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**SOUTH DAKOTA
DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES
523 EAST CAPITOL AVENUE
PIERRE, SOUTH DAKOTA 57501-3182**

(Facility Name)

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL WATER POLLUTION CONTROL PERMIT FOR
CONCENTRATED ANIMAL FEEDING OPERATIONS**

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, chapters 74:52:01 through 74:52:12, the South Dakota Department of Agriculture and Natural Resources (DANR) directs Concentrated Animal Feeding Operations to have no discharge from their production areas and land application areas to waters of the state except for discharges that meet the conditions of this permit.

This permit shall become effective, **DATE**.

This permit and the authorization to discharge shall expire at midnight, **DATE 5 years from effective date**.

Signed this **XXth day of XX, 2024**.

Authorized Permitting Official

Hunter Roberts
Secretary
Department of Agriculture and Natural Resources

TABLE OF CONTENTS

1. EFFLUENT LIMITATIONS..... 3
1.1. Definitions..... 3
Table 1 4
1.2. How to Obtain Coverage Under this Permit 8
1.3. Permit Termination 18
1.4. Effluent Limits 18
Table 2..... 38
1.5. Retention of Records..... 46
1.6. Twenty-four Hour Reporting 46
1.7. Bankruptcy Reporting 46
1.8. Inspection and Entry 46
1.9. Permit Fee 47
2. COMPLIANCE RESPONSIBILITIES 47
2.1. Duty to Comply..... 47
2.2. Penalties for Violations of Permit Conditions 47
2.3. Need to Halt or Reduce Activity not a Defense..... 47
2.4. Duty to Mitigate..... 47
2.5. Proper Operation and Maintenance 47
Removed Substances 47
3. GENERAL REQUIREMENTS..... 47
3.1. Planned Changes..... 47
3.2. Permit Actions 47
3.3. Duty to Reapply 48
3.4. Duty to Provide Information..... 48
3.5. Other Information 48
3.6. Signatory Requirements..... 48
3.7. Penalties for Falsification of Reports..... 49
3.8. Availability of Reports..... 49
3.9. Property Rights 49
3.10. Severability 49
3.11. Transfers 49
3.12. Reopener Provision..... 49
3.13. Appeals Provision 49
3.14. Requiring an Individual Permit..... 49

APPENDIX A

- NOTICE OF COMPLETION
- CERTIFICATION OF APPLICANT FORMS

APPENDIX B

NOTICE OF INTENT FORM

APPENDIX C

NOTICE OF TERMINATION OF COVERAGE FORM

APPENDIX D

CHANGE OF PRODUCER FORM

APPENDIX E

SYSTEM DESIGN, CONSTRUCTION, INITIAL NUTRIENT MANAGEMENT PLAN, AND
OPERATION AND MAINTENANCE GUIDELINE

APPENDIX F

25-YEAR, 24-HOUR
PRECIPITATION MAP
FOR SOUTH DAKOTA

APPENDIX G

MAPPED AQUIFERS INCLUDED IN THE
STATEWIDE GROUND WATER QUALITY
MONITORING NETWORK

APPENDIX H

DANR CRITERIA TO DETERMINE SHALLOW AQUIFER
DISCHARGE AND MONITORING REQUIREMENTS
FOR LIVESTOCK FEEDING OPERATIONS

APPENDIX I

CROSS SECTIONS OF
CONTAINMENT STRUCTURES

APPENDIX J

DISCHARGE REPORTING FORM

1. EFFLUENT LIMITATIONS

1.1. Definitions

- 1.1.1. A “25-year, 24-hour Storm Event” is the amount of precipitation in a 24-hour period expected to occur only once every 25 years. Typically, the 25-year, 24-hour storm event is about 3 inches in western South Dakota and 5 inches in eastern South Dakota. The map in Appendix F shows the actual amount of precipitation that constitutes the 25-year, 24-hour storm event for South Dakota (*NOAA Atlas 14 Volume 8: Precipitation-Frequency Atlas of the United States, Midwestern States, 2013*). [The web site found on DANR Livestock Services Website for Permit Reference Hyperlinks](#) can be used with an operation’s longitude and latitude to find the 25-year, 24-hour storm event for that location.

- 1.1.2. “Agricultural Stormwater Discharge” means a precipitation related discharge of manure, litter, or process wastewater from land application areas where the manure, litter, or process wastewater has been applied in accordance with the approved nutrient management plan designed to ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater (ARSD 74:52:02:22 a.b.r. 40 CFR 122.23(e)).
- 1.1.3. “Animal Feeding Operation” (AFO) is a lot or facility that stables, confines, and feeds or maintains livestock in either an open or housed lot for a total of 45 days or more in any 12-month period. The open lot does not sustain crops, vegetation, forage growth, or post-harvest residues in the normal growing season over any portion of the lot or facility. Two or more AFOs under common ownership are a single AFO if they adjoin each other (within one mile), or if they use a common area or system for the disposal of manure.
- 1.1.4. “ARSD” means the Administrative Rules of South Dakota.
- 1.1.5. "Aquifer," a geologic formation, group of geologic formations, or part of a geologic formation that contains sufficient saturated permeable material to yield economical quantities of water to wells and springs;
- 1.1.6. “Best Management Practices” (BMPs) means schedules of activities, prohibitions of practice, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge, manure disposal, manure application, manure stockpiles, or drainage from raw material storage.
- 1.1.7. A “Concentrated Animal Feeding Operation” (CAFO) is an AFO that meets the following criteria for a large, medium, or small CAFO:
 - 1.1.7.1. A large CAFO as described in Table 1;
 - 1.1.7.2. A medium CAFO as described in Table 1 and meets one of the following conditions:
 - 1.1.7.2.a. Pollutants are discharged into waters of the state through a man-made ditch, flushing system, or other similar man-made device; or
 - 1.1.7.2.b. Pollutants are discharged directly into waters of the state which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation;
 - 1.1.7.3. A small CAFO as described in Table 1 and designated as a CAFO by the Secretary considering the following factors:
 - 1.1.7.3.a. The size of the AFO and the amount of manure or process wastewater reaching waters of the state;
 - 1.1.7.3.b. The location of the AFO in relation to waters of the state;
 - 1.1.7.3.c. The means of conveyance of manure and process wastewater into waters of the state; and
 - 1.1.7.3.d. The slope, vegetation, precipitation, and other factors affecting the likelihood or frequency of discharge of manure and process wastewater into waters of the state.

Table 1. Number of Animals to Define Large, Medium and Small CAFOs			
Type of Animal Feeding Operation	CAFOs		
	Large	Medium	Small

	Animal numbers equal to or more than:	Animal numbers equal to:	Animal numbers less than:
Dairy cows (mature - milked or dry) ¹	700	200 to 699	200
Veal calves ¹	1,000	300 to 999	300
Cattle other than mature dairy cows or veal calves ^{1 and 2}	1,000	300 to 999	300
Swine (weighing 55 pounds or more) ¹	2,500	750 to 2,499	750
Swine (weighing less than 55 pounds) ¹	10,000	3,000 to 9,999	3,000
Horses ¹	500	150 to 499	150
Sheep or Lambs ¹	10,000	3,000 to 9,999	3,000
Turkeys	55,000	16,500 to 54,999	16,500
Laying hens or broilers ³	30,000	9,000 to 29,999	9,000
Chickens, other than laying hens ⁴	125,000	37,500 to 124,999	37,500
Laying hens ⁴	82,000	25,000 to 81,999	25,000
Ducks ³	5,000	1,500 to 4,999	1,500
Ducks ⁴	30,000	10,000 to 29,999	10,000
Geese	30,000	10,000 to 29,999	10,000

¹ Animals are counted individually once separated from the mother.

² Cattle includes but is not limited to heifers, steers, and bulls.

³ AFO uses a liquid manure handling system.

⁴ AFO uses other than a liquid manure handling system.

NOTE: Other animal types not listed in the above table may be considered on a case-by-case basis.

- 1.1.8. “Containment Structure” means any structure designed to store, treat, or process manure, litter, or process wastewater at a CAFO or any structure designed to store, treat, or process manure, litter, process wastewater, or other organic by-products at a processing operation.
- 1.1.9. “Discharge” an addition of any pollutant or combination of pollutants to surface waters of the state from any CAFO or processing operation.
- 1.1.10. “Housed Lot” means totally roofed buildings that may be open or completely enclosed on the sides. Animals are housed over solid concrete or earthen floors, slotted floors over pits, or manure collection areas in pens, stalls, or cages.
- 1.1.11. “Incorporation” means applying manure using injection, disking into the soil, tilling the soil after application, or using other practices that result in a majority of the manure or process wastewater being placed below the ground surface.
- 1.1.12. “Land Application” means the application of manure, litter, or process wastewater onto or incorporated into the soil.
- 1.1.13. “Land Application Area” means land in the initial nutrient management plan to which manure, litter, or process wastewater from the production area is or may be applied.
- 1.1.14. “Local Government” means county or city governments that can adopt requirements applicable to AFOs located within their respective jurisdictions.
- 1.1.15. “Major Modification” means an expansion or increase to the lot area or feeding area; change in the location of the AFO; increase in the maximum permitted animal numbers; change in the methods of

waste treatment, waste storage, or land application of waste; change in animal species or type; change in the size or location of the containment structure; increase in the amount of nutrients from the manure management system or processing operation land applied, change in crop rotation, or the addition of land application fields. A temporary transfer of approved land application fields between permitted operations is not a major modification.

- 1.1.16. “Manure” means manure, bedding, compost, and raw materials or other materials commingled with manure or set aside for disposal.
- 1.1.17. “Manure Management System” means any housed lots, open lots, piping, containment structures, and disposal appurtenances associated with the collection, storage, treatment, and land application of manure, litter, or process wastewater at an AFO.
- 1.1.18. “Maximum Operating Level” means the required storage elevation for a CAFO liquid containment structure to contain residual solids and process wastewater for the time period required by the permit (see Appendix I) and the required storage elevation for a processing operation liquid containment structure to contain the 25-year, 24-hour storm volume below the freeboard level. The maximum operating level shall be marked with an appropriate marker set in the containment structure or by other means to indicate when drawdown is needed.
- 1.1.19. “New or Expanding Operations” means CAFOs commencing construction of a new manure management system on or after February 12, 2003, (New operations) or existing operations proposing to increase the maximum number of animals that may be confined at the facility (Expanding operations).
- 1.1.20. “New Source” means any building or manure management system at a large CAFO the construction of which commenced after February 12, 2003, where the operation:
 - 1.1.20.1. Constructs a new building, manure management system structure(s), or manure containment system at a location where no other CAFO exists;
 - 1.1.20.2. Totally replaces the animal housing, production equipment, or manure management system structures associated with the collection, storage, and treatment of manure or process wastewater at a site; or
 - 1.1.20.3. Constructs a new building, manure management system structure(s), or manure containment system at a location where another CAFO exists where the new operation will be operated substantially independently from the existing operation.
- 1.1.21. “No-till Cropland” means land which is subject to a conservation farming practice used to establish the soil characteristics necessary to limit erosion from runoff where the soil is left continuously undisturbed and planting or drilling is done in a narrow seedbed or slot created by coulters, row cleaners, disk openers, etc. No-till cropland should equate to a soil tillage intensity rating (STIR) of 20 or less using an approved NRCS water erosion prediction technology. No-till cropland characteristics **are not** obtained with vertical tillage implements (super coulters, turbo till, etc.).
- 1.1.22. “Open Lot” means pens or similar confinement areas with earthen and/or paved surfaces. Animals are exposed to the outside environment except for possible small portions affording some protection by windbreaks or small shed type shade areas.
- 1.1.23. “Overflow” means the flowing over or spilling of manure or process wastewater resulting from filling of a containment structure beyond the point at which no more manure, process wastewater, or storm water can be contained by the structure.

- 1.1.24. “Process Wastewater” means water directly or indirectly used in the operation of the AFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or by-products including manure, litter, feed, milk, eggs, or bedding.
- 1.1.25. “Processing Operation” is an operation that processes or stores manure, or processes or stores process wastewater, without coverage under a concentrated animal feeding operation's general or individual water pollution control permit, and the maximum number of permitted or unpermitted animals from which manure or process wastewater is processed or stored meets the definition of a large concentrated animal feeding operation.
- 1.1.26. “Producer” means the owner or operator of the CAFO or the owner or operator of a processing operation. When a CAFO or a processing operation is owned by one person but is operated by another person, the operator shall apply for the permit. The producer is the person with coverage under this permit. When a processing operation is covered under a CAFO’s permit, the person applying for or with permit coverage for the CAFO shall apply for the permit.
- 1.1.27. “Production Area” means the part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milk rooms, milking centers, cow yards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions which separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility and any area used in the storage, handling, treatment, or disposal of mortalities.
- 1.1.28. “Secretary” means the Secretary of the South Dakota Department of Agriculture and Natural Resources or authorized representative.
- 1.1.29. “Setback” means a specified distance from waters of the state or potential conduits to waters of the state where manure, litter, and process wastewater may not be land applied or containment structures may not be located.
- 1.1.30. “Shall” means that the condition is an enforceable requirement of this permit.
- 1.1.31. “Should” means that the condition is a recommendation of the Secretary. If violations of the enforceable requirements of this permit occur, the Secretary will evaluate whether the producer implemented the recommendations contained in this permit that may have helped the producer to avoid the violation.
- 1.1.32. “Strip-till Cropland” means land which is subject to a conservation farming practice used to establish the soil characteristics necessary to limit erosion from runoff that involves tilling a narrow band (less than one third of the total row area) of soil while leaving the rest of the field undisturbed. Strip-till cropland should equate to a soil tillage intensity rating (STIR) of 20 or less using an approved NRCS water erosion prediction technology.

- 1.1.33. “Surface Waters of the State” are lakes, ponds, streams, rivers, and any other body or accumulation of water on the land surface that is waters of the state, but not waste treatment systems, including treatment ponds, lagoons, leachate collection ponds, or stormwater retention ponds.
- 1.1.34. “Vegetated Buffer” means a permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching surface waters of the state. Vegetated buffer areas are maintained and can be harvested.
- 1.1.35. “Waters of the State” means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.

1.2. **How to Obtain Coverage Under this Permit**

1.2.1. **Operations Required to Obtain Permit Coverage**

- 1.2.1.1. South Dakota Codified Laws (SDCL), Section 34A-2-36.2, requires each CAFO, as defined by Title 40 Codified Federal Regulations (C.F.R.) Part 122.23 (January 1, 2023), to operate under a general or individual water pollution control permit. Once a CAFO receives general permit coverage, the permit requirements apply to all AFOs at the operation with respect to all manure, litter, and process wastewater generated by those animals or the production of those animals, regardless of the type of animal.
- 1.2.1.2. An AFO shall obtain coverage under this permit if required by local government. The Legislature has given the authority to establish setbacks to structures and other land uses to counties and municipal planning and zoning bodies. Local government is responsible for administering their ordinances. This permit does not supersede or remove liability for compliance with local government ordinances. If the producer has additional AFOs not required by local government to obtain permit coverage, unless they are a CAFO required to be permitted by Section 1.2.1.1., this permit is not required for those operations.
- 1.2.1.3. South Dakota Codified Laws (SDCL), Section 34A-2-36.3, requires each operation that processes or stores manure, or processes or stores process wastewater, as those terms are defined in 40 C.F.R. § 122.23 (January 1, 2023), without coverage under a concentrated animal feeding operation's general or individual water pollution control permit issued pursuant to §§ 34A-2-36 and 34A-2-36.2, and if the maximum number of permitted or unpermitted animals from which manure or process wastewater is processed or stored would meet the definition of a large concentrated animal feeding operation, under 40 C.F.R. § 122.23 (January 1, 2023), to obtain its own general or individual water pollution permit.
- 1.2.1.4. The Secretary encourages producers with AFOs that do not meet the definition of a large CAFO to voluntarily request coverage under this permit or voluntarily comply with the terms and conditions of the permit. If the producer that voluntarily obtains permit coverage has additional AFOs not required to obtain permit coverage, this permit is not required for those operations.
- 1.2.2. **Permit Application Requirements.** This section describes the permit application requirements for all operations, new or expanding operations, and existing operations required to obtain permit coverage.

- 1.2.2.1. **Existing Operations with an Approved Permit Application or General Permit Coverage Prior to the Effective Date of this Permit.** Operations with coverage under the 2003 or 2017 general permit, which were administratively extended, continue to have coverage under that permit until the operation is granted coverage under this permit or coverage is otherwise terminated. Existing operations with an approved permit application or coverage under the 2003 or 2017 general permit have one year from the effective date of this permit to submit a permit application. Information submitted as the permit application shall consist of:
- 1.2.2.1.a. If the applicant is a corporation, partnership, limited liability partnership (LLP), limited liability company (LLC), or trust, the applicant shall provide information on their legal structure including any parent corporation or subsidiary corporations of the applicant. The applicant shall also identify the name, title/position, and residential address (a P.O. Box is not acceptable) of every officer, general partner, LLP partner, LLC member, trustee, investor, director, or person performing a function similar to a director, the applicant, and each person who is the recorded or beneficial owner of 10 percent or more of any class of voting stock of the applicant, or any other responsible official(s) of the applicant with legal or decision making responsibility or authority for the operation. Documentation shall also be submitted indicating the producer has the authority to sign the application documents below for the corporation, partnership, LLP, LLC, or trust;
- 1.2.2.1.b. A Certification of Applicant form (Appendix A);
- 1.2.2.1.c. A Notice of Intent (NOI) form (Appendix B). This form contains the DANR mailing address where the permit application is to be sent;
- 1.2.2.1.d. New source swine, poultry, and veal calf operations with uncovered containment structure(s) shall evaluate the adequacy of the designed containment structure(s) to show it will not discharge using the Natural Resources Conservation Service's (NRCS) SPAW hydrology tool. The evaluation shall include all inputs to SPAW for the previous 100 years consistent with the operation's nutrient management plan, with the final modeled result showing no overflows from the designed uncovered containment structure(s). For those operations where 100 years of local weather data for the operation's location is not available, operations may use a simulation with a confidence interval analysis conducted over a period of 100 years. The Secretary may approve an equivalent evaluation and simulation procedure;
- 1.2.2.1.e. If the producer has an approved initial nutrient management plan meeting the requirements of the 2017 general permit, the producer shall affirm that they are not making changes to their existing nutrient management plan or shall submit a new or revised initial nutrient management plan developed in accordance with Section 1.4.4. of this permit;
- 1.2.2.1.f. **Training and Education.** The producer or on-site representative shall attend an approved environmental training program, no later than one year after obtaining coverage under this permit, on proper operation and maintenance of a manure management system and proper natural resource management and provide a copy of the training certificate to DANR. In lieu of attending the environmental training program, the producer may provide a copy of a training certificate dated after April 15, 2017, to DANR. If the person who attended training no longer works at the operation, a producer or on-site representative shall attend training for the operation within one year. Applicators of manure and process wastewater should consider attending this training, so they are aware of the permit's requirements. Upon request, the Secretary shall provide producers with a listing of approved environmental training programs;

- 1.2.2.1.g. Existing operations with an approved permit application without having permit coverage or approval under the 2003 or 2017 general permit for all items shown on the approved plans have until their approval expires (see approval letter), but no later than four years from the effective date of this permit to submit a modified application including the requirements under this permit for reconsideration or to submit a Notice of Completion with any other information required to meet the requirements of this permit to receive permit coverage under this permit; and
- 1.2.2.1.h. Operations with coverage or approval under the 2003 or 2017 general permit planning changes to their approved manure management system that consist of an expansion or increase to the lot or feeding area; a change in the location of the AFO; an increase in the permitted animal numbers; a change in the method of waste treatment or storage; a change in animal species or type; or change in the size or location of the containment structure(s) shall submit a permit application for coverage under this permit that includes all of the requirements of Section 1.2.2.2.
- 1.2.2.2. **New Operations, Operations Making a Major Modification to their Operation, or Operations Without a DANR Approved Manure Management System.** The producer shall submit an application that contains the following information to the Secretary at least 60 days prior to starting construction:
- 1.2.2.2.a. If the applicant is a corporation, partnership, limited liability partnership (LLP), limited liability company (LLC), or trust, the applicant shall provide information on their legal structure including any parent corporation or subsidiary corporations of the applicant. The applicant shall also identify the name, title/position, and residential address (a P.O. Box is not acceptable) of every officer, general partner, LLP partner, LLC member, trustee, investor, director, or person performing a function similar to a director, the applicant, and each person who is the recorded or beneficial owner of 10 percent or more of any class of voting stock of the applicant, or any other responsible official(s) of the applicant with legal or decision making responsibility or authority for the operation. Documentation shall also be submitted indicating the producer has the authority to sign the documents in Sections b. and c. below for the corporation, partnership, LLP, LLC, or trust;
- 1.2.2.2.b. A Certification of Applicant form (Appendix A);
- 1.2.2.2.c. A Notice of Intent (NOI) form (Appendix B). This form contains the DANR mailing address where the permit application is to be sent;
- 1.2.2.2.d. New source swine, poultry, and veal calf operations with uncovered production area(s) applying for this permit shall include an evaluation of their liquid containment structure(s) using the Natural Resource Conservation Service's (NRCS) Soil Plant Air Water (SPAW) hydrology tool indicating the liquid containment structure(s) with a final modeled result showing no overflow from the designed liquid containment structure(s). The evaluation shall include all inputs to SPAW for the previous 100 years and shall be consistent with the operation's nutrient management plan. The Secretary may approve an equivalent evaluation and simulation procedure;
- 1.2.2.2.e. New or revised plans and specifications for the manure management system.
- 1.2.2.2.e.1) The plans and specifications shall be sealed, signed, and dated by a South Dakota licensed professional engineer or, to the extent authorized by state law, prepared by the U.S. Department of Agriculture – Natural Resources Conservation Service,
- 1.2.2.2.e.2) The plans and specifications, nutrient management plan, and Operation and Maintenance Guideline shall include all necessary items to show that the manure

management system will meet all the terms and conditions of this permit once constructed, and

- 1.2.2.2.e.3) SDCL 36-18A-46 requires the engineer to perform construction administration as defined in SDCL 36-18A-1(9). The engineer shall submit a construction administration plan with the plans and specifications;
- 1.2.2.2.f. If the producer has an approved initial nutrient management plan meeting the requirements of the 2017 general permit, the producer shall affirm that they are not making changes to their existing nutrient management plan or shall submit a new or revised initial nutrient management plan developed in accordance with Section 1.4.4. of this permit;
- 1.2.2.2.g. A new or revised Operation and Maintenance Guideline signed by the producer;
- 1.2.2.2.h. **Training and Education.** The producer or on-site representative shall attend an approved environmental training program, no later than one year after obtaining coverage under this permit, on proper operation and maintenance of a permitted operation and proper natural resource management and provide a copy of the training certificate dated after April 15, 2017, to DANR. If the person who attended training no longer works at the operation, a producer or on-site representative shall attend training for the operation within one year. Applicators of manure and process wastewater should consider attending this training, so they are aware of the permit requirements;
- 1.2.2.2.i. A Notice of Completion (Appendix A) signed by the producer's engineer indicating the manure management system was constructed in accordance with the approved plans and is complete. This part of the application cannot be submitted prior to the Secretary's approval, but shall be submitted before a Certificate of Compliance can be issued;
- 1.2.2.2.j. **Best Management Practices (BMPs).** The producer is responsible for implementing BMPs to ensure compliance with the terms and conditions of this permit. The producer shall include the BMPs that shall be implemented at the AFO in the Operation and Maintenance Guideline and nutrient management plan. The following sections describe several BMPs that may assist the producer in complying with this permit and prevent pollution; and
- 1.2.2.2.k. **Location Standards.** This section establishes the minimum standards the producer shall consider when selecting a site for a new CAFO or processing operation.
- 1.2.2.2.k.1) The producer shall contact the local planning and zoning office to determine all local requirements. The producer is responsible for complying with all local ordinances and requirements. Local governments may have setback distances, buffer zone widths, and other siting or environmental requirements established in local ordinances.
- 1.2.2.2.k.2) The producer should take every precaution to minimize the possibility of exposing the public to nuisance conditions and to prevent locating an AFO or processing operation in an area unsuitable or inappropriate. Factors that the producer should consider are:
- 1.2.2.2.k.2)a) Distance to roads, homes, churches, schools, residential and recreational areas, towns, cities, etc.;
- 1.2.2.2.k.2)b) Prevailing wind direction;
- 1.2.2.2.k.2)c) Fencing the containment structure for safety and posting signs around the structure;
- 1.2.2.2.k.2)d) Location of tile drainage systems;
- 1.2.2.2.k.2)e) Planting trees or shrubs where they will not damage the containment structure to help control odors and improve aesthetics; and

- 1.2.2.2.k.2)f) Distance to public and individual water supplies.
- 1.2.2.2.k.3) The producer should evaluate the design, construction, and operational features of the process wastewater containment system to minimize contamination of surface water or groundwater. In making this evaluation, the producer should consider the following factors:
 - 1.2.2.2.k.3)a) Soil conditions;
 - 1.2.2.2.k.3)b) Depth to the aquifer;
 - 1.2.2.2.k.3)c) Distance from the feeding operation or processing operation to the aquifer and nearby drainages, streams, rivers, lakes, wetlands, etc.;
 - 1.2.2.2.k.3)d) Groundwater conditions such as ground water flow rate, quality, and aquifer recharge or discharge conditions;
 - 1.2.2.2.k.3)e) Active natural processes such as flooding, erosion, settling, submergence, etc.;
 - 1.2.2.2.k.3)f) Local weather conditions;
 - 1.2.2.2.k.3)g) Terrain slopes; and
 - 1.2.2.2.k.3)h) Containment structures should not be located in wetlands. If required by federal law, the producer shall obtain a Section 404 permit from the US Army Corps of Engineers prior to any dredging or filling of wetlands.
- 1.2.2.2.k.4) Containment structures should not be located over shallow aquifers. The Secretary shall evaluate whether monitoring wells or a Groundwater Discharge Permit will be required on a case-by-case basis. The Secretary shall use SDCL 34A-3A-24 and the conditions of this permit to determine when a Groundwater Discharge Permit is required.
- 1.2.2.2.k.5) The producer shall at least maintain the minimum buffer zones required by this permit around containment structures or land application areas.
- 1.2.2.2.k.6) The producer should consider distances from neighbors, cities, and other residential areas. Proposed sites in areas located in a predominately upwind direction from residential areas should be avoided.
- 1.2.2.3. **Existing Operations Required to Obtain Permit Coverage**
 - 1.2.2.3.a. Upon receipt of a signed complaint, the Secretary will conduct an inspection in response to the complaint to determine whether an existing AFO is a CAFO or processing operation required to obtain coverage under this permit. After conducting the inspection, the Secretary will notify the producer of DANR's inspection findings and whether coverage under this permit is required.
 - 1.2.2.3.b. Any existing operation that is a CAFO shall submit a permit application for coverage under this permit following the schedule provided by the Secretary. Permit applications for those operations that do not have existing containment systems shall be in accordance with Section 1.2.2.2. Permit applications for those operations that have existing containment systems shall be in accordance with Section 1.2.2.2. except the following criteria will be used to determine what needs to be submitted for the plans and specifications element of the application for AFOs or CAFOs with containment structures built prior to August 14, 1996:
 - 1.2.2.3.b.1) Documentation prepared by a South Dakota licensed professional engineer or the Natural Resources Conservation Service showing the size and shape of the containment

structure, the calculated capacity of the containment structure, and the existing or proposed location and elevation of the required maximum operating level marker (see the representative storage structure drawing in Appendix I). The producer shall also submit any information that is available detailing the construction of the existing containment structure to include as-built drawings, cross-sectional views of the containment structure, location and type of piping, Notice of Completion, etc;

- 1.2.2.3.b.2) If the existing containment structure cannot contain 180 days of liquid storage plus the 25-year, 24-hour storm volume, the producer shall submit plans and specifications for a new or modified containment structure. The 25-year, 24-hour storm requirement is not applicable for a totally enclosed CAFO with an enclosed containment structure. Any new enclosed containment structure or new enclosed containment structure used in combination with an existing manure containment structure shall have at least 270 days of storage. Any new open lot and/or uncovered containment structure design shall provide 365 days of storage to account for the annual precipitation volume plus the 25-year, 24-hour storm necessary in the design (see Appendix I); and
- 1.2.2.3.b.3) If the producer intends to continue using existing liquid containment structures constructed prior to August 14, 1996, the producer shall provide documentation the containment structure meets the seepage or permeability requirements in Section 1.4.3.4. of this permit if the containment structure meets one of the following criteria:
- 1.2.2.3.b.3)a) There is visible evidence of seepage from the containment structure;
- 1.2.2.3.b.3)b) The containment structure is located over a mapped shallow aquifer shown in Appendix G of this permit or other shallow aquifers identified in reports published by the South Dakota Geological Survey;
- 1.2.2.3.b.3)c) The containment structure is located within 150 feet of a river or lake classified in the South Dakota Surface Water Quality Standards, ARSD 74:51:02 and 74:51:03, as a warmwater fishery or coldwater fishery; or
- 1.2.2.3.b.3)d) Impacts to private or public water supplies from the existing containment structure have been documented or if the existing containment structure is less than 250 feet from a well owned by someone other than the producer or 1,000 feet from an existing public water well, constructed to supply water to water distribution systems as defined by SDCL 46-1-6(17) or surface waters of the state classified by the South Dakota Surface Water Quality Standards, ARSD 74:51:02 and 74:51:03, for a domestic water supply beneficial use.
- 1.2.2.3.b.3)e) The requirements of section 1.2.2.3.b.3 do not apply to an existing containment structure that does not meet any of the four criteria listed above, a containment structure constructed from concrete, or any structure with a synthetic liner. If a structure is built with concrete or has a synthetic liner and there are visible signs of leakage, the producer shall include in the application a plan to repair the structure to stop the leakage.
- 1.2.2.3.b.3)f) If required to show an existing liquid containment structure can meet the seepage or permeability requirements of this permit, documentation complying with one of the following options shall be submitted:
- 1.2.2.3.b.3)f)i. The drilling logs and elevation of the top of the borings shall be provided. There shall be at least two soil borings for each containment structure. The borings shall be drilled on the side of the structure that has visible leakage, nearest to the river or lake, or adjacent well (see items a, c, and d above);

- 1.2.2.3.b.3)f)ii. Permeability tests of in-situ samples taken from the sides and bottom of the containment structure. One test shall be conducted on each side of the dike and at least one per acre of containment structure bottom area. In-situ sampling outside of the containment structure perimeter will be considered if a sampling plan is first submitted to DANR for approval;
- 1.2.2.3.b.3)f)iii. Long-term measurements of the level of liquid in the containment structure considering evaporation and other losses or gains to the waste volume in the structure;
- 1.2.2.3.b.3)f)iv. Plans and specifications for the existing containment structure that show in detail how the liner of the containment structure was constructed; or
- 1.2.2.3.b.3)f)v. Other methods that can be shown to reliably predict the seepage or permeability of an existing containment structure.
- 1.2.2.3.b.3)g) If the documentation does not show that the existing containment structure meets the seepage or permeability requirements of this permit, the producer shall submit a plan to bring the containment structure into compliance with the conditions of this permit. Options include lining the structure with a clay liner, installing a synthetic liner, installing a bentonite layer, abandoning the existing containment structure and constructing a new structure in accordance with this permit, obtaining a Groundwater Discharge Permit and conducting shallow aquifer water monitoring, or other options approved by the Secretary. Plans and specifications for any new construction shall be submitted for review and approval by the Secretary before construction begins.
- 1.2.2.3.c. **Processing Operations.** Any existing processing operation without coverage under a CAFO's general or individual water pollution control permit shall submit a permit application for coverage under this permit following the schedule provided by the Secretary. Permit applications for those operations that have existing containment structures shall be in accordance with Section 1.2.2.2. except the following criteria will be used to determine what needs to be submitted for the plans and specifications element of the application:
- 1.2.2.3.c.1) **Processing operations with prior DANR approval.** A Notice of Completion prepared by a South Dakota licensed professional engineer or the Natural Resources Conservation Service (NRCS) indicating the containment structures were constructed in general conformance with the approved plans and specifications shall be submitted. Where deviations are noted, as-built plans detailing the constructed facilities shall be required. If the existing processing structure cannot contain the 25-year, 24-hour storm event, the producer shall submit plans and specifications for a new or modified processing structure; or
- 1.2.2.3.c.2) **Processing operations built prior to DATE (Effective Date of PERMIT), without prior DANR approval.**
- 1.2.2.3.c.2)a) Documentation prepared by a South Dakota licensed professional engineer or the Natural Resources Conservation Service (NRCS) showing the size and shape of the containment structures, and the existing or proposed location and elevation of the required Maximum Operating Level marker (see the representative storage structure drawing in Appendix I). The producer shall also submit any information that is available detailing the construction of the existing containment structure to

include as-built drawings, cross-sectional views of the structure, location and type of piping, Notice of Completion, etc.

- 1.2.2.3.c.2)b) If an existing uncovered containment structure cannot contain the 25-year, 24-hour storm event, the producer shall submit plans and specifications for a new or modified processing structure.
- 1.2.2.3.c.2)c) If the producer intends to continue using existing containment structures constructed prior to **DATE (effective Date of PERMIT)**, the producer shall provide documentation the structure meets the liner requirements in Section 1.4.3.4. of this permit if the structure meets one of the following criteria. Documentation complying with the following items shall be submitted:
- 1.2.2.3.c.2)c)i. Soil boring logs and elevation of the top of the borings shall be provided. There shall be at least two soil borings for each containment structure;
- 1.2.2.3.c.2)c)ii. For earthen containment structures, permeability tests of in-situ samples taken from the sides and bottom of the containment structure. One test shall be conducted on each side of the dike and at least one per acre of containment structure bottom area. Outside pond perimeter in-situ sampling may be considered if a sampling plan is first submitted to DANR for approval;
- 1.2.2.3.c.2)c)iii. Long-term measurements of the level of manure in the containment structure considering evaporation and other losses or gains to the waste volume in the structure; and
- 1.2.2.3.c.2)c)iv. Plans and specifications for the existing containment structure that show in detail how the liner of the containment structure was constructed.
- 1.2.2.4. **Change of Producer.** If the producer will no longer be the operator of the operation, they shall transfer permit coverage to the new producer. The producer shall comply with the following to transfer the permit to a new producer:
- 1.2.2.4.a. The current producer notifies the Secretary at least 30 days in advance of the proposed transfer date by submitting a Change of Producer form (Appendix D);
- 1.2.2.4.b. The new producer submits Certification of Applicant form (Appendix A), Notice of Intent form (Appendix B), and Operation and Maintenance Guideline;
- 1.2.2.4.c. If the applicant is a corporation, partnership, limited liability partnership (LLP), limited liability company (LLC), or trust, the applicant shall provide information on their legal structure including any parent corporation or subsidiary corporations of the applicant. The applicant shall also identify the name, title/position, and residential address (a P.O. Box is not acceptable) of every officer, general partner, LLP partner, LLC member, trustee, investor, director, or person performing a function similar to a director, the applicant, and each person who is the recorded or beneficial owner of 10 percent or more of any class of voting stock of the applicant, or any other responsible official(s) of the applicant with legal or decision making responsibility or authority for the operation. Documentation shall also be submitted indicating the producer has the authority to sign the application documents for the corporation, partnership, LLP, LLC, or trust;
- 1.2.2.4.d. The new producer submits either documentation that the current nutrient management plan will continue to be used or a revised nutrient management plan for approval, including appropriate manure application agreements;

- 1.2.2.4.e. If the new producer plans to make major modifications to a manure management system the operation shall go through the National Pollutant Discharge Elimination System (NPDES) permit public notice process after being transferred;
- 1.2.2.4.f. The current producer is responsible for complying with the permit requirements until permit coverage is transferred to the new producer. The Secretary will notify the current and new producers if the transfer of permit coverage is granted and the effective date of the permit transfer; and
- 1.2.2.4.g. No later than one year after obtaining coverage under this permit, the new producer is required to attend an approved environmental training program on proper operation and maintenance of a permitted operation and proper natural resource management or provide a copy of a training certificate dated after April 15, 2017, to DANR.
- 1.2.2.4.h. If no changes to the operation are planned, the permit will be transferred in accordance with ARSD 74:52:04:02. If changes to the operation are planned, the permit will be transferred in accordance with ARSD 74:52:04:01.
- 1.2.2.5. **Continuation of this Permit.** An NPDES general permit is effective for five years. If this permit is not reissued prior to the expiration date, it continues in force and effect until the Secretary issues a new general permit so long as the producer remains in compliance with the conditions of this permit, the approved plans and specifications, the BMPs required by this permit to be implemented, and the BMPs incorporated by the producer into the Operation and Maintenance Guideline and the nutrient management plan. Any reissued general permit will contain application requirements for operations with coverage under this permit.
- 1.2.3. **Permit Application Processing.** To request coverage under this general permit, the producer shall submit a permit application as described in Section 1.2.2. to DANR at the address indicated on the Notice of Intent (NOI) form (see Appendix B). Once available, permit applications shall be submitted electronically.
 - 1.2.3.1. Upon receipt, the Secretary shall review the permit application to make a determination whether it is complete and to verify it meets the requirements of this permit. The Secretary may request additional information if the application is incomplete or if additional information needs to be submitted to verify the requirements of this permit will be met.
 - 1.2.3.2. The Livestock Services Program's recommendation of approval, conditional approval, or denial of permit coverage shall be public noticed once in a newspaper in the general locality of the feeding operation and on DANR's One Stop Public Notice website. The notice shall appear at least 30 days prior to the Secretary issuing final approval, conditional approval, or denial of the permit application. The producer shall be responsible for paying for the newspaper notice. The notice shall contain information on the feeding operation to include the location, number of animals, a brief description of the proposed manure management system, the location of the land in the nutrient management plan, the Livestock Services Program's recommendation, and where to obtain further information. The public notice shall include information on how to submit comments or request a contested case hearing. A request for a contested case hearing shall be in writing and shall be prepared and filed in accordance with ARSD 74:50:02:02.
 - 1.2.3.3. The Livestock Services Program shall prepare a written response to all written comments received during this period and, if necessary, may require the producer to revise the permit application.
 - 1.2.3.4. If a contested case hearing is requested, the Secretary shall schedule a contested case hearing.

- 1.2.3.5. The contested case hearing shall be public noticed once in a newspaper in the general locality of the feeding operation and on DANR's One Stop Public Notice website at least 30 days before the hearing.
- 1.2.3.6. If a contested case hearing is held, the Secretary shall issue a final decision based on the outcome of the hearing and issue permit coverage, issue permit coverage with conditions, or deny permit coverage. At that time if permit coverage is granted, the Secretary shall conditionally approve plans and specifications submitted as part of the permit application. It is a violation of this permit if a producer does not follow the conditions of the Secretary's approval.
- 1.2.3.7. If no contested case hearing is requested, the Secretary shall conditionally approve or deny the operation's plans and specifications and grant or deny permit coverage. It is a violation of this permit if a producer does not follow the conditions of the Secretary's approval.
- 1.2.3.8. Starting construction of the manure management system before receiving permit coverage is a violation of this permit. If permit coverage is granted, the producer can begin any construction included as part of their permit application. Once construction has commenced, the producer has three years to complete construction and submit a Notice of Completion. If construction has not started within two years of receiving permit coverage, or if construction has not been completed within three years following the start of construction, approval of the plans and specifications is expired. Operations that received an approval letter from the Secretary under the 2003 or 2017 general permit with approval that has not expired can proceed with construction of the manure management system as long as the operation will meet the requirements of this permit. If additional documentation is needed to demonstrate the requirements of this permit will be met, it shall be submitted with revised plans or as-built plans with a Notice of Completion.
- 1.2.3.9. The Secretary shall conduct a minimum of one inspection during construction.
- 1.2.3.10. Upon completion of construction, the producer shall submit to DANR the results of any required construction testing and a Notice of Completion form (Appendix A) that has been completed by a South Dakota licensed professional engineer or, to the extent authorized by state law, prepared by the U.S. Department of Agriculture – Natural Resources Conservation Service.
- 1.2.3.11. If all conditions of approval and permit conditions are met, the Secretary shall issue a Certificate of Compliance and the operation can populate its production area. Populating the production area before the Secretary issues a Certificate of Compliance and at any time exceeding the maximum number of animals listed on the Certificate of Compliance is a violation of this permit.
- 1.2.3.12. If at any time after a permit application is public noticed and before a Certificate of Compliance is granted the producer's permit application is significantly changed; it shall start the permitting process over. This includes a new public notice. Significant changes include:
 - 1.2.3.12.a. Any revised or as-built plans that include a change in location of the liquid containment structures where additional soil borings are required;
 - 1.2.3.12.b. A change to the type of containment structure; or
 - 1.2.3.12.c. A modification to the nutrient management plan resulting in a change in a planned crop rotation or an increase in land application field acres.
- 1.2.3.13. If after an operation receives permit coverage, the producer plans to make a major modification to their operation, excluding an increase in animal numbers, the producer must

submit a modified permit application. The Livestock Services Program's recommendation for approval, conditional approval, or denial shall only be public noticed on DANR's One Stop Public Notice website for 14 days. The notice shall contain information on the feeding operation to include the location, number of animals, a brief description of any proposed modifications to the manure management system or the nutrient management plan, and where to obtain further information. The department shall respond to any comments submitted. A contested case hearing can be requested, but only addressing the modifications being proposed in the notice.

- 1.2.3.14. If after an operation receives a Certificate of Compliance, the producer plans to have more animals present than the maximum number of approved animals, the producer must submit a modified permit application. The Livestock Services Program's recommendation of approval, conditional approval, or denial of permit coverage shall be public noticed once in a newspaper in the general locality of the feeding operation and on DANR's One Stop Public Notice website. The notice shall appear at least 30 days prior to the Secretary issuing final approval, conditional approval, or denial of the permit application. The notice shall contain information on the feeding operation to include the location, number of animals, a brief description of the proposed manure management system, the location of the land in the nutrient management plan, the Livestock Services Program's recommendation, and where to obtain further information. The public notice shall include information on how to submit comments or request a contested case hearing. A request for a contested case hearing shall be in writing and shall be prepared and filed in accordance with ARSD 74:50:02:02.
- 1.3. **Permit Termination and Closure Requirements.** The producer shall notify the Secretary if coverage under this permit is no longer necessary because the AFO is no longer in operation or a change in the operation has eliminated the requirement for a permit and the producer wants to terminate permit coverage. The producer shall use the Notice of Termination of Coverage form provided in Appendix C of this permit for this notification.
 - 1.3.1. If the AFO will continue to be used for livestock production, the manure management system shall be properly operated and maintained and be below the maximum operating level at the time of permit termination. The Secretary shall notify the producer when permit coverage is terminated and the effective date of permit termination.
 - 1.3.2. If the AFO will no longer be used for livestock production, the producer is responsible for ensuring that upon closure of the AFO, all manure and wastewater has been removed and properly land applied in accordance with the terms and conditions of this permit. Once this is complete, the Secretary shall conduct an inspection of the operation to verify all conditions have been met for closure of the operation. The Secretary shall notify the producer when permit coverage is terminated and the effective date of permit termination.
- 1.4. **Effluent Limits**
 - 1.4.1. **Effective immediately and lasting through the life of this permit the following effluent limits apply.**
 - 1.4.1.1. **New Source Swine, Poultry, and Veal Operations and Other CAFOs with Covered Production Areas.** The producer shall have no discharge of manure, litter, process wastewater, or other organic by-products from the production area or containment structure(s) to waters of the state.

- 1.4.1.2. **CAFOs with Uncovered Production Areas.** The producer shall have no discharge of manure, litter, process wastewater, or other organic by-products from the production area to waters of the state. The only time this permit allows a discharge of process wastewater to waters of the state is when precipitation causes a discharge from the production area as long as:
- 1.4.1.2.a. The manure management system is designed, constructed, operated, and maintained at all times to contain all manure, litter, process wastewater, and other organic by-products including the runoff and direct precipitation from a 25-year, 24-hour precipitation event and is in compliance with the terms and conditions set forth in this permit;
 - 1.4.1.2.b. A daily record of measurable rainfall events shall be recorded. The producer can use an on-site rain gauge to measure precipitation amounts. Measurements taken from the rain gauge must be recorded to the nearest tenth (1/10) of an inch. Producers do not need to update their records on any day when there is no precipitation.
 - 1.4.1.2.c. The producer has inspection records indicating the operation has been properly operated and maintained;
 - 1.4.1.2.d. The discharge is the result of the precipitation event(s);
 - 1.4.1.2.e. No feasible alternative to discharging existed;
 - 1.4.1.2.f. Only manure or process wastewater in excess of the storage capacity of the process wastewater containment system or necessary to prevent system failure is discharged to waters of the state; and
 - 1.4.1.2.g. DANR is notified in accordance with the twenty-four hour reporting section of this permit, and the county emergency manager for the county where the operation is located is notified.
- 1.4.1.3. **Processing Operations.** The producer shall have no discharge of manure, litter, process wastewater, or other organic by-products to waters of the state.
- 1.4.1.4. **Land Application.** The producer shall have no discharge of manure, litter, process wastewater, or organic by-product from their land application fields, unless the discharge meets the definition of agricultural stormwater.
- 1.4.1.5. **Water Quality Based Effluent Limits.** Discharges conditionally authorized by this permit must not cause or contribute to a violation of South Dakota Surface Water Quality Standards, ARSD Chapter 74:51:01. Discharges not in compliance with these standards are not authorized.
- 1.4.2. **Discharge Monitoring**
- 1.4.2.1. In the event a discharge that is not an agriculture stormwater discharge occurs at any permitted operation, the process wastewater shall be sampled at the point of discharge or overflow by at least one grab sample if the discharge lasts 24 hours or less, or by at least three grab samples per week if the discharge exceeds 24 hours. The producer shall record the date and time the discharge was identified, the date and time the discharge is halted, and an estimate of the volume of the discharge. The producer shall report the discharge within 24 hours as required by section 1.6 of this permit. The grab samples shall be analyzed for:
 - 1.4.2.1.a. Total Suspended Solids (TSS) mg/L;
 - 1.4.2.1.b. Total Nitrogen (as N) mg/L;

- 1.4.2.1.c. Ammonia – Nitrogen (as N) mg/L;
- 1.4.2.1.d. Total Phosphorus (as P) mg/L;
- 1.4.2.1.e. Five-Day Biochemical Oxygen Demand (BOD₅), mg/L;
- 1.4.2.1.f. *Escherichia coli* (*E. coli*), #/100 mL; and
- 1.4.2.1.g. Flow Rate - daily estimated, gallons per day.

1.4.2.2. Samples taken in compliance with the monitoring requirements established under this permit shall be collected prior to reaching the receiving waters. If the producer provides sufficient justification, by phone, the monitoring requirement may be waived by DANR staff due to unsafe conditions associated with sampling until conditions allow for samples to be collected safely. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Monitoring shall be conducted according to test procedures approved under ARSD Section 74:52:03:06 (a.b.r. 40 CFR, Part 136), unless other test procedures have been specified in this permit or approved by the Secretary. Analysis methods shall be sufficiently sensitive to ensure the minimum detection level to determine water quality standards are met. If no sufficiently sensitive method is available, the method with the lowest minimum detection level shall be used.

The producer shall submit the sampling results using the form attached in Appendix J of this permit, including all laboratory report forms, to the Secretary no later than the 28th day of the month following the month when the discharge occurred. Sample results shall be submitted to the following address:

South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182

Once notified by the Secretary, these sample results shall be submitted using electronic reporting.

1.4.3. Design, Construction, Operation, and Maintenance Requirements

- 1.4.3.1. Producers shall design, construct, operate, and maintain the CAFO or processing operation in compliance with the conditions of this permit; the approved plans and specifications; the BMPs required by this permit; and the BMPs incorporated by the producer into the permit application. The producer shall include the BMPs that will be implemented at the AFO in the Operation and Maintenance Guideline and the nutrient management plan. The producer is responsible for implementing the BMPs to ensure compliance with the terms and conditions of this permit.
- 1.4.3.2. Each producer's site-specific manure management system design, construction, and operation and maintenance requirements will be placed in Appendix E of this permit when permit coverage is granted. These requirements are designed to protect South Dakota's surface water and groundwater quality.
- 1.4.3.3. **Surface Water Protection.** The producer shall design, construct, operate, and maintain manure management systems to contain the 25-year, 24-hour storm event, plus all sources of process wastewater and liquid and solid manure. The manure management system and processing operation containment structures shall be designed and constructed in accordance with accepted engineering and construction practices.

- 1.4.3.3.a. Ditches, dikes, berms, terraces, or other such structures shall be used to divert peak clean water flows away from a containment structure. These structures shall be designed with stable side slopes to carry the peak flow expected during the 25-year, 24-hour storm event without overtopping. Where peak flows are used to design ditches, dikes, berms, sediment basins, or other similar structures, appropriate rainfall distributions (MSE1, MSE2, and MSE3) shall be utilized (see the NRCS supplement to the National Engineering Handbook Part 650).
- 1.4.3.3.b. For uncovered containment structures, a minimum of one permanent marker shall be installed at the maximum operating level and maintained in each containment structure to show the volume above the permanent marker can contain a 25-year, 24-hour storm event below the High Water Level (see the representative containment structure cross section drawing in Appendix I). The marker shall clearly indicate to the producer the elevation of the maximum operating level. The marker shall be constructed so it will not be displaced by ice or other normal South Dakota weather conditions. The producer shall be aware that if the wastewater rises above the maximum operating level, it shall be pumped down below the marker within 14 days to restore the 25-year, 24-hour storm event and freeboard volume above the marker. If the design requires, the producer shall also pump down the containment structure to the top of the residual volume prior to winter months to provide adequate winter volume. The producer should install a marker indicating this elevation.
- 1.4.3.3.c. Ditches, dikes, berms, terraces, or other such structures used to divert process wastewater flows to the containment structure shall be designed with stable side slopes to carry the peak flow expected during the 25-year, 24-hour storm event without overtopping.
- 1.4.3.3.d. Sediment basins shall be designed to drain to the containment structure within 72-hours or shall have a liner meeting the requirements of this permit. Sediment basins shall also be designed with one foot of freeboard. Design calculations indicating the frequency of required sediment basin cleaning and flood routing shall be submitted as part of the design.
- 1.4.3.3.e. Gravity piping shall be a minimum of SDR 35 PVC, Schedule 40, Class 100, or 16-gauge as appropriate for the particular pipe material or be constructed of a material able to contain wastewater without corroding and installed to provide a minimum velocity of 2 feet per second. Exposed gravity piping shall be protected from ultraviolet radiation. Gravity sewer piping greater than 100 feet in total length (excluding pull plug barn piping within the barn), storm water or clean water diversion piping passing under production areas or containment structures, or any piping that will be surcharged under normal operation (excluding equalization piping) shall be water tightness tested in accordance with the requirements in DENR's *Recommended Design Criteria Manual for Wastewater Treatment and Collection Facilities*, March 1991 or the Recommend Practice For Low-Pressure Air Testing of Installed Sewer Pipe (UNI-B-6-98). [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#). Water tightness test results shall be submitted with a Notice of Completion.
- 1.4.3.3.f. Force main piping shall be a minimum of SDR 35 PVC, Schedule 40, Class 100, or 16-gauge as appropriate for the particular pipe material or be constructed of a material able to contain wastewater without corroding and installed to provide a minimum velocity of 2 feet per second. The minimum pressure rating shall be 100 psi for all force main piping. Pressure testing shall be conducted for any force main piping greater than 100 feet in total length. Pressure test results shall be submitted with a Notice of Completion. Test methods shall meet the requirements for pressure sewers provided in DENR's *Recommended Design Criteria Manual for Wastewater Treatment and Collection Facilities* (March 1991) or ASTM (F2164) (2021). [\(See DANR Livestock Services Website for Permit Reference](#)

Hyperlinks) Irrigation piping shall meet or exceed the NRCS' Waste Transfer (634) standard (October 2022).

- 1.4.3.3.g. Any gravity flow piping into a liquid containment structure, where there is no sediment basin, sediment pond, or solids separation shall be at or above the maximum operating level to prevent pipe surcharging. This requirement does not apply to equalization or inter-pond piping.
- 1.4.3.3.h. Housed lots with covered containment structures shall provide for a minimum design capacity of 270 days of manure and process wastewater storage below the maximum operating level. Housed lots with uncovered containment structure designs shall provide 270 days of manure and process wastewater storage and the annual precipitation volume below the maximum operating level. Open lots with uncovered containment structure designs shall provide 365 days of manure and process wastewater storage below the maximum operating level to account for annual precipitation volume necessary in the design. The design volume below the maximum operating level includes the following:
 - 1.4.3.3.h.1) Liquid and solid manure and any process-generated wastewater, including flush water;
 - 1.4.3.3.h.2) Process wastewater including the mean annual runoff from all drainage areas and annual precipitation on any uncovered parts of the production area;
 - 1.4.3.3.h.3) Mean annual precipitation less evaporation on the pond surface. The amount of evaporation used in this calculation will be no more than the amount shown on the Mean Annual Lake Evaporation map, U.S. Weather Bureau Technical Paper Number 37 (or other reference approved by the Secretary);
 - 1.4.3.3.h.4) If uncontaminated storm water runoff cannot be diverted away from the production area or processing operation, the containment structure shall include adequate storage capacity for the additional clean water. Clean water includes, but is not limited to, precipitation falling on the roofs of facilities and runoff from adjacent land;
 - 1.4.3.3.h.5) Additional water necessary to meet volatile solids loading or other loading rates specified in item 1.4.3.3.x., if the structure is an anaerobic, naturally aerobic, or mechanically aerated lagoon; and
 - 1.4.3.3.h.6) The volume equivalent of at least one foot across the total pond bottom area shall be provided in the bottom of the containment structure to accommodate residual materials that are not removed during emptying. In lieu of this volume, operations with concrete structures can have one foot of residual in sumps within the pump out pits and documentation in their Operation and Maintenance Guideline that they shall agitate the structure just before or when the structure is emptied (See Appendix I). For sloped pond bottoms the volume equivalent of at least one foot across the total bottom surface area of the manure containment structure may be used in lieu of one-foot residual volume.
 - 1.4.3.3.h.7) There shall be no reduction in the required storage in an AFO's manure management system for facilities with manure or process wastewater that is sent to a processing operation.
- 1.4.3.3.i. The design volume above the maximum operating level consists of the following:
 - 1.4.3.3.i.1) The 25-year, 24-hour storm event precipitation directly on pond surface, at the top of the pond berms, and the runoff from any open lot and any other drainage area that is directed to the containment structure and sediment basin(s).

- 1.4.3.3.i.2) The freeboard shall not be less than two feet for any containment structure constructed with earthen materials. The freeboard shall not be less than one foot for any containment structure constructed with concrete or for above ground manure storage tanks. Freeboard is measured from the High Water Level to the bottom elevation of the emergency spillway or lowest part of the containment structure berm, dike, wall, or embankment (see containment structure cross section drawings in Appendix I).
- 1.4.3.3.i.3) If applicable, the South Dakota Safety requirements in ARSD 74:02:08 shall be met for construction of manure containment systems. A manure containment system shall meet these regulatory requirements if it is at least 25 feet high and holds more than 15 acre-feet of water; or holds more than 50 acre-feet of water and is over 6 feet high.
- 1.4.3.3.j. A containment structure for an open lot or a containment structure constructed to meet South Dakota Dam Safety requirements in ARSD 74:02:08 may be constructed with an emergency spillway or overflow channel at the top of the freeboard elevation to remove water in a controlled manner when the capacity of the containment facility is exceeded. If present, the emergency spillway shall be designed to safely pass the flow expected from at least a 25-year, 24-hour storm event without causing a nuisance to downstream landowners.
- 1.4.3.3.k. Chemicals and other contaminants handled on-site or transferred on-site cannot be disposed of in any containment structure, storm water storage system, or treatment system unless it is specifically designed to treat such chemicals or contaminants and the Secretary approves the disposal method. All wastes from dipping vats, pest and parasite control units, and other facilities utilized for the management of potentially hazardous or toxic chemicals shall be handled and disposed of in a manner sufficient to prevent pollutants from entering the containment structures or waters of the state. The producer's Operation and Maintenance Guideline should include any applicable chemical handling protocols and identify all chemicals introduced to the containment structure.
- 1.4.3.3.l. The production area and manure management system, including all clean water conveyances, shall be located on land owned by the producer or the producer shall submit with the application an agreement with the landowner for the planned life of the operation.
- 1.4.3.3.m. Interior and exterior slopes of earthen embankment walls of containment structures shall be no steeper than one foot vertical to three feet horizontal.
- 1.4.3.3.n. Earthen embankments of any containment structure shall have a minimum top width of 10 feet.
- 1.4.3.3.o. Any earthen lined containment structure having a surface area of five acres or more at the maximum operating level (see manure storage structure cross section drawing in Appendix I) shall be provided with erosion protection. If a DANR inspection indicates that significant dike erosion is occurring on earthen containment structures having a surface area of less than five acres, the Secretary shall require that the erosion be repaired and may require erosion protection be installed in those areas subject to erosion.
- 1.4.3.3.p. Any riprap installed for erosion protection shall be hard, durable, and be stable after placement (the use of concrete rubble as riprap is not acceptable). The riprap shall be placed on a securely anchored filter blanket or placed against at least four inches of a filter of sand with gravel and be approximately 6 to 18 inches in diameter. The riprap shall be placed in depths of 8 to 18 inches depending upon size, location, and configuration of cells.
- 1.4.3.3.q. Adequate erosion protection shall be provided where erosive flow is possible such as below inlet piping. Splash pads and chutes for earthen containment structures shall have

adequate capacity, shape, and orientation to handle the maximum flow from the inlet pipe without letting flow leave the sides of the chute and shall be constructed with the use of reinforced concrete or riprap.

- 1.4.3.3.r. Manure containment structures shall not be located within the 100-year flood plain unless the structure is protected from inundation and damage that may occur during flood events. The top of the freeboard shall be constructed at least one foot above the elevation of the 100-year flood. The water surface elevation of the 100-year flood can be determined by using Federal Emergency Management Agency (FEMA) 100-year flood maps, United States Geological Survey (USGS) 100-year flood prone maps, and/or completing a hydrologic and hydraulic analysis. If no FEMA or USGS 100-year flood delineation is available for the location of the waste storage structure, the 100-year flood elevation shall be determined by completing a hydrologic and hydraulic analysis.
- To determine the 100-year flood elevation using a hydrologic and hydraulic analysis, a 100-year flow shall first be estimated by using USGS published peak-flow 100-year frequency estimates, using USGS flow-frequency regression equations, or utilizing a rainfall runoff model. If using a rainfall runoff model, a 100-year frequency, 24-hour duration storm peak flow estimate shall be determined. Manning's equation or a step-backwater program such as Hec/Ras shall then be used to determine the 100-year flood elevation corresponding to the 100-year flow estimate. Other methods may be considered where the potential to flood is not reasonable due to topography.
- 1.4.3.3.s. All operations with manure containment systems or land application areas within ¼ mile of streams, where according to the U.S. Fish and Wildlife Service, Topeka shiners have been observed or have potentially occupied shall develop and implement an Endangered Species Action Plan [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#). The Endangered Species Action Plan shall identify BMP(s) that shall be implemented upon receiving permit coverage to minimize the likelihood of a discharge from entering waters of the state occupied by Topeka shiners. The Endangered Species Action Plan shall be included as an element of the submitted initial nutrient management plan or as part of a revision to an initial nutrient management plan.
- 1.4.3.3.t. Manure management systems, manure disposal sites, and process wastewater disposal sites shall not be located closer than 250 feet from an existing private water well not owned by the producer or 1,000 feet from an existing public water well, constructed to supply water to water distribution systems as defined by SDCL 46-1-6(17) or surface waters of the state classified by the South Dakota Surface Water Quality Standards, ARSD 74:51:02 and 74:51:03, for a domestic water supply beneficial use. Manure management systems, manure disposal sites, and process wastewater disposal sites shall not be located closer than 150 feet from a water well owned or proposed to be drilled by the producer supplied by an aquifer where the top of the aquifer is less than 100 feet below the land surface or 100 feet from a water well owned or proposed to be drilled by the producer supplied by an aquifer whose top is 100 or more feet below the land surface. These setback requirements do not apply to manure management systems constructed prior to August 13, 1996.
- 1.4.3.3.u. Confined animals shall be prevented from contacting waters of the state.
- 1.4.3.3.v. The producer should take precautions while agitating the pond to ensure that the liner is not damaged.
- 1.4.3.3.w. Animal mortalities shall be handled to prevent the discharge of manure and process wastewater to surface waters of the state.

- 1.4.3.3.w.1) Unless plans and specifications approved by the Secretary are for systems specifically designed to handle mortalities, manure, or process wastewater systems cannot be used for the disposal of mortalities;
- 1.4.3.3.w.2) If mortalities are composted using manure or process wastewater, the composting area shall meet the liner and containment requirements of this permit and shall be included on plans and specifications submitted to DANR for approval;
- 1.4.3.3.w.3) If manure or process wastewater from the manure management system is not used in a mortality management system, DANR shall receive an aerial photo or site plan showing the location of the system and the Operation and Maintenance Guideline shall indicate the mortality management system shall be operated so no discharge of process wastewater occurs; and
- 1.4.3.3.w.4) Animal mortality disposal is regulated by the South Dakota Animal Industry Board. The Animal Industry Board may be contacted at (605) 773-3321.
- 1.4.3.3.x. **Waste Treatment Lagoons.** Plans and specifications for waste treatment lagoons shall meet the requirements of SD NRCS Conservation Practice Standard Waste Treatment Lagoon (359) (April 2018) and the following criteria:
- 1.4.3.3.x.1) **Anaerobic Lagoons.** The design shall be based on volatile solids loading. The loading rate for an anaerobic lagoon shall not exceed 3.0 pounds of volatile solids per 1,000 cubic feet of pond volume. Loading rates less than 3.0 pounds are allowed. The minimum depth of liquid shall be 6 feet;
- 1.4.3.3.x.2) **Naturally Aerobic Lagoons.** The design shall be based on daily biochemical oxygen demand (BOD₅) loading per acre of lagoon. The loading rate for an aerobic lagoon shall not exceed 25 pounds of biochemical oxygen demand (BOD₅) per acre of lagoon per day. Loading rates less than 25 pounds are allowed. The maximum depth of liquid shall be five feet;
- 1.4.3.3.x.3) **Mechanically Aerated Lagoons.** The aeration equipment shall provide a minimum of one pound of oxygen for each pound of biochemical oxygen demand (BOD₅) per day. The minimum depth of liquid shall be 6 feet; and
- 1.4.3.3.y. **Calf Hutches.** There shall be no discharge of manure or process wastewater from a calf hutch. Calf hutches that allow animals outside the hutch where the outside areas are not under a roof are considered open lots and runoff from these areas shall be included in the manure containment system.
- 1.4.3.3.y.1) A concrete floor or liner is required unless the in-situ soils can meet the accepted permeability coefficient of 1×10^{-7} centimeters per second (cm/sec) or less, unless the producer has a plan in their Operation and Maintenance Guideline to move hutches so they are not in the same location for more than 45 days and documents they are following this management practice, and
- 1.4.3.3.y.2) Manure removed from calf hutches shall be placed in the operation's manure management system or land applied in accordance with the operation's nutrient management plan.
- 1.4.3.3.z. **Feed and Other Raw Materials Storage.** Processing areas and storage areas for feed or other raw materials where the stored material contains thirty percent (30%) or more moisture content or which have free draining liquids cannot cause the generation of process wastewater which is not contained. Examples of feed and other raw materials

include hay, straw, corn stalks, stover, silage, and distillers grain. Silage and distillers grain have a moisture content that exceeds 30%.

- 1.4.3.3.z.1) All new processing and storage areas where the stored material contains thirty percent (30%) or more moisture content or has free draining liquids shall contain all process wastewater in a containment structure. Moisture testing results for silage or distillers grain will need to be conducted to demonstrate the moisture content is below 30% to be excluded from this requirement.
- 1.4.3.3.z.2) 2) All other processing and storage areas shall contain process wastewater with the raw material, be covered and operated to keep the active face of the material and loading area clean to prevent the generation of process wastewater, or contain process wastewater within a containment structure. Water that flows off a tarp or roof of a feed storage area is not considered process wastewater unless that liquid has come into contact with feedstocks, residual feed, or process wastewater. If process wastewater is observed leaving the processing and storage areas, the department will require plans and specifications for containment of the process wastewater and a construction schedule for process wastewater containment or elimination.
- 1.4.3.3.aa. **Returns from Processing Operations.** Processing operations shall measure the volume of manure or process wastewater received from and returned to each AFO where the manure process wastewater is generated. The volume of manure or process wastewater returned to an AFO's manure management system shall not be in excess of the volume sent to the processing operation by that AFO. Any additional wastewater from the processing operation can only be returned to an AFO if documentation demonstrating the AFO's manure management system has capacity for the additional wastewater, in addition to the manure and process wastewater generated at the AFO, is submitted to DANR for review and approval. The processing operation shall maintain records of the total wastewater volume transferred and provide copies of records to each AFO no less than monthly.
- 1.4.3.3.bb. **Containment System Tile and Covered Holding Ponds Sampling.** Water from tile located closer than 50 feet from the toe of the exterior berm or foundation of a containment structure or any other or any other part of the production area and from storm water pump systems for covers on containment structure(s) shall either direct the water from those systems to the containment structure and be included in the design volume below the maximum operating level or the outfall shall be included on a map with the outfall location's longitude and latitude. The water shall be sampled by grab sample at least once quarterly for:
- 1.4.3.3.bb.1) Total Suspended Solids (TSS) mg/L;
 - 1.4.3.3.bb.2) Total Nitrogen (as N) mg/L;
 - 1.4.3.3.bb.3) Ammonia – Nitrogen (as N) mg/L;
 - 1.4.3.3.bb.4) Total Phosphorus (as P) mg/L;
 - 1.4.3.3.bb.5) Five-Day Biochemical Oxygen Demand (BOD5), mg/L;
 - 1.4.3.3.bb.6) *Escherichia coli* (*E. coli*), #/100 mL; and
 - 1.4.3.3.bb.7) Flow Rate - daily estimated, gallons per day.

Samples collected to demonstrate the discharge is not process wastewater shall be collected prior to reaching the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Monitoring shall be conducted according to test procedures approved under ARSD Section 74:52:03:06 (a.b.r. 40 CFR,

Part 136), unless other test procedures have been specified in this permit or approved by the Secretary. Analysis methods shall be sufficiently sensitive to ensure the minimum detection level to determine water quality standards are met. If no sufficiently sensitive method is available, the method with the lowest minimum detection level shall be used.

The producer shall submit the sampling results, including all laboratory report forms, to the Secretary no later than the 28th day of the month following March, June, September, and December. If no discharge occurred, a report shall be submitted indicating that. Sample results and no discharge reports shall be submitted to the following address:

South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182

Once notified by the Secretary, these sample results shall be submitted using electronic reporting.

If a review of the sampling results indicates the discharge consists of process wastewater, the Secretary shall notify the producer with a deadline to take corrective action to prevent future discharges of process wastewater. The producer shall inspect the outfall daily to determine if a discharge is occurring and keep records documenting the result of the inspection. The outfall shall be sampled each day a discharge is observed until any corrective actions have been implemented. The producer will have the option to direct the process wastewater into the containment structure(s) if adequate volume is available or identify the source of process wastewater and eliminate the source. If the Secretary determines that the specific cause has been appropriately corrected to eliminate the discharge of process wastewater, the producer can continue to collect samples documenting the discharge is not process wastewater. If process wastewater is detected twice in any five-year period, capacity calculations showing adequate capacity in the containment structure(s) shall be submitted to the Secretary and the process wastewater shall be directed to a containment structure(s).

- 1.4.3.4. **Groundwater Protection.** The producer shall take precautions to prevent migration of pollutants to groundwater. Containment structures and raw material storage areas where the stored material contains thirty percent (30%) or more moisture content or which have free draining liquids shall be constructed with a liner following the BMPs below to ensure protection of groundwater:
- 1.4.3.4.a. All new or modified containment structures and raw material storage areas where the stored material contains thirty percent (30%) or more moisture content or which have free draining liquids that have liners constructed of compacted earthen materials shall be constructed in accordance with Appendix 10D of the Agricultural Waste Management Field Handbook [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#) and the following minimum practices shall be followed to ensure protection of groundwater:
- 1.4.3.4.a.1) Earthen liners shall be designed to meet or exceed the requirements in Appendix 10D of the NRCS Agricultural Waste Management Field Handbook (August 2009) and meet the following criteria:
- 1.4.3.4.a.1)a) Clay liners shall be a minimum of 18 inches thick and maximum of 30 inches thick (after compaction), and

- 1.4.3.4.a.1)b) The permeability coefficient (hydraulic conductivity) shall be less than or equal to 1×10^{-7} centimeters per second (cm/sec), or for process wastewater containment structures the specific discharge is less than or equal to 9×10^{-7} centimeters per second (cm/sec) determined at the maximum operating level;
- 1.4.3.4.a.2) Existing manure management systems constructed prior to February 12, 2003, shall demonstrate they have a maximum seepage rate of $1/16^{\text{th}}$ inch per day at maximum operating depth or have a permeability coefficient less than or equal to 1×10^{-7} centimeters per second (cm/sec);
- 1.4.3.4.a.3) Material used for the clay liner shall be either Unified Classification CL or CH capable of meeting the liner requirements. Liner materials shall contain no frozen material, sod, roots, or other perishable materials, or rocks larger than 6 inches in diameter. No liner shall be placed on a frozen surface (Reference: SD NRCS Construction Specifications SD-7A Earthfill – Class A, 10/06);
- 1.4.3.4.a.4) Earthen Liners shall be placed in approximately equal thickness, uniform layers with an uncompacted thickness of no more than 9 inches. Within 2 feet of any concrete structure, fill layer thickness shall not exceed 4 inches and equipment loads shall not exceed 400 pounds. (Reference: SD NRCS Construction Specifications SD-7A Earthfill – Class A, 10/06);
- 1.4.3.4.a.5) Soil compaction for liners shall be constructed at 95 percent of standard proctor density at optimum moisture content of minus two to plus three percent or according to the recommendations of the soils testing laboratory; and
- 1.4.3.4.a.6) Testing shall be conducted to ensure proper construction of the liner. There shall be at least two in-place moisture and density tests conducted on each acre of six inch lift, with a minimum of four tests per lift. Test data shall be furnished as described by ASTM D698, D1556, D2167, or equivalent. In lieu of conducting density tests, there shall be a minimum of two permeability tests conducted on the completed liner. For ponds larger than two acres, one additional permeability test shall be conducted for each additional acre of liner. Liners for liquid containment structures that will be covered, are determined to be located over a shallow aquifer, or where the soil testing laboratory recommends a soil density greater than 95 percent of standard proctor density shall have both density and permeability tests conducted. The results of the testing procedures shall show that the proper density was achieved and the permeability requirements of this permit have been met. The locations of the tests shall be random and equally distributed over the liner bottom and inside embankments. The liner testing results and locations shall be submitted to the Secretary along with the Notice of Completion form.
- 1.4.3.4.b. If an earthen liner cannot meet the requirements in item 1.4.3.4.a.1), then an alternative lining material shall be used. These alternative liners shall meet or exceed the permeability coefficient requirements in item 1.4.3.4.a.1). Alternative liner materials include but are not limited to flexible membrane linings such as 45-mil reinforced high-density polyethylene (HDPE), or 60-mil unreinforced HDPE; asphalt-sealed fabric liners; and bentonite sealants.
- 1.4.3.4.c. Containment structures and raw material storage areas where the stored material contains thirty percent (30%) or more moisture content or which have free draining liquids structures may be constructed with concrete. These structures shall be properly designed using adequate structural reinforcement to minimize cracking of the concrete and to ensure the structural integrity of the containment structure. These structures shall also be properly

designed to minimize or prevent seepage or leakage. Concrete design shall be appropriate for the intended use of the structure. American Concrete Institute Standards shall be used within the scope of the standards. Use of random fiber reinforcement or fiberglass rebar in lieu of steel rebar is prohibited for use in containment structures without specific written approval. Acceptable standards for concrete design are found in the following sources:

- 1.4.3.4.c.1) American Concrete Institute Standards 318-19 (2022) *Building Code Requirements for Structural Concrete*;
- 1.4.3.4.c.2) American Concrete Institute Standards 350-20 (2020) *Code Requirements for Environmental Engineering Concrete Structures*; or
- 1.4.3.4.c.3) American Concrete Institute Standards 360R-10 (2010) *Guide to Design of Slabs-on-Ground* Chapter 8 “Design of slabs reinforced for crack-width control”.
- 1.4.3.4.d. Livestock shall be prohibited entry into earthen containment structures or on its dikes, and the immediate surrounding area to ensure protection of the liner. Existing operations with unique animal access issues will be addressed on a case-by-case basis.
- 1.4.3.4.e. The following recommendations apply unless other separation distances are recommended by an arborist. If shrubs and small trees with a mature height of less than 25 feet are planted near a manure containment system, they should be a minimum of 25 feet from the toe of the exterior berm of a holding pond or the foundation of a manure containment system. If trees with a mature height of greater than 25 feet are planted near a manure containment system, they should be at least 50 feet from the toe of the exterior berm of a holding pond or the foundation of a manure containment system. Any volunteer trees and shrubs should be removed from the above boundaries depending on the species.
- 1.4.3.4.f. Any mechanical or structural damage shall be evaluated by a NRCS Engineer or Professional Engineer licensed in South Dakota within thirty (30) days of the damage and if necessary repaired as soon as possible.
- 1.4.3.5. **Stockpiling.** If stockpiling of manure, litter, or other organic by-products is a usual practice at a CAFO or processing operation, the producer shall:
 - 1.4.3.5.a. Stockpile manure, litter, or other organic by-products generated onsite within pen areas where manure and process wastewater runoff will be directed to a containment structure;
 - 1.4.3.5.b. Stockpile manure, litter, or other organic by-products in an approved covered containment structure;
 - 1.4.3.5.c. Construct a permanent open stockpiling area. The stockpiling area shall be designed to accommodate the normal manure, litter, or other organic by-products stockpiling practices implemented at the CAFO or processing operation;
 - 1.4.3.5.c.1) The stockpiling area shall include a liner meeting the requirements of this permit and dikes to contain runoff from stockpiled material and keep clean water runoff from entering the stockpiling area.
 - 1.4.3.5.c.2) The liquid containment structure(s) for stockpiling sites shall meet the design requirements of this permit.
 - 1.4.3.5.d. Temporarily stockpile for less than 30 days from the date the stockpile was created in an area that will not allow runoff to waters of the state, road ditches, or neighboring property. The temporary stockpile shall be located at least 200 feet from any natural or manmade drainage, outside setback areas, and shall not be located in the 100-year flood plain (where identified) or on nutrient management plan fields located over a shallow aquifer (fields

with 2-4 foot soil sampling or 0-2 foot post-harvest soil sampling requirements). The producer should consider moving temporary stockpiles to different locations. The producer shall keep records of the date when each temporary stockpile was created and the date when the temporary stockpile was completely removed or land applied; or

- 1.4.3.5.e. Temporarily stockpile for longer than 30 days up to 120 days in a temporary stockpile with a compacted soil berm to contain process wastewater runoff from the stockpiling site, or with an impermeable cover. The temporary stockpiling sites shall only be located on fields in the approved nutrient management plan. The initial nutrient management plan or an amendment to the plan shall identify the fields where manure may be temporarily stockpiled. The general area of the temporary stockpile shall be identified on the land application field map. The temporary stockpile shall be located outside the 100-year flood plain (where identified), at least 200 feet from any natural or manmade drainage, outside setback areas, and shall not be placed on nutrient management plan fields over a shallow aquifer (fields with 2-4 foot soil sampling or 0-2 foot post-harvest soil sampling requirements). The same stockpiling site cannot be used from year to year. The producer shall keep records of the date when each temporary stockpile was created and the date when the temporary stockpile was completely removed or land applied.

- 1.4.3.6. **Requirements for CAFOs and Processing Operations with Liquid Containment Structures located over a Shallow Aquifer.** The process to determine whether liquid containment structures are located over a shallow aquifer and whether a Groundwater Discharge Permit and/or monitoring well installation is required shall be based on SDCL 34A-3A-24, the requirements of this section, and Appendix H.

- 1.4.3.6.a. The producer shall conduct soil borings to provide on-site hydrogeologic information for any new or enlarged liquid containment structure. The producer shall provide the drilling logs and the elevation of the top of the boring from soil borings in the vicinity of the liquid containment structure. The elevation shall be relative to the elevation submitted on the liquid containment structure plans. There shall be a minimum of two soil borings or at least one boring per acre of containment structure surface area at the maximum operating level (see Appendix I). All borings shall be within 200 feet of the proposed location of the liquid containment structure and all borings shall extend to a depth of at least six feet below the bottom of the liquid containment structure. At least one of these borings shall be a deep subsurface boring characterizing the subsurface hydrogeology by using continuous in-situ undisturbed core samples collected from the deep boring. All borings shall be plugged in accordance with South Dakota Well Construction Standards, ARSD 74:02:04. The deep subsurface boring shall extend to a minimum of 25 feet below the ground surface and may stop when one of the following criteria has been met:

- 1.4.3.6.a.1) At least 15 continuous feet of extremely low permeability, geologic material (unweathered clayey till or shale) is encountered in the boring;
- 1.4.3.6.a.2) At least 30 continuous feet of low to extremely low permeability, geologic material (weathered or unweathered till or shale) is encountered, if the boring is greater than 50 feet in depth;
- 1.4.3.6.a.3) The boring reaches an aquifer or bedrock; or
- 1.4.3.6.a.4) A total depth of 100 feet.

- 1.4.3.6.b. Based on SDCL 34A-3A-24, the criteria listed in items 1) and 2) below, and the results of Section 1.4.3.6.a. of this permit, the Secretary will determine if a liquid containment structure is located over a shallow aquifer. If the liquid containment structure is located

over a shallow aquifer, Appendix H will be used to determine if a Groundwater Discharge Permit or shallow aquifer monitoring is required. The producer shall begin shallow aquifer monitoring or obtain a Groundwater Discharge Permit before storing manure. The criteria are as follows:

- 1.4.3.6.b.1) The CAFO or processing operation is located over a mapped shallow aquifer. Water resources and aquifer mapping reports, as well as other information shall be used, where available, to determine aquifer locations. Aquifer boundaries are drawn at the discretion of geologists and hydrogeologists based on best available information. Therefore, actual site specific aquifer boundaries may differ from mapped aquifer boundaries and other information. On-site hydrogeological information is necessary to verify the location of an AFO in relation to an underlying shallow aquifer.
- 1.4.3.6.b.2) The CAFO or processing operation is located over an aquifer not shown on the map in Appendix G, and meets one of the following criteria:
 - 1.4.3.6.b.2)a) The aquifer is within 50 feet or less below the land surface with 15 feet or less of continuous, overlying, extremely low permeability, geologic material such as unweathered clayey till or shale. Weathered till or highly fractured/weathered shale is not considered to be extremely low permeability material;
 - 1.4.3.6.b.2)b) The aquifer is greater than 50 feet but less than 100 feet below the land surface with 30 feet or less of continuous overlying low to extremely low permeability geologic material that may be a combination of weathered and unweathered till, shale, or till and shale; or
 - 1.4.3.6.b.2)c) If the aquifer is greater than 100 feet below the land surface, the vulnerability shall be determined on a case-by-case basis.
- 1.4.3.6.c. If shallow aquifer monitoring is required, a minimum of three monitoring wells shall be installed around the liquid containment structure. At least one of the wells must be located upgradient of the liquid containment structure and at least two monitoring wells must be downgradient from the liquid containment structure. The monitoring wells shall be installed by a South Dakota licensed well driller.
 - 1.4.3.6.c.1) At least one sample from each well shall be collected from the monitoring wells before storing manure in new manure management systems to determine background groundwater quality conditions. The producer shall sample the groundwater in each monitoring well on a quarterly basis (for example, during January, April, July and October) for the following parameters:
 - 1.4.3.6.c.1)a) Total Dissolved Solids;
 - 1.4.3.6.c.1)b) Sulfate, Dissolved;
 - 1.4.3.6.c.1)c) Nitrate as Nitrogen;
 - 1.4.3.6.c.1)d) Ammonia – Nitrogen, Dissolved $\text{NH}_4 + \text{NH}_3$ as N;
 - 1.4.3.6.c.1)e) Chloride, Dissolved; and
 - 1.4.3.6.c.1)f) Water table elevations (nearest 0.01-foot).
 - 1.4.3.6.c.2) The producer shall submit the monitoring well sampling results, including all laboratory report forms, to the Secretary once monitoring results are available to the following address:

Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182

Once notified by the Secretary, these sample results shall be submitted using electronic reporting.

- 1.4.3.6.c.3) If sample results indicate the groundwater quality is not impacted after one year of sampling, the producer may request the Secretary to reduce the monitoring frequency. The monitoring frequency may not be less than once per year. However, if the groundwater quality is impacted, the Secretary may require more frequent monitoring and reporting, ground water remediation, additional sampling parameters, a Groundwater Discharge Permit, or any other measures deemed necessary to protect groundwater quality.
- 1.4.4. **Nutrient Management Requirements.** Effective immediately and lasting through the life of this permit, the producer shall implement the DANR approved nutrient management requirements, Operation and Maintenance Guidelines, and BMPs required by this permit for land application of manure and process wastewater to prevent discharge of manure or process wastewater to waters of the state. The discharge of manure, litter, or process wastewater to waters of the state as a result of land application of that manure, litter, or process wastewater by the CAFO to land it owns, rents, or leases is a discharge except where the manure, litter or process wastewater has been applied in accordance with its approved nutrient management plan. Nutrient management planning can ensure that the 4 R's (Right rate, Right source, Right application method, and Right application timing) provide the proper amount of nutrients to the crop where it is needed while protecting surface water and groundwater.
- 1.4.4.1. **BMPs for Land Application of Manure.** The producer is responsible for the safe land application of manure and process wastewater generated at the AFO. The producer shall comply with all mandatory BMPs listed below and may use any or all of the recommended BMPs to ensure compliance with this permit and prevent pollution.
- 1.4.4.1.a. The producer shall apply manure for the purpose of growing crops.
- 1.4.4.1.b. The producer shall develop, maintain, and follow a nutrient management plan to ensure safe disposal of manure and process wastewater and protection of surface and ground water.
- 1.4.4.1.c. Containment structures shall be equipped with irrigation, evaporation, liquid removal systems, or a combination of these systems. The producer shall ensure access to pumping equipment to dewater the containment structure in accordance with the operation's approved NMP if the liquid level rises above the maximum operating level. These systems shall be capable of dewatering the containment structures for proper land application. The producer shall maintain freeboard in the containment structure at all times as required by this permit. The producer shall restore the storage capacity necessary to contain the 25-year, 24-hour storm event within 14 days of any precipitation event or accumulation of manure or process wastewater that results in storage above the maximum operating level of the containment structure. If soil moisture conditions do not allow land application of manure or process wastewater within 14 days, the producer shall contact DANR to discuss restoring the storage capacity of the containment structure. The maximum operating level is the elevation in the containment structure necessary to contain the designed storage of accumulated manure and process generated wastewater and any solids accumulation (see Appendix I). Producers operating open lots shall have access to equipment capable of

dewatering the containment structures within 14 days of exceeding the maximum operating level.

- 1.4.4.1.d. All manure stockpiles should be removed and land applied as soon as practicable and shall be handled in accordance with the stockpiling requirements of this permit.
- 1.4.4.1.e. The producer shall land apply solids, sludges, manure, or other pollutants in a manner to prevent pollution of waters of the state.
- 1.4.4.1.f. Any permanent or temporary piping used to transfer manure to land application equipment or an irrigation system shall be designed, constructed, and operated so liquid manure is not discharged to waters of the state at any time during start-up, operation, and shut down. Temporary piping shall not be placed in water or on a bridge unless the piping is in a watertight carrier pipe that would direct any discharge away from the water body.
- 1.4.4.1.g. The producer shall maintain at least a 100-foot buffer zone or 35-foot vegetated buffer between:
 - 1.4.4.1.g.1) Any manure land application areas and any downgradient surface waters of the state, open tile line intake structures, sinkholes, or other conduits to surface waters of the state; and
 - 1.4.4.1.g.2) Any irrigation of process wastewater and any downgradient surface waters of the state, open tile line intake structures, sinkholes, or other conduits to surface waters of the state.
- 1.4.4.1.h. Depending on the results of a producer's soil phosphorus test and estimated field erosion, a 100-foot vegetated buffer zone shall be required if the producer wants to apply manure based on the nitrogen needs of the crop and not crop removal of phosphorus (see Table 2).
- 1.4.4.1.i. Fields should be diked or terraced to prevent the release of applied wastewater.
- 1.4.4.1.j. Land to be irrigated or receive manure should have a slope less than 6 percent.
- 1.4.4.1.k. Highly erodible soils due to water erosion should be avoided.
- 1.4.4.1.l. Manure and process wastewater land application practices should be managed to prevent ponding of wastewater on the land application site and shall be managed to prevent runoff of manure or process wastewater beyond the edge of the field.
- 1.4.4.1.m. Mobile land application systems using temporary piping shall use land application equipment with a flow meter and on-board radio controller overseen by an applicator during land application. The applicator shall monitor the flow meter and application equipment and shall shut down the pump should a discharge or other emergency situations occur. The radio controller shall also allow the applicator to idle down the pump when turning around at the end of fields and in other maneuvering situations when low flow is required. The producer should consider hiring applicators with equipment that uses an automatic pump shut-off device in case of pressure loss in the piping.
- 1.4.4.1.n. The producer shall inject or incorporate any liquid manure or process wastewater within 24 hours of application to non-vegetated cropland. If the process wastewater/liquid manure is surface applied, sprinkled, or spray irrigated to actively growing cropped fields, grass, alfalfa, pasture land, strip-till cropland, or no-till cropland, incorporation is not required.
- 1.4.4.1.o. The producer shall incorporate any solid or semi-solid manure within five days of application to non-vegetated cropland. If the application area is an actively growing cropped field, alfalfa, grass, pasture land, strip-till cropland, or no-till cropland, incorporation is not required.

- 1.4.4.1.p. To reduce nutrient discharges from pattern tile, producers should apply nutrients with the right placement, in the right amount, at the right time and from the right source. The producer should consider the following nutrient use efficiency strategies: slow and controlled release fertilizers; nitrification and urease inhibitors; enhanced efficiency fertilizers; timing and the number of applications; coordinate nutrient applications with optimum crop nutrient uptake; Corn Stalk Nitrate Test, Pre-Sidedress Nitrate Test, and Pre-Plant Soil Nitrate Test; tissue testing, chlorophyll meters, and spectral analysis technologies, and other SDSU or NRCS recommendation technologies that improve nutrient use efficiency. Producers should also consider the use of drainage water management, bioreactors, buffers at tile inlets, treatment wetlands, plugging tile outlets during land application, the use of cover crops, and other BMPs to reduce nutrient discharges from tile drainage systems. Additional management considerations can be found in Cornell University Cooperative Extension's Fact Sheet 58 *Subsurface (Tile) Drainage Best Management Practices* and the University of Minnesota Extension's fact sheet *Nitrates in Drainage Water in Minnesota*.
- 1.4.4.1.q. A producer applying manure to property owned by other persons shall obtain a written agreement from the legal landowner. Any lands owned by other persons that shall be used for manure application shall be identified in the initial nutrient management plan. The producer shall be responsible for ensuring that the application of manure to the other person's property is in compliance with the terms and conditions of this permit and the nutrient management plan.
- 1.4.4.1.r. The producer, or agent acting on behalf of the producer, should calibrate application equipment to ensure accurate distribution of material at planned rates. The producer, or commercial land applicator acting on behalf of the producer, should consider tillage of the cropped buffer zones and field boundaries prior to land application of process wastewater to help increase the soil porosity in these areas to keep process wastewater in the application areas.
- 1.4.4.1.s. **Manure Application on Saturated, Snow Covered, or Frozen Soil.** Manure and process wastewater shall not be surface applied to saturated soil where the top two inches of soil are so wet or water-logged that farm equipment cannot travel over the area effectively, soil covered by one-inch or more of snow or covered by more than one-half inch of ice, or frozen soil that is impermeable to liquid manure applied to the ground surface due to frozen soil moisture unless planned for in the initial nutrient management plan. The producer shall follow all other applicable requirements of their approved initial nutrient management plan and this permit.
- 1.4.4.1.s.1) If the producer has properly designed, constructed, operated and maintained the manure management system or processing operation in accordance with this permit and their permit application and the wastewater level in the liquid containment structure is above the maximum operating level, process wastewater can be uniformly land applied to saturated, snow covered, or frozen soil to prevent catastrophic equipment or structural failure or to prevent a discharge to waters of the state. Liquid manure containment structures shall only be pumped down one foot below the maximum operating level or the amount necessary to prevent structural failure. Conditions 4) through 11) of this section must be met;
- 1.4.4.1.s.2) If the producer has properly designed, constructed, operated and maintained the manure management system in accordance with this permit and the permit application, solid manure can be uniformly land applied to saturated, snow covered, or frozen soils if conditions 5) through 11) of this section are met.

- 1.4.4.1.s.3) If the producer has properly designed, constructed, operated and maintained the manure management system in accordance with this permit, incidental amounts of manure collected during feedlot snow removal or cleaning of feed bunks to facilitate livestock feeding and handling may be uniformly land applied if conditions 7) through 10) of this section are met;
- 1.4.4.1.s.4) Process wastewater or manure shall not be spray irrigated on saturated, snow covered, or frozen soil;
- 1.4.4.1.s.5) The producer should notify DANR prior to application so DANR may review buffer zone requirements with the producer and respond to inquiries from the public;
- 1.4.4.1.s.6) Application rates shall be determined based on a soil test and a manure or process wastewater test that are no more than one year old. No application shall occur on flood plain soils classified as frequently or occasionally flooded on the National Cooperative Soil Survey [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#);
- 1.4.4.1.s.7) The producer shall maintain at least a 300-foot buffer zone between any manure land application areas and any downgradient surface waters of the state, open tile line intake structures, sinkholes, or other conduits to surface waters of the state;
- 1.4.4.1.s.8) Application of nutrients must be set back a minimum of 300 feet from surface waters of the state or water conveyances and a minimum of 1,000 feet from National Hydrography Dataset named lakes, rivers, and perennial streams [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#).
- 1.4.4.1.s.9) The producer shall only apply manure on land with slopes less than 4 percent. Fields with the lowest predicted water erosion soil loss should have the highest priority for application; and
- 1.4.4.1.s.10) Field maps showing the items in 6) through 8) above and the well setbacks of this permit shall be included in the initial nutrient management plan for fields where land application under these conditions may occur.
- 1.4.4.1.t. **Transfers of Manure and Process Wastewater Between CAFOs.** Upon DANR approval, manure and process wastewater may be transferred between CAFOs covered under this general permit. A copy of a written agreement between the permittees shall be submitted to DANR for review and approval. Approval of transfers will only be considered when the receiving CAFO has adequate storage capacity available in the containment structure(s) and adequate acres available in the initial nutrient management plan. The agreement shall detail the responsibilities of each party and indicate where ownership and responsibility of the manure and process wastewater changes. The producer who receives manure and process wastewater is responsible for maintaining records documenting the volume transferred and dates of transfer.
- 1.4.4.2. **Initial Nutrient Management Plan Requirements for Permit Application.** The initial nutrient management plan is a planning document to ensure the producer has enough land available to apply generated manure and process wastewater. The DANR and the Natural Resources Conservation Service have a nutrient management planning tool (a Microsoft Excel spreadsheet) available to assist with developing an initial nutrient management plan [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#). The producer may use other initial planning tools provided the alternate plan contains all the information necessary to determine compliance with conditions of this general permit. Each producer's site-specific initial nutrient management plan will be placed in Appendix E of this permit when permit

coverage is granted. The initial nutrient management plan shall contain and address the following items:

- 1.4.4.2.a. The Secretary shall approve a nutrient management plan or a modification to a nutrient management plan before land application of any manure and process wastewater can occur on any fields in the plan;
- 1.4.4.2.b. General information on local requirements and whether the producer has complied with those requirements;
- 1.4.4.2.c. The maximum animal numbers and average weight throughout the production cycle for all types of animals that will be confined. For each animal type, the maximum number of days livestock will be present per year shall also be provided;
- 1.4.4.2.d. An estimate of the total nitrogen and phosphorus in pounds that will be available for crop production. The producer may use either estimated nutrient concentrations for the animal manure or nutrient concentrations from laboratory analysis. If laboratory analysis is conducted, the analysis shall be included with the plan. If estimated concentrations are used to determine the total nutrients available, the source of the estimated concentrations of nitrogen for the animal manure shall be provided;
- 1.4.4.2.e. An estimate of the daily and annual amount of manure produced in tons of wet manure;
- 1.4.4.2.f. The type or types of containment structures and manure handling practices;
- 1.4.4.2.g. The method(s) and timing of manure application. Percent of nitrogen retained after application shall be determined based on Table 3 of the SD-CPA-63, [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#) or a basis provided by SDSU or NRCS;
- 1.4.4.2.h. The initial nutrient management plan shall include the proper mineralization rates for subsequent years of manure and process wastewater application to account for the potential buildup of nitrogen (See Table 4 of the SD-CPA-63) [\(See DANR Livestock Services Website for Permit Reference Hyperlinks\)](#) or provide basis from SDSU or NRCS);
- 1.4.4.2.i. The producer shall ensure that there is enough land to apply manure consistent with the approved initial nutrient management plan. The legal description of all fields to be used for land application, information indicating whether the land is owned, rented, or leased by the producer, the crop to be planted on each field for each of five years, the total number of acres in each field, the number of acres available for land application in each field, and whether the field is irrigated. Land identified or classified as wetlands, lakes, rivers, streams, farmsteads, tree belts, or other buffer zones that cannot or will not be used for manure application shall not be included in the number of acres available for land application. If wetlands are routinely farmed and it would be a normal practice to apply fertilizer, then these areas are allowed for manure application. Also, if this permit requires setback distances or buffer zones, areas within those buffer zones shall be identified on the field maps and cannot be included in the total available number of acres;
- 1.4.4.2.j. A copy of each written agreement for a minimum of one year executed with the legal land owner where manure will be applied. The written agreement shall indicate the acres that manure from the AFO may be applied to and the length of the agreement;
- 1.4.4.2.k. A detailed map showing the outline of each field listed in item 1.4.4.2.i. of this permit and all buffer zones and separation distances required by this permit including any well setbacks and buffer zones.

If application to saturated, snow covered, or frozen soil may occur routinely or in an emergency, a map for each land application field showing the outline of the field and all buffer zones and separation distances. The producer shall submit an acknowledgement indicating that, unless planned for, they understand that application under these conditions would be a violation of the permit.

If temporary stockpiling for longer than 30 days is planned, maps for each land application field where temporary stockpiling will occur shall be submitted. The maps shall show the general area of the temporary stockpiles, all buffer zones, and setback distances;

- 1.4.4.2.l. The nutrient management plan shall also include information on any required local government setbacks or buffer zones.
- 1.4.4.2.m. A soils map identifying the predominant soil type for each field;
- 1.4.4.2.n. Realistic yield goals for each field and crop listed in item 1.4.4.2.i. of this permit. The yield goal for initial nutrient management planning shall be determined from the three highest yields used for purchasing multi-peril crop insurance plus ten percent; proven yields on a field-by-field or farm-by-farm basis for a continuous 3-year average plus ten percent; the NRCS Crop Yield Tables (Productivity Indexes and 5-year average of continuous South Dakota Agricultural Statistics Service published yield) plus ten percent, or the South Dakota Agricultural Statistics Service published continuous 5-year average plus ten percent. If NRCS Crop Yield Tables (Productivity Indexes and 5-year average of continuous South Dakota Agricultural Statistics Service published yield) or the South Dakota Agricultural Statistics Service published continuous 5-year average have not been updated, other developed SDSU yield estimation procedures may be used. Yield goals based on multi-peril crop insurance or field by field/farm by farm basis shall include documentation used to calculate the yield. For new crops or varieties, industry-demonstrated yield and nutrient utilization information may be submitted and used until SDSU information is available;
- 1.4.4.2.o. Times of the year that land application is planned;
- 1.4.4.2.p. The results of a representative 0 to 6-inch soil phosphorus test in parts per million using the Olsen, the Bray-1, or Mehlich-3 test, including all laboratory report forms, from each field included in the nutrient management plan no older than two years from when the application was submitted. To get a representative sample, a minimum of 15 soil sample cores shall be taken from each field or landscape position to determine the soil test phosphorus in the field;
- 1.4.4.2.q. Identify the annual average soil loss value for the sum of wind and water erosion for each field to be included in the nutrient management plan using the most current soil loss prediction technology used by the South Dakota Natural Resources Conservation Service. References can be found in the South Dakota Natural Resources Conservation Service Field Office Technical Guide, Section 1, Erosion Prediction or at a local Natural Resources Conservation Service office. [See DANR Livestock Services Website for Permit Reference.](#) The soil loss number may be adjusted by implementing alternative crop rotation and cropping practices, or implementing conservation practices such as contour farming, cross-slope farming, buffer strips, strip cropping, or terracing;
- 1.4.4.2.r. Identify whether fields in the nutrient management plan can be used to land apply manure based on nitrogen need or phosphorus crop removal. Table 2 shall be used to make this determination for each field by considering the level of phosphorus in the soil, the soil loss number, and the presence or absence of a 100-foot vegetated buffer. Only fields identified

as eligible for nitrogen based manure application can be included in the total acres available for manure application in the initial nutrient management plan. Fields requiring a phosphorus based plan can be listed in the plan and used for manure application. However, these acres cannot be used to show a producer has enough land to apply manure generated at the operation to meet the permit requirements;

Table 2. Nitrogen Need/Phosphorus Crop Removal Manure Application Determination Table¹

Soil Test Phosphorus (ppm)		Predicted Annual Erosion – Sum of Wind and Water Erosion (tons per acre per year) ²					Greater than 8
		Less than 6		6 to 8			
		100 Foot Vegetated Buffer		100 Foot Vegetated Buffer			
Olsen	Bray-1 or Mehlich-3	Yes	No	Yes	No		
0-25	0-35	Nitrogen Need	Nitrogen Need	Nitrogen Need	Nitrogen Need	Five Year Phosphorus crop removal	
26-50	36-75	Nitrogen Need	Nitrogen Need	Nitrogen Need	Five Year Phosphorus crop removal	One Year Phosphorus crop removal	
51-75	76-110	Nitrogen Need	Five Year Phosphorus crop removal	Five Year Phosphorus crop removal	Five Year Phosphorus crop removal	One Year Phosphorus crop removal	
76-100	111-150	One Year Phosphorus crop removal	One Year Phosphorus crop removal	One Year Phosphorus crop removal	One Year Phosphorus crop removal	No application	
Greater than 100	Greater than 150	No application	No application	No application	No application	No application	

Crop removal is the amount of phosphorus a crop removes in one crop year (SDSU-Extra 8009). Five year phosphorus crop removal is phosphorus removal for up to a five year crop sequence.

¹ South Dakota’s nutrient management planning tool also includes a Phosphorus Loss Risk Assessment which categorizes phosphorus loss as a Low Risk for fields with a Nitrogen Need determination, a Moderate Risk for fields with a Five Year Phosphorous crop removal determination, and a High Risk for fields with a One Year Phosphorus crop removal determination.

² Wind erosion calculations shall be completed for all fields with predominate soils having a wind erodibility index (I) ≥ 134.

- 1.4.4.2.s. An estimate on the number of years it would take to raise all fields in the initial nutrient management plan to a phosphorus soil test level over 50 parts per million using the Olsen test or 75 parts per million using the Bray-1 or Mehlich-3 test;
- 1.4.4.2.t. Determination of the total amount of nitrogen (based on crop need) and phosphorus (based on crop removal) utilizing the South Dakota State University Cooperative Extension Service publication, Fertilizer Recommendations Guide (June 2023), that can be applied to each field based on the crop planted at that field, the realistic yield goal, any residual nitrogen left in the field from past agricultural practices or crops, and the phosphorus soil test level. Applications of biosolids, starter fertilizers, or pop-up fertilizers shall be accounted for in the nutrient budget;

- 1.4.4.2.u. Comparison of the total nitrogen requirement and crop removal of phosphorus for each field to the total nitrogen and phosphorus available in the manure. If the nitrogen in the manure exceeds the field nitrogen requirements, the producer shall identify additional fields that can be used for the application of manure;
- 1.4.4.2.v. Where the CAFO has enough land available in South Dakota to apply generated manure and process wastewater and is transferring additional manure out of state or to Indian Country or all of a CAFO's generated manure or process wastewater will be transferred out of state or to Indian Country, the following shall be included in their nutrient management plan:
- 1.4.4.2.v.1) Whether the transfer will be limited in duration or is expected to last for the term of this permit,
- 1.4.4.2.v.2) An estimate of the quantity of solids (tons) and liquid (gallons) to be transferred per year,
- 1.4.4.2.v.3) The states and counties where manure or process wastewater is expected to be land applied,
- 1.4.4.2.v.4) The producer shall maintain records documenting the dates and quantities of manure transferred out of state or to Indian Country. These records must be kept on site and be available to department inspectors. The total quantity of manure transferred each year will need to be reported on the producer's annual report form, and
- 1.4.4.2.v.5) The producer shall also provide a copy of an annual nutrient analysis for total nitrogen, inorganic nitrogen, and total phosphorus to the person the manure or process wastewater is transferred to, and
- 1.4.4.2.v.6) A CAFO not transferring all generated manure or process wastewater out of state or to Indian Country or a CAFO that does not have enough land available in South Dakota to apply generated manure and process wastewater and is transferring manure out of state or to Indian Country, must also provide an estimate of the number of acres out of state or in Indian Country where manure will be applied.
- 1.4.4.2.w. A producer can sell or give away a maximum of 100 tons of solid manure per year without including that manure in their annual nutrient management plan. The producer shall provide each landowner with the manure sample results for total nitrogen, inorganic nitrogen, and total phosphorus. The producer shall also let each landowner know that they cannot place or cause to be placed any manure in a location where it is likely to cause pollution to waters of the state. Once the producer has completed the requirements of this section, the producer is no longer responsible for how the manure is stored or applied. The person who receives the manure assumes responsibility for storing the manure and land applying the manure so it does not cause pollution to waters of the state. This manure may be subject to the South Dakota Department of Agriculture and Natural Resources commercial fertilizer law, SDCL 38-19;
- 1.4.4.2.x. If any changes are made to the fields approved for use in the nutrient management plan, the producer shall submit an amendment to DANR for review and approval prior to the change taking effect;
- 1.4.4.2.y. Two or more separately permitted operations with approved nutrient management plans can submit a written agreement to share nutrient management plans. The agreement shall indicate which operation is responsible for maintaining both initial nutrient management plans and implementing annual nutrient management planning, record keeping, and

reporting requirements. Upon approval by DANR, manure from any of the permitted operations covered by the agreement can be applied on any field in either approved nutrient management plan. The producers shall also submit agreement(s) executed with any legal landowner(s) with application fields in either initial nutrient management plan and both operations; and

- 1.4.4.2.z. The Secretary shall determine on a case-by-case basis whether a land application site is located over a shallow aquifer. This shall be done using the water resources and aquifer mapping reports, hydrogeologic reports, and first occurrence of aquifer materials maps published by the South Dakota Geological Survey and well log information located near the fields.
- 1.4.4.3. **Annual Nutrient Management Plan Requirements.**
- 1.4.4.3.a. Upon receiving permit coverage and prior to land applying manure, the producer shall use the following procedure to determine the appropriate application rates of manure and process wastewater based on nitrogen or phosphorus (see Table 2). Upon determining the application rate, the producer shall apply the manure and process wastewater according to the calculated rate. Applying manure above the calculated rate is a violation of this permit. The following is the procedure for calculating the application rate:
- 1.4.4.3.a.1) Before manure application, each field where manure or process wastewater will be land applied shall be sampled for phosphorus from a depth of 0 to 6 inches and for nitrate-nitrogen from 0 to 2 feet. If manure application sites are located over shallow aquifers, prior to application of nitrogen above starter application rates, the producer shall also either:
- 1.4.4.3.a.1)a) Take soil samples for nitrate-nitrogen from both 0 to 2 and 2 to 4 feet prior to manure application, or
- 1.4.4.3.a.1)b) Take soil samples for nitrate-nitrogen to a depth of 2 feet both prior to manure application and within four weeks after harvesting the crop. This shall apply to all fields in the nutrient management plan located over a shallow aquifer. Once the producer takes the post-harvest soil samples, in lieu of the 2 to 4-foot samples, it shall become a condition of this permit to continue taking post-harvest samples for the fields located over shallow aquifers. If a producer does not take the required 2 to 4-foot samples prior to land application of manure, the post-harvest sampling shall then be required. In either case, the producer shall no longer have the option of taking the deep soil samples.
- 1.4.4.3.a.1)c) If the post-harvest soil sample results indicate the residual nitrate-nitrogen in the soil is above 100 pounds per acre, this field shall not be available for manure application until one full growing season has passed. After one full growing season has passed another soil test shall be taken and if it shows nitrate-nitrogen levels have dropped below 100 pounds per acre then manure application may commence based on the producer's annual nutrient management plan calculations.
- 1.4.4.3.a.2) A minimum of 15 soil sample cores shall be taken from each field or landscape position in the field. Soil sample cores that represent similar soil and landscape position may be composited into one sample. Soil sampling shall be done in accordance with the NRCS guidance, Sampling Soils for Nutrient Management SD-NRCS-FS-50 (April 2022) or SDSU's Recommended Soil Sampling Methods for South Dakota FS935 (September 2019) The laboratory analyzing the soil samples shall be accredited in the North American Proficiency Testing Program (NAPT) Proficiency

Assessment Program (PAP) [See DANR Livestock Services Website for Permit Reference](#)

- 1.4.4.3.a.3) The producer shall take a representative sample each year of the manure or process wastewater that will be land applied and have each sample tested for total nitrogen, inorganic nitrogen, and phosphorus. Organic nitrogen is equal to the total nitrogen minus the inorganic nitrogen. Sampling shall be done in accordance with the NRCS guidance, Sampling Manure for Nutrient Management SD-NRCS-FS-36 (May 2022). The laboratory analyzing the manure samples shall be certified by the Manure Testing Laboratory Certification Program. [See DANR Livestock Services Website for Permit Reference](#).
- 1.4.4.3.a.4) **Nitrogen-based application.** Based on a soil test, a manure test, type of crop to be grown, expected crop yield, legume credits, and sampling date, the producer shall determine the total nitrogen that can be applied to each field. When determining the nitrogen application rate, the producer does not have to use the yield goal listed in the initial nutrient management plan. The producer may use a yield goal that is reasonably expected for that field. The total nitrogen that can be applied shall be determined as follows:
- 1.4.4.3.a.4)a) The total nitrogen necessary to meet the expected yield goal in pounds of nitrogen per acre shall be determined using the South Dakota State University Cooperative Extension Service publication, Fertilizer Recommendations Guide (June 2023) ([See DANR Livestock Services Website for Permit Reference](#)). This value is determined by the crop to be grown and the expected yield. In addition to the manure nitrogen allowed in the nutrient management plan, other nitrogen necessary to obtain the realistic yield goal, as indicated by soil nitrogen test results, may be applied to the field; and
- 1.4.4.3.a.4)b) Nitrogen credits shall be subtracted from the total nitrogen value determined in item a) above. The following credits shall be subtracted from this value.
- 1.4.4.3.a.4)b)i. The results from the 0 to 2-foot nitrate soil test conducted in accordance with item 1.4.4.3.a.1) of this permit. If a 2 to 4-foot deep nitrate test is required and the result of the test is greater than 30 pounds of nitrogen, then reduce the nitrogen recommendation an additional four pounds of nitrogen for each five pound increment above 30 pounds (for example, if there are 50 pounds of nitrate nitrogen in the 2 to 4-foot depth, 16 pounds of nitrogen in addition to the 0 to 2-foot deep test shall be subtracted).
- 1.4.4.3.a.4)b)ii. Legume credits. To determine legume credits, please see the SDSU Cooperative Extension Service publication, Fertilizer Recommendations Guide (June 2023).
- 1.4.4.3.a.4)b)iii. Sampling date adjustment. Breakdown of organic material continues to release nitrates until soils cool in the fall. Therefore, the nitrogen requirement shall be adjusted if the soil samples are taken between July 1st and September 15th. To make this adjustment, reduce the nitrogen requirement by 0.5 pounds of nitrogen per day prior to September 15th. The maximum adjustment is 23 pounds. Soil samples from fallow fields do not need to be adjusted for time of sampling because most of the residue from the previous crop should have mineralized during the fallow period.
- 1.4.4.3.a.4)b)iv. Any other sources of nitrogen used.

- 1.4.4.3.a.4)b)v. The resulting value in pounds of nitrogen per acre is the maximum amount of additional nitrogen that may be applied to the field.
- 1.4.4.3.a.5) Based on the results of the manure testing required in item 1.4.4.3.a.3) of this permit, the producer shall apply manure to each field at a rate not to exceed the rate calculated in item 1.4.4.3.a.4) of this permit. NOTE: If the yields that are used to calculate the application rate are not consistently attained, residual nitrogen will increase in subsequent years and will decrease the amount of manure that can be applied to that field during future applications. This nitrogen carry-over will be evident in future soil sampling.
- 1.4.4.3.a.6) **Phosphorus Based Application.** If the manure application is required to be based on phosphorus crop removal as determined by using Table 2 of this permit, the application rate shall be based on phosphorus removed in the harvested portion of the crop as listed in the most current version of SDSU Extension Publication EXEX 8009, Quantities of Plant Nutrients Contained in Crops. Application can be based on a five-year or one-year phosphorus crop removal (see Table 2) but cannot exceed the one-year nitrogen crop need, and no manure may be applied to that field again until the applied phosphorus has been removed from the field via harvest and crop removal. In addition to all other nutrient management planning requirements of this permit, the producer shall submit an amendment to their initial nutrient management plan that includes a soil phosphorous drawdown strategy implementation plan, and a site assessment for nutrients and soil loss to determine mitigation practices that are required to protect water quality.
- 1.4.4.3.a.7) Manure or process wastewater shall be spread as uniformly as possible.
- 1.4.4.3.a.8) **Precision/Variable Rate Nutrient Management Planning.** The following additional components shall be included in a precision/variable rate nutrient management plan:
- 1.4.4.3.a.8)a) Document the geo-referenced field boundary and data collected that was processed and analyzed as a Geographic Information Systems (GIS) layer or layers to generate nutrient or soil amendment recommendation;
- 1.4.4.3.a.8)b) Document the nutrient recommendation guidance and recommendation equations used to convert the GIS base data layer or layers to a nutrient source material recommendation GIS layer or layers;
- 1.4.4.3.a.8)c) Document if a variable rate nutrient or soil amendment application was made; and
- 1.4.4.3.a.8)d) Provide application records per management zone or as applied map within individual field boundaries (or electronic records) documenting source, timing, method, and rate of all applications that resulted from use of the precision agriculture process for nutrient applications.
- 1.4.4.3.b) Upon DANR approval, field(s) may be temporarily transferred for up to one year between approved NMPs for operations covered under this permit. A copy of a written agreement between the legal landowner and all permittees shall be submitted to DANR for review and approval. The producer who land applies to the temporarily transferred field(s) is responsible for maintaining annual nutrient management planning requirements, record keeping, and reporting requirements for the field(s).
- 1.4.4.4. **Nutrient Management Plan Record Keeping.** Each producer shall maintain on-site, for a period of five years from the date they are created, a complete copy of the nutrient

management plan for their operation and the records specified below. The producer shall make these records available to the Secretary upon request.

- 1.4.4.4.a. A copy of the general permit including the initial nutrient management plan;
 - 1.4.4.4.b. Expected crop yields;
 - 1.4.4.4.c. The date(s) manure, litter, or process wastewater is applied to each field;
 - 1.4.4.4.d. Weather conditions at time of application and for 24 hours prior to and following application;
 - 1.4.4.4.e. Test methods used to sample and analyze manure, litter, process wastewater, and soil;
 - 1.4.4.4.f. Results from manure, litter, process wastewater, and soil sampling;
 - 1.4.4.4.g. Explanation of the basis for determining manure application rates, as provided in the technical standards established by this permit;
 - 1.4.4.4.h. GIS precision/variable rate electronic records of the GIS data layers and nutrient applications
 - 1.4.4.4.i. Calculations showing the total nitrogen and phosphorus (if required) to be applied to each field, including sources other than manure, litter, or process wastewater;
 - 1.4.4.4.j. Total amount of nitrogen and phosphorus (if required) actually applied to each field, including documentation of calculations for the total amount applied;
 - 1.4.4.4.k. The method used to apply the manure, litter, or process wastewater; and
 - 1.4.4.4.l. Date(s) of manure application equipment inspection.
- 1.4.5. **Site Inspection Requirements.** At a minimum, the producer shall visually inspect and document the following:
- 1.4.5.1. Weekly inspect all storm water diversion devices, runoff diversion structures, barns, mortality management facilities, and devices channeling process wastewater to containment structures;
 - 1.4.5.2. Daily inspect water lines, including drinking water or cooling water lines;
 - 1.4.5.3. Weekly inspect containment structures for signs of damage (including but not limited to seepage, erosion, animal burrows, or adverse vegetation); the inspection will note the level of the manure and process wastewater in liquid containment structures in relation to the maximum operating level marker;
 - 1.4.5.4. The producer, or agent acting on behalf of the producer, shall inspect the land application equipment, land application sites and irrigation equipment, if used, on a daily basis while land application of process wastewater or manure is occurring. This inspection is to ensure that the land application equipment is not leaking and runoff from the land application site and irrigation system is not occurring. If a discharge or leak is found where process wastewater or manure is reaching any surface waters of the state, flowing onto property not owned by the producer, or not included in the nutrient management plan, the producer is responsible for taking immediate steps to stop the discharge or leak and following the reporting requirements of this permit. The producer shall keep documentation of these inspections so the Secretary can review them upon request or during an inspection; and
 - 1.4.5.5. Weekly inspect all outlets for tile located closer than 50 feet from the toe of the exterior berm or foundation of a containment structure or any other or any other part of the production area and from storm water pump systems for covers on containment structure(s). If the outlet is flowing, sample in accordance with section 1.4.3.3.bb.

1.4.5.6. Any deficiencies found as a result of these inspections shall be documented when they are found and when they are corrected.

1.4.6. Record Keeping Requirements

1.4.6.1. Records documenting the required inspections.

1.4.6.2. Weekly records of the level of the manure and process wastewater in the liquid containment structures in relation to the maximum operating level marker.

1.4.6.3. Records documenting any actions taken to correct deficiencies required. Deficiencies not corrected within 30 days shall be accompanied by an explanation of the factors preventing immediate correction.

1.4.6.4. Records of mortalities management and practices used by the CAFO.

1.4.6.5. Records documenting the current design of any containment structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity.

1.4.6.6. Records of the date, time, and estimated volume of any overflow, spill, or discharge of manure or process wastewater from the production area or processing operation.

1.4.6.7. Records of samples from discharge monitoring, Containment System Tile and Covered Holding Ponds Sampling, and monitoring wells, collected in accordance with sections 1.4.2, 1.4.3.3.bb, and 1.4.3.6.c.1.

1.4.7. Annual Reporting Requirements

1.4.7.1. On or before March 28th of each year, each CAFO producer shall submit an annual report to the Secretary, on a form provided by the Secretary, to the following address:

South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182

Once notified by the Secretary, the annual report shall be submitted using electronic reporting.

1.4.7.2. The annual report shall be for the previous calendar year and shall include:

1.4.7.2.a. The type of animals confined (swine weighing 55 pounds or more, swine weighing less than 55 pounds, beef cattle, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, ducks, turkeys, geese, broiler chickens, layer chickens, or other), the maximum number of each type of animal confined at any one time, and whether confined in open lots or housed under roof;

1.4.7.2.b. A summary of all manure, litter and process wastewater discharges that have occurred from the production area or during land application, including date, time, and approximate volume;

1.4.7.2.c. Estimated amount of total manure, litter and process wastewater generated by the producer (tons/gallons);

1.4.7.2.d. Estimated amount of total manure, litter and process wastewater transferred to other persons by the producer (tons/gallons);

1.4.7.2.e. Total number of acres for land application covered by the nutrient management plan developed in accordance with this permit;

- 1.4.7.2.f. Total number of acres under control of the producer that were used for land application of manure, litter and process wastewater; and
- 1.4.7.2.g. A statement indicating whether the current version of the permittee's nutrient management plan was developed or approved by a certified nutrient management planner;
- 1.4.7.2.h. The annual report shall include the actual crop(s) planted and actual yield(s) for each field where manure, litter, or process wastewater was applied, copies of the results from manure, litter, process wastewater and soil sampling, copies of the calculations showing the total nitrogen and phosphorus (if required) to be applied to each field including the amount of any supplemental fertilizer applied during the previous 12 months for fields owned, rented, or leased by the producer.

1.4.8. Other Permits and Requirements That May Be Needed

- 1.4.8.1. **Water Rights Permit.** A water right permit is required for a private water supply if the water use by the feeding operation is more than 25,920 gallons per day (18 gallons per minute) or if the combined maximum pump capacity exceeds 25 gallons per minute. Any producer submitting a permit application for this permit for a new or expanding operation which results in a total population that will be at least two times the minimum threshold identified in Table 1 for a large CAFO and gets water for their operation from a combination of wells or surface water sources, and does not have a Water Right permit at the time they submit an application for this permit, shall install a flow meter between the water source(s) and the first water use location. The flow meter shall be used to document the operation does not exceed the maximum allowable daily water volume and flow rate allowed without having a Water Right permit. Flow documentation shall be maintained on-site for review during DANR inspections. Processing operations are commercial operations needing a water right for a private water supply. This requirement does not apply to operations that get their water from rural water systems or other sources that have a water right permit. For more information, contact DANR's Water Rights Program at (605) 773-3352.
- 1.4.8.2. **Storm Water Construction Permit.** A storm water construction permit is required if one or more acres of land will be disturbed during construction of the AFO, the manure management system, or processing operation. For more information on storm water permit requirements, please call 1-800-SDSTORM (1-800-737-8676).
- 1.4.8.3. **Air Quality Permit.** If the operation has sources that release air contaminants to the ambient air, it may need an air quality permit. Examples of equipment that may be regulated by an Air Quality Permit are boilers, emergency generators, and incinerators. **If a permit is required, the facility will need to obtain a permit under the Air Quality Program before construction begins.** Please contact the DANR's Air Quality Program at (605) 773-3151 for a permit application, additional information, or any questions.
- 1.4.8.4. If an operation will encroach, damage or destroy any of the historic sites identified on the websites for the SD Historical Society or The National Register for Historic Places (**located on the DANR Livestock Services Website for Permit Reference**). The producer shall first contact the State Historic Preservation Office at (605) 773-3458.
- 1.4.8.5. **Permit to Occupy Right of Way.** If manure application will involve placing hoses or other equipment in a state highway right of way (for example, in a road ditch or through a culvert), the producer must first obtain a Permit to Occupy Right of Way. Application for this permit may be made through the local South Dakota Department of Transportation area office. In addition, please contact the county highway superintendent to determine if the county has similar requirements.

- 1.4.8.6. The producer is responsible for contacting the local planning and zoning office to determine if there are any local ordinances or requirements with which the producer needs to comply.
- 1.5. **Retention of Records.** The producer shall retain records of all monitoring information, maintenance and inspection records, copies of reports required by this permit, and data used to complete the Notice of Completion for this permit. The producer shall keep the records for at least five years from the date of the sample, measurement, report, or application. Data collected and a copy of this permit shall be kept at the AFO or processing operation or the usual place of business where employees of the operation have access to these documents.
- 1.6. **Twenty-four Hour Reporting.** The producer shall report any overflow, spill, or discharge of manure or process wastewater that leaves the exterior boundary of the processing operation, production area, or land application field, reaches water of the state, or may endanger health or the environment. The report shall be made to the South Dakota Department of Agriculture and Natural Resources at (605) 773-4647 as soon as possible, but no later than twenty-four (24) hours from the time the producer first became aware of the spill or discharge. If after normal business hours (8:00 am to 5:00 pm Central Time, Monday through Friday), the producer shall report the overflow, spill, or discharge by calling the South Dakota Office of Emergency Management at (605) 773-3231. The producer shall also take immediate steps to stop the overflow, spill, or discharge and notify anyone downgradient who may be impacted by the overflow, spill, or discharge. In the event of a discharge, the producer shall fill out the CAFO Discharge, Overflow, or Spill Form located in Appendix J and submit to DANR no later than the 28th day of the month following the month when the discharge occurred. In the event of an overflow or spill, the producer shall fill out the CAFO Discharge, Overflow, or Spill Form located in Appendix J and submit to DANR within 15 days from the date when the overflow or spill occurred. The form shall be submitted to the following address:

South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182

If construction is necessary plans and specifications with a construction schedule shall be submitted for approval.

- 1.7. **Bankruptcy Reporting.** Within 10 days after commencement of a voluntary or involuntary bankruptcy proceeding naming a producer as a debtor, the producer shall notify the Secretary by certified mail at the address listed in Section 1.4.7.1. of this permit. The notice shall provide information on the producer's continued ability to operate and maintain the operation in compliance with this general permit and include the bankruptcy bar date. If a trustee or other entity becomes responsible for the operation, including the responsibility for compliance with this permit, the Secretary shall be notified within 10 days of that change.
- 1.8. **Inspection and Entry**
- 1.8.1. The producer shall allow the Secretary, upon presentation of credentials, to:
- 1.8.1.1. Enter the premises of an AFO, processing operation, or where records are kept;
- 1.8.1.2. Inspect any AFO covered under this permit;
- 1.8.1.3. Inspect any processing operation covered under this permit;
- 1.8.1.4. Access and copy, at reasonable times, records specified under this permit; and

- 1.8.1.5. Sample or monitor any substance or parameter, at reasonable times, to determine compliance with this permit or other requirements of the South Dakota Water Pollution Control Act.
- 1.8.2. The Secretary shall only have access to the animal confinement areas if it becomes absolutely necessary to determine compliance with this permit. If access becomes necessary, the Secretary will abide by all security measures implemented by the producer to ensure protection of the health of the animals at the AFO. The Secretary will also follow all security measures the producer has implemented for all offsite visitors at open lot facilities.
- 1.8.3. The Secretary shall inspect CAFOs at the frequency specified in ARSD 74:57:01. The Secretary shall inspect processing operations at least every five years.
- 1.9. **Permit Fee.** Permit fees shall be assessed in accordance with SDCL 34A-2-125.

2. COMPLIANCE RESPONSIBILITIES

- 2.1. **Duty to Comply.** In accordance with ARSD 74:52:03:02, the producer shall comply with all the conditions of the permit; the approved plans and specifications; the BMPs required by this permit to be implemented; and the BMPs incorporated by the producer(s) into the operation's Operation and Maintenance Guideline and Nutrient Management Plan.
- 2.2. **Penalties for Violations of Permit Conditions.** The South Dakota Water Pollution Control Act provides that any producer in noncompliance with this permit may be subject to a fine of not more than \$10,000 per day per violation.
- 2.3. **Need to Halt or Reduce Activity not a Defense.** In enforcing violations of this permit, the Secretary will not consider that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the permit.
- 2.4. **Duty to Mitigate.** Each producer shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
- 2.5. **Proper Operation and Maintenance.** Each producer shall at all times properly operate and maintain the manure management system in a manner to achieve compliance with the conditions of this permit.
- 2.6. **Removed Substances.** The producer shall accumulate, transport, and store the manure in accordance with the conditions of this permit to prevent any pollution of surface water or groundwater of the state or create a health hazard. The manure from the feeding operation shall be land applied in accordance with this permit and the initial nutrient management plan developed for the feeding operation.

3. GENERAL REQUIREMENTS

- 3.1. **Planned Changes.** The producer shall give notice to the Secretary as soon as possible of any planned physical alterations or additions that significantly change the permitted AFO. During and after implementation of those changes, the producer is bound to the terms and conditions of this general permit.
- 3.2. **Permit Actions.** The Secretary may modify, revoke and reissue, or terminate this permit in accordance with ARSD 74:52:04:03. If the Secretary decides to modify or revoke and reissue the permit, the terms and conditions of this general permit will remain in effect until a new or modified permit becomes effective.

- 3.3. **Duty to Reapply.** Before the expiration of this permit, the Secretary will provide each producer authorized to operate under this permit with a renewal application. The producer shall be responsible for returning the Notice of Intent to Retain Coverage Form to the Secretary to receive coverage under the new permit at least 60 days before the expiration of the existing permit. Producers need not continue to seek permit coverage or reapply for a permit if:
- 3.3.1. They have notified the Secretary that their operation has ceased operation or is no longer a CAFO; and
- 3.3.2. The Secretary has notified the producer that the operation is no longer a CAFO.
- 3.4. **Duty to Provide Information.** The producer shall provide any information that the Secretary requests in order to determine whether cause exists for revoking or terminating coverage under this permit. The Secretary may also request information to determine if the producer is in compliance with this permit. The producer shall provide to the Secretary, upon request, copies of records that the permit requires the producer to keep.
- 3.5. **Other Information.** If the producer becomes aware that any relevant facts in the Notice of Completion and Certification of Applicant Forms were not submitted, or incorrect information was submitted, the correct information shall be promptly submitted to the Secretary.
- 3.6. **Signatory Requirements.** The producer shall sign and certify all reports submitted to the Secretary.
- 3.6.1. The producer who owns or operates the AFO shall sign all permit applications or forms to receive coverage under this permit.
- 3.6.2. The producer, or a duly authorized representative, may sign all reports required by the permit and other information requested by the Secretary. A person is a duly authorized representative only if:
- 3.6.2.1. The authorization is made in writing by the producer and submitted to the Secretary; and
- 3.6.2.2. The authorization specifies either an individual or a position having responsibility for the overall operation of the permitted facility. This position may be a manager, operator, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
- 3.6.3. **Changes to authorization.** If an authorization under Section 3.6.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Section 3.6.2. shall be submitted to the Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.
- 3.6.4. **Certification.** Any person signing a document under this section shall make the following certification:
- “I also certify under penalty of law that this document and all other plans and application documents to obtain coverage under the animal feeding general permit were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are penalties for submitting false information.”

- 3.7. **Penalties for Falsification of Reports.** Any person who knowingly makes a false statement in any record submitted or required to be maintained under this permit, shall be subject to enforcement under the South Dakota Water Pollution Control Act.
- 3.8. **Availability of Reports.** Except for data determined to be confidential under ARSD 74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Secretary. The Secretary will not consider applications, Operation and Maintenance Guidelines, nutrient management plans, notices of completion, permits, plans and specifications, and monitoring data, or any correspondence related to these items, to be confidential information.
- 3.9. **Property Rights**
- 3.9.1. The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state, or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties.
- 3.9.2. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, that may result from actions taken under the permit.
- 3.10. **Severability.** Any portion of this permit that is found to be void, or is challenged, shall not affect the validity of the other permit requirements that are not voided or challenged.
- 3.11. **Transfers.** The Secretary will transfer a permit application approval or coverage under this permit to a new producer if the requirements in Section 1.2.2.4. of this permit are met.
- 3.12. **Reopener Provision.** If state or federal statutes or regulations change, the Secretary may reopen and modify this permit (following proper administrative procedures) to include appropriate conditions (and a compliance schedule, if necessary), to address the additional requirements.
- 3.13. **Appeals Provision.** If the Secretary recommends revoking, suspending, or modifying a permit, the Secretary shall give written notice of the action to the permit holder. The permit holder may request a hearing before the Secretary. The hearing shall be held within thirty days of receipt of the written request. The Secretary may affirm, modify, or reverse the initial decision based upon the evidence presented at the hearing.
- 3.14. **Requiring an Individual Permit.** The Secretary may deny coverage or require any producer requesting coverage under the general permit to apply for an individual permit. The Secretary's decision to deny coverage under this permit and require an individual permit will be based on the following:
- 3.14.1. Ability of the producer to comply with the state's environmental requirements for AFOs;
- 3.14.2. Past compliance history of the producer based on disclosures made under the Certification of Applicant form;

- 3.14.3. The proposed location of the AFO or processing operation such as its proximity to a drinking water source;
- 3.14.4. The CAFO producer plans to sell or give away any process wastewater or more than 100 tons of solid manure where the manure or process wastewater will be land applied to fields located in South Dakota but will not be land applied in accordance with the operation's approved nutrient management plan (see Section 1.4.4. of this permit);
- 3.14.5. The processing operation producer plans to land apply any process wastewater or manure to fields located in South Dakota that will not be land applied in accordance with a permitted CAFO or processing operation's approved nutrient management plan (see section 1.4.4. of this permit);
- 3.14.6. A facility that proposes to discharge wastewater to waters of the state except for allowable CAFO discharges under this permit.
- 3.14.7. Treatment or disposal technology proposed to be used at the AFO is beyond the scope of the conditions contained in this permit. For example: a vegetative treatment system is beyond the scope of the conditions presented in this permit due to the federally required design specific permit elements, immaturity of design models, and the site specific nature of locating and designing these systems; and
- 3.14.8. **Any other relevant factors.** The Secretary will notify the producer in writing if an individual permit is required. When the Secretary issues an individual permit to a producer, the producer is responsible for complying with the terms and conditions of the new individual permit and relieved from responsibility of complying with this general permit.

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APPENDIX A

NOTICE OF COMPLETION

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CERTIFICATION OF APPLICANT FORMS

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NOTICE OF COMPLETION OF
MANURE MANAGEMENT SYSTEM CONSTRUCTION

Please complete this form for receiving a Certificate of Compliance from the Department of Agriculture and Natural Resources. Use this form if a licensed Professional Engineer in the State of South Dakota designed the manure management system. Please return the form to:

South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182

FACILITY (Please print): _____ (PRODUCER)

LAST NAME FIRST NAME

ADDRESS

CITY STATE ZIP CODE

Construction of the manure management system for the above producer that had plans and specifications approved by letter by the DANR on _____ is completed. The system was designed for a _____ operation for _____

and _____ acres of drainage area. I hereby certify that I am a licensed professional engineer in the State of South Dakota. To the best of my knowledge, information and belief, the _____ was constructed in general

conformance with the plans and specifications, and in my professional opinion, is in compliance with applicable laws, codes, and ordinances as of the date of construction (or this date).

Dated at _____, South Dakota this _____ day of _____, 20_____.

Design Engineer's Signature
(Stamp)

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STATE OF SOUTH DAKOTA

BEFORE THE SECRETARY OF

THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES

IN THE MATTER OF THE)
APPLICATION OF)
STATE OF)
COUNTY OF)

CERTIFICATION OF
APPLICANT

I, _____, the applicant in the above matter after being duly sworn upon oath hereby certify the following information in regard to this application:

I have read and understand South Dakota Codified Law Section 1-41-20 which provides:

"The secretary may reject an application for any permit filed pursuant to Titles 34A or 45, including any application by any concentrated swine feeding operation for authorization to operate under a general permit, upon making a specific finding that:

- (1) The applicant is unsuited or unqualified to perform the obligations of a permit holder based upon a finding that the applicant, any officer, director, partner, or resident general manager of the facility for which application has been made:
(a) Has intentionally misrepresented a material fact in applying for a permit;
(b) Has been convicted of a felony or other crime involving moral turpitude;
(c) Has habitually and intentionally violated environmental laws of any state or the United States which have caused significant and material environmental damage;
(d) Has had any permit revoked under the environmental laws of any state or the United States; or
(e) Has otherwise demonstrated through clear and convincing evidence of previous actions that the applicant lacks the necessary good character and competency to reliably carry out the obligations imposed by law upon the permit holder; or
(2) The application substantially duplicates an application by the same applicant denied within the past five years which denial has not been reversed by a court of competent jurisdiction. Nothing in this subdivision may be construed to prohibit an applicant from submitting a new application for a permit previously denied, if the new application represents a good faith attempt by the applicant to correct the deficiencies that served as the basis for the denial in the original application.

All applications filed pursuant to Titles 34A and 45 shall include a certification, sworn to under oath and signed by the applicant, that he is not disqualified by reason of this section from obtaining a permit. In the absence of evidence to the contrary, that certification shall constitute a prima facie showing of the suitability and qualification of the applicant. If at any point in the application review, recommendation or hearing process, the secretary finds the applicant has intentionally made any material misrepresentation of fact in regard to this certification, consideration of the application may be suspended and the application may be rejected as provided for under this section.

Applications rejected pursuant to this section constitute final agency action upon that application and may be appealed to circuit court as provided for under chapter 1-26."

I certify pursuant to 1-41-20, that as an applicant, officer, director, partner, or resident general manager of the activity or facility for which the application has been made that I; a) have not intentionally misrepresented a material fact in applying for a permit; b) have not been convicted of a felony or other crime of moral turpitude; c) have not habitually and intentionally violated environmental laws of any state or the United States which have caused significant and material environmental damage; (d) have not had any permit revoked under the environmental laws of any state or the United States; or e) have not otherwise demonstrated through clear and convincing evidence of previous actions that I lack the necessary good character and competency to reliably carry out the obligations imposed by law upon me. I also certify that this application does not substantially duplicate an application by the same applicant denied within the past five years which denial has not been reversed by a court of competent jurisdiction. Further;

“I declare and affirm under the penalties of perjury that this claim (petition, application, information) has been examined by me, and to the best of my knowledge and belief, is in all things true and correct.”

Dated this _____ day of _____, 20_____.

Applicant (print)

Applicant (signature)

Subscribed and sworn before me this _____ day of _____, 20_____.

Notary Public (signature)

My commission expires: _____

(SEAL)

**PLEASE ATTACH ANY ADDITIONAL INFORMATION NECESSARY TO DISCLOSE ALL FACTS
AND DOCUMENTS PERTAINING TO
SDCL 1-41-20 (1) (a) THROUGH (e).
ALL VIOLATIONS MUST BE DISCLOSED, BUT WILL NOT
AUTOMATICALLY RESULT IN THE REJECTION OF AN APPLICATION**

APPENDIX B

NOTICE OF INTENT FORM

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DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES

NOTICE OF INTENT FOR COVERAGE
UNDER THE GENERAL WATER POLLUTION CONTROL PERMIT
FOR CONCENTRATED ANIMAL FEEDING OPERATIONS

This form is required to be submitted by applicants for permit coverage. Please submit this form to the following address:

South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182
Telephone: (605) 773-4647 FAX: (605) 773-5286

PLEASE PRINT OR TYPE

I am applying for a: State permit NPDES permit

1. Existing Permit Number (if applicable): _____

2. Name of Animal Feeding Operation / Name of Owner or Operator: _____

3. Location of Facility (legal description): _____

Mailing address of Producer:

Name: _____ Phone: _____

Street: _____ Fax or Email: _____

City: _____ State: _____ County: _____ Zip Code: _____

4. Latitude and Longitude of the entrance to the production area:

Latitude: _____ degrees

Longitude: _____ degrees

5. Submit a topographic map of the area in which the animal feeding operation is located showing the specific location of the production area(s). Attach map to back of form.

6. Number of animals and housing information:

a. Open lots

Swine weighing less than 55 pounds: _____ Swine weighing 55 pounds or more: _____

Beef Cattle: _____ Mature dairy cows: _____ Dairy heifers: _____ Veal calves: _____

Sheep and lambs: _____ Horses: _____ Ducks: _____ Turkeys: _____

Chickens: Broilers: _____ Layers: _____ Geese: _____

Other (Explain): _____

b. Housed lots

Swine weighing less than 55 pounds: _____ Swine weighing 55 pounds or more: _____

Beef Cattle: _____ Mature dairy cows: _____ Dairy heifers: _____ Veal calves: _____

Sheep and lambs: _____ Horses: _____ Ducks: _____ Turkeys: _____

Chickens: Broilers: _____ Layers: _____ Geese: _____

Other (Explain): _____

7. Type of Manure Containment and Storage Capacity:

Manure Containment (*Check all that apply*): Anaerobic Lagoon(s) Roofed Storage Shed(s) Storage Pond(s)
 Above-ground storage tank(s) Under-floor Pit(s) Below-ground storage tank(s)
 Approved Stockpiling Area(s) Digester
 Other (*Explain*): _____

Total Capacity for manure, litter, and process wastewater storage (*in tons and/or gallons*):
_____ tons _____ gallons

8. Total number of acres available for land application of manure, litter, or process wastewater (*owned and/or covered by signed manure application agreements*): _____ acres

9. Estimated amounts of manure, litter, and process wastewater generated per year (*in tons and/or gallons*):

Depending on the animal feeding operation's manure management system, use one or more of the following blanks:

Liquid: _____ gallons Solid: _____ tons

10. Estimated amounts of manure, litter, and process wastewater transferred to other persons per year (*in tons and/or gallons*):

Depending on the animal feeding operation's manure management system, use one or more of the following blanks:

Liquid: _____ gallons Solid: _____ tons

By signing this form I understand that I will need to continue to operate my system in accordance with my general permit application, DANR approval, and the requirements of the general permit. If anything in my original application is no longer accurate, I will contact DANR at (605) 773-4647 and work with DANR to amend my application within 60 days from the date the department mails this form.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for knowing violations. In addition, I certify that I am aware of the terms and conditions of the General Water Pollution Control Permit for Concentrated Animal Feeding Operations and I agree to comply with those requirements.

NOTE: Notice of Intent shall be signed by the authorized chief executive officer of the applicant, or by the applicant, if an individual.

Name (*print*)

Title

Signature

Date

Additional information or comments you wish to provide: _____

APPENDIX C

NOTICE OF TERMINATION OF COVERAGE FORM

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DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES

NOTICE OF TERMINATION OF COVERAGE
UNDER THE GENERAL WATER POLLUTION CONTROL PERMIT
FOR CONCENTRATED ANIMAL FEEDING OPERATIONS

This form is required to be submitted when a discharge permit is no longer required or necessary. Submission of this form shall in no way relieve the producer of permit obligations required prior to submission of this form. Please submit this form to the following addresses:

Original to: South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, SD 57501-3182
Telephone: (605) 773-4647 FAX: (605) 773-5286

PLEASE PRINT OR TYPE

1. **Name of animal feeding operation:** _____

2. **Mailing Address of Producer:**

Name: _____ Phone: _____

Street: _____ Fax: _____

City: _____ State: _____ County: _____ Zip Code: _____

3. **Mailing address of the animal feeding operation (if different from producer):**

Name: _____ Phone: _____

Street: _____ Fax: _____

City: _____ State: _____ County: _____ Zip Code: _____

4. **Check the reason for termination of permit coverage:**

- You are no longer the operator of the facility
- Concentrated Animal Feeding Operation is no longer in operation
- Other reason(s): _____

I certify under penalty of law that all concentrated animal feeding operations at the above facility that are authorized by a Surface Water Discharge permit have been eliminated or that I am no longer the operator of the facility. I understand that by submitting the Notice of Termination, I am no longer covered under the General Water Pollution Control Permit for Concentrated Animal Feeding Operations. I also understand that the submittal of this Notice of Termination does not release me from liability for any violations of this permit or the South Dakota Water Pollution Control Act. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NOTE: Notice of Termination shall be signed by the authorized chief executive officer of the applicant, or by the applicant, if an individual.

Name (print)

Title

Signature

Date

Permit Number: _____ Date Received: _____ Date Terminated: _____ PCS: _____

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APPENDIX D

CHANGE OF PRODUCER FORM

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DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES

CHANGE OF PRODUCER FORM
FOR THE GENERAL WATER POLLUTION CONTROL PERMIT
FOR CONCENTRATED ANIMAL FEEDING OPERATIONS

In accordance with the Administrative Rules of South Dakota, Chapter 74:52:04, a permit may be transferred to a new producer if the current permittee notifies the secretary at least 30 days in advance of the proposed transfer date. This form and a Certification of Applicant form shall be completed and submitted prior to a change in ownership at a concentrated animal feeding operation. This form shall serve as a request by the current and new owner to modify the permit solely for a change in ownership.

NOTE: If the new producer plans to make changes to the permitted manure management system or nutrient management plan, additional information showing that the changes will meet the requirements of the general permit shall be submitted with this form. If applicable, any written agreement between the permittee and the land owner where manure will be applied shall be written so it is transferable or new agreements shall be submitted.

Please submit this form to the following address: South Dakota Department of Agriculture and Natural Resources
Livestock Services Program
523 East Capitol Avenue
Pierre, South Dakota 57501-3182
Telephone: (605) 773-4647 Fax: (605) 773-5286

PLEASE PRINT OR TYPE

1. **Facility Information:** Permit Number _____ Location of Operation _____ / _____
¼ Section Section Township / Range County

2. **Producer Information Prior to Change:**
Legal name of facility prior to change _____
Name of Owner Prior to Change _____ Phone: _____
Street _____ Fax: _____
City _____ State _____ Zip Code _____

3. **New Producer Information:**
Legal name of facility after ownership change _____
Name of New Owner _____ Phone: _____
Street _____ Fax: _____
City _____ State _____ Zip Code _____

4. **Proposed Transfer Date of Permit Responsibility:** Date: _____

5. **Description of Facility Modifications:**
The new producer shall complete this section and check only one of the following boxes:
 Modifications consist only of a change in ownership of the facility. No other modifications affecting the manure management system are proposed for this facility.
 Modifications consist of a change in ownership of the facility and the additional modifications are described in detail below. Contact DANR for information required to be submitted. Attach additional pages if necessary.

6. **Producer Training:**
Permittees are required to attend a DANR approved environmental training course.
 I have attended training (please submit a copy of your training certificate).
 I will attend the next DANR approved environmental training course (please submit a copy of your training certificate after the training).

7. **Operation and Maintenance Guideline:**
 A new Operation and Maintenance Guideline signed by the new permit applicant is attached.

8. **New Producer Certification:**
I hereby certify that I am the new owner of the facility described above and that I have read and understand the requirements identified in this form. I hereby certify that the construction and/or operation of the facility referenced above will be in accordance with the plans, specifications, reports, permit application submittals approved by DANR. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Name of Current Permittee (print): _____ Signature of Current Permittee: _____ Date: _____

Name of New Permittee (print): _____ Signature of New Permittee: _____ Date: _____

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APPENDIX E

SYSTEM DESIGN, CONSTRUCTION, INITIAL NUTRIENT MANAGEMENT PLAN, AND OPERATION AND MAINTENANCE GUIDELINE

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INSERT THE SITE SPECIFIC NUTRIENT MANAGEMENT PLAN HERE

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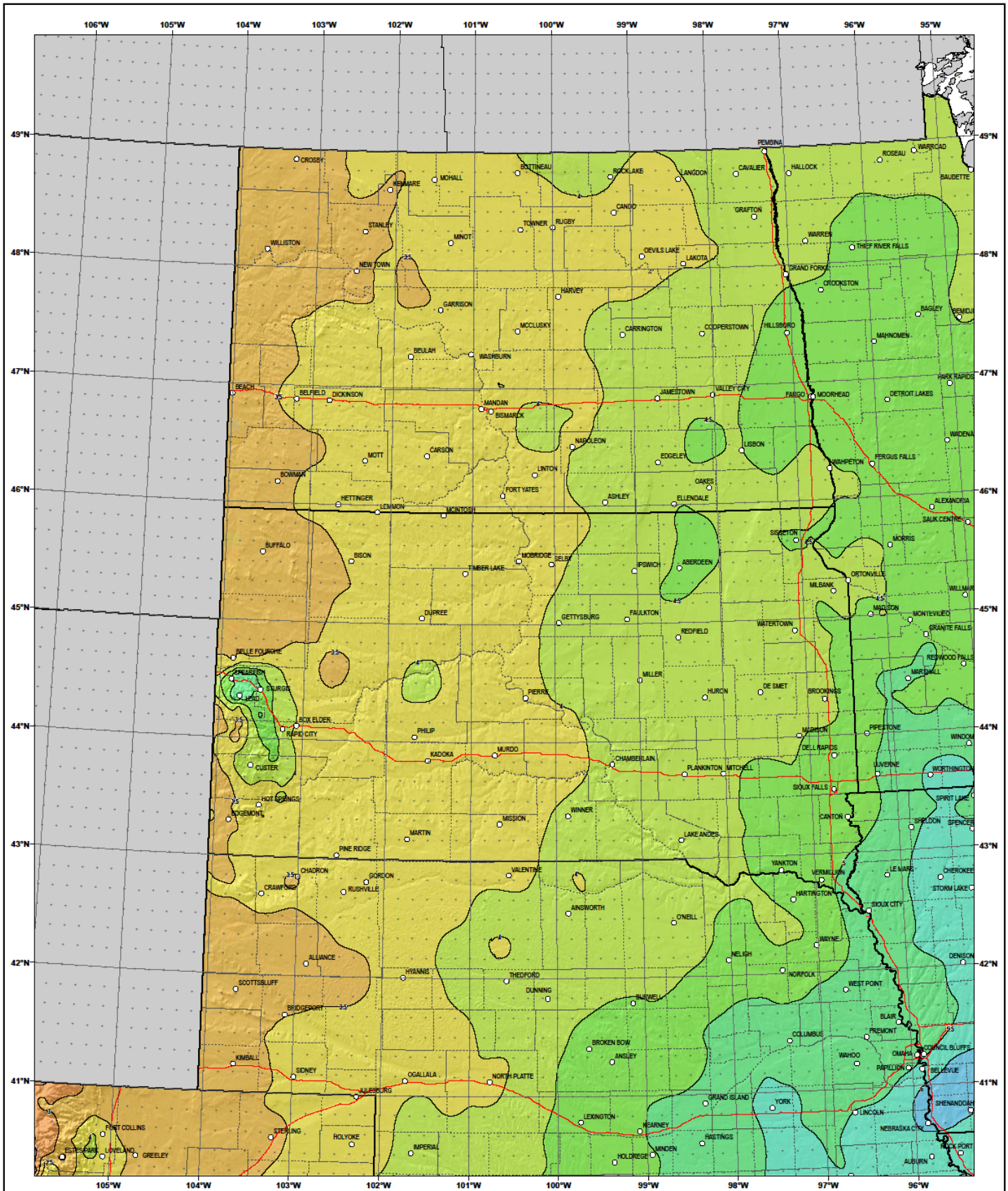
APPENDIX F

25-YEAR, 24-HOUR
PRECIPITATION MAP
FOR SOUTH DAKOTA

<ftp://hdsc.nws.noaa.gov/pub/hdsc/data/mw/nd25y24h.pdf>

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NOAA Atlas 14, Volume 8, Version 2
Midwestern States

NORTH DAKOTA, SOUTH DAKOTA

Isopluvials of 25-year 24-hour precipitation in inches

SCALE 1:2,250,000

- | | | | |
|-------------|-------------|-------------|-------------|
| 1.52 - 2.00 | 3.51 - 4.00 | 5.51 - 6.00 | 7.51 - 8.00 |
| 2.01 - 2.50 | 4.01 - 4.50 | 6.01 - 6.50 | 8.01 - 8.50 |
| 2.51 - 3.00 | 4.51 - 5.00 | 6.51 - 7.00 | 8.51 - 9.00 |
| 3.01 - 3.50 | 5.01 - 5.50 | 7.01 - 7.50 | 9.01 - 9.24 |

Legend based on entire Volume 8 project area.



Prepared by U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE
OFFICE OF HYDROLOGIC DEVELOPMENT
HYDROMETEOROLOGICAL DESIGN STUDIES CENTER
April 2013

0 5 10 20 30

Miles

0 10 20 40 60

Kilometers

Projection: Lambert Conformal Conic; Datum: NAD83; Standard Parallels: 44°N and 48°N; Central Meridian: 100.5°W

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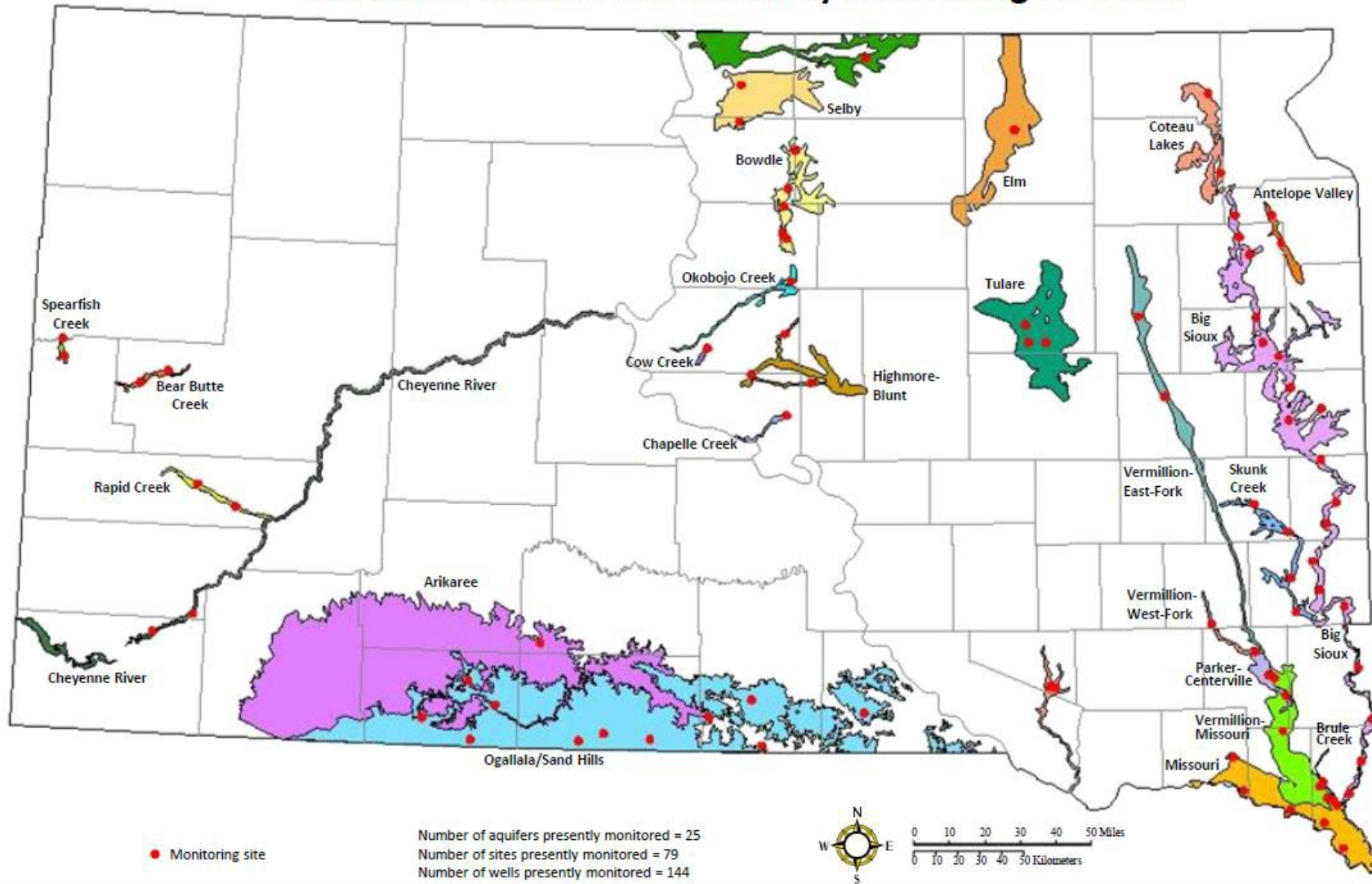
APPENDIX G

MAPPED AQUIFERS INCLUDED IN THE STATEWIDE GROUND WATER QUALITY MONITORING NETWORK

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Aquifers and Monitoring Sites in the Statewide Ground Water Quality Monitoring Network



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APPENDIX H

DANR CRITERIA TO DETERMINE SHALLOW AQUIFER DISCHARGE AND MONITORING REQUIREMENTS FOR LIVESTOCK FEEDING OPERATIONS

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APPENDIX H

DANR Criteria to Determine Ground Water Discharge and Monitoring Requirements for Concentrated Animal Feeding Operations				
Located over a Shallow Aquifer*			Not Located over a Shallow Aquifer	
Counties without Zoning and Wellhead Protection Ordinances		Counties with Zoning and Wellhead Protection Ordinances		
Large CAFOs		Medium and Small CAFOs Units	Any Size Operation	Any Size Operation
<p>New Feeding Operation (After July 1, 1997):</p> <ul style="list-style-type: none"> • Ground Water Discharge Permit and monitoring required. 	<p>Existing or Expanding Feeding Operation:</p> <ul style="list-style-type: none"> • Monitoring required. 	<ul style="list-style-type: none"> • If the county requires state approval or a valid water pollution complaint is filed on the livestock feeding operation, or the producer requests coverage under a state general permit, DANR will use the criteria described in the general permit for concentrated animal feeding operations to determine if a Ground Water Discharge Permit and/or monitoring is required. • If a producer is not required by either local or state law to obtain coverage under a state general permit, but requests plans and specifications approval, monitoring will be required. • Producer has the option of applying for a ground water discharge permit. 	<ul style="list-style-type: none"> • Operation shall comply with local government ordinances. • If a valid water pollution complaint is filed, or if the producer requests coverage under a state general permit, monitoring will be required. • If a producer is not required by local or state law to obtain coverage under a state general permit but requests plans and specifications approval, monitoring will be required. • If the operation is outside a wellhead protection area, the producer has the option of applying for a Ground Water Discharge Permit. 	<ul style="list-style-type: none"> • Ground Water Discharge Permit not required. • Monitoring may be required if site-specific conditions warrant monitoring to protect localized, shallow ground water supplies.

All feeding operations shall be in compliance with South Dakota Ground Water Quality Standards. A Ground Water Discharge Permit allows the producer to have a limited zone where ground water may be impaired.

*Shallow aquifer is defined in SDCL 34A-3A-24 passed by the 1997 Legislature.

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APPENDIX I

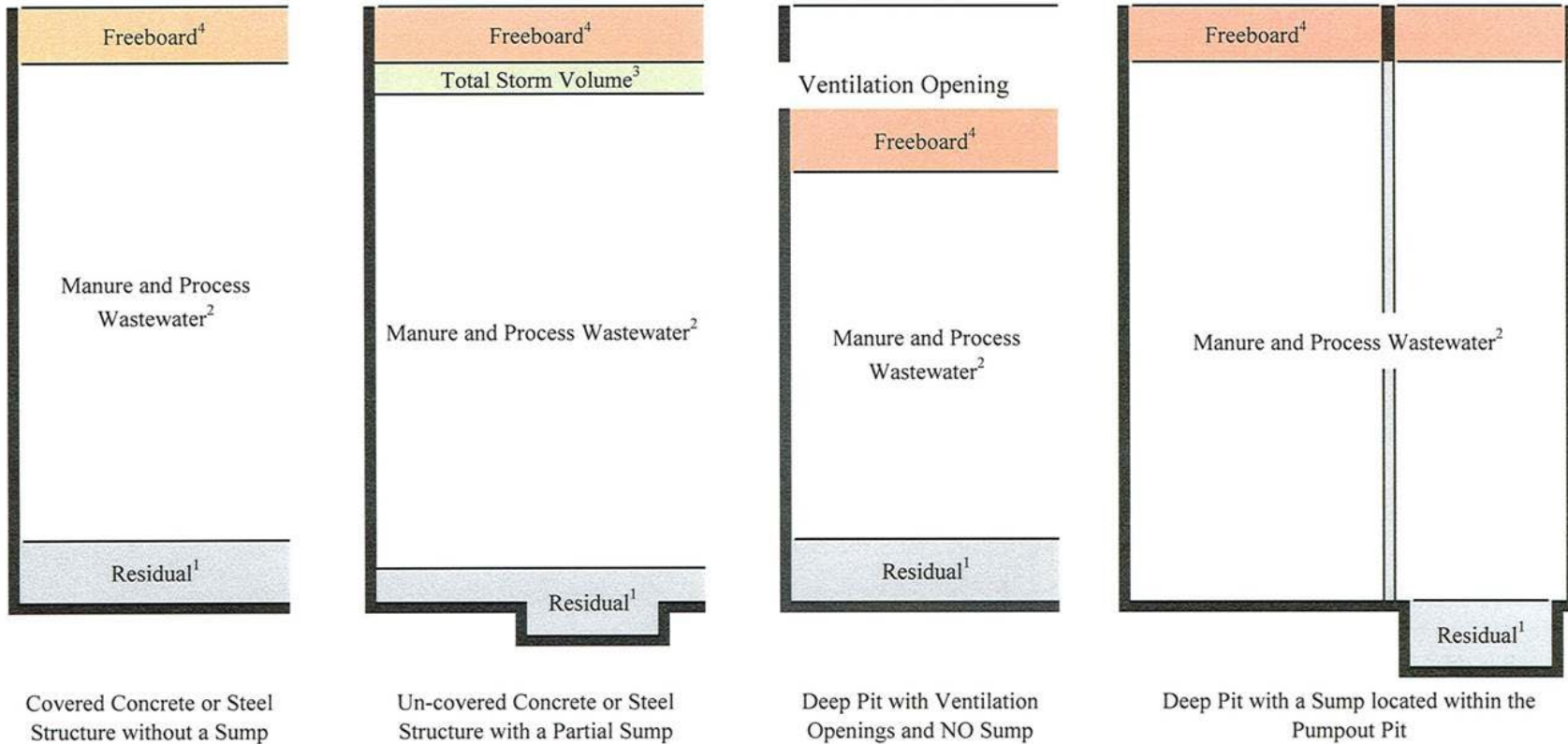
**CROSS SECTIONS OF
CONTAINMENT STRUCTURES**

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CROSS SECTION FOR A CONCRETE OR STEEL MANURE CONTAINMENT STRUCTURE



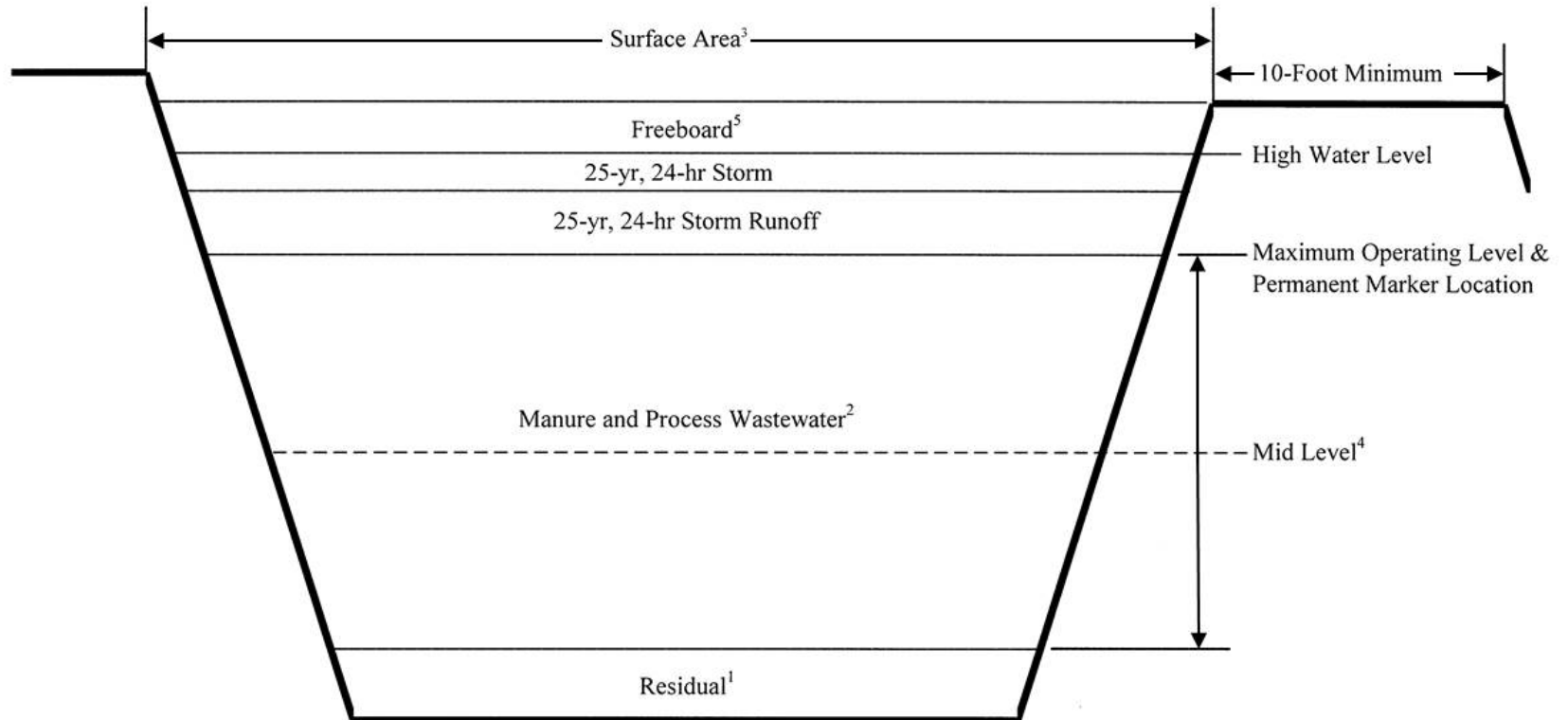
¹ A minimum of 1-foot is required for residual solids accumulation but a portion of or all of the residual depth may be accounted for in a sump. If a structure includes a sump, the O&M guideline must include the procedure for agitating the contents of the structure prior to or during manure and process wastewater removal.

² Process wastewater is any process generated wastewater and any precipitation (rain or snow) that comes into contact with the animals, manure, litter, bedding, feed, or other portions of the animal feeding operation, and includes any runoff from an open lot.

³ Volume required for the 25-year, 24-hour storm which includes the direct storm precipitation on an un-covered structure and the storm runoff from any drainage area that may be associated with the system.

⁴ A minimum of 1-foot of freeboard is required. The top of the freeboard begins at the lowest opening in a structure, if present, or the top of the structure.

CROSS SECTION FOR AN EARTHEN MANURE CONTAINMENT STRUCTURE



¹ There must be a minimum of 1-foot available for residual solids accumulation in all earthen structures.

² Process wastewater is any process generated wastewater and any precipitation (rain or snow) that comes into contact with the animals, manure, litter, bedding, feed, or other portions of the animal feeding operation, and includes any runoff from an open lot.

³ Annual precipitation and the storm precipitation for an un-covered structure is determined by using the surface area at the top of the structure.

⁴ Annual evaporation for an un-covered structure is determined by the surface area at the mid level of a structure which is midway between the maximum operating level and the top of the residual.

⁵ A minimum of 2-foot of freeboard and the top of the freeboard is established at the lowest berm elevation.

APPENDIX J

DISCHARGE REPORTING FORM

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CAFO DISCHARGE, OVERFLOW, or SPILL REPORTING FORM

Sheet A

This form is to be used to summarize the reporting requirements for any discharge, overflow, or spill.

Address:	
Facility Contact:	Phone:
Description of Event <i>(Attach additional sheets if necessary)</i>	
<i>Please check the boxes below, as appropriate, to indicate the type of release being reported (See Definitions for an explanation of each term).</i>	
<input type="checkbox"/> Discharge <input type="checkbox"/> Overflow <input type="checkbox"/> Spill	
Date and Time the event began or was discovered:	
Date and Time the event was stopped:	
Estimated volume, gallons:	
Describe the cause(s) of the event:	
Where did the event occur and where was the manure or process wastewater released to:	
Describe the steps taken or planned to reduce, eliminate, and prevent reoccurrence:	
Time and Date 24-Hour Notice of Noncompliance given to DANR (include who notice was given to):	
Describe any adverse effects, such as fish kills, etc.:	

ANALYTICAL RESULTS

Sheet B

Enclose laboratory report forms with this form.

Parameter	Sample 1	Sample 2	Sample 3	Sample 4
Date and time of sample				
Total Suspended Solids (TSS) mg/L				
Total Nitrogen (as N), mg/L				
Total Ammonia-Nitrogen (as N), mg/L				
Total Phosphorus (as P), mg/L				
Five-Day Biochemical Oxygen Demand (BOD ₅), mg/L				
<i>Escherichia coli</i> (<i>E. coli</i>), no./100 mL				
Estimated Volume of Discharged Water, gallons per day				
Estimated Volume of Discharged Water, gallons per day				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print): _____	Title: _____
Signature: _____	Date: _____