

**STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENTAL QUALITY**

**HEARING OFFICER'S REPORT AND RESPONSE TO PUBLIC  
COMMENTS FOR THE ISSUANCE OF THE STATE GENERAL  
PERMITS FOR FARM DIGESTER SYSTEMS ON ANIMAL  
FEEDING OPERATIONS**

**PUBLIC MEETING  
APRIL 5, 2022  
KENANSVILLE, NORTH CAROLINA**

**PUBLIC MEETING  
APRIL 7, 2022  
CLINTON, NORTH CAROLINA**

**PUBLIC MEETING  
APRIL 19, 2022  
STATESVILLE, NORTH CAROLINA**

**PUBLIC MEETING  
APRIL 21, 2022  
WEBEX ONLINE MEETING**

## TABLE OF CONTENTS

	<b>Page</b>
I. Introduction	3
II. Stakeholder Process	4
III. Public Meetings	5
IV. Summary of and Response to Public Comments	6
V. Revised Digester General Permits	20
VI. Hearing Officer's Recommendation	21

## ATTACHMENTS

Attachment 1 – 2021 Farm Act – S.L. 2021-78 (S605)

Attachment 2 – NC Environmental Justice and Equity Advisory Board Letter, 08.26.2021

Attachment 3 – Technical Stakeholder Working Group Meeting Summary

Attachment 4 – Draft General Permits Sent Out to Public Notice

Attachment 5 – Press Release and Fact Sheet for Public Meetings

Attachment 6 – Environmental Justice Report

Attachment 7 – Public Comments

- Audio recordings of the public hearings
- Written Comments

Attachment 8 – Recommended General Permits

All Attachments are available at: <https://deq.nc.gov/digesterpermits>

## I. INTRODUCTION

The 2021 North Carolina Farm Act (Session Law 2021-78) required the Environmental Management Commission (Commission) to create a new general permit for farms with farm digester systems. See Attachment 1. S.L. 2021-78 defined a “farm digester system” as “a system, including all associated equipment and lagoon covers, by which gases are collected and processed from an animal waste management system for the digestion of animal biomass for use as a renewable energy resource. A farm digester system shall be considered an agricultural feedlot activity within the meaning of “animal operation” and shall be considered a part of an “animal waste management system” as defined in G.S. §143-215.10B.” The development and implementation of general permits for animal operations is delegated by the Commission to the Director of the Division of Water Resources (Director) per 15A NCAC 02T .0111.

S.L. 2021-78 requires that the new digester general permits be effective no later than 12 months after the effective date of the law (July 2, 2021). S.L. 2021-78 further requires that in addition to conditions required to describe and authorize the construction, monitoring, and proper operation of farm digester systems, the farm digester general permits contain the same conditions included in the existing state general permits for animal operations. S.L. 2021-78 also requires that the digester general permits expire no later than September 30, 2024, or the effective date of the next version of the currently existing state general permits for animal operations.

Based upon the requirements of S.L. 2021-78 and G.S. §143-215.10C, the Division of Water Resources (Division or DWR) developed the following farm digester general permits (collectively Digester General Permits) with an effective date of July 1, 2022 and expiration date of September 30, 2024.

- General Permit No. AWG400000 – Farm Digester System for Swine Operations
- General Permit No. AWG500000 – Farm Digester System for Cattle Operations
- General Permit No. AWG600000 – Farm Digester System for Poultry Operations with Liquid Waste Management System

These Digester General Permits are required for farm digester animal waste management systems that have at least 100 confined cattle, 250 swine, or 30,000 poultry with a liquid waste management system, respectively. The farm digester systems covered by these Digester General Permits include the collection, transfer, treatment, storage, and land application of animal waste as well as the digester, lagoon covers, and all associated equipment by which gases are collected and processed for use as a renewable resource. These systems collect animal waste using a variety of methods, including flush systems, pit recharge systems, barn scraper systems, and scraped surface lots. The waste is transmitted via channels or pipes to an anaerobic digester(s) for waste treatment and biogas collection. The digestate or effluent from the digester(s) is then either transferred to a lagoon or storage pond for secondary treatment/storage or land applied directly. G.S. §143-215.10C requires that animal waste must be land applied at no greater than agronomic rates, regardless of digester system design.

On August 26, 2021, the DEQ Secretary's Environmental Justice and Equity Advisory Board (EJEAB) sent a letter to DEQ Secretary Biser expressing concerns related to the Digester General Permits required by S.L. 2021-78, See Attachment 2. In addition to calling for use of superior waste management technology and additional air and water monitoring, the EJEAB letter recommended that DEQ take specific steps to ensure adequate and meaningful public participation in permit development. DEQ carefully considered the information and recommendations from the EJEAB and implemented those recommendations in developing plans for both the Stakeholder Process and the Public Comment/Public Meetings Process whenever possible.

## **II. STAKEHOLDER PROCESS**

In preparation of developing the Draft General Permits, the Division held three stakeholder meetings to gather vital input; the first two meetings were technical workgroup sessions and the third was a public meeting/forum. Stakeholder meetings were all held via Zoom or WebEx online due to ongoing COVID concerns. DEQ engaged the services of John Stephens of the UNC School of Government to serve as an independent third-party facilitator for the technical stakeholder workgroup sessions and for the public stakeholder input session.

The first two stakeholder meetings were held November 19, 2021, and December 7, 2021. Approximately 60 stakeholders were invited to these two meetings to provide input on what should be included in the draft Digester General Permits. The stakeholders represented community groups and environmental non-governmental organizations, state agencies and universities, and permittee and industry representatives. A summary of the two technical stakeholder meetings was posted online for public review and can be found in Attachment 3.

A press release was issued on November 3, 2021, announcing the stakeholder comment period and the third stakeholder meeting, which was open to the public, scheduled for December 14, 2021. Thirty stakeholders provided oral comments during this online meeting. As a part of the stakeholder process, the Division also accepted written and electronic public comments on the development of Digester General Permits until December 17, 2021. After considering the input from the stakeholder meetings and public comment, the Division developed Draft Digester General Permits.

### III. PUBLIC MEETINGS

The Division is required by 15A NCAC 02T .0111(b) to publicly notice an intent to issue general permits at least 30 days prior to final action. The Director determined that it would be in the public interest to conduct public meetings and request public comment on the Digester General Permits. Rich Gannon, the Division's Nonpoint Source Program Supervisor, served as the hearing officer.

On February 1, 2022, a press release and public notice of the public meeting and public comment period were issued, posted on the DEQ webpage in both English and Spanish at [deq.nc.gov/digesterpermits](http://deq.nc.gov/digesterpermits), and sent directly to DEQ's interested parties list. DEQ also sent press releases to statewide media outlets, interested parties, and DEQ's Environmental Justice Listserv regarding these public meetings on February 1, March 3, March 22, April 8, and April 18, 2022. DEQ placed notice of the public meeting and public comment period in newspapers across North Carolina. DEQ communicated the public notices and information throughout the process to the tribes, tribal organizations across the state, and shared the information with the North Carolina Indian Affairs Commission. DEQ mailed the public notice in both English and Spanish to approximately 130 churches across Eastern North Carolina. DEQ also worked with known community leaders across the state to distribute information to hard-to-reach communities, with a focus on the counties identified in the Environmental Justice analysis found in the Environmental Justice Report (see Attachment 6). The public notice provided for a full 90-day public comment period and was issued more than 60 days prior to the first of four public meetings regarding the Digester General Permits. The public meetings were held at 6:00 PM on the following dates:

- April 5, 2022 – James Sprunt Community College, Kenansville, NC
- April 7, 2022 – Sampson County Exposition Center, Clinton, NC
- April 19, 2022 – Statesville Civic Center, Statesville, NC
- April 21, 2022 – WebEx online meeting

DEQ offered the option to request interpretation services for the public meetings, and interpretation services were provided at the April 5 meeting in Kenansville and during the April 21 WebEx meeting. DEQ hired Fountainworks to facilitate the meeting process and provide independent moderators for all four public meetings regarding these Digester General Permits. Fountainworks is an independent consulting firm that specializes in public meetings to better engage and capture the needs of those involved. Written comments were accepted in person, by postal service, and electronically at [PublicCommentsDWR@ncdenr.gov](mailto:PublicCommentsDWR@ncdenr.gov) throughout the public comment period. The public comment period closed on May 2, 2022.

Forty-nine people attended the public meeting in Kenansville on April 5 with 19 individuals providing oral comments. Forty-six people attended the public meeting in Clinton on April 7 with 19 individuals providing oral comments. Twenty-three people attended the public meeting in Statesville on April 19 with ten individuals providing oral

comments. Sixty-six people attended the April 21 WebEx meeting in addition to staff. Thirty-three people registered to speak, of those 26 provided oral comments; one additional commentor that did not pre-register also requested and was permitted to provide oral comments. Eight people, including three staff, participated on the WebEx site providing Spanish language interpretation services.

The Draft Digester General Permits are included as Attachment 4 and the related public notice, press release, and fact sheet are included as Attachment 5. The public notice and press release were made available in both English and Spanish. Written public comments are included, as Attachment 7. Links to recordings of the four public meetings can be found on the DEQ website: [deq.nc.gov/digesterpermits](https://deq.nc.gov/digesterpermits)

#### **IV. SUMMARY OF AND RESPONSE TO PUBLIC COMMENTS**

The Division received approximately 186 public comments via email and another 6 were hand delivered at public meetings. These comments are in addition to the 75 oral comments provided during the four public meetings. Many commenters that opposed the draft Digester General Permits describe biogas as “greenwashing” that serves to perpetuate an “outdated, inefficient, and irresponsible method of waste management.” Commenters opposing the Digester General Permits also stated that biogas is not clean energy, and that digester systems should require the biogas to be used onsite or flared. Some commenters expressed concern that the use of a general permit would be a shortcut to permitting without case-by-case reviews.

Commenters in support of the Digester General Permits spoke to the economic impact provided by the implementation of digesters. Commenters also described the benefits of anaerobic digestion such as the reduction in greenhouse gases, decrease in on-farm odor (citing EPA’s AgSTAR program), and protection from heavy rainfall for covered waste structures.

Division staff summarized public comments, prepared staff responses to comments, and provided staff recommendations to the Hearing Officer. Changes that are recommended in the “Staff’s Recommendation” below are changes between the Draft General Permits (Attachment 4) and the Recommended General Permits (Attachment 8).

All the written comments are available at: [deq.nc.gov/digesterpermits](https://deq.nc.gov/digesterpermits)

#### **PERMIT CONDITION COMMENTS**

For organizational purposes, permit condition numbers listed below reference the Swine Digester General Permit. All condition numbers may not always align with the Wet Poultry and Cattle Digester General Permits.

## **Permit Description/Preamble**

Comments: Commenters requested clarification for when individual permits can be required. Some commenters also requested the requirements that trigger an individual permit to be expanded to include facilities in the 100-year floodplain, facilities near impaired waterways, facilities near drinking water wells, and those with a record of violations.

Response: The circumstances for when the Director may require a facility to seek an individual permit rather than a general permit are specified in 15A NCAC 02T .0111(h).

S.L. 2021-78 amends G.S. §106-806 to expressly prohibit the installation of a farm digester in the 100-year floodplain. Accordingly, permit Condition I.8 states that no collection, treatment, or storage facilities may be constructed in the 100-year floodplain.

15A NCAC 02T .1304(b)(11) requires new and expanding animal waste treatment systems to be at least 100 feet from perennial streams and waterbodies. S.L. 2021-78 also amends G.S. §106-806 to require the construction or renovation of a farm digester system to comply with setbacks found in G.S. §106-803 to the maximum extent practicable. G.S. §106-803 addresses setbacks from, among other things residences, schools, hospitals, churches, property boundaries, and water supply wells. Verification of compliance with setback requirements is a part of the permit application review process.

Staff do not believe that addition of digesters to these systems increases the risk of surface or ground water contamination that would suggest a need to increase buffer distances.

*Staff Recommendations: Add the phrase “but is not limited to” to the second paragraph of the Preamble to underscore that many site-specific factors may need to be considered in determining the need for an individual permit.*

## **Condition I.9 – Phosphorus Loss Analysis**

Comments: DWR received many comments on this topic – some requested that this permit condition be retained and others requested that it be removed.

Response: This condition in the 2019 General Permits was challenged through the Office of Administrative Hearings (OAH). OAH issued a final decision finding that this condition was void. At the time the draft Digester General Permits were released for public comment, that ruling was under appeal. The Superior Court issued a ruling on June 21, 2022, to overturn the OAH decision reinstating this permit condition in the 2019 State General Permits. S.L. 2021-78 requires that the Digester General Permits contain the same conditions as the existing State General Permits.

*Staff Recommendations: Condition I.9 be included in the Digester General Permit as it appears in the 2019 State General Permits.*

#### **Condition I.14**

Comments: Some commenters stated that Natural Resources Conservation Service (NRCS) Standards are designed to be guidelines; they are not rules or law. Commenters also stated that engineers should not be bound to a standard that may not be applicable.

Response: S.L. 2021-78 provides that the permits shall contain “conditions required to describe and authorize the construction, monitoring, and proper operation of farm digester systems.” While NC [NRCS Standards](#) are not laws or rules, they provide industry benchmarks and staff consider their continued use reasonable and appropriate, DWR has determined that adherence to these standards is appropriate to ensure proper design of the digesters.

Staff Recommendations: *The condition should be changed to read:*

*Digester design shall meet the criteria in NC NRCS Standard 366 Anaerobic Digester and NC NRCS Standard 367 Roofs and Covers effective at the time of development/design and initial permit issuance where applicable.*

#### **Condition I.15**

Comments: Some commenters stated that the term “best engineering practices” was subjective and open to interpretation.

Response: The term “best engineering practices” is a common term in the regulated community. However, a statement that refers to engineering standards may provide clearer guidance to permittees.

Staff Recommendations: *The condition should be changed to read:*

*Upon completion of construction and prior to operation of a new Farm Digester System, as-built plans and specifications and the certification, signed and sealed by a Professional Engineer, must be submitted certifying that the permitted Farm Digester System has been installed in accordance with the submitted design, this General Permit, and applicable engineering standards. Mail the attached Engineer's Certification form to the Animal Feeding Operations Unit, 1636 Mail Service Center, Raleigh, NC 27699-1636.*

#### **Condition I.17**

Comments: Commenters stated that the term “fails to perform satisfactorily” is subjective and that the digester system is either compliant or not.

Response: Staff agrees that the condition is intended to address circumstances where the system fails to operate in compliance with the general permit.

Staff Recommendations: *The condition should be changed to read:*

*The waste management system, including the Farm Digester System and the land application system, shall be effectively maintained and operated at all times so that there is no discharge to surface waters or violation of groundwater standards. In the event that the Farm Digester System fails to perform in compliance with this General Permit, the Permittee shall take immediate corrective actions including those actions that may be required by the Division.*



### **Condition II.8**

Comments: Commenters stated that the digester system design should not limit the return of biogas condensate to the digester. Commenters further said that the Professional Engineer should be allowed to determine the manner of managing the condensate within the digester system – return to digester, other permitted storage, a biodryer, etc.

Response: Staff agree with these comments.

Staff Recommendations: *The condition should be changed to read:*

*No material other than animal wastes of the type generated on this facility shall be disposed of in the animal waste collection, treatment, storage, or application systems. This includes but is not limited to pesticides, toxic chemicals and petroleum products.*

*The biogas condensate generated by the biogas dryers may be returned to the farm digester system as it serves to recycle moisture from the existing waste stream. The condensate collection system must be designed to prevent the introduction of precipitation, runoff, wastes, or any chemicals other than those necessary for system maintenance.*

### **Condition II.25**

Comments: Commenters stated that the condition addresses concerns related to any potential increase in nutrients to be land applied and that the condition is adequately protective.

Response: Staff agree with this comment. This condition is also contained within the current State General Permits. S.L. 2021-78 requires that the Digester General Permits contain the same conditions as the existing State General Permits.

Staff Recommendations: *No change.*

### **Condition II.30**

Comments: Some commenters stated that in most cases the secondary storage will not operate as a treatment lagoon but as a waste storage pond that is designed to be pumped out completely. Commenters stated that the condition should be modified to clarify that it only applies to treatment lagoons.

Response: Staff believe that the permit condition is clear as written and is consistent with State law. Modifications to the waste treatment system design are site specific and will be evaluated on a case-by-case basis.

Staff Recommendations: *No change.*

### **Conditions III.11 – 14**

Comments: DWR received many comments on this topic – some requested that these permit conditions be retained, and others requested that they be removed.

Response: These conditions in the 2019 General Permits were challenged through the Office of Administrative Hearings (“OAH”). The OAH issued a final decision finding that these conditions were void. At the time the draft Digester General Permits were released for public comment, that ruling was under appeal. The Superior Court issued a ruling on June 21, 2022, to overturn the OAH decision reinstating these permit conditions in the 2019 State General Permits. S.L. 2021-78 requires that the Digester General Permits contain the same conditions as the existing State General Permits.

Staff Recommendations: *Conditions III.11-14 be included in the Digester General Permit as they appear in the 2019 State General Permits.*

### **Condition III.18**

Comments: DWR received many comments on this topic – some requested that this permit condition be retained, and others requested that it be removed.

Response: This condition in the 2019 General Permits was challenged through the Office of Administrative Hearings (“OAH”). The OAH issued a final decision finding that this condition was void. At the time the draft Digester General Permits were released for public comment, that ruling was under appeal. The Superior Court issued a ruling on June 21, 2022, to overturn the OAH decision reinstating this permit condition in the 2019 State General Permits. S.L. 2021-78 requires that the Digester General Permits contain the same conditions as the existing State General Permits.

Staff Recommendations: *Condition III.18 be included in the Digester General Permit as it appears in the 2019 State General Permits.*

### **Condition III.23 Leak Detection for biogas gathering lines**

Comments: DWR received many comments on this topic – some requested that this permit condition be retained, and others requested that it be removed. Commenters in support of the condition stated that it should be required as a part of necessary air quality monitoring to be protective of the environment. Other commenters stated that this condition is outside the authority of a water quality permit. These commenters further stated that emissions from a farm digester system would generally be the same as those that exist today.

Response: Staff agree that air quality monitoring is not within the authority of DWR to implement in these animal waste management system non-discharge general permits.

The General Assembly has not authorized DWR to regulate air emissions from animal operations other than new or expanding swine operations, see G.S. §143-215.10I, 15A NCAC 02T .1307-.1308, and 15A NCAC 02D .1808. The statutes and regulations applicable to DWR’s permitting of existing animal feeding operations contain no provisions addressing the regulation of ammonia emissions. G.S. §143-215.10I specifically states that the performance standards, including the limit on ammonia emissions, does not apply where ““permitting action does not

result in an increase in the permitted capacity of the swine farm, as measured by the annual steady state live weight capacity of the swine farm”.

Air emissions are specifically exempted from the definition of “discharge” in N.C. Gen. Stat. §143-213. In 2012, the General Assembly amended § 143-213(9) to add the following sentence to the definition of discharge: “A reference to ‘discharge’ or the ‘discharge of waste’ shall not be interpreted to include ‘emission’ as defined in subdivision (12) of this section.” In turn, subsection (12) defines emission as “a release into the outdoor atmosphere of air contaminants.”

Furthermore, the NC Greenhouse Gas (GHG) inventory report estimates that in 2020, fugitive methane emissions from natural gas distribution systems were about 1.0 million metric tons of CO<sub>2</sub> equivalent or approximately 0.7% of statewide emissions.<sup>1</sup> The methodology for estimating GHG emissions from Natural Gas and Oil systems is based on standard procedures developed by EPA for states’ use<sup>2</sup>, and incorporates natural gas distribution pipeline miles reported by DOT’s Pipeline and Hazardous Materials Safety Administration (PHMSA).<sup>3</sup> As this statewide estimate represents emissions from medium pressure city gate gas distribution lines with the carrying capacity for all natural gas delivered to end users in the state, it is estimated that fugitive leaks from smaller, low-pressure collection systems at biogas digester facilities will be comparatively smaller.

*Staff Recommendations: Remove this condition.*

### **Condition III.24 – Influent/Effluent Monitoring**

Comments: DWR received many comments on this topic – some requested that this permit condition be retained or amended, and others requested that it be removed. Commenters stated that DWR should retain and expand influent and effluent sampling to also include quarterly sampling of effluent from any secondary treatment structures. Other commenters said that while influent/effluent sampling of digesters may assist the operators in proper system management that it should not be a regulatory requirement. These commenters also stated that the variable nature of the influent makes collection of a representative sample problematic.

Response: S.L. 2021-78 allows for conditions required to monitor the proper operation of the farm digester system. Periodic influent and effluent monitoring allows for the

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<sup>1</sup> “North Carolina Greenhouse Gas Inventory (1990-2030)”, NC Department of Environmental Quality, January 2022, accessed from <https://deq.nc.gov/energy-climate/climate-change/greenhouse-gas-inventory>

<sup>2</sup> “User’s Guide for Estimating Carbon Dioxide and Methane Emissions from Natural Gas and Oil Systems Using the State Inventory Tool,” prepared by ICF for the State Energy and Environment Program and U.S. Environmental Protections Agency, October 2017, accessed from [https://www.epa.gov/sites/production/files/2017-12/documents/natural\\_gas\\_and\\_oil\\_users\\_guide.pdf](https://www.epa.gov/sites/production/files/2017-12/documents/natural_gas_and_oil_users_guide.pdf)

<sup>3</sup> PHMSA, “Gas Distribution, Gas Gathering, Gas Transmission, Hazardous Liquids, Liquefied Natural Gas (LNG), and Underground Natural Gas Storage (UNGS) Annual Report Data, accessed from <https://www.phmsa.dot.gov/data-andstatistics/pipeline/distribution-transmission-gathering-lng-and-liquid-annual-data>

evaluation of the proper operation of the digester. The data from the influent and effluent monitoring will provide additional clarity on ammonia and organic nitrogen concentrations in the digester effluent. Effluent from secondary treatment/storage structures is required to have a standard waste analysis within 60 days of any land application event [G.S. §143-215.10C]. Additional quarterly sampling is not necessary to evaluate proper operation of the system.

*Staff Recommendations: No change.*

### **Condition VII – “Farm Digester System” Definition**

Comments: A commenter stated that the general permit should be available to farmers regardless of the use of the biogas; the biogas should be allowed for heating or other purposes different from some definitions of “renewable energy”.

Response: The definition of Farm Digester System in the permit condition comes directly from S.L. 2021-78 section 11(a) which updates G.S. §143-213 (12a).

*Staff Recommendations: No change.*

## **GENERAL COMMENTS**

The following discussion summarizes comments received concerning the draft Digester General Permits that were not specific to permit conditions or attachments. Comments were categorized into similar topics for developing staff responses and recommendations, which are provided below.

### **Additional Monitoring**

Comments: Many commenters requested the implementation of additional surface water monitoring, groundwater monitoring, and air quality monitoring for all facilities covered by the Digester General Permits. Commenters recommended various sampling frequencies, parameters, and collection protocols.

Some commenters also requested that the Digester General Permits should require quarterly soil sampling from land application fields at two different depths. The commenters recommended the soils analysis include Total Nitrogen, Total Kjeldahl Nitrogen, Total Phosphorus, Total Organic Carbon, Total Carbon, Nitrate/Nitrite Nitrogen, heavy metals, and pH.

Response: S.L. 2021-78 specifically required that the same permit conditions found in the current State General Permits be incorporated into the Digester General Permits. The session law also limits the implementation of additional requirements to those necessary to describe and authorize the construction, monitoring, and proper operation of farm digester systems. The installation of farm digester systems at pre-existing facilities does not increase the risk of impacts to surface water, or groundwater. Therefore, S.L. 2021-78 does not allow the inclusion of these additional sampling requirements.

Air quality monitoring is not within the authority of DWR to implement in these animal waste management system non-discharge general permits.

Air emissions are specifically exempted from the definition of “discharge” in N.C. Gen. Stat. §143-213. In 2012, the General Assembly amended § 143-213(9) to add the following sentence to the definition of discharge: “A reference to ‘discharge’ or the ‘discharge of waste’ shall not be interpreted to include ‘emission’ as defined in subdivision (12) of this section.” In turn, subsection (12) defines emission as “a release into the outdoor atmosphere of air contaminants.”

Soil sampling requirements are established in G.S. §143-215.10(e)(6). Soil sampling requirements are addressed in Condition III.4.

Condition III.10 in the Digester General Permits allows for implementation of additional monitoring and reporting on a case-by-case basis.

*Staff Recommendations: No changes.*

### **Alternative Treatment with Least Adverse Impact**

Comments: Commenters stated that DEQ should revise the draft Digester General Permits to require permittees to use the practicable waste treatment and disposal alternatives with the least adverse impact on the environment as required by G.S. §143-215.1(b)(2).

Response: S.L. 2021-78 specifically required that the same permit conditions found in the current State General Permits be incorporated into the Digester General Permits. The session law also limits the implementation of additional requirements to those necessary to describe and authorize the construction, monitoring, and proper operation of farm digester systems. The installation of farm digester systems at pre-existing facilities does not increase the risk of surface water, groundwater, or air pollution. Therefore, S.L. 2021-78 does not allow the inclusion of these additional sampling requirements.

Furthermore, this statutory provision does not apply to modifications of existing waste treatment and disposal systems. The Division interprets this statutory requirement to apply at the initial permitting of the system, when a permittee is determining how to manage a new waste stream.

Even if the alternative technology requirement did apply to some existing systems, it would not apply to existing swine waste management systems because those systems are subject to a more specific statutory regime that does not require implementation of these measures. Specifically, in 2007, the General Assembly enacted Session Law 2007-523. That session law speaks to when new technologies will be required at swine waste management systems. New facilities are required to meet stringent performance standards. Session Law 2007-523, Sec. 1(a) (codified at N.C. Gen. Stat. § 143-215.10I). Existing facilities are allowed to continue to operate under their existing permit. This statutory regime indicates that this requirement does not apply to swine waste management systems.

*Staff Recommendations: No changes.*

## **Ammonia Emission**

Comments: Commenters stated that the use of farm digesters would significantly increase the atmospheric emission of ammonia, causing water quality impairments due to downstream atmospheric deposition of that ammonia. Some commenters stated that DEQ should monitor and limit ammonia emissions.

Response: The General Assembly has not authorized DWR to regulate air emissions from animal operations other than new or expanding swine operations, see G.S. §143-215.10I, 15A NCAC 02T .1307-.1308, and 15A NCAC 02D .1808. The statutes and regulations applicable to DWR's permitting of existing animal feeding operations contain no provisions addressing the regulation of ammonia emissions. The General Assembly's intent is demonstrated in G.S. §143-215.10I which specifically states that the performance standards, including the limit on ammonia emissions, does not apply where "permitting action does not result in an increase in the permitted capacity of the swine farm, as measured by the annual steady state live weight capacity of the swine farm".

Air emissions are specifically exempted from the definition of "discharge" in N.C. Gen. Stat. §143-213. In 2012, the General Assembly amended § 143-213(9) to add the following sentence to the definition of discharge: "A reference to 'discharge' or the 'discharge of waste' shall not be interpreted to include 'emission' as defined in subdivision (12) of this section." In turn, subsection (12) defines emission as "a release into the outdoor atmosphere of air contaminants."

Staff Recommendations: *No changes.*

## **Cumulative Impacts**

Comments: Commenters stated that the Digester General Permits should require permittees to demonstrate that the facility will not contribute to violations of water quality standards due to cumulative effects of permit decisions.

Response: The Digester General Permits are for waste management systems that are required to be designed, operated and maintained to have no discharge. The addition of digesters provides additional treatment of wastewater whether secondary treatment is utilized or not prior to land application. The Digester General Permits are non-discharge permits that will continue to prohibit the discharge of wastewater to surface waters. Permittees must adhere to their nutrient management plans that require waste to be applied at no greater than agronomic rates and would be required to sample and monitor waste and soils as prescribed by NC General Statute 143-215.10C to prevent impacts to soil and groundwater.

The Digester General Permits contain multiple requirements to protect surface water and groundwater; examples include:

- the Farms are prohibited from discharging waste to surface waters or wetlands, Permits at I.1;
- the Farms are prohibited from causing violations of surface or groundwater standards, *id.* at I.2;
- the Farms are required to maintain adequate freeboard levels and monitor

freeboard levels in storage lagoons to minimize the risk of overtopping, *id.* at V.2;

- the Farms are prohibited from allowing any ponding or runoff of waste during application, *id.* at II.5;
- the Farms are required to apply waste in compliance with CAWMPs, only at or below agronomic rates, and only in areas where crops are sufficient for nutrient utilization, *id.* at II.4; and
- the Farms are required to conduct sampling and monitoring of waste and soils pursuant to N.C. Gen. Stat. § 143-215.10C to prevent impacts to soil and groundwater, *id.* at III.4–5.

The changes authorized by these Digester General Permits do not increase the potential for impacts to surface water and groundwater. Accordingly, the additional treatment provided by a farm digester system under the Digester General Permits does not increase the potential for water quality standard violations whether the effects are viewed individually or cumulatively.

*Staff Recommendations: No changes.*

### **Environmental Justice**

Comments: DWR received many comments regarding environmental justice related to these Digester General Permits. The following comments represent the various environmental justice issues raised during the public comment period.

- Request DEQ to work with DHHS to incorporate health metrics into a cumulative impact scoring system and conduct a cumulative impacts analysis on the addition of digester systems to low-income, communities of color.
- Build upon the EJ report with a cumulative impact assessment that examines how development of waste digestion systems in addition to other existing facilities and social determinants of health may impact surrounding communities.
- Water quality monitoring to ensure no disproportionate impact on people of color.
- EJ Report should translate specific permit conditions to minimize disparate impacts.
- Require individual permits if determined adverse disproportionate impact on Title VI communities and specifically note this within the permit. Address the disparate impact of pollution on communities of color and low-income communities.

Response: DEQ is committed to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. DEQ operates a robust nondiscrimination program that complies with

EPA's Title VI regulations and staff works with the EJEAB and communities directly to address environmental justice concerns.

- DEQ staff has been in regular communication with DHHS Epidemiology staff to advance the collaboration on mapping health data and to discuss the most recent state of the science around cumulative impact calculations and scoring metrics. DEQ is also monitoring the national landscape of the discussion and guidance around cumulative impact scoring, including what other states are implementing, and engaging in discussions with EPA staff regarding the anticipated release of cumulative impact analysis guidance documents by the end of 2022.
- The Digester General Permits contain many conditions to address potential impacts to water quality. For example, the Digester General Permits require quarterly monitoring the influent and effluent. They also require the monitoring of any waste applied to the land as required by statute, and inspection of the land application site as it occurs. These general permits are non-discharge permits; therefore, any discharge to the waterways would be a violation of the permit. These conditions are to ensure protection of human health and the environment, regardless of race, color or national origin.
- The EJ Report conducted for the Digester General Permits does include information on the distribution of current general permits as well as race, income, and ethnicity data. However, as noted in the draft EJ report, it is not possible to know at the time of this analysis which facilities will apply for this new type of general permit:  
*“It is important to note that this is an analysis of the facilities with current 2019 general permits and it is not anticipated that every facility covered under the 2019 general permits will apply for the new digester general permits. Additionally, the new digester general permits will replace the existing general permits only if the facility applies for the digester general permit. As it is not possible to predict which facilities will install digesters under the new general permits, this analysis relies on general information and is not a site-specific examination.”*
- The Division will evaluate each application to determine if coverage under a Digester General Permit is appropriate. The Director may require any person, otherwise eligible for coverage under this General Permit, to apply for an individual permit as provided by G.S. §143-215.10C(a) and 15A NCAC 02T .0111 (h). DEQ will also analyze for Title VI protected classes nearby as appropriate in concert with the above laid out criteria to determine the possibility of requiring an individual permit.

Staff Recommendations: No changes.



### **Environmentally Superior Technology (EST)/Smithfield Agreement**

Comments: Some commenters requested that the Division require digester systems to utilize environmentally superior technology. Commenters also said that the farms should be made to comply with the Smithfield Agreement regarding implementation of ESTs.

Response: The Smithfield Agreement (“the Agreement”) was entered into on July 25, 2000, by then-Attorney General Michael Easley and Smithfield Foods, Inc. and several of its subsidiaries. DEQ was not a signatory or a party to the Agreement, nor did the Agreement provide DEQ with any authority. The terms of the Agreement are not part of the statutes or rules that DEQ must rely upon when making decisions with respect to the Digester General Permits that may apply to any animal operation wishing to implement a farm digester system.

Among other things, the Agreement provided for the identification, development, and installation of “Environmentally Superior Technologies” on Smithfield-owned farms. “Environmentally Superior Technology” is a defined term in the Agreement. In addition to meeting five specific performance criteria, the technology or technologies also must be economically feasible. Under the Agreement, whether a technology meets these criteria is a determination made by a “Designee” selected by North Carolina State University, not DEQ. The Agreement’s requirements for the implementation of “Environmentally Superior Technology” are not enforceable by DEQ and are outside the scope of the Digester General Permits.

While the performance criteria for “Environmentally Superior Technology” in the Agreement are the same in substance as statutory and regulatory performance standards for new and expanding swine operations included in NC General Statute 143-215.10I(b)(2) and 15A NCAC 02T .1307-.1308, neither new nor expanding swine farms are eligible for coverage under the Swine Digester General Permit. Accordingly, those statutory and regulatory provisions are not applicable. For existing swine operations as well as cattle and wet poultry digester systems, these Digester General Permits are constrained to addressing the legislative charge of SL 2021-78, and by statute may not impose the requirements called for by this comment.

*Staff Recommendations: No change.*

### **General Permit**

Comments: Some commenters expressed concern that the use of a general permit was a shortcut in permitting and that there would be no case-by-case review.

Response: A request for coverage under these Digester General Permits will be subject to a full review for compliance with all applicable laws and regulations prior to issuing the permit/Certificate of Coverage to the facility. These requests are evaluated on a case-by-case basis.

*Staff Recommendations: No changes.*

### **Increase in Nutrients**

Comments: Commenters stated that digesters will increase the concentration of nutrients, especially ammonia nitrogen, in the effluent from the digester. They state that this will lead to a significant increase in the atmospheric loss of ammonia. Commenters expressed concern that higher concentrations of nutrients in the waste to be land applied would yield over-application.

Response: The same waste that flows into the lagoons from the barns within the existing treatment system would enter the digesters in a farm digester system. As a digester is a closed structure, the atmospheric loss of ammonia that normally occurs in an open lagoon would not occur during the digester treatment. Therefore, the digestate that leaves the digester would have a higher concentration of ammonia as compared to effluent that is removed from an anaerobic treatment lagoon. Many of the farm digester systems currently permitted utilized a secondary treatment lagoon. In these secondary treatment lagoons, ammonia volatilization is similar to that in the current treatment systems without digesters. The waste from farm digester systems to be land applied is expected have the same or slightly reduced nutrient concentration compared to the waste from existing treatment systems that is currently being land applied. For all farm digester systems, including those without secondary treatment, the requirement for waste to be applied at no greater than agronomic rates remains. Condition II.25 establishes requirements to address elevated nutrient levels and corrective actions.

Farm Digester Systems are subject to non-discharge requirements. They must follow a nutrient management plan that requires waste be applied at no greater than agronomic rates. That means that if the nitrogen concentration of the waste increases, the facility would have to apply a smaller volume of waste to each given unit of cropland to account for the increase in concentration. Facilities with farm digester systems will continue to be subject to waste and soil sampling as required by G.S. §143-215.10C. Every facility that seeks coverage under these Digester General Permits must submit an application that includes the system design as well as the Certified Animal Waste Management Plan (CAWMP). The design and CAWMP will be evaluated for compliance with all applicable laws and regulations prior to permit issuance.

Staff Recommendations: *No changes.*

### **Lagoon-Sprayfield System**

Comments: Some commenters stated that farm digesters will only serve to further entrench the lagoon-sprayfield system and requested that the lagoon spray systems be eliminated or phased out.

Response: Statute and administrative code do not prohibit the continued use of lagoon-spray systems. Issuance of the Digester General Permits is required and authorized by Session Law 2021-78. Minimum design and operating requirements are established in G.S. §143-215.10C and 15A NCAC 02T Section .1300.

Staff Recommendations: *No changes.*

### **Odor Complaints in Communities in other states with animal waste digesters**

Comments: Some commenters at the public meetings mentioned digesters that have been installed in other states that have caused odor complaints and impacts to the communities. Specifically mentioned were Heartland Biogas in La Salle, Colorado and Big Ox Energy in Dakota City, Nebraska. Other commenters stated that those facilities utilized industrial, residential, and food wastes in addition to animal wastes and are not comparable to the systems to be covered by these general permits.

Response: The facilities mentioned both involved bringing waste to a third-party location, not on the animal feeding operation. These two facilities employed codigestion of animal wastes with other feedstocks. The Digester General Permits do not allow for codigestion of alternate feedstocks. Also, the digester systems to be covered by these general permits are to be installed on existing animal feeding operations and thus would not create new environmental concerns at a separate location.

Staff Recommendations: *No changes.*

### **Operator Certification**

Comments: A commenter stated that upon issuance of coverage of the general permit, those operating the digester should receive appropriate training and associated certification.

Response: DWR agrees with this comment. Farm digester system operators must be properly trained in correct operation and maintenance as well as associated permitting requirements. No distinct certification currently exists for farm digester system operators; however, DWR supports whatever action may be needed to establish such certification. Absent a distinct operator certification for farm digester systems, operators will be required to obtain/maintain the appropriate an Animal Waste Operator certification for the animal type. The site-specific Operation and Maintenance Plan (O&M Plan), which is a required component of the CAWMP, will be a key document to guide the operator of the farm digester system.

Staff Recommendations: *No changes.*

**Comments outside of scope of general permit language and authority.**

Comments: Many comments received were outside of the scope of the Digester General Permits. Some examples of those comments are:

DEQ should require the biogas generated by farm digester systems be utilized onsite or be sold. DEQ should prohibit the venting or flaring of biogas.

DEQ should explore options for implementing a centralized air monitoring program to monitor and report air emission data in communities near facilities covered under the Biogas General Permits.

DEQ must take affirmative action to provide remedies to North Carolinians injured by DEQ's past discriminatory permitting actions.

Methane is not clean energy. NC should pursue real clean energy options.

DEQ should require replacing sprayfields with direct injection of the waste.

DEQ should regulate and enforce more with respect to poultry waste.

DEQ should require covered secondary lagoons.

Response: Staff believe these comments address items that are beyond the scope and authority of these General Permits and S.L. 2021-78. The Division appreciates these comments and is supportive of legislative action and funding, and other efforts to protect the environment.

S.L. 2021-78 specifically required that the same permit conditions found in the current State General Permits be incorporated into the Digester General Permits. S.L. 2021-78 also limits the implementation of additional requirements to those necessary to describe and authorize the construction, monitoring, and proper operation of farm digester systems. Covering secondary treatment units is not necessary to describe and authorize the construction, monitoring, and proper operation of farm digester systems. Therefore, S.L. 2021-78 does not allow the inclusion of additional requirements.

Staff Recommendations: *No changes.*

**V. REVISED DIGESTER GENERAL PERMITS**

As a result of the public comments received and further information gathered by the Division during the course of the public comment period, the Division produced revised State General Permits that incorporate the Hearing Officer's recommendations previously discussed in this report. The Recommended General Permits are provided as Attachment 8.

## VI. HEARING OFFICER RECOMMENDATION

After considering the public input received, the Hearing Officer recommends issuance of the General Permits with changes identified in this report.

Based upon the information contained in this report, consideration of the the public input received, a thorough review of all the information and facts that are pertinent to the development of these Digester General Permits, and an analysis of the revised Digester General Permits, the Hearing Officer makes the following recommendation:

The permit changes identified in staff recommendations of this report should be incorporated into the permits.

The Director should adopt the Recommended Digester General Permits contained in Attachment 8. These permits should be issued with an effective date of July 1, 2022, and expiration date of September 30, 2024.



Rich Gannon, Hearing Officer  
Nonpoint Source Planning Program Supervisor,  
North Carolina Division of Water Resources

All Attachments are available at: <https://deq.nc.gov/digesterpermits>