

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Application Review**

**Issue Date: DRAFT**

**Region:** Mooresville Regional Office  
**County:** Catawba  
**NC Facility ID:** 1800073  
**Inspector's Name:** Melinda Wolanin  
**Date of Last Inspection:** 01/06/2021  
**Compliance Code:** 3 / Compliance - inspection

<b>Facility Data</b>	<b>Permit Applicability (this application only)</b>
<p><b>Applicant (Facility's Name):</b> Duke Energy Carolinas, LLC - Marshall Steam Station</p> <p><b>Facility Address:</b>                  Duke Energy Carolinas, LLC - Marshall Steam Station                  8320 East NC Hwy 150                  Terrell, NC 28682</p> <p><b>SIC:</b> 4911 / Electric Services  <b>NAICS:</b> 221112 / Fossil Fuel Electric Power Generation</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V  <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>	<p><b>SIP:</b> N/A  <b>NSPS:</b> N/A  <b>NESHAP:</b> N/A  <b>PSD:</b> N/A  <b>PSD Avoidance:</b> N/A  <b>NC Toxics:</b> N/A  <b>112(r):</b> N/A  <b>Other:</b> N/A</p>

<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<p><b>Application Number:</b> 1800073.20A  <b>Date Received:</b> 03/06/2020  <b>Application Type:</b> Modification  <b>Application Schedule:</b> TV-Sign-501(b)(2) Part II</p> <p style="text-align: center;"><b>Existing Permit Data</b></p> <p><b>Existing Permit Number:</b> 03676/T57  <b>Existing Permit Issue Date:</b> 05/03/2019  <b>Existing Permit Expiration Date:</b> 07/31/2022</p>
Joseph (Scott) La Sala Lead EHS Professional (828) 478-7820 8320 East NC Hwy 150 Terrell, NC 28682	Rick Roper General Manager III (828) 478-7600 8320 East NC Hwy 150 Terrell, NC 28682	Daniel Markley Lead Environmental Specialist (704) 382-0696 526 South Church Street Charlotte, NC 28202	

**Total Actual emissions in TONS/YEAR:**

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	4877.96	8752.83	94.30	2167.26	293.68	26.17	11.80 [Hydrogen chloride (hydrochlori)]
2018	3621.01	8836.06	102.16	2274.58	326.18	27.65	12.81 [Hydrogen chloride (hydrochlori)]
2017	4362.01	9545.81	111.17	2446.55	346.03	29.70	13.69 [Hydrogen chloride (hydrochlori)]
2016	4919.01	9389.15	117.18	2917.11	375.48	31.35	14.58 [Hydrogen chloride (hydrochlori)]
2015	4623.95	8824.34	92.81	1552.52	954.11	97.06	79.08 [Hydrogen chloride (hydrochlori)]

<p><b>Review Engineer:</b> Connie Horne</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> DRAFT</p>	<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 03676/T58  <b>Permit Issue Date:</b> DRAFT  <b>Permit Expiration Date:</b> July 31, 2022</p>
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**1. Purpose of Application**

This permit action is for Part II of a two-step process allowed under 15A NCAC 02Q .0501(b)(2). The Rule states:

- (b) *With the exception in Paragraph (c) of this Rule, the owner or operator of an existing facility, new facility, or modification of an existing facility (except for minor modifications under Rule .0515), including significant modifications that would not contravene or conflict with a condition in the existing permit, subject to the requirements of this Section shall not begin construction without first obtaining:*
  - (1) ..., or
  - (2) *a construction and operation permit following the procedures under Rule .0504 and filing a complete application within 12 months after commencing operation to modify the construction and operation permit to meet the requirements of this Section.*

The Permittee was last issued a construction and operation permit on May 3, 2019.

According to the Part II application received on March 6, 2020 (1800073.20A), Marshall Steam Station commenced operation of the FGD wastewater treatment facility on March 7, 2019. Therefore, the Part II application was received within the 12-month period after commencing operation, as required. The technical review for the Part I application (1800073.18A) is attached to this document.

**2. Facility Description**

Duke Energy’s DEC Marshall Steam Station is an electric utility that generates electrical power. The Marshall Steam Station is permitted for four No. 2 fuel oil/natural gas/coal-fired electric utility boilers (ID Nos. ES-1, ES-2, ES-3, ES-4) and various supporting equipment.

**3. Application Chronology**

- March 6, 2020            Part II application received
- March 4, 2021            Draft to applicant and regional office
- DRAFT                    Draft to public notice and EPA
- DRAFT                    Public comment period ends
- DRAFT                    EPA Comment period ends
- DRAFT                    Permit issued

**4. Permit Modifications/Changes**

The table below outlines the proposed changes to the current permit (03676T57):

Page No.	Section	Description of Change(s)
All	---	Modified to reflect current permit number, issue and effective dates
46		Removed “15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT”. This requirement was satisfied with application 1800073.20A received March 6, 2020.
64-73	Section 3	Updated General Conditions to Version 5.5 (8/25/2020)

#### **4. Other Regulatory Requirements**

- An application fee of \$988 is required and was received by DAQ on 3/6/20.
- The appropriate number of application copies was received on 3/6/20.
- Catawba County has triggered increment tracking under PSD for PM-10. Any increment changes associated with this modification were addressed in the Part I permit application No. 1800073.18A.
- A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 15A NCAC 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 15A NCAC 02Q .0521, above. South Carolina is an affected State, and Mecklenburg and Forsyth Counties are affected local programs within 50 miles of the facility.
- The associated dates are listed in the Application Chronology section above.

#### **5. Facility Compliance Status**

This facility was last inspected on January 6, 2021 by Melinda Wolanin of the Mooresville Regional Office. According to Ms. Wolanin's report, "this facility appeared to be in compliance with the applicable air quality regulations at the time of the inspection".

#### **6. Conclusions, Comments and Recommendations**

The issuance of Air Quality Permit No. 03676T58 to Duke Energy Carolinas, LLC - Marshall Steam Station is recommended.

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Application Review**

**Issue Date:** 12/20/2018

**Region:** Mooresville Regional Office  
**County:** Catawba  
**NC Facility ID:** 1800073  
**Inspector's Name:** Melinda Wolanin  
**Date of Last Inspection:** 03/27/2018  
**Compliance Code:** 3 / Compliance - inspection

<b>Facility Data</b>	<b>Permit Applicability (this application only)</b>
<p><b>Applicant (Facility's Name):</b> Duke Energy Carolinas, LLC - Marshall Steam Station</p> <p><b>Facility Address:</b>                  Duke Energy Carolinas, LLC - Marshall Steam Station                  8320 East NC Hwy 150                  Terrell, NC 28682</p> <p><b>SIC:</b> 4911 / Electric Services  <b>NAICS:</b> 221112 / Fossil Fuel Electric Power Generation</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V  <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>	<p><b>SIP:</b> 15A NCAC 02D .0510, 02D .0521  <b>NSPS:</b> NA  <b>NESHAP:</b> NA  <b>PSD:</b> NA  <b>PSD Avoidance:</b> NA  <b>NC Toxics:</b> NA  <b>112(r):</b> NA  <b>Other:</b> NA</p>

<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<p><b>Application Number:</b> 1800073.18A  <b>Date Received:</b> 05/22/2018  <b>Application Type:</b> Modification  <b>Application Schedule:</b> TV-Significant</p> <p style="text-align: center;"><b>Existing Permit Data</b></p> <p><b>Existing Permit Number:</b> 03676/T55  <b>Existing Permit Issue Date:</b> 08/22/2017  <b>Existing Permit Expiration Date:</b> 07/31/2022</p>
Joseph (Scott) La Sala Senior EHS Professional (828) 478-7820 8320 East NC Hwy 150 Terrell, NC 28682	Rick Roper General Manager (828) 478-7600 8320 East NC Hwy 150 Terrell, NC 28682	Ann Quillian Lead Environmental Specialist (919) 546-6610 410 South Wilmington Street Raleigh, NC 27601	

**Total Actual emissions in TONS/YEAR:**

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2017	4362.01	9545.81	111.17	2446.55	346.03	29.70	13.69 [Hydrogen chloride (hydrochlori)]
2016	4919.01	9389.15	117.18	2917.11	375.48	31.35	14.58 [Hydrogen chloride (hydrochlori)]
2015	4623.95	8824.34	92.81	1552.52	954.11	97.06	79.08 [Hydrogen chloride (hydrochlori)]
2014	5917.45	9917.04	100.94	2180.70	1004.30	99.98	84.76 [Hydrogen chloride (hydrochlori)]
2013	4703.86	11854.28	89.99	1952.62	1201.47	105.27	86.10 [Hydrogen chloride (hydrochlori)]

<p><b>Review Engineer:</b> Ed Martin</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> 12/20/2018</p>	<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 03676/T56  <b>Permit Issue Date:</b> 12/20/2018  <b>Permit Expiration Date:</b> 07/31/2022</p>
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### Chronology

- May 22, 2018 Application received.
- August 1, 2018 Duke's toxics dispersion modeling analysis was approved by Nancy Jones, AQAB (note, this modeling is to be revised and submitted within 90 days of issuance of this permit).
- August 3, 2018 A Zoning Consistency Determination form signed by Catawba County Planning and Parks was received.
- October 25, 2018 Email to Ann Quillian at Duke requesting information on the toxics analysis.
- October 25, 2018 Duke asked about whether DAQ could process the application using the two-step process pursuant to rule 15A NCAC 02Q .0501(b)(2) and not the one-step process originally requested in the application to expedite receipt of the permit in time to meet the startup schedule of the wastewater facility and is the result of a change in Duke's project priorities.
- October 25, 2018 Duke was informed to send DAQ a letter requesting the application be processed using the two-step process to meet the startup schedule.
- October 31, 2018 A letter was received from Duke requesting that the application be processed using the two-step process.
- November 1, 2018 A letter was received from Duke notifying DAQ of the installation of new flyash filter separators as insignificant activities, and to request that the existing flyash filter separators (ES-FS1, ES-FS3, ES-FS4, ES-FS3B and ES-FS4B) also qualify as insignificant activities and that they be moved from the permit to the insignificant activity list.
- November 5, 2018 Ed Martin and Matt Porter, AQAB, who is reviewing the Marshall toxics analysis for the natural gas co-firing project (application 1800073.18B, received 10/03/2018) discussed the toxics modeling. Modeling for that project and this project is very similar. Matt had some questions on the co-firing project and therefore we decided to send Duke those questions since they could affect the modeling for this project, even though the modeling for this project had been approved.
- November 7, 2018 Email from Matt Porter to Philip Crawford with DAQ's comments on the Marshall natural gas co-firing project modeling.
- November 8, 2018 Email from Ann Quillian with response to the October 25, 2018 request. Also, Duke asked, that if a revised TAPs dispersion modeling run is required with the changes being discussed, whether they could be addressed either in the Part II application submittal for this wastewater project, or within 90 days of the Part I issuance, or as part of the Marshall natural gas co-firing project.
- November 21, 2018 Email to Ann Quillian to notify Duke that DAQ can allow the necessary revised toxics modeling to be submitted within 90 days of issuance of the Part I permit.
- November 26, 2018 Conference call among Ann Quillian, Cyndi Winston, Mark Yoder, Philip Crawford, Matt Porter and Ed Martin to discuss toxics modeling issues related to the wastewater and natural gas co-firing applications.
- November 29, 2018 Email to Ann Quillian to summarize the changes DAQ feels are necessary for the revised toxics modeling.

- December 17, 2018 Pursuant to a conversation between Ann Quillian and Ed Martin, concerning the letter received November 1, 2018, notifying DAQ of additions of flyash filter separators as insignificant activities, a letter was received (emailed on December 12, 2018) from Duke, at DAQ's request, further explaining the arrangement of the filter separators. Duke states that the control devices on the existing filter separators that are shown in the permit do not exist and Duke shows which sources emit to atmosphere and which are routed to the ESP inlet and not to atmosphere, even though the permit reviews when the filter separators were first permitted do not indicate they do not emit to atmosphere.
- December 17, 2018 Sent draft permit to the applicant, Mooresville Regional Office and Stationary Source Compliance Branch to review.
- December 18, 2018 Comments received from Duke related to the number of new filter separators to be added to the insignificant activity list as discussed in their letter received November 1, 2018 (see above). The draft permit had five new filter separators, but there are only three.
- December 19, 2018 Mooresville Regional Office and Stationary Source Compliance Branch responded that they have no comments.
- December 20, 2018 The permit was issued.

#### **I. Purpose of Applications**

Duke has applied for a permit to construct and operate a new flue gas desulfurization (FGD) wastewater treatment system (bioreactor) to comply with the North Carolina Coal Ash Management Act (NC-CAMA) and EPA's Coal Combustion Residual (CCR) regulations. Sulfur dioxide (SO<sub>2</sub>) is generated from the combustion of coal and is controlled with wet FGD scrubbers on each of the four units. The purpose of the bioreactor is to treat the scrubber blowdown before the wastewater is released to surface water. The system includes physical and chemical treatment to remove contaminants from the FGD blowdown. Biological treatment is used to remove certain heavy metals prior to discharge. Anaerobic activity of bacteria converts a small fraction of sulfate salts in the wastewater to hydrogen sulfide. Wastewater generated by the scrubbers is currently directed to a wet ash settling basin. Additionally, to comply with the CCR regulations under Subtitle D of the Resource Conservation and Recovery Act (RCRA), all inflow streams to the wastewater settling and auxiliary ponds must be eliminated. Other equipment to be added includes a wastewater treatment facility lime storage silo (ES-WWTF Silo), and an insignificant activity (a 10,000 gallon wastewater treatment facility hydrochloric acid storage tank).

The application included a facility-wide toxics modeling analysis that is triggered by adding new toxics emitting sources. However, because of questions raised by DAQ, which requires revised modeling, and in order to meet Duke's schedule for startup of the equipment, revised modeling will be required to be submitted within 90 days of issuance of the permit. Several issues related to the required modeling are covered in the correspondence shown in the chronology and these will affect modeling for this project as well as for the Marshall natural gas co-firing project.

A notice of intent to construct for the sources being added was approved by NCDAQ on July 10, 2017.

The application originally requested these modifications be processed using the one-step 15A NCAC 02Q .0501(b)(1) process. However, in a letter received October 31, 2018, Duke requested that the application be processed using the two-step process pursuant to rule 15A NCAC 02Q .0501(b)(2) to expedite receipt of the permit in time to meet the startup schedule of the wastewater facility.

## II. Permit Changes

The following changes were made to the Duke Energy Carolinas LLC – Marshall Steam Station Air Permit No. 03676T55:

Old Page	Old Section	New Page	New Section	Description of Change(s)
Cover	--	Cover	--	Amended permit numbers and dates.
--	Insignificant Activities list	--	Insignificant Activities list	Added new wastewater treatment facility hydrochloric acid storage tank I-138.  Moved sources ES-FS1, ES-FS3, ES-FS4, ES-FS3B and ES-FS4B from the permit to the IA list as I-139, I-140, I-141, I-142 and I-143 respectively. Also added new sources I-144, I-145 and I-146.
5-6	1, table of permitted emission sources	5-6	1, table of permitted emission sources	Moved sources ES-FS1, ES-FS3, ES-FS4, ES-FS3B and ES-FS4B from the permit to the IA list. Control devices CD-FS1, CD-FS3, CD-FS4, CD-FS3B and CD-FS4B for these sources were deleted since they do not exist.  Added wastewater treatment facility ES-WWTFBR (bio-reactor) and wastewater treatment facility lime storage silo ES-WWTF Silo.
37-38	2.1.G	--	--	Removed this section for sources ES-FS1, ES-FS3 and ES-FS4.
41-42	2.1.I	2.1.H	39-40	Removed sources ES-FS3B and ES-FS4B from this section.
--	--	46-47	2.1.K	Added section for wastewater treatment facility lime storage silo ES-WWTF Silo.
--	--	49	2.2.B.1.a	Added requirement to submit a toxics modeling demonstration within 90 days of issuance of Permit No. 03676T56 for the wastewater treatment facility modification.
54-62	3	53-61	3	Updated General Conditions to version 5.3, 08/21/2018.
--	List of Acronyms	--	List of Acronyms	Corrected definition of AOS to Alternative Operating Scenario.

## III. Facility Description

Duke's Marshall Steam Station is an electric utility that generates electrical power. The Marshall Steam Station is permitted for four coal/No. 2 fuel oil-fired electric utility boilers (ID Nos. ES-1, ES-2, ES-3, ES-4) and various supporting equipment.

## IV. Summary of Changes to Emission Sources and Control Devices

The equipment description changes for the above modifications are as follows (strikeout shows equipment removed and new equipment is shown in bold):

Emission Source I.D. No.	Emission Source Description	Control Device I.D. No.	Control Device Description
<del>ES-FS1</del>	<del>Flyash transfer filter separator Units 1 &amp; 2</del>	<del>CD-FS1</del>	<del>Bagfilter (417 square feet of filter area)</del>
<del>ES-FS3</del>	<del>Flyash transfer filter separator Unit 3</del>	<del>CD-FS3</del>	<del>Bagfilter (853 square feet of filter area)</del>

Emission Source I.D. No.	Emission Source Description	Control Device I.D. No.	Control Device Description
ES-FS4	Flyash transfer filter separator Unit 4	CD-FS4	Bagfilter (853 square feet of filter area)
ES-FS3B	Flyash transfer filter separator, Unit 3B (35 tons per hour maximum process rate)	CD-FS3B	Bagfilter (853 square feet of filter area)
ES-FS4B	Flyash transfer filter separator, Unit 4B (35 tons per hour maximum process rate)	CD-FS4B	Bagfilter (853 square feet of filter area)
ES-WWTFBR	wastewater treatment facility (bio-reactor)	NA	NA
ES-WWTF Silo	wastewater treatment facility lime storage silo (5,600 cubic feet capacity)	CD-WWTF-Silo-BF	bin vent filter (295.2 square feet of filter area)

Also added insignificant activities I-138 through I-148.

## V. Emissions and Regulatory Evaluation

### A. PSD Applicability

The Marshall Steam Station is an existing Prevention of Significant Deterioration (PSD) “major stationary source” of criteria air pollutants as defined under PSD, per 40 CFR 51.166(b)(1)(i)(a), and is classified as one of the 28 named source categories under the category of “fossil fuel-fired steam electric plants of more than 250 million Btu per hour heat input,” which emits or has a potential to emit (PTE) 100 tons per year of any regulated pollutant.

Because the existing facility is considered a major stationary source, any physical change or a change in the method of operation as calculated pursuant to 40 CFR 51.166(a)(7)(iv) which results in a *net emissions increase* for regulated pollutants in the amounts equal or greater than the significance levels, is subject to PSD review and must meet certain review requirements. Thus, the net emission increase as a result of this modification must be compared to the “significance levels” as listed in 40 CFR 51.166(b)(23)(i) to determine which pollutants must undergo PSD review.

The Permittee has performed a PSD applicability analysis for the project to determine whether the project results in an emission increase of any regulated NSR pollutant above the applicable significance thresholds and therefore whether PSD permitting is required for the applicable PSD-regulated air pollutants being emitted by the new sources: PM, PM<sub>10</sub>, PM<sub>2.5</sub>, Pb, and H<sub>2</sub>S.

### B. Project Emissions

Emissions for the new sources are calculated under the “actual-to-potential test” as the difference between the *potential to emit* (post-project) as defined by 40 CFR 51.166(b)(4), and the *baseline actual emissions* (pre-project) as defined by 40 CFR 51.166(b)(47)(iii). Potential to emit means the maximum capacity to emit under its physical and operational design. For a new emissions unit, baseline actual emissions are zero. Duke has calculated the potential emissions increase for the new sources as shown in Table 1 (see Appendix B of the application for calculations). Potential emissions are calculated as follows:

#### Emissions from Lime Storage Silo

Particulate matter (PM/PM<sub>10</sub>/PM<sub>2.5</sub>) emissions from the lime storage silo are estimated based on an outlet grain loading manufacturer’s guarantee of 0.005 grains of PM per standard cubic feet of exhaust and the maximum air flow through the bin vent filter during filling of 48,000 scf/hr resulting in potential PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions of 0.034 lb/hr or 0.15 tpy. The silo will be filled by truck delivery



and empty into slurry tanks located directly below the silo. The silo will be equipped with dual discharge trains. Each train will include an aerator, rotary feeder, volumetric screw feeder with surge hopper, and a slurry tank. Each surge hopper will be equipped with a vent sock that allows displaced air to be evacuated from the hopper during the filling process. PM emissions as a result of discharging lime from the silo to the slurry tanks are expected to be negligible.

Metal emissions from the lime storage silo calculated using Electric Power Research Institute (EPRI) data. The EPRI PISCES Database (February 2003) was used to determine the composition of lime. Metal emissions are derived from the PM estimate and the average trace element analysis of lime.

Emissions from Bio-Reactor

Hydrogen sulfide (H<sub>2</sub>S) emissions from the bio-reactor are estimated using emission factors based on manufacturer studies. Anaerobic activity of bacteria converts a small fraction of sulfate salts in the effluent to H<sub>2</sub>S. Conservatively, all sulfate reduction is assumed to form H<sub>2</sub>S, and 50 percent is assumed to be emitted from solution. The value of the Sulfate Reduction Delta of 16.7 mg/L as used to calculate the H<sub>2</sub>S emissions in Appendix B is based on testing that was performed in 2005 at the Red Rock Ranch Pilot site in California on sulfate reduction across the biofilter technology, as provided in an email from Erin Wallace August 17, 2018.

Emissions from Hydrochloric Acid Storage Tank (IS-HCl) (insignificant activity)

Hydrochloric acid (HCl) is used to treat the scrubber blowdown before the wastewater is released to surface water. Duke calculates HCl emissions from the storage tank, using EPA TANKS 4.0.9d, at 304.84 lb/yr. No control efficiency is claimed for the (voluntary) tank scrubber. Emissions of HCl are less than 1000 pounds per year and therefore the tank qualifies as an insignificant activity in accordance with 02Q .053(8).

Inorganic storage tanks with a true vapor pressure less than 1.5 pounds per square inch absolute are exempt from toxics modeling per 02Q .0702(a)(19)(A).

Table 1 presents a summary of the potential emissions increases for the project based on the baseline and potential (PTE) emissions described above. Since the net increase for each pollutant using PTE minus baseline emissions is below the corresponding PSD significant rates, a PSD review is not required for this project.

Table 1 –Project Potential Emissions Increase, tpy

		PM/PM <sub>10</sub> /PM <sub>2.5</sub>	TRS	Pb	HCl
Project Potential Emissions	ES-WWTFBR		3.57		
	ES-WWTF Silo	0.15		1.8E-07	
	hydrochloric acid storage tank*				0.152
Baseline Actual Emissions		0	0	0	0
Project Net Emissions Increase		0.15	3.57	1.8E-07	0.152
NSR Significant Emissions Rates		25/15/10	10	0.6	NA
NSR Review Required?		No	No	No	NA

\* insignificant activity

Detailed emissions calculations are presented in Duke’s application Appendix B.

**VI. Source-by-Source Requirements**

- A. wastewater treatment facility lime storage silo (ID No. ES-WWTF Silo) with associated bin vent filter (ID No. CD-WWTF-Silo-BF)**

This equipment is subject to the following regulations:

1. 15A NCAC 02D .0510: PARTICULATES FROM SAND, GRAVEL, OR CRUSHED STONE OPERATIONS

- a. The Permittee shall not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent exceeding the ambient air quality standards beyond the property line for particulate matter, both PM10 and total suspended particulates.
- b. Fugitive non-process dust emissions shall be controlled by 15A NCAC 02D .0540.
- c. The Permittee shall control emissions from conveyors, screens, and transfer points, such that the applicable opacity standards in Section VI.A.2 below are not exceeded.

Compliance

Particulate matter emissions from this source (ID No. ES-WWTF Silo) shall be controlled by the associated bin vent filter (ID No. CD-WWTF-Silo-BF). 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 bin vent filter's structural integrity.

The results of the above 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 and time of each recorded action;
- ii. The results of each inspection;
- iii. The results of any maintenance performed on the bin vent filter; and
- iv. Any variance from manufacturer's recommendations, if any, and corrections made.

Reporting

The Permittee shall submit a summary report of the monitoring and recordkeeping activities 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.

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

Visible emissions from this source shall not be more than 20 percent opacity (except during startups, shutdowns, and malfunctions) 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.

Compliance

To assure compliance, once a month the Permittee shall observe the emission points of this source (ID No. ES-WWTF Silo) for any visible emissions above normal. The Permittee shall establish "normal" for the source in the first 30 days following start-up of the sources. If visible emissions from this source are observed to be above normal, the Permittee shall either: (a) immediately shutdown the source and repair the malfunction, (b) be deemed to be in noncompliance with 15A NCAC 02D .0521 or (c) demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2601 for 30 minutes is below the emission limit.

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.

Reporting

The Permittee shall submit a summary report of the observations 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.

**VII. Public Notice**

Public notice is not required at this time.

**VIII. Other Requirements**

PE Seal

A PE seal is not required since the air flow through the lime storage silo bin vent filter is less than or equal to 10,000 actual cubic feet per minute in accordance with 02Q .0112.

Zoning

A Zoning Consistency Determination form was received August 3, 2018, signed by Chris Temberlake, Catawba County Planning and Parks, stating that the application had been received and that the proposed operation is consistent with applicable zoning ordinances.

Fee Classification

The facility fee classification before and after this modification will remain as "Title V".

Increment Tracking

Catawba County has triggered increment tracking under PSD for PM10. This modification will result in an increase of 0.034 lb/hr of PM-10 from the lime storage silo (ES-WWTF Silo).

**IX. Recommendations**

Issuance is recommended.