



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

November 26, 2019

Kirk Aughenbaugh  
Ratio, LLC  
43204 U.S. Highway 14  
De Smet, SD 57231

RE: Ratio, LLC - State General Permit Application  
Plans and Specifications Review

Dear Mr. Aughenbaugh:

The Department of Environment and Natural Resources received three copies of your application for state permit coverage under the 2017 *General Water Pollution Control Permit for Concentrated Animal Feeding Operations* (general permit), **permit application number SDG-100578**. The proposed manure management system will be located in the Northwest  $\frac{1}{4}$  of Section 32, Township 111 North, Range 67 West in Hand County, South Dakota.

Your proposed manure management system is for a new housed lot feeding a maximum of 9,060-head of swine consisting of 800-head of swine weighing less than 55 pounds and 8,260-head of swine weighing 55 pounds or more. The proposed manure management system will consist of one gilt developer unit (GDU) barn with a deep pit, one gestation barn with a deep pit, one farrowing barn with shallow pull-plug pits, a gravity transfer pipe between the farrowing barn and the gestation barn, and no acres of drainage area. The designed capacity of the deep pits is for 365 days of liquid storage capacity.

We have reviewed and hereby conditionally approve the plans and specifications for your proposed manure management system. This approval expires on November 26, 2021, unless construction of the manure management system has been started by that date. Once construction has commenced, you will have three years to complete construction and submit a Notice of Completion. If construction is not completed within the three year timeframe this approval will expire. One copy of the approved plans and specifications are being retained for our files and requirements you must implement are listed on the attached pages.

If any deviations are required from the approved plans, as-built plans will be required. A complete set of as-built plans will be required if any major deviations result. If you plan to make any of the following modifications to your approved permit application prior to obtaining permit coverage, you will need to start the permitting process over which will require a new public notice. These

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modifications include: a change to the location of a process wastewater containment structure where additional soil borings are needed; a change to the type of manure or process wastewater storage structure; an increase in the amount of manure or process wastewater generated; a decrease in the manure or process wastewater storage volume in the manure containment system; or a modification to the nutrient management plan that results in a change in crop rotation or an increase in the land application acres.

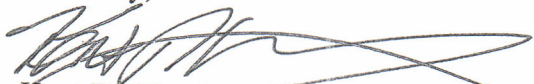
Upon completion of construction, the enclosed Notice of Completion must be returned to the department. **You cannot populate any of the proposed barns or use the proposed manure management system to store manure until a Certificate of Compliance is issued and coverage is granted under the 2017 state general permit. The department will issue a Certificate of Compliance and coverage under the 2017 state general permit after the Notice of Completion has been received and a satisfactory construction inspection has been conducted.**

Continued compliance is dependent upon you performing proper operation and maintenance activities. You will be liable for any noncompliance with applicable South Dakota environmental laws or regulations.

Our review covers works of sanitary significance and does not cover items such as quality of material, structural soundness, or electrical and mechanical design features. Approval of the plans and specifications does not in any way release the applicant from the responsibility that the project will be an operable facility when construction is completed.

If you have any questions regarding the content of this letter, please feel free to contact Aviana Knochel, Feedlot Permit Program at (605) 773-3351. Thank you for your cooperation.

Sincerely,



Kent R. Woodmansey, PE, Engineering Manager  
Feedlot Permit Program  
Phone: (605) 773-3351

cc: Brad Woerner, PE, Stockwell Engineers, Inc., Yankton, SD  
Ian Olson, Centrol, 351 Burlington Circle, PO Box 236, Marshall, MN 56258  
Hand County Commissioners

Enclosures: Construction Schedule Postcard  
Notice of Completion Form

## REQUIREMENTS

The following requirements must be implemented before we will issue a Certificate of Compliance and coverage under the 2017 state general permit. Failure to implement these requirements will invalidate this approval.

### Plans & Specifications

The plans and specifications review is to determine whether seepage, storage, and other design requirements will be met.

#### 1. Water Usage and Water Right Permit

Your engineer indicates your water supply will include well water and rural water. State Water Rights law requires any livestock operation to obtain a water right permit if the operation uses more than 25,920 gallons per day (18 gallons per minute) or if the combined maximum pump capacity exceeds 25 gallons per minute. This water usage is for the well(s) only and does not include any water supplied by rural water. Information concerning this permit can be obtained by calling Eric Gronlund at (605) 773-3352. **Please contact Eric so he can assist you in determining if you need to obtain a water right permit.**

Based on the department's experience with new swine operations similar in size to your project, those operations needed to obtain a water right permit. The department recommends you consider applying for a water right permit now as opposed to after construction to reduce the risk of the Water Management Board not issuing a water right permit.

If you do not obtain a water right permit, you will need to verify the facility will not exceed the maximum allowable daily water usage from the proposed well(s). The permit requires producers to install a flow meter between the proposed well(s) and the first water use location prior to receiving a Certificate of Compliance and permit coverage. **Daily pumping records must be maintained onsite for review during department inspections.** If after one year at normal site production levels it can be shown that the maximum daily water usage from the well was not exceeded, record keeping may be terminated. **If the usage records indicate the daily water usage is exceeding the maximum allowable rate, you will be required to apply for a water right permit.**

#### 2. Cool Cells

The submitted plans and specifications show cool cells will be used as part of the farrowing barn ventilation system. **If water in the cool cells will be periodically replaced or removed from the cool cells before winter, it must be contained within the manure containment system or immediately land applied in accordance with the nutrient management plan.** The general permit does not allow wastewater from cool cells to be discharged to waters of the state.



## REQUIREMENTS CONTINUED

### 3. Drain Tile

The submitted plans indicate drain tile will be installed around the perimeter of each deep pit, with a sump and standpipe. The operation and maintenance (O&M) guideline indicates the liquid level in the standpipes will be checked weekly and after major rainfall events. **Any liquid removed from the tile sumps is considered process wastewater and must be placed in the deep pits to prevent a discharge. The department may require your engineer to submit revised capacity calculation for the pits including the excess water.**

### 4. Tile Pond

The tile pond shown on Site Plan A is not included as part of this approval. **If a permanent tile pond will be installed, your engineer must submit plans and specifications for the tile pond, a Soil Plant Air Water (SPAW) hydrology model and sizing calculations and submit a revised O&M guideline which includes an inspection program for inspection of the tile pond on a weekly basis.**

### 5. Constructability

The soil borings submitted with your proposed project do not indicate that there is shallow ground water present. However, the plans show the use of foundation tile. If you are dewatering during construction, you must comply with the requirements of the construction stormwater permit. Information concerning this permit can be obtained by contacting the Surface Water Quality Program at either [stormwater@state.sd.us](mailto:stormwater@state.sd.us) or 1-800-737-8676.

### 6. Office Septic System

Your submittal indicates a septic system will be installed at each of the two office areas. Plans and specifications for any new on-site system, except those that are conventional onsite systems that service an individual residence, must be submitted to the department for review and approval prior to construction. A certified installer must install the on-site septic systems. For more information contact Matt Cherney at (605) 773-3351.

## State General Permit

You will be required to operate your feeding operation and manure management system in accordance with the requirements in the general permit.

### 1. Environmental Training

As part of obtaining a Certificate of Compliance and coverage under the general permit, producers are required to participate in an approved environmental training program. **Verification that a producer or on-site representative has attended an approved**

## REQUIREMENTS CONTINUED

**environmental training program within the past three years must be submitted to the department before a Certificate of Compliance and coverage under the general permit can be issued.**

Our attendance records show that neither you nor anyone registered as representing your facility have attended training within the past three years. Currently, the department has approved the environmental training program developed by the SDSU Agriculture and Biosystems Engineering Department's Cooperative Extension Service. The next training session is scheduled for Wednesday, December 11, 2019, in Huron. Announcements for this and future training dates and locations may be found on our website at <https://denr.sd.gov/des/fp/manuremanagementtraining.aspx>. The training is a day in length and runs from 8:30 a.m. to 4:30 p.m.

### 2. Ground Water Monitoring

Based on the system design, soil boring logs, and other published reports and information, this system does not appear to overlie a shallow aquifer and should not impact ground water. Therefore, a Ground Water Discharge Permit and groundwater monitoring will not be required. Should the design or operation of the facility change appreciably, new hydrogeological information become available, or any contamination problems be reported, the department reserves the right to reassess the need for possible remediation, monitoring of ground water, or a Ground Water Discharge Permit. For additional information concerning ground water monitoring, please contact Troy Roth at (605) 773-3351.

### 3. Composting of Animal Mortalities

According to your permit application, the proposed composting structure will not utilize manure as a composting agent for the composting of mortalities. Proper disposal of animal mortalities, including composting, is regulated by the South Dakota Animal Industry Board. **Please contact the Animal Industry Board at (605) 773-3321, for information on their composting requirements.** You must also prevent a discharge of any pollutants from your mortality composting building to surface waters. If for any reason you plan to use manure as a composting agent in the future, you must obtain department approval prior to making that change. Also, if you plan to modify your proposed composting structure, a revised site map will need to be submitted by your engineer after any modifications are completed.

Since manure will not be used as a composting agent, DENR approval of the compost structure is not required at this time. You are responsible for operating and maintaining the compost facility to prevent runoff from occurring and this area will be inspected as part of the DENR operation and maintenance inspections. If manure or process wastewater will be used in the composting process, DENR approval of the plans and specifications and general permit coverage for the compost building is required prior to construction.

## REQUIREMENTS CONTINUED

### 4. Notification

Construction Schedule - You or your engineer must notify the department of the proposed construction schedule for your project to allow our personnel the opportunity for construction inspections. Please fill out the enclosed postcard and return it to us prior to beginning construction of the manure management system. If any of the dates change from the ones submitted on the postcard, please notify us at (605) 773-3351 and ask for Aviana Knochel.

Other Government - You are responsible for contacting your local planning and zoning office to determine if there are any local ordinances or requirements with which you need to comply. If a stream, lake, or wetland will be dredged or filled during the construction of the feeding operation, you need to contact the United States Army Corps of Engineers' South Dakota Regulatory Office at (605) 224-8531 prior to beginning construction of the manure management system.

Notice of Completion - The Notice of Completion form must be completed by your engineer and returned to the department when construction of the manure management system is complete. The department cannot issue you a Certificate of Compliance and coverage under the 2017 state general permit until we receive a Notice of Completion. **You cannot populate any of the proposed barns or use the proposed manure management system to store manure until a Certificate of Compliance is issued and coverage is granted under the 2017 state general permit.**

### 5. Initial Nutrient Management Plan (NMP)

Your submitted NMP indicates that manure and wastewater will be applied in the spring, summer, and fall, and that the method of manure application will be injection and sprinkling with and without incorporation. If solid manure or process wastewater is applied to fields other than cropped fields, grass, alfalfa, pasture land, or no-till cropland, liquid manure and process wastewater must be incorporated within 24 hours and solid or semi-solid manure must be incorporated within 5 days. Additional requirements pertaining to your NMP are listed on the following pages.

#### A. Endangered Species Action Plan

An Endangered Species Action Plan was not included with your NMP as no fields are within ¼ mile of a stream where Topeka shiners have been observed or have potentially occupied according to the U.S. Fish and Wildlife Service.

#### B. Annual Soil Testing

Annual soil samples from 0 to 2 feet are required on all manure land application fields prior to manure application.

## REQUIREMENTS CONTINUED

### C. Approved Land Application Fields

The fields listed in Table 1 below are approved for the land application of manure or process wastewater. **Before manure or wastewater can be applied to these fields, you must obtain a current soil test and use the table on page 34 of the 2017 general permit to determine whether the field fits into a nitrogen need, one-year phosphorus crop removal, five-year phosphorus crop removal, or no application category based on the current phosphorus level of the field and the predicted annual erosion.** Please refer to the table on page 34 and the annual nutrient management requirements beginning on page 35 of the 2017 general permit prior to the land application of manure to determine the proper procedure for calculating the appropriate application rate for each specific field.

**Table 1: Ratio, LLC – Approved Land Application Fields**

CPA-63 Line #	Field ID	County	Legal Description	Available Acres	Soil Sampling Requirements	
					0-2 feet	Additional
1	1	Hand	N ½, Section 8, T110N, R67W	279.4	Yes	No
2	2	Hand	Section 5, T110N, R67W	253.3	Yes	No
3	3	Hand	Section 6, T110N, R67W	472.6	Yes	No
4	4	Hand	Section 31, T111N, R67W	496.2	Yes	No
5	5	Hand	Section 32, T111N, R67W	296.4	Yes	No
<b>Total Available Acres</b>				<b>1,797.9</b>		

Please note in your initial NMP the estimated time it will take to build your listed fields up to 50 ppm (Olsen test) or 75 ppm (Bray-1 test) of phosphorus. You may need additional land in order to apply to your fields based on phosphorus removal at that time.

### D. Land Application to Saturated, Snow-Covered, or Frozen Soil

The fields identified on lines 1, 2, 3, 4 and 5 of your submitted NMP are designated as winter or emergency application areas. The winter application maps identify the appropriate setbacks that need to be excluded from land application when the soil is saturated, snow-covered, or frozen and land application is absolutely necessary. You should notify the department and review the winter field map prior to land applying during these soil conditions.

Incorporation to non-vegetated crop ground is required for winter application. If incorporation is not possible, winter application may only be to cropped fields, grass, alfalfa, pasture land, or no-till cropland. The general permit requires manure or process wastewater applied to non-vegetated cropland to be incorporated; liquid manure and process wastewater must be incorporated within 24 hours and solid or semi-solid manure must be incorporated within 5 days.

## REQUIREMENTS CONTINUED

### E. Buffer Zones

As required by the general permit, the producer shall maintain at least a 100-foot buffer zone or 35-foot vegetated buffer between any manure land application areas and any downslope surface waters, open tile line intake structures, sinkholes, or other conduits to surface waters of the state shown on the initial nutrient management planning maps or present at the time of application.

### F. Modification to Crop Rotation

Your initial NMP identifies a specific crop rotation for each field and includes a list of alternative crops that may be substituted into the rotation. If for any reason an alternative crop that is not included in the list of alternative crops is planned to be grown, that change would be considered a major modification and would require a revised alternative crop list to be submitted to the department for review and approval.

### G. Certified Soil and Manure Testing Laboratories

As part of your annual nutrient management planning requirements, soil and manure tests must be analyzed by certified soil testing and manure testing labs. The laboratory analyzing the soil samples must participate in the **North American Proficiency Testing Programs' Proficiency Assessment Program** and the labs that are currently certified are listed on the following website: <http://www.naptpprogram.org/pap/labs>. The laboratory analyzing the manure or process wastewater must be certified by the **Manure Testing Laboratory Certification Program** and the manure testing labs that are currently certified are listed on the following website: <http://www2.mda.state.mn.us/webapp/lis/manurelabs.jsp>.

If you or your crop consultant sends your soil or manure samples to a lab that is not listed on either of these websites, you and/or crop consultant may want to tell them that you need to use a certified lab so they can become certified.

### H. Field Addition Requirements

To add fields to your approved NMP, you must submit the required information for each additional field to the department for our review and approval. Information on adding fields to your approved NMP may be obtained from your local Natural Resources Conservation Service (NRCS) office. You may also contact us for assistance at (605) 773-3351, or visit our website at <http://denr.sd.gov/des/fp/FieldAdditions.aspx> for instructions on adding fields to your NMP. **You cannot apply manure to any fields not included in your approved NMP.**



## REQUIREMENTS CONTINUED

### I. Mobile Land Application Systems

If a mobile land application system using temporary piping will be used for the land application of liquid manure or process wastewater, the equipment must be equipped with an on-board radio controller and flow meter that can be overseen by the applicator. See Section 1.4.4.1.m. on page 30 of the 2017 general permit for more information on this requirement.

### 6. Setback Distance and Water Wells

The manure management system and the application sites must be located at least 100 feet from a private well owned by you if the top of the aquifer is 100 feet or more below the land surface, 150 feet from a private well owned by you if the top of the aquifer is less than 100 feet below the land surface, 250 feet from a private well not owned by you and 1,000 feet from any public supply well. These areas cannot be included in the land application areas. You must provide information indicating whether any public water wells or water sources exist within 1,000 feet of a manure containment structure or the manure application sites.

### 7. Other Permits That Will or May Be Required

Storm Water Permit - You obtained a stormwater permit for the construction of the access road to the facility, **permit application number SDR10J638**. Information concerning this permit can be obtained by calling the Surface Water Quality Program at 1-800-737-8676. **A copy of this plan must be kept on-site during construction for review by DENR inspectors.**

Emergency Power Generator - The department has observed that emergency power generators have been installed at similar sized operations. If an emergency power generator will be installed at your operation it may require that you obtain an air quality permit. Please contact Kristen Hendricks with the department's Air Quality Program at (605) 773-3151, to determine whether an air quality permit is required. If an air quality permit is required, you must have that permit prior to using the generator.

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), you 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. Contact your local SD DOT area office for more information on this permit. In addition, please contact your county highway superintendent to determine if your county has similar requirements.