

**North Dakota Department of Environmental Quality Public Notice
Reissue of an AFO Permit**

Public Notice Date: 2/27/2023

Public Notice Number: ND-2022-025

Purpose of Public Notice

The Department intends to take public comment to ensure the following Animal Feeding Operations AFO Permit follows the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information

Application Date: 6/9/2021

Application Number: NDAFO0810

Applicant Name: Spickler Ranch

Mailing Address: 8377 7th Parkway NE, Glenfield, ND 58443

Telephone Number: 701.674.3170

Proposed Permit Expiration Date: 4/30/2027

Facility Description

The application is for an expanding facility that is located 2 miles northeast of Grace City, ND, in East 1/2 of Section 25, Township 147, Range 64, in Foster County. The application indicates the facility will be permitted for a maximum of 2,200 beef cattle with an average weight of 1,400 lbs.

Tentative Determinations

The submitted application and supporting documentation have been reviewed by the Department. They assure that State Water Quality Standards will be protected and the system will be constructed and can be operated in compliance with the North Dakota state requirements for storage and handling of manure and wastewater for an Animal Feeding Operation.

Information Requests and Public Comments

Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by March 28, 2023 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice.

The NDDEQ will consider every request for reasonable accommodation to provide an accessible meeting facility or other accommodation for people with disabilities, language interpretation for people with limited English proficiency (LEP), and translations of written material necessary to access programs and information. To request accommodations, contact Jennifer Skjod, Acting Non-discrimination Coordinator at 701-328-5226 or jskjod@nd.gov. TTY users may use Relay North Dakota at 711 or 1-800-366-6888.

**FACT SHEET FOR STATE AFO PERMIT
NDAFO-0810**

**SPICKLER RANCH
GLENFIELD, ND**

DATE OF THIS FACT SHEET – February 10, 2023

INTRODUCTION

The North Dakota Department of Environmental Quality (department) has been designated the state water pollution control agency for all purposes of the Federal Water Pollution Control Act, as amended [33 U.S.C. 1251, et seq.], and is hereby authorized to take all action necessary or appropriate to secure to this state the benefits of the act and similar federal acts. The department's authority and obligations for the control of pollution from animal feeding operations in the North Dakota Administrative Code (NDAC) chapter 33.1-16-03.1 which was promulgated pursuant to the North Dakota Century Code (NDCC) chapter 61-28. The State of North Dakota is delegated primacy of the Animal Feeding Operation program by EPA. The Rules and Regulations for the Control of Pollution from Certain Livestock Enterprises were first issued in 1972 and updated in 1989, 2005, and 2018.

The following rules or regulations apply to feedlot operations permits:

- Operations requiring a permit (NDAC Section 33.1-16-03.1-05),
- Authority for issuing Feedlot Permits (NDAC Section 33.1-16-03.1-01),
The Department of Environmental Quality has been authorized to provide and administer this chapter relating to the control of pollution from animal feeding operations under the provisions of North Dakota Century Code Section 61-28-04.
- Procedures the department follows for issuing Feedlot permits (NDAC Chapter 33.1-16-03.1),
- Standards of Quality for Waters of the State (NDAC Chapter 33.1-16-02.1)

According to the NDAC section 33.1-16-03.1-13, if the department determines a significant degree of public interest exists regarding new or expanding facilities, it shall issue a public notice requesting comment on applications for both individual permits and general state animal feeding operation permits. The department shall provide a period of not less than thirty days during which time interested persons may submit comments.

For more information regarding preparing and submitting comments about the fact sheet and permit, please see **Appendix A – Public Involvement**. Following the public comment period, the department may make changes to the draft feedlot permit. The department will summarize the responses to comments and changes to the permit in **Appendix D – Response to Comments**.

TABLE OF CONTENTS

Contents

BACKGROUND INFORMATION	3
FACILITY DESCRIPTION	3
GROUNDWATER AND SURFACE WATER	3
MANURE HANDLING AND DISPOSAL	4
SPECIFICATIONS	6
NUTRIENT MANAGEMENT PLAN AND MANURE APPLICATION	8
PERMIT ISSUANCE PROCEDURES	10
PERMIT ACTIONS	10
PROPOSED PERMIT ISSUANCE	10
APPENDIX A – PUBLIC INVOLVEMENT INFORMATION	11
APPENDIX B – DEFINITIONS	13
APPENDIX C – DATA AND TECHNICAL CALCULATIONS	19
APPENDIX D – RESPONSE TO COMMENTS	23

BACKGROUND INFORMATION

Table 1 – General Facility Information

Applicant:	Spickler Ranch
Facility Name and Address:	Spickler Ranch 8377 7 th Parkway NE Glenfield, ND 58443
Permit Number:	NDAFO-0810
Permit Type:	CAFO
Hydrologic Code:	10160001-James Headwaters

FACILITY DESCRIPTION

The Spickler Ranch farm is located 2 miles northeast of Grace City, ND, in East ½ of Section 25, Township 147N, Range 64W or Latitude 47.519842°N and Longitude -98.763180°W, in Foster County.

An application submitted to the department on November 4, 2022, indicates the facility is proposing to increase permitted numbers from 999 head of beef cattle to a maximum of 2,200 beef cattle with an average weight of 1,400 lbs. The application indicates the owner is planning to maintain their present feedlot design, with no new construction.

GROUNDWATER AND SURFACE WATER

Geology:

The facility site lies mainly within the Drift Plains district of the Central Lowland province. Associated with these major landforms are numerous washboard moraines, drumlins, and ice disintegration features. Surficial deposits are chiefly till and outwash, but proglacial and postglacial lake sediments, colluvium, dune sand and recent alluvium are also present. Studies of the color, boulder and peddle lithology, and grain size of the till revealed no significant variations in the physical characteristics of the surficial drift.

Topography:

The site lies in the Drift Plains part of Eddy and Foster Counties is characterized by a surface of flat to gently rolling topography that is rough on the four end moraines and smoother on the ground moraines and outwash plains.

Slope:

The slope is 5% for the site.

Runoff:

Runoff from the 27 acres feedlot is contained and routed to the storage pond.

Elevation:

The elevation at the site is 1,455 feet. (Approximately, based on United States Geological Survey Quadrangle maps)

Site Drainage:

The location around the facility drains south to southeast away from the James River. The river is at an elevation of 1,450 feet. This is a difference of five feet over a couple hundred yards.

Water Bodies:

The facility is located on the east bank of the James River.

Soils:

The primary soils at the site, as indicated by Natural Resource Conservation Service (NRCS) soil survey, including Arvilla-Sioux complex, Maddock-Hecla loamy fine sands and La Prairie loam. These soils consist mostly of SC-SM, and SC materials. The water table is four to greater than six feet deep. (See Appendix C, Table 8)

Aquifers:

The facility over lies the New Rockford and Juanita Lake Aquifers.

Public Wells:

There are 4 irrigation well(s), zero public wells, and 2 observation well(s) located within two miles of the site. Wells in the general area range from 60 feet to 200 feet deep. (Appendix C, Table 7)

Private Wells:

Within two miles of the site there are 3 Unknown, 4 Monitoring, 15 Stock, 26 Domestic, and 1 Domestic/Stock well(s) identified. Wells in the general area range from 14 feet to 483 feet deep.

MANURE HANDLING AND DISPOSAL

Facility Operation:

The facility incorporated access roads with bunk line feeding. The access roads have 9 inches of gravel underlain with a woven geotextile. The bunk lines are constructed of concrete. Livestock are confined at this site up to 365 days per year in an open lot.

Manure Handling:

The pens are sloped to drain away from the access road to the east. From the east side of the pens, the natural drainage conveys the runoff to the south towards the runoff containment area. There are no solids separators incorporated in the design.

Expected Manure Quantities:

Table 2- Manure quantities from design plans

Number of Head	2,200 beef cows
Average Weight	1,400 lbs
Manure Production	3,080 ft ³ /day
Total Volume Needed for Manure Storage	496,314 ft ³ /yr or 3.7 Mgal

Mortality Disposal:

The owners have chosen burial for the facility's disposal method. Animal mortality shall be handled as outlined in the North Dakota Livestock Program Design Manual, Section 6.4:

"Livestock mortality shall be disposed of in a manner acceptable to the Board of Animal Health and in accordance with NDCC Section 36-14-19. Livestock mortality shall be disposed of in areas that will not discharge into waters of the state and where they will not detrimentally impact air quality. Livestock mortality shall not be disposed of in any structure used to store or treat liquid manure, process wastewater, or storm water unless the department-approved system is designed for such a purpose."

The burial area has clay silt type soil-G272A Sioux Arvilla Complex, which is suitable for burial. The burial site is west of field 1 in Section 25, range 64, township 147.

ODORS

Potential Sources:

The most significant sources of potential odors would be from the feedlot itself and application of manure. Odors from the lots may be minimized with good house-keeping practices. Land application may present a source of short-term odor problems. This is an existing facility and Department records show this facility has not had an odor incident. However, if odors are shown to be a concern, steps must be taken to control them. As the county does regulate the nature scope and location of this operation, the state setbacks do not apply. Spickler received zoning setback approval on March 15, 2022. The nearest residence is 0.75 miles from the feedlot.

SPECIFICATIONS

Manure Storage Structures:

Table 3-Required manure storage N/A

Table 4- Runoff containment

Type: Runoff Containment Pond	
Pond Dimensions	
Design surface area	282,775 ft ²
Top liquid area	282,775 ft ²
Bottom surface area	4,192 ft ²
Design volume	506,898 ft ³ or 3.8 Mgal
Depth	3 ft
The facility has the capacity to store the designed runoff from the 27-acre feed storage area.	

Soil Summary:

The location is suitable based on soil survey and ground water survey information. Soil borings were completed by K2S Engineering. The borings indicate that the Unified classification for the subsoil at the site is generally CL and GP to a depth of about 11 feet. A water table was encountered at 90.5 feet. The bottom of the pond is at a relative elevation of 95 feet. The bottom of the pond is 4.5 feet from the water table. (Appendix C, Table 9)

Clay Liner Construction Testing:

The department has determined the situ soils at the pond site meet the requirements in the North Dakota Livestock Program Design Manual (NDLPDM), so the facility does not need to install a clay or synthetic liner.

Manure Transfer Components:

Manure Storage Structure Considerations:

The facility does not have solid separators incorporated into this design of the facility.

The feedlot area to the west of the middle access road and south of the working facility and barn, outlets into the runoff containment area by means of an 80 foot long, 18" PE pipe. The pipe outlets onto a 10 foot by 16 foot concrete splash pad.

Concrete & Rebar:

The splash pad concrete and rebar specifications follow the guidelines of the National Engineering Handbook publication “National Standard Construction Specification Part 642” and Portland Cement Association. Concrete shall conform to the requirement of Material Specification 531. Number 3 steel reinforcement rebar will be used for the construction of concrete slabs.

Diversions:

Clean water to the east of the pens, between the east access road and the gravel road, is conveyed to the north through an 18” corrugated metal pipe (CMP) with a control gate. During a 25 year 24 hour storm event, the CMP carries approximately 0.96 cfs at a velocity less than 1.66 fps from the 3.2 acre area.

The channel grade is designed such that the velocity will not cause excessive erosion for the type of soil and vegetation or the lining. The maximum acceptable channel velocity may range from 2.0 ft/sec on sandy soils with no vegetation to 3.5 ft/sec on clayey soils with vegetation.

Earth Fill:

Vegetation and organic material were stripped and removed from the footprint of the embankment. Organic materials or frozen soil were not used in fill material. Class C compaction was used for earth fill. Appropriate topsoil as deemed by the engineer was used as cover material on the outside slopes of the embankment. The embankment was seeded to a shallow rooted perennial grass. Pens were sloped to drain properly towards dirty water diversion.

Groundwater Monitoring Plan:

The site directly overlies the Juanita Lake and New Rockford aquifers, which are both sensitive ground water areas. Soil borings at the site indicate that the soils are clay with gravel at the bottom. In the past, monitoring of the current production wells at the facility were done periodically to assess ground water quality. Due to the increase in livestock numbers and the location of the facility over the two aquifers. The department recommends the installation of three monitoring wells, two downgradient and one upgradient from the storage area.

Operation and Maintenance Plan:

The operation and maintenance plan calls for cleaning of settling areas and repair as needed to maintain original condition. Pond must be pumped when it reaches marker to maintain capacity. Earth work must be inspected annually and repaired as needed. Drains and diversions must be mowed and maintained when soil is dry and firm. Sediment build-up or erosion in drainage ways must be cleaned and re-graded to original condition. Accumulated manure shall be removed annually and applied in accordance with the nutrient management plan.

NUTRIENT MANAGEMENT PLAN AND MANURE APPLICATION

General Conditions:

Managing and applying manure to ensure surface waters are not impacted and minimize nuisance concerns for nearby residents is a requirement. Factors to consider when choosing methods of management and application include but are not limited to: the volume of manure, the topography, location of surface and ground water sources, and distance from neighboring residents.

Application Rates:

Manure is scraped from the lots in the spring, and land applied primarily in the fall by broadcasting with a spreader. Manure is land applied at a rate not to exceed high phosphorus levels so it will be utilized for crop production and so manure will not get into waters of the state.

Record Keeping:

The facility must make the following records available to the department for review upon request for a minimum of 5 years from the date they are created:

- Document routine visual inspections of the production area and containment structures.
- How, when, and where the manure, litter, or process wastewater was reused or disposed.
- Weather conditions at the time and 24 hours prior to manure application.
- Mortalities management and practices used.
- The date, time and estimated volume of any overflow outside of the containment area.
- Annual nutrient sampling of: manure, litter and/or process wastewater and soil samples where manure has been applied that year.
- An explanation of how the manure application rates were determined with calculations of the planned and actual total nitrogen and phosphorus to be applied to each field.
- The crops grown and crop yields for all fields where manure was applied.
- If manure, litter, or process wastewater is transferred to other persons or entities; the recipient's name and address, approximate amount transferred, and the date of the transfer should be documented.
- Any actions taken to correct deficiencies.

Table 5-Expected Manure Volumes and Nutrients

	Daily	365 Days
Volume of animal manure	23,038.4 gal/day 3,080 cu ft	8.4 Mgal 1,124,200 cu ft
Nitrogen (N)	1,016.4 lbs./day	370,986 lbs.
Phosphorus (P2O5)	845.77 lbs./day	308,705 lbs.
Potassium (K2O)	964.96 lbs./day	352,212 lbs.
Storage	47.5%	
Land apply method	22.5%	

Land Application of Manure:

Estimate of land needed for manure application:

If the nutrient management plan's phosphorus risk assessment indicates a medium to low risk of movement of phosphorus, facilities are allowed to apply at agronomic nitrogen rates in accordance with the phosphorus index.

If the nutrient management plan's phosphorus risk assessment indicates a high potential for movement or if soil test show phosphorus levels in the high range, the facility is required to apply the manure at agronomic phosphorus rates.

Table 6-Nutrients and Rates

Nutrient	Rate
Phosphorus (with 20% not available)	42 lbs. P2O5/acre
Nitrogen (with 70% losses)	100 lbs. N/acre

Anticipated crop grown: corn silage, oats, alfalfa, and grass hay

Risk assessment for phosphorus: medium

Amount of land estimated for spreading at agronomical rates: 1,509.45 acres

Amount of land identified by applicant for land application: 1,831 acres

The department realizes that the nitrogen in manure is not all available to the crop the first year and therefore the manure will typically be applied at rates higher than the rates listed above. However, the organic nitrogen becomes available the following year(s) so the manure cannot be applied at the same rate subsequent years. These figures are used to estimate the total acres that would be needed over several years of application using proper rotation of cropland and/or calculating nitrogen that is carried over to the following years.

Disclaimer:

This design review accounts for those rules and regulations which govern the integrity of those structures put in place to handle manure, manure runoff, or other waste streams which may impact the waters of the state. All other rules, codes, or regulations are outside the scope of this proposed permit and the authority of this department.

PERMIT ISSUANCE PROCEDURES

PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

PROPOSED PERMIT ISSUANCE

This proposed permit application meets all statutory requirements for the department to authorize a State Animal Feeding Operation Permit. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the State of North Dakota. The department proposes to issue this permit for a term of five (5) years.

APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to issue a permit to **Spickler Ranch**. This fact sheet describes the facility and the department's rationale for requiring permit conditions.

The department will place a Public Notice of Draft on 2/27/2023 in the **Foster County Record** to inform the public and to invite comment on the proposed draft North Dakota State AFO Permit and fact sheet.

The Notice-

- Indicates where copies of the draft Permit and Fact Sheet are available for public evaluation.
- Offers to provide assistance to accommodate special needs.
- Urges individuals to submit their comments before the end of the comment period.
- Informs the public that if there is significant interest, a public hearing will be scheduled.

You may obtain further information from the department by telephone, 701.328.5210, or by writing to the address listed below.

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy Street, 3rd Floor
Bismarck, ND 58503

The primary author of this permit and fact sheet is Rachel Strommen

**North Dakota Department of Environmental Quality Public Notice
Reissue of an AFO Permit**

Public Notice Date: 2/27/2023

Public Notice Number: ND-2022-025

Purpose of Public Notice

The Department intends to take public comment to ensure the following Animal Feeding Operations AFO Permit follows the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information

Application Date: 6/9/2021

Application Number: NDAFO0810

Applicant Name: Spickler Ranch

Mailing Address: 8377 7th Parkway NE, Glenfield, ND 58443

Telephone Number: 701.674.3170

Proposed Permit Expiration Date: 4/30/2027

Facility Description

The application is for an expanding facility that is located 2 miles northeast of Grace City, ND, in East 1/2 of Section 25, Township 147, Range 64, in Foster County. The application indicates the facility will be permitted for a maximum of 2,200 beef cattle with an average weight of 1,400 lbs.

Tentative Determinations

The submitted application and supporting documentation have been reviewed by the Department. They assure that State Water Quality Standards will be protected and the system will be constructed and can be operated in compliance with the North Dakota state requirements for storage and handling of manure and wastewater for an Animal Feeding Operation.

Information Requests and Public Comments

Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by March 28, 2023 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice.

The NDDEQ will consider every request for reasonable accommodation to provide an accessible meeting facility or other accommodation for people with disabilities, language interpretation for people with limited English proficiency (LEP), and translations of written material necessary to access programs and information. To request accommodations, contact Jennifer Skjod, Acting Non-discrimination Coordinator at 701-328-5226 or jskjod@nd.gov. TTY users may use Relay North Dakota at 711 or 1-800-366-6888.

APPENDIX B – DEFINITIONS

DEFINITIONS Standard Permit (BP 2019.09.23)

1. “Animal feeding operation” means a lot or facility, other than an aquatic animal production facility, where the following conditions are met:
 - a. Animals, other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of forty-five days or more in any twelve-month period; and
 - b. Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.
2. “Bedding material” means an absorbent substance applied to dirt or concrete flooring systems, including wood shavings, wood chips, sawdust, shredded paper, cardboard, hay, straw, hulls, sand, and other similar, locally available materials.
3. “Best management practices” means schedules of activities, prohibitions of practices, conservation practices, maintenance procedures, and other management strategies to prevent or reduce the pollution of waters of the state. Best management practices also include treatment requirements, operating procedures, and practices to control production area and land application area runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
4. “Concentrated animal feeding operation” means an animal feeding operation that is defined as a large, medium, or small concentrated animal feeding operation or any animal feeding operation designated as a concentrated animal feeding operation under section 33.1-16-03.1-04. For purposes of determining animal numbers, two or more feeding operations under common ownership are considered to be a single animal feeding operation if they adjoin each other or if they use a common area or system for the disposal of wastes.
5. “Earthen storage pond” or “pond” means a topographic depression either below or above ground level, manmade excavation, or diked area formed primarily of earthen materials, although it may be lined with man-made materials or other seepage control materials, and used to store manure, process wastewater and runoff from the production area of a facility.
6. “Engineer” means a professional engineer registered to practice in the state of North Dakota.
7. “Facility” is an animal feeding operation.
8. “General permit” means a general state animal feeding operation permit. This is a permit issued to cover multiple facilities of the same or similar type, without requiring each facility

to be covered under an individual permit.

9. “Large concentrated animal feeding operation” means any animal feeding operation that stables or confines as many as or more than the numbers of animals, not including unweaned young, specified in any of the following categories:
 - a. Seven hundred mature dairy cows, whether milked or dry;
 - b. One thousand veal calves;
 - c. One thousand cattle other than mature dairy cows or veal calves. “Cattle” includes, but is not limited to, heifers, steers, bulls, and cow/calf pairs;
 - d. Two thousand five hundred swine, each weighing 55 pounds or more;
 - e. Ten thousand swine, each weighing less than 55 pounds;
 - f. Five hundred horses;
 - g. Ten thousand sheep or lambs;
 - h. Fifty-five thousand turkeys;
 - i. Thirty thousand laying hens or broilers, if the animal feeding operation uses a liquid manure handling system;
 - j. One hundred twenty-five thousand chickens (other than laying hens), if the animal feeding operation uses other than a liquid manure handling system;
 - k. Eighty-two thousand laying hens, if the animal feeding operation uses other than a liquid manure handling system;
 - l. Thirty thousand ducks, if the animal feeding operation uses other than a liquid manure handling system; or
 - m. Five thousand ducks, if the animal feeding operation uses a liquid manure handling system.
10. “Litter” means a mixture of fecal material, urine, animal bedding material, and sometimes waste feed.
11. “Manure” means fecal material and urine, animal-housing wash water, bedding material, litter, compost, rainwater, or snow melt that comes in contact with fecal material and urine, and raw or other materials commingled with fecal material and urine or set aside for disposal.
12. “Manure handling system” means all of the water pollution control structures used at the production area of a facility.

13. “Manure storage pond” means an earthen storage pond that stores liquid manure and process wastewater from indoor confined animal feeding operations.
14. “Manure storage structure” means any water pollution control structure used to contain or store manure or process wastewater. It includes earthen manure storage ponds; runoff ponds; concrete, metal, plastic, or other tanks; and stacking facilities.
15. “Medium animal feeding operation” means any animal feeding operation that stables or confines the numbers of animals, not including unweaned young, specified within any of the following ranges:
 - a. Two hundred to six hundred ninety-nine mature dairy cows, whether milked or dry;
 - b. Three hundred to nine hundred ninety-nine veal calves;
 - c. Three hundred to nine hundred ninety-nine cattle other than mature dairy cows or veal calves. “Cattle” includes, but is not limited to, heifers, steers, bulls, and cow/calf pairs;
 - d. Seven hundred fifty to two thousand four hundred ninety-nine swine, each weighing 55 pounds or more;
 - e. Three thousand to nine thousand nine hundred ninety-nine swine, each weighing less than 55 pounds;
 - f. One hundred fifty to four hundred ninety-nine horses;
 - g. Three thousand to nine thousand nine hundred ninety-nine sheep or lambs;
 - h. Sixteen thousand five hundred to fifty-four thousand nine hundred ninety-nine turkeys;
 - i. Nine thousand to twenty-nine thousand nine hundred ninety-nine laying hens or broilers, if the animal feeding operation uses a liquid manure handling system;
 - j. Thirty-seven thousand five hundred to one hundred twenty-four thousand nine hundred ninety-nine chickens (other than laying hens), if the animal feeding operation uses other than a liquid manure handling system;
 - k. Twenty-five thousand to eighty-one thousand nine hundred ninety-nine laying hens, if the animal feeding operation uses other than a liquid manure handling system;
 - l. Ten thousand to twenty-nine thousand nine hundred ninety-nine ducks, if the animal feeding operation uses other than a liquid manure handling system; or
 - m. One thousand five hundred to four thousand nine hundred ninety-nine ducks, if the animal feeding operation uses a liquid manure handling system.

16. “Medium concentrated animal feeding operation” means a medium animal feeding operation that meets either one of the following conditions:
 - a. Pollutants are discharged into waters of the state through a manmade ditch, flushing system, or other similar manmade device; or
 - 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.
17. “North Dakota Livestock Program Design Manual” means the guidelines established for use by the department in the review and permitting process for animal feeding operations.
18. “Nutrient management plan” means a written description of the equipment, methods and schedules by which:
 - a. Manure, litter, and process wastewater is beneficially reused in an environmentally safe manner such as being applied to land at appropriate agronomic rates as nutrients or fertilizers; and
 - b. Water pollution and air pollution, including odors, are controlled sufficiently to protect the environment and public health.
19. “Open lot” means livestock pens, feeding or holding areas at the production area of an animal feeding operation which are outside and not under roof, and where rain can fall directly on the lot area.
20. “Open manure storage structure” means an earthen pond or storage tank for holding liquid manure which is not covered so rainfall can fall directly into the pond or tank.
21. “Operation and maintenance plan” means a written description of the equipment, methods, and schedules for:
 - a. Inspection, monitoring, operation, and maintenance of the animal feeding operation, including manure storage structures, water pollution control structures, and the production area; and
 - b. Controlling water pollution and air pollution, including odors sufficient to protect the environment and public health. It includes emergency response actions for spills, discharges or failure of a collection, storage, treatment, or transfer component.
22. “Operator” means an individual or group of individuals, partnership, corporation, joint venture, or any other entity owning or controlling, in whole or in part, one or more animal feeding operations.
23. “Overflow” means the discharge of manure or process wastewater resulting from the filling of wastewater or manure storage structures beyond the point at which no more manure, process wastewater, or storm water can be contained by the structure.
24. “Pollutant” means “wastes” as defined in North Dakota Century Code section 61-28-02, including dredged spoil, solid waste, incinerator residue, garbage, sewage, sludge,

munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.

25. "Process wastewater" means water directly or indirectly used in the operation of the animal feeding operation 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 animal feeding operation 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 byproducts, including manure, litter, feed, milk, eggs, or bedding material.
26. "Production area" means those areas of an animal feeding operation used for animal confinement, manure storage, raw materials storage, and waste containment. The animal confinement area includes open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milking rooms, milking centers, cattle yards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes lagoons, runoff ponds, storage sheds, stockpiles, under-house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes feed silos, silage bunkers, and bedding materials. The waste containment area includes settling basins, 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.
27. "Runoff" means rainwater or snow melt that comes in contact with manure at an open lot or open manure storage area and, therefore, is defined as manure.
28. "Runoff pond" means an earthen storage pond that is used to collect and store runoff from an open lot or from a manure storage area.
29. "Seepage" means the volume of flow through a manure storage structure.
30. "Sensitive groundwater area" means vulnerable hydrogeologic settings as determined by the department such as glacial outwash deposits or alluvial or aeolian sand deposits that are critical to protecting current or future underground sources of drinking water. Areas designated as sensitive groundwater areas by the department include alluvial or aeolian sand deposits shown on Geologic Map of North Dakota (Clayton, 1980, North Dakota geological survey) and glacial drift aquifers listed in North Dakota Geographic Targeting System for Groundwater Monitoring (Radig, 1997, North Dakota department of health), or most recent editions of these publications, with DRASTIC scores greater than or equal to 100 based on methodology described in DRASTIC: A Standardized System For Evaluating Groundwater Pollution Potential (Aller et al, 1987, United States environmental protection agency).
31. "Small animal feeding operation" means any animal feeding operation that stables or confines less than the numbers of animals specified for a medium animal feeding operation.

32. “Small concentrated animal feeding operation” means a small animal feeding operation designated as a concentrated animal feeding operation under section 33.1-16-03.1-04.
33. “State animal feeding operation permit” means a permit issued by the department under this chapter to an animal feeding operation.
34. “Surface water” means waters of the state that are located on the ground surface, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, and all other bodies or accumulations of water on the surface of the earth, natural or artificial, public or private.
35. “Unconfined glacial drift aquifer” means a glacial drift aquifer that does not have an impervious soil layer which acts to prevent or minimize movement of water into, through, or out of the aquifer.
36. “Water pollution control structure” means a structure built or used for handling, holding, transferring, or treating manure or process wastewater, so as to prevent it from entering the waters of the state. The term also includes berms, ditches, or other structures used to prevent clean water from coming in contact with manure.
37. “Water quality standards” means the water quality standards contained in chapter 33.1-16-02.1.

APPENDIX C – DATA AND TECHNICAL CALCULATIONS

Table 7-Water Commission Well Data:				
Location	Use	Depth(ft)	Diameter(inches)	Aquifer
14706425ADD2*	Observation	60	2"	Juanita
14706415ACD	Domestic	-	5"	-
14706436DAB	Irrigation	200	12"	New Rockford
14706435BAA	Observation	200	2"	New Rockford
14606401DCD	Domestic	-	-	New Rockford
14706332CCC	Domestic	-	4"	New Rockford
14706425CAB*	Stock	37	5"	-
14706425AA*	Stock	58	5"	-
14706422	Unknown	-	-	-
14706415DA	Domestic	84	4"	-
14706415DAA	Domestic	96	4"	-
14706415DAA	Domestic	95	4"	-
14706415DAA	Domestic	100	5"	-
14706415DBB	Domestic	22	4"	-
14706415	Domestic	93	4"	-
14706415AA	Domestic	89	4"	-
14706415AD	Domestic	94	4"	-
14706415DA	Domestic	92	4"	-
14706415BB	Domestic	71	4"	-
14706415ACA	Unknown	483	2"	-
14706415DDB	Domestic	90	5"	-
14706415DDA	Domestic	114	9"	-
14706415DAA	Domestic	95	5"	-
14706415BB	Unknown	123	5"	-
14706415DAA	Domestic	50	5"	-

Table 7-Water Commission Well Data:

Location	Use	Depth(ft)	Diameter(inches)	Aquifer
14706415DAA	Domestic	105	6"	-
14706415ADB	Domestic	95	5"	-
14706415DDB	Domestic	58	5"	-
14706415ACC	Domestic	81	4"	-
14706436CDD	Domestic/Stock	50	4"	-
14706436DA	Stock	132	5"	-
14706436	Monitoring	180	5"	-
14706436	Irrigation	184	12"	-
14706435B	Irrigation	195	5"	-
14706435B	Irrigation	187	12"	-
14706434DC	Stock	246	5"	-
14606401D	Domestic	110	4"	-
14606401D	Domestic	240	4"	-
14606401C	Stock	142	5"	-
14606401C	Stock	-	-	-
14606402BBD	Stock	289	5"	-
14606403BCB	Stock	72	5"	-
14706317CAA	Domestic	105	5"	-
14706317CAA	Stock	100	5"	-
14706317	Stock	70	5"	-
14706317	Monitoring	23	2"	-
14706317	Monitoring	22	2"	-
14706317	Monitoring	27	2"	-
14706318CCA	Domestic	50	4.5"	-
14706330CCC	Stock	70	8"	-
14706330CBB	Stock	14	24"	-
14706330DAA	Stock	32	4"	-
14706330DAC	Stock	135	5"	-

Table 7-Water Commission Well Data:

Location	Use	Depth(ft)	Diameter(inches)	Aquifer
14706330DBD	Domestic	123	5"	-
14706332B	Stock	150	4"	-

*Wells closest to facility.

Table 8-Soil Survey Data:

Map unit	Name	Description	Bedrock depth	Seasonal water table	Unified soil class*	Perm in/hr	Lagoon Restrictions
G272B	Arvilla-Sioux complex 2-6% slopes	<p>The Arvilla series consists of very deep, somewhat excessively drained soils formed in moderately coarse textured glacial outwash and the underlying sand and gravel on glacial lake beaches, stream valley terraces and outwash plains. These soils have moderately rapid permeability in the upper part and rapid or very rapid permeability in the underlying material. Slopes range from 0 to 25 percent.</p> <p>The Sioux series consists of excessively drained soils formed in sand and gravel on outwash plains, terraces and eskers. They are very shallow over sandy-skeletal material. Saturated hydraulic conductivity is high or very high. Slopes range from 0 to 40 percent.</p>	0-60"	>6.0'	SC	2.0 - 6.0 > 20	Very limited: Seepage, depth to saturated zone, slope
G273B	Sioux-Arvilla complex 2-6% slopes	<p>The Sioux series consists of excessively drained soils formed in sand and gravel on outwash plains, terraces and eskers. They are very shallow over sandy-skeletal material. Saturated hydraulic conductivity is high or very high. Slopes range from 0 to 40 percent.</p> <p>The Arvilla series consists of very deep, somewhat excessively drained soils formed in moderately coarse textured glacial outwash and the underlying sand and gravel on glacial lake beaches, stream valley terraces and outwash plains. These soils have moderately rapid permeability in the upper part and rapid or very rapid permeability in the underlying material. Slopes range from 0 to 25 percent.</p>	0-60"	>6.0'	SC-SM	2.0 - 6.0 > 20	Very limited: Seepage, depth to saturated zone, slope

Table 8-Soil Survey Data:

Map unit	Name	Description	Bedrock depth	Seasonal water table	Unified soil class*	Perm in/hr	Lagoon Restrictions
G384B	Maddock-Hecla loamy fine sands 0-6% slopes	The Maddock series consists of very deep, well drained or somewhat excessively drained, rapidly permeable soils that formed in fine sands deposited by wind or water. These soils are on sandy glaciolacustrine or glaciofluvial, outwash and delta plains and have slopes ranging from 0 to 35 percent. The Hecla series consists of very deep, moderately well drained soils formed in sandy sediments on lake plains and glacial outwash plains. Permeability is moderately rapid or rapid. Slopes range from 0 to 6 percent.	0-60"	5.0'	SC-SM	6.0 - 20 0.6 - 2.0	Very limited: Seepage, depth to saturated zone, slope
G561A	La Prairie loam 0-2% slopes	The La Prairie series consists of very deep, moderately well drained, moderately permeable soil that formed in loamy alluvium. These soils are on terraces and bottom lands in stream valleys. Slope ranges from 0 to 6 percent.	0-60"	4.0'	ML	0.6 - 2.0	Very limited: Seepage, depth to saturated zone, slope
SC-clayey sand, ML-Silt, SM-silty sand							

Table 9-Soil Boring information:

	SB 1	SB 2	SB 3	SB 4
Elevation	97	96.5	97	97
0 to 1	TS	TS	TS	TS
1 to 2	TS	TS	TS	TS
2 to 3	CL	CL	CL	CL
3 to 4	CL	CL	CL	CL
4 to 5	CL	CL	CL	CL
5 to 6	CL	CL	CL	CL
6 to 7	GP/H2O	GP/H2O	GP/H2O	GP/H2O
7 to 8	GP	GP	GP	GP
8 to 9	GP	GP	GP	GP
9 to 10	GP	GP	GP	GP
10 to 11	GP	GP	GP	GP

APPENDIX D – RESPONSE TO COMMENTS

Comments received during the public comment period will be addressed and placed here.

STATE ANIMAL FEEDING OPERATION PERMIT

NDAFO-0810

In compliance with North Dakota Administrative Code (NDAC) 33.1-16-03.1 of the North Dakota Department of Environmental Quality rules as promulgated under Chapters 61-28 and 23-25 of North Dakota Century Code (NDCC), authorization of the **Spickler Ranch** facility located in the east ½ of Section 25, Township 147 N, Range 64 W, in Foster County, North Dakota is granted provided the following conditions are met:

- 1) The application indicated the facility is a CAFO that will house **2,200 Beef cattle**. The department must be notified in writing if there is an expansion in the number of livestock, change in ownership of the facility, significant changes in the physical operation of the facility or if the lot area where livestock are concentrated is expanded. Changes may require an update to the permit or issuance of a new permit.
- 2) Operation and Maintenance plans and standard operating procedures must be followed as submitted to the department. Changes to the Operation and Maintenance plan must be reviewed by the department prior to being implemented. There must be regular and adequate maintenance and upkeep to prevent degradation of the structures, to ensure the system continues to operate as designed, to ensure the storage pond does not overflow, and to ensure manure or wastewater does not discharge into waters of the state. Operation and maintenance plans shall include:
 - a. Weekly inspections of all storm water diversion devices, runoff diversion structures and devices channeling runoff to the manure storage structure;
 - b. Daily inspection of water lines, including drinking water or cooling water lines; and
 - c. Weekly inspections of the manure storage structures noting the level of liquid in the structure as indicated by the depth marker. (North Dakota Livestock Program Design manual, section 6)
- 3) The operator shall notify the department within thirty days of construction completion of the manure storage or water pollution control structures. The operator shall provide certification from the engineer or the designer that construction of manure storage and water pollution control structures was completed according to designs provided with the application or the department-approved changes. (NDAC 33.1-16-03.1-07(5))
- 4) Mortality shall be disposed of in accordance with NDCC section 36-14-19, in a manner acceptable to the North Dakota Board of Animal Health, and so they will not impact waters of the state. Burial is the option for this facility. Mortality will be buried on the property and be at least four feet below the ground level and covered with dirt to that depth. Mortality shall not be buried in an area where there could be a surface or ground water impact such as along riverbanks or in sandy soils with high water tables. The best locations for burying are on higher areas with heavy clay soil that are away from water and drainage ways.
- 5) Land application of manure shall be in accordance with the nutrient management plan. Manure shall be applied in a manner so it will not be washed into waters of the state. When applying manure within ½ mile of an occupied residence, building, or public area where people may be present; it is recommended that the operator review and follow the guidelines of the North Dakota Livestock Program Design Manual, 7.6, section 4 and incorporate the manure within 8 hours of land application.
- 6) The following records pertaining to nutrient management shall be maintained for a minimum of 5 years:
 - a. The crops grown and expected realistic crop yields;
 - b. The date(s) manure, litter or process wastewater is applied to each field;
 - c. Weather conditions during application, 24 hours prior and following application;
 - d. Test methods used to sample and analyze manure, litter, wastewater and soil;
 - e. Results from annual testing of manure, litter, and process wastewater, and annual soil sample results for land where manure was applied that year;
 - f. An explanation of how the application rates were determined in accordance with standards established by the department;

- g. Calculations showing nutrients applied to each field, including other nutrient sources;
 - h. Total amount of nutrients actually applied to each field, including documentation of calculations for the total amount applied, and;
 - i. Method used to apply the manure, litter or process wastewater; inspection of manure application equipment including method, frequency, dates and repairs made if leaks were found; and setbacks, vegetated buffers or other alternative practices used when land applying manure near surface water or potential conduits to surface water. (North Dakota Livestock Program Design Manual, 7.7, section 2)
- 7) If manure is transferred to other persons or entities not associated with the facility, the following conditions shall apply:
- a. Owners/operators shall provide the recipient of the manure, litter or process wastewater with the most current nutrient analysis prior to transfer;
 - b. The analysis provided shall be consistent with the requirements of section 7.4 in design manual, and;
 - c. The owners/operators of the CAFO shall retain records for five years after the transfer date documenting the recipient's name and address, the approximate amount of manure transferred, and the date the manure was transferred. (North Dakota Livestock Program Design Manual, 7.7, section 3)
- 8) All open manure storage structures shall maintain a depth marker which clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation from a 25-year, 24-hour rainfall event.
- 9) Any deficiency discovered during an inspection shall be corrected as soon as possible. Chemicals or other contaminants handled on site shall not be disposed of in a structure used for storage or treatment of manure, process wastewater or stormwater unless it is specifically designed for that purpose. The operator of a livestock facility should maintain a rain gauge at the production area and record measurable rainfall events. (North Dakota Livestock Program Design manual, 6.2)
- 10) The owner/operator of a CAFO shall make the following records available to the department for review upon request:
- a. Records documenting the visual inspections;
 - b. Weekly records of the depth of the manure and process wastewater in the liquid manure storage structure as indicated by the depth gauge in storage structure; records documenting any actions taken to correct deficiencies;
 - c. Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction;
 - d. Records of management and practices used;
 - e. Record documenting current design of any manure storage structures, including solids accumulation volume, design treatment volume, total design volume and the approximate number of days of storage capacity;
 - f. Records of the date, time and estimated volume of any overflow; and records documenting the land application of manure. (North Dakota Livestock Program Design Manual, 6.5)
- 11) This permit shall in no way authorize the discharge of any objectionable odorous air contaminant which is in excess of the limits established in NDAC Chapter 33.1-15-16 of the North Dakota Air Pollution Control Rules. If the department determines odors from the facility exceed limits, steps shall be taken, within a reasonable time, to control and reduce odors from the facility site. This may include requiring the installation of a cover on the ponds or other odor control measures.
- 12) There must be regular and adequate maintenance and upkeep to prevent degradation of the structures, to ensure the system continues to operate as designed, to ensure the containment system does not overflow, and to ensure manure or wastewater does not discharge into waters of the state.
- 13) The department must be notified if there is a change in address or other contact information for the facility.
- 14) The operator shall install three monitoring wells at the facility, one up-gradient (north) and two down-gradient (south/southwest) of the facility. Annual groundwater monitoring shall be completed by the

Effective Date: Date of Signature
Expiration Date: April 30, 2027

department during inspection. If groundwater monitoring indicates that the facility is detrimentally impacting groundwater, the facility will need to take corrective action to prevent groundwater impacts.

The above conditions are considered part of the proper operation of the facility. If any of the above conditions are not met, the department must be notified in writing, within five (5) days. Any noncompliance with the permit conditions or with state requirements must be reported to the department as soon as possible after the facility becomes aware of the noncompliance condition. Failure to meet these requirements may result in monetary penalties and/or revocation of this permit.

Construction may begin upon signature of this permit by the department. The permit is based on construction being completed as per the design plans reviewed by the department. If any structural changes are made that are different than these design plans, the department must be notified in writing and prior approval obtained, before making these changes.

Authorized department personnel shall be permitted access to the facility to determine compliance with department rules and regulations. Department inspections will abide by all security measures implemented by the owner or operator to protect the health and safety of the workers and animals at the facility.

The owner/operator of this facility shall comply with all State and Federal environmental laws and rules, and shall also comply with all local building, fire, zoning and other applicable ordinances, codes, and rules.

Notice of Completion and results of testing completed on the clay liner or the manure storage structures shall be received by the department within 30 days of completion of construction.

I certify that I have read and understand the above information and agree to operate the facility in a manner that will meet all the conditions listed herein.

OWNER/OPERATOR CONSENT

FOR THE NORTH DAKOTA
DEPARTMENT OF
ENVIRONMENTAL QUALITY

By _____
(signature)

By _____

By _____
(print name here)

By Karl Rockeman, Director
Water Quality Division

Date _____

Date _____