuric Acid Plant No. 5 (ID No. S-5, ep103) – double-absorption sulfuric acid plant, equipped with a vertical tube mist eliminator (ID No. 415-934) installed on the final absorbing tower**
- **Sulfuric Acid Plant No. 6 (ID No. S-6, ep104) – double-absorption sulfuric acid plant, equipped with a vertical tube mist eliminator (ID No. 406-129) installed on the final absorbing tower**
- **Sulfuric Acid Plant No. 7 (ID No. S-7, ep105) – double adsorption sulfuric acid plant, equipped with a vertical tube mist eliminator (BACT; ID No. 407-258) installed on the final absorbing tower**

Note: double absorption processes provides control of SO_2 from the sulfuric acid plants.

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide	Sulfuric Acid Plant No. 7 emissions shall be less than 2,006 tons of sulfur dioxide per consecutive 12-month period.	15A NCAC 02Q .0317 *(Avoidance of 15A NCAC 02D .0530)*
	27 pounds per ton of 100% sulfuric acid produced	15A NCAC 02D .0517
	4 pounds per ton of 100% sulfuric acid produced	15A NCAC 02D .0524 *(40 CFR 60, Subpart H)*
	(See Section 2.5) **Sulfuric Acid Plant No. 5 (ID No. S-5):** 3.2 pounds per ton of 100% sulfuric acid produced (short-term limit/3-hour rolling average) 2.5 pounds per ton of 100% sulfuric acid produced (long-term limit/365-day rolling average) *Comply by January 1, 2020* **Sulfuric Acid Plant No. 6 (ID No. S-6):** 3.3 pounds per ton of 100% sulfuric acid produced (short-term limit/3-hour rolling average) 2.5 pounds per ton of 100% sulfuric acid produced (long-term limit/365-day rolling average) *Comply by January 1, 2018* **Sulfuric Acid Plant No. 7 (ID No. S-7):** 3.0 pounds per ton of 100% sulfuric acid produced (short-term limit/3-hour rolling average) 1.75 pounds per ton of 100% sulfuric acid produced (long-term limit/365-day rolling average) *Comply by January 1, 2019**	40 CFR 51.166 [Consent Decree Civil Action No. 14-707-BAJ-SCR]

Pollutant	Limits/Standards	Applicable Regulation
Visible emissions	10 percent opacity	15A NCAC 02D .0524 *(40 CFR 60, Subpart H)*
Sulfuric acid mist	0.5 pounds per ton of 100% sulfuric acid produced	15A NCAC 02D .0517
	0.15 pounds per ton of 100% sulfuric acid produced	15A NCAC 02D .0524 *(40 CFR 60, Subpart H)* and Consent Decree Civil Action No. 14-707-BAJ-SCR
	0.075 pounds per ton of 100% sulfuric acid produced for Sulfuric Acid Plant No. 7	15A NCAC 02D .0530 **BACT for S-7**
Nitrogen dioxide	5.8 pounds per ton of 100% sulfuric acid produced	15A NCAC 02D .0519
	0.6 pounds per ton of 100% sulfuric acid produced for Sulfuric Acid Plant No. 7	15A NCAC 02D .0530 **BACT for S-7**
Sulfuric acid mist	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
TAPS	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1**	15A NCAC 02D .0530(u)
Sulfur dioxide Particulate matter Nitrogen oxides Sulfuric acid mist	**See Section 2.2 D.1**	15A NCAC 02D .0530(u)
Sulfur dioxide Particulate matter Nitrogen oxides	**See Section 2.2 E.1**	15A NCAC 02D .0530(u)

*Subject to adjustment as described in Paragraph 9.e of Consent Decree Civil Action No. 14-707-BAJ-SCR (see Section 2.5 A.1.d.ii).

1. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS
for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. The sulfur dioxide emissions from Sulfuric Acid Plant No. 7 **(ID No. S-7)** shall be less than 2,006 tons per consecutive 12-month period. The Permittee shall continue to comply with this avoidance emission limit until January 1, 2020, when compliance is demonstrated with the Consent Decree Civil Action No. 14-707-BAJ-SCR (See Section 2.5, below) long-term SO_2 limit from the No. 7 Sulfuric Acid Plant. After January 1, 2020, Section 2.1.1 A.1 will no longer apply.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.1 A.1.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Each calendar month, the Permittee shall determine the SO_2 emissions from Sulfuric Acid Plant No. 7 **(ID No. S-7)** during the previous calendar month and the previous consecutive 12-month period in accordance with the following procedures:
   i. Determine the SO_2 emission rate from the plant (in lbs/ton 100% H_2SO_4 produced) during the previous calendar month in accordance with Sections 2.1.1 A.4.g, below;
   ii. Determine the monthly SO_2 emissions from the plant (in tons/month) by multiplying the emission rate, as determined in i. above, by the total production of 100% H_2SO_4 during the previous calendar month (in tons/month), and the dividing the sum by the lbs-to-ton conversion factor (i.e., 2,000 lbs/ton).
   iii. Determine the SO_2 emissions from the plant for the previous 12-month period (in tons/12-months) by summing the monthly sulfur dioxide emission rate, as determined in ii. above, for each of the previous 12 calendar months.

Records of the required calculations listed above shall be recorded monthly in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not retained, or if the 12-month sulfur dioxide emission rate, as determined in iii. above, exceeds the limit in Section 2.1.1 A.1.a, above.

Reporting [15A NCAC 02Q .0508(f)]

d. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:
   i. The monthly sulfur dioxide emissions from the affected plant for the previous 17 months as calculated in Section 2.1.1 A.1.c.ii, above; and
   ii. 12-month rolling sulfur dioxide emissions from the affected plant for each of the six 12-month periods over the previous 17-month period as calculated in Section 2.1.1 A.1.c.iii, above.

2. 15A NCAC 02D .0517: EMISSIONS FROM PLANTS PRODUCING SULFURIC ACID

a. Sulfur dioxide emissions from these sulfuric acid plants shall not exceed 27 pounds per ton of 100% sulfuric acid produced.

b. Sulfuric acid mist emissions from these sources shall not exceed 0.5 pounds per ton of 100% sulfuric acid produced.

Testing/Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. Testing/monitoring/recordkeeping/reporting shall be conducted in accordance with the New Source Performance provisions of Section 2.1.1 A.4. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0517 if records are not maintained or if the results of any test are above the limit in Section 2.1.1 A.2.a or A.2.b, above.

3. 15A NCAC 02D .0519: CONTROL OF NITROGEN DIOXIDE AND NITROGEN OXIDES EMISSIONS

a. The emissions of nitrogen dioxide shall not exceed 5.8 pounds per ton of acid produced from any sulfuric acid manufacturing plant.

Testing/Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

b. The Permittee shall demonstrate compliance at Sulfuric Acid Plant No. 5 and No. 6 **(ID No. S-5 and S-6)** by conducting a performance test on either Sulfuric Acid Plant No. 5 or No. 6 once every five-year permit cycle. The test shall be conducted in accordance with 40 CFR Part 60, Appendix A, Reference Method 7, or approved alternative method as described in 40 CFR 60.8(b). The results of the testing must be submitted to the Division within 45 days of the completion of the test.
   i. If Sulfuric Acid Plant No. 5 or No. 6 operates for any day at a production rate exceeding that listed for that plant in Section 1, then the production rate required during annual testing for that plant will be at an hourly production rate at least 90 percent of the highest daily rate, as documented by the production records over the last production year, divided by 24. If an annual test, at a sufficient production rate as described above, was conducted within two weeks of the date that the highest production rate occurred, then the annual test for that plant for the following year may use the normal production rate.
   ii. If Sulfuric Acid Plant No. 5 or No. 6 does not operate for any day at a production rate exceeding that listed for that plant in the Permitted Source List in Section 1, then the production rate required during annual testing for that plant will be a rate demonstrable by production records to be equal to or greater than the normal production rate of the source.
   iii. The normal production rate (hourly) shall be calculated by dividing the total annual production for a given plant by the number of hours that plant was run during that year. The facility shall establish the production rate, either 90 percent of highest or normal, using the production records over the last production year.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0519 if the test is not performed with in the required time frame or if the results show an exceedance of the emission standard contained in Section 2.1.1 A.3.a, above.

c. The Permittee shall demonstrate compliance at the Sulfuric Acid Plant No. 7 **(ID No. S-7)** by conducting an annual performance test in accordance with the PSD BACT provisions of Section 2.1.1 A.5.c.ii, below. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0519 if records of these tests are not maintained or if the results of the tests are above the limit in Section 2.1.1 A.3.a, above.

4. 15A NCAC 02D .0524: NSPS 40 CFR 60, SUBPART H

a. Except as specified in Section 2.1.1 A.4.i, below, the Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 02D .0524, "New Source Performance Standards," as promulgated in 40 CFR 60, Subpart H, including Subpart A "General Provisions" for each of the sulfuric acid plants **(ID Nos. S-5, S-6, and S-7)**.

Emission Standards [15A NCAC 02Q .0508(f)]

b. Sulfur dioxide emissions from these sources shall not exceed 4 pounds per ton of 100% sulfuric acid produced.

c. Sulfuric acid mist emissions from these sources shall not exceed 0.15 pounds per ton of 100% sulfuric acid produced.

d. Visible emissions shall not be more than 10 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

e. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1.1 A.4.b through A.4.d, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

f. The Permittee shall demonstrate compliance with the sulfuric acid mist emission limit above by testing Sulfuric Acid Plant No. 5, No. 6, and No. 7 **(ID Nos. S-5, S-6, and No. 7)** annually for sulfuric acid mist. After February 26, 2015, as specified in Section 2.5 A.1.f , below, the Permittee may use the performance test required in Section 2.5 A.1.j, below, as the performance test required under 40 CFR 60.8 for sulfuric acid mist.
   i. If Sulfuric Acid Plant No. 5, No. 6, or No. 7 operates for any day at a production rate exceeding that listed for that plant in Section 1, then the production rate required during annual testing for that plant will be at an hourly production rate at least 90 percent of the highest daily rate, as documented by the production records over the last production year, divided by 24. If an annual test, at a sufficient production rate as described above, was conducted within two weeks of the date that the highest production rate occurred, then the annual test for that plant for the following year may use the normal production rate.
   ii. If Sulfuric Acid Plant No. 5, No. 6, or No. 7 does not operate for any day at a production rate exceeding that listed for that plant in the Permitted Source List in Section 1, then the production rate required during annual testing for that plant will be a rate demonstrable by production records to be equal to or greater than the normal production rate of the source.
   iii. The normal production rate (hourly) shall be calculated by dividing the total annual production for a given plant by the number of hours that plant was run during that year. The facility shall establish the production rate, either 90 percent of highest or normal, using the production records over the last production year.

   If the results of this test are above the limit given in Section 2.1.1 A.4.c, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

Sulfur Dioxide Requirements

g. Except as provided in Section 2.1.1 A.4.h and A.4.i, below, the Permittee shall monitor sulfur dioxide emissions from each of the affected sulfuric acid plants **(ID Nos. S-5, S-6, and S-7)** in accordance the following procedures:
   i. Install, calibrate, maintain, and operate continuous monitoring systems for the measurement of sulfur dioxide emissions. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 (40 CFR 60, Appendix B) and for calibration checks under 40 CFR 60.13(d), shall be sulfur dioxide (SO_2). Method 8 shall be used for conducting monitoring system performance evaluations under 40 CFR 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide. [40 CFR 60.84(a)]
   ii. Establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (lb/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999–AP–13) and calculating the appropriate conversion factor for each eight-hour period in accordance with 40 CFR 60.84(b). [40 CFR 60.84(b)]
   iii. Record all conversion factors and how they were computed, including the input values. [40 CFR 60.84(c)]
   iv. The Permittee shall maintain records of all required monitoring data in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall be deemed in non-compliance with 15A NCAC 02D .0524 if these records are not retained, or if monitored 3-hour average sulfur dioxide emissions exceed the limit in Section 2.1.1 A.4.b, above.

h. As an alternative to the monitoring requirements in Section 2.1.1 A.4.g, above, the Permittee may install, calibrate, maintain, and operate continuous monitoring systems for the measurement of SO_2, O_2, and CO_2 (if required) in accordance with 40 CFR 60.84(d). This procedure is not required, but is an alternative that would alleviate problems encountered in the measurement of gas velocities or production rate. If using this alternative procedure, the Permittee shall maintain records of all required monitoring data in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The Permittee shall be deemed in non-compliance with 15A NCAC 02D .0524 if these records are not retained, or if monitored 3-hour average sulfur dioxide emissions exceed the limit in Section 2.1.1 A.4.b, above. [40 CFR 60.84(d)]

i. Instead of the requirements in Section 2.1.1 A.4.g.ii, above, the Permittee shall use the procedures for converting monitoring data into the units of the applicable standard specified in Section 2.5 A.1.p, below, for calculating compliance with the sulfur dioxide limit specified in Section 2.1.1 A.4.b, above, beginning on the following dates: [40 CFR 60.13(i)]
   i. January 1, 2020 for Sulfuric Acid Plant No. 5 **(ID No. S-5)**.
   ii. January 1, 2018 for Sulfuric Acid Plant No. 6 **(ID No. S-6)**.
   iii. January 1, 2019 for Sulfuric Acid Plant No. 7 **(ID No. S-7)**.

Sulfuric Acid Mist Requirements

j. Sulfuric acid mist emissions from the final absorbers at Sulfuric Acid Plant Nos. 5 through 7 **(ID Nos. S-5 through S-7)** shall be controlled by vertical tube mist eliminators. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the ductwork and vertical tube mist eliminators are not inspected and maintained.

k. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the vertical tube mist eliminators; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained.

Visible Emission Requirements

l. To ensure compliance, once a month the Permittee shall observe the emission points of the Sulfuric Acid Plants for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2601 is below the limit given in 2.1.1 A.4.d, above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0524.

m. The results of the visible emissions monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

n. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

Start-Up Procedures for Sulfuric Acid Plants [15A NCAC 02Q .0508(f)]

o. Only one sulfuric acid plant at a facility should be in startup mode and burning sulfur at a time. There are times when it will be acceptable for more than one sulfuric acid plant to be in the start-up mode at the same time, provided the following condition is met. It is not acceptable to initiate sulfur burning at one sulfuric acid plant when another plant at the same facility is emitting SO_2 at a rate in excess of the emission limits imposed by the permit or rule, as determined by the CEMs emission rates for the immediately preceding 20 minutes.

p. A plant start-up must be at the lowest practicable operating rate, not to exceed 70 percent of the designed operating rate, until the SO_2 monitor indicates compliance. Because production rate is difficult to measure during start-up, if a more appropriate indicator (such as blower pressure, furnace temperature, gas strength, blower speed, number of sulfur guns operating, etc.) can be documented, tested, and validated, the DAQ will accept this in lieu of directly documenting the operating rate. Implementation requires the development of a suitable list of surrogate parameters to demonstrate and document the reduced operating rate on a plant-by-plant basis. Documentation that the plant is conducting start-up at the reduced rate is the responsibility of the Permittee. After start-up has begun, the foreman may approve an increase in rate if he judges that will result in faster reduction of emissions.

q. Except for the long-term sulfur dioxide emission limits specified in 2.5 A.1, below, sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices, in accordance with this agreement, to minimize emissions are followed. No plant shall be operated (with sulfur as fuel) out of compliance for more than three consecutive hours. Thereafter, the plant shall be shut down. The plant shall be shut down (cease burning sulfur) if, as indicated by the continuous emission monitoring system, the plant is not in compliance within three hours of start-up. Restart may occur as soon as practicable following any needed repairs or adjustments, provided the corrective action is taken and properly documented. If the only reason for high emissions is low catalyst temperatures, the plant need not be shut down at the end of three hours as long as emissions have been decreasing.

Cold Start-Up Procedures [15A NCAC 02Q .0508(f)]

r. Converter
   i. The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO2 enters the masses. In no event shall the inlet temperature to the first mass be less than 800 ˚F or the outlet temperature to the first two masses be less than 700 ˚F. These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated.
   ii. The gas stream entering the converter shall contain SO_2 at a level less than normal, and sufficiently low to promote catalytic conversion to SO_3.

s. Absorbing Towers. The concentration, temperature, and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4.

Warm Restart Procedures [15A NCAC 02Q .0508(f)]

t. Converter. The inlet and outlet temperatures of the first two catalyst masses should be sufficiently high to ensure conversion. One of the following three conditions must be met:
   i. The first two catalyst masses inlet and outlet temperatures must be at a minimum of 700 ˚F; or
   ii. Two of the four inlet and outlet temperatures must be greater than or equal to 780 ˚F; or
   iii. The inlet temperature of the first catalyst must be greater than or equal to 600 ˚F and the outlet temperature greater than or equal to 800 ˚F. Also, the inlet and outlet temperatures of the second catalyst must be greater than or equal to 700 ˚F.

   Failure to meet one of the above conditions requires use of cold start-up procedures, unless the Superintendent (or Acting Superintendent) approves otherwise. To allow for technological improvement of individual plant conditions, alternative conditions will be considered by the Department in appropriate cases.

u. Absorbing Towers. The concentration, temperature, and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4.

5. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT

a. For Sulfuric Acid Plant 7 **(ID No. S-7)** the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit[1]
Sulfuric Acid Plant No. 7 **(ID No. S-7)**	Nitrogen Oxides	none	0.6 lbs/ton of 100% acid produced
Sulfuric Acid Plant No. 7 **(ID No. S-7)**	Sulfuric Acid Mist	Vertical Tube Mist Eliminator	0.075 lbs/ton of 100% acid produced

1. Calculated as a calendar year average.

DAQ withholds the option to revise the BACT limitation listed above based on future stack testing. Any increase in the allowable BACT limitation would require permitting pursuant to 15A NCAC 02D .0530.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1.1 A.5.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall demonstrate compliance with the emission limits above by conducting annual stack tests at Sulfuric Acid Plant No. 7 **(ID No. S-7)**.

i. Sulfuric acid mist testing shall be conducted in accordance with the NSPS testing requirements pursuant to 40 CFR 60.85(b)(1) through (4), or an approved permit protocol, and as provided in Section 2.1.1 A.4.f. of this permit.

ii. Nitrogen oxide emissions shall be conducted in accordance with EPA Method 7, or an approved permit protocol.

iii. If Sulfuric Acid Plant No. 7 operates for any day at a production rate exceeding that listed for that plant in Section 1, then the production rate required during annual testing for that plant will be at an hourly production rate at least 90 percent of the highest daily rate, as documented by the production records over the last production year, divided by 24. If an annual test, at a sufficient production rate as described above, was conducted within two weeks of the date that the highest production rate occurred, then the annual test for that plant for the following year may use the normal production rate.

iv. If Sulfuric Acid Plant No. 7 does not operate for any day at a production rate exceeding that listed for that plant in the Permitted Source List in Section 1, then the production rate required during annual testing for that plant will be a rate demonstrable by production records to be equal to or greater than the normal production rate of the source.

v. The normal production rate (hourly) shall be calculated by dividing the total annual production for a given plant by the number of hours that plant was run during that year. The facility shall establish the production rate, either 90 percent of highest or normal, using the production records over the last production year.

All testing shall be conducted in accordance with General Condition JJ. In the event that more than one compliance test is conducted in a calendar year, compliance with the above standards shall be based on the average emission rate from all tests conducted during the compliance period. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the required tests are not conducted, records of the tests are not maintained, or if the tests show emissions (on a calendar year average) in exceedance of the applicable limits in Section 2.1.1 A.5.a, above.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall comply with the inspection and maintenance requirements of Section 2.1.1 A.4.j and A.4.k, above, the vertical tube mist eliminator. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these requirements are not met.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

6. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – H_2SO_4

a. Beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations and retain records of the observations in accordance with Section 2.1.1 A.4.k and A.4.l, above. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal from a sulfuric acid plant, the Permittee shall conduct an inspection and perform maintenance pursuant to standard operating procedures.
   i. The inspection shall be consistent with manufacturer recommendations.
   ii. The Permittee shall retain records of each inspection, the date of the inspection, and any maintenance or repairs made as a result of the inspection.

   If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

d. Averaging Periods. Compliance with the H_2SO_4 emission limitations pursuant to both 15A NCAC 02D .0517, 15A NCAC 02D .0524, and 15A NCAC 02D .0530 (for **ID No. S-7** only) are determined on a 3-hour average basis.

2.1.1 B Auxiliary Boiler – No. 2 fuel oil-fired (ID No. BW, ep110)

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Particulate Matter	0.268 pounds per million Btu	15A NCAC 02D .0503
Visible Emissions	20 percent opacity	15A NCAC 02D .0524 (40 CFR 60, Subpart Dc)
Sulfur Dioxide	Fuel oil sulfur content limit of 0.5 percent	15A NCAC 02D .0524 (40 CFR 60, Subpart Dc)
Sulfur Dioxide	Less than 40 tons per consecutive 12-month period	15A NCAC 02Q .0317 (Avoidance of 15A NCAC 02D .0530)
Nitrogen Oxides	Less than 40 tons per consecutive 12-month period	15A NCAC 02Q .0317 (Avoidance of 15A NCAC 02D .0530)
Hazardous Air Pollutants	Best Combustion Practices	15A NCAC 02D .1109
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1.**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

a. Emissions of particulate matter from the combustion of No. 2 fuel oil that are discharged from this source into the atmosphere shall not exceed 0.268 pounds per million Btu heat input.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.1 B.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0503.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of No. 2 fuel oil in this source.

2. 15A NCAC 02D .0524: NSPS, 40 CFR 60, SUBPART Dc

a. The Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 02D .0524, "New Source Performance Standards," as promulgated in 40 CFR 60, Subpart Dc, including Subpart A, "General Provisions."

Emission Limitations [15A NCAC 02D .0524]

b. The maximum sulfur content of any fuel oil received and burned in the Auxiliary Boiler **(ID No. BW)** shall not exceed 0.5 percent by weight. [40 CFR 60.42c(d)]

c. Visible emissions from the Auxiliary Boiler **(ID No. BW)** shall not be more than 20 percent opacity when averaged over a six-minute period, except for one six-minute period per hour of not more than 27 percent opacity. [40 CFR 60.43c(c)]

d. The SO_2 emission limits in Section 2.1.1 B.2.b, above, apply at all times, including periods of startup, shutdown and malfunction. The opacity standards in Section 2.1.1 B.2.c, above, apply at all times except during periods of startup, shutdown or malfunction. [40 CFR 60.42c(i) and 60.43c(d)]

Testing [15A NCAC 02Q .0508(f)]

e. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.1 B.4.b or B.4.c, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

f. The Permittee shall conduct a performance test using Method 9 of Appendix A-4 of 40 CFR Part 60 and in accordance with General Condition JJ to demonstrate compliance with the opacity limit in Section 2.1.1 B.2.c, above, and as follows. [40 CFR 60.47c(a)]
   i. The Permittee shall conduct subsequent Method 9 of Appendix A-4 of 40 CFR Part 60 performance tests according to the schedule specified in Section 2.1.1 B.2.i, below.
   ii. The observation period for Method 9 of Appendix A-4 of 40 CFR Part 60 performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation.

   If the results of this test are above the limits in Section 2.1.1 B.2.c, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Fuel Sulfur Monitoring [15A NCAC 02Q .0508(f)]

g. To ensure compliance with the fuel sulfur limit in Section 2.1.1 B.2.b, above, the Permittee shall retain a copy of the fuel supplier certification for any fuel oil fired in the Auxiliary Boiler **(ID No. BW)**. The fuel supplier certification shall include the following information:
   i. The name of the oil supplier;
   ii. The sulfur content or maximum sulfur content of the oil (in % by weight); and
   iii. A statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in 40 CFR 60.41c.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the sulfur content of the oil exceeds the limit provided in Section 2.1.1 B.2.b, above, or if fuel supplier certifications are not retained as described above. [40 CFR 60.46c(e), 40 CFR 60.48c(f)(1)]

Opacity Monitoring [15A NCAC 02Q .0508(f)]

h. The Permittee shall comply with visible emissions monitoring according to the following:
   i. The Permittee shall conduct subsequent Method 9 performance tests using the applicable schedule in Section 2.1.1 B.2.h.i.(A) through B.2.h.i.(D), below, as determined by the most recent Method 9 performance test results. The observation period for Method 9 performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation. [40 CFR 60.47c(a)(1)]
      (A) If no visible emissions are observed, a subsequent Method 9 performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted;
      (B) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted;
      (C) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted; or
      (D) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.
   ii. If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 performance test, the Permittee may, as an alternative to performing subsequent Method 9 performance tests, elect to perform subsequent monitoring using Method 22 of Appendix A-7 of 40 CFR Part 60 according to the procedures specified in Section 2.1.1 B.2.h.ii.(A) and B.2.h.ii.(B), below. [40 CFR 60.47c(a)(2)]
      (A) The Permittee shall conduct 10 minute observations (during normal operation) each operating day the Auxiliary Boiler **(ID No. BW)** fires No. 2 fuel oil using Method 22 and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (i.e., 30 seconds per 10-minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10-minute observation, immediately conduct a 30-minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (i.e., 90 seconds per 30 minute period), the Permittee shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a

30 minute observation (i.e., 90 seconds) or conduct a new Method 9 performance test using the procedures in condition (i)(i) above within 45 calendar days.

(B) If no visible emissions are observed for 10 operating days during which No. 2 fuel oil is fired, observations can be reduced to once every 7 operating days during which No. 2 fuel oil is fired. If any visible emissions are observed, daily observations shall be resumed.

iii. If the Auxiliary Boiler **(ID No. BW)** is not operating on the required date for the Method 9 performance test, the performance test shall be conducted the next time the boiler is operated for three or more daylight hours. [40 CFR 60.8(d)]

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the opacity monitoring is not conducted as specified.

Recordkeeping [15A NCAC 02Q .0508(f)]

i. In addition to any other recordkeeping required by 40 CFR § 60.48c or recordkeeping requirements of the EPA, the Permittee shall record and maintain records of the amounts of fuel fired during each calendar month. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained. [40 CFR 60.48c(g)(2)]

j. The Permittee shall maintain records of No. 2 fuel oil supplier certifications as specified in Section 2.1.1 B.2.g, above. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if records of fuel sulfur content monitoring are not maintained. [40 CFR 60.48c(e)(11), (f)(1)]

k. The Permittee shall keep the following opacity monitoring records: [40 CFR 60.48c(c)(1) and (c)(2)]

i. For each performance test conducted using Method 9 of appendix A-4 of 40 CFR Part 60, the Permittee shall keep the records including the following:

(A) Dates and time intervals of all opacity observation periods;

(B) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(C) Copies of all visible emission observer opacity field data sheets.

ii. For each performance test conducted using Method 22 of appendix A-4 of 40 CFR Part 60, the Permittee shall keep the records including the following:

(A) Dates and time intervals of all visible emissions observation periods;

(B) Name and affiliation for each visible emission observer participating in the performance test;

(C) Copies of all visible emission observer opacity field data sheets; and

(D) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the Permittee to demonstrate compliance with the applicable monitoring requirements.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these opacity monitoring records are not maintained.

l. The Permittee shall maintain records of any occurrence and duration of any startup, shutdown, or malfunction in the operation the Auxiliary Boiler **(ID No. BW)**. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the records of startups, shutdowns, and malfunctions are not maintained. [40 CFR 60.7(b)]

m. All records required shall be maintained by the Permittee for a period of two years following the date of such record. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the records are not maintained for the duration of 2 years. [40 CFR 60.48c(i)]

Notifications [15A NCAC 02Q .0508(f)]

n. The Permittee shall provide to DAQ a notification of the anticipated date for conducting the opacity observations required in Section 2.1.1 B.2.h, above. The notification shall include, if appropriate, a requiest for DAQ to provide a visible emissions reader during the performance test. The notification shall be postmarked not less than 30 days prior to the anticipated date, or a mutually agreed upon date as allowed under 60.8(d). [40 CFR 60.7(a)(6) and 60.8(d)]

Reporting [15A NCAC 02Q .0508(f)]

o. In addition to any other reporting required by 40 CFR § 60.48c or notification requirements to the EPA, the Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of noncompliance from

the requirements of this permit and excess emissions must be clearly identified. The report shall contain the following information: [40 CFR 60.48c(c), (e)(11), and (j)]

i. Fuel supplier certification(s) for distillate fuel oil, as provided in Section 2.1.1 B.2.g of this permit.
ii. A certified statement signed by the Permittee that the records of fuel supplier certification(s) submitted represent all of the fuel fired at the Auxiliary Boiler **(ID No. BW)** during the semiannual reporting period.
iii. Opacity monitoring records from any performance tests conducted as required in Section 2.1.1 B.2.k, above.

3. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS
for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. In order to avoid applicability of 15A NCAC 02D .0530(g) for major sources and major modifications, total sulfur dioxide (SO_2) and nitrogen oxide (NOx) emissions from the boiler **(ID No. BW)** shall be less than the following emissions limits:
   i. 40 tons of SO_2 per consecutive 12-month period; and
   ii. 40 tons of NOx per consecutive 12-month period.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1.1 B.3.a.i or B.3.a.ii, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The Permittee shall keep monthly records of fuel usage in a logbook (written or in electronic format), as follows:
   i. The total quantity (in gallons) of No. 2 fuel oil fired at the boiler; and
   ii. The fuel oil supplier certification for any fuel oil fired at the boiler, including the sulfur content of the oil (in percent by weight).

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if records of the fuel usage and No. 2 fuel oil sulfur content are not created and retained.

d. Each calendar month, the Permittee shall calculate SO_2 and NOx emissions from the affected boiler for the previous month and previous 12-month period using the equations provided below, and record calculated emissions in a logbook (written or electronic format):
   i. Calculate SO_2 (Eqn. 1) and NOx (Eqn. 2) emissions from the previous calendar month using the following equations:

   $E_{SO_2} = 142 * S * Q_{fo_2}$ $[Eqn. 1]$

   $E_{NO_X} = 20 * Q_{fo_2}$ $[Eqn. 2]$

   Where: E_{SO2} = SO_2 emissions (in lbs) during the previous calendar month;
   S = Sulfur content in the No. 2 fuel oil (in percent by weight);
   Q_{fo2} = Quantity of No. 2 fuel oil fired at the affected sources during the previous calendar month (in 1,000 gal); and
   E_{NOx} = NOx emissions (in lbs) during the previous calendar month.

   ii. Sum the SO_2 emissions from the affected boiler for the previous 12-month period to determine the 12-month rolling emission total.
   iii. Sum the NOx emissions from the affected boiler for the previous 12-month period to determine the 12-month rolling emission total.

   The Permittee shall be deemed in non-compliance with 15A NCAC 02D .0530 if records of the monthly calculations listed above are not retained or if the 12-month rolling emission totals are greater than the emission limits provided in Section 2.1.1 B.3.a.i or B.3.a.ii, above.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a semiannual summary report, acceptable to the Regional Air Quality Supervisor, of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December, and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:
   i. Monthly emissions of SO_2 and NOx emissions from the affected boiler for the previous 17 months, as calculated in Section 2.1.1 B.3.d.i, above;
   ii. Total SO_2 emissions from the affected boiler for each of the six 12-month periods ending during the reporting period, as calculated in Section 2.1.1 B.3.d.ii, above; and

iii. Total NOx emissions from the affected boiler for each of the six 12-month periods ending during the reporting period, as calculated in Section 2.1.1 B.3.d.iii, above.

4. 15A NCAC 02D .1109: Case-by-Case MACT

a. The Permittee shall use best combustion practices when operating the affected boiler **(ID No. BW)**. The initial compliance date for this work practice standard and the associated monitoring, recordkeeping, and reporting requirements is **March 17, 2013**.

b. The Permittee shall comply with this 15A NCAC 02D .1109 [CAA § 112(j)] standard until **May 19, 2019**. The initial compliance date for the applicable CAA § 112(d) standard for ‘‘National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters” is **May 20, 2019**.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. To ensure compliance, the Permittee shall perform an annual boiler inspection and maintenance as recommended by the manufacturer, or as a minimum, the inspection and maintenance requirement shall include the following:
   i. Inspect the burner, and clean or replace any components of the burner as necessary;
   ii. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern; and
   iii. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly.

   The Permittee shall conduct at least one tune-up per calendar year to demonstrate compliance with this requirement. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1109 if the affected boilers are not inspected and maintained as required above.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection; and
   iii. The results of any maintenance performed on the boilers.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1109 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. No reporting is required.

2.1.2. Mill Area

2.1.2 A Phosphate Rock Calciners:

- **No. 1 Phosphate Rock Calciner (ID No. 339-051, ep201) – equipped with two duplex cyclones (ID Nos. 339-381a and 339-381b), one fixed throat venturi-type wet scrubber (ID No. 339-381c) and one wet electrostatic precipitator (ID Nos. 339-381d)**
- **No. 2 Phosphate Rock Calciner (ID No. 339-052, ep202) – equipped with two duplex cyclones (ID Nos. 339-382a and 339-382b), one fixed throat venturi-type wet scrubber (ID No. 339-382c) and one wet electrostatic precipitator (ID Nos. 339-382d)**
- **No. 3 Phosphate Rock Calciner (ID No. 339-053, ep203) – equipped with two duplex cyclones (ID Nos. 339-383a and 339-383b), one fixed throat venturi-type wet scrubber (ID No. 339-383c) and one wet electrostatic precipitator (ID Nos. 339-383d)**
- **No. 4 Phosphate Rock Calciner (ID No. 339-054, ep204) – equipped with two duplex cyclones (ID Nos. 339-384a and 339-384b), one fixed throat venturi-type wet scrubber (ID No. 339-384c) and one wet electrostatic precipitator (ID Nos. 339-384d)**
- **No. 5 Phosphate Rock Calciner (ID No. 339-055, ep205) – equipped with two duplex cyclones (ID Nos. 339-385a and 339-385b), one fixed throat venturi-type wet scrubber (ID No. 339-385c) and one wet electrostatic precipitator (ID Nos. 339-385d)**
- **No. 6 Phosphate Rock Calciner (ID No. 339-056, ep206) – equipped with two duplex cyclones (ID Nos. 339-386a and 339-386b), one fixed throat venturi-type wet scrubber (ID No. 339-386c) and one wet electrostatic precipitator (ID Nos. 339-386d)**

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	0.080 grains/dscf	15A NCAC 02D.1111 40 CFR Part 63, Subpart AA
	1,992 pounds per day total from all calciners combined	15A NCAC 02D .0501(e)
Sulfur dioxide	0.75 pounds per million Btu, and 1,026 pounds per day from all calciners combined	15A NCAC 02D .0501(e)
Visible emissions	40 percent opacity (Calciner Nos. 1, 2, 3, and 4) 20 percent opacity (Calciner Nos. 5 and 6)	15A NCAC 02D .0521
PM PM_{10} $PM_{2.5}$, Sulfur dioxide Nitrogen oxides Carbon monoxide	Monitor and report emissions	15A NCAC 02D .0530(u)
N/A	Submit Title V permit application within one year from the date of beginning operation of applicable sources	15A NCAC 02Q .0504
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .0501(e): COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS

a. Operation of the six calciners **(ID Nos. 339-051 through 339-056)** shall be limited as follows:

i. All calciners considered together shall be limited to 1,992 pounds per day of PM_{10} emissions total.

ii. Each calciner shall be limited to 0.75 pounds of sulfur dioxide emissions per million Btu consumed.

iii. All calciners considered together shall be limited to 1,026 pounds per day of sulfur dioxide emissions.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2 A.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501.

c. The Permittee shall verify the allowable ranges of baseline average values for secondary voltage for the WESP's as described below by annually testing the calciners to determine the PM/PM_{10} emission rate. The Permittee shall also use this testing to demonstrate compliance with the PM_{10} emission limit above (Section 2.1.2 A.1.a.i). Details of the emissions testing and requirements can be found in General Condition JJ. The calciners shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for each calciner by the number of hours that calciner was run during that year. The facility shall establish the normal production rate using the production records over the last production year. At least one twelfth of the time during the test the WESP shall be in wash mode. If the results of this test are above the limit given in Section 2.1.2 A.1.a.i, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501.

d. The Permittee shall demonstrate compliance with the daily sulfur dioxide emission limit above (Section 2.1.2 A.1.a.iii) by testing one calciner **(ID Nos. 339-051 through 339-056)** annually for sulfur dioxide. Details of the emissions testing and requirements can be found in General Condition JJ. The selected calciner shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the selected calciner by the number of hours that calciner was run during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the limit given in Section 2.1.2 A.1.a.ii or A.1.a.iii, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

e. To ensure compliance with Section 2.1.2 A.1.a.ii, above, the Permittee shall monitor the sulfur and heat content of all the coal or coke burned during the period by using coal supplier certification per total shipment received. The coal supplier certification shall be recorded in a logbook (written or electronic format) per total shipment and include the following information:
   i. The name of the coal/coke supplier; and
   ii. A statement verifying that the methods used to determine the maximum sulfur content of the coal was in accordance with the following:
      (A) Sampling - ASTM Method D 2234;
      (B) Preparation - ASTM Method D 2013;
      (C) Gross calorific value (Btu) - ASTM Method D 5865;
      (D) Moisture content - ASTM Method D 3173; and
      (E) Sulfur content - ASTM Method D 3177 or ASTM Method D 4239.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .501(e) if the sulfur and heat content of the coal is not monitored and recorded.

f. To ensure compliance with Section 2.1.2 A.1.a.ii, above, the Permittee shall monitor the sulfur and heat content of all liquid fuels burned during the period by using fuel supplier certification. The results of the fuel supplier certifications shall be recorded in a logbook (written or electronic format) on a quarterly basis and include the following information:
   i. The name of the fuel supplier;
   ii. The maximum sulfur content of the fuel received during the quarter;
   iii. The method used to determine the maximum sulfur content of the fuel oil;
   iv. The minimum heat content of the fuel received during the quarter;
   v. The method used to determine the minimum heat content of the fuel; and
   vi. A certified statement signed by the responsible official that the records of fuel supplier certifications submitted represent all of the liquid fuel fired during the period in the calciners.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e) if the sulfur and heat content of the fuel is not monitored and recorded.

g. The Permittee shall ensure compliance with the PM/PM_{10} emission limits stated above by monitoring the following operational parameters:

i. Mass flow rate of phosphorus-bearing feed material to the process.
ii. Wet electrostatic precipitators secondary voltage.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e) if these records are not kept.

h. The Permittee shall record in a logbook (written or electronic format) the following:
i. A daily record of phosphate rock feed by determining the total mass rate in short ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flow rate.
ii. Wet electrostatic precipitators secondary voltage.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e) if these records are not kept or if any exceedances of the limits in Section 2.1.2 A.1.ii, above, are determined.

Reporting [15A NCAC 02Q .0508(f)]

i. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA, PHOSPHORIC ACID MANUFACTURING PLANTS)

a. No calciner **(ID Nos. 339-051 through 339-056)** shall discharge into the atmosphere gases that contain particulate matter in excess of 0.080 grains per dry standard cubic foot (gr/dscf). [40 CFR 63.602(d)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2 A 2.a, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

c. The Permittee shall verify the allowable minimum secondary voltage for the WESP's as described below by annually testing the calciners for PM/PM_{10}. The Permittee shall also use this testing to demonstrate compliance with the PM_{10} emission limit above (Section 2.1.2 A.2.a). Details of the emissions testing and requirements can be found in General Condition JJ. The calciners shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for each calciner by the number of hours that calciner was run during that year. The facility shall establish the normal production rate using the production records over the last production year. During at least one twelfth of the duration of the test the WESP shall be in wash mode. If the results of this test are above the limit given in Section 2.1.2 A.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

Monitoring/Recordkeeping [15A NCAC 02Q .0508 (f)]

d. The Permittee shall ensure compliance with the PM/PM_{10} emission limits stated above by monitoring the following operational parameters:
i. Mass flow rate of phosphorus-bearing feed material to the process.
ii. Wet electrostatic precipitators secondary voltage.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these records are not kept.

e. The Permittee shall record in a logbook (written or electronic format) the following:
i. A daily record of phosphate rock feed by determining the total mass rate in short ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flow rate.
ii. Wet electrostatic precipitators secondary voltage.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these records are not kept or if any exceedances of the limits in Section 2.1.2 A.2.a are determined.

f. The Permittee has chosen to determine the allowed ranges for the above operating parameters by the method described in 40 CFR 63.605(d)(2). The Permittee has submitted the results of previous tests to demonstrate allowed ranges for the parameter values listed above in (f). The allowed ranges are:
i. WESP on Calciner No. 1: 37.17 minimum Kv
ii. WESP on Calciner No. 2: 36.78 minimum Kv

iii. WESP on Calciner No. 3: 40.46 minimum Kv
iv. WESP on Calciner No. 4: 38.56 minimum Kv
v. WESP on Calciner No. 5: 37.95 minimum Kv
vi. WESP on Calciner No. 6: 41.62 minimum Kv

Should the results of any subsequent annual performance test demonstrate that the allowed minimum is incorrect, the Permittee shall submit those new ranges to the Division of Air Quality for inclusion in this permit. If the daily averages (for any day for which there are 24 hours of normal (not startup, shutdown or malfunction) operation) of minimum secondary voltage is below the allowable an exceedance will have occurred. The WESP will be allowed a maximum of two hours per day for the wash mode of the units. During this time the secondary voltage will be allowed to drop to zero. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 for each exceedance.

Reporting [15A NCAC 02Q .0508(f)]

g. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

h. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

3. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from the calciners Nos. 5 and 6 shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

b. Visible emissions from the calciners Nos. 1, 2, 3, and 4 shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

c. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2 A.3.a or b above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.2 A.3.a or A.3.b, above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

e. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;

ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
iii. The results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

State-enforceable only

4. 15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSIONS LIMITATION AND REQUIREMENTS

a. Pursuant to 15A NCAC 02D .1100, in accordance with the approved application for an air toxic compliance demonstration and in addition to other limits described in Section 2.2 A.2, the used oil/used oil sludge/used glycols burned in the calciners shall not contain concentrations in excess of the following:

Substance	Concentration (mg/l)
Total Halogens	4000
Arsenic	5.0
Cadmium	2.0
Chromium	10.0
Lead	100.0

Testing

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ.

Monitoring/Recordkeeping

c. To ensure compliance, the Permittee shall monitor the sulfur content of the fuel oil by using fuel oil supplier certification of an agglomerated sample of all shipments received per month. The results of the fuel oil supplier certifications shall be recorded in a logbook (written or electronic format) on a 6-month period basis and include the following information:
   i. The substance content of the used oil for each aggregate during the 6-month period;
   ii. The method used to determine the maximum substance content of the used oil; and
   iii. A certified statement signed by the responsible official that the records of testing submitted represent all of the used oil fired during the period.

Reporting

d. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

5. 15A NCAC 02D .0530(u): USE OF PROJECTED ACTUAL EMISSIONS TO AVOID APPLICABILITY OF REQUIREMENTS OF PSD

a. The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements pursuant to application no. 0700071.21B for the Calciner Project. In order to verify the assumptions used in the projected actual emissions calculations, the Permittee shall comply with the requirements in Section 2.1.2.A.5.c below.

Testing [15A NCAC 02Q .0308(a)]

b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ.

Monitoring/Recordkeeping/Reporting [15A NCAC 02D .0530(u) and 02Q .0308]

c. The Permittee shall perform the following:
   i. The Permittee shall notify the Regional Office in writing of the date of beginning of resumption of regular operations of each of the calciners **(ID Nos. 339-051 through 339-056)** after the first activity planned under this project is made to the calciner, postmarked no later than 30 days after such date.
   ii. The Permittee shall maintain records of actual emissions of PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, and CO from the six calciners **(ID Nos. 339-051 through 339-056)** in accordance with the following:
      (A) Total emissions from all six calciners, in tons per 12 month period, shall be recorded.
      (B) For each calciner, recordkeeping shall begin following the resumption of regular operations after any activity planned under this project is made to the calciner and shall continue for five years after all activities have been completed. The first year shall start on the first day of the first full calendar month after commencing regular operations. Each subsequent year shall include the same 12-month period.
   ii. The Permittee shall submit a report to the Director within 60 days after the end of each year, as defined in Section 2.1.2.A.5.c.ii above, during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a-c).
   iii. The Permittee shall make the information documented and maintained under this condition available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).
   iv. The reported actual emissions (post-construction emissions) for each 12-month period will be compared to the projected actual emissions (pre-construction projection) as included below:

Pollutant	Projected Actual Emissions* (tpy)
PM (filterable)	122.4
PM_{10}	169.7
$PM_{2.5}$	68.8
SO_2	89.2
NO_X	539.9
CO	720.8

* The projected actual emissions are not enforceable limitations. If the reported actual emissions exceed the projected actual emissions, the Permittee shall include in its annual report an explanation as to why actual emissions exceeded the projected actual emissions.

6. 15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT

Permitting [15A NCAC 02Q .0504(d)]

a. Pursuant to 15A NCAC 02Q .0501(b)(2), for completion of the two-step significant modification process initiated by Application No. 0700071.21B, the Permittee shall file an amended application following the procedures of Section 15A NCAC 02Q .0500 within one year from the date of beginning operation of the first of these sources **(ID Nos. 339-051 through 339-056)** after completion of any activity included in the Calciner Project.

Reporting [15A NCAC 02Q .0308(a)]

b. The Permittee shall notify the Regional Office in writing of the date of beginning operation of the first of these sources **(ID Nos. 339-051 through 339-056)** after completion of any activity included in the Calciner Project, postmarked no later than 30 days after such date.

2.1.2.B Phosphate Rock Dryer (ID No. 332-120, ep210) – No. 6 fuel oil-fired rock dryer, equipped with a duplex cyclone and venturi type wet scrubber

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide	300 pounds per day	15A NCAC 02D .0501(e)
PM/PM_{10}	$E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or $E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour) Where E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
Sulfur dioxide	2.3 pounds per million Btu	15A NCAC 02D .0516
Visible emissions	40 percent opacity	15A NCAC 02D .0521
TAPS	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0501(e): COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS

a. Sulfur dioxide (SO_2) emission from the Phosphate Rock Dryer **(ID No. 332-120)** shall be limited to no greater than 300 pounds per day (midnight to midnight).

Testing [15A NCAC 02Q .0508(f)]

b. The Permittee shall conduct a stack test once every 5 years (no more than 60 months between performance tests) to determine the SO_2 emission rate from the Phosphate Rock Dryer **(ID No. 332-120)** on a pound per hour (lb/hr) and pound per million Btu (lb/million Btu) basis. The emission test shall be performed in accordance with General Condition JJ. The Permittee shall be required to meet the following test conditions:
   i. The test shall occur at a production rate that is equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for rock dryer for the previous year by the number of hours that it was run during that year.
   ii. The sulfur content of the fuel oil fired at the rock dryer during the test shall be equal to or greater than the normal sulfur content of the fuel oil fired at the source. The normal sulfur content shall be calculated by determining the average sulfur content of No. 6 fuel oil received at the facility (from fuel supplier certifications) since the last performance test.
   iii. If the SO_2 emissions from the Phosphate Rock Dryer **(ID No. 332-120)** measured during the performance test are greater than 80 percent of the emissions limit, the Permittee shall resume performance testing on an annual basis. If the SO_2 emissions from the rock dryer measured during two consecutive performance test are equal to or less than 80 percent of the emissions limit, the Permittee shall resume testing once every 5 years (no more than 60 months between performance tests).

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e) if the testing requirements listed above are not met.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. If the hourly emission rate detected by the most recent annual stack test is less than or equal to 25 lb/hr, no monitoring, recordkeeping, or reporting is required to demonstrate compliance with this standard.

d. If the hourly emission rate detected by the most recent annual stack test is greater than 25 lb/hr, the Permittee shall monitor and record the daily emission rate as follows:
   i. Each calendar day, the Permittee shall record the hours the rock dryer operated during the previous calendar day (in hr/day);
   ii. The Permittee shall calculate and record the daily SO_2 emission rate (in lb/day) by multiplying the hourly emission rate, determined in accordance with Section 2.1.2 B.1.b, above, and hours of operation for each

calendar day. The SO_2 emission calculation shall be conducted at least monthly (i.e., for any given calendar day, the emission calculation shall be completed by the end of the following calendar month).

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e) if the required monitoring and recordkeeping requirements listed above are not met, or if any calculated SO_2 emission rate exceeds the limit in Section 2.1.2 B.1.a, above.

e. If the hourly emission rate detected by the most recent annual stack test is greater than 25 lb/hr, the Permittee shall submit a summary report of the monitoring postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source **(ID No. 332-120)** shall not exceed an allowable emission rate as calculated by the following equations:

$E = 4.10 \times P^{0.67}$ (for process rates less than or equal to 30 tons per hour), or
$E = 55.0 \times P^{0.11} - 40$ (for process rates greater than 30 tons per hour)

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2. B.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

c. Pursuant to NCGS 143-215.108, the Permittee shall determine the allowable ranges of baseline average values for the pressure drop and liquid injection rate for the scrubber as described below by annually testing the rock dryer for particulate matter (PM). Details of the emissions testing and requirements can be found in General Condition JJ. The rock dryer shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for rock dryer by the number of hours that it was run during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the limit given in Section 2.1.2 B.2.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring 15A NCAC 02Q .0508(f)]

d. Emissions from the Phosphate Rock Dryer **(ID No. 332-120)** shall be controlled by a duplex cyclone **(ID No. 332-370a)** and venturi-type wet scrubber **(ID No. 332-370b)**.

e. The Permittee shall perform inspections and maintenance for the control devices as recommended by the manufacturer.

f. The venturi-type wet scrubber shall meet the following operational requirements:
   i. The daily average pressure drop of the gas stream across the scrubber shall be maintained between 8.2 inches of H_2O and 23.5 inches of H_2O.
   ii. The daily average flow rate of the scrubbing liquid shall be maintained between 873 and 1,181 gallons per minute.

g. The Permittee shall install, calibrate, maintain, and operate monitoring systems to monitor and record the following:
   i. The pressure drop of the gas stream across the scrubber; and
   ii. The flow rate of the scrubbing liquid to the scrubber.

   Each of the monitors shall permanently record the operating parameter in 15-minute block averages. The monitoring systems shall be certified by the manufacturer to have an accuracy of ±5 percent over the operating range. Records shall be maintained in a logbook (written or electronic format).

h. The Permittee shall be deemed in non-compliance with 15A NCAC 02D .0515 if the monitoring requirements are not met or if the monitored operating parameters (on a 24-hour block average) are not within the allowable ranges provided in Section 2.1.2 B.2.f, above.

Recordkeeping [15A NCAC 02Q .0508(f)]

i. The results of any monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each inspection;
   iii. the results of any maintenance performed on the control devices;
   iv. any variance from manufacturer's recommendations, if any, and corrections made; and
   v. the daily average pressure drop and the daily average flow rate (on 24-hour block averages) for the venturi scrubber.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these recordkeeping requirements are not met.

Reporting [15A NCAC 02Q .0508(f)]

h. The Permittee shall submit the results of any maintenance performed on any control device within 30 days of a written request by the DAQ.

i. The Permittee shall submit a summary report of the monitoring and recordkeeping activities given in Sections 2.1.2 B.2.d, e, f, g and I above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

a. Emissions of sulfur dioxide from this source shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1.2 B.3.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. The testing requirement in Section 2.1.2 B.1.b, above is sufficient to demonstrate compliance with this standard. The Permittee shall be deemed in non-compliance with 15A NCAC 02D .0516 if the sulfur dioxide emission rate (in lb/million Btu) determined during the annual stack test exceeds the limit in Section 2.1.2 B.3.a, above.

4. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from the rock dryer shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2 B.4.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.2 B.4.a, above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.
   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.1.2.C Two parallel bagfilters (ID Nos. 341-331 and 341-332) installed on single cyclone (ID No. 341-310) installed on coal/coke pulverizer and thermal dryer system (ID No. 341-300), ep215

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	0.031 grains per dry standard cubic foot	15A NCAC 02D .0524 (40 CFR 60, Subpart Y)
Visible Emissions	20 percent opacity	15A NCAC 02D .0524 (40 CFR 60, Subpart Y)
Sulfur dioxide	2 pounds per day	15A NCAC 02D .0501(e)
PM_{10}	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
TAPS	**State-enforceable only See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1.**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .0524: NSPS 40 CFR 60, Subpart Y

a. The Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 02D .0524, "New Source Performance Standards," as promulgated in 40 CFR 60, Subpart Y, including Subpart A, "General Provisions," for the coal processing system.

Emission Limitations [15A NCAC 02D .0524]

b. Thermal gases discharged into the atmosphere shall not contain more than 0.031 grains per dscf of particulate matter.
c. Visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period.

Testing [15A NCAC 02Q .0508(f)]

d. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.C 1.b. and c., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f), 40 CFR 60.253(a)]

e. The Permittee shall measure the temperature of the gas stream at the exit of the thermal dryer on a continuous basis (CMS). The calibration and calculation methods shall be as described in 40 CFR Part 60.253 and approved by the division before use. The Permittee shall record in a logbook (written or electronic format) the results of the CMS. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not kept.
f. Particulate matter emissions from the coal processing system **(ID No. 341-300)** shall be controlled by a cyclone and two bagfilters. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer, if any. As a minimum, the inspection and maintenance program shall include:

i. Monthly external inspection of the ductwork, cyclone, and bagfilters noting the structural integrity; and
ii. Annual (for each 12 month period following the initial inspection) internal inspection of the bagfilters noting the structural integrity and the condition of the filters.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the ductwork, cyclone, and bagfilters are not inspected and maintained.

Reporting [15A NCAC 02Q .0508(f)]

g. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0501(e): COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS

a. Sulfur dioxide (SO_2) emission from the coal processing system **(ID No. 341-300)** shall be limited to no greater than 2 pounds per day (midnight to midnight).

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.C 2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e).

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. No monitoring/recordkeeping/reporting is required to demonstrate compliance with this standard.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10}

a. Beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations at the emission point of this source and shall and maintain results of the monitoring shall be maintained in a logbook (written or electronic format) including the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal, the Permittee shall conduct an inspection and perform maintenance pursuant to standard operating procedures. The Permittee shall retain records of each inspection, including the date of the inspection and any maintenance or repairs made as a result of the inspection. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.
d. Averaging Periods. Compliance with the PM_{10} emission limitations pursuant to 15A NCAC 02D .0524 are determined on a 3-hour average basis.

2.1.2.D Coal/coke railcar unloader (ID No. 341-100), ep294a
Three parallel conveyor belts and single belt conveyor (ID Nos. 341-110, 341-111, 341-112, 341-120), ep294b
Single belt conveyor (ID No. 341-140), ep294c
Coal/coke crusher (ID No. 341-130), ep294d
Two coal/coke storage silos (ID Nos. 341-200 and 341-201), ep294e
Conveyor belt (ID No. 341-230), ep294f

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E=55 \times P^{0.11} - 40$ where E = allowable emission rate in pounds per hour and P = rock throughput in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity	15A NCAC 02D .0524 (40 CFR 60 Subpart Y)
Toxic Air Pollutants	**State enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0524: NSPS 40 CFR 60, Subpart Y

a. The Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 02D .0524, "New Source Performance Standards," as promulgated in 40 CFR 60, Subpart Y, including Subpart A, "General Provisions," for the coal handling and crushing systems.

Emission Limitations [15A NCAC 02D .0524]

b. Visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period.

Testing [15A NCAC 02Q .0508(f)]

c. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.D.1.b., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f), 40 CFR 60.253(a)]

d. The Permittee shall control visible emissions from all of the sources above by wet suppression systems. The suppression systems shall not be required to operate when the coal/coke is intrinsically sufficiently moist to limit visible emissions to less than the above limit. In addition, all hood covers, conveyor belt skirts, and transfer points shall be maintained and operated in a manner to avoid visible emissions.

e. The Permittee shall perform maintenance as required, but in no case less frequently than an annual inspection of all suppression equipment (including hood covers and belt skirts. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if this maintenance is not performed.

f. The results of inspection and maintenance for the suppression equipment shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection; and
   iii. The results of maintenance performed on any control device.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained.

2.1.2.E Calcined rock transfer station (ID No. Belt39 to 70.1), ep220
Calcined rock transfer station (ID No. 339-809-464), ep223

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E=55 \times P^{0.11} -40$ where E = allowable emission rate in pounds per hour and P = rock throughput in tons per hour	15A NCAC 02D .0515
Visible Emissions	40 percent opacity	15A NCAC 02D .0521
Toxic Air Pollutants	**State enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E=55 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.E.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The Permittee shall perform maintenance as required, but in no case less frequently than an annual inspection of all suppression equipment (including hood covers and belt skirts). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if this maintenance is not performed.

d. The results of inspection and maintenance for the suppression equipment shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection; and
   iii. The results of maintenance performed on any control device.
   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.E.2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. Compliance with the requirements of Section 2.1.2.E.1.c-e above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

2.1.2.F Fabric filter (ID No. 339-680) installed on calcined rock conveyor transfer station (ID No. Belt 55 to 70.1), ep221
Fabric filter (ID No. 333-180 or 333-190) installed on calcined rock transfer station (ID No. Belt 21or Belt 22 to Belt 23 or Belt 24), ep222

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E=55 \times P^{0.11} - 40$ Where E = allowable emission rate in pounds per hour P = rock throughput in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
Toxic Air Pollutants	**State enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from these sources shall not exceed an allowable emission rate as calculated by the following equation:

$E=55 \times P^{0.11} - 40$ Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.F.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The Permittee shall maintain production records which specify the quantity of dry phosphate rock processed and shall make these records available to a DAQ authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the production records are not maintained.

d. Particulate matter emissions from the conveyor belt drop point shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

e. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.
g. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.F.2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Compliance with the requirements of Section 2.1.2.F.1.c-e above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

Reporting [15A NCAC 02Q .0508(f)]

d. Compliance with the requirements of Section 2.1.2.F.1.f-g above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

2.1.2.GFabric filter (ID No. 320-215-478, nominal 1200 square feet of surface area) installed on polymer storage bin (ID No. 224), ep224

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E= 4.10 \times P^{0.67}$ Where: E = allowable emission rate in pounds per hour P = throughput in tons per hour	15A NCAC 02D .0515
Visible Emissions	40 percent opacity	15A NCAC 02D .0521
Toxic Air Pollutants	**State enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E = 4.10 \times P^{0.67}$ Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.G 1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from the silos shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's

inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.
f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.2.G.2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. Compliance with the requirements of Section 2.1.2.G.1.c-f above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

2.1.3 Fertilizer Production Area

2.1.3.A Diammonium Phosphate Plant No. 2 (ID Nos. 505-104, 505-107, 505-114, 505-110, 505-143, 505-111, 505-103, 505-121), ep303

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	64.1 pounds per hour, 238.5 tons per year	15A NCAC 02D .0530 (BACT)
	$E=9.377 \times P^{0.3067}$ Where E = allowable emission rate in pounds per hour P = production and recycle rate of fertilizer	15A NCAC 02D .0507
Sulfur dioxide	15 pounds per hour	15A NCAC 02D .0530 (BACT)
	2.3 pounds per million Btu	15A NCAC 02D .0516
Visible emissions	20 percent opacity	15A NCAC 02D .0521
Total Fluorides	0.055 pounds per ton of equivalent P_2O_5 feed	15A NCAC 02D .1100
	0.060 pounds per ton of equivalent P_2O_5 feed	15A NCAC 02D .1111 40 CFR Part 63, Subpart BB
	0.058 pounds per ton of equivalent P_2O_5 feed	15A NCAC 02D .0530 (BACT)
PM_{10}, Total Fluorides	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
Sulfur dioxide PM/PM_{10}/$PM_{2.5}$ Nitrogen oxides Fluorides Lead	**See Section 2.2 F.1**	15A NCAC 02D .0530(u)
N/A	**(ID No. 505-103, only)** Option for obtaining construction and operation permit	15A NCAC 02Q .0504

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart BB, Phosphoric Fertilizer Production Plants)

a. The Permittee shall not cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 30 grams/metric ton equivalent P_2O_5 feed (0.060 pounds/ton). [40 CFR 63.622(a)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.A 1.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

c. Per 40 CFR 63.606, the Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for the diammonium phosphate process line in accordance with 40 CFR 63.626. Details of the emissions testing and requirements can be found in General Condition JJ. The fertilizer plant **(ep303)** shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

d. If the Permittee produces monoammonium phosphate in this fertilizer plant **(ep303)** during the life of this permit, then the Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for that monoammonium phosphate process line in accordance with 40 CFR 63.626 while producing

monoammonium phosphate. The test must be performed before the expiration date of this permit. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

e. The Permittee shall install, calibrate, maintain, and operate a monitoring system that can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range. The results of the monitoring shall be recorded in a log (electronic or written form). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if this monitoring system is not maintained, calibrated, operated, and the results recorded.

f. The Permittee shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in short ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flow rate and then by proceeding according to 40 CFR 63.626(c)(3).

g. The Permittee shall install, calibrate, maintain, and operate the following monitoring systems installed on the wet scrubbing emission control system:
   i. A monitoring system that continuously measures and permanently records the pressure drop across each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.
   ii. A monitoring system that continuously measures and permanently records the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded.

h. The Permittee has chosen to determine the allowed ranges for the above operating parameters by conducting performance tests as described in 40 CFR 63.625(f)(2). The Permittee has submitted the results of previous tests to demonstrate allowed ranges for the parameter values listed above in (f). The allowed ranges are:
   i. Reactor/Granulator/Tail gas Scrubber - Pressure drop: 7.8 to 21.2 inches of water; flow rate: 2327 to 2829 gpm;
   ii. Cooler Scrubber - Pressure drop: 6.2 to 17.0 inches of water; flow rate: 840 to 1259 gpm;
   iii. Reactor/Granulator acid scrubber - Pressure drop: 7.0 to 18.4 inches of water; flow rate: 660 to 989 gpm;
   iv. Dryer/Scrubber - Pressure drop: 10.5 to 20.0 inches of water; flow rate: 516 to 774 gpm; and
   v. Tail gas Scrubber - Pressure drop: 8.0 to 14.5 inches of water; flow rate: 1138 to 1466 gpm.

   Should the results of any subsequent annual performance test demonstrate that the allowed range is incorrect, the Permittee shall submit new ranges to the Division of Air Quality for inclusion in this permit. If the daily averages (for any day for which there are 24 hours of normal (not startup, shutdown or malfunction) operation) of the pressure drop or flow rate to the scrubber exceeds the allowable range an exceedance will have occurred. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 for each exceedance.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.622(d)]

i. During periods of startup and shutdown, as defined in 40 CFR 63.621, the Permittee shall comply with the work practice specified in this paragraph in lieu of the emission limits specified above in Section 2.1.3.A.1.a. During periods of startup and shutdown, the Permittee shall operate any control device(s) being used at the affected source, monitor the influent liquid flow in accordance with Section 2.1.3.A.1.g above, and comply with the operating limits specified in 2.1.3.A.1.h above.

Reporting [15A NCAC 02Q .0508(f), 40 CFR 63.627(e)]

j. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

k. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

l. EPA Electronic Reporting Tool. Within 60 days after the date of completing each performance test (defined in §63.2) as required by 40 CFR Part 63 Subpart BB, the Permittee shall submit the results of the performance tests, including any associated fuel analyses, to the DAQ pursuant to 40 CFR 63.10(d)(2) and to the EPA via the procedures in 40 CFR 63.627(e).

2. 15A NCAC 02D .0507: PARTICULATES FROM CHEMICAL FERTILIZER MANUFACTURING PLANTS

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E = 9.377 \times P^{0.3067}$ Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.A 2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0507.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. The monitoring, recordkeeping, and reporting requirements for demonstrating compliance given in Section 2.1.3.A.1 above are deemed sufficient to demonstrate compliance with 15A NCAC 02D .0507.

3. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

a. Emissions of sulfur dioxide from this source shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.A.3.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The maximum sulfur content of any fuel oil received and burned in the dryer shall not exceed 2.1 percent by weight. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516 if the sulfur content of the fuel oil exceeds this limit.

d. To ensure compliance, the Permittee shall monitor the sulfur content of the fuel oil by using fuel oil supplier certification. The results of the fuel oil supplier certifications shall be recorded in a logbook (written or electronic format) on a quarterly basis and include the following information:
   i. The name of the fuel oil supplier;
   ii. The maximum sulfur content of the fuel oil received during the quarter;
   iii. The method used to determine the maximum sulfur content of the fuel oil; and
   iv. A certified statement signed by the responsible official that the records of fuel oil supplier certification submitted represent all of the fuel oil fired during the period.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516 if the sulfur content of the oil is not monitored and recorded.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of the fuel oil supplier certifications postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

4. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from the emission point shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0308(a)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.A.4.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0308(a)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. The Permittee shall establish "normal" for Diammonium Phosphate Plant No. 2 (ep303) in the first 30 days following the beginning operation of the granulator **(ID No. 505-103)**. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.3.A.4.a above.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

Reporting [15A NCAC 02Q .0308(a)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities given in Sections 2.1.3.A.4.c and d above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

5. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD), BACT

a. For Diammonium Phosphate Plant No. 2 the following table shall describe the emission standards

Emission Source	Pollutant	BACT Technology	Emission Limit
DAP Plant No. 2	Nitrogen oxides	Conventional combustion	14.7 pounds per hour
DAP Plant No. 2	VOC	Good engineering practices	N/A
DAP Plant No. 2	Sulfur dioxide	Scrubbing with process ammonia	15 pounds per hour
DAP Plant No. 2	Total fluorides	Venturi and packed bed scrubbers	0.058 pounds per ton of equivalent P_2O_5 feed
DAP Plant No. 2	TSP/PM_{10}	Venturi and packed bed scrubbers	64.1 pounds per hour

Testing [15A NCAC 02Q .0508(c)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1.3.A.5.a, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall demonstrate compliance with the fluoride and particulate emission limits above by testing the DAP No. 2 plant annually for fluoride and particulate. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that the plant was operated during that year. The facility shall establish the normal production rate using the production records of over the last production year. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the limits given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

d. The Permittee shall demonstrate compliance with the nitrogen oxides and sulfur dioxide emission limits above by testing the DAP No. 2 plant once every five years for nitrogen oxides and sulfur dioxide. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that the plant was operated during that year. The facility shall establish the normal production rate using the production records of over the last production year. Details of the emissions testing and requirements can be found in General Condition JJ.

If the results of this test are above the limits given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

e. The Permittee shall demonstrate compliance with the fluorides emission limit given above by monitoring and recording the mass flow rate of phosphorus bearing material to the process, the pressure drop across each wet scrubber, and flow rate of scrubbing liquid to each scrubber as described in Section 2.1.3.A.1.e. through h. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit a summary report of monitoring, testing and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

State-enforceable only

6. 15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSION LIMITATIONS AND REQUIREMENTS

a. In accordance with the approved application for an air toxic compliance demonstration and to insure that limits described in Section 2.2.A.2 are not exceeded, the equivalent P_2O_5 feed rate to the Diammonium Phosphate Plant No. 2 (ep303) shall not exceed 2,562 tons per calendar day when producing MAP or DAP.

Testing

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ.

Monitoring/Recordkeeping

c. The Permittee shall use the production logbook (written or electronic format) (as mandated in Section 2.1.3.A.1.e above) to document the compliance with the above requirement.

Reporting

d. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

7. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10} and Total Fluorides

a. Beginning **March 10, 2013**, the Permittee shall continuously monitor the following parameters as provided in Section 2.1.3.A.1.e-h above:
   i. The pressure drop across each scrubber; and
   ii. The water flow rate to the scrubber.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if the monitoring and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. If the daily average (midnight-to-midnight) value of any monitored parameter falls outside the following ranges, the Permittee shall conduct an inspection and perform maintenance pursuant to standard operating procedures:
   i. Reactor/Granulator/Tail Gas Scrubber - Pressure drop: 8.5 to 20.5 inches of water; flow rate: 2,352 to 2,804 gpm;
   ii. Cooler Scrubber - Pressure drop: 6.7 to 16.5 inches of water; flow rate: 861 to 1,238 gpm;
   iii. Reactor/Granulator acid scrubber - Pressure drop: 7.6 to 17.8 inches of water; flow rate: 676 to 973 gpm;
   iv. Dryer/Scrubber - Pressure drop: 11.0 to 19.5 inches of water; flow rate: 529 to 761 gpm; and
   v. Tail gas Scrubber - Pressure drop: 8.3 to 14.2 inches of water; flow rate: 1,154 to 1,450 gpm.

   If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness and QA/QC. The Permittee shall develop and implement a quality assurance program (QAP) for the device in accordance with the provisions of 15A NCAC 02D .0613. Existing plant QA/QC

procedures/manufacturer's recommended quality assurance procedures may be used as a QAP if they meet the requirements of 15A NCAC 02D .0613.

d. Averaging Periods. Compliance with the emission limitations are determined on a daily average (midnight to midnight) basis.

8. 15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT

Permitting [15A NCAC 02Q .0504(d)]

a. Pursuant to 15A NCAC 02Q .0501(b)(2), for completion of the two-step significant modification process initiated by Application No. 0700071.20C, the Permittee shall file an amended application following the procedures of Section 15A NCAC 02Q .0500 within one year from the date of beginning operation of this emission source **(ID No. 505-103)** or control device **(ID No. 505-148)** after replacement,.

Reporting [15A NCAC 02Q .0308(a)]

c. The Permittee shall notify the Regional Office in writing of the date of beginning operation of this emission emission source **(ID No. 505-103)** or control device **(ID No. 505-148)** after replacement, postmarked no later than 30 days after such date.

2.1.3.B Diammonium Phosphate Plant No. 3 (ID Nos. 511-085, 511-086, 511-070, 511-032, 511-025, 511-008, 511-009, 511-010, 511-011, 511-016, 511-017, 511-038, 511-039, 511-041, 511-093, 511-094, 511-095, 511-096), ep302

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	72.0 tons per consecutive 12-month period	15A NCAC 02Q .0317(a)(1) *(Avoidance of 15A NCAC 02D .0530)*
	$E=9.377 \times P^{0.3067}$ Where: E = allowable emission rate in pounds per hour P = production and recycle rate of fertilizer	15A NCAC 02D .0507
sulfur dioxide	226.2 tons consecutive 12-month period	15A NCAC 02Q .0317(a)(1) *(Avoidance of 15A NCAC 02D .0530)*
	2.3 pounds per million Btu	15A NCAC 02D .0516
visible emissions	20 percent opacity	15A NCAC 02D .0521
Total Fluorides	0.060 pounds per ton of equivalent P_2O_5 feed (during DAP or MAP production)	15A NCAC 02D .1111 40 CFR Part 63, Subpart BB
	0.150 pounds per ton of equivalent P_2O_5 feed (during GTSP production)	
	0.058 pounds per ton of equivalent P_2O_5 feed, **BACT**	15A NCAC 02D .0530
PM_{10}, Total Fluorides	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR PART 63 Subpart BB, Phosphoric Fertilizer Production Plants)

a. The Permittee shall not cause to be discharged into the atmosphere from any affected source any gases that contain total fluorides in excess of:

i. 30 grams/metric ton equivalent P_2O_5 feed (0.060 pounds/ton) during either monoammonium phosphate (MAP) or diammonium phosphate (DAP) production [40 CFR 63.622(a)]

ii. 75 grams/metric ton equivalent P_2O_5 feed (0.150 pounds/ton) during granular triple superphosphate (GTSP) production [40 CFR 63.622(b)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.B.1.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

c. Per 40 CFR 63.606, the Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for each DAP and/or MAP process line in accordance with 40 CFR 63.626. Details of the emissions testing and requirements can be found in General Condition JJ. The fertilizer plant (ep302) shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

d. If the Permittee produces MAP in this fertilizer plant (ep302) during the life of this permit, then the Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for that MAP process line in accordance with 40 CFR 63.626 while producing MAP. The test must be performed before the expiration date of this permit. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

e. If the Permittee produces granular triple super phosphate in this fertilizer plant (ep302) during the life of this permit, then the Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for that granular triple super phosphate process line in accordance with 40 CFR 63.626 while producing granular triple super phosphate. The test must be performed before the expiration date of this permit. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

f. The Permittee shall install, calibrate, maintain, and operate a monitoring system that can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range. The results of the monitoring shall be recorded in a log (electronic or written form). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if this monitoring system is not maintained, calibrated, operated, and the results recorded.

g. The Permittee shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in short ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flow rate by proceeding according to 40 CFR 63.626(c)(3).

h. The Permittee shall install, calibrate, maintain, and operate the following monitoring systems installed on the wet scrubbing emission control system:
   i. A monitoring system that continuously measures and permanently records the pressure drop across each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.
   ii. A monitoring system that continuously measures and permanently records the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded.

i. The Permittee has chosen to determine the allowed ranges for the above operating parameters by the method described in 40 CFR 63.625(f)(2). The Permittee has submitted the results of previous tests to demonstrate allowed ranges for the parameter values listed as follows:
   i. Low Mole (scrubber) - Pressure drop: 9.4 to 16.1inches of water; flow rate: 867 to 1,300 gpm
   ii. High Mole (saturation chamber) - flow rate: 1,000 to 1,650 gpm;
   iii. Dust scrubber - Pressure drop: 4.4 to 9.0 inches of water; flow rate: 300 to 600 gpm
   iv. Cooler scrubber - Pressure drop: 4.3 to 11.3 inches of water; flow rate: 400 to 650 gpm
   v. Dryer No. 1 scrubber - Pressure drop: 6.8 to 10.2 inches of water; flow rate: 600 to 900 gpm
   vi. Dryer No. 2 scrubber - Pressure drop: 2.8 to 6.1inches of water; flow rate: 357 to 536 gpm

vii. Tailgas scrubber - Pressure drop: 3.4 to 5.1inches of water; flow rate: 1,066 to 1,600 gpm
Should the results of any subsequent annual performance test demonstrate that allowed range is incorrect, the Permittee shall submit those new ranges to the DAQ for inclusion in this permit. If the daily averages (for any day for which there are 24 hours of normal (not startup, shutdown or malfunction) operation) of the pressure drop or flow rate to the scrubber exceeds the allowable range an exceedance will have occurred. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 for each exceedance.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.620(e)]

j. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of §63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of §63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

k. The emission limitations and operating parameter requirements of this Section of the permit do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in §63.2, provided that the source is operated in accordance with §63.6(e)(1)(i).

Reporting [15A NCAC 02Q .0508(f)]

l. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

m. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2. 15A NCAC 02D .0507: PARTICULATES FROM CHEMICAL FERTILIZER MANUFACTURING PLANTS

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E = 9.377 \times P^{0.3067}$ Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.B.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0507.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. The monitoring, recordkeeping, and reporting requirements for demonstrating compliance given in Section 2.1.3.C.1.h and i. above are deemed sufficient to demonstrate compliance with 15A NCAC 02D .0507.

3. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

a. Emissions of sulfur dioxide from this source shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.B.3.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The maximum sulfur content of any fuel oil received and burned in the dryer shall not exceed 2.1 percent by weight. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516 if the sulfur content of the fuel oil exceeds this limit.

d. To ensure compliance, the Permittee shall monitor the sulfur content of the fuel oil by using fuel oil supplier certification per shipment received. The results of the fuel oil supplier certifications shall be recorded in a logbook (written or electronic format) on a quarterly basis and include the following information:
   i. The name of the fuel oil supplier;
   ii. The maximum sulfur content of the fuel oil received during the quarter;
   iii. The method used to determine the maximum sulfur content of the fuel oil; and
   iv. A certified statement signed by the responsible official that the records of fuel oil supplier certification submitted represent all of the fuel oil fired during the period.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516 if the sulfur content of the oil is not monitored and recorded.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of the fuel oil supplier certifications postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

4. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from the any emission point shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.B.4.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.3.B.4.a. above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

5. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD), BACT

a. For Diammonium Phosphate Plant No. 3 the following table shall describe the emission standards:

Emission Source	Pollutant	BACT Technology	Emission Limit
Diammonium Phosphate Plant No. 3	Fluoride (F)	Dual mole scrubbing	0.058 lb/ton P_2O_5 feed

Testing [15A NCAC 02Q .0508(c)(9)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1.3.B.5.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall demonstrate compliance with the fluoride emission limits above by testing the DAP No. 3 plant annually for fluoride. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that the plant was operated during that year. The facility shall establish the normal production rate using the production records of over the last production year. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the limits given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall maintain in a logbook (written or electronic format) production data sufficient to document the calculation of the normal production rate for determining the appropriate production rates at which to conduct the testing described above. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

e. The Permittee shall demonstrate compliance with the fluorides emission limits given above by monitoring and recording the mass flow rate of phosphorus bearing material to the process, the pressure drop across each wet scrubber, and flow rate of scrubbing liquid to each scrubber as described in Section 2.1.3.B.1.f. through i. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit a summary report of monitoring, testing, and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

6. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. The emissions from DAP3 **(ep302)** shall not exceed the following limits:
   i. SO_2 emissions shall not exceed 226.2 tons per consecutive 12-month period.
   ii. PM_{10} emissions shall not exceed 72.0 tons per consecutive 12-month period.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.B.6.a.i. or ii. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Each calendar month, the Permittee shall determine the SO_2 and PM_{10} emissions from DAP3 **(ep302)** during the previous calendar month and the previous consecutive 12-month period. Records of the required calculations listed above shall be recorded monthly in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not retained, or if the consecutive 12-month SO_2 or PM_{10} emission rate exceeds the relevant limit in Section 2.1.3.B.6.a.i. or ii. above.

Reporting [15A NCAC 02Q .0508(f)]

d. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:
   i. The monthly SO_2 and PM_{10} emissions from the DAP3 for the previous 17 months; and

ii. The consecutive 12-month rolling SO_2 and PM_{10} emissions from DAP3 for each of the six consecutive 12-month periods ending during the reporting period.

State-enforceable only

7. 15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSION LIMITATIONS AND REQUIREMENTS

a. In accordance with the approved application for an air toxic compliance demonstration and to insure that limits described in Section 2.2.A.2 are not exceeded, the following operational limits shall not be exceeded:
   i. The equivalent P_2O_5 feed rate to the Diammonium Phosphate Plant No. 3 (ep302) shall not exceed 714 tons per calendar day when producing GTSP.
   ii. The equivalent P_2O_5 feed rate to the Diammonium Phosphate Plant No. 3 (ep302) shall not exceed 1,188 tons per calendar day when producing MAP.
   iii. The equivalent P_2O_5 feed rate to the Diammonium Phosphate Plant No. 3 (ep302) shall not exceed 1,188 tons per calendar day when producing DAP.
   iv. The equivalent P_2O_5 feed rate to the Diammonium Phosphate Plant No. 3 (ep302) shall not exceed 840 tons per calendar day when producing PAPR.

Testing

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ.

Monitoring/Recordkeeping

c. The Permittee shall use the production log (written or electronic form) (as mandated in Section 2.1.3.B 1.f.) to document the compliance with the above requirement.

Reporting

d. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

8. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10} and Total Fluorides

a. Beginning **March 10, 2013**, the Permittee shall continuously monitor the following parameters as provided in Section 2.1.3.B.1.f-i of this permit:
   i. The pressure drop across each scrubber and saturation chamber; and
   ii. The scrubbant rate to each scrubber.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if the monitoring and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. If the daily average (midnight-to-midnight) of any monitored parameter falls outside the following ranges, the Permittee shall conduct an inspection and perform maintenance pursuant to standard operating procedures:
   i. Low Mole (scrubber) - Pressure drop: 9.7 to 15.8 inches of water; flow rate: 889 to 1,278 gpm;
   ii. High Mole (saturation chamber) - flow rate: 1,020 to 1,631 gpm;
   iii. Dust scrubber - Pressure drop: 4.6 to 8.8 inches of water; flow rate: 315 to 585 gpm;
   iv. Cooler scrubber - Pressure drop: 4.5 to 11.1 inches of water; flow rate: 413 to 638 gpm;
   v. Dryer No. 1 scrubber - Pressure drop: 7.0 to 10.0 inches of water; flow rate: 615 to 885 gpm;
   vi. Dryer No. 2 scrubber - Pressure drop: 3.0 to 5.9 inches of water; flow rate: 366 to 527 gpm; and
   vii. Tailgas scrubber - Pressure drop: 3.5 to 5.0 inches of water; flow rate: 1,093 to 1,573 gpm.

   If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness and QA/QC. The Permittee shall develop and implement a quality assurance program (QAP) for the device in accordance with the provisions of 15A NCAC 02D .0613. Existing plant QA/QC procedures/manufacturer's recommended quality assurance procedures may be used as a QAP if they meet the requirements of 15A NCAC 02D .0613.

d. Averaging Periods. Compliance with the emission limitations is determined on a daily average (midnight to midnight) basis.

2.1.3.C Ammonium Polyphosphate Plant (ID No. APP-1, ep 304)

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Visible emissions	**(ID No. APP-1 only)** 40 percent opacity	15A NCAC 02D .0521
Particulate matter	$E = 55 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
TAPS	**State enforceable only** **See Section 2.2.A.2 and Attachment 1 and 2.1.3.D 4**	15A NCAC 02D .1100
Sulfur dioxide Particulate matter Nitrogen oxides	**See Section 2.2 E.1**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from any emission point shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.C.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.3.C.1.a above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

d. The results of the monitoring, inspection, and maintenance activities shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E = 55 \times P^{0.11} - 40$ Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.C.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. No monitoring/recordkeeping/reporting is necessary to verify compliance with 15A NCAC 02D .0515.

State-enforceable only

3. 15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSIONS LIMITATION AND REQUIREMENT

a. In accordance with the approved air toxic compliance demonstration and to ensure that limits described in Section 2.2.A.2 are not exceeded, the equivalent P_2O_5 feed rate to the Ammonium Polyphosphate Plant **(ID No. APP-1)** shall not exceed 550 tons per calendar day.

Monitoring/Recordkeeping

b. The Permittee shall install, calibrate, maintain, and operate a monitoring system that can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range. The results of the monitoring shall be recorded in a logbook (electronic or written form) to document the compliance with the above requirement.

Reporting

c. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.1.3.D GTSP Rock Storage Silo (ID No. 511-045), ep310

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	$E = 55 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
Visible emissions	20 percent opacity	15A NCAC 02D .0521
PM_{10}	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
TAPS	**State-enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E = 55 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.D.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from the silo shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilters within 30 days of a written request by the DAQ.

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from the silos shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.3.D 2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Compliance with the requirements of Section 2.1.3.D.1.c-d above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

Reporting [15A NCAC 02Q .0508(f)]

d. Compliance with the requirements of Section 2.1.3.D.1.e-f above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10}

a. The Permittee shall perform monthly visible emissions observations at the emission point of this source and shall and maintain results of the monitoring shall be maintained in a logbook (written or electronic format) including the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal, the Permittee shall conduct an inspection and perform maintenance pursuant to standard operating procedures. The Permittee shall retain records of each inspection, including the date of the inspection and any maintenance or repairs made as a result of the inspection. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

2.1.3.E Ammonium Polyphosphate Plant – Line 2 (ID No. 454-200, ep306)

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
TAPS	**State enforceable only** **See Section 2.2.A.2 and Attachment 1and 2.1.3.E.1**	15A NCAC 02D .1100
Sulfur dioxide Particulate matter Nitrogen oxides	**See Section 2.2 E.1**	15A NCAC 02D .0530(u)
N/A	**See Section 2.2 E.2**	15A NCAC 02Q .0504

State-enforceable only

1. 15A NCAC 2D .1100: TOXIC AIR POLLUTANT EMISSIONS LIMITATION AND REQUIREMENT

a. In accordance with the approved air toxic compliance demonstration and to ensure that limits described in Section 2.2.A.2 are not exceeded, the equivalent P_2O_5 feed rate to Ammonium Polyphosphate Plant – Line 2 **(ID No. 454-200)** shall not exceed 550 tons per calendar day.

Monitoring/Recordkeeping

b. The Permittee shall install, calibrate, maintain, and operate a monitoring system that can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range. The results of the monitoring shall be recorded in a logbook (electronic or written form) to document the compliance with the above requirement.

Reporting

c. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.1.4 Superphosphoric Acid Plant Area

2.1.4.A No. 2 Filter Press (ID No. FPR-2) and No. 3 Filter Press (ID No. FPR-3), ep305

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Total Fluorides	**(ID No. FPR-3 only)** No control	15A NCAC 02D .0530
TAPs	**State-enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1.**	15A NCAC 02D .0530(u)

1. **15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT**
   For the No. 3 filter press **(ID No. FPR-3, ep305),** BACT has been determined to be uncontrolled total fluorides.

2.1.4.B Superphosphoric Acid Plant No. 1 (ID Nos. 451-418 and 451-409) and No. 2 Press Product Tank (ID No. 453-112) equipped with a venturi type wet scrubber (ID No. 451-407, ep330)

Superphosphoric Acid Plant No. 2 (ID Nos. 451-701 and 451-809) and No. 3 Press Product Tank (ID No. 453-409) equipped with a venturi type wet scrubber (ID No. 451-807, ep331)

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide	30 pounds per day Superphosphoric Acid Plant No. 1	15A NCAC 02D .0501(e)
	50 pounds per day Superphosphoric Acid Plant No. 2	
Total fluorides	0.010 pounds per ton of equivalent P_2O_5 feed	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1**	15A NCAC 02D .0530(u)

1. **15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA, PHOSPHORIC ACID MANUFACTURING PLANTS)**
   a. No Superphosphoric Acid Plant **(ID Nos. 451-418 and 451-409; 451-701 and 451-809)** shall discharge into the atmosphere gases that contain total fluorides in excess of 5.0 grams per metric ton of equivalent P_2O_5 feed (0.010 pound/ton). Beginning on August 19, 2018, the Permittee shall include emissions from the Press Product Tanks **(ID Nos. 453-112 and 453-409)** when determining compliance with the total fluorides limits for each associated Superphosphoric Acid Plant **(ID Nos. 451-418 and 451-409, and 451-701 and 451-809, respectively)**. [40 CFR 63.602(a)(1) and Table 1 to Subpart AA]

   Testing [15A NCAC 02Q .0508(f)]
   b. The Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for each Superphosphoric Acid Plant process line in accordance with 40 CFR 63.606. Performance tests shall be conducted in accordance with General Condition JJ. Each Superphosphoric Acid Plant **(ID Nos. 451-418 and 451-409; 451-701 and 451-809)** and Press Product Tanks **(ID Nos. 453-112 and 453-409)** shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard in Section 2.1.4 B.1.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

c. The Permittee shall conduct a performance test within 180 days of the commencement of operation of the replacement scrubbers **(ID Nos. 451-407 and 451-807)**. The performance test shall be conducted according to the procedures specified in Section 2.1.4 B.1.b, above. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if this performance test is not conducted.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall install, calibrate, maintain, and operate a monitoring system that can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range. The results of the monitoring shall be recorded in a log (electronic or written form). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if this monitoring system is not maintained, calibrated, operated, and the results recorded.

e. The Permittee shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flow rate which meets the requirements of Section 2.1.4 B.1.d and then by proceeding according to 40 CFR 63.626(c)(3).

f. The Permittee shall install, calibrate, maintain, and operate the following monitoring systems installed on the wet scrubbing emission control system:
   i. A monitoring system which continuously measures and permanently records the pressure drop across each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.
   ii. A monitoring system that continuously measures and permanently records the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded.

g. The Permittee has chosen to determine the allowed ranges for the above operating parameters by the method described in 40 CFR 63.605(d)(2). The Permittee has submitted the results of previous tests to demonstrate allowed ranges for the parameter values listed in Section 2.1.4.B 1.f. The allowed ranges are:
   i. SPA No. 1 - pressure drop: 1.1 to 2.8 inches of water; flow rate: 81 to 163 gpm
   ii. SPA No. 2 - pressure drop: 1.1 to 2.8 inches of water; flow rate: 112 to 163 gpm

   Should the results of any subsequent annual performance test, including the performance test required in Section 2.1.4 B.1.c, above, demonstrate that the allowed ranges are incorrect, the Permittee shall submit those new ranges to the Division of Air Quality for inclusion in this permit. If the daily averages (for any day for which there are 24 hours of normal (not startup, shutdown or malfunction) operation) of the pressure drop or flow rate to the scrubber exceeds the allowable range an exceedance will have occurred. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 for each exceedance.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.600(e)]

h. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of 40 CFR 63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of 40 CFR 63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

i. The emission limitations and operating parameter requirements of Section 2.1.4 B.1, above, do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in 40 CFR 63.2, provided that the source is operated in accordance with 40 CFR 63.6(e)(1)(i).

Reporting [15A NCAC 02Q .0508(f)]

j. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in 40 CFR 63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

k. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2. 15A NCAC 02D .0501(e): COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS

a. Operation of the superphosphoric acid plants **(ID Nos. 451-418 and 451-409; 451-701 and 451-809)** shall be limited as follows:
   i. Superphosphoric acid plant No. 1 **(ID Nos. 451-418 and 451-409)** shall be limited to 30 pounds per calendar day of sulfur dioxide emissions,
   ii. Superphosphoric acid plant No. 2 **(ID Nos. 451-701 and 451-809)** shall be limited to 50 pounds per calendar day of sulfur dioxide emissions.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4 B 2.a, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501.

c. The Permittee shall demonstrate compliance with the emission limits above by testing each superphosphoric acid plant **(ID Nos. 451-418 and 451-409; 451-701 and 451-809)** annually for sulfur dioxide. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that the plant was operated during that year. The facility shall establish the normal production rate using the production records of over the last production year. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e).

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

d. The reporting requirements of Section 2.1.4. B.1.h shall be sufficient to demonstrate compliance with Section 2.1.4 B.2.a, above.

2.1.4.C Superphosphoric acid plant No. 3 (ID Nos. 451-316 and 451-308) and superphosphoric acid plant No. 4 (ID Nos. 451-916 and 451-940) equipped with a wet venturi type scrubber (ID No. 451-315, ep332)

The following table provides a summary of limits and standards for the emission source(s) described above

Pollutant	Limits/Standards	Applicable Regulation
Sulfur Dioxide	400 pounds per day (combined Plant Nos. 3 and 4)	15A NCAC 02D .0530 **BACT**
Total Fluorides	0.010 pounds per ton of equivalent P_2O_5 feed	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA
Sulfur dioxide Particulate matter Nitrogen oxides	**See Section 2.2 E.1**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA, PHOSPHORIC ACID MANUFACTURING PLANTS)

a. No superphosphoric acid plant shall discharge into the atmosphere gases that contain total fluorides in excess of 5.0 grams per metric ton of equivalent P_2O_5 feed (0.010 pound/ton). [40 CFR 63.602 (b)(1)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4.C.1.a the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

c. Per 40 CFR 63.606, the Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for the superphosphoric acid plant process line in accordance with 40 CFR 63.626. Details of the emissions testing and requirements can be found in General Condition JJ. The combined superphosphoric acid plant exhausts **(ep332)** shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall install, calibrate, maintain, and operate a monitoring system that can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range. The results of the monitoring shall be recorded in a log (electronic or written form). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if this monitoring system is not maintained, calibrated, operated, and the results recorded.

e. The Permittee shall maintain a daily record of equivalent P2O5 feed by first determining the total mass rate in ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flow rate which meets the requirements of paragraph (c) of this section and then by proceeding according to 40 CFR 63.626(c)(3).

f. The Permittee shall install, calibrate, maintain, and operate the following monitoring systems installed on the wet scrubbing emission control system:
   i. A monitoring system that continuously measures and permanently records the pressure drop across each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.
   ii. A monitoring system that continuously measures and permanently records the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded.

g. The Permittee has chosen to determine the allowed ranges for the above operating parameters by the method described in 40 CFR 63.605(d)(2). The Permittee has submitted the results of previous tests to demonstrate allowed ranges for the parameter values listed above in Section 2.1.4.C.1.f. The allowed ranges for SPA No. 3/4 are: pressure drop: 0.7 to 1.8 inches of water; flow rate: 115 to 147 gpm. Should the results of any subsequent annual performance test demonstrate that the allowed range is incorrect, the Permittee shall submit those new ranges to NC DAQ for inclusion in this permit. If the daily averages (for any day for which there are 24 hours of normal (not startup, shutdown or malfunction) operation) of the pressure drop or flow rate to the scrubber exceeds the allowable range an exceedance will have occurred. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 for each exceedance.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.600(e)]

h. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of §63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of §63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

i. The emission limitations and operating parameter requirements of Section 2.1.4.C.1. of this permit do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in §63.2, provided that the source is operated in accordance with §63.6(e)(1)(i).

Reporting [15A NCAC 02Q .0508(f)]

j. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be

postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

k. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT

a. Wet scrubbing and an emission rate of 400 pounds per day of sulfur dioxide has been determined to be BACT for SPA Plants Nos. 3 and 4.

Emission Source	Pollutant	BACT Technology	Emission Limit
Superphosphoric Acid Plant Nos. 3 and 4 (combined)	Sulfur Dioxide	Wet Scrubbing	400 pounds per day

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1.4.C.2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall demonstrate compliance with the sulfur dioxide emission limits above by testing the SPA Nos. 3 and 4 plants annually for sulfur dioxide. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that the plant was operated during that year. The facility shall establish the normal production rate using the production records of over the last production year. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the limits given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall demonstrate compliance with the sulfur dioxide emission limits given above by monitoring and recording the mass flow rate of phosphorus bearing material to the process, the pressure drop across each wet scrubber, and flow rate of scrubbing liquid to each scrubber as described in Section 2.1.4.C 1.d through g. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring, testing and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.1.4.D Additive Storage Silo (ID No. 453-485), and No. 1 and No. 2 additive weigh feed hoppers (ID Nos. 453-489 and 453-490), ep340
Additive Storage Silo (ID No. 453-468), ep341

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	$E = 4.10 \times P^{0.67}$ Where: E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
Visible emissions	20 percent opacity	15A NCAC 02D .0521
PM_{10}	**(ID No. 453-468 only)** Compliance Assurance Monitoring (CAM) plan	15A NCAC 02D .0614
TAPS	**State-enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100
Sulfur dioxide Nitrogen oxides	**(ID No. 453-485, 453-489 and 453-490)** **See Section 2.2 C.1.**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E = 4.10 \times P^{0.67}$ Where: E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4.D 1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from the silo shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and perform maintenance pursuant to standard operating procedures. As a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilters within 30 days of a written request by the DAQ.

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from the silos shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4.D.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15 NCAC 02Q .0508(f)]

c. For emission source (**ID No. 453-468**), compliance with the requirements of Section 2.1.4.D.1.c throuh d above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

d. To ensure compliance for emissions sources **(ID Nos. 453-485, 453-489 and 453-490)** once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. The Permittee shall establish "normal" for the sources **(ID Nos. 453-485, 453-489 and 453-490)** in the first 30 days following the commencement of operation. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.4.D.2.a.above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

e. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

f. For emission source (**ID No. 453-468**), compliance with the requirements of Section 2.1.4.D.1.e through f above will be sufficient to demonstrate compliance with 15A NCAC 02D .0521.

g. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10}

a. Beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations at the emission point for the additive storage silo (**ID No. 453-468**) and shall and maintain results of the monitoring shall be maintained in a logbook (written or electronic format) including the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal, the Permittee shall conduct an inspection and perform maintenance pursuant to standard operating procedures. The Permittee shall retain records of each inspection, including the date of the inspection and any maintenance or repairs made as a result of the inspection. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

2.1.4.E Fertilizer Warehouse Fugitives: Warehouse No. 3 (ID No. DAP3WH3), ep390

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Total Fluorides	0.0005 lb/hr/ton P_2O_5 cured or stored for GTSP production	15A NCAC 02D .1111 40 CFR Part 63, Subpart BB
TAPS	**State-enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100
Sulfur dioxide $PM/PM_{10}/PM_{2.5}$ Nitrogen oxides Fluorides Lead	**See Section 2.2 F.1.**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart BB –PHOSPHORIC FERTILIZER PRODUCTION PLANTS)

a. The Permittee shall not cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 0.250 grams/hr/metric ton equivalent P_2O_5 stored (0.0005 pounds/hr/ton stored). [40 CFR 63.622(c)(1)]

Operating Standard [15A NCAC 02Q .0508(f)]

b. The Permittee shall not ship granular triple super phosphate (GTSP) produced within the previous 72 hours from any warehouse [40 CFR 63.622(c)(2)].

Testing [15A NCAC 02Q .0508(f)]

c. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4.E.1.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501.

d. Per 40 CFR 63.606, the Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for the warehouse in accordance with 40 CFR 63.626. Details of the emissions testing and requirements can be found in General Condition JJ. The warehouse **(ep390)** shall be tested annually. If no GTSP production has occurred during the year, then the only requirement is to state that no production has occurred on any report. Upon resumption of GTSP production, the Permittee shall conduct the performance tests only when the total GTSP is at least 10 percent of the building capacity, fresh GTSP is at least 6 percent of the total amount of GTSP, or if the previous parameters exceed production capabilities of fresh GTSP, then fresh GTSP is equal to at least 5 days maximum production. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

e. The Permittee shall maintain an accurate account of granular triple super phosphate in storage to permit the determination of the amount of equivalent P_2O_5 stored. The Permittee shall maintain a daily record of total equivalent P_2O_5 stored by multiplying the percentage P_2O_5 content, as determined by 40 CFR 63.626(d)(3), times the total mass of granular triple super phosphate stored. The Permittee shall develop for approval by the Director a site-specific methodology including sufficient recordkeeping for the purposes of demonstrating compliance with 40 CFR 63.622(c)(2) or 40 CFR 63.623(c)(2), as applicable. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the records are not maintained, or if the site-specific methodology is not submitted.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.620(e)]

f. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of §63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of §63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

g. The emission limitations and operating parameter requirements of this Section of the permit do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in §63.2, provided that the source is operated in accordance with §63.6(e)(1)(i).

Reporting [15A NCAC 02Q .0508(f)]

h. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

i. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2.1.4.F Superphosphoric acid plant No. 5 (ID Nos. 451-1100 and 451-1200, ep333) equipped with a venturi type wet scrubber (ID No. 451-1300)

The following table provides a summary of limits and standards for the emission source(s) described above

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E = 4.10(P)^{0.67}$ where E = allowable emission rate in pounds per hour and P = process weight in tons per hour	15A NCAC 02D .0515
visible emissions	20 percent opacity	15A NCAC 02D .0521
Total Fluorides	0.00870 pounds per ton of equivalent P_2O_5 feed	15A NCAC 02D .1111 (40 CFR 63, Subpart AA)
Sulfur dioxide Particulate matter Nitrogen oxides	**See Section 2.2 E.1**	15A NCAC 02D .0530(u)
N/A	**See Section 2.2 E.2**	15A NCAC 02Q .0504

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$E = 4.10(P)^{0.67}$

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4.F.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. No monitoring/recordkeeping/reporting is necessary to verify compliance with 15A NCAC 02D .0515.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from this source **(ID Nos. 451-1100 and 451-1200)** shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4.F.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. No monitoring/recordkeeping/reporting is necessary to verify compliance with 15A NCAC 02D .0521.

3. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR 63, Subpart AA, PHOSPHORIC ACID MANUFACTURING PLANTS)

a. Superphosphoric acid plant No. 5 **(ID Nos. 451-1100 and 451-1200)** shall not discharge into the atmosphere gases that contain total fluorides in excess of 0.00870 pound/ton of equivalent P_2O_5 feed. [40 CFR 63.602(a)(4)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.4.F.3.a the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

c. The Permittee shall conduct an initial performance test to demonstrate compliance with the emission limit in Section 2.1.4.F.3.a within 180 days of initial startup of superphosphoric acid plant No. 5 **(ID Nos. 451-1100 and 451-1200)**. [40 CFR 63.606(a)]

d. Following the initial performance test, the Permittee shall conduct a performance test to demonstrate compliance with the emission limit in Section 2.1.4.F.3.a once per calendar year. [40 CFR 63.606(b)]

e. Performance testing shall be conduct in accordance the following:

i. Performance tests shall be conducted at representative (normal) conditions for the process. Representative (normal) conditions means those conditions that:

(A) Represent the range of combined process and control measure conditions under which the facility expects to operate (regardless of the frequency of the conditions); and

(B) Are likely to most challenge the emissions control measures of the facility with regard to meeting the applicable emission standards, but without creating an unsafe condition. Operations during startup, shutdown, and malfunction do not constitute representative (normal) operating conditions for purposes of conducting a performance test.

[40 CFR 63.606(d)(1)]

ii. The Permittee shall record process information necessary to document the operating conditions during the test and include in such records an explanation to support that such conditions represent representative (normal) conditions. The Permittee shall make available to an authorized representative upon request such records as may be necessary to determine the conditions of performance tests. [40 CFR 63.606(d)(2)]

iii. The Permittee shall use reference methods and procedures the test methods in 40 CFR part 60, appendix A, or other methods and procedures as specified in this section, except as provided in 40 CFR 63.7(f). [40 CFR 63.606(e)]

iv. The Permittee shall determine compliance with the emission limit in Section 2.1.4.F.3.a as specified in 40 CFR 63.606(f)(1) through (3). [40 CFR 63.606(f)]

v. The Permittee shall monitor the liquid flowrate to the venturi type wet scrubber **(ID No. 451-1300)** and establish the applicable limit during testing. In accordance with the alternative monitoring plan approved by

the Division, the Permittee shall determine the value(s) of the liquid flow rate as the arithmetic average of the liquid flow rate measurements recorded during the three test runs conducted during the most recent performance test. The Permittee shall determine a minimum L/G ratio from the liquid flow rate value established during the most recent performance test and maximum volumetric flow (G_{max}) from the designer's specifications. [40 CFR 63.605(d)(1), 40 CFR 60.8(f)]

f. The Permittee shall conduct a performance evaluation as specified in 40 CFR 63.8(e) on continuous monitoring system (CMS) used to measure P2O5 feed, in accordance with the site-specific monitoring plan in 40 CFR 63.608(c). [40 CFR 63.606(m)]

g. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if performance testing is not conducting in accordance with Sections 2.1.4.F.3.c through f.

Compliance Date [40 CFR 63.602(a)(4)]

h. The Permittee shall comply with the emission limits specified in Section 2.1.4.F.3.a immediately upon startup of superphosphoric acid plant No. 5 **(ID Nos. 451-1100 and 451-1200).** The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if compliance is not achieved by this date.

Notifications

i. The Permittee shall submit a notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date. [40 CFR 63.607, 40 CFR 63.9]

j. The Permittee shall submit the results of the initial and subsequent performance tests as part of the notification of compliance status required in 40 CFR 63.9(h) The Permittee shall verify that the operating limits for each process have not changed or provide documentation of revised operating limits established according to 40 CFR 63.605, as applicable. The notification shall contain the requirements under 40 CFR 63.9(h), as applicable. The notification must be signed by a responsible official and submitted by the close of business on the 60th day following the completion of the initial performance test and each subsequent performance test. [40 CFR 63.607(b)(2), 40 CFR 63.9(h)]

k. During the most recent performance test, if the Permittee demonstrates compliance with the emission limit while operating the control device outside the previously established operating limit, the Permittee shall establish a new operating limit based on that most recent performance test and notify the DAQ that the operating limit changed based on data collected during the most recent performance test. When a source is retested and the performance test results are submitted to the DAQ pursuant to Section 2.1.4.F.3.j, the Permittee shall indicate whether the operating limit is based on the new performance test or the previously established limit. Upon establishment of a new operating limit, the Permittee shall thereafter operate under the new operating limit. If the DAQ determines that the Permittee did not conduct the compliance test in accordance with the applicable requirements or that the operating limit established during the performance test does not correspond to representative (normal) conditions, the Permittee shall conduct a new performance test and establish a new operating limit. [40 CFR 63.607(a)]

General Compliance Requirements

l. The Permittee shall comply with the emission limitations, work practice standards, and operating parameter requirements specified in 40 CFR Part 63 Subpart AA at all times. [40 CFR 63.600(a)]

m. At all times, the Permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination by the Administrator of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.608(b)]

n. The Permittee shall develop a site-specific monitoring plan for the CMS on P2O5 feed and continuous parameter monitoring system (CPMS) on the venturi type wet scrubber **(ID No. 451-1300)** in accordance with 40 CFR 63.608(c). The Permittee shall submit the site-specific monitoring plan, if requested by the DAQ, at least 60 days before the initial performance evaluation of the CMS. [40 CFR 63.608(c)]

o. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if requirements in Sections 2.1.4.F.3.l through n are not met.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

p. The Permittee shall install, calibrate, maintain, and operate CMS according to the site-specific monitoring plan specified in 40 CFR 63.608(c). The CMS must have an accuracy of ±5 percent over its operating range and must

determine and permanently record the mass flow of phosphorus-bearing material fed to the process. [40 CFR 63.605(a)(1)]

q. The Permittee shall maintain a daily record of equivalent P2O5 feed. The Permittee shall maintain a daily record of equivalent P2O5 feed by first determining the total mass rate in metric ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flow rate which meets the requirements of Section 2.1.4.F.3.p and then by proceeding according to 40 CFR 63.606(f)(3).

r. In accordance with the alternative monitoring plan approved by the Division, the Permittee shall install and operate a CPMS on the venturi type wet scrubber **(ID No. 451-1300)** that meets the following:
   i. Continuously measures the liquid flow rate to determine the minimum influent liquid-to-gas ratio (L/G ratio). The L/G ratio shall be calculated using the continuous liquid flow rates and the Gmax determined from the designer's specifications. The L/G ratio shall be required every 15-minute and these readings shall be used to determine a daily average of the L/G ratio. [40 CFR 605(d)(2), Table 4 of 40 CFR 63 Subpart AA 40 CFR 63.8(f)]
   ii. Monitors liquid flowrate to an accuracy of ±5 percent over the normal range of flow measured or 1.9 liters per minute (0.5 gallons per minute), whichever is greater. [40 CFR 605(d)(3), Table 5 of 40 CFR 63 Subpart AA]

s. The Permittee shall exclude periods of non-operation of superphosphoric acid plant No. 5 **(ID Nos. 451-1100 and 451-1200)**; periods of no flow to the venturi type wet scrubber **(ID No. 451-1300)**; and any monitoring data recorded during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable), and high-level adjustments in computing the daily average of liquid flow rate to the venturi type wet scrubber **(ID No. 451-1300)**. [40 CFR 63.607(d)]

t. The Permittee shall maintain records in a form suitable and readily available for expeditious review. The Permittee must keep each record 5 years following the date of each recorded action. Records must be kept on site, or accessible from a central location by computer or other means that instantly provides access at the site, for at least 2 years after the date of each recorded action. Records may be kept off site for the remaining 3 years. [40 CFR 63.607(c)]

u. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the monitoring and recordkeeping activities Sections 2.1.4.F.3.p through t are not met.

Reporting [15A NCAC 02Q .0508(f)]

v. The Permittee shall submit the results of performant tests within 60 days after the date of completing each performance test as specified in the following:
   i. For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (http://www.epa.gov/ttn/chief/ert/index.html), the Permittee must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (http://cdx.epa.gov/epa_home.asp). Performance test data must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, the Permittee may submit performance test data in an electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site once the XML schema is available.
   ii. If the Permittee claims some of the performance test information being submitted is confidential business information (CBI), the Permittee must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

   [40 CFR 63.607(e)]

w. The Permittee shall submit a summary report postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The summary report shall contain the information specified in 40 CFR 63.10(e)(3)(vi). All instances of deviations from the requirements of this permit must be clearly identified. [40 CFR 63.607(b)(5)]

x. The Permittee shall submit an excess emissions report for any exceedance of an emission limit, work practice standard, or operating parameter limit if the total duration of the exceedances for the reporting period is 1 percent of the total operating time for the reporting period or greater. The excess emission report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30

of each calendar year for the preceding six-month period between January and June. When exceedances of an emission limit or operating parameter have not occurred, the Permittee must include such information in the report. The report must contain the following information in the event that an affected unit fails to meet an applicable standard:

i. The date, time and duration of the failure.
ii. A list of the affected sources or equipment for which a failure occurred.
iii. An estimate of the volume of each regulated pollutant emitted over any emission limit.
iv. A description of the method used to estimate the emissions.
v. A record of actions taken to minimize emissions in accordance with 40 CFR 63.608(b), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10(e)(3)(ii).
[40 CFR 63.607(b)(3) and (4)]

2.1.5 Phosphoric Acid Production Area

2.1.5 A **Phosphoric Acid Train No. 1**

- **Reactor Train No. 1, Tilting pan (Bird) filter No. 1, Tilting Pan (Bird) filter No. 1 Primary vacuum pump installed on primary vacuum separator, Secondary vacuum pump installed on secondary vacuum separator, Two Barometric condenser vacuum pumps, Barometric condensers hotwell, Tilting pan (Bird) filter No. 1 seal tanks, and Trench hood (ID Nos. 421-201, 421-000, 421-325, 421-327, 421-223, 421-232, 421-218, 421-330 and 421-225A) – equipped with a spray cross-flow packed bed-type scrubber (ID No. 451-225, ep401);**
- **Belt filter No. 1 vacuum pump (ID No. 441-015, ep402) – the following units are routed through the vacuum pump:**
  - **Belt filter No. 1 filtrate separator (ID No. 441-000); and**
  - **Spray tower separator (ID No. 444-021)**
- **Belt filter No. 1 seal tanks and Belt Filter No. 1 feed hood (ID Nos. 441-031 and 441-034) – equipped with a cyclonic scrubber (ID No. 442-061, ep403)**

Phosphoric Acid Train No. 2

- **Reactor Train No. 2, Tilting pan (Bird) filter No. 2, Tilting Pan (Bird) filter No. 2 Primary vacuum pump installed on primary vacuum separator, Secondary vacuum pump installed on secondary vacuum separator, Two Barometric condenser vacuum pumps, Barometric condensers hotwell, Tilting pan (Bird) filter No. 2 seal tanks, and Trench hood (ID Nos. 422-201, 422-000, 422-325, 422-327, 422-223, 422-232, 422- 218, 422-330, and 422-225A) – equipped with a spray cross-flow packed bed-type scrubber (ID No. 422-225, ep404)**
- **Belt filter No. 2 feed hood (ID No. 442-034) – equipped with a cyclonic scrubber (ID No. 442-061, ep403)**
- **Belt filter No. 2 vacuum pump (ID Nos. 442-015, ep405) – the following units are routed through the vacuum pump:**
  - **Belt Filter No. 2 filtrate separator (ID No. 442-000); and**
  - **Spray tower separator (ID No. 442-021)**

Phosphoric Acid Train No. 3

- **Reactor Train No. 3, Tilting pan (Bird) filter No. 3, Tilting Pan (Bird) filter No. 3 Primary vacuum pump installed on primary vacuum separator, Secondary vacuum pump installed on secondary vacuum separator, Two Barometric condenser vacuum pumps, Barometric condensers hotwell, and Tilting pan (Bird) filter No. 3 seal tanks (ID Nos. 423-201, 423-000, 423-325, 423-327, 423-223, 423-232, 423- 218, 423-330) – equipped with a spray cross-flow packed bed-type scrubber (ID No. 423-225, ep406)**
- **Belt filter No. 3 vacuum pump (ID No. 443-015, ep407) – the following units are routed through the vacuum pump:**
  - **Belt filter No. 3 filtrate separator (ID No. 443-000); and**
  - **Spray tower separator (ID No. 443-021)**
- **Belt filter No. 3 feed hood (ID No. 443-034) – equipped with a cyclonic scrubber (ID No. 443-061, ep408)**

Phosphoric Acid Train No. 4

- **Belt filter No. 4 seal tanks and Belt filter No. 4 feed hood (ID Nos. 444-031, 444-034) – routed through the Phosphoric Acid Train No. 3 cyclonic scrubber (ID No. 443-061, ep408)**
- **Reactor Train No. 4, Tilting pan (Bird) filter No. 4, Tilting Pan (Bird) filter No. 4 Primary vacuum pump installed on primary vacuum separator, Secondary vacuum pump installed on secondary vacuum separator, Two Barometric condenser vacuum pumps, Barometric condensers hotwell, and Tilting pan (Bird) filter No. 4 seal tanks (ID Nos. 424-201, 424-000, 424-325, 424-327, 424-223, 424-232, 424- 218, 424-330) – equipped with a spray cross-flow packed bed-type scrubber (ID No. 424-225, ep409)**
- **Belt Filter No. 4 vacuum pump (ID No. 444-015, ep410) – the following units are routed through the vacuum pump:**
  - **Belt filter No. 4 filtrate separator (ID No. 444-000)**
  - **Spray tower separator (ID No. 444-021)**

Phosphoric Acid Plant Fugitives (ID No. PAPF), ep491

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Sulfur Dioxide	486 pounds per day (Train No. 1 - measured at cross flow scrubber stacks)	15A NCAC 02D .0501(e) 15A NCAC 02D .0530 (BACT)
	486 pounds per day (Train No. 2 - measured at cross flow scrubber stacks)	
	961 pounds per day (Train No. 3 - measured at cross flow scrubber stacks)	
	961 pounds per day (Train No. 4 - measured at cross flow scrubber stacks)	15A NCAC 02D .0501(e)
Total Reduced Sulfur	2207.61 tons per rolling 12-month period (Trains 1, 2, 3 and 4)	15A NCAC 02Q .0317(a)(1) **PSD Avoidance limit**
	1728.3 tons per rolling 12-month period (Trains 1 and 2) (also Train 4 when using calcined rock)	
Hydrogen Sulfide	4.24 pounds per ton P_2O_5 input (when processing calcined rock – Trains 1, 2 and 4)	15A NCAC 02Q .0317(a)(1) **PSD Avoidance limit**
	510 pounds per day (Train 4) 435 pounds per day (Train 3)	15A NCAC 02D .0530 (BACT)
Total Fluorides	10.0 gram/metric ton of equivalent P_2O_5 feed (0.020 lb/ton)	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA 15A NCAC 02D .0530 BACT (Trains 1, 2, 3, and 4)
Sulfur Dioxide, Hydrogen Sulfide	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
TAPS	**State-enforceable only** **Section 2.1.5 A.5 and A.6**	15A NCAC 02Q .0317(a)(8) Avoidnace of 15A NCAC 02D .1100
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1**	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – PHOSPHORIC ACID MANUFACTURING PLANTS)

a. Phosphoric acid trains shall not discharge any gases which contain total fluorides in excess of 10.0 gram/metric ton of equivalent P_2O_5 feed (0.020 lb/ton). [40 CFR 63.602(a)]

Testing [15A NCAC 02Q .0508(f)]

b. The Permittee shall conduct a performance test to demonstrate compliance with the applicable emission standard for each phosphoric acid train in accordance with 40 CFR 63.606. The Permittee shall perform such testing in accordance with General Condition JJ. Except as specified in Section 2.1.5 A.1.c, below, each phosphoric acid train shall be tested annually at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

c. As allowed pursuant to 40 CFR 63.7(e)(2)(iv), the Permittee shall conduct a performance test on each of the belt filter vacuum pumps **(ID Nos. 441-015, 442-015, 443-015, and 444-015)** once every five years (not to exceed 60 months between performance tests). The performance test shall be conducted as specified in Section 2.1.5 A.1.b, above. If the total fluorides emissions from a phosphoric acid train calculated as the sum of the emissions measured during the annual performance test required in Section 2.1.5 A.1.b, above, including the total fluorides emissions from the belt filter vacuum pumps, measured during the performance test are greater than 80 percent of the emissions limit specified in Section 2.1.5 A.1.a, above, the Permittee shall resume performance testing on an annual basis for the phosphoric acid train that exceeded the 80% limit. Following the next two consecutive compliance tests that are less than 80% of the emission limit the Permittee may resume testing the belt filter vacuum pump for that train once every 5 years (no more than 60 months between performance tests). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the performance test is not conducted as required.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall install, calibrate, maintain, and operate a monitoring system that can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range. The results of the monitoring shall be recorded in a log (electronic or written form). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if this monitoring system is not maintained, calibrated, operated, and the results recorded.

e. The Permittee shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in short ton/hour of phosphorus bearing feed using the monitoring system for measuring mass flow rate by proceeding according to 40 CFR 63.626(c)(3).

f. The Permittee shall install, calibrate, maintain, and operate the following monitoring systems installed on the wet scrubbing emission control system:
   i. A monitoring system that continuously measures and permanently records the pressure drop across each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.
   ii. A monitoring system that continuously measures and permanently records the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system in 15-minute block averages. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded.

g. The Permittee has chosen to determine the allowed ranges for the above operating parameters by the method described in 40 CFR 63.605(d)(2). The Permittee has submitted the results of previous tests to demonstrate allowed ranges for the parameter values listed above in (f). The allowed ranges are:
   i. Crossflow scrubbers Nos. 1 to 3 - pressure drop: 0.5 to 3.5 inches of water; flow rate: 700 to 1135 gpm;
   ii. Crossflow scrubber No. 4 - pressure drop: 0.5 to 3.5 inches of water; flow rate: 700 to 1135 gpm; and
   iii. Cyclonic scrubbers Nos. 1/2 and 3/4 - pressure drop: 6.8 to 9.3 inches of water; flow rate: 50 to 116 gpm.

Should the results of any subsequent annual performance test demonstrate that the allowed range is incorrect, the Permittee shall submit those new ranges to the Division of Air Quality for inclusion in this permit. If the daily averages (for any day for which there are 24 hours of normal (not startup, shutdown or malfunction) operation) of the pressure drop or flow rate to the scrubber exceeds the allowable range an exceedance will have occurred. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 for each exceedance.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.600(e)]

h. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of §63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of §63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

i. The emission limitations and operating parameter requirements of Section 2.1.4.B.1. of this permit do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in §63.2, provided that the source is operated in accordance with §63.6(e)(1)(i).

Reporting [15A NCAC 02Q .0508(f)]

j. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

k. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2. 15A NCAC 02D .0501(e): COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS

a. Sulfuric dioxide emissions from the Phosphoric Acid Trains shall not exceed the following limits:
   i. Phosphoric Acid Train No. 1 (ep401) shall be limited to 486 pounds SO_2 per calendar day;
   ii. Phosphoric Acid Train No. 2 (ep404) shall be limited to 486 pounds SO_2 per calendar day;
   iii. Phosphoric Acid Train No. 3 (ep406) shall be limited to 961 pounds SO_2 per calendar day; and
   iv. Phosphoric Acid Train No. 4 (ep409) shall be limited to 961 pounds SO_2 per calendar day.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.5 A.2.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501.

c. The Permittee shall demonstrate compliance with the emission limits above by testing one phosphoric acid train producing acid from calcined rock (a "green" acid train) and one phosphoric acid train producing acid from uncalcined rock (an "amber" acid train) annually for sulfur dioxide. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records for the last production year. Details of the emissions testing and requirements can be found in General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0501(e).

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

d. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD), BACT

a. For the identified Phosphoric Acid trains the following table shall describe the emission standards:

Emission Source	Pollutant	BACT Technology	Emission Limit
PA Train No. 1 (ep401, ep402, ep403)	Total Fluorides	Crossflow packed scrubber	0.020 pound per ton P_2O_5 feed
PA Train No. 1 (ep401)	Sulfur dioxide	Crossflow packed scrubber	486 pounds per day
PA Train No. 2 (ep404)	Sulfur dioxide	Crossflow packed scrubber	486 pounds per day
PA Train No. 2 (ep403, ep404, ep405)	Total Fluorides	Crossflow packed scrubber	0.020 pounds per ton P_2O_5 feed
PA Train No. 3 (ep406, ep407, ep408)	Total Fluorides	Crossflow packed scrubber	0.020 pounds per ton P_2O_5 feed
PA Train No. 3 (ep406)	Hydrogen sulfide	Crossflow packed scrubber	435 pounds per day
PA Train No. 3 (ep406)	Sulfur dioxide	Crossflow packed scrubber	961 pounds per day
PA Train No. 4 (ep408, ep409, ep410)	Total Fluorides	Crossflow packed scrubber	0.020 pounds per ton P_2O_5 feed
PA Train No. 4 (ep409)	Hydrogen sulfide	Crossflow packed scrubber	510 pounds per day
PA Train No. 4 (ep409)	Sulfur dioxide	Crossflow packed scrubber	961 pounds per day

Testing [15A NCAC 02Q .0508(f)]

b. The Permittee shall conduct a compliance test on Trains No. 3 or 4 to demonstrate compliance with the emission standards above for hydrogen sulfide. Details of the emissions testing and requirements can be found in General Condition JJ. Either Train No. 3 or 4 shall be tested once every five years at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

c. The Permittee shall conduct a compliance test on Train No. 3 or 4 and one compliance test on Trains No. 1 or 2 to demonstrate compliance with the emission standards listed above for sulfur dioxide. Details of the emissions testing and requirements can be found in General Condition JJ. Either Train No. 1 or 2 and Train No. 3 or 4 shall be tested once every year at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530. The results of this testing shall be saved for possible inclusion in future determinations of operating parameter ranges.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

d. The requirements for monitoring and recordkeeping are the same as given in Section 2.1.5 A.1.d through A.1.g, above.

e. The Permittee shall submit a summary report of monitoring, testing, and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

4. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS
for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. In order to avoid applicability of 15A NCAC 02D .0530(g), the Phosphoric Acid trains shall discharge into the atmosphere less than:
   i. 2,207.61 tons of total reduced sulfur (TRS) from all four trains on a rolling 12-month basis, and
   ii. 1,728.3 tons of total TRS from Trains 1,2, and 4 on a rolling 12-month basis when processing calcined rock.

Testing [15A NCAC 02Q .0508(f)]

b. In order to verify the accuracy of the average emission factor listed in Section 2.1.5 A 5.f.i, below, the Permittee shall test for TRS emissions from the cross flow scrubber stack of one green acid train at least once during the five year permit term. In addition, subsequent to the first time that the normal production rate (defined below) at any green acid train exceeds 1,350 tons per day, a test of TRS emissions will be required. A test triggered by exceeding 1350 tons per day will satisfy the once per five year permit term testing requirement.

c. Testing shall be performed in accordance with 40 CFR 60 Appendix A, Reference Method 16A (Determination of TRS Emissions from Stationary Sources) or an approved alternative method as described in 40 CFR 60.8(b) and as approved by the DAQ. The performance test shall be performed at production rates equal to or greater than the normal production rate. The normal production rate shall be determined by dividing the total annual production from the most recent production year by the number of hours operated during the previous 12 months. The test results must be submitted to the Regional Supervisor, DAQ, in accordance with the approved procedures of the Environmental Management Commission within 30 days of test completion.

Monitoring/Recordkeeping/Calculations [15A NCAC 02Q .0508(f)]

d. The Permittee shall use the production log (written or electronic form) (as mandated in Section 2.1.5 A 1.d, above) along with the emission factors detailed below to demonstrate compliance with emission limits in Section 2.1.5 A.4.a, above. To insure that the yearly emission limits are not exceeded, the yearly production shall be limited as follows:
   i. The production of phosphoric acid from calcined rock shall be limited to a P_2O_5 input rate of 815,217 tons per year, calculated each month for the previous twelve (12) months;
   ii. The production of phosphoric acid from uncalcined rock at Trains 3 and 4 shall be limited to a P_2O_5 input rate of 981,120 tons per year, calculated each month for the previous twelve (12) months; and
   iii. The production of phosphoric acid from uncalcined rock at Train 4 shall be limited to a P_2O_5 input rate of 535,000 tons per year, calculated each month for the previous twelve (12) months (Note: This limit was accepted as part of the 2004 PSD review analysis).

   If a production rate is above these limits for any consecutive 12-month period, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

e. The Permittee shall use the following emission factors to determine if the emission limits above are exceeded:
   i. For TRS emissions from trains processing calcined rock: 4.24 lbs/ton of P_2O_5 feed;
   ii. For TRS emissions from Trains 3 and 4 processing uncalcined rock: 0.30 lbs/ ton of P_2O_5 feed.

   If the results of the above calculations show emissions above any of the limits in Section 2.1.5 A.4.a, above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. The report shall contain the following:
   i. For production using uncalcined and calcined rock, the monthly TRS emissions for the previous 17 months and the annual total TRS emissions for each of the six 12-month periods over the previous 17 months (calculations must be included);
   ii. The monthly P_2O_5 input rates for calcined and uncalcined rock for the previous 17 months and the annual totals for calcined and uncalcined P_2O_5 input rates for each of the six12-month periods over the previous 17 months; and
   iii. The daily P_2O_5 input rate for calcined and uncalcined rock for the previous semiannual period.

State-enforceable only

5. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for
15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSION LIMITATIONS AND REQUIREMENTS

a. In accordance with 15A NCAC 02Q .0317 and to avoid the applicability of 15A NCAC 02D .1100, the following operational limits shall not be exceeded:
   i. Only two trains (of trains 1, 2, or 4 which are the three trains capable of processing calcined rock) may process calcined rock at any given time for "green" acid. Only trains 3 and 4 may process uncalcined rock at any given time for "amber" acid.
   ii. All four trains of the phosphoric acid plant may manufacture phosphoric acid solely by the wet process operating in the dihydrate mode.
   iii. The phosphoric acid plant may use phosphate ore sources other than PCS Phosphate Aurora (outside ore) in the manufacture of green or amber acid. During any given day, however, the ore used in the manufacture of green or amber acid may only come from two separate places including Aurora ore. The maximum outside ore content shall be determined by a compliant source test for fluoride, sulfur dioxide, total reduced sulfur or other pollutants as deemed necessary by the division. To be a compliant source test, it must be submitted and accepted in writing by the division. The Permittee shall notify the Division 30 days before any test that is anticipated to be used as a compliant source test to change the maximum allowable outside ore content as defined above; ore from each different mine or area will be tested separately. The Permittee shall conduct a compliance test within 60 days of beginning manufacture of acid using the new ore. If the compliance test does not show compliance with any applicable air standard, the Permittee will be considered out of compliance with that standard for all days of operation with the new ore. At the discretion of the Division, the Permittee may use the results of the test to satisfy other requirements for a compliance test on the green or amber acid train for these three pollutants. However, the Permittee must declare their intention to use the test for such purposes in advance and will be held to the results of the test. The division will notify the Permittee in writing of the results of the compliance test. The division's letter will be kept on site attached to the current Air Permit. Use of outside ore will be limited to the percentage of total ore feed used for the compliance test. On-going compliance with this provision will be demonstrated based on a monthly average of daily records.

Monitoring/Recordkeeping

b. The Permittee shall use the production logbook (written or electronic form) (as required in Section 2.1.5 A.1. above) and other production records to document the compliance with the above operational practices limits.

Reporting

c. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

State-enforceable only

6. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for
15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSION LIMITATIONS AND REQUIREMENTS

a. In accordance with 15A NCAC 02Q .0317 and to avoid the applicability of 15A NCAC 02D .1100, the following operational limits shall not be exceeded:
   i. The feed rate (calcined rock) to trains 1, 2 or 4 shall not exceed 1,450 tons P_2O_5 per calendar day.
   ii. The feed rate (uncalcined rock) to train 3 shall not exceed 1,450 tons P_2O_5 per calendar day.
   iii. The feed rate (uncalcined rock) to train 4 shall not exceed 1,700 tons P_2O_5 per calendar day.

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ.

Monitoring/Recordkeeping

c. The Permittee shall use the production logbook (written or electronic form) (as mandated in Section 2.1.5 A.1.d, above) to document the compliance with the above requirement.

Reporting

d. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period

between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

7. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – SO_2 and H_2S

a. Beginning **March 10, 2013**, the Permittee shall continuously monitor the following parameters as provided in Section 2.1.5 A.1.d through A.1.g, above,:
   i. The pressure drop across each scrubber; and
   ii. The scrubbant rate to each scrubber.
   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if the monitoring and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. If the daily average (midnight to midnight) of any monitored parameter falls outside the following ranges, the Permittee shall conduct an inspection and perform maintenance pursuant to standard operating procedures:
   i. Crossflow scrubbers Nos. 1 to 3 - pressure drop: 0.65 to 3.4 inches of water; flow rate: 722 to 1,113 gpm;
   ii. Crossflow scrubber No. 4 - pressure drop: 0.65 to 3.4 inches of water; flow rate: 722 to 1,113 gpm; and
   iii. Cyclonic scrubbers Nos. 1/2 and 3/4 - pressure drop: 6.9 to 9.2 inches of water; flow rate: 53 to 113 gpm.
   If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness and QA/QC. The Permittee shall develop and implement a quality assurance program (QAP) for the device in accordance with the provisions of 15A NCAC 02D .0613. Existing plant QA/QC procedures/manufacturer's recommended quality assurance procedures may be used as a QAP if they meet the requirements of 15A NCAC 02D .0613.

d. Averaging Periods. Compliance with the emission limitations are determined on daily average (midnight to midnight) basis.

2.1.5.B Four phosphoric acid storage tanks (ID Nos. 433-188 (020), 433-001 (030), 433-010 (031), and 433-050 (040)), ep421
Four phosphoric acid/green acid storage tanks (ID Nos. 433-020 (032), 433-030 (033), 433-120 (034), and 433-100 (060)) and one carbon storage tank (ID No. 433-140), ep422
Slurry mix tank (ID No. 426-156) and one clarifier tank (T100) (ID No. 433-158), ep450
Four HFSA Tanks (ID Nos. 428-440, 428-442, 428-445, and 428-450) and one carbon day tank (ID No. 433-183), ep492
Clarifier tank (080) (ID No. 433-127) controlled by one venturi scrubber (ID No. 433-133), ep423

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
TAPS	**State-enforceable only** **See Section 2.2.A.2 and Attachment 1**	15A NCAC 02D .1100

State-enforceable only

1. 15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSION LIMITATIONS AND REQUIREMENTS

a. The clarifier tank **(ID No. 433-127)** shall not be vented to the atmosphere without the emissions first being treated by the scrubber **(ID No. 433-133)**. The scrubber shall be operated and a scrubbant flow rate shall be maintained whenever emissions from the clarifier tank are vented to it.

Reporting

b. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.1.5.C Phosphate rock jet conveyors reactor train No. 1 (ID Nos. 429-002 and 421-115), ep430 Phosphate rock jet conveyors reactor train No. 2 (ID Nos. 429-005 and 422-115), ep431

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	10.7 pounds per day	15A NCAC 02D .0530
Total Fluoride	0.0178 pounds per hour	15A NCAC 02D .0530
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
PM_{10}	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
Toxic Air Pollutants	**State-enforceable only** **See Section 2.2.A.2 and attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD), BACT

a. For the identified Phosphoric Acid trains the following table shall describe the emission standards:

Emission Source	Pollutant	BACT Technology	Emission Limit
PA No. 1 Rock Transfer Point conveyor GS-103 and PA Train 1 transfer point (ep 430)	Total Fluorides	enclosure and fabric filtration	1.78×10^{-2} pound per hour
PA No. 1 Rock Transfer Point conveyor GS-103 and PA Train 1 transfer point (ep 430)	PM_{10}	enclosure and fabric filtration	10.7 pounds per day
PA No. 2 Rock Transfer Point conveyor GS-203 and PA Train 2 transfer point (ep 431)	Total Fluorides	enclosure and fabric filtration	1.78×10^{-2} pound per hour
PA No. 2 Rock Transfer Point conveyor GS-203 and PA Train 2 transfer point (ep 431)	PM_{10}	enclosure and fabric filtration	10.7 pounds per day

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from the conveyor belt drop point shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.5.C 2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Rcordkeeping [15A NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.5.C.2.a above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10}

a. Beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations and retain records of the observations in accordance with Section 2.1.5.C.2.c and d of this permit. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal from a phosphate rock jet conveyor reactor train, the Permittee shall conduct an inspection of the associated bagfilter and perform maintenance pursuant to standard operating procedures. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

2.1.5.D Phosphate rock storage silo No. 1 (ID No. 429-152) and three transfer points (ID Nos. 429-001, 429-004, and 429-151), ep434

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	8.74 pounds per day	15A NCAC 02D .0530
Total Fluoride	0.0146 pounds per hour	15A NCAC 02D .0530
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
PM_{10}	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
Toxic Air Pollutants	**State-enforceable only** **See Section 2.2.A.2 and attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD), BACT

a. For the identified Phosphoric Acid trains the following table shall describe the emission standards:

Emission Source	Pollutant	BACT Technology	Emission Limit
PA Rock Transfer Points conveyor 70-2 transfer point (ep434)	Total Fluorides	enclosure and fabric filtration	1.46×10^{-2} pound per hour
PA Rock Transfer Points conveyor 70-2 transfer point (ep434)	PM_{10}	enclosure and fabric filtration	8.74 pounds per day

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from the conveyor belt drop point shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.5.D.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. The results of these observations shall be recorded in a logbook (written or electronic form).
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.5.D.2.a above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10}

a. Beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations and retain records of the observations in accordance with Section 2.1.5.D.2.c. and d. of this permit. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal from the phosphate rock storage silo or transfer points, the Permittee shall conduct an inspection of the associated bagfilter and perform maintenance pursuant to standard operating procedures. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

2.1.5.E Phosphate Rock Transfer House (ID No. 429-150), ep437

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	6.58 pounds per day	15A NCAC 02D .0530 **BACT**
Total Fluoride	0.0110 pounds per hour	
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
PM_{10}	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
Toxic Air Pollutants	**State-enforceable only** **See Section 2.2.A.2 and attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT

a. For the identified Phosphoric Acid processes the following table shall describe the emission standards:

Emission Source	Pollutant	BACT Technology	Emission Limit
PA Rock Transfer Point conveyor 70-1 and 70-2 transfer point (ep437)	Total Fluorides	Enclosure and fabric filtration	1.10×10^{-2} lb/hr
PA Rock Transfer Point conveyor 70-1 and 70-2 transfer point (ep437)	PM_{10}	Enclosure and fabric filtration	6.58 lb/day

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from the conveyor belt drop point shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.5.E.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15 NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.5.E.2.a above.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10}

a. Beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations and retain records of the observations in accordance with Section 2.1.5.E.2.c and d of this permit. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal from a phosphate rock jet conveyor reactor train, the Permittee shall conduct an inspection of the associated bagfilter and perform maintenance pursuant to standard operating procedures. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

2.1.5.F Diatomaceous Earth Silo (ID No. 426-154), ep451
Additive Storage Silo (ID No. 426-240), ep494
Additive Weigh Feed Hopper (ID No. 426-244), ep496

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E= 4.10 \times P^{0.67}$ Where: E = allowable emission rate in pounds per hour P = rock throughput in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
PM_{10}	(**ID No. 426-154 only**) Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1.** (**ID No. 426-240 and 426-244**)	15A NCAC 02D .0530(u)

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from these sources shall not exceed an allowable emission rate as calculated by the following equation:

$E=4.10 \times P^{0.67}$ Where: E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from the transfer pipe shall be controlled by the bagfilter. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each

calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.5.F.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15 NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. The Permittee shall establish "normal" for the sources (**ID Nos. 426-240 and 426-244**) in the first 30 days following the commencement of operation. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.5.F.2.aabove.

   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10}

a. For emission source (**ID No. 426-154**), beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations and retain records of the observations in accordance with Section 2.1.5.F.2.c and d of this permit. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal from the diatomaceous earth silo, the Permittee shall conduct an inspection of the associated bagfilter and perform maintenance pursuant to standard operating procedures. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

2.1.5.G Phosphoric Acid Recirculation Water Cooling Tower Fans (ID Nos. ES461 and ES462), ep461, ep462

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
HAPs	Operating limitations	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA

1. **15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – Phosphoric Acid Manufacturing Plants)**
   Operation of the cooling tower shall be limited as follows: No introduction of any liquid effluent from any wet scrubbing device installed to control emissions from process equipment into any evaporative cooling tower shall be allowed. Compliance with this requirement shall be shown during inspections by the DAQ and by certification by the Permittee. [40 CFR 63.603(e)]

2.1.5.H RESERVED

2.1.5.I <u>HF Production Process</u>

HF Loading and storage (ID No. GW01) with venturi scrubbers (ID Nos. HFVS-1 and HFVS-2) and packed bed scrubbers (ID Nos. HFPB-1 and HFPB-2), ep440 and ep441
HF Trains 1 and 2 (ID Nos. GW03-A and GW03-B) with venturi scrubbers (ID Nos. HFVS-1 and HFVS-2) and packed bed scrubbers (ID Nos. HFPB-1 and HFPB-2), ep440 and ep441, respectively
HF Trains 1 and 2 during shutdown (ID Nos. GW03-A and GW03-B) with venturi scrubbers (ID Nos. 436-180 and 438-180), ep447 and ep448, respectively
Additive storage silo (ID No. LS-1) with fabric filter (ID No. LSBF-1), ep426
Additive bin (ID No. LB-1) with fabric filter (ID No. LBF-1), ep427
Cooling tower (ID No. CT444), ep 428

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E= 4.10 \times P^{0.67}$ Where: E = allowable emission rate in pounds per hour P = rock throughput in tons per hour (**ID Nos. LS-1 and LB-1, only**)	15A NCAC 02D .0515
Visible Emissions	20 percent opacity (**ID Nos. LS-1 and LB-1, only**)	15A NCAC 02D .0521
Hydrogen fluoride Fluoride (excluding hydrogen fluoride) Hydrogen chloride	Conduct source test **(ep440 or ep441)**	NCGS 143-215.108
Toxic Air Pollutants	**State-enforceable only** **See Section 2.2 A.2, Attachment 1**	15A NCAC 02D .1100

1. **15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES**
   a. Emissions of particulate matter from these sources (**ID Nos. LS-1 and LB-1**) shall not exceed an allowable emission rate as calculated by the following equation:

   $E=4.10 \times P^{0.67}$ Where: E = allowable emission rate in pounds per hour
   P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Particulate matter emissions from these emission sources these sources (**ID Nos. LS-1 and LB-1**) shall be controlled by fabric filters **(ID No. LSBF-1 and LBF-1)**, respectively. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities given in Sections 2.1.5.I.1.c and d postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources (**ID Nos. LS-1 and LB-1**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.5.I.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring [15 NCAC 02Q .0508(f)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of this/these sources (**ID Nos. LS-1 and LB-1**) for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. The Permittee shall establish "normal" for these sources in the first 30 days following the effective date of of beginning operation. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.5.I.2.a above.

   The Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521 if the required monthly observations are not conducted as required; if the above-normal emissions are not corrected within the monitoring

period or the percent opacity demonstration cannot be made; or if "normal" is not established for these sources in the first 30 days following the effective date of beginning operation.

Recordkeeping [15A NCAC 02Q .0508(f)]

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. the results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of the monitoring and recordkeeping activities given in Sections 2.1.5.I.2.c and d above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. RESERVED

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4. NCGS 143-215.108: CONTROL OF SOURCES OF AIR POLLUTION; PERMITS REQUIRED

a. Under the provisions of North Carolina General Statute 143-215.108 and in accordance with 15A NCAC 02D .0605, the Permittee shall conduct source testing to quantify the emissions of hydrogen fluoride, fluoride (excluding hydrogen fluoride), and hydrogen chloride from HF Train 1 or 2 **(ep440 or ep441).** Results obtained from the tested train shall be considered representative of emissions from the other train.

Testing [15A NCAC 02Q .0508(f)]

b. The Permittee shall perform such testing in accordance with 15A NCAC 02D .2600.
c. At least 45 days prior to performing any required emissions testing, the Permittee must submit a testing protocol to the Regional Supervisor, DAQ, for review and approval. All testing protocols must be approved by the DAQ prior to performing such tests.
d. To afford the Regional Supervisor, DAQ, the opportunity to have an observer present, the Permittee shall provide the Regional Office, in writing, at least 15 days notice of any required performance test(s).
e. The emission tests shall be conducted no later than 180 days after the initial startup of the affected sources. During the source test, the Permittee shall determine emission rates of hydrogen fluoride, fluoride (excluding hydrogen fluoride), and hydrogen chloride in accordance with a DAQ-approved test method.
f. The Permittee shall be responsible for ensuring, within the limits of practicality, that the equipment or process being tested is operated at or near its maximum normal production rate or at a lesser rate if specified by the Director or his delegate.

Reporting [15A NCAC 02Q .0508(f), 15A NCAC 02D .2602(h)]

g. The test report shall be submitted to the the Regional Supervisor, DAQ, not later than 30 days after sample collection. The Permittee may request an extension to submit the final test report. The Regional Supervisor, DAQ, shall approve an extension request if he finds that the extension request is a result of actions beyond the control of the Permittee.

2.1.6 Purified Acid Production Area

2.1.6.A Purified Acid Plant No. 1

**Three scrub acid storage tanks (ID Nos. T24, T224, T324),
Seal pot (ID No. T346),
Four extraction columns under nitrogen (ID Nos. C10, C20, C210, C220),
Ten Tanks under nitrogen (ID Nos. T7, T12, T13, T212, T213, T1, T201, T40, T240, T57),
Four tanks with Seal Pots Under Nitrogen Blanket System (T54, T44, T244, T34),
Five seal pots under nitrogen (ID No. T8, T15, T215, T315, T58),
Six separators under nitrogen (ID Nos. S53, S43, S243, S253, S33, S5),
Still under nitrogen (ID No. S4),
Five strippers under nitrogen (ID No. S42, S242, S32, S52, S54), and
Scrubber under nitrogen (ID No. S324), ep501**

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Methyl Isobutyl Ketone (MIBK)	twenty parts per million in each product acid stream (thirty day average)	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA
	thirty parts per million in each raffinate stream (thirty day average)	
	chiller gas steam exit temperature less than or equal to 50 degrees Fahrenheit	
	See Section 2.2 C.2	15A NCAC 02D .1111 40 CFR 63, Subpart H

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – PHOSPHORIC ACID MANUFACTURING PLANTS)

a. Operation of the Purified Acid Plant No. 1 shall be limited to not exceed any of the following:
   i. A 30-day average of daily concentration measurements of methyl isobutyl ketone in excess of 20 ppm for each product acid stream.
   ii. A 30-day average of daily concentration measurements of methyl isobutyl ketone in excess of 30 ppm for each raffinate stream.
   iii. A daily average chiller stack exit gas stream temperature less than or equal to 50 degrees F. [40 CFR 63.602(f)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.A 1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The Permittee shall:
   i. Install, calibrate, maintain, and operate a monitoring system which continuously measures and permanently records the stack gas exit temperature for each chiller stack.
   ii. Measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once daily.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the monitored parameters exceed limits or standards given in section a. above.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.600(e)]

d. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of §63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of §63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized

representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

e. The emission limitations and operating parameter requirements of Section 2.1.6.A.1. of this permit do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in §63.2, provided that the source is operated in accordance with §63.6(e)(1)(i).

Leak Detection and Repair Requirements [40 CFR 63.602(f)]

f. The Permittee shall comply with the provisions of 40 CFR 63, Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks). Affected equipment includes the following:
   i. pumps in light liquid service (§63.163),
   ii. compressors (§63.164),
   iii. pressure relief devices in gas/vapor service (§63.165),
   iv. sampling connection systems (§63.166),
   v. open-ended valves or lines (§63.167),
   vi. valves in gas/vapor service and light liquid service (§63.168),
   vii. pumps, valves, connectors, and agitators in heavy liquid service, instrumentation systems, and pressure relief devices in liquid service (§63.169),
   viii. surge control vessels and bottoms receivers (§63.170),
   ix. delay of repair equipment (§63.171),
   x. closed-vent systems and control devices (§63.172),
   xi. agitators in gas/vapor service and in light liquid service (§63.173),
   xii. connectors in gas/vapor service and in light liquid service (§63.174),

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if a leak detection and repair program that is consistent with the requirements of this Subpart is not implemented, including required recordkeeping requirements pursuant to 40 CFR 63.181.

Reporting [15A NCAC 02Q .0508(f)]

g. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

h. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2.1.6.B Purified Acid Plant No. 1 – three acid defluorination columns with concentrators (ID Nos. ID S88/T70, S288/T100, S118/T270), ep502

The following table provides a summary of limits and standards for the emission sources described above:

Pollutant	Limits/Standards	Applicable Regulation
TAP	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100

2.1.6.C Purified Acid Plant No. 1 – Direct Cooling Tower (ID No. E180 (CT-1)), ep510/511 Indirect Cooling Tower (ID No. E181 (CT-2)), ep512/513

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
HAP	Operating limitations	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA

1. **15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – PHOSPHORIC ACID MANUFACTURING PLANTS)**
   Operation of the cooling towers shall be limited as follows: No introduction of any liquid effluent from any wet scrubbing device installed to control emissions from process equipment into any evaporative cooling tower shall be allowed. Compliance with this requirement shall be shown during inspections by the DAQ and by certification by the Permittee. [40 CFR 63.603(e)]

2.1.6.D <u>Purified Acid Plant No. 2</u>

Two scrub acid storage tanks (ID Nos. T1024, T1324),
Seal pot (ID No. T1346),
Two extraction columns under nitrogen (ID No. C1010, C1020),
Seven tanks under nitrogen (ID Nos. T1007, T1012, T1013, T1212, T1001, T1040, T1057),
Three tanks with seal pots under nitrogen (ID Nos. T1054, T1044, T1034),
Five seal pots under nitrogen (ID Nos. T1008, T1015, T1215, T1315, T1058),
Five separators under nitrogen (ID Nos. S1043, S1053, S1253, S1033, S1005),
Still under nitrogen (ID No. S1004),
Four strippers under nitrogen (ID Nos. S1042, S1032, S1052, S1054),
Scrubber under nitrogen (ID No. S1324), ep503

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Methyl Isobutyl Ketone (MIBK)	twenty parts per million in each product acid stream (thirty day average)	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA
	thirty parts per million in each raffinate stream (thirty day average)	
	chiller gas steam exit temperature less than or equal to 50 degrees Fahrenheit	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA 15A NCAC 02D.0530 **BACT**
Total Fluorides	0.0152 pounds per hour	15A NCAC 02D .0530 **BACT**
HAPs	**See Section 2.2 C.2.**	15A NCAC 02D .1111 40 CFR 63 Subpart H

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – PHOSPHORIC ACID MANUFACTURING PLANTS)

a. Operation of the Purified Acid Plant No. 2 shall be limited to not exceed any of the following:
   i. A 30-day average of daily concentration measurements of methyl isobutyl ketone in excess of 20 ppm for each product acid stream.
   ii. A 30-day average of daily concentration measurements of methyl isobutyl ketone in excess of 30 ppm for each raffinate stream.
   iii. A daily average chiller stack exit gas stream temperature less than or equal to 50 degrees F. [40 CFR 63.602(f)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.D.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The Permittee shall install, calibrate, maintain, and operate a monitoring system that continuously measures and permanently records the stack gas exit temperature for each chiller stack.

d. The Permittee shall measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once daily. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the monitored values exceed a limit or standard given in a. above.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.600(e)]

e. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of §63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of §63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

f. The emission limitations and operating parameter requirements of Section 2.1.6.D.1. of this permit do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in §63.2, provided that the source is operated in accordance with §63.6(e)(1)(i).

Leak Detection and Repair Requirements [40 CFR 63.602(f)]

g. The Permittee shall comply with the provisions of 40 CFR 63, Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks). Affected equipment includes the following:
   i. Pumps in light liquid service (§63.163),
   ii. Compressors (§63.164),
   iii. Pressure relief devices in gas/vapor service (§63.165),
   iv. Sampling connection systems (§63.166),
   v. Open-ended valves or lines (§63.167),
   vi. Valves in gas/vapor service and light liquid service (§63.168),
   vii. Pumps, valves, connectors, and agitators in heavy liquid service, instrumentation systems, and pressure relief devices in liquid service (§63.169),
   viii. Surge control vessels and bottoms receivers (§63.170),
   ix. Delay of repair equipment (§63.171),
   x. Closed-vent systems and control devices (§63.172),
   xi. Agitators in gas/vapor service and in light liquid service (§63.173), and
   xii. Connectors in gas/vapor service and in light liquid service (§63.174).

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if a leak detection and repair program that is consistent with the requirements of this Subpart is not implemented, including required recordkeeping requirements pursuant to 40 CFR 63.181.

Reporting [15A NCAC 02Q .0508(f)]

h. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be

postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

i. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD), BACT

a. For Purified Acid Plant No. 2 the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit
Purified Acid Plant No. 2, Chiller Stack (ep503)	VOC	Chiller	Maintain a daily average chiller stack exit gas stream temperature less than or equal to 50 °F
Purified Acid Plant No. 2, Chiller Stack (ep503)	Total Fluorides	Chiller	1.52×10^{-2} pounds per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.D.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall conduct a performance test once per five-year permit period to demonstrate compliance with the applicable emission standard for the purified phosphoric acid plant chiller stack. Details of the emissions testing and requirements can be found in General Condition JJ. The chiller stack shall be tested at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall install, calibrate, maintain, and operate a monitoring system that continuously measures and permanently records the stack gas exit temperature for each chiller stack.

e. The Permittee shall measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once daily. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these monitoring systems are not maintained, calibrated, operated, and the results recorded. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these monitoring systems any exceedances of the standards given in Section 2.1.6.D.2.a above.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.1.6.E Purified Acid Plant No. 2 – two acid defluorination column/concentrators (ID No. S1088/T1070 and S1118/T1100), ep504

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Total Fluorides	0.0688 pounds per hour	15A NCAC 02D .0530 **BACT**
Total Fluorides	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
TAPS	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT

a. Each of the two acid defluorination column/concentrators shall be controlled with a scrubber and total fluoride emissions from all units shall not exceed 0.0688 pounds per hour.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.E 1.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall conduct a performance test once per five-year permit period to demonstrate compliance with the applicable emission standard for Emission Point 504. Details of the emissions testing and requirements can be found in Section 3 – General Condition JJ. The scrubber stack shall be tested at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall install, calibrate, maintain, and operate a monitoring system that continuously measures and permanently records the pond liquid injection rate for each wet spray tower scrubber. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these monitoring systems are not maintained, calibrated, operated, and the results recorded.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10} and Total Fluorides

a. Beginning **March 10, 2013**, the Permittee shall continuously monitor and record the pond liquid injection rate for each wet spray tower scrubber **(ID Nos. S1092 and S1122)** as required in Section 2.1.6.E.1.d above. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if the flow rate is not monitored and recorded as provided above.

Indicator Range [15A NCAC 02D .0614]

b. If the daily average (midnight-to-midnight) of the monitored scrubbing liquid flow rate falls below the following values, the Permittee shall conduct an inspection of the associated scrubber and perform maintenance pursuant to standard operating procedures:

i. ID No. S1092 – 1,254 gpm~~;~~

ii. ID No. S1122 - 900 gpm;

If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness and QA/QC. The Permittee shall develop and implement a quality assurance program (QAP) for the device in accordance with the provisions of 15A NCAC 02D .0613. Existing plant QA/QC procedures/manufacturer's recommended quality assurance procedures may be used as a QAP if they meet the requirements of 15A NCAC 02D .0613.

d. Averaging Periods. Compliance with the emission limitations are determined on a daily average (midnight-to-midnight) basis.

2.1.6.F Purified Acid Plant No. 2 –Direct Cooling Tower No. 1 (ID No. E1180), ep514/515

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Total Fluorides	0.072 pounds per hour	15A NCAC 02D .0530 **BACT**
Particulate Matter	0.11 pounds per hour	
HAPs	Operating Restriction	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – PHOSPHORIC ACID MANUFACTURING PLANTS)

Operation of the cooling towers shall be limited as follows: No introduction of any liquid effluent from any wet scrubbing device installed to control emissions from process equipment into any evaporative cooling tower shall be allowed. Compliance with this requirement shall be shown during inspections by the DAQ and by certification by the Permittee. [40 CFR 63.603(e)]

2. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT

a. For the concentrators, the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit
PAP No. 2 Cooling Tower No. 1	PM_{10}	Drift Elimination System	0.11 pounds per hour
PAP No. 2 Cooling Tower No. 1	Total Fluorides	Drift Elimination System	0.072 pounds per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.F.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

2.1.6.G Purified Acid Plant No. 2 –Indirect Cooling Tower No. 3 (ID No. E1181), ep516/517

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM	0.072 pounds per hour	15A NCAC 02D .0530 **BACT**
HAPs	Operating Restrictions	15 A NCAC 02D .1111 40 CFR Part 63, Subpart AA

1. **15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – Phosphoric Acid Manufacturing Plants)**
   Operation of the cooling towers shall be limited as follows: No introduction of any liquid effluent from any wet scrubbing device installed to control emissions from process equipment into any evaporative cooling tower shall be allowed. Compliance with this requirement shall be shown during inspections by the DAQ and by certification by the Permittee. [40 CFR 63.603(e)]

2. **15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT**
   a. For the PAP Indirect Cooling Tower, the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit
PAP No. 2 Cooling Tower No. 2	PM_{10}	Drift Elimination System	0.072 pounds per hour

   Testing [15A NCAC 02Q .0508(f)]
   b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.G.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

   Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]
   c. No monitoring/recordkeeping/reporting is required to show compliance with this standard.

2.1.6.H Purified Acid Plant No. 2 Train No. 4
Gas chiller (ID No. GC-2) controlling the following:
Two scrub acid storage tanks (ID Nos. T1524, T1224),
Seal pot (ID No. T1546),
Two extraction columns under nitrogen (ID Nos. C1210, C1220),
Five tanks under nitrogen (ID Nos. T1201, T1207, T1213, T1240, T1257),
Tank with seal pot under nitrogen (ID No. T1244),
Five emergency vent pots (ID Nos. T1415, T1515, T1208, T1258, T1546),
Two separators under nitrogen (ID Nos. S1243, S1205),
Stripper under nitrogen (ID No. S1242),
Solvent still (ID No. S1204), ep503

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Methyl Isobutyl Ketone (MIBK)	twenty parts per million in each product acid stream (thirty day average)	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA
	thirty parts per million in each raffinate stream (thirty day average)	
	chiller gas steam exit temperature less than or equal to 50 Fahrenheit	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA 15A NCAC 02D.0530 **BACT**

Pollutant	Limits/Standards	Applicable Regulation
Total Fluorides	0.0152 pounds per hour	15A NCAC 02D .0530 **BACT**
HAPs	**See Section 2.2 C.2**	15A NCAC 02D .1111 40 CFR 63 Subpart H
TAPs	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – PHOSPHORIC ACID MANUFACTURING PLANTS)

a. Operation of the Purified Acid Plant No. 2 Train No. 4 shall be limited to not exceed any of the following:
   i. A thirty day average of daily concentration measurements of methyl isobutyl ketone in excess of twenty parts per million for each product acid stream.
   ii. A thirty day average of daily concentration measurements of methyl isobutyl ketone in excess of thirty parts per million for each raffinate stream.
   iii. A daily average chiller stack exit gas stream temperature less than or equal to fifty degrees Fahrenheit. [40 CFR 63.602(f)]

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.H.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. The Permittee shall install, calibrate, maintain, and operate a monitoring system that continuously measures and permanently records the stack gas exit temperature for each chiller stack.

d. The Permittee shall measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once daily. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems are not maintained, calibrated, operated, and the results recorded. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these monitoring systems any exceedances of the standards given in Section 2.1.2.H.1.a above.

Start-up, Shutdown, and Malfunction Procedures [40 CFR 63.6(e)(3), 40 CFR 63.600(e)]

e. The Permittee shall develop a written startup, shutdown, and malfunction plan in accordance with the requirements of §63.6(e)(3). During startup, shutdown, and malfunction events, the Permittee shall comply with the requirements of §63.6(e)(3)(iii)-(iv). A current version of the plan must be maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if these requirements are not met.

f. The emission limitations and operating parameter requirements of Section 2.1.6.H.1. of this permit do not apply during periods of startup, shutdown, and malfunction, as those terms are defined in §63.2, provided that the source is operated in accordance with §63.6(e)(1)(i).

Leak Detection and Repair Requirements [40 CFR 63.602(f)]

g. The Permittee shall comply with the provisions of 40 CFR 63, Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks). Affected equipment includes the following:
   i. Pumps in light liquid service (§63.163),
   ii. Compressors (§63.164),
   iii. Pressure relief devices in gas/vapor service (§63.165),
   iv. Sampling connection systems (§63.166),
   v. Open-ended valves or lines (§63.167),
   vi. Valves in gas/vapor service and light liquid service (§63.168),
   vii. Pumps, valves, connectors, and agitators in heavy liquid service, instrumentation systems, and pressure relief devices in liquid service (§63.169),
   viii. Surge control vessels and bottoms receivers (§63.170),
   ix. Delay of repair equipment (§63.171),
   x. Closed-vent systems and control devices (§63.172),
   xii. Agitators in gas/vapor service and in light liquid service (§63.173), and

xiii. Connectors in gas/vapor service and in light liquid service (§63.174).
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if a leak detection and repair program that is consistent with the requirements of this Subpart is not implemented, including required recordkeeping requirements pursuant to 40 CFR 63.181.

Reporting [15A NCAC 02Q .0508(f)]

h. Summary report. If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the Permittee shall submit a summary report containing the information specified in §63.10(e)(3)(iv) rather than the full excess emissions report. The summary report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

i. Excess emissions report. If the total duration of control system operating parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the Permittee shall submit both a Summary Report and an excess emissions report for any exceedance of an operating parameter limit. The report shall contain the information specified in 40 CFR 63.10. The report shall be postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. If exceedances are reported, the Permittee shall report quarterly until a request to reduce reporting frequency is approved as described in 40 CFR 63.10.

2. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD), BACT

a. For Purified Acid Plant No. 2, Train No. 4 the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit
Purified Acid Plant (PAP) No. 2 Train No. 4 Chiller Stack (ep503)	VOC	Chiller	Maintain a daily average chiller stack exit gas stream temperature less than or equal to 50 ^{o}F
PAP No. 2 No. 2 Train No. 4 Chiller Stack (ep503)	Total Fluorides	Chiller	1.52 x 10^{-2} pounds per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.H.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall conduct a performance test once per five-year permit period to demonstrate compliance with the applicable emission standard for the purified phosphoric acid plant chiller stack. Details of the emissions testing and requirements can be found in General Condition JJ. The chiller stack shall be tested at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall install, calibrate, maintain, and operate a monitoring system that continuously measures and permanently records the stack gas exit temperature for each chiller stack.

e. The Permittee shall measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once daily. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these monitoring systems are not maintained, calibrated, operated, and the results recorded. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these monitoring systems any exceedances of the standards given in Section 2.1.2.H.2.a above.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2.1.6.I Purified Acid Plant No. 2 Train No. 4 - Acid Defluorination Column/Concentrator (ID No. S1288/T1270), ep506

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Total Fluorides	0.0688 pounds per hour	15A NCAC 02D .0530 **BACT**
Total Fluorides	Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
TAPs	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT

a. For the Acid Defluorination and Concentrators the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit
PAP No. 2 Scrubber Stack (ep506)	Total Fluorides	Scrubbers	6.88×10^{-2} pounds per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.I.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

c. The Permittee shall conduct a performance test once per five-year permit period to demonstrate compliance with the applicable emission standard for Emission Point 506. Details of the emissions testing and requirements can be found in General Condition JJ. The scrubber stack shall be tested at a rate demonstrable by production records to be equal to or greater than the normal production rate of the source. The normal production rate (hourly) shall be calculated by dividing the total annual production for the plant by the number of hours that plant was operated during that year. The facility shall establish the normal production rate using the production records over the last production year. If the results of this test are above the emission standard given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall install, calibrate, maintain, and operate a monitoring system that continuously measures and permanently records the pond liquid injection rate for each wet spray tower scrubber. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these monitoring systems are not maintained, calibrated, operated, and the results recorded.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – PM_{10} and Total Fluorides

a. Beginning **March 10, 2013**, the Permittee shall continuously monitor and record the pond liquid injection rate the wet spray tower scrubber **(ID No. S1292)** as required in Section 2.1.6.I.1.d above. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if the flow rate is not monitored and recorded as provided above.

Indicator Range [15A NCAC 02D .0614]

b. If the daily average (midnight-to-midnight) of the monitored scrubbing liquid flow rate falls below 1,228 gpm, the Permittee shall conduct an inspection of the associated scrubber and perform maintenance pursuant to standard operating procedures. If the Permittee fails to conduct an inspection of the affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness and QA/QC. The Permittee shall develop and implement a quality assurance program (QAP) for the device in accordance with the provisions of 15A NCAC 02D .0613. Existing plant QA/QC procedures/manufacturer's recommended quality assurance procedures may be used as a QAP if they meet the requirements of 15A NCAC 02D .0613.

d. Averaging Periods. Compliance with the emission limitations are determined on a daily average (midnight-to-midnight) basis.

2.1.6.J Purified Acid Plant No. 2 Train No. 4 – Direct Cooling Tower No. 3 (ID No. 1380), ep518/519

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Total Fluorides	0.072 pounds per hour	15A NCAC 02D .0530 **BACT**
Particulate matter	0.0367 pounds per hour	
HAPs	Operating Restrictions	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA

1. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – Phosphoric Acid Manufacturing Plants)

Operation of the cooling towers shall be limited as follows: No introduction of any liquid effluent from any wet scrubbing device installed to control emissions from process equipment into any evaporative cooling tower shall be allowed. Compliance with this requirement shall be shown during inspections by the DAQ and by certification by the Permittee. [40 CFR 63.603(e)]

2. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT

a. For the concentrators, the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit
PAP No. 2 Cooling Tower No. 3	PM_{10}	Drift Elimination System	0.0367 pounds per hour
PAP No. 2 Cooling Tower No. 3	Total Fluorides	Drift Elimination System	0.072 pounds per hour

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.J.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

2.1.6.K Purified Acid Plant No. 2 Train No. 4 – Indirect Cooling Tower No. 4 (ID No. 1381) ep520/521

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Particulate Matter	0.072 pounds per hour	15A NCAC 02D .0530 **BACT**
HAPs	Operating Restrictions	15A NCAC 02D .1111 40 CFR Part 63, Subpart AA

1. **15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR Part 63, Subpart AA – Phosphoric Acid Manufacturing Plants)**
   Operation of the cooling towers shall be limited as follows: No introduction of any liquid effluent from any wet scrubbing device installed to control emissions from process equipment into any evaporative cooling tower shall be allowed. Compliance with this requirement shall be shown during inspections by the DAQ and by certification by the Permittee. [40 CFR 63.603(e)]

2. **15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION (PSD) BACT**
   a. For the PAP Indirect Cooling Tower, the following table shall describe the emission standards:

Emission Source	Pollutant	BACT	Emission Limit
PAP No. 2 Cooling Tower No. 4	PM_{10}	Drift Elimination System	0.072 pounds per hour

   Testing [15A NCAC 02Q .0508(f)]
   b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.6.K.2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

   Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]
   c. No monitoring, recordkeeping, or reporting is required to show compliance with this standard.

2.1.7 Calcium Phosphate Production Area

2.1.7.A Limestone railcar unloading (ID No. 381.105) with associated baghouse (ID No. 381.106), ep759
Three limestone silos (ID Nos. 381.115, 381.125, and 381.135) with associated baghouses (ID Nos. 381.110, 381.120, and 381.130, respectively), ep760, ep 761, and ep762
Limestone supply weigh hopper (ID No. 381.145) with associated exhaust filter (ID No. 381.150), ep765
Ultra low sulfur diesel-fired dryer (ID No. 381.215) and delumper (ID No. 381.240) with associated cyclones (ID Nos. 381.155 and 381.160) and venturi scrubber (ID No. 381.165), ep774
Screening/conveying operations (ID No. 381.SCREEN) with associated dust collectors (ID Nos. 381.385 and 381.390), ep777
Product conveying operations (ID No. 381.CONVEY) with associated dust collector (ID No. 381.490), ep 717
Final screening operations (ID No. 381.FINAL) with associated dust collector (ID No. 381.555), ep 783
Loadout hopper (ID No. 381.575) and conveyer (ID No. 381.435) with associated shipping dust collector (ID No. 381.440), ep 718
Truck/Railcar loadout (ID No. 381.LOAD) with associated dust collector (ID No. 381.585), ep754

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E = 4.10(P)^{0.67}$ Process Rate $\leq$ 30 tons per hour $E = 55.0(P)^{0.11} - 40$ Process Rate > 30 tons per hour Where: E = allowable emission rate in pounds per hour P = rock throughput in tons per hour	15A NCAC 02D .0515
SO_2	**ID No. 381.215 only** 2.3 pounds per million Btu heat input	15A NCAC 02D .0516
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
N/A	Submit Title V permit application within one year from the date of beginning operation of applicable sources	15A NCAC 02Q .0504
TAPs	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from these sources shall not exceed an allowable emission rate as calculated by the following equations:

For process weight rates less than or equal to 30 tons per hour
$E = 4.10(P)^{0.67}$

For process weight rates greater than 30 tons per hour
$E = 55.0(P)^{0.11} - 40$

Where: E = allowable emission rate in pounds per hour
P = rock throughput in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0308(a)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ.

c. Pursuant to NCGS 143-215.108, the Permittee shall determine the minimum daily average pressure drop and liquid injection rate for the venturi scrubber **(ID No. 381.165)** by testing the dryer and delumper **(ID No. 381.215 and 381.240)** for particulate matter (PM) in accordance with General Condition JJ. The testing shall be conducted and source test results submitted to the DAQ within 180 days of commencing operation of the dryer and deulumber.

Monitoring/Recordkeeping [15A NCAC 02Q .0308(a)]

d. Particulate matter emissions from these sources **(ID Nos. 381.105, 381.115, 381.125. 381.135, and 381.145)** shall be controlled by bagfilters. Particulate matter emissions from these sources **(ID Nos. 381.SCREEN, 381.CONVEY, 381.FINAL, 381.575, 381.435, and 381.LOAD)** shall be controlled by dust collectors. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system ductwork and material collection unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the bagfilters' or dust collectors' structural integrity.

e. The results of inspection and maintenance on the bagfilters and dust collectors shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the bagfilters; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

f. Particulate matter emissions from the dryer and delumper **(ID No. 381.215 and 381.240)** shall be controlled by cyclones **(ID Nos. 381.155 and 381.160)** and a venturi scrubber **(ID No. 381.165)**. The venturi scrubber shall meet the minimum daily average pressure drop of the gas stream across the scrubber and the minimum daily average flow rate of the scrubbing liquid established during initial testing specified in above in Section 2.1.7.A.1.c.

g. The Permittee shall install, calibrate, maintain, and operate monitoring systems to monitor and record the following:
   i. The pressure drop of the gas stream across the venturi scrubber; and
   ii. The flow rate of the scrubbing liquid to the venturi scrubber.

Reporting [15A NCAC 02Q .0308(a)]

h. The Permittee shall submit the results of any maintenance performed on the bagfilters or dust collectors within 30 days of a written request by the DAQ.

i. The Permittee shall submit a summary report of monitoring and recordkeeping activities given in Sections 2.1.7.A.1.d through g postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

2. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

a. Emissions of sulfur dioxide from the dryer **(ID No. 381.215)** shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ.

Monitoring/Recordkeeping [15A NCAC 02Q .0308(a)]

c. The maximum sulfur content of any fuel oil received and burned in the dryer shall not exceed 2.1 percent by weight. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516 if the sulfur content of the fuel oil exceeds this limit.

d. To ensure compliance, the Permittee shall monitor the sulfur content of the fuel oil by using fuel oil supplier certification. The results of the fuel oil supplier certifications shall be recorded in a logbook (written or electronic format) on a quarterly basis and include the following information:
   i. The name of the fuel oil supplier;
   ii. The maximum sulfur content of the fuel oil received during the quarter;
   iii. The method used to determine the maximum sulfur content of the fuel oil; and

iv. A certified statement signed by the responsible official that the records of fuel oil supplier certification submitted represent all of the fuel oil fired during the period.

Reporting [15A NCAC 02Q .0308(a)]

e. The Permittee shall submit a summary report of the fuel oil supplier certifications postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

3. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0308(a)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ.

Monitoring/Recordkeeping [15A NCAC 02Q .0308(a)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. The Permittee shall establish "normal" for these sources in the first 30 days following the effective date of beginning operation. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.7.A.3.a. above.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

Reporting [15A NCAC 02Q .0308(a)]

e. The Permittee shall submit a summary report of monitoring and recordkeeping activities given in Sections 2.1.7.A.3.c and d postmarked postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June.

4. 15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT

a. The Permittee shall file a Title V Air Quality Permit Application pursuant to 15A NCAC 02Q .0504. to modify the construction and operation permit on or before 12 months after commencing operation of any of the emission sources or control devices listed in Table 1.7.

Reporting [15A NCAC 02Q .0504]

b. The Permittee shall notify the Regional Office in writing of the date of beginning operation of the first of any of the emission sources or control devices listed in Table 1.7, postmarked no later than 30 days after such date.

2.1.8 Shipping Operations

2.1.8.A Grinder rock load out conveyor transfer station (ID No. F650), ep650
Grinder rock load out conveyor transfer station (ID No. F651), ep651
Rock load out transfer station (ID No. F652), ep652
Phosphate rock transfer station (ID No. F653), ep653
Chute barge rock load out (ID No. F655) ep655
Chute train rock loadout (ID No. F565), ep656
Phosphate rock storage silo (ID No. 429-157), four transfer points (ID Nos. 429-158, 429-009, 429-181, 429-183) with fabric filter, ep435

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
PM/PM_{10}	$E= 55.0 \times P^{0.11} -40$ Where: E = allowable emission rate in pounds per hour P = rock throughput in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
PM_{10}	**(ID No. ep435 only)** Compliance Assurance Monitoring (CAM) Plan	15A NCAC 02D .0614
TAPS	**State-enforceable only** **See Section 2.2 A.2 and Attachment 1**	15A NCAC 02D .1100

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from these sources shall not exceed an allowable emission rate as calculated by the following equation:

$E= 55.0 \times P^{0.11} -40$ Where: E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Requirements c, d, e, and f only apply when the Rock Tower Barge Loadout has been used within the last month. Notification to DAQ is required 30 days prior to startup of this equipment.

d. Particulate matter emissions from these sources shall be controlled by enclosures and control devices where specified. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. A monthly visual inspection of the system enclosures and control unit for leaks; and
   ii. An annual (for each 12 month period following the initial inspection) internal inspection of the enclosure's and control device structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the enclosure is not inspected and maintained.

e. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each inspection;

iii. The results of any maintenance performed on the enclosures; and
iv. Any variance from manufacturer's recommendations, if any, and corrections made.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit the results of any maintenance performed on the enclosures within 30 days of a written request by the DAQ.
g. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.8.A.2.a., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. Requirements c and d only apply when the Rock Tower Barge Loadout has been used within the last month. Notification to DAQ is required 30 days prior to startup of this equipment.
d. To ensure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1.8.A.2.a above.
   If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.
e. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. The date of each recorded action;
   ii. The results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.
   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING – H_2SO_4

a. Beginning **March 10, 2013**, the Permittee shall perform monthly visible emissions observations at the affected source **(ep435)** and retain records of the observations in accordance with Section 2.1.8.A.2.c. and d. of this permit. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if visible emissions observations and associated recordkeeping are not completed as provided above.

Indicator Range [15A NCAC 02D .0614]

b. Each time the monthly visible emissions observation detects visible emissions above normal from the phosphate rock storage silo or associated transfer points, the Permittee shall conduct an inspection of the associated bagfilter and perform maintenance pursuant to standard operating procedures. If the Permittee fails to conduct an inspection of the

affected equipment or maintain records as provided above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614.

Performance Criteria [15A NCAC 02D .0614]

c. Data Representativeness, QA/QC, and Monitoring Frequency. The visible emissions observations shall be made at least once per calendar month by trained personnel. Records of each inspection shall be created and retained. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if it fails to collect or record data as described above.

2.1.9 Miscellaneous Sources

2.1.9.A Diesel-fired emergency engine for backup power at DPW water pumps in mine (ID No. 404-814), ep801
Diesel-fired emergency engine for backup power at wastewater treatment plant (ID No. 130-458)
Diesel-fired emergency engine for backup power at main lift station pumps (ID No. 130-457)
Two diesel-fired fire pump engines – PAP plant (ID Nos. 624-231-484 and 624-293-484)
Diesel-fired emergency engine for backup power at DFP process water pump (ID No. 365-160-523), ep756
Diesel-fired engine for secondary and backup power at DFP kilns (ID No. 365-136-484), ep755
Diesel-fired emergency engine for ammonia emergency deluge system (ID No. 555-218-484)
LPG-fired 4SRB emergency engine for backup power at radio tower (ID No. 190-400-484)
LPG-fired 4SRB emergency engine for backup power for the No. 7 Sulfuric Acid Plant turbine lube oil pump (ID No. 407-401), ep 108

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 02D .0516
Visible emissions	20 percent opacity	15A NCAC 02D .0521
NOx	**(Diesel-fired emergency engine for backup power at DPW water pumps in mine; ID No. 404-814 only)** 39.3 tons per year	15A NCAC 02Q .0317 *(Avoidance of 15A NCAC 02D .0530)*
Hazardous air pollutants	**(ID Nos. 130-458, 130-457, 624-231-484, and 624-293-484 only)** National Emission Standards for Hazardous Air Pollutants from Stationary Reciprocating Internal Combustion Engines	15A NCAC 02D .1111 (40 CFR 63, Subpart ZZZZ)
Hazardous air pollutants	**(ID Nos. 365-136-484 only)** National Emission Standards for Hazardous Air Pollutants from Stationary Reciprocating Internal Combustion Engines	15A NCAC 02D .1111 (40 CFR 63, Subpart ZZZZ)
Hazardous air pollutants	**(ID Nos. 365-160-523 and 555-218-484 only)** National Emission Standards for Hazardous Air Pollutants from Stationary Reciprocating Internal Combustion Engines	15A NCAC 02D .1111 (40 CFR 63, Subpart ZZZZ)
	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	15A NCAC 02D .0524 (40 CFR 60, Subpart IIII)
Hazardous air pollutants	**(ID Nos. 190-400-484 and 407-401 only)** National Emission Standards for Hazardous Air Pollutants from Stationary Reciprocating Internal Combustion Engines	15A NCAC 02D .1111 (40 CFR 63, Subpart ZZZZ)
	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	15A NCAC 02D .0524 (40 CFR 60, Subpart JJJJ)

1. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

a. Emissions of sulfur dioxide from these sources **(ID Nos. 404-814, 130-458, 130-457, 190-400-484, 624-231-484, 624-293-484, 365-160-523, 365-136-484, 555-218-484 and 407-401)** shall not exceed **2.3 pounds per million Btu heat input**. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.9 A.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0516.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

c. No monitoring/recordkeeping/reporting is required for sulfur dioxide emissions from the firing of diesel/LPG in these sources **(ID Nos. 404-814, 130-458, 130-457, 190-400-484, 624-231-484, 624-293-484, 365-160-523, 365-136-484, 555-218-484 and 407-401)**.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources **(ID Nos. 404-814, 130-458, 130-457, 190-400-484, 624-231-484, 624-293-484, 365-160-523, 365-136-484, 555-218-484 and 407-401)** shall not be more than **20 percent opacity** (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.9.A.2.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of diesel/LPG in these sources **(ID Nos. 404-814, 130-458, 130-457, 190-400-484, 624-231-484, 624-293-484, 365-160-523, 365-136-484, 555-218-484 and 407-401)**.

3. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. The generator **(ID No. 404-814)** shall discharge into the atmosphere less than 40 tons of nitrogen oxides per consecutive 12-month period.

b. To ensure compliance with the emission limit above total fuel usage in the generator shall be limited to 446,000 gallons of diesel fuel per consecutive 12-month period.

Testing [15A NCAC 02Q .0508(f)]

c. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.9.A.3.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

d. The Permittee shall maintain fuel usage log (written or electronic form) that demonstrates that actual annual (12-month) consumption of diesel fuel from the source less than the limit in Section 2.1.9.A.3.a. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the fuel usage exceeds the above limit. The log must be made available to an authorized representative upon request.

Reporting [15A NCAC 02Q .0508(f)]

e. The Permittee shall submit a summary report of the observations by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

4. 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Applicability [40 CFR 63.6585, 63.6590]

a. For these emission sources **(ID Nos. 130-458, 130-457, 624-231-484, and 624-293-484)** (existing, emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions) the Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, "Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines."

Definitions and Nomenclature

b. For the purposes of this permit condition, the definitions and nomenclature contained in 40 CFR 63.6675 shall apply.

Applicability Date [40 CFR 63.6595(a)(1)]

c. The Permittee shall comply with the applicable requirements no later than **May 3, 2013**.

Notifications [40 CFR 63.6645(a)(5)]

d. The Permittee has no notification requirements.

General Provisions [40 CFR 63.6665]

e. The Permittee shall comply with the General Provisions as applicable pursuant to Table 8 of 40 CFR 63 Subpart ZZZZ

Operating and Maintenance Requirements [15A NCAC 02Q .0508(b)]

f. During periods of startup of the IC engine, the Permittee shall minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR 63.6602 and 63.6625(h)]

g. Except during periods of startup of the IC engine, the Permittee shall:
   i. Change oil and filter every 500 hours of operation or annually, whichever comes first;
   ii. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
   iii. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6602, Table 2C, Item 1]

h. The Permittee shall have the option to utilize the oil analysis program as described in 40 CFR 63.6625(i) in order to extend the specified oil change requirement in condition g. [40 CFR 63.6602, Table 2C, 63.6625(i)]

i. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in condition g., or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable. [40 CFR 63.6602, Table 2C]

j. The Permittee shall be in compliance with the emission limitations and operating limitations in this subpart that apply at all times. [40 CFR 63.6605(a)]

k. The Permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b)]

l. The Permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e) and 63.6640(a), Table 6]

m. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in these conditions, is prohibited. [40 CF 63.6640(f)(1)]

n. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1)(i)]
o. The Permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year. [40 CFR 63.6640(f)(1)(ii)]
p. The Permittee may operate the emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing.
    i. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level.
    ii. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent.
    iii. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations.
    iv. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power. [40 CFR 63.6640(f)(1)(iii)]

    The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if Section 2.1.9 A.4 e through p are not met.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

q. The Permittee shall install a non-resettable hour meter on the IC engine if one is not already installed. [40 CFR 63.6625(f)]
r. The Permittee shall keep the following:
    i. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.6655(a)(1)]
    ii. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. [40 CFR 63.6655(a)(2)]
    iii. Records of all required maintenance performed on the air pollution control and monitoring equipment. [40 CFR 63.6655(a)(4)]
    iv. Records of actions taken during periods of malfunction to minimize emissions in accordance with Section 2.1.9 A.4.k, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.6655(a)(5)]
    v. Records of the maintenance conducted on the RICE pursuant to Section 2.1.9 A.4.i.[40 CFR 63.6655(d) and (e)]
    vi. Records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the Permittee shall keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. [40 CFR 63.6655(f)(1)]
s. The Permittee shall keep each record in a form suitable and readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). [40 CFR 63.6660(a),(b),(c)]

    The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if Section 2.1.9 A.4.q through s are not met.

Reporting [15A NCAC 02Q .0508(f)]

t. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each

calendar year for the preceding six-month period between January and June. All instances of noncompliance must be clearly identified. [40 CFR 63.6640(b),(e), and 63.6650(f)]

i. The summary report shall also include any reporting required under Section 2.1.9 A.4.i, as necessary. [40 CFR 63.6602, Table 2C]

The Permittee shall be deemed in noncompliance with the reporting requirements of 15A NCAC 02D .1111 if Section 2.1.9 A.4 is not met.

5. 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Applicability [40 CFR 63.6585, 6590(a)(1)(ii)]

a. For this source **(ID Nos. 365-136-484)** (existing, non-emergency stationary RICE with a site rating of less than or equal to 100 brake HP located at a major source of HAP emissions) the Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines" and Subpart A "General Provisions."

Applicability Date [40 CFR 63.6595(a)(1)]

b. The Permittee shall comply with the applicable requirements no later than **May 3, 2013**.

Notifications [40 CFR 63.6645(a)(5)]

c. The Permittee has no notification requirements.

General Provisions [40 CFR 63.6665]

d. The Permittee shall comply with the General Provisions as applicable pursuant to Table 8 of 40 CFR 63 Subpart ZZZZ.

Operating and Maintenance Requirements [15A NCAC 02Q .0508(b)]

e. During periods of startup of the IC engine, the Permittee shall minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR 63.6602, Table 2C, 63.6625(h)]

f. Except during periods of startup of the IC engine, the Permittee shall:
   i. Change oil and filter every 1,000 hours of operation or annually, whichever comes first;
   ii. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
   iii. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6602, Table 2c, Item 2]

g. The Permittee shall have the option to utilize the oil analysis program as described in 40 CFR 63.6625(i) in order to extend the specified oil change requirement in (Table 2C) condition f. [40 CFR 63.6602, Table 2C, 63.6625(i)]

h. The Permittee shall be in compliance with the emission limitations and operating limitations in this subpart (conditions e. through j.) that apply at all times. [40 CFR 63.6605(a)]

i. The Permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b)]

j. The Permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e) and 63.6640(a), Table 6]

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the requirements of Section 2.1.9 A.5 d through j are not met.

Recordkeeping [15A NCAC 02Q .0508(f)]

k. The Permittee shall keep the following:
   i. A copy of each notification and report that was submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted, according to the requirement in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.6655(a)(1)]
   ii. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. [40 CFR 63.6655(a)(2)]
   iii. Records of all required maintenance performed on the air pollution control and monitoring equipment. [40 CFR 63.6655(a)(4)]
   iv. Records of actions taken during periods of malfunction to minimize emissions in accordance with condition i. [40 CFR 63.6605(b)], including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.6655(a)(5)]
   v. Records required to show continuous compliance with each operating and maintenance requirement in conditions e through j. [40 CFR 63.6655(d) and (e)]

l. The Permittee shall keep each record in a form suitable and readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). [40 CFR 63.6660(a)(b)(c)]

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the requirements of **conditions k. and l**. are not met.

Reporting [15A NCAC 02Q .0508(f)]

m. The Permittee shall submit a summary report of recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of noncompliance must be clearly identified. [40 CFR 63.6640(b),(e), and 63.6650(f)]

The Permittee shall be deemed in noncompliance with the reporting requirements of 15A NCAC 02D .1111 if **condition m** is not met.

6. 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Applicability [40 CFR 63.6585, 6590(a)(2)(ii)]

a. For these sources **(ID Nos. 365-160-523 and 555-218-484)** (new, emergency stationary CI RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions) the Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines" and Subpart A "General Provisions."

Stationary RICE subject to Regulations under 40 CFR Part 60 [15 A NCAC 02Q. 0508(f)]

b. Pursuant to 40 CFR 63.6590(c)(6), these sources must meet the requirements of 40 CFR 63 Subpart ZZZZ and Subpart A by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for these engines under 40 CFR 63 Subpart ZZZZ and Subpart A. If these requirements are not met, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

7. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS

Applicability [15A NCAC 02Q .0508(f) and 40 CFR 60.4200(a)(2)]

a. For these sources **(ID Nos. 365-160-523 and 555-218-484)** (new, emergency stationary CI RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions), the Permittee shall comply with all applicable provisions, including the requirements for emission standards, notification, testing, reporting, record keeping, and monitoring, contained in Environmental Management Commission Standard 15A NCAC 02D .0524 "New Source Performance Standards (NSPS)" as promulgated in 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines," including Subpart A "General Provisions."

General Provisions [15A NCAC 02Q .0508(f)]

b. Pursuant to 40 CFR 60 .4218, The Permittee shall comply with the General Provisions of 40 CFR 60 Subpart A as presented in Table 8 of 40 CFR 60 Subpart IIII.

Emission Standards [15A NCAC 02Q .0508(f)]

c. The Permittee shall comply with the following emission standards for new non-road CI engines in 40CFR 60.4202, for all pollutants, for the same model year and maximum engine power for this source [40 CFR 63.4205(c), Table 4, 40CFR 60.4202(a)(2), 40 CFR 89.112, Table 1]:

Emission Source ID No.	Engine type	Maximum engine power	Manufacture date *(after)*	Emission standards g/kW-hr (g/Hp-hr)		
				NMHC + NO_x	CO	PM
555-218-484	Emergency	130≤kW<225	7/1/2006	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
365-160-523	Emergency	75≤kW<130	4/1/2006	4.0	5.0	0.30

Fuel Requirements [15A NCAC 02Q .0508(f)]

d. The Permittee shall use diesel fuel in the engine with:
   i. a maximum sulfur content of 15 ppm; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
   [40CFR 60.4207(b) and 40CFR 80.510(b)]

Testing [15A NCAC 02Q .0508(f)]

e. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limits given in conditions c. and d. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Monitoring [15A NCAC 02Q .0508(f)]

f. The engine has the following monitoring requirements:
   i. The engines shall be equipped with a non-resettable hour meter prior to startup. [40CFR 60.4209(a)]
   ii. The engine, if equipped with a diesel particulate filter, must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. [40CFR 60.4209(b)]

Compliance Requirements [15A NCAC 02Q .0508(b)]

g. The Permittee shall:
   i. operate and maintain the engines and control devices according to the manufacturer's emission related-written instructions over the entire life of the engine;
   ii. change only those emission-related settings that are permitted by the manufacturer; and
   iii. meet the requirements of 40 CFR 89, 94 and/or 1068 as applicable.
   [40CFR 60.4206 and 60.4211(a)]

h. The Permittee shall comply with the emission standards in condition c. by:
   i. purchasing an engine certified to the emission standards in condition c for this source **(ID No. 365-160-523)**; and
   ii. keeping records of engine manufacturer data indicating compliance with the standards in condition c for this source **(ID No. 555-218-484)**.
   The engine shall be installed and configured according to the manufacturer's emission-related specifications [40CFR 60.4211(c)]

i. Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited. [40CFR 60.4211(f)]

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524, if the requirements in conditions f. through i. are not met.

Recordkeeping [15A NCAC 02Q .0508(f)]

j. To ensure compliance, the Permittee shall perform inspections and maintenance on the engine as recommended by the manufacturer per 40 CFR 60.4206 and 40 CFR 60.4211(a). The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date of each recorded action;
   ii. the results of each inspection;
   iii. the results of any maintenance performed on the engine;
   iv. any variance from manufacturer's recommendations, if any, and corrections made;
   v. the hours of operation during maintenance and readiness testing and during emergency service; and
   vi. if a PM filter is used, records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached [40 CFR60.4214(c)].

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

k. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of noncompliance with the requirements of this permit shall be clearly identified.

8. 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Applicability [40 CFR 63.6585, 6590(a)(2)(ii)]

a. For these sources **(ID No. 190-400-484 and 407-401)** (new, emergency 4SRB stationary spark ignition internal combustion engines with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions), the Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines" and Subpart A "General Provisions."

Stationary RICE subject to Regulations under 40 CFR Part 60 [15 A NCAC 02Q. 0508(f)]

b. Pursuant to 40 CFR 63.6590(c)(6), these sources must meet the requirements of 40 CFR 63 Subpart ZZZZ and Subpart A by meeting the requirements of 40 CFR part 60 subpart JJJJ. No further requirements apply for these engines under 40 CFR 63 Subpart ZZZZ and Subpart A. If the requirements are not met, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

9. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS

Applicability [15A NCAC 02Q .0508(f), 40 CFR 60.4230(a)(4)(iv)]

a. For these sources **(ID No. 190-400-484 and 407-401)** (new, emergency 4SRB stationary spark ignition internal combustion engines), the Permittee shall comply with all applicable provisions, including the requirements for emission standards, notification, testing, reporting, record keeping, and monitoring, contained in Environmental Management Commission Standard 15A NCAC 02D .0524 "New Source Performance Standards (NSPS)" as promulgated in 40 CFR Part 60 Subpart JJJJ – "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines**,"** including Subpart A "General Provisions."

General Provisions [15A NCAC 02Q .0508(f)]

b. Pursuant to 40 CFR 60 .4246, The Permittee shall comply with the General Provisions of 40 CFR 60 Subpart A as presented in Table 3 of 40 CFR 60 Subpart JJJJ.

Emission Standards [15A NCAC 02Q .0508(b)]

c. The Permittee shall comply with the following emission standards for the emergency engines. [40CFR 60.4231(c), 40 CFR 90.103, Table 1-Phase 1, Class II]

Engine type	Maximum engine power	Manufacture date *(after)*	Emission standards g/kW-hr	
			$HC + NO_x$	CO
Emergency	$25 \leq HP < 130$	1/1/2009	13.4	519

Testing [15A NCAC 02Q .0508(f)]

d. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of the testing are above the limits given in Section 2.1.9.A.9.c above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Compliance Requirements [15A NCAC 02Q .0508(b) and 40 CFR 60.4243(a) and (b)]

e. The Permittee shall:
   i. purchase an engine certified to the emission standards in Section 2.1.9.A.9.c above and maintain a record of engine manufacturer data indicating compliance with the standards;
   ii. install and configure the engine according to the manufacturer's emission-related specifications;
   iii. equipped the engine with a non-resettable hour meter according to 40 CFR 60 .4237(c);
   iv. operate and maintain the engine and control device (if any) according to the manufacturer's emission related-written instructions over the entire life of the engine, changing only those emission-related settings that are permitted by the manufacturer; and
   v. meet the requirements of 40 CFR Part 1068, subparts A through D, as applicable, for the engine.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524, if the engine does not comply with the emissions standards or if the engine is not installed, operated, or maintained in accordance with the manufacturer's emissions-related instructions.

Operational Restrictions [15A NCAC 02Q .0508(b) and 40 CFR 60.4243(c)]

f. The Permittee shall only operate the engine as allowed below:
   i. The Permittee may operate the engine in emergency situations without any time restriction.
   ii. The Permittee may operate the engine for any combination of the purposes specified in Section 2.1.9.A.9.f.ii.A through 2.1.9.A.9.f.ii.C below for a maximum of 100 hours per calendar year[1]. All non-emergency operation allowed in Section 2.1.9.A.9.f.iii below also counts as part of this 100 hours per calendar year limit.
      A. Maintenance checks and recommended[2] readiness testing;
      B. Emergency demand response;[3] and
      C. Periods of low voltage or low frequency at levels 5 percent or greater below standard voltage or frequency.
   iii. The Permittee may operate the engine up to 50 hours per calendar year in non-emergency situations provided the engine is not used for peak shaving, non-emergency demand response, to generate income to an electric grid, or to supply power as part of a financial arrangement with another entity[4] and provided the number of operating hours are counted towards the 100 hour per calendar year limit in Section 2.1.9.A.9.f.ii above.

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[1] The Permittee may petition the Administrator for additional hours to be used for maintenance checks and readiness testing, but no petition is required if the Permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency engine beyond 100 hours per calendar year.

[2] A governmental agency, manufacturer or vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or insurance company may recommend readiness testing.

[3] Emergency demand response is limited to periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see 40 CFR 60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in NERC Standard EOP-002-3

[4] As allowed by 40 CFR 60.4243(d)(3)(i), the engine may supply power as part of a financial arrangement with another entity if (A) the engine is dispatched by the local balancing authority or local transmission and distribution system operator; (B) the dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region; (C) the dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines; (D) The power is provided only to the facility itself or to support the local transmission and distribution system; and (E) the Permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

If non-emergency operation of the engine exceeds that which is allowed in Section 2.1.9.A.9.f.ii and 2.1.9.A.9.f.iii above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 unless the engine meets all the requirements in 40 CFR Subpart JJJJ for non-emergency engines.

Recordkeeping [15A NCAC 02Q .0508(f), 40 CFR 60.4243(a)(1) and (b)(1), and 40 CFR 60.4245(a)]

g. The Permittee shall maintain the following records:
   i. A copy of each notification and report that you submitted to comply with this subpart;
   ii. Records of maintenance performed on the engine;
   iii. Documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, and 1060, as applicable;
   iv. Documentation of each variance from manufacturer's recommendations, if any, and corrections made; and
   v. Records of the engine operation recorded through the non-resettable hour meter including the hours spent for emergency operation and the hours spent for non-emergency operation along with the reason for each operation.

   The Permittee shall keep each record in written or electronic format for a period of five years in accordance with 40 CFR 63.10(b)(1). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524, if the above records are not maintained as required.

Reporting [15A NCAC 02Q .0508(f)]

h. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of noncompliance with the requirements of this permit shall be clearly identified.

2.1.9 B Sulfuric Acid Plant Fugitive Emissions (ID Nos. S-5F, S-6F, and S-7F), ep191-194
Mill Concentrator Fugitives, ep290
Filter Presses, ep305
Phosphoric Acid Pilot Plant No. 2, ep316
Technical Services Dust Collection System, Pilot Plant, ep318
Filter Press/Filter Press Repulp Tank, ep335
Filter Presses Repulp Tank, ep336
Warehouse No. 2 for DAP2, ep390
Fugitive Plant Fugitives, ep391, ep392
Process Vessels and Product Tank, ep493
Filter Presses Building Vent No. 1, ep495
Filter Presses Building Vent No. 2, ep497
Purified Acid Plant Tank Farm, ep590 through ep593
Ammonia Rail Car Unloading, Truck Unloading, and Storage Tanks, ep601 through ep605 and epNH3TRK1 and NH3TRK2
Sulfur Unloading, ep610 through ep614
Railcar Wash 1, ep615
Railcar Wash 2, ep617
Phosphoric/Superphosphoric Acid Shipping Tank Farm and Miscellaneous Sources, ep616
Cooling Pond Nos. 1, 2, and 1A, ep910, ep914, and ep922
Gypsum Stack Pond Nos. 4. 5, and 6, ep955A, ep950A, and ep954A
Mill Pond, ep957
Reycle Lake, ep958

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
TAPS	**State-enforceable only** **See Section 2.2 A.2 & Attachment 1** **[For all emission sources described above except Cooling Pond Nos. 1, 2, and 1A (ep910, ep914, and ep922) and Gypsum Stack Pond Nos. 4. 5, and 6 (ep955A, ep950A, and ep954A)]**	15A NCAC 02D .1100
Sulfur dioxide Nitrogen oxides	**See Section 2.2 C.1.** **[Affected Sources: ONLY ID Nos. FPR-2, FPR-3, 453-412, 453-148, 453-406, 453-112, 453-409, 426-208, 426-232, 426-200, 426-220 and 426-226, within ep 305, ep336, ep616, ep 493, ep495 and ep497]**	15A NCAC 02D .0530(u)
Sulfur dioxide $PM/PM_{10}/PM_{2.5}$ Nitrogen oxides Fluorides Lead	**See Section 2.2 F.1.** **[Affected Sources: ONLY ID Nos. F391 and F392), ep391 and ep392]**	15A NCAC 02D .0530(u)

2.1.9.C Reclaim Areas 1 to 11 (ID Nos. R1 to R11, ep 960-970) Gypsum Stack Pond No. 4 (ID No. GYP Pond No. 4, ep 955A) Gypsum Stack Pond No. 5 (ID No. GYP Pond No. 5, ep 950A) Gypsum Stack Pond No. 6 (ID No. GYP Pond No. 6, ep 954A)

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Radon-222	Inactive stacks shall not emit more than 20 picocuries per square meter-seconds ($pCi/m^2 \cdot s$)	15A NCAC 02D .1110 *(40 CFR 61, Subpart R)*

1. 15A NCAC 02D .1110: NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS for 40 CFR 61, Subpart R – Radon Emissions From Phosphogypsum Stacks

a. All phosphogypsum generated shall be placed in stacks. [40 CFR 61.202]

b. Phosphogypsum may only be removed from a phosphogypsum stack as expressly provided in 40 CFR 61, Subpart R. [40 CFR 61.202]

c. After a phosphogypsum stack has become inactive, the stack may not emit more than 20 $pCi/m^2 \cdot s$ of radon-222. [40 CFR 61.202]

Testing & Compliance Procedures [15A NCAC 02Q .0508(f)]

d. Within sixty (60) days following the date on which a phosphogypsum stack becomes inactive, the Permittee shall test the stack for radon-222 flux in accordance with the procedures described in 40 CFR 61, Appendix B, Method 115, unless Administrator waives the testing requirement in accordance with the procedures in 40 CFR 61.13(i). In addition to the test methods provided above:

i. Testing shall be performed in accordance with General Condition JJ found in Section 3; and

ii. Notifications and reports shall be provided to U.S. EPA as provided in 40 CFR 61.203.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1110 if the above requirements are not met or if the test results exceed the above limit in Section 2.1.9.C.1.c above. [40 CFR 61.203]

Recordkeeping [15A NCAC 02Q .0508(f)]

e. The Permittee shall create and maintain a record for each phosphogypsum stack documenting the procedure used to verify compliance with the flux standard in Section 2.1.9.C.1.c above, including all measurements, calculations, and analytical methods on which input parameters were based. The required documentation shall be sufficient to allow an independent auditor to verify the correctness of the compliance determination. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1110 if the required records are not created and maintained. [40 CFR 61.209(a)]

2.2 - Multiple Emission Source(s) Specific Limitations and Conditions

A. Facility-Wide

The following table provides a summary of limits and standards for the emission source(s) describe above:

Pollutant	Limits/Standards	Applicable Regulation
TAPS	Specific limits listed in Attachment 1	15A NCAC 02D .1100
Pollutants regulated under 40 CFR Part 68	Comply with all applicable requirements in accordance with 40 CFR Part 68.	15A NCAC 02D .2100

1. [Reserved]

State-enforceable only

2. 15A NCAC 02D .1100: TOXIC AIR POLLUTANT EMISSION LIMITATIONS AND REQUIREMENTS

a. Pursuant to 15A NCAC 02D .1100 and in accordance with the approved application for an air toxic compliance demonstration, the permit limits found in Attachment 1 shall not be exceeded.

b. To ensure compliance with the limits in Attachment 1, the following restrictions shall apply:

i. The Permittee shall maintain records of production rates, material feed rates and other process operational information as is necessary to determine compliance with the process operating limitations cited for each affected source in Section 2.1 of this permit and the corresponding toxic pollutant emission limits contained in Attachment 1.

ii. For each emission source affected by 15A NCAC 02D .1100, as specifically provided in Section 2.1 of this permit, for which emissions are abated by control devices or enclosures, an inspection, maintenance and monitoring program shall be provided to ensure that maximum control efficiency is maintained. The Permittee shall maintain a written, comprehensive program on-site which details the scheduled maintenance and monitoring activities for each control device as recommended by the equipment manufacturer. The defined activities will be performed on a set schedule (weekly, monthly, quarterly, annually) with a method of tracking and recording the completion of each activity. Both the monitoring and maintenance activities will be specific. The monitoring activities will be quantifiable and will be compared against design parameters with dated actions noted to correct out of specification operations. A centralized recording keeping system shall be utilized to define the activities and record actions as a demonstration of compliance.

iii. The air toxic model submitted as part of your most recent application is considered part of the binding limits and conditions of this permit. Your application specified certain parameters for modeling compliance with 15A NCAC 02D .1100 "Control of Toxic Air Pollutants." A new permit is required prior to changing any of these parameters. Changes in equipment of operations that affect stack exhaust temperature or the stack gas exit velocity, or changes in facilities such as location of new buildings or structures in close proximity to the modeled stack, that could significantly increase the modeled emissions, would require an amended permit application.

c. The Permittee shall demonstrate compliance with the sulfuric acid mist emission limits for the sulfuric acid plants **(ID Nos. S-5, S-6, and S-7)** by performing annual emissions tests for sulfuric acid mist. Emissions testing requirements can be found in General Condition JJ.

d. The Permittee shall submit a summary report of monitoring and recordkeeping postmarked on or before January 30 for the preceding six-month period between July and December and July 30 for the preceding six-month period between January and June. The report shall include the following:

i. A verification that all actual measured production and material feed rates cited in 15A NCAC 02D .1100 stipulations throughout this permit were all within the permit limitations over the past quarter. If exceedences occur, identify source, limitation, date, and corrective actions taken to bring into compliance.

ii. A verification that all scheduled maintenance and monitoring activities required in 15A NCAC 02D .1100 stipulations throughout this permit were completed as scheduled.

2. 15A NCAC 02D .2100, RISK MANAGEMENT PROGRAM

a. The Permittee is subject to Section 112(r) of the Clean Air Act and shall comply with all applicable requirements in 15A NCAC 02D .2100, "Risk Management Program," as promulgated in 40 CFR Part 68.

Recordkeeping/Reporting [15A NCAC 02Q .0508(f), 15A NCAC 02Q .0508(h)]

b. The Permittee shall submit an update to the Risk Management Plan (RMP) to EPA pursuant to 40 CFR 68.150 no later than **December 6, 2023**, or as specified in 40 CFR 68.10.

c. The Permittee shall revise and update the RMP submitted under 40 CFR 68.150 no later than **December 6, 2023** and at least every five years after that date or most recent update as required by 40 CFR 68.190(b)(2) through (b)(7), whichever is later.

d. When the Permittee submits the Annual Compliance Certification required by General Condition P, the Permittee shall include a statement that the facility is in compliance with all requirements of 15A NCAC 02D .2100, including the registration and submission of the risk management plan.

B. DFP Area
Pug Mill, Kiln
Materials Handling Sources (Section 2.1.7.B)

The following table provides a summary of limits and standards for the emission source(s) describe above:

Pollutant	Limits/Standards	Applicable Regulation
PM_{10}	727.2 pounds per 24 hours and 137.2 tons per year	15A NCAC 02D .0501(e)

1. 15A NCAC 02D .0501(e): COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS

a. Operation the equipment listed above shall be limited as follows:

i. Emissions of PM_{10} from all of the sources considered together shall not exceed 727.2 pounds per 24 hours (midnight-to-midnight).

ii. Emissions of PM_{10} from all of the sources considered together shall not exceed 137.2 tons per year.

C. Additive Storage Silo (ID No. 453-485)
Additive Weigh Feeder Hoppers (ID Nos. 453-489 and 453-490)
Additive Storage Silo (ID No. 426-240)
Additive Weigh Hopper (ID No. 426-244)
No. 2 Filter Press Feed Tank (ID No. 453-412)
No. 3 Filter Press Feed Tank (ID No. 453-148)
Process Vessel No. 1 (ID No. 426-208)
Process Vessel No. 2 (ID No. 426-232)
Product Tank (ID No. 426-200)
Filter Press No. 1 and Filter Press No. 2 building vent No. 1 (ID No. 426-220)
Filter Press No. 1 and Filter Press No. 2 building vent No. 2 (ID No. 426-226)
Superphosphoric Acid Plant No. 1 (ID Nos. 451-418 and 451-409)
Superphosphoric Acid Plant No. 2 (ID Nos. 451-709 and 451-809)
No. 2 and No. 3 Repulp Tank (ID No. 453-406)
No. 2 Filter Press (ID No. FPR-2)
No. 3 Filter Press (ID No. FPR-3)
No. 2 Filter Press Product Tank (ID No. 453-112)
No. 3 Filter Press Product Tank (ID No. 453-409)

Sulfuric Acid Plant Nos. 5, 6 and 7 (ID Nos. S-5, S-6 and S-7)
Calciner Unit Nos. 1 Through 6 (ID Nos. 339-051 through 339-056)
Coal /Coke Pulverizer and Thermal Dryer System (ID Nos. 341-300)
Phosphoric Acid Trains #1 through 4 (Emission Points 401, 404, 406 and 409 only)

1. 15A NCAC 02D .0530(u): PREVENTION OF SIGNIFICANT DETERIORATION

On February 27, 2020, the Permittee submitted the final annual report required under Section 2.2 C.1.d below for emission tracking for the LOMAG/DFMGAA Projects. All requirements in Section 2.2 .C.1 have been fulfilled with submittal of this report.

a. The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements for a project consisting of increasing the product capacities for both low magnesium superphosphoric acid ("LOMAG") and defluorinated phosphoric acid ("DFMGAA") by utilizing new equipment; additive storage silo (ID No. 453-485), additive weigh feeder hoppers (ID Nos. 453-489 and 453-490), additive storage silo (ID No. 426-240), additive weigh hopper (ID No. 426-244), No. 2 filter press feed tank (ID No. 453-412), No. 3 filter press feed tank (ID No. 453-148), process vessel No. 1 (ID No. 426-208), process vessel No. 2 (ID No. 426-232), product tank (ID No. 426-200), filter press No. 1 and filter press No. 2 building vent No. 1 (ID No. 426-220), filter press No. 1 and filter press No. 2 building vent No. 2 (ID No. 426-226) and associated control devices (ID Nos. 453-488, 426-242 , 426-245, and 426-254), and the modified equipment; superphosphoric acid plant No. 1 (ID Nos. 451-418 and 451-409), superphosphoric acid plant No. 2 (ID Nos. 451-709 and 451-809), No. 2 and No. 3 repulp tank (ID No. 453-406), No. 2 filter press (ID No. FPR-2), No. 3 filter press (ID No. FPR-3), No. 2 filter press product tank (ID No. 453-112) and No. 3 filter press product tank (ID No. 453-409).

   In order to verify the assumptions used in the projected actual emissions calculations, the Permittee shall comply with the testing, record keeping and reporting requirements in Section 2.2 C.1. b. through d. below.

   Testing [15A NCAC 02Q .0308]

b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ.

   Recordkeeping [15A NCAC 02Q .0308]

c. Upon commencement of LOMAG and DFMGAA production, the Permittee shall maintain records on a calendar year basis for five years for actual emissions of SO_2 for sulfuric acid plants 5, 6 and 7 (ID Nos. S-5, S-6 and S-7), and NOx for sulfuric acid plants 5, 6 and 7 (ID Nos. S-5, S-6 and S-7) and calciners 1 through 6 (ID Nos. 339-051 through 339-056).

   This recordkeeping is required upon commencement of operation of new equipment; either additive storage silo **(ID No. 453-485)**, additive weigh feeder hoppers **(ID Nos. 453-489 and 453-490),** additive storage silo **(ID No. 426-240)**, additive weigh hopper **(ID No. 426-244)**, No. 2 filter press feed tank **(ID No. 453-412)**, No. 3 filter press feed tank **(ID No. 453-148)**, process vessel No. 1 **(ID No. 426-208)**, process vessel No. 2 **(ID No. 426-232)**, product tank **(ID No. 426-200)**, filter press No. 1 and filter press No. 2 building vent No. 1 **(ID No. 426-220)**, filter press No. 1 and filter press No. 2 building vent No. 2 **(ID No. 426-226)**, or associated control devices **(ID Nos. 453-488, 426-242, 426-245 and 426-254)**, or commencement of operation of the modified equipment; either superphosphoric acid plant No. 1 **(ID Nos. 451-418 and 451-409)**, superphosphoric acid plant No. 2 **(ID Nos. 451-709 and 451-809)**, No. 2 and No. 3 repulp tank **(ID No. 453-406)**, No. 2 filter press **(ID No. FPR-2)**, No. 3 filter press **(ID No. FPR-3)**, No. 2 filter press product tank **(ID No. 453-112)**, or No. 3 filter press product tank **(ID No. 453-409)**.

   The emissions tracking (i.e., recordkeeping) in this Section 2.2 C.1.c. applies to only sulfuric acid plants 5, 6 and 7 (ID Nos. S-5, S-6 and S-7) upon commencement of DFMGAA production. The emissions tracking in this Section 2.2 C.1.c. (i.e., recordkeeping) applies to both sulfuric acid plants 5, 6 and 7 **(ID Nos. S-5, S-6 and S-7)** and calciners 1 through 6 (ID Nos. 339-051 through 339-056) upon commencement of LOMAG production.

   The Permittee shall make the information documented and maintained in this Section 2.2 C.1.c., and available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).

   Reporting [15A NCAC 02Q .0308]

d. The Permittee shall submit a report for actual emissions of SO_2 for sulfuric acid plants 5, 6 and 7 **(ID Nos. S-5, S-6 and S-7)**, and NOx for sulfuric acid plants 5, 6 and 7 **(ID Nos. S-5, S-6 and S-7)** and calciners 1 through 6 **(ID Nos. 339-051 through 339-056)**, to the Director within 60 days after the end of each calendar year during which the records in Section 2.2 C.1.c. must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a) through (c).

The reported actual emissions of SO_2 for sulfuric acid plants 5, 6 and 7 **(ID Nos. S-5, S-6 and S-7**) and NOx for sulfuric acid plants 5, 6 and 7 **(ID Nos. S-5, S-6 and S-7)** and calciners 1 through 6 **(ID Nos. 339-051 through 339-056)**, for each of the five calendar years will be compared to the respective projection as included below:

Emission Source	Parameter	Projection*+ (Per calendar year)
Sulfuric Acid Plant 5 (ID No. S-5)	SO_2	1,336 tons/yr
	NOx	74 tons/yr
Sulfuric Acid Plant 6 (ID No. S-6)	SO_2	2,124 tons/yr
	NOx	78 tons/yr
Sulfuric Acid Plant 7 (ID No. S-7)	SO_2	1,847 tons/yr
	NOx	68 tons/yr
Calciners 1 through 6 (ID Nos. 339-051 through 339-056)	NOx	451 tons/yr (combined total)

* These projections are not enforceable limitations. If parameter exceeds the projection, consistent with 15A NCAC 02D .0530, the permit shall include in its annual report an explanation as to why the actual rates exceeded the projection.

+ It should be noted that in an air permit application dated January 3, 2014, for a project consisting of increasing the product capacities for both LOMAG and DFMGAA, it was demonstrated that the project would be a minor modification using projected actual emissions and contemporaneous netting analyses. For SO_2 emissions, the baseline actual emissions for all affected units were 5,539 tpy, the projected actual emissions for all affected units were 5,676 tpy, and the contemporaneous emissions changes were 428 tpy (decrease). This resulted in net project emissions of 291 tpy (decrease). Thus, the project would have remained a minor modification as long as the projected actual emissions remain less than 5,869 tpy (5,539 tpy + 291 tpy + 39 tpy). For NOx emissions, the baseline actual emissions for all affected units were 637 tpy and the projected actual emissions for all affected units were 671 tpy. Thus, the project would have remained a minor modification as long as the projected actual emissions remain below 676 tpy (637 tpy + 39 tpy).

D. Sulfuric Acid Plant Nos. 5, 6 and 7 (ID Nos. S-5, S-6 and S-7)

1. 15A NCAC 02D .0530(u): USE OF PROJECTED ACTUAL EMISSIONS TO AVOID APPLICABILITY OF REQUIREMENTS OF PSD

a. The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements pursuant to application 0700071.15C for the Sulfuric Acid Plant Modification project consisting of the No. 5 Sulfuric Acid Plant **(ID No. S-5)**, the No. 6 Sulfuric Acid Plant **(ID No. S-6)**, and the No. 7 Sulfuric Acid Plant **(ID No. S-7)**. In order to verify the assumptions used in the projected actual emissions calculations, the Permittee shall comply with the requirements in Section 2.2 D.1.b, below.

Monitoring/Recordkeeping/Reporting [15A NCAC 02D .0530(u) and 02Q .0308]

b. The Permittee shall perform the following:
   i. The Permittee shall maintain records of annual SO_2, PM, PM_{10}, $PM_{2.5}$, NO_X, and H_2SO_4 emissions from the Nos. 5, 6, and 7 Sulfuric Acid Plants **(ID Nos. S-5, S-6, and S-7)** in tons per year, on a calendar year basis related to Sulfuric Acid Plant Modificaiton Project, for five years following resumption of regular operations after the change is made.
   ii. The Permittee shall submit a report to the director within 60 days after the end of each calendar year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a-c).
   iii. The Permittee shall make the information documented and maintained under this condition available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).
   iv. The reported actual emissions (post-construction emissions) for each of the five calendar years will be compared to the projected actual emissions (pre-construction projection) as included below:

Pollutant	Projected Actual Emissions from Nos. 5, 6, and 7 Sulfuric Acid Plants, combined* (tons per year)
SO_2	5,101
PM	175
PM_{10}	175
$PM_{2.5}$	175

Pollutant	Projected Actual Emissions from Nos. 5, 6, and 7 Sulfuric Acid Plants, combined* (tons per year)
NO_X	250
H_2SO_4	175

* These projections are not enforceable limitations. If projected emissions are exceeded, consistent with 15A NCAC 02D .0530, the Permittee shall include, in its annual report, an explanation as to why the actual rates exceeded the projection.

E. Superphospheric Acid Production

- **Superphosphoric acid plant No. 3 (ID Nos. 451-316 and 451-308) and superphosphoric acid plant No. 4 (ID Nos. 451-916 and 451-940) and with venturi type wet scrubber (ID No. 451-315), ep 332**
- **Super phosphoric acid plant No. 5 (ID Nos. 451-1100 and 451-1200) with venturi type wet scrubber (ID No. 451-1300), ep 333**
- **Superphosphoric acid process vessel (shipping tank farm) (ID No. 453-143), ep 616**
- **LOMAG Aging Tank # 2 (ID No. 453-750), ep 616**
- **No. 1 filter press/filter press repulp tank (ID No. FPR-1), ep 335**
- **No. 2 filter press (ID No. FPR-2), ep 305**
- **No. 2 and No. 3 filter presses repulp tank (ID No. 453-406), ep 336**
- **Black Lomag tank (ID NO. Black Lomag), ep 616**
- **LOMAG Tank # 2 (ID No. 453-800), ep 616**

Ammonium Polyphospate Production

- **Ammonium Polyphosphate Plant – Line 1 (ID No. APP-1), ep 304**
- **Filtration Tank (ID No. Filtration Tank), ep 616**
- **1,000 gallon Concertation Tank (ID Concentration Tank), ep 616**
- **1,000 gallon Permeate Tank (ID No. Permeate Tank), ep 616**
- **Tank 028 (APP Shipping Tank) (ID No. 558-028), ep 616**
- **Ammonium Polyphosphate Plant – Line 2 (ID No. 454-200), ep 306**
- **Filtration Feed Tank # 2 (ID No. 454-240), ep 616**
- **Filtration Concentration Tank #2 (ID No. 454-280), ep 616**
- **Filtration Permeate Tank #2 (ID No. 454-300), ep 616**
- **Ammonium Polyphosphate Plant – Shipping Tank # 2 (ID No. 558-300), ep 616**

Sulfuric Acid Production (associated with with only incremental sulfuric acid used in ammonium polyphosphate production)

- **Double-absorption sulfuric acid plant No. 5 (ID No. S-5) with vertical tube mist eliminator (ID No. 415-934), ep 103**
- **Double-absorption sulfuric acid plant No. 6 (ID No. S-6) with vertical tube mist eliminator (ID No. 406-129), ep 104**
- **Double-absorption sulfuric acid plant No. 7 (ID No. S-7) with vertical tube mist eliminator (ID No. 407-258), ep 105**

Cooling Tower (ID No. I-APPCOOLTOWER), ep 393

The following table provides a summary of limits and standards for the emission source(s) describe above:

Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide Particulate matter Nitrogen oxides	Monitor and report emissions	15A NCAC 02D .0530(u)
N/A	Submit Title V permit application within one year from the date of beginning operation of applicable sources	15A NCAC 02Q .0504

1. 15A NCAC 02D .0530(u): PREVENTION OF SIGNIFICANT DETERIORATION

a. The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements for a project to expand production of Ammonium Polyphosphate (APP) as specified in Air Permit Application No. 0700071.17C.

In order to verify the assumptions used in the projected actual emissions calculations, the Permittee shall comply with the testing, recordkeeping and reporting requirements in Sections 2.2 E.1. c. and d. below.

Testing [15A NCAC 02Q .0308]

b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ.

Recordkeeping [15A NCAC 02Q .0308]

c. The Permittee shall maintain records of actual emissions for PM, PM_{10}, $PM_{2.5}$, SO_2, and Fluorides (other than Hydrogen Fluoride), as applicable, in tons per year on a calendar year basis for five years upon commencement of operation of Ammonium Polyphosphate Plant – Line 2 **(ID No. 454-200)** or superphosphoric acid plant No. 5 **(ID Nos. 451-1100 and 451-1200),** whichever is earliest. The Permittee shall maintain records of the amount of sulfuric acid feed to the APP plants **(ID Nos. APP-1 and 454-200)** and shall calculate emissions of PM, PM_{10}, $PM_{2.5}$, SO_2 from the sulfuric acid plants **(ID Nos. S-5, S-6, and S-7)** based on this amount. The Permittee shall make the information, documented and maintained under this condition available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).

Reporting [15A NCAC 02Q .0508(f)]

d. The Permittee shall submit a report for PM, PM_{10}, $PM_{2.5}$, SO_2, and Fluorides (other than Hydrogen fluoride) emissions to the Director within 60 days after the end of each calendar year during which the records in Section 2.2 E.5.c. must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a) through (c).

The reported actual emissions for each of the five calendar years for PM, PM_{10}, $PM_{2.5}$, SO_2, and Fluorides (other than Hydrogen fluoride) will be compared to the respective projected actual emissions as included below:

Pollutant	Projected Actual Emissions* (Tons per Year)
$PM/PM_{10}/PM_{2.5}$	2.82
SO_2	17.22
Fluorides (other than HF)	1.55

* The projected actual emissions are not enforceable limitations. If the reported actual emissions exceed the projected actual emissions, the Permittee shall include in its annual report an explanation as to why actual emissions exceeded the projected actual emissions.

2. 15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT

Permitting [15A NCAC 02Q .0504(d)]

a. For completion of the two-step significant modification process pursuant to 15A NCAC 02Q .0501(c)(2) or (d)(2), the Permittee shall file an amended application following the procedures of Section 15A NCAC 02Q .0500 within

one year from the date of beginning operation of any of these sources **(ID Nos. 454-200, 451-1100 and 451-1200, 453-750, 453-800, 558-300, 454-240, 454-280, 454-300, I-APPCOOLTOWER).**

Reporting [15A NCAC 02Q .0508(f)]

b. The Permittee shall notify the Regional Office in writing of the date of beginning operation of any of these sources **(ID Nos. 454-200, 451-1100 and 451-1200, 453-750, 453-800, 558-300, 454-240, 454-280, 454-300, I-APPCOOLTOWER)**, postmarked no later than 30 days after such date.

F. Diammonium Phosphate Plant No. 2 (ID Nos. 505-104, 505-107, 505-114, 505-110, 505-143, 505-111, 505-103, 505-121), ep303
Fertilizer Warehouse Fugitives: Warehouse No. 3 (ID No. DAP3WH3), ep390
Fugitive Plant Fugitives (ID Nos. F391 and F392), ep391, ep392

1. 15A NCAC 02D .0530(u): USE OF PROJECTED ACTUAL EMISSIONS TO AVOID APPLICABILITY OF REQUIREMENTS OF PSD

c. The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements pursuant to application 0700071.20C for the DAP Plant No. 2 Replacement Project. In order to verify the assumptions used in the projected actual emissions calculations, the Permittee shall comply with the requirements in Section 2.2 F.1.c below.

Testing [15A NCAC 02Q .0308(a)]

d. If emissions testing is required, the testing shall be performed in accordance General Condition JJ.

Monitoring/Recordkeeping/Reporting [15A NCAC 02D .0530(u) and 02Q .0308]

c. The Permittee shall perform the following:
   i. The Permittee shall maintain records of annual SO_2, PM, PM_{10}, $PM_{2.5}$, NO_X, and Fluoride (excluding HF) from DAP Plant No. 2 (ep303) in tons per year, on a calendar year basis, related to the DAP Plant No. 2 Replacement Project, for five years following resumption of regular operations after the change is made.
   ii. The Permittee shall submit a report to the Director within 60 days after the end of each calendar year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a-c).
   iii. The Permittee shall make the information documented and maintained under this condition available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).
   iv. The reported actual emissions (post-construction emissions) for each of the five calendar years will be compared to the projected actual emissions (pre-construction projection) as included below:

Pollutant	Projected Actual Emissions*(tpy)
SO_2	43.6
NOx	16.74
PM	53.83
PM_{10}	39.96
$PM_{2.5}$	33.34
Lead	4.71E-03
Fluorides (excluding HF)	5.4

* The projected actual emissions are not enforceable limitations. If the reported actual emissions exceed the projected actual emissions, the Permittee shall include in its annual report an explanation as to why actual emissions exceeded the projected actual emissions.

2.3 Insignificant Activities per 15A NCAC 02Q .0503(8)

Emission Source ID No.	Emission Source Description
I-T30	Non-organic liquid storage tank – unstripped high alkali acid
I-T50	Non-organic liquid storage tank – unstripped raffinate
I-T1030	Non-organic liquid storage tank – unstripped high alkali acid
I-T1050	Non-organic liquid storage tank – unstripped raffinate
I-15	Lime Hopper
I-14	DFP Vacuum cleaners
I-T560	DAB Hold Tank
I-T554	PhosBrite Hold Tank (PAP)
I-T552	Phosphoric acid storage tank (PAP)
I-T550	Phosphoric acid storage tank (PAP)
I-T100	Five (5) sulfuric acid product storage tanks
I-150	Three (3) sulfur pits
I-930-931	Gypsum Stack No. 1
I-932-944	Gypsum Stack No. 2
I-955-956	Gypsum Stack No. 4
I-945-953	Gypsum Stack No. 5
I-954	Gypsum Stack No. 6
I-317	Technical Services Pilot Plant
I-10	Phosphoric Acid Storage
I-9	USLD Storage Tank
I-8	Coal Storage Silo
I-7	Coal Mill
I-6	Coal Transfer Conveyor
I-5	Coal Unloading conveyor
I-4	54% Phosphoric Acid Storage Tank
I-3	Bright Dip Pilot Line
I-2	2 conveyors for Moroccan ore – temporary
I-1	60 tph crusher
I-DFP1	DFP rock silos Nos. 7, 8, 9, and 10
ISAPCT	sulfuric acid plant cooling towers
I-MILL	Milling operations
I-BAG	Bagging and tote filling operations

Emission Source ID No.	Emission Source Description
I370-196-478	lab fume hood exhaust at DFP, ep757
I-999	mining operation fugitives
I-APPCOOLTOWER	Cooling Tower for APP Production, ep 393
I-AHF **MACT ZZZZ** **NSPS IIII**	AHF plant diesel-fired emergency genset (up to 250 ekW)
IT-4108	Storage containment tank

1. Because an activity is insignificant does not mean that the activity is exempted from an applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.
2. When applicable, emissions from stationary source activities identified above shall be included in determining compliance with the permit requirements for toxic air pollutants under 15A NCAC 02D .1100, “Control of Toxic Air Pollutants,” or 15A NCAC 02Q .0711, “Emission Rates Requiring a Permit”.

2.4 Other Applicable Requirements

2.4.1.15A NCAC 02D .0543: Best Available Retrofit Technology

Based on the review of Permit Application **0700071.06D**, and with the consideration of comments received from interested parties, NC DAQ has determined that Best Available Retrofit Technology (BART) for the following emission sources subject to the requirements contained in 15A NCAC 02D .0543 "Best Available Retrofit Technology" is no additional controls.

Emission Source ID No.	Emission Source Description	Emission Point (ep)
339-051	One coal/coke/"off-spec" used oils, used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed, phosphate rock calciner unit No. 1 (105.1 tons per hour nominal feed capacity)	201
339-052	One coal/coke/"off-spec" used oils, used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed, phosphate rock calciner unit No. 2 (105.1 tons per hour nominal feed capacity)	202
339-053	One coal/coke/"off-spec" used oils, used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed, phosphate rock calciner unit No. 3 (105.1 tons per hour nominal feed capacity)	203
339-054	One coal/coke/"off-spec" used oils, used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed, phosphate rock calciner unit No. 4 (105.1 tons per hour nominal feed capacity)	204
339-055	One coal/coke/"off-spec" used oils, used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed, phosphate rock calciner unit No. 5 (105.1 tons per hour nominal feed capacity)	205
339-056	One coal/coke/"off-spec" used oils, used oil sludge/used glycols/No. 2 fuel oil/No. 6 fuel oil/natural gas-fired vertical fluidized bed, phosphate rock calciner unit No. 6 (105.1 tons per hour nominal feed capacity)	206
332-120	Residual oil-fired phosphate rock dryer (250 tons per hour nominal capacity)	210
Belt 39 to 70.1	Calcined rock CTS	220
Belt 55 to Belt 70.1	Calcined rock CTS Baghouse	221
Belt 22 to Belt 23 or Belt 24	Storage silo baghouse	222
339-809-464	Calcined/dried rock CTS	223
F291	Calciner Plant Area Fugitives	291
511-085, 511-086, 511-070	Diammonium Phosphate Plant No. 3 first stage reactor second stage reactor granulator	302
511-032	Diammonium Phosphate Plant No. 3 residual oil/No. 2 fuel oil/natural gas-fired dryer	302
511-008, 511-009, 511-010, 511-011, 511-016, 511-017, 511-038, 511-039, 511-041, 511-093, 511-094, 511-095, 511-096	Diammonium Phosphate Plant No. 3 process sizing and handling equipment (four (4) chain mills, screen feed drag conveyor, recycle drag conveyor, recycle elevator, dryer elevator, product elevator, and four (4) double-deck product screens)	302
511-025	Diammonium Phosphate Plant No. 3 cooler and other miscellaneous material handling points	302
451-418 and 451-409	Superphosphoric acid plant No. 1	330
451-701 and 451-809	Superphosphoric acid plant No. 2	331
451-316 and 451-308	Superphosphoric acid plant No. 3	332
451-916 and 451-940	Superphosphoric acid plant No. 4	332
421-201	Reactor Train No. 1	401
421-000	tilting pan (Bird) filter No. 1	401

Emission Source ID No.	Emission Source Description	Emission Point (ep)
421-325	tilting pan (Bird) filter No. 1 primary vacuum pump installed on primary vacuum separator	401
421-327	secondary vacuum pump installed on secondary vacuum separator	401
421-223, 421-232	(2) barometric condensers vacuum pumps	401
421-218	barometric condensers hotwell	401
421-330	tilting pan (Bird) filter No. 1 seal tanks	401
422-201	Reactor Train No. 2	404
422-000	tilting pan (Bird) filter No. 2	404
422-325	tilting pan (Bird) filter No. 2 primary vacuum pump installed on primary vacuum separator	404
422-327	secondary vacuum pump installed on secondary vacuum separator	404
422-223, 422-232	Two (2) barometric condensers vacuum pumps	404
422-218	barometric condensers hotwell	404
422-330	tilting pan (Bird) filter No. 2 seal tanks	404
423-201	Reactor Train No. 3	406
423-000	tilting pan (Bird) filter No. 3	406
423-325	tilting pan (Bird) filter No. 3 primary vacuum pump installed on primary vacuum separator	406
423-327	secondary vacuum pump installed on secondary vacuum separator	406
423-223, 423-232	Two (2) barometric condensers vacuum pumps	406
423-218	barometric condensers hotwell	406
423-330	tilting pan (Bird) filter No. 3 seal tanks	406
424-201	Reactor Train No. 4	409
424-000	tilting pan (Bird) filter No. 4	409
424-325	tilting pan (Bird) filter No. 4 primary vacuum pump installed on primary vacuum separator	409
424-327	secondary vacuum pump installed on secondary vacuum separator	409
424-223, 424-232	Two (2) barometric condensers vacuum	409
424-218	barometric condensers hotwell	409
424-330	tilting pan (Bird) filter No. 4 seal tanks	409
F650	CTS - Grinder Rock Loadout	650
F651	CTS - Grinder Rock Loadout	651
F652	Rock Loadout Transfer Station	652
F653	CTS - Phosphate Rock Transfer Station	653
F655	Chute-Barge Rock Loadout	655
F656	Chute-Train Rock Loadout	656

2.5 Consent Decree

A. Nos. 5, 6, and 7 Sulfuric Acid Plants (ID Nos. S-5, S-6, and S-7)

1. CONSENT DECREE CIVIL ACTION NO. 14-707-BAJ-SCR

a. The Permittee shall comply with the terms and conditions of Consent Decree Civil Action No. 14-707-BAJ-SCR, effective February 26, 2015. The following requirements apply to Sulfuric Acid Plants Nos. 5, 6, and 7 **(ID Nos. S-5, S-6, and S-7).**

Emission Limitations [02Q .0508(i)(16) and]

b. By no later than the compliance deadline specified in Section 2.5 A.1.g, below, the sulfur dioxide emissions from Sulfuric Acid Plant No. 5 **(ID No. S-5)** shall not exceed the following emissions limitations:
   i. Short-Term Limit: 3.2 pounds per ton of 100 percent sulfuric acid production on a 3-hour rolling average basis.
   ii. Long-Term Limit: 2.5 pounds per ton of 100 percent sulfuric acid production on a 365-day rolling average basis.

c. By no later than the compliance deadline specified in Section 2.5 A.1.g, below, the sulfur dioxide emissions from Sulfuric Acid Plant No. 6 **(ID No. S-6)** shall not exceed the following emissions limitations:
   i. Short-Term Limit: 3.3 pounds per ton of 100 percent sulfuric acid production on a 3-hour rolling average basis.
   ii. Long-Term Limit: 2.5 pounds per ton of 100 percent sulfuric acid production on a 365-day rolling average basis.

d. By no later than the compliance deadline specified in Section 2.5 A.1.g, below, the sulfur dioxide emissions from Sulfuric Acid Plant No. 7 **(ID No. S-7)** shall not exceed the following emissions limitations:
   i. Short-Term Limit: 3.0 pounds per ton of 100 percent sulfuric acid production on a 3-hour rolling average basis.
   ii. Long-Term Limit: 1.75 pounds per ton of 100 percent sulfuric acid production on a 365-day rolling average basis. PCS shall commence monitoring to determine compliance with the long-term limit beginning January 1, 2019, but compliance with the limit shall not be determined until one year later. This limit is subject to future adjustment as described in Paragraph 9.e of Consent Decree Civil Action No. 14-707-BAJ-SCR. If the limit is adjusted, the Permittee shall comply with a new long-term emission limit immediately upon written notification by EPA. Except as provided in Paragraph 9.e of Consent Decree Civil Action No. 14-707-BAJ-SCR, this emission limit shall not be relaxed.

e. No later than February 26, 2015, the sulfuric acid mist emissions from each of Sulfuric Acid Plants Nos. 5, 6, and 7 **(ID Nos. S-5, S-6, and S-7)** shall not exceed 0.15 lb/ton of 100 percent sulfuric acid produced.

f. The emission limits in Section 2.5 A.1.b through A.1.e, above, shall never be relaxed, even after termination of the consent decree.

Compliance Deadlines [02Q .0508(i)(16)]

g. By no later than the applicable compliance deadline specified below, the Permittee shall comply with the SO_2 limits in Section 2.5 A.1.b through A.1.d, above.
   i. The compliance deadline for Sulfuric Acid Plant No. 5 **(ID No. S-5)** is January 1, 2020.
   ii. The compliance deadline for Sulfuric Acid Plant No. 6 **(ID No. S-6)** is January 1, 2018.
   iii. Except as provided in Paragraph 9.e of Consent Decree Civil Action No. 14-707-BAJ-SCR, the compliance deadline for Sulfuric Acid Plant No. 7 **(ID No. S-7)** is January 1, 2019.

Startup, Shutdown, and Malfunction [02Q .0508(i)(16)]

h. The short-term sulfur dioxide emission limits in Section 2.5 A.1.b, A.1.c, and A.1.d, above, do not apply during periods of startup, shutdown, or malfunction.

i. The long-term sulfur dioxide emission limits in Section 2.5 A.1.b, A.1.c, and A.1.d, above, apply at all times, including during periods of startup, shutdown, or malfunction.

Testing [02Q .0508(i)(16)]

j. By no later than the compliance deadlines specified in Section 2.5 A.1.g, above, the Permittee shall conduct performance tests at each sulfuric acid plant **(ID Nos. S-5, S-6, and S-7)**. The Permittee shall perform such testing in accordance with the following:
   i. The Permittee shall provide notice to EPA no later than 30 days prior to the performance test of its intent to conduct such testing. If a performance test must be rescheduled, notice of the rescheduled performance test may

be given less than 30 days, but in no case, less than 7 days in advance of it. This notification must include the schedule date of the test(s), an emission test protocol, a description of the planned operating rate and operating conditions, and the procedures that will be used to measure 100% sulfuric acid production.

ii. The Permittee shall conduct SO_2 emissions tests in accordance with the applicable requirements of 40 CFR Part 60 Appendix A, Reference Method 8 and Part 60, Appendix B, Performance Specification 2. The test shall consist of at least nine reference method test runs and may serve as the SO2 CEMS relative accuracy test required under Performance Specification 2.

iii. The Permittee shall conduct sulfuric acid mist emissions tests in accordance with the applicable requirements of 40 CFR Part 60 Appendix A Reference Method 8, or an alternative method approved by EPA. These performance tests may serve as the NSPS performance test required under 40 CFR 60.8 and in Section 2.1.1 A.4.f, above.

iv. The Permittee shall take all steps necessary to obtain accurate measurements of the 100 percent sulfuric acid produced during each test run.

Emissions Monitoring [02Q .0508(i)(16)]

k. After the compliance dates listed in Section 2.1.1 A.6.g, above, the Permittee shall conduct a Relative Accuracy Test Audit (RATA) at least once every four calendar quarters at each of the Sulfuric Acid Plants No. 5, No. 6, and No. 7 **(ID Nos. S-5, S-6, and No. 7)** per the procedures of 40 CFR 60.85 for sulfur dioxide and oxygen concentrations and pounds sulfur dioxide per ton of 100 percent sulfuric acid produced as required by 40 CFR Part 60 Appendix F, Procedure 1, 5.1.1.

l. Beginning with the initial RATA as required by Section 2.1.1 A.6.k, above, and thereafter for every triennial RATA (i.e., year 1, 4, 7, etc.), the Permittee shall utilize the reference methods and procedures specified in 40 CFR 60.85(b) to generate the Reference Method values for calculating the relative accuracy. In intervening years (i.e., year 2, 3, 5, 6, etc.) the Permittee may use the alternative method specified in 40 CFR 60.85(c) to calculate the Reference Method values.

m. By no later than the compliance deadlines listed in Section 2.5 A.1.g, above, the Permittee shall monitor sulfur dioxide emissions from each of the sulfuric acid plants **(ID Nos. S-5, S-6, and S-7)**, in accordance with the SO_2 CEMS Plan (see Attachment 2 of this permit) and following procedures:

i. The Permittee shall measure the sulfur dioxide concentration (lb/DSCF or ppmvd) and oxygen concentration (percent by volume) at the exit stack at least once every 15 minutes using a sulfur dioxide analyzer and oxygen analyzer.

ii. During routine calibration checks and adjustments of any analyzer, the pre-calibration level shall be used to fill in any analyzer data gaps that occur pending completion of the calibration checks and adjustments.

iii. If any one or more than one analyzer is/are not operating, a like-kind replacement (i.e. a redundant analyzer) may be used as a substitute.

iv. If any one or more than one analyzer is/are not operating for a period of 24 hours or greater and no redundant analyzer is available, data gaps in the array involving the non-operational analyzer(s) shall be filled is as follows:

(A) Exit stack gas shall be sampled and analyzed for sulfur dioxide at least once every three hours, while the relevant sulfuric acid plant is operating. Sampling shall be conducted by Reich test or other established method (e.g., portable analyzer). The most recent 3-hour average reading shall be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

(B) Oxygen in the exit stack gas shall be sampled and analyzed at least once every three hours, while the relevant sulfuric acid plant is operating. Sampling shall be conducted by Orsat test or other method (e.g., portable analyzer). The most recent 3-hour average reading shall be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

v. The sulfur dioxide analyzers and oxygen analyzers shall meet the specifications of Table 1 in Attachment 2.

n. If any one or more than one analyzer is/are not operating for a period of less than 24 hours, the Permittee shall either:

i. Follow the requirements set forth for a 24-hour or greater period of downtime to fill in the data gaps; or

ii. Use the data recorded for the 3-hour average immediately preceding the affected analyzer's(s') stoppage to fill in the data gap.

o. The 15-minute analyzer data shall be used to determine the 3-hour rolling averages and 365-day rolling averages per Attachment 2 of this permit to demonstration compliance with the short-term and long-term sulfur dioxide limits. All calculations associated with these rolling averages shall be rounded using procedures specified in Attachment 2.

p. The sulfur dioxide emission rate (lb/ton) shall be calculated using the data collected per Section 2.1.1.A.6.m and the following equations:

$$E_{\frac{lb}{ton}} = \frac{C_S \times S}{(0.264 - 0.0126 \times \%O_2 - 7.61 \times C_S)}$$

$$M_{SO_2Stack} = E_{\frac{lb}{ton}} \times P_{H_2SO_4}$$

Where:

$P_{H_2SO_4}$	= 100% sulfuric acid production, tons per unit of time
M_{SO_2Stack}	= Mass SO_2 stack emission rate, lb per unit of time
$\%O_2$	= Stack O_2 concentration, percent by volume dry basis
C_S	= Stack SO_2 concentration, lb/DSCF (to convert to parts per million by volume, dry basis (ppmvd) to lb/DSCF, multiple by 1.661×10^{-7})
$E_{\frac{lb}{ton}}$	= lb SO_2 per ton 100% sulfuric acid produced
S	= the acid production rate factor, 11,800 DSCF/Ton of 100% sulfuric acid

Recordkeeping

q. The Permittee shall retain, and instruct its contractors and agents to preserve, all data generated by its sulfur dioxide analyzers, oxygen analyzers, and production rate analyzers including all data generated during startup, shutdown, and/or malfunction for five years after the termination of the Consent Decree. At the conclusion of the information-retention period, the Permittee shall notify the EPA at least 90 days prior to the destruction of any documents, records, or other information subject to these requirements.

2.6 Permit Shield for Non-applicable Requirements

The Permittee is shielded from the following non applicable requirement based on information furnished with Applicability Determination No. 1976 (Dated **May 1, 2012**). [15A NCAC 02Q .0512(a)(1)(B)]

A. 15A NCAC 02D .0530 - Pursuant to 40 CFR 51.166(b)(2)(iii)(a), the X07 Superhesater replacement project does not constitute a "physical change or change in the method of operation," and is not subject to review under the PSD program.

B. 15A NCAC 02D .1111, Maximum Achievable Control Technology, for "NESHAP for Source Categories: Generic Maximum Achievable Control Technology Standards," 40 CFR Part 63 Subpart YY, is applicable to hydrogen fluoride (HF) Production in which HF is produced by reacting calcium fluoride with sulfuric acid. Because the Permittee produces HF by reacting hydrofluorosilicic acid (a byproduct of phosphoric acid manufacturing) with sulfuric acid, the DAQ has determined 40 CFR Part 63 Subpart YY is not applicable to the HF Production Process **(ID Nos. GW01, GW03-A, GW03-B, LS-1, LB-1, and CT444**). [40 CFR 63.1100(a) and 40 CFR 63.1103(c)(2)]

SECTION 3 - GENERAL CONDITIONS (version 6.0, 01/07/2022)

This section describes terms and conditions applicable to this Title V facility.

A. **General Provisions** [NCGS 143-215 and 15A NCAC 02Q .0508(i)(16)]
1. Terms not otherwise defined in this permit shall have the meaning assigned to such terms as defined in 15A NCAC 02D and 02Q.
2. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are binding and enforceable pursuant to NCGS 143-215.114A and 143-215.114B, including assessment of civil and/or criminal penalties. Any unauthorized deviation from the conditions of this permit may constitute grounds for revocation and/or enforcement action by the DAQ.
3. This permit is not a waiver of or approval of any other Department permits that may be required for other aspects of the facility which are not addressed in this permit.
4. This permit does not relieve the Permittee from liability for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted facility, or from penalties therefore, nor does it allow the Permittee to cause pollution in contravention of state laws or rules, unless specifically authorized by an order from the North Carolina Environmental Management Commission.
5. Except as identified as state-only requirements in this permit, all terms and conditions contained herein shall be enforceable by the DAQ, the EPA, and citizens of the United States as defined in the Federal Clean Air Act.
6. Any stationary source of air pollution shall not be operated, maintained, or modified without the appropriate and valid permits issued by the DAQ, unless the source is exempted by rule. The DAQ may issue a permit only after it receives reasonable assurance that the installation will not cause air pollution in violation of any of the applicable requirements. A permitted installation may only be operated, maintained, constructed, expanded, or modified in a manner that is consistent with the terms of this permit.

B. **Permit Availability** [15A NCAC 02Q .0507(k) and .0508(i)(9)(B)]
The Permittee shall have available at the facility a copy of this permit and shall retain for the duration of the permit term one complete copy of the application(s) and any information submitted in support of the application package. The permit and application shall be made available to an authorized representative of Department of Environmental Quality upon request.

C. **Severability Clause** [15A NCAC 02Q .0508(i)(2)]
In the event of an administrative challenge to a final and binding permit in which a condition is held to be invalid, the provisions in this permit are severable so that all requirements contained in the permit, except those held to be invalid, shall remain valid and must be complied with.

D. **Submissions** [15A NCAC 02Q .0507(e) and 02Q .0508(i)(16)]
Except as otherwise specified herein, two copies of all documents, reports, test data, monitoring data, notifications, request for renewal, and any other information required by this permit shall be submitted to the appropriate Regional Office. Refer to the Regional Office address on the cover page of this permit. For continuous emissions monitoring systems (CEMS) reports, continuous opacity monitoring systems (COMS) reports, quality assurance (QA)/quality control (QC) reports, acid rain CEM certification reports, and NOx budget CEM certification reports, one copy shall be sent to the appropriate Regional Office and one copy shall be sent to:

Supervisor, Stationary Source Compliance
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

All submittals shall include the facility name and Facility ID number (refer to the cover page of this permit).

E. **Duty to Comply** [15A NCAC 02Q .0508(i)(3)]
The Permittee shall comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Noncompliance with any permit condition except conditions identified as state-only requirements constitutes a violation of the Federal Clean Air Act. Noncompliance with any permit condition is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application.

F. **Circumvention** - STATE ENFORCEABLE ONLY
The facility shall be properly operated and maintained at all times in a manner that will effect an overall reduction in air pollution. Unless otherwise specified by this permit, no emission source may be operated without the concurrent operation of its associated air pollution control device(s) and appurtenances.

G. **Title V Permit Modifications**
1. Administrative Permit Amendments [15A NCAC 02Q .0514]
The Permittee shall submit an application for an administrative permit amendment in accordance with 15A NCAC 02Q .0514.
2. Transfer in Ownership or Operation and Application Submittal Content [15A NCAC 02Q .0524 and 02Q .0505]
The Permittee shall submit an application for an ownership change in accordance with 15A NCAC 02Q.0524 and 02Q .0505.
3. Minor Permit Modifications [15A NCAC 02Q .0515]
The Permittee shall submit an application for a minor permit modification in accordance with 15A NCAC 02Q .0515.
4. Significant Permit Modifications [15A NCAC 02Q .0516]
The Permittee shall submit an application for a significant permit modification in accordance with 15A NCAC 02Q .0516.
5. Reopening for Cause [15A NCAC 02Q .0517]
The Permittee shall submit an application for reopening for cause in accordance with 15A NCAC 02Q .0517.

H. **Changes Not Requiring Permit Modifications**
1. Reporting Requirements [15A NCAC 02Q .0508(f)]
Any of the following that would result in new or increased emissions from the emission source(s) listed in Section 1 must be reported to the Regional Supervisor, DAQ:
   a. changes in the information submitted in the application;
   b. changes that modify equipment or processes; or
   c. changes in the quantity or quality of materials processed.

   If appropriate, modifications to the permit may then be made by the DAQ to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause a violation of the emission limitations specified herein.
2. Section 502(b)(10) Changes [15A NCAC 02Q .0523(a)]
   a. "Section 502(b)(10) changes" means changes that contravene an express permit term or condition. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
   b. The Permittee may make Section 502(b)(10) changes without having the permit revised if:
      i. the changes are not a modification under Title I of the Federal Clean Air Act;
      ii. the changes do not cause the allowable emissions under the permit to be exceeded;
      iii. the Permittee notifies the Director and EPA with written notification at least seven days before the change is made; and
      iv. the Permittee shall attach the notice to the relevant permit.
   c. The written notification shall include:
      i. a description of the change;
      ii. the date on which the change will occur;
      iii. any change in emissions; and
      iv. any permit term or condition that is no longer applicable as a result of the change.
   d. Section 502(b)(10) changes shall be made in the permit the next time that the permit is revised or renewed, whichever comes first.
3. Off Permit Changes [15A NCAC 02Q .0523(b)]
The Permittee may make changes in the operation or emissions without revising the permit if:
   a. the change affects only insignificant activities and the activities remain insignificant after the change; or
   b. the change is not covered under any applicable requirement.
4. Emissions Trading [15A NCAC 02Q .0523(c)]
To the extent that emissions trading is allowed under 15A NCAC 02D, including subsequently adopted maximum achievable control technology standards, emissions trading shall be allowed without permit revision pursuant to 15A NCAC 02Q .0523(c).

I.A **Reporting Requirements for Excess Emissions** [15A NCAC 02D .0535(f) and 02Q .0508(f)(2)]

1. "Excess Emissions" - means an emission rate that exceeds any applicable emission limitation or standard allowed by any rule in Sections .0500, .0900, .1200, or .1400 of Subchapter 02D; or by a permit condition; or that exceeds an emission limit established in a permit issued under 15A NCAC 02Q .0700. *(Note: Definitions of excess emissions under 02D .1110 and 02D .1111 shall apply where defined by rule.)*
2. If a source is required to report excess emissions under NSPS (15A NCAC 02D .0524), NESHAPS (15A NCAC 02D .1110 or .1111), or the operating permit provides for periodic (e.g., quarterly) reporting of excess emissions, reporting shall be performed as prescribed therein.
3. If the source is not subject to NSPS (15A NCAC 02D .0524), NESHAPS (15A NCAC 02D .1110 or .1111), or these rules do NOT define "excess emissions," the Permittee shall report excess emissions in accordance with 15A NCAC 02D .0535 as follows:
   a. Pursuant to 15A NCAC 02D .0535, if excess emissions last for more than four hours resulting from a malfunction, a breakdown of process or control equipment, or any other abnormal condition, the owner or operator shall:
      i. notify the Regional Supervisor or Director of any such occurrence by 9:00 a.m. Eastern Time of the Division's next business day of becoming aware of the occurrence and provide:
         - name and location of the facility;
         - nature and cause of the malfunction or breakdown;
         - time when the malfunction or breakdown is first observed;
         - expected duration; and
         - estimated rate of emissions;
      ii. notify the Regional Supervisor or Director immediately when corrective measures have been accomplished; and
      iii. submit to the Regional Supervisor or Director within 15 days a written report as described in 15A NCAC 02D .0535(f)(3).

I.B **Reporting Requirements for Permit Deviations** [15A NCAC 02D .0535(f) and 02Q .0508(f)(2)]

1. "Permit Deviations" - for the purposes of this condition, any action or condition not in accordance with the terms and conditions of this permit including those attributable to upset conditions as well as excess emissions as defined above lasting less than four hours.
2. Pursuant to 15A NCAC 02Q .0508(f)(2), the Permittee shall report deviations from permit requirements (terms and conditions) quarterly by notifying the Regional Supervisor or Director of all other deviations from permit requirements not covered under 15A NCAC 02D .0535. A written report to the Regional Supervisor shall include the probable cause of such deviation and any corrective actions or preventative actions taken. The responsible official shall certify all deviations from permit requirements.

I.C **Other Requirements under 15A NCAC 02D .0535**

The Permittee shall comply with all other applicable requirements contained in 15A NCAC 02D .0535, including 15A NCAC 02D .0535(c) as follows:

1. Any excess emissions that do not occur during start-up and shut-down shall be considered a violation of the appropriate rule unless the owner or operator of the sources demonstrates to the Director that the excess emissions are a result of a malfunction. The Director shall consider, along with any other pertinent information, the criteria contained in 15A NCAC 02D .0535(c)(1) through (7).
2. 15A NCAC 02D .0535(g). Excess emissions during start-up and shut-down shall be considered a violation of the appropriate rule if the owner or operator cannot demonstrate that excess emissions are unavoidable.

J. **Emergency Provisions** [40 CFR 70.6(g)]

The Permittee shall be subject to the following provisions with respect to emergencies:

1. An emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the facility, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in 3. below are met.
3. The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs or other relevant evidence that include information as follows:

a. an emergency occurred and the Permittee can identify the cause(s) of the emergency;
b. the permitted facility was at the time being properly operated;
c. during the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the standards or other requirements in the permit; and
d. the Permittee submitted notice of the emergency to the DAQ 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, steps taken to mitigate emissions, and corrective actions taken.

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein.

K. **Permit Renewal** [15A NCAC 02Q .0508(e) and 02Q .0513(b)]
This 15A NCAC 02Q .0500 permit is issued for a fixed term not to exceed five years and shall expire at the end of its term. Permit expiration terminates the facility's right to operate unless a complete 15A NCAC 02Q .0500 renewal application is submitted at least six months before the date of permit expiration. If the Permittee or applicant has complied with 15A NCAC 02Q .0512(b)(1), this 15A NCAC 02Q .0500 permit shall not expire until the renewal permit has been issued or denied. Permit expiration under 15A NCAC 02Q .0400 terminates the facility's right to operate unless a complete 15A NCAC 02Q .0400 renewal application is submitted at least six months before the date of permit expiration for facilities subject to 15A NCAC 02Q .0400 requirements. In either of these events, all terms and conditions of these permits shall remain in effect until the renewal permits have been issued or denied.

L. **Need to Halt or Reduce Activity Not a Defense** [15A NCAC 02Q .0508(i)(4)]
It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

M. **Duty to Provide Information (submittal of information)** [15A NCAC 02Q .0508(i)(9)]
1. The Permittee shall furnish to the DAQ, in a timely manner, any reasonable information that the Director may request in **writing** to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit.
2. The Permittee shall furnish the DAQ copies of records required to be kept by the permit when such copies are requested by the Director. For information claimed to be confidential, the Permittee may furnish such records directly to the EPA upon request along with a claim of confidentiality.

N. **Duty to Supplement** [15A NCAC 02Q .0507(f)]
The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the DAQ. The Permittee shall also provide additional information as necessary to address any requirement that becomes applicable to the facility after the date a complete permit application was submitted but prior to the release of the draft permit.

O. **Retention of Records** [15A NCAC 02Q .0508(f) and 02Q .0508(l)]
The Permittee shall retain records of all required monitoring data and supporting information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring information, and copies of all reports required by the permit. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. Any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request.

P. **Compliance Certification** [15A NCAC 02Q .0508(n)]
The Permittee shall submit to the DAQ and the EPA (Air Enforcement Branch, EPA, Region 4, 61 Forsyth Street SW, Atlanta, GA 30303 or through the EPA CEDRI) postmarked on or before March 1 a compliance certification (for the preceding calendar year) by a responsible official with all terms and conditions in the permit (including emissions limitations, standards, or work practices), except for conditions identified as being State-enforceable Only. It shall be the responsibility of the current owner to submit a compliance certification for the entire year regardless of who owned the facility during the year. The compliance certification shall comply with additional requirements as may be specified under Sections 114(a)(3) or 504(b) of the Federal Clean Air Act. The compliance certification shall specify:
1. the identification of each term or condition of the permit that is the basis of the certification;
2. the compliance status (with the terms and conditions of the permit for the period covered by the certification);

3. whether compliance was continuous or intermittent;
4. the method(s) used for determining the compliance status of the source during the certification period;
5. each deviation and take it into account in the compliance certification; and
6. as possible exceptions to compliance, any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (CAM) occurred.

Q. **Certification by Responsible Official** [15A NCAC 02Q .0520]
A responsible official shall certify the truth, accuracy, and completeness of any application form, report, or compliance certification required by this permit. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

R. **Permit Shield for Applicable Requirements** [15A NCAC 02Q .0512]
1. Compliance with the terms and conditions of this permit shall be deemed compliance with applicable requirements, where such applicable requirements are included and specifically identified in the permit as of the date of permit issuance.
2. A permit shield shall not alter or affect:
   a. the power of the Commission, Secretary of the Department, or Governor under NCGS 143-215.3(a)(12), or EPA under Section 303 of the Federal Clean Air Act;
   b. the liability of an owner or operator of a facility for any violation of applicable requirements prior to the effective date of the permit or at the time of permit issuance;
   c. the applicable requirements under Title IV; or
   d. the ability of the Director or the EPA under Section 114 of the Federal Clean Air Act to obtain information to determine compliance of the facility with its permit.
3. A permit shield does not apply to any change made at a facility that does not require a permit or permit revision made under 15A NCAC 02Q .0523.
4. A permit shield does not extend to minor permit modifications made under 15A NCAC 02Q .0515.

S. **Termination, Modification, and Revocation of the Permit** [15A NCAC 02Q .0519]
The Director may terminate, modify, or revoke and reissue this permit if:
1. the information contained in the application or presented in support thereof is determined to be incorrect;
2. the conditions under which the permit or permit renewal was granted have changed;
3. violations of conditions contained in the permit have occurred;
4. the EPA requests that the permit be revoked under 40 CFR 70.7(g) or 70.8(d); or
5. the Director finds that termination, modification, or revocation and reissuance of the permit is necessary to carry out the purpose of NCGS Chapter 143, Article 21B.

T. **Insignificant Activities** [15A NCAC 02Q .0503]
Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement. The Permittee shall have available at the facility at all times and made available to an authorized representative upon request, documentation, including calculations, if necessary, to demonstrate that an emission source or activity is insignificant.

U. **Property Rights** [15A NCAC 02Q .0508(i)(8)]
This permit does not convey any property rights in either real or personal property or any exclusive privileges.

V. **Inspection and Entry** [15A NCAC 02Q .0508(l) and NCGS 143-215.3(a)(2)]
1. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the DAQ, or an authorized representative, to perform the following:
   a. enter the Permittee's premises where the permitted facility is located or emissions-related activity is conducted, or where records are kept under the conditions of the permit;
   b. have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
   c. inspect at reasonable times and using reasonable safety practices any source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
   d. sample or monitor substances or parameters, using reasonable safety practices, for the purpose of assuring compliance with the permit or applicable requirements at reasonable times.

Nothing in this condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee under Section 114 or other provisions of the Federal Clean Air Act.

2. No person shall refuse entry or access to any authorized representative of the DAQ who requests entry for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

W. **Annual Fee Payment** [15A NCAC 02Q .0508(i)(10)]

1. The Permittee shall pay all fees in accordance with 15A NCAC 02Q .0200.
2. Payment of fees may be by check or money order made payable to the N.C. Department of Environmental Quality. Annual permit fee payments shall refer to the permit number.
3. If, within 30 days after being billed, the Permittee fails to pay an annual fee, the Director may initiate action to terminate the permit under 15A NCAC 02Q .0519.

X. **Annual Emission Inventory Requirements** [15A NCAC 02Q .0207]

The Permittee shall report by **June 30 of each year** the actual emissions of each air pollutant listed in 15A NCAC 02Q .0207(a) from each emission source within the facility during the previous calendar year. The report shall be in or on such form as may be established by the Director. The accuracy of the report shall be certified by a responsible official of the facility.

Y. **Confidential Information** [15A NCAC 02Q .0107 and 02Q .0508(i)(9)]

Whenever the Permittee submits information under a claim of confidentiality pursuant to 15A NCAC 02Q .0107, the Permittee may also submit a copy of all such information and claim directly to the EPA upon request. All requests for confidentiality must be in accordance with 15A NCAC 02Q .0107.

Z. **Construction and Operation Permits** [15A NCAC 02Q .0100 and .0300]

A construction and operating permit shall be obtained by the Permittee for any proposed new or modified facility or emission source which is not exempted from having a permit prior to the beginning of construction or modification, in accordance with all applicable provisions of 15A NCAC 02Q .0100 and .0300.

AA. **Standard Application Form and Required Information** [15A NCAC 02Q .0505 and .0507]

The Permittee shall submit applications and required information in accordance with the provisions of 15A NCAC 02Q .0505 and .0507.

BB. **Financial Responsibility and Compliance History** [15A NCAC 02Q .0507(d)(3)]

The DAQ may require an applicant to submit a statement of financial qualifications and/or a statement of substantial compliance history.

CC. **Refrigerant Requirements (Stratospheric Ozone and Climate Protection)** [15A NCAC 02Q .0501(d)]

1. If the Permittee has appliances or refrigeration equipment, including air conditioning equipment, which use Class I or II ozone-depleting substances such as chlorofluorocarbons and hydrochlorofluorocarbons listed as refrigerants in 40 CFR Part 82 Subpart A Appendices A and B, the Permittee shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82 Subpart F.
2. The Permittee shall not knowingly vent or otherwise release any Class I or II substance into the environment during the repair, servicing, maintenance, or disposal of any such device except as provided in 40 CFR Part 82 Subpart F.
3. The Permittee shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the EPA or its designee as required.

DD. **Prevention of Accidental Releases - Section 112(r)** [15A NCAC 02Q .0508(h)]

If the Permittee is required to develop and register a Risk Management Plan with EPA pursuant to Section 112(r) of the Clean Air Act, then the Permittee is required to register this plan in accordance with 40 CFR Part 68.

EE. **National Emission Standards Asbestos – 40 CFR Part 61, Subpart M** [15A NCAC 02D .1110]

The Permittee shall comply with all applicable standards for demolition and renovation activities pursuant to the requirements of 40 CFR Part 61, Subpart M. The permittee shall not be required to obtain a modification of this permit in order to perform the referenced activities.

FF. **Title IV Allowances** [15A NCAC 02Q .0508(i)(1)]
This permit does not limit the number of Title IV allowances held by the Permittee, but the Permittee may not use allowances as a defense to noncompliance with any other applicable requirement. The Permittee's emissions may not exceed any allowances that the facility lawfully holds under Title IV of the Federal Clean Air Act.

GG. **Air Pollution Emergency Episode** [15A NCAC 02D .0300]
Should the Director of the DAQ declare an Air Pollution Emergency Episode, the Permittee will be required to operate in accordance with the Permittee's previously approved Emission Reduction Plan or, in the absence of an approved plan, with the appropriate requirements specified in 15A NCAC 02D .0300.

HH. **Registration of Air Pollution Sources** [15A NCAC 02D .0202]
The Director of the DAQ may require the Permittee to register a source of air pollution. If the Permittee is required to register a source of air pollution, this registration and required information will be in accordance with 15A NCAC 02D .0202(b).

II. **Ambient Air Quality Standards** [15A NCAC 02D .0501(c)]
In addition to any control or manner of operation necessary to meet emission standards specified in this permit, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards in 15A NCAC 02D .0400 to be exceeded at any point beyond the premises on which the source is located. When controls more stringent than named in the applicable emission standards in this permit are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

JJ. **General Emissions Testing and Reporting Requirements** [15A NCAC 02Q .0508(i)(16)]
Emission compliance testing shall be by the procedures of Section .2600, except as may be otherwise required in Rules .0524, .1110, or .1111 of Subchapter 02D. If emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ to demonstrate compliance for emission sources subject to Rules .0524, .1110, or .1111, the Permittee shall provide and submit all notifications, conduct all testing, and submit all test reports in accordance with the requirements of 15A NCAC 02D .0524, .1110, or .1111, as applicable. Otherwise, if emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 02D .2600 and follow the procedures outlined below:

1. The owner or operator of the source shall arrange for air emission testing protocols to be provided to the Director prior to air pollution testing. Testing protocols are not required to be pre-approved by the Director prior to air pollution testing. The Director shall review air emission testing protocols for pre-approval prior to testing if requested by the owner or operator at least **45 days** before conducting the test.
2. Any person proposing to conduct an emissions test to demonstrate compliance with an applicable standard shall notify the Director at least **15 days** before beginning the test so that the Director may at his option observe the test.
3. The owner or operator of the source shall arrange for controlling and measuring the production rates during the period of air testing. The owner or operator of the source shall ensure that the equipment or process being tested is operated at the production rate that best fulfills the purpose of the test. The individual conducting the emission test shall describe the procedures used to obtain accurate process data and include in the test report the average production rates determined during each testing period.
4. Two copies of the final air emission test report shall be submitted to the Director not later than **30 days** after sample collection unless otherwise specified in the specific conditions. The owner or operator may request an extension to submit the final test report. The Director shall approve an extension request if he finds that the extension request is a result of actions beyond the control of the owner or operator.
    a. The Director shall make the final determination regarding any testing procedure deviation and the validity of the compliance test. The Director may:
        i. Allow deviations from a method specified under a rule in this Section if the owner or operator of the source being tested demonstrates to the satisfaction of the Director that the specified method is inappropriate for the source being tested.
        ii. Prescribe alternate test procedures on an individual basis when he finds that the alternative method is necessary to secure more reliable test data.
        iii. Prescribe or approve methods on an individual basis for sources or pollutants for which no test method is specified in 15A NCAC 02D .2600 if the methods can be demonstrated to determine compliance of permitted emission sources or pollutants.

b. The Director may authorize the DAQ to conduct independent tests of any source subject to a rule in 15A NCAC 02D to determine the compliance status of that source or to verify any test data submitted relating to that source. Any test conducted by the Division of Air Quality using the appropriate testing procedures described in 15A NCAC 02D .2600 has precedence over all other tests.

KK. **Reopening for Cause** [15A NCAC 02Q .0517]

1. A permit shall be reopened and revised under the following circumstances:
   a. additional applicable requirements become applicable to a facility with remaining permit term of three or more years;
   b. additional requirements (including excess emission requirements) become applicable to a source covered by Title IV;
   c. the Director or EPA finds that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or
   d. the Director or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
2. Any permit reopening shall be completed or a revised permit issued within 18 months after the applicable requirement is promulgated. No reopening is required if the effective date of the requirement is after the expiration of the permit term unless the term of the permit was extended pursuant to 15A NCAC 02Q .0513(c).
3. Except for the state-enforceable only portion of the permit, the procedures set out in 15A NCAC 02Q .0507, .0521, or .0522 shall be followed to reissue the permit. If the State-enforceable only portion of the permit is reopened, the procedures in 15A NCAC 02Q .0300 shall be followed. The proceedings shall affect only those parts of the permit for which cause to reopen exists.
4. The Director shall notify the Permittee at least 60 days in advance of the date that the permit is to be reopened, except in cases of imminent threat to public health or safety the notification period may be less than 60 days.
5. Within 90 days, or 180 days if the EPA extends the response period, after receiving notification from the EPA that a permit needs to be terminated, modified, or revoked and reissued, the Director shall send to the EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate.

LL. **Reporting Requirements for Non-Operating Equipment** [15A NCAC 02Q .0508(i)(16)]

The Permittee shall maintain a record of operation for permitted equipment noting whenever the equipment is taken from and placed into operation. When permitted equipment is not in operation, the requirements for testing, monitoring, and recordkeeping are suspended until operation resumes.

MM. **Fugitive Dust Control Requirement** [15A NCAC 02D .0540]

As required by 15A NCAC 02D .0540 "Particulates from Fugitive Dust Emission Sources," the Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 02D .0540(f).

"Fugitive dust emissions" means particulate matter from process operations that does not pass through a process stack or vent and that is generated within plant property boundaries from activities such as: unloading and loading areas, process areas, stockpiles, stock pile working, plant parking lots, and plant roads (including access roads and haul roads).

NN. **Specific Permit Modifications** [15A NCAC 02Q .0501 and .0523]

1. For modifications made pursuant to 15A NCAC 02Q .0501(b)(2), the Permittee shall file a Title V Air Quality Permit Application for the air emission source(s) and associated air pollution control device(s) on or before 12 months after commencing operation.
2. For modifications made pursuant to 15A NCAC 02Q .0501(c)(2), the Permittee shall not begin operation of the air emission source(s) and associated air pollution control device(s) until a Title V Air Quality Permit Application is filed and a construction and operation permit following the procedures of Section .0500 (except for Rule .0504 of this Section) is obtained.
3. For modifications made pursuant to 502(b)(10), in accordance with 15A NCAC 02Q .0523(a)(1)(C), the Permittee shall notify the Director and EPA (Air Permitting Branch, EPA, Region 4, 61 Forsyth Street SW, Atlanta, GA 30303 or through the EPA CEDRI) in writing at least seven days before the change is made.
   a. The written notification shall include:
      i. a description of the change at the facility;
      ii. the date on which the change will occur;

iii. any change in emissions; and
iv. any permit term or condition that is no longer applicable as a result of the change.

b. In addition to this notification requirement, with the next significant modification or Air Quality Permit renewal, the Permittee shall submit a page "E5" of the application forms signed by the responsible official verifying that the application for the 502(b)(10) change/modification, is true, accurate, and complete. Further note that modifications made pursuant to 502(b)(10) do not relieve the Permittee from satisfying preconstruction requirements.

OO. **Third Party Participation and EPA Review** [15A NCAC 02Q .0521, .0522 and .0525(7)]
For permits modifications subject to 45-day review by the federal EPA, EPA's decision to not object to the proposed permit is considered final and binding on the EPA and absent a third party petition, the failure to object is the end of EPA's decision-making process with respect to the revisions to the permit. The time period available to submit a public petition pursuant to 15A NCAC 02Q .0518 begins at the end of the 45-day EPA review period.

Attachment 1
Allowable Toxic Air Pollutant Emission Rates

Source Name (Source Number)	Ammonia (lb/hr)	Arsenic (lb/yr)	Benzene (lb/yr)	Beryllium (lb/yr)	Cadmium (lb/yr)	Carbon Disulfide (lb/day)	Chromium VI (lb/day)	Fluoride (no HF) (lb/hr)	Fluoride (no HF) (lb/day)	Formaldehyde (lb/hr)	Hydrogen Chloride (lb/hr)	Hydrogen Fluoride (lb/hr)	Hydrogen Fluoride (lb/day)	Hydrogen Sulfide (lb/hr)	Manganese (lb/day)	Mercury (lb/day)	MIBK (lb/hr)	MIBK (lb/day)	Nickel (lb/day)	Sulfuric Acid (lb/hr)	Sulfuric Acid (lb/day)
SA Plant #5 (103)		2.74E-01		9.91E-01	2.04E-01		1.19E-04			9.79E+01					1.06E+01	1.09E-01			3.49E-01	1.65E+01	3.96E+02
SA Plant # 6 (104)		2.74E-01		9.91E-01	2.04E-01		1.19E-04			9.79E+01					1.06E+01	1.09E-01			3.49E-01	1.74E+01	4.18E+02
SA Plant #7 (105)		2.74E-01		9.91E-01	2.04E-01		1.19E-04			9.79E+01					1.06E+01	1.09E-01			3.49E-01	1.69E+01	4.05E+02
SA Plant #5 fugitives (192)																				2.40E-03	6.26E-02
SA Plant #6 fugitives (193)																				2.40E-03	6.26E-02
SA Plant #7 fugitives (194)																				2.40E-03	6.26E-02
Rock Dryer (210)		3.13E+00	4.59E+01	1.05E+02	1.47E+01		1.30E+01	1.67E-01	4.01+00	2.32E+00		2.17E-02	5.22E-01		3.30E+02	3.72E-03			2.41E+01	3.31E-01	8.33E+00
Coal Pulverizer/Dryer (215)		1.96E-02	1.87E+01	1.22E-02	6.66E-01	3.03E+00	2.90E-04	7.38E-04	1.77E-02	3.92E-02	2.51E-01	1.03E-03	2.47E-02		3.75E-02	4.55E-02			8.46E-03	5.37E-03	7.47E-02
Calcine CTS (220)		9.87E-02		4.57E-02	1.31E-01			4.06E-03	9.73E-02						4.63E-02	1.79E-06			3.81E-03		
Calcine CTS (221)		3.54E-01		1.44E-01	4.13E-01			1.28E-02	3.07E-01						1.46E-01	5.66E-06			1.20E-02		
Storage Silo Baghouses (222)		2.59E-01		1.05E-01	3.02E-01			9.36E-03	2.25E-01						1.07E-01	4.14E-06			8.79E-03		
Calcined/Dried Rock Transfer (223)		6.00E-01		2.78E-01	7.96E-01			2.46E-02	5.92E-01						2.82E-01	1.09E-05			2.31E-02		
Mill Concentrator Fugitives (290)								8.70E-04	2.09E-02			6.53E-03	1.57E-01	1.00E+01							
Fugitives from Calciner (291)		6.00E-01		2.78E-01	7.96E-01			2.46E-02	5.92E-01						2.82E-01	1.09E-05			2.31E-02		
APP Plant Line 1 (304)	7.90E-01							5.15E-02	1.24E+00			4.93E-02	1.18E+00								
No. 2 and No. 3 Filter Presses (305)								3.17E-02	7.61E-01			3.04E-02	7.30E-01								
APP Plant Line 2 (306)	7.90E-01							5.15E-02	1.24E+00			4.93E-02	1.18E+00								
GTSP Rock Silo (310)		7.82E-01		3.62E-01	1.04E+00			3.21E-02	7.71E-01						3.67E-01	1.42E-05			3.02E-02		
Pilot Plant #2 (316)								1.80E-03	4.32E-02			7.00E-04	1.68E-02	1.00E+01							
Tech Services Pilot Plant (317)	6.25E-02																				
Tech Services Pilot Plant Baghouse (318)		4.71E-01		2.18E-01	6.24E-01			1.93E-02	4.64E-01						2.21E-01	8.56E-06			1.82E-02		
SPA Filter Press No. 1 (335)								7.87E-04	1.89E-02			7.52E-04	1.81E-02								
Repulp Tank #2/#3 (336)								7.87E-04	1.89E-02			7.53E-04	1.81E-02								
Additive storage silo and No. 1 and No. 2 additive weigh feed hoppers (340)		5.31E-02		2.46E-02	7.05E-02										2.50E-02	9.66E-07			2.05E-03		
Additive Storage Silo (341)		1.50E+00		6.93E-01	1.98E+00										7.02E-01	2.72E-05			5.77E-02		
Fertilizer Warehouses Fugitives (390)	1.68E-01							3.35E-01	8.05E+00			3.23E-01	7.75E+00								
Fertilizer Plant Fugitives (391)	7.50E-02							3.35E-01	8.04E+00			2.31E-01	5.53E+00								
Fertilizer Plant Fugitives (392)	7.50E-02							3.35E-01	8.04E+00			2.31E-01	5.53E+00								
Tanks 020, 030, 031, 040 (421)								8.29E-02	1.99E+00			5.71E-02	1.37E+00								
Tanks 32-34,60 and GAST (422)								4.98E-02	1.19E+00			3.43E-02	8.24E-01								
PA Tank farm Clarifier Scrubber (423)								4.98E-02	1.19E+00			3.43E-02	8.24E-01								
PA #1 Baghouse (430)		3.42E-01		1.58E-01	4.53E-01			1.78E-02	4.27E-01						1.60E-01	6.21E-06			1.32E-02		
PA #2 Baghouse (431)		3.42E-01		1.58E-01	4.53E-01			1.78E-02	4.27E-01						1.60E-01	6.21E-06			1.32E-02		
PA Storage Silo #1 (434)		2.73E-01		1.27E-01	3.63E-01			1.46E-02	3.50E-01						1.28E-01	4.97E-06			1.05E-02		
PA Storage Silo #2 (435)		9.25E-02		8.44E-02	2.42E-01			7.49E-03	1.80E-01						8.56E-02	3.31E-06			7.03E-03		
Calcined Rock CTS Baghouse (437)		2.05E-01		9.49E-02	2.72E-01			1.10E-02	2.64E-01						9.63E-02	3.73E-06			7.91E-03		
HF loading and Storage/HF Train 1 (440)								3.35E-01	8.04E+00		5.24E+00	2.90E+00	6.95E+01								
HF loading and Storage/HF Train 2 (441)								3.35E-01	8.04E+00		5.24E+00	2.90E+00	6.95E+01								
Defluorinated Acid Scrubber Stack (450)								5.73E-03	1.38E-01			1.43E-03	3.44E-02								
HF Train 1 – Shutdown scrubber (447)								1.42E-03	3.40E-02			1.20E-03	2.88E-02								
HF Train 2 – Shutdown scrubber (448)								1.42E-03	3.40E-02			1.20E-03	2.88E-02								
Filtration Process # 1 (470)								3.03E-02	7.28E-01			1.52E-02	3.66E-01								
Filtration Process # 2 (471)								2.52E-02	6.05E-01			1.27E-02	3.04E-01								
PA Plant Fugitives (491)								1.37E-01	3.29E+00			1.31E-01	3.15E+00	1.50E+01							

Attachment 1

Source Name (Source Number)	Ammonia (lb/hr)	Arsenic (lb/yr)	Benzene (lb/yr)	Beryllium (lb/yr)	Cadmium (lb/yr)	Carbon Disulfide (lb/day)	Chromium VI (lb/day)	Fluoride (no HF) (lb/hr)	Fluoride (no HF) (lb/day)	Formaldehyde (lb/hr)	Hydrogen Chloride (lb/hr)	Hydrogen Fluoride (lb/hr)	Hydrogen Fluoride (lb/day)	Hydrogen Sulfide (lb/hr)	Manganese (lb/day)	Mercury (lb/day)	MIBK (lb/hr)	MIBK (lb/day)	Nickel (lb/day)	Sulfuric Acid (lb/hr)	Sulfuric Acid (lb/day)
PA Tank Farm Fugitives (492)								1.37E-02	3.29E-01			1.31E-02	3.15E-01	1.50E+01							
Scrubber Stack (493)								2.41E-01	5.79E+00			2.31E-01	5.54E+00								
Filter Press No. 1 and Filter Press No. 2 building vent No. 1 (495)								2.12E-02	5.09E-01			2.04E-02	4.90E-01								
Filter Press No. 1 and Filter Press No. 2 building vent No. 2 (497)																					
PAP Scrubber (502)		5.51E-03		4.78E-03	5.29E-02			9.52E-02	2.28E+00			9.52E-02	2.28E+00	1.00E+00	7.67E-02				9.39E-03		
PAP No. 2 Chiller Stack (503)	2.60E-05							7.77E-03	1.86E-01			7.43E-03	1.78E-01	1.00E+00			1.30E+02	1.32E+03			
PAP No. 2 Scrubber Stack (504)		5.51E-03		4.78E-03	5.29E-02			3.52E-02	8.44E-01			3.36E-02	8.07E-01	1.00E+00	7.67E-02				9.39E-03		
PAP No.2 Train No 4 Scrubber stack (506)		5.51E-03		4.78E-03	5.29E-02			3.52E-02	8.44E-01			3.36E-02	8.07E-01	1.00E+00	7.67E-02				9.39E-03		
PAP No. 1 Plant and Tank Farm Fugitives (590/591)	5.30E-02							1.58E-02	3.79E-01			1.51E-02	3.62E-01				1.33E+02	1.35E+03			
PAP No. 2 Train No. 3 Plant and Tank Farm Fugitives (592/593)	5.30E-02							1.58E-02	3.79E-01			1.51E-02	3.62E-01				1.33E+02	1.35E+03			
PAP loading no. 1 (594)								3.38E-06	8.11E-05												
PAP loading no. 2 (595)								3.38E-06	8.11E-05												
PAP loading no. 3 (596)								3.38E-06	8.11E-05												
PAP loading no. 4 (597)								3.38E-06	8.11E-05												
Ammonia Railroad Unload (601)	2.27E+00																				
Ammonia Railroad Unload (602)	2.27E+00																				
Ammonia Railroad Unload (603)	2.27E+00																				
Ammonia Storage Tanks (604)	2.50E+00																				
Ammonia Storage Tanks (605)	2.50E+00																				
Ammonia Truck Unloading (NH3TRK1)	7.25E-01																				
Ammonia Truck Unloading (NH3TRK2)	7.25E-01																				
Railcar Sulfur Unloading (610)														1.21E+00							
Railcar Sulfur Unloading (611)														1.21E+00							
Railcar Sulfur Unloading (612)														1.21E+00							
Railcar Sulfur Unloading (613)														1.21E+00							
Railcar Sulfur Unloading (614)														1.21E+00							
Railcar Wash Station No. 1 (615)								1.60E-01	3.84E+00			2.12E-02	5.09E-01								
Tank Farm Fugitives (616)	1.38E-01							1.27E-01	3.05E+00			5.96E-02	1.43E+00	1.00E+00			2.16E+02	2.19E+03			
Railcar Wash Station No. 2 (617)								1.60E-02	3.84E-01			2.12E-03	5.09E-02	1.00E+00							
CTS - Grinder Rock Loadout (650)		2.83E-02		1.39E-02	5.03E-02			1.29E-03	3.10E-02						9.39E-03	5.80E-07			1.15E-03		
CTS - Grinder Rock Loadout (651)		2.83E-02		1.39E-02	5.03E-02			1.29E-03	3.10E-02						9.39E-03	5.80E-07			1.15E-03		
Rock Loadout Transfer Station (652)		1.79E+00		8.80E-01	3.19E+00			8.17E-02	1.96E+00						5.95E-01	3.67E-05			7.29E-02		
CTS - Phos Rock Loadout (653)		1.76E+00		8.67E-01	3.14E+00			2.81E-02	6.75E-01						5.86E-01	3.62E-05			7.18E-02		
Chute-Barge Rock Loadout (655)		1.76E+00		8.67E-01	3.14E+00			2.81E-02	6.75E-01						5.86E-01	3.62E-05			7.18E-02		
Chute-Barge Rock Loadout (656)		4.26E+00		2.09E+00	7.57E+00			6.80E-02	1.63E+00						1.41E+00	8.73E-05			1.73E-01		
Truck loading (660)								2.57E-02	6.17E-01			7.39E-03	1.77E-01								
North rail loading (661)								2.57E-02	6.17E-01			7.39E-03	1.77E-01								
Center rail loading (662)								2.57E-02	6.17E-01			7.39E-03	1.77E-01								
South rail loading (663)								8.69E-03	2.09E-01			1.01E-02	2.42E-01								

Source Name (Source Number)	Ammonia (lb/hr)	Arsenic (lb/yr)	Benzene (lb/yr)	Beryllium (lb/yr)	Cadmium (lb/yr)	Carbon Disulfide (lb/day)	Chromium VI (lb/day)	Fluoride (no HF) (lb/hr)	Fluoride (no HF) (lb/day)	Formaldehyde (lb/hr)	Hydrogen Chloride (lb/hr)	Hydrogen Fluoride (lb/hr)	Hydrogen Fluoride (lb/day)	Hydrogen Sulfide (lb/hr)	Manganese (lb/day)	Mercury (lb/day)	MIBK (lb/hr)	MIBK (lb/day)	Nickel (lb/day)	Sulfuric Acid (lb/hr)	Sulfuric Acid (lb/day)
APP loading no. 1 (664)								3.38E-06	8.11E-05												
APP loading no. 2 (665)								3.38E-06	8.11E-05												
APP loading no. 3 (666)								3.38E-06	8.11E-05												
HFSA loading (667)								8.69E-03	2.09E-01			1.01E-02	2.42E-01								
Phosphoric acid rail loading station (668)								2.57E-02	6.16E-01			7.39E-03	1.77E-01								
Barge slip 1 loading (672)								4.40E-02	1.06E+00			1.27E-02	3.04E-01								
Barge slip 2 loading (673)								8.69E-03	2.09E-01			1.73E-02	4.15E-01								
Product handling (717)		7.89E-01		1.64E+00	3.27E-01			2.79E-03	6.69E-02						1.70E+01				2.77E-02		
Product loadout (718)		2.54E-01		5.28E-01	1.05E-01			8.96E-04	2.15E-02						5.46E+00				8.89E-03		
Product Shipping (754)		3.04E-01		6.34E-01	1.26E-01			1.07E-03	2.58E-02						6.56E+00				1.07E-02		
Limestone Railcar Unloading (759)		7.28E-03			1.16E-03										2.58E-01				5.23E-05		
No. 1 Limestone Silo (760)		4.96E-02			7.92E-03										1.76E+00				3.57E-04		
No. 2 Limestone Silo (761)		4.96E-02			7.92E-03										1.76E+00				3.57E-04		
No. 3 Limestone Silo (762)		4.96E-02			7.92E-03										1.76E+00				3.57E-04		
Limestone supply weigh hopper (765)		4.90E-02			7.82E-03										1.74E+00				3.52E-04		
Milling Operations (IMILL)								1.02E-03	2.46E-02												
54% Phosphoric Acid Storage (I4)								3.73E-04	8.95E-03			2.57E-04	6.17E-03								
Dryer and delumper (774)		1.14E+01		3.79E+01	7.75E+00			7.39E-03	1.77E-01						5.05E+01	5.59E-02			2.53E-01		
Screening/conveying operations (777)		4.97E-01		1.04E+00	2.06E-01			1.76E-03	4.21E-02						1.07E+01				1.74E-02		
Bagging and tote filling operations (I-BAG)		1.87E-05		3.89E-05	7.75E-06			6.60E-08	1.58E-06						4.02E-04				6.55E-07		
Final screening operations (783)		9.94E-01		2.07E+00	4.13E-01			3.51E-03	8.43E-02						2.14E+01				3.49E-02		
Mine Pit Diesel Generator (801)			8.54E+01							6.20E-01											
Mill Pond (957)								8.14E-03	1.95E-01			6.59E-02	1.58E+00								
Recycle Lake (958)								2.89E-01	6.94E+00			2.34E+00	5.62E+01								
Concentrate Pile (990)		1.53E-02		7.52E-03	2.72E-02			6.97E-04	1.67E-02						5.08E-03	3.13E-07			6.22E-04		
Facility Total	**15.46**	**34.39**	**150.00**	**159.73**	**50.30**	**3.03**	**13.00**	**4.06**	**93.47**	**296.68**	**10.73**	**10.06**	**241.33**	**62.05**	**487.04**	**0.43**	**612.00**	**6210.00**	**26.14**	**51.14**	**1227.59**

Attachment 2

CEMS Plan for SO_2 Emissions
PCS Phosphate Company, Inc., Aurora, NC
Sulfur Burning Sulfuric Acid Plants

Principle

This CEMS Plan is the mechanism for determining compliance with the SO_2 emission limits in Section IV.A of the Consent Decree for the Aurora Sulfuric Acid Plants. The methodology described in this CEMS Plan will provide a continuous real-time indication of compliance with the emission limits established in the Consent Decree for the Aurora Sulfuric Acid Plants by determining the emission rate in terms of pounds of SO_2 emitted per ton of 100% Sulfuric Acid Produced ("lb/ton"). The system will utilize the following analyzers: one to measure stack SO_2 concentration, one to measure stack oxygen ("O_2") concentration, and one to measure the 100% Sulfuric Acid Production Rate. From these data, the SO_2 emission rate, expressed as lb/ton, will be directly calculated using Equations 1 and 2 below.

Equation 1:

$$E_{\frac{lb}{ton}} = \frac{Cs \cdot S}{(0.264 - 0.0126 \cdot \%O_2 - 7.61 \cdot Cs)}$$

Equation 2:

$$M_{SO_2 Stack} = E_{\frac{lb}{ton}} \cdot P_{H_2SO_4}$$

Where:

$P_{H_2SO_4}$ = 100% Sulfuric Acid Production, tons per unit of time

$M_{SO_2 Stack}$ = Mass SO_2 stack emission rate, lb per unit of time

$\%O_2$ = Stack O_2 concentration, percent by volume dry basis

Cs = Stack SO_2 concentration, lb/DSCF (to convert parts per million by volume, dry basis (ppmvd) to lb/DSCF, multiply by 1.661×10^{-7})

$E_{\frac{lb}{ton}}$ = lb SO_2 per ton 100% Sulfuric Acid Produced

S = the acid production rate factor, 11,800 DSCF/Ton of 100% Sulfuric Acid Produced;

Definitions

Terms used in this CEMS Plan that are defined in the Clean Air Act ("CAA") or in federal or State regulations promulgated pursuant to the CAA shall have the meaning assigned to them in the CAA or such regulations, unless otherwise defined in the Consent Decree. The terms used in this CEMS Plan that are defined in the Consent Decree shall have the meaning assigned to them therein.

Emissions Monitoring

Emissions monitoring will be done using an O_2 analyzer at the exit stack and an SO_2 analyzer at the exit stack. Except for any analyzer downtime, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments), and any other period specified in Paragraph 15 of the Consent Decree, PCS Phosphate Company, Inc. (PCS Phosphate) will conduct monitoring at each Aurora Sulfuric Acid Plant during all Operating Periods.

- At least once every 15 minutes, the analyzers will measure the stack SO_2 concentration (lb/DSCF or ppmvd) and the stack O_2 concentration (percent by volume).

- During routine calibration checks and adjustments of any analyzer, the pre-calibration level will be used to fill in any analyzer data gaps that occur pending completion of the calibration checks and adjustments.

- If any one or more than one analyzer is/are not operating, a like-kind replacement (*i.e.* a redundant analyzer) may be used as a substitute.

- If any one or more than one analyzer is/are not operating for a period of 24 hours or greater and no redundant analyzer is available, data gaps in the array involving the non-operational analyzer(s) will be filled in as follows:

    - Exit stack gas will be sampled and analyzed for SO_2 at least once every three hours, while the relevant Aurora Sulfuric Acid Plant is operating. Sampling will be conducted by Reich test or other established method (*e.g.*, portable analyzer). The most recent 3-hour average reading will be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

    - O_2 in the exit stack gas will be sampled and analyzed at least once every three hours, while the relevant Aurora Sulfuric Acid Plant is operating. Sampling will be conducted by Orsat test or other method (*e.g.*, portable analyzer). The most recent 3-hour average reading will be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

- If any one or more than one analyzer is/are not operating for a period of less than 24 hours, PCS Phosphate will either: (i) follow the requirements set forth for a 24-hour or greater period of downtime to fill in the data gaps; or (ii) use the data recorded for the 3-hour average immediately preceding the affected analyzer's(s') stoppage to fill in the data gap.

Emissions Calculations

1-Hour Average

At the top of each hour, the CEMS will maintain an array of the 15-minute average measurements of each of the monitored parameters collected for that hour (or partial hour, in the case of a Shutdown) and perform the calculation specified in Equation 3.

Equation 3:

$$E_{1hravg} = \frac{\overline{Cs} \cdot S}{(0.264 - 0.0126 \cdot \overline{\%O_2} - 7.61 \cdot \overline{Cs})}$$

Where:

$\overline{\%O_2}$ = Stack O_2 concentration, percent by volume dry basis, arithmetic average of hourly measurements

$\overline{Cs}$ = Stack SO_2 concentration, lb/DSCF, arithmetic average of hourly measurements

S = the acid production rate factor, 11,800 DSCF/Ton of 100% Sulfuric Acid Produced;

E_{1hravg} = 1-hour average lb SO_2 per ton 100% Sulfuric Acid Produced

3-Hour Rolling Average

At the top of each hour, the CEMS will calculate the 3-hour rolling average SO_2 emission rate (E_{3hravg}) by maintaining an array of the three most recently calculated values of E_{1hravg} and performing the calculation specified in Equation 4.

Equation 4

$$E_{3hravg} = \frac{\sum_i^3 E_{1hravg\ i}}{3}$$

$E_{1hravg\ i}$ = 1-hour average lb SO_2 per ton 100% Sulfuric Acid Produced for hour *i*

E_{3hravg} = 3-hour rolling average lb SO_2 per ton 100% Sulfuric Acid Produced

Daily Mass SO_2 Emissions

The daily mass SO_2 emissions (M_{SO_2Day}) (which are based on a calendar day) will be calculated for each Aurora Sulfuric Acid Plant using the hourly values of E_{1hravg}, the measured 100% Sulfuric Acid Production rate, and Equation 5.

Equation 5:

$$M_{SO_2Day} = \sum_i^n \left(E_{1hravg\ i} \cdot P_{H_2SO_4Hour\ i}\right)$$

Where:

$E_{1hravg\ i}$ = 1-hour average lb SO_2 per ton 100% Sulfuric Acid Produced during hour *i*

$P_{H_2SO_4Hour\ i}$ = 100% Sulfuric Acid Produced during hour *i*, tons

M_{SO_2Day} = Mass emissions of SO_2 during a calendar day, lb

n = Number of operating hours in the day

365-Day Rolling Average

For the purposes of calculating a 365-day rolling average lb/ton SO_2 emission rate, the system will maintain an array of M_{SO_2Day} and $P_{TonsH_2O_4}$ each day for 365 days. Every day, the system will add the values from that day to the array and exclude the readings from the oldest day.

The 365-day rolling average lb/ton SO_2 emission rate ($E_{365-Day\ Avg}$) will be calculated for each Aurora Sulfuric Acid Plant using Equation 6:

Equation 6:

$$E_{365-Day\ Avg} = \frac{\sum_i^n M_{SO_2 Day\ i}}{\sum_i^n P_{H_2SO_4 Day\ i}}$$

Where:

$M_{SO_2 Day\ i}$ = Mass emissions of SO_2 during a calendar day *i*, lb
$P_{H_2SO_4 Day\ i}$ = 100% Sulfuric Acid Produced during day *i*, tons
$E_{365-Day\ Avg}$ = 365-day rolling average lb SO_2 per ton 100% Sulfuric Acid Produced

Rounding of Numbers Resulting from Calculations

Upon completion of the calculations, the final numbers will be rounded as follows:

E_{3hravg}: Rounded to the nearest tenth
$E_{365-Day\ Avg}$: Rounded to the nearest hundredth

The number "5" shall be rounded up (*e.g.*, a short-term rate of 2.05011 shall be rounded to 2.1).

Rounding of Variables: $Cs, \%O_2$, and $P_{H_2SO_4}$

Rounding of the variables identified as $Cs, \%O_2$, and $P_{H_2SO_4}$ in the equations set forth in this CEMS Plan shall be done based on the accuracy of the measuring device as provided by the manufacturer of the device.

Compliance with Consent Decree SO_2 Limits

Nothing in this CEMS Plan shall preclude the use of other credible evidence or information, as authorized under Section 113 of the Clean Air Act and 40 C.F.R. §§ 60.11(g) and 61.12, to determine whether an Aurora Sulfuric Acid Plant is, or would have been, in compliance with the SO_2 Emissions Limits required by Section IV.A of the Consent Decree if the appropriate performance or compliance test had been performed.

Short-Term SO_2 Limits

The Short-Term SO_2 Limits do not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods, PCS Phosphate will be in compliance with the Short-Term SO_2 Consent Decree Limit if E_{3hravg} for each Aurora Sulfuric Acid Plant does not exceed the applicable Short-Term SO_2 Limit listed in Table 1 in Paragraph 9 of the Consent Decree. If PCS Phosphate contends that emissions during a Malfunction(s) resulted in a calculated 3-hour rolling average emission rate(s) in excess of an applicable Short-Term SO_2 Limit, after the period of the Malfunction(s) end(s), PCS Phosphate will recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Malfunction(s).

NSPS SO_2 Limits

The NSPS SO_2 Limit does not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods, PCS Phosphate will be in compliance with the NSPS SO_2 Limit if E_{3hravg} does not exceed 4.0 lb of SO_2 per ton of 100% Sulfuric Acid Produced. If PCS Phosphate contends that emissions during a Malfunction(s) resulted in a calculated 3-hour rolling average emission rate(s) in excess of 4.0 lb/ton after the period of the Malfunction(s) end(s), PCS Phosphate will recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Malfunction(s).

Long-Term SO_2 Limits

The Long-Term SO_2 Limits include periods of Startup, Shutdown, and Malfunction. The Aurora Sulfuric Acid Plants will be in compliance with the Long-Term SO_2 Limits if $E_{365-Day\ Avg}$ does not exceed the applicable Long-Term SO_2 Limit listed in Table 1 in Paragraph 9 of the Consent Decree (measured as lbs of SO_2 per ton of 100% Sulfuric Acid Produced).

Retention of All CEMS Data, including Data during Startup, Shutdown, and Malfunction

PCS Phosphate will retain all data generated by its SO_2 analyzers, O_2 analyzers, and production rate analyzers including all data generated during Startup, Shutdown, and/or Malfunction ("SSM") of the Aurora Sulfuric Acid Plants in accordance with Section XIII of the Consent Decree.

Analyzer Specifications

The analyzers will meet the following specifications:

Table 1

Parameter	Location	Range
SO_2, parts per million, dry basis (to convert to lb/DSCF, multiply by 1.661×10^{-7})	Stack	Dual range: Normal: 0 –1,000 ppm SO_2 SSM: 0 –10,000 ppm SO_2
O_2, percent, dry basis	Stack	Single range: 0 – 20.9 % O_2

Each SO_2 and O_2 CEMS will meet all applicable requirements of 40 C.F.R. §§ 60.11, 60.13, Performance Specifications 2, 3, and 6 in 40 C.F.R. Part 60, Appendix B, and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1.

RATA Requirements

After the Effective Date, pursuant to 40 C.F.R. Part 60, Appendix F, Procedure 1, 5.1.1, PCS Phosphate shall conduct a Relative Accuracy Test Audit (RATA) at least once every four calendar quarters at each Aurora Sulfuric Acid Plant.

RATAs will be performed to determine the relative accuracy of the equipment, methods, and procedures required by this CEMS Plan. In addition to all other applicable procedures required by 40 C.F.R. Part 60, Appendix F, Procedure 1, 5.1.1, RATA testing will compare the concentrations of SO_2 and O_2, as measured by the CEMS installed or operated as part of the Consent Decree, with the concentrations of SO_2 and O_2 measured during the RATA testing. In addition, RATA testing will compare the pounds of SO_2 emissions/ton of 100% Sulfuric Acid Produced, as calculated by Equation 1, with the pounds of SO_2 emissions/ton of 100% Sulfuric Acid Produced calculated during the RATA testing pursuant to 40 C.F.R. § 60.85.

Beginning with the initial RATA under this CEMS Plan, and thereafter for every triennial RATA (*i.e.*, year 1, 4, 7, etc.), PCS Phosphate will utilize the reference methods and procedures specified in 40 C.F.R. § 60.85(b) to generate the Reference Method (RM) values for calculating the relative accuracy. In intervening years (*i.e.*, year 2, 3, 5, 6, etc.) PCS Phosphate may use the alternative method at 40 C.F.R. § 60.85(c) to calculate the RM values.

For each RATA performed, stack flow shall be measured using Method 2, 2F, 2G, or 2H, or a combination thereof.

If a CEMS or the measurement of pounds of SO_2 emissions/ton of 100% Sulfuric Acid Produced (as calculated by Equation 1) is deemed to be "out of control" pursuant to 40 C.F.R. Part 60, Appendix F, Procedure 1, § 5.2, PCS Phosphate shall take all necessary corrective actions required by that procedure, including performing a follow-up ("verification") RATA meeting the requirements of this CEMS Plan. All necessary corrective actions and the verification RATA shall be completed within 30 days after the initial RATA testing. If the verification RATA determines that a CEMS or the measurement of pounds of SO_2 emissions/ton of 100% Sulfuric Acid Produced (as calculated by Equation 1) remains out of control, PCS Phosphate shall take all necessary corrective actions to eliminate the problem, including, but not limited to, submitting, for EPA review and approval, a revised SO_2 CEMS Plan that considers: a) installation of direct stack flow meters and b) a monitoring methodology that accurately measures emissions of SO_2/ton of 100% Sulfuric Acid Produced, but is not based on the S-Factor.

If the verification RATA determines that a CEMS or the measurement of pounds of SO_2 emissions/ton of 100% Sulfuric Acid Produced (as calculated by Equation 1) remains out of control, PCS Phosphate shall also be subject to stipulated penalties as set forth in Section X, Paragraph 63.b of the Consent Decree.

Compliance with the NSPS: 40 C.F.R. Part 60, Subpart H

In addition to the requirements in this CEMS Plan, PCS Phosphate also will comply with all of the requirements of the NSPS relating to monitoring except that, pursuant to 40 C.F.R. § 60.13(i), this CEMS Plan will supersede the following provisions of 40 C.F.R. Part 60, Subpart H:

- The procedures specified at 40 C.F.R. § 60.84(b) for converting monitoring data into the units of the applicable standard. In lieu of this PCS Phosphate will utilize the procedures specified in this CEMS Plan for calculating compliance with the NSPS SO_2 Limit.