

SECTION .1800 - CONTROL OF ODORS

15A NCAC 02D .1801 DEFINITIONS

For the purpose of this Section, the following definitions apply:

- (1) "Animal operation" means animal operation as defined in G.S. 143-215.10B.
- (2) "Child care center" means child care centers as defined in G.S. 110-86 and licensed pursuant to G.S. 110, Article 7.
- (3) "Construction" means any physical change, including fabrication, erection, installation, replacement, demolition, excavation, or other modification, at any contiguous area in common control.
- (4) "Control technology" means economically feasible control devices installed to reduce objectionable odors from animal operations.
- (5) "Existing animal operation" means an animal operation that is in operation or commences construction on or before February 28, 1999.
- (6) "Historic properties" means historic properties acquired by the State pursuant to G.S. 121-9 or listed in the North Carolina Register of Historic Places pursuant to G.S. 121-4.1.
- (7) "Modified animal operation" means an animal operation that commences construction after February 28, 1999, to increase the steady state live weight that can be housed at that animal operation. Modified animal operation does not include renovating existing barns, relocating barns, or replacing existing lagoons or barns if the new barn or lagoon is no closer to the nearest property and if the new barn or lagoon does not increase the steady state live weight that can be housed at that animal operation.
- (8) "New animal operation" means an animal operation that commences construction after February 28, 1999.
- (9) "Objectionable odor" means any odor present in the ambient air that by itself, or in combination with other odors, is or may be harmful or injurious to human health or welfare, or may unreasonably interfere with the comfortable use and enjoyment of life or property. Odors are harmful or injurious to human health if they tend to lessen human food and water intake, interfere with sleep, upset appetite, produce irritation of the upper respiratory tract, cause symptoms of nausea, or if their chemical or physical nature is, or may be, detrimental or dangerous to human health.
- (10) "Occupied residence" means occupied residence as defined in G.S. 106-802.
- (11) "State Parks" means the State Parks System as defined in G.S. 143B-135.44.
- (12) "Technologically feasible" means that an odor control device or a proposed solution to an odor problem has previously been demonstrated to accomplish its intended objective, and is generally accepted within the technical community. It is possible for technologically feasible solutions to have demonstrated their suitability on similar, but not identical, sources for which they are proposed to control.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(11);
Temporary Adoption Eff. April 27, 1999; March 1, 1999;
Eff. July 1, 2000;
Readopted Eff. September 1, 2019.

15A NCAC 02D .1802 CONTROL OF ODORS FROM ANIMAL OPERATIONS USING LIQUID ANIMAL WASTE MANAGEMENT SYSTEMS

(a) Purpose. The purpose of this Rule is to control objectionable odors from animal operations beyond the boundaries of animal operations.

(b) Applicability. This Rule shall apply to all animal operations using liquid animal waste management systems.

(c) Required management practices. All animal operations shall be required to implement applicable management practices for the control of odors as follows:

- (1) the carcasses of dead animals shall be disposed in accordance with G.S. 106-403 and 02 NCAC 52C .0102. The Rule 02 NCAC 52C .0102 is hereby incorporated by reference and includes subsequent amendments or editions;
- (2) waste from animal wastewater application spray systems shall be applied in such a manner and pursuant to such conditions to prevent drift from the irrigation field of the wastewater spray beyond the boundary of the animal operation, except waste from application spray systems may be applied in an emergency to maintain safe lagoon freeboard if the owner or operator notifies the Department and resolves the emergency with the Department as written in the Swine Waste Operation General Permit;
- (3) animal wastewater application spray system intakes shall be located near the liquid surface of the animal wastewater lagoon;
- (4) ventilation fans shall be maintained according to the manufacturer's specifications; and
- (5) animal feed storage containers located outside of animal containment buildings shall be covered except when removing or adding feed. This Subparagraph shall not apply to the storage of silage or hay or to commodity boxes with roofs.

(d) Odor management plan (OMP) for existing animal operations for swine. Animal operations for swine that meet the criteria in the table in this Paragraph shall submit an odor management plan to the Director. The animal operation shall be required to submit its odor management plan only once. The odor management plan shall:

- (1) identify the name, location, and owner of the animal operation;
- (2) identify the name, title, address, and telephone number of the owner or operator filing the plan;
- (3) identify the sources of odor within the animal operation;
- (4) describe how odor will be controlled from:
 - (A) the animal houses;
 - (B) the animal wastewater lagoon, if used;
 - (C) the animal wastewater application lands, if used;
 - (D) waste conveyances and temporary accumulation points; and
 - (E) other possible sources of odor within the animal operation;
- (5) contain a diagram showing all structures and lagoons at the animal operation, forced air directions, and approximate distances to structures or groups of structures within 3,000 feet of the property line of the animal operation; an aerial photograph may be provided instead of a diagram provided the items required by this Subparagraph are shown;
- (6) for existing animal operations, contain a schedule not to exceed six months by which the plan will be implemented;
- (7) describe how the plan will be implemented, including training of personnel;
- (8) describe inspection and maintenance procedures;
- (9) describe methods of monitoring and recordkeeping to verify compliance with the plan; and
- (10) describe how odors are currently being controlled and how these odors will be controlled in the future.

100 pounds steady state live weight of swine		Distance in feet to the boundary of the nearest neighboring occupied property with an inhabitable structure, business, school, hospital, church, outdoor recreational facility, national park, State Park, historic property, or child care center
at least	but less than	
10,000	20,000	less than or equal to 3,000
20,000	40,000	less than or equal to 4,000
40,000		less than or equal to 5,000

For the purposes of this Rule, the distance shall be measured from the edge of the barn or lagoon, whichever is closer, to the boundary of the neighboring occupied property with an inhabitable structure, business, school, hospital, church, outdoor recreational facility, national park, State Park, historic property, or child care center. All animal operations for swine that are of the capacity in the table in this Paragraph shall submit either an odor management plan or documentation that no neighboring occupied property with an inhabitable structure, business, school, hospital, church, outdoor recreational facility, national park, State Park, historic property, or child care center is within the distances specified in the table. The Director may require existing animal operations for swine with a steady state live weight of swine between 100,000 to 1,000,000 pounds steady state live weight to submit an odor management plan if the Director determines pursuant to Paragraph (g) of this Rule that these animal operations cause or contribute to an objectionable odor. The Director may require an existing animal operation to submit a best management plan pursuant to 15A NCAC 02D .1803, then submit the best management plan pursuant to Paragraph (h) of this Rule if the existing animal operation fails to submit an odor management plan.

(e) Location of objectionable odor determinations.

- (1) For an existing animal operation that does not meet the following siting requirements:
 - (A) at least 1,500 feet from any occupied residence not owned by the owner of the animal operation;
 - (B) at least 2,500 feet from any school, hospital, church, outdoor recreation Facility, national park, State Park, historic property, or child care center; and
 - (C) at least 500 feet from any property boundary;objectionable odors shall be determined at neighboring occupied property not owned by the owner of the animal operation, such as businesses, schools, hospitals, churches, outdoor recreation facilities, national parks, State Parks, historic properties, or child care centers that are affected.
- (2) For a new animal operation or existing animal operation that meets the siting requirements in Subparagraph (1) of this Paragraph, objectionable odors shall be determined beyond the boundary of the animal operation.

(f) Complaints. The Director shall respond to complaints about objectionable odors from animal operations as follows:

- (1) Complaints shall be investigated;
- (2) Complaints may be used to assist in determination of a best management plan failure or a control technology failure;
- (3) The Director shall respond to complaints within 30 days of receipt of the complaint;
- (4) Complaint response shall include the Director's evaluation of the complaint;
- (5) The investigation of a complaint shall be completed as expeditiously as possible considering the meteorology, activities at the animal operation, and other conditions occurring at the time of the complaint.

(g) Determination of the existence of an objectionable odor. In determining if an animal operation is causing or contributing to an objectionable odor, the factors the Director may consider include:

- (1) the nature, intensity, frequency, pervasiveness, and duration of the odors from the animal operation;
- (2) complaints received about objectionable odors from the animal operation;
- (3) emissions from the animal operation of known odor causing compounds, such as ammonia, total volatile organics, hydrogen sulfide, or other sulfur compounds at levels that could cause or contribute to an objectionable odor;
- (4) any epidemiological studies associating health problems with odors from the animal operation or documented health problems associated with odors from the animal operation provided by the State Health Director; or
- (5) any other evidence, including records maintained by neighbors, that show that the animal operation is causing or contributing to an objectionable odor.

(h) Requirements for a best management plan for control of odors from existing animal operations. If the Director determines that an existing animal operation is causing or contributing to an objectionable odor, the owner or operator of the animal operation shall:

- (1) submit to the Director as soon as practical, but not to exceed 90 days after receipt of written notification from the Director that the animal operation is causing or contributing to an objectionable odor, a best management plan for odor control as described in 15A NCAC 02D .1803; and

- (2) comply with the terms of the best management plan within 30 days after the Director approves the best management plan, or the Director may approve an alternate compliance schedule based upon the complexity of the best management plan (approved compliance schedule is an alternate schedule to 30 days).
- (i) Requirement for amendment to the best management plan. No later than 60 days from completion of a compliance schedule in an approved best management plan or if the best management plan contains no compliance schedule, no later than 60 days from the implementation date of the best management plan, the Director shall determine whether the plan has been implemented. If the Director determines at any time that a plan submitted pursuant to Paragraph (h) of this Rule does not control objectionable odors from the animal operation, the Director shall require the owner or operator of the animal operation to amend the plan to incorporate additional or alternative measures to control objectionable odors from the animal operation. The owner or operator shall:
 - (1) submit a revised best management plan to the Director as soon as practical but not later than 60 days after receipt of written notification from the Director that the plan is inadequate; and
 - (2) comply with the revised best management plan within 30 days after the Director approves the revisions to the best management plan (approved compliance schedule is an alternate schedule to 30 days).
- (j) Requirements for control technology. After the best management plan has been implemented and revised no more than one time excluding voluntary revisions and revisions made pursuant to 15A NCAC 02D .1803(c), a plan failure shall constitute a finding by the Director, using the criteria pursuant to Paragraph (g) of this Rule. If a plan failure occurs, the Director shall require the owner or operator of the animal operation to install control technology to control odor from the animal operation. Within 90 days from receipt of written notification from the Director of a plan failure, the owner or operator shall submit a permit application for control technology and an installation schedule. If the owner or operator demonstrates to the Director that a permit application cannot be submitted within 90 days, the Director shall extend the time for submittal up to an additional 90 days if the owner or operator demonstrates the delay in submitting the application was beyond his or her control. Control technology shall be determined according to Subparagraph (1) of this Paragraph. The installation schedule shall contain the increments of progress described in Subparagraph (2) of this Paragraph. The owner or operator may at any time request adjustments in the installation schedule and shall in his or her request explain why the schedule cannot be met. If the Director finds the request to be accurate, the Director shall revise the installation schedule as requested; however, the Director shall not extend the final compliance date beyond 24 months from the date that the permit was first issued for the control technology. The owner or operator shall certify to the Director within five days after the deadline for each increment of progress described in Subparagraph (2) of this Paragraph whether the required increment of progress has been met.
 - (1) Control technology. The owner or operator of an animal operation shall identify control technologies that are technologically feasible for his or her animal operation and shall select the control technology or control technologies that results in the greatest reduction of odors considering human health, energy, environmental, and economic impacts and other costs. The owner or operator shall explain the reasons for selecting the control technology or control technologies. If the Director finds that the selected control technology or control technologies will control objectionable odors following the procedures in 15A NCAC 02Q .0300 or .0500, he or she shall approve the installation of the control technology or control technologies for this animal operation upon permit issuance. The owner or operator of the animal operation shall comply with all terms and conditions in the permit.
 - (2) Installation schedule. The installation schedule for control technology shall contain the following increments of progress:
 - (A) a date by which contracts for odor control technology shall be awarded or orders shall be issued for purchase of component parts or materials;
 - (B) a date by which on-site construction or installation of the odor control technology shall begin;
 - (C) a date by which on-site construction or installation of the odor control technology shall be completed; and
 - (D) a date by which final compliance shall be achieved.Control technology shall be in place and operating as soon as practical but not to exceed 12 months from the date that the permit is issued for control technology.
- (k) The following requirements shall apply to new or modified animal operations:

- (1) Before beginning construction, the owner or operator of a new or modified animal operation raising or producing swine shall submit and have an approved best management plan and shall meet the following setbacks. A house or lagoon that is a component of an animal operation shall be constructed:
 - (A) at least 1,500 feet from any occupied residence not owned by the owner of the animal operation;
 - (B) at least 2,500 feet from any school, hospital, church, outdoor recreation facility, national park, State Park, historic property, or child care center; and
 - (C) at least 500 feet from any property boundary;
- (2) Before beginning construction, the owner or operator of a new or modified animal operation other than swine shall submit and have an approved best management plan.
- (3) For new or modified animal operations raising or producing swine, the outer perimeter of the land area onto which waste is applied that is a component of an animal operation shall be:
 - (A) at least 75 feet from any boundary of property on which an occupied residence not owned by the owner of the animal operation is located; and
 - (B) at least 200 feet from any occupied residence not owned by the owner of the animal operation.
- (4) The Director shall either approve or disapprove the best management plan submitted pursuant to this Paragraph within 90 days after receipt of the plan. If the Director disapproves the plan, he or she shall identify the plan's deficiency.

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(11); 143-215.108(a); 150B-21.6;
Temporary Adoption Eff. April 27, 1999; March 1, 1999;
Eff. July 1, 2000;
Readopted Eff. September 1, 2019.*

15A NCAC 02D .1803 BEST MANAGEMENT PLANS FOR ANIMAL OPERATIONS

(a) Contents of a best management plan. The best management plan for animal operations shall:

- (1) identify the name, location, and owner of the animal operation;
- (2) identify the name, title, address, and telephone number of the person filing the plan;
- (3) identify the sources of odor within the animal operation;
- (4) describe how odor will be controlled from:
 - (A) the animal houses;
 - (B) the animal wastewater lagoon, if used;
 - (C) the animal wastewater application lands, if used;
 - (D) waste conveyances and temporary accumulation points; and
 - (E) other possible sources of odor within the animal operation;
- (5) contain a diagram showing all structures and lagoons at the animal operation, forced air directions, and approximate distances to structures or groups of structures within 3000 feet of the property line of the animal operation; an aerial photograph may be submitted in place of a diagram provided the items required in accordance with this Subparagraph of this Rule are shown;
- (6) for existing animal operations, contain a schedule not to exceed six months by which the plan will be implemented. A new animal operation shall and be in compliance with its best management plan when it begins operations. For an amended best management plan, the implementation schedule shall not exceed six months;
- (7) describe how the plan will be implemented, including training of personnel;
- (8) describe inspection and maintenance procedures; and
- (9) describe methods of monitoring and recordkeeping to verify compliance with the plan.

(b) The Division shall review all best management plan submittals within 30 days of receipt to determine if the submittal is complete or incomplete for processing purposes. To be complete, the submittal shall contain all the elements listed in Paragraph (a) of this Rule. The Division shall notify the person submitting the plan by letter stating that:

- (1) the submittal is complete;
- (2) the submittal is incomplete and identifying the missing elements and a date by which the missing elements need to be submitted to the Division; or
- (3) the best management plan is incomplete and requesting that the person rewrite and resubmit the plan.

(c) Approval of the best management plan. The Director shall approve the plan if he or she finds that:

- (1) the plan contains all the required elements in Paragraph (a) of this Rule;
- (2) the proposed schedule contained in the plan will reduce objectionable odors;
- (3) the methods used to control objectionable odors will prevent objectionable odors beyond the property lines of the animal operation. The Director shall not consider impacts of objectionable odors on neighboring property if the owner of the neighboring property agrees in writing that he or she does not object to objectionable odors on his or her property and this written statement is included with the proposed best management plan. This agreement becomes void if the neighboring property changes ownership. If the neighboring property changes ownership, the plan shall be revised, if necessary, to prevent objectionable odors on this property unless the new owner agrees in writing that he or she does not object to objectionable odors on his property; and
- (4) the described methods verify compliance with the plan.

Within 90 days after receipt of a plan, the Director shall determine whether the proposed plan meets the requirements of this Paragraph. If the Director finds that the proposed plan does not meet the requirements of this Paragraph, he or she shall notify the owner or operator of the animal operation in writing of the deficiencies in the proposed plan. The owner or operator shall have 30 days after receiving written notification from the Director to correct the deficiencies. If the Director finds that the proposed plan is acceptable, he or she shall notify the owner or operator in writing that the proposed plan has been approved.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143-215.107(a)(11); Temporary Adoption Eff. April 27, 1999; March 1, 1999; Eff. July 1, 2000; Readopted Eff. September 1, 2019.

15A NCAC 02D .1804 REPORTING REQUIREMENTS FOR ANIMAL OPERATIONS

If the Department receives an odor complaint about an animal operation, the Department may require the owner or operator of the animal operation to submit the following information to investigate the odor complaint:

- (1) the name and location of the animal operation;
- (2) the name, title, address, and telephone number of the person reporting;
- (3) the type and number of animals at the animal operation;
- (4) potential sources of odors, such as animal housing structures, lagoons, collection and handling devices, and storage containers, with a physical description of these sources;
- (5) waste water land application procedures; and
- (6) measures taken to reduce odors.

The owner or operator shall submit this information to the Division within 15 days after receipt of the request.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143-215.107(a)(11)*
Temporary Adoption Eff. March 1, 1999;
Eff. July 1, 2000;
Readopted Eff. September 1, 2019.

15A NCAC 02D .1805 IMPLEMENTATION PLAN

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(11);*
 Temporary Adoption Eff. March 1, 1999;
 Temporary Repeal Eff. May 25, 1999.

15A NCAC 02D .1806 CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

(a) Purpose. The purpose of this Rule is to provide for the control and prohibition of objectionable odorous emissions.

(b) Definitions. For the purpose of this Rule, the following definitions shall apply:

- (1) "Commercial purposes" means activities that require a State or local business license to operate.
- (2) "Temporary activities or operations" means activities or operations that are less than 30 days in duration during the course of a calendar year and do not require an air quality permit.

(c) Applicability. With the exemptions in Paragraph (d) of this Rule, this Rule shall apply to all operations that produce odorous emissions that can cause or contribute to objectionable odors beyond the facility's boundaries.

(d) Exemptions. The requirements of this Rule do not apply to:

- (1) processes at kraft pulp mills identified in 15A NCAC 02D .0528 and subject to 15A NCAC 02D .0524 or .0528;
- (2) processes at facilities that produce feed-grade animal proteins or feed-grade animal fats and oils identified in 15A NCAC 02D .0539;
- (3) motor vehicles and transportation facilities;
- (4) all on-farm animal and agricultural operations, including dry litter operations and operations subject to 15A NCAC 02D .1804;
- (5) municipal wastewater treatment plants and municipal wastewater handling systems;
- (6) restaurants and food preparation facilities that prepare and serve food on site;
- (7) single family dwellings not used for commercial purposes;
- (8) materials odorized for safety purposes;
- (9) painting and coating operations that do not require a business license;
- (10) all temporary activities or operations; or
- (11) any facility that stores products that are grown, produced, or generated on one or more agricultural operations and that are "renewable energy resources," as defined in G.S. 62-133.8(a)(8) if the facility identifies the sources of potential odor emissions and specifies odor management practices in their permit pursuant to 15A NCAC 02Q .0300 or .0500 to minimize objectionable odor beyond the property lines.

(e) Control Requirements. The owner or operator of a facility subject to this Rule shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

(f) Odor management plan. If the Director determines that a source or facility subject to this Rule is causing or contributing to objectionable odors beyond its property boundary by the procedures described in Paragraph (i) of this Rule, the owner or operator shall develop and submit an odor management plan within 60 days of receipt of written notification from the Director of an objectionable odor determination. The odor management plan shall:

- (1) identify the sources of odorous emissions;
- (2) describe how odorous emissions will be controlled from each identified source;
- (3) describe how the plan will be implemented; and
- (4) contain a schedule by which the plan will be implemented.

Upon receipt of an approval letter from the Director for the odor management plan, the source or facility shall implement the approved plan within 30 days, unless an alternative schedule of implementation is approved as part of the odor management plan submittal. If the Director finds that the odor management plan does not meet the requirements of this Paragraph or address the specific odor concerns, he or she shall notify the owner or operator of any deficiencies in the proposed plan. The owner or operator shall have 30 days after receipt of written notification from the Director to resubmit the odor management plan correcting the stated deficiencies with the plan or the schedule of implementation. If the owner or operator fails to correct the plan deficiencies with the second draft plan submittal or repeatedly fails to meet the deadlines set forth in this Paragraph or Paragraph (g) of this Rule, the Director shall notify the owner or operator in writing that they are required to comply with the maximum feasible control requirements in Paragraph (h) of this Rule.

(g) Odor management plan revision. If after the odor management plan has been implemented, the Director determines that the plan fails to eliminate objectionable odor emissions from a source or facility using the procedures described in Paragraph (i) of this Rule, he or she shall require the owner or operator of the facility to submit a revised plan. Within 60 days after receiving written notification from the Director of a new objectionable odor determination, the owner or operator of the facility shall submit a revision to their odor management plan following the procedures and timelines in Paragraph (f) of this Rule. If the revised plan, once implemented, fails to

eliminate objectionable odors, then the source or facility shall comply with requirements in Paragraph (h) of this Rule.

(h) Maximum feasible controls. If an amended odor management plan does not prevent objectionable odors beyond the facility's boundary, the Director shall require the owner or operator to implement maximum feasible controls for the control of odorous emissions. Maximum feasible controls shall be determined according to the procedures in 15A NCAC 02D .1807. The owner or operator shall:

- (1) complete the process outlined in 15A NCAC 02D .1807 and submit a complete permit application according to 15A NCAC 02Q .0300 or 15A NCAC 02Q .0500, as applicable, within 180 days of receipt of written notice from the Director requiring implementation of maximum feasible controls. The application shall include a compliance schedule containing the following increments of progress:
 - (A) a date by which contracts for the odorous emission control systems and equipment shall be awarded or orders shall be issued for purchase of component parts;
 - (B) a date by which on-site construction or installation of the odorous emission control systems and equipment shall begin;
 - (C) a date by which on-site construction or installation of the odorous emission control systems and equipment shall be completed; and
 - (D) a date by which final compliance shall be achieved.
- (2) install and begin operating maximum feasible controls within 18 months after receiving written notification from the Director of the requirement to implement maximum feasible controls. The owner or operator may request an extension to implement maximum feasible controls. The Director shall approve an extension request if he or she finds that the extension request is the result of circumstances beyond the control of the owner or operator.

The owner or operator shall certify to the Director within five days after the deadline for each increment of progress in this Paragraph whether the required increment of progress has been met.

(i) Determination of the existence of an objectionable odor. A source or facility is causing or contributing to an objectionable odor when:

- (1) a member of the Division staff determines by field investigation that an objectionable odor is present by taking into account the nature, intensity, pervasiveness, duration, and source of the odor and other pertinent such as wind direction, meteorology, and operating parameters of the facility;
- (2) the source or facility emits known odor-causing compounds such as ammonia, total volatile organics, hydrogen sulfide, or other sulfur compounds at levels that cause objectionable odors beyond the property line of that source or facility; or
- (3) the Division receives from the State Health Director epidemiological studies associating health problems with odors from the source or facility.

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);
Eff. April 1, 2001;
Readopted Eff. September 1, 2019.*

15A NCAC 02D .1807 DETERMINATION OF MAXIMUM FEASIBLE CONTROLS FOR ODOROUS EMISSIONS

(a) Scope. This Rule sets out procedures for determining maximum feasible controls for odorous emissions. The owner or operator of the facility shall be responsible for providing the maximum feasible control determination.

(b) Process for maximum feasible control determinations. The following sequential process shall be used on a case-by-case basis to determine maximum feasible controls:

- (1) Identify all available control technologies. In the first step, all available options for the control of odorous emissions shall be listed. Available options include all possible control technologies or techniques with a potential to control, reduce, or minimize odorous emissions. For the purposes of this document, a comprehensive and effective odor control plan may be listed among the possible odor control technologies as a viable and satisfactory maximum feasible control technology option. All available control technologies shall be included on this list regardless of their technical feasibility or potential energy, human health, economic, or environmental impacts.
- (2) Eliminate technically infeasible options. In the second step, the technical feasibility of all the control options identified pursuant to Subparagraph (b)(1) of this Rule shall be evaluated with respect to source specific factors. A demonstration of technical infeasibility shall be documented and shall show, based on physical, chemical, or engineering principles, that technical difficulties preclude the successful use of the control option under review. Technically infeasible control options shall then be eliminated from further consideration as maximum feasible controls.
- (3) Rank remaining control technologies by control effectiveness. All the remaining control technologies, which have not been eliminated pursuant to Subparagraph (b)(2) of this Rule, shall be ranked and then listed in order of their ability to control odorous emissions, with the most effective control option at the top of the list. The list shall present all the control technologies that have not been previously eliminated and shall include the following information:
 - (A) control effectiveness;
 - (B) economic impacts, including cost effectiveness;
 - (C) environmental impacts: this shall include any media impacts (for example, water or solid waste), at a minimum the impact of each control alternative on emissions of toxic or hazardous air pollutants;
 - (D) human health impacts; and
 - (E) energy impacts.

However, an owner or operator proposing to implement the most stringent alternative, in terms of control effectiveness, need not provide detailed information concerning the other control options. In such cases, the owner or operator shall provide documentation to the Director the proposed control option is the most efficient, in terms of control effectiveness, and provide a review of collateral environmental impacts.

- (4) Evaluate most effective controls and document results. Following the delineation of all available and technically feasible control technology options pursuant to Subparagraph (b)(3) of this Rule, the energy, human health, environmental, and economic impacts shall be considered in order to arrive at the maximum feasible controls. An analysis of the predicted and associated impacts for each option shall be conducted. The owner or operator shall present an objective evaluation of the impacts of each alternative. Beneficial and adverse impacts shall be analyzed and, if possible, quantified. If the owner or operator proposed to select the most stringent alternative, in terms of control effectiveness, as maximum feasible controls, he or she shall evaluate whether impacts of unregulated air pollutants or environmental impacts in other media would justify selection of an alternative control technology. If there are no concerns regarding collateral environmental impacts, the analysis is ended and this proposed option is selected as maximum feasible controls. In the event the most stringent alternative is inappropriate, due to energy, human health, environmental, or economic impacts, the justification for this conclusion shall be documented. The next most stringent option, in terms of control effectiveness, shall become the primary alternative and be similarly evaluated. This process shall continue until the control technology evaluated cannot be eliminated due to source-specific environmental, human health, energy, or economic impacts.
- (5) Select maximum feasible controls. The most stringent option, in terms of control effectiveness, that is not eliminated pursuant to Subparagraph (b)(4) of this Rule shall be selected as maximum feasible controls.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);
Eff. April 1, 2001;
Readopted Eff. September 1, 2019.

15A NCAC 02D .1808 EVALUATION OF NEW OR MODIFIED SWINE FARMS

(a) Purpose. The purpose of this Rule is to specify the methods for evaluating new or modified swine farms for compliance with the performance standard in G.S. 143-215.10I (b)(3).

(b) Applicability. This Rule applies to new or modified swine farms required by G.S. 143-215.10I to meet the performance standard in G.S. 143-215.10I (b)(3).

(c) Requirements. New or modified swine farms subject to this Rule shall comply with the requirements in this Section.

(d) Evaluation of new or modified swine farms. For the purpose of evaluating odor at new or modified swine farms for compliance with the performance standard in G.S. 143-215.10I (b)(3), the following shall apply:

- (1) When a field olfactometry method and instrumentation is used to determine odor intensity at the designated evaluation location, as specified in 15A NCAC 02D .1802(e), the measured dilution-to-threshold ratio shall be less than or equal to 7:1 as determined using the manufacturer's instrument procedures and instructions; or
- (2) When odor intensity is determined using an Odor Intensity Referencing Scale (OIRS) as specified in ASTM 544-99, the instantaneous observed level shall be less than the equivalent of 225 parts per million n-butanol in air. In addition, the average of 30 consecutive observations conducted over a minimum of 30-minutes at designated evaluation locations shall be less than the equivalent of 75 parts per million n-butanol in air and a minimum of 4 readings out of the minimum 30 readings shall be less than or equal to the equivalent 25 parts per million n-butanol in air.

History Note: Authority G.S. 143-215.10I; 143-215.3(a)(1); 143-215.107(a)(11); 143-215.108(a);
Eff. January 1, 2009;
Readopted Eff. September 1, 2019.