

WATER PERMIT NO. 8243-3

Name of Applicant: **Kodiak Pork RE, LLC**

Address: **PO Box 188, Pipestone MN 56164** Phone: **507 825 4211**

Amount of Water Claimed: **0.13 cfs** Total Acres: **NA**

Source of Water Supply: **groundwater (2 wells)**

Water to be used for: **commercial** County: **Brookings**

Type of Waste Disposal System:

Location: **approximately 10 miles east of Brookings**

PRIORITY Date Received: **10-17-16** Application/License Fee: **\$ 700**

Corrected Application Received: **-** Period of Annual Use: **Jan – Dec 31**

Remarks:

Diversion Point: **SE 1/4 SE 1/4 Sec 3-T109N-R48W**

Land to be Irrigated: **NA**

Depth of Well: **600 feet deep**

Well Driller: **Dave Putzke Well Drilling**

Remarks:

Type of Map: **Plat**

Prepared by:

Reviewed and the Number Assigned on: **10-17-16**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

			3		
				⊗ ⊗	

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8243-3</u> (office use only) Hydrologic Unit <u>10170202</u>
	Basin <u>Sioux River</u>
	Newspaper <u>Brookings Register</u>
	<u>605-692-6271</u>

RECEIVED

OCT 17 2016

WATER RIGHTS
PROGRAM

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use(s) of water:

☐ Municipal	☐ Water Distribution System	☐ Recreational	☐ Institutional
☐ Rural Water System	☒ Commercial	☐ Fish & Wildlife	☐ Geothermal
☐ Domestic (over 18 gpm)	☐ Industrial	☐ Other	

Type of Application:
(check one)

☒ New	☐ Vested Right (Use predates Mar 2, 1955)	☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____		
☐ Amendment/Correction to Permit No. _____		

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

1. Name to Appear on Water Permit Kodiak Pork RE, LLC

Mailing Address 1300 S HWY 75, PO Box 188 Pipestone MN 56164
(Address) (City) (State) (Zip Code)

Phone 507-825-4211 Mobile _____ Email Barry.Kerkaert@pipestone.com

2. Amount of water claimed 0.13 *CFS or 60 **GPM and 46.03 ***AF or 15M Gallons
Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use)

3. Source of water supply Fractured Bedrock Aquifer4. Location of point of diversion SE 1/4, SE 1/4 Sec 3-T109N-R48W County Brookings(example - wells in SW1/4 NE1/4 section 12-T104N-R53W)If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☒ Yes ☐ NoIf "Yes," where will water be used? SE 1/4, Sec 3-T109N-R48W(example - NW1/4 section 12-T104N-R53W)5. County or counties where water will be used Brookings6. Annual period during which water is to be used Jan - Dec 31

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

Kodiak Pork RE, LLC is a new swine farrowing operation which is permitted for a maximum of 7,224 animals over 55 lbs. and 640 under 55 lbs. The CAFO permit has been approved by SD DENR and construction is underway. A rural water connection will be established to the site as well.

I, Dr. Barry KerkaertName of PersonManaging PartnerTitle (if applicable)

, the applicant, certify under

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

**SOUTH DAKOTA
WATER PERMIT NO. 8243-3**

Date of first receipt of application October 17, 2016.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8243-3 to Kodiak Pork RE, LLC, PO Box 188, Pipestone MN 56164 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 8243-3 appropriates 46.03 acre-feet annually at a maximum diversion rate of 0.13 cubic feet of water per second from two wells to be completed into the Sioux Quartzite Aquifer (approximately 600 feet deep) located in the SE 1/4 SE 1/4 Section 3 for commercial use in a swine facility located in the SE 1/4 Section 3; all in T109N-R48W.
2. The water appropriated shall be used for the purpose of commercial use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 8243-3 is January 2, 2017.
5. The date from which applicant may claim right is October 17, 2016.
6. One-fifth of the construction is to be completed on or before July 2, 2019.
7. All construction is to be completed on or before January 2, 2022.
8. Water is to be put to beneficial use on or before January 2, 2026.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The wells approved under Water Permit No. 8243-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under this permit shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The new well authorized by Permit No. 8243-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Permit No. 8243-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-112 for concentrated animal feeding operations.

(continued)

Supplemental Information

(type or print)

1. Well Information

(check one or both as applicable) ☒ Drilling new well(s) ☒ Using existing well(s)

- a) If new wells, how many 2 Have test holes been drilled ☒ Yes ☐ No Drilled by Putzke's Well Drilling & Pump
(if yes, please provide copies of logs)
- b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by Putzke's Well Drilling & Pump

For either Existing or Proposed Wells:

- c) Well Depth (required) 600' Depth to Top of Water Bearing Material _____ Depth to Water from Surface 75'
- d) Distance to nearest domestic well on applicant's property None Property owned by others ≈3,500'

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) _____
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System

3. Dugout Information

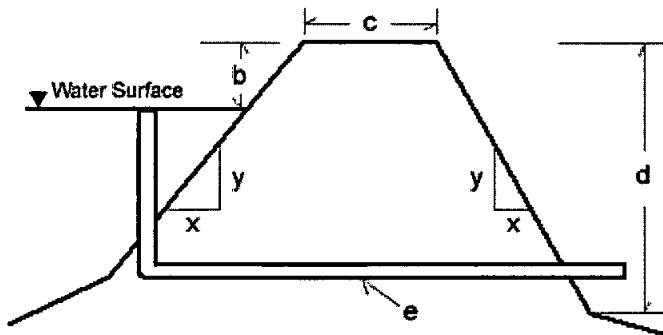
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

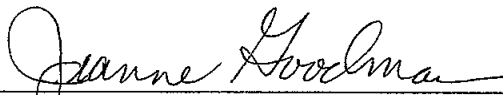
- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

- b) Freeboard _____
- c) Crest Width _____
Crest Length _____
- d) Height _____
- e) Primary Outlet Capacity _____
If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream _____
Downstream _____
- h) Surface Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres

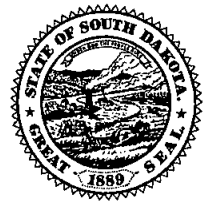


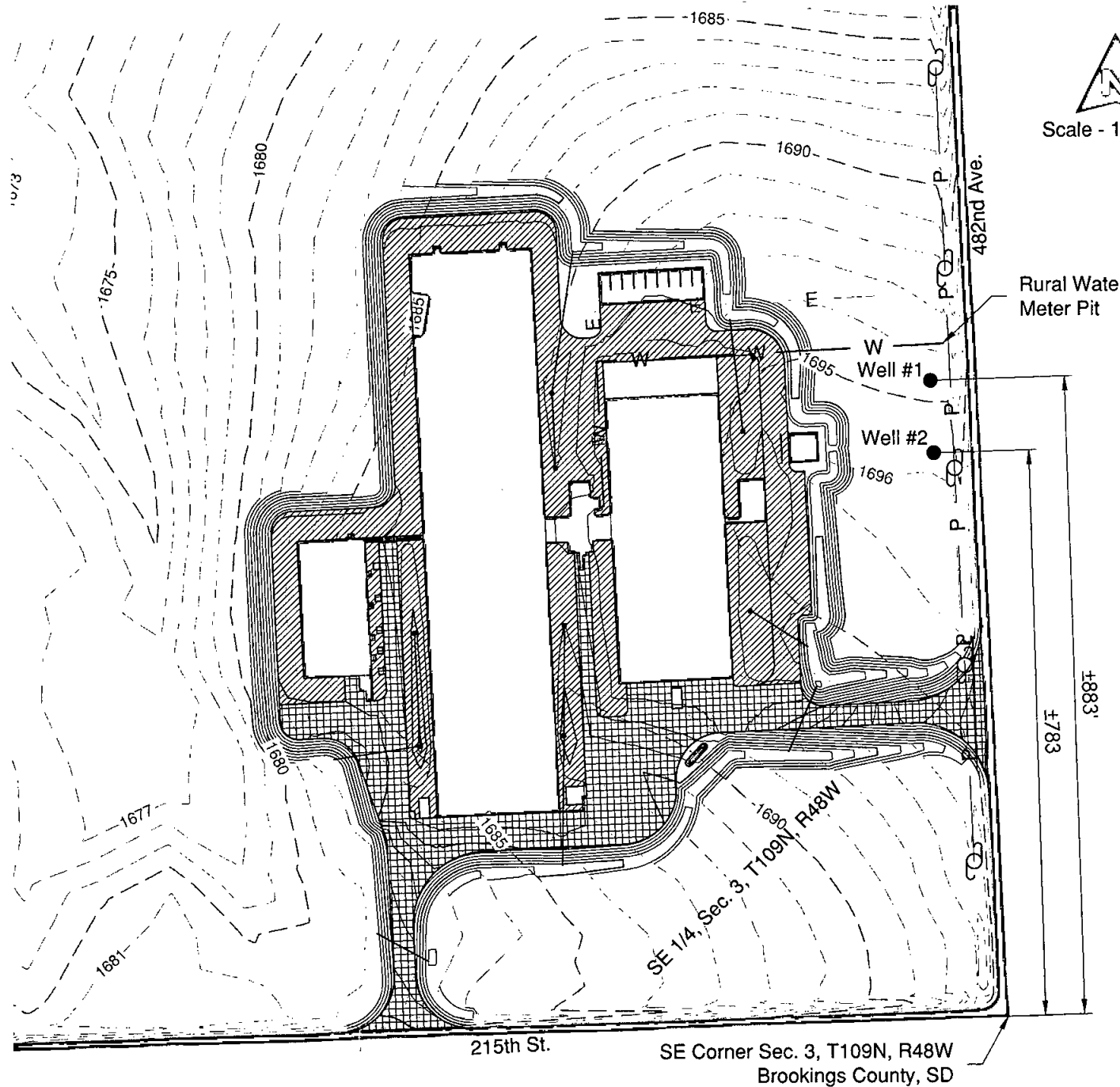
4. Permit No. 8243-3 is subject to compliance with all existing and applicable Water Management Board Rules including but not limited to:
 - a) Chapter 74:54:01 Ground Water Quality Standards,
 - b) Chapter 74:54:02 Ground Water Discharge Permit,
 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - d) Chapter 74:51:02 Uses Assigned to Lakes,
 - e) Chapter 74:51:03 Uses Assigned to Streams, and
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Sioux Quartzite aquifer.
6. Water Permit No. 8243-3 authorize a total annual diversion of 46.03 acre feet of water.

WATER MANAGEMENT BOARD

By: 
Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JAN 30 2017
date





Scale - 1" = 200'

STOCKWELL
 STOCKWELL ENGINEERS, INC.
 215 WALNUT ST.
 YANKTON, SD 57078
 PH: 605.665.8092
 FAX: 605.665.0523

RECEIVED
OCT 17 2016
WATER RIGHTS PROGRAM

Kodiak Pork RE, LLC
Well Locations
 Brookings County, SD

REVISION SCHEDULE	
ISSUE/REVISION	DATE

SEI PROJECT #: Y15163

WELL LOCATION



SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Lot 1 of Kodiac Addition

Location

1/4 SE 1/4 Sec 3

Twp

109N

Rg 48W

Well Owner:

Business Name:

Pipestone System

Address:

P.O. Box 370

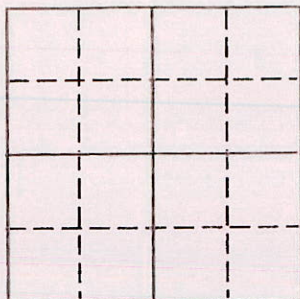
City, State, Zip:

Pipestone MN 56164

County

Brookings

North



Please mark well location with an "X"

Well completion Date

8-24-16

1 Mile

Distance to nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)

? 200 ft. from

Hogs

(identify source)

PROPOSED USE:

- ☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring

METHOD OF DRILLING:

Rotary

CASING DATA:

- ☐ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
19.18 LB/FT	6 IN	0 FT	182 FT	10 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
Portland 1 #		Lb/gal	Ft	Ft
		Lb/gal	Ft	Ft

Describe grouting procedure 3yds of slurry pumped by Pulling Rig

SCREEN:

- ☐ Perforated pipe ☐ Manufactured

Diameter _____ Inches Length _____ Feet

Material _____

Slot Size _____ Set From _____ Feet to _____ Feet

Other information _____

WAS A PACKER OR SEAL USED?

- ☐ Yes ☐ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

- ☐ Yes, How?

5 gallons of

Lab sample sent to for water quality analysis

- ☐ No, Why Not?

chlorine pump

WELL LOG:

DEPTH

FORMATION

FROM

TO

Top soil

0

2

yellow clay

2

126

Blue clay

126

180

Granite

181

182

Granite

182

615

STATIC WATER LEVEL

75

FEET

If flowing: closed in pressure

PSI

GPM flow

through

Inch pipe

Controlled by

- ☐ Valve

- ☐ Reducers

- ☐ Other

Reduced flow rate

GPM

Can well be completely shut in?

WELL TEST DATA:

- ☐ Pumped Describe:

AIR

- ☐ Bailed

- ☐ Other

Pumping Level Below Land Surface

Ft. After

Hrs. pumped

GPM

Ft. After

Hrs. pumped

GPM

If pump installed, pump rate:

GPM

REMARKS

56 gpm

This well was drilled under license #

439

And this report is true and accurate.

Drilling firm:

Dave Putzke

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

RECEIVED

OCT 17 2016

Date:

523 E Capitol Ave.

Pierre SD 57501

WATER RIGHTS PROGRAM

Please return WHITE COPY to: DENR Water Rights

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 10/17, 20 16

RECEIVED OF Kodiak Pork RE LLC PO Box 370 Pipestone MN 56164

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>8243-3</u> to Appropriate Water, to construct and to put water to beneficial use	500	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. <u>3</u> after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>8243-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law) TOTAL	700	00

No. **07935**

By James Goodman
Chief Engineer

Schlaak, Karen

From: Gronlund, Eric
Sent: Wednesday, October 05, 2016 4:09 PM
To: 'Todd Van Maanen'
Subject: RE: Kodiak Pork

Item No. 2 under the volume portion the application states 15M under AF and 15M under Gallons. I presume the acre foot amount should be 46.03 ac-ft with is the conversion of 15M gallons to ac-ft.

Item No. 4, the map shows the well will be in the SE ¼ SE ¼ Section 3, T109N, R48W and the facility as a whole is to be located in the SE ¼ Section 3.

Form 2A Well information indicates test holes have been drilled. Application should include these test hole logs.

As I'm sure your aware my review of the application is from a completeness perspective. The review of the water source and availability will be conducted by Ken Buhler or his staff when the complete application is filed.

Eric

From: Todd Van Maanen [<mailto:tvanmaanen@stockwellengineers.com>]
Sent: Wednesday, October 05, 2016 10:12 AM
To: Gronlund, Eric
Subject: Kodiak Pork

Good morning Eric, I have another water rights permit application that I would appreciate your preliminary review on. We have talked about this permit in the fractured bedrock before. Would the fee be \$600? Thanks for the help.

Todd Van Maanen, PE
Stockwell Engineers, Inc.
605-665-8092
605-660-1361 Cell
tvanmaanen@stockwellengineers.com





STOCKWELL



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

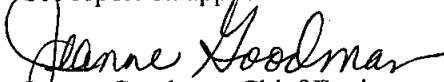
**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8243-3, Kodiak Pork RE LLC**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 8243-3, Kodiak Pork RE LLC, c/o Dr. Barry Kerkaert, PO Box 188, Pipestone, MN 56164.

The Chief Engineer is recommending APPROVAL of Application No. 8243-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use, 4) it is in the public interest with the following qualifications:

1. The wells approved under Water Permit No. 8243-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The new well authorized by Permit No. 8243-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Permit No. 8243-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-112 for concentrated animal feeding operations.
4. Permit No. 8243-3 is subject to compliance with all existing and applicable Water Management Board Rules including but not limited to:
 - a) Chapter 74:54:01 Ground Water Quality Standards,
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 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - d) Chapter 74:51:02 Uses Assigned to Lakes,
 - e) Chapter 74:51:03 Uses Assigned to Streams, and
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Sioux Quartzite aquifer.
6. Water Permit No. 8243-3 authorize a total annual diversion of 46.03 acre feet of water.

See report on application for additional information.


Jeanne Goodman, Chief Engineer
December 12, 2016

**REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 8243-3
KODIAK PORK RE, LLC c/o DR, BARRY KERKAERT
DECEMBER 7, 2016**

Water Permit Application No. 8243-3 proposes to appropriate up to 46.03 acre-feet of water annually from the Sioux Quartzite aquifer for commercial use in a swine facility. Water is to be diverted from two wells (one existing and one proposed) approximately 600 feet deep at a maximum rate of 0.13 cubic feet of water per second. The swine facility is to be located in the SE¼ Sec. 3, T109N-R48W and the wells are to be located in the SE¼ SE¼ Sec. 3, T109N-R48W.

AQUIFER: Sioux Quartzite (SOUX)

GEOLOGY AND AQUIFER CHARACTERISTICS:

Depending on the author, the Sioux Quartzite is often not considered an aquifer, or at best, is considered a minor aquifer. However, hundreds of wells have been successfully completed into the Sioux Quartzite in South Dakota. The Sioux Quartzite is a Precambrian-aged ortho-quartzite (i.e. a sedimentary formation composed of massive, pink and red colored quartz sand cemented to a non-porous quartzite with silica) (Baldwin, 1949). Except for the places where the quartzite is interbedded with mudstone and poorly cemented sand, the primary (intergranular) porosity of the rock is generally extremely low. Water is transmitted to wells through secondary porosity and permeability features (i.e. joints and fractures). Since the orientation and density of joints or fractures in the rock are difficult to predict, the aquifer characteristics of the quartzite are site specific and highly variable. Although the Sioux Quartzite is expected to be several thousand feet thick, the depth and development of the fracture system in the Sioux Quartzite is unknown, and water-supply wells commonly penetrate the quartzite to a depth of 200 feet or less. Subsurface information from well logs indicates the Sioux Quartzite extends over a regional scale (McCormick, 2010); however, the aquifer within it likely occurs on a more localized scale. The South Dakota Water Well Completion Report submitted with this application for an existing well that is to be used, identifies the top of the quartzite at 180 feet below grade. However, mapping of the Precambrian surface (McCormick, 2010) shows the depth to the quartzite can change rapidly within a short distance. Pre-glacial streams incised numerous irregular valleys on the quartzite surface resulting in a craggy and rugged upper surface (Baldwin, 1949). The completion report for one of the wells that is to be used to supply this appropriation indicates the quartzite is overlain by glacial till in this area. Nearby, glacial outwash, the Niobrara Formation, undifferentiated Cretaceous aged material, the Pierre Shale, or Quartzite wash overly the Sioux Quartzite. The Sioux Quartzite is hydrologically connected to overlying aquifers.

Where the Sioux Quartzite is an aquifer, it is commonly under unconfined conditions near outcrop areas and under confined conditions elsewhere. The aquifer is under confined conditions in this project area. The Sioux Quartzite was encountered 181 feet below grade, and the static water level reported for the existing well this application proposes to use was reported to be 75 feet below grade on August 24, 2016.

Water Availability:

Water Permit Application No. 8243-3 proposes to divert water at a maximum rate of 0.13 cfs and less than 46.03 acre-feet per year. The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1 which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source.” If the source of the water is older or lower than the Greenhorn Formation and a water distribution system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Although there is an exception to the recharge/withdrawal consideration in SDCL 46-6-3.1, for geologic formations older than or stratigraphically lower than the Greenhorn Formation, it applies only to applications filed by water distribution systems and is not applicable here.

Recharge to the Sioux Quartzite occurs through infiltration of precipitation at or near outcrops and through leakage from other aquifers that are hydrologically connected. Discharge from the Sioux Quartzite is primarily to connected aquifers where the gradient is favorable. The recharge and discharge potential between the Sioux Quartzite aquifer and hydrologically connected aquifers is dependent upon the water level differentials between the aquifers.

Discharge from the Sioux Quartzite aquifer is also through well withdrawals, although well withdrawals are expected to be minor in comparison to the rate of water that naturally discharges from the Sioux Quartzite aquifer. There are a total of 57 water rights/permits appropriating water from the Sioux Quartzite aquifer in the state; designated uses of these appropriations are shown in Table 1. The total combined instantaneous diversion rate authorized from these appropriations is 32.436 cfs. It should be noted that a single appropriation, (Vested Right No. 5400-3, L G Everist, Inc.) authorizes a rate of 12.25 cfs for mine dewatering at a quarry in Dell Rapids, SD. Two Water Rights (No. 4493-3 and 6070-3) appropriate 4.9 cfs for mine dewatering at Spencer Quarry. In addition, there are a number of domestic use wells on file with the DENR-Water Rights Program. The amount of water withdrawn for domestic use would not be significant to a hydrologic budget for the aquifer.

Table 1. Uses per water rights/permits appropriating water from the Sioux Quartzite aquifer (Water Rights, 2016a)

Use	Number of Permits/Rights
Commercial	15
Domestic	1
Geothermal	6
Industrial	4
Institutional	1
Irrigation	8
Municipal	17
Recreation	2
Suburban Housing Development	3

Data is not available to quantitatively compare the average annual recharge to the Sioux Quartzite aquifer with the average annual withdrawal from the aquifer. However, comparison of average annual recharge with average annual withdrawals from the aquifer can be accomplished by considering historic water level trends of the aquifer. If water levels in an aquifer decline over time, it may suggest that withdrawals are exceeding recharge. The DENR-Water Rights Program does not monitor any observation wells completed into the Sioux Quartzite aquifer and historic water level data is limited. The best data available to assess the water level trends in the Sioux Quartzite is through examination of water well completion reports for area wells. Although evaluating historic water levels using domestic well data is more subjective than through the use of dedicated observation wells because of additional interpretations necessary for well locations/elevations, groundwater gradients, and water level fluctuations due to seasonal and climatic variations, the data is valuable. Examination of the completion reports on file with the DENR-Water Rights Program (Water Rights, 2016b) for nearby wells document that historically, water levels in the Sioux Quartzite have generally remained constant, signifying that withdrawals from the aquifer have not exceeded recharge. In other areas, water levels in the Sioux Quartzite show a correlation with long-term precipitation trends. Water levels undergo cyclic conditions, rising during wet years and declining during dry years (Stonesifer, 2013). The aquifer appears to behave similarly in this area. Since the Sioux Quartzite aquifer is under steady state conditions in this area, and considering additional recharge is available and groundwater outflow can be captured by well withdrawals, the withdrawals proposed by this application are not expected to cause the withdrawals from the Sioux Quartzite aquifer to exceed the average annual recharge to the aquifer.

EXISTING WATER RIGHTS/PERMITS

Unlawful impairment of wells in the Sioux Quartzite:

There are no water rights/permits appropriating water from the Sioux Quartzite aquifer within approximately 30 miles of this project site. The nearest appropriations from the Sioux Quartzite aquifer are in/near Dell Rapids, SD for the city and for L.G. Everist, Inc. These water rights authorize diversion points approximately 31 miles south-southwest of this proposed project site. The DENR-Water Rights Program has records of three domestic wells completed into the Sioux Quartzite aquifer within approximately six miles of the project area (see table 2).

Table 2. Domestic wells on file with the DENR-Water Rights Program, completed into the Sioux Quartzite aquifer, within approximately six miles of the project area proposed by this application (Water Rights, 2016b)

Owner at time of construction	Completion date	Direction and distance from 8243-3
Emmett Caughlin	8/31/1973	south ~0.75 miles
Jim Stuefen	04/10/1996	west~ 4 miles
Newdale Colony	10/25/2013	Northwest ~2.75 miles

Since SDCL 46-2A-9 requires that a permit to appropriate water may only be issued if the proposed diversion can be developed without unlawful impairment of existing rights, consideration must be given to what constitutes unlawful impairment or an adverse impact.

The Water Management Board rule (ARSD 74:02:04:20(7)) defines an adversely impacted domestic well as:

“a well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as near to the bottom of the aquifer as is practical and the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner's needs”

The rules do not identify what constitutes an adverse impact to a prior appropriator. The Board has however promulgated rules pursuant to SDCL 46-6-6.1 that regulate large capacity wells with the intent of maintaining an adequate depth of water for prior appropriators and providing for the lowering of the pump in prior appropriator's wells.

One of the principal Board rules addressing SDCL 46-6-6.1 is ARSD 74:02:05:02, which requires that the spacing of large capacity wells is to be controlled to assure domestic use and other prior water right water supplies in adequate wells. An adequate well is defined by ARSD 74:02:04:20(6) as:

“a well constructed or rehabilitated to allow various withdrawal methods to be used, to allow the inlet to the pump to be placed not less than 20 feet into the saturated aquifer or formation material when the well is constructed, or to allow the pump to be placed as near to the bottom of the aquifer as is practical if the aquifer thickness is less than 20 feet;”

Although 20 feet is an adequate depth of water for prior appropriators in most aquifers, in the Sioux Quartzite aquifer, 20 feet is seldom a sufficient depth of water to be a dependable supply for a well. Defining adverse interference issues in the Sioux Quartzite aquifer is further complicated by the fact that unlike the case of most other aquifers where the maximum drawdown that could result from pumping a large capacity well is limited by the aquifer thickness, in the quartzite aquifer the maximum drawdown is limited by the well depth.

Therefore, in assessing if well interference is an adverse impairment, provided the affected well is adequate, the depth of the affected well must also be taken into consideration. Although depth is a critical factor in a well's ability to tolerate interference in the Sioux Quartzite, minimum well depth is not regulated.

Even though minimum well depth is not dictated by statute or rule, ARSD 74:02:04:60 does specify the requirements for the installation of pumps in wells. The rule requires that the depth of the pump setting shall be determined by dividing the specific capacity determined for the well into the required yield and adding at least 10 additional feet. Obviously the minimum depth of the pump setting as determined by ARSD 74:02:04:60 could be used as a quasi-minimum well depth standard. For example, the bottom of a well with a specific capacity of 1 gallon per minute per foot of drawdown (gpm/ft), permitted for 20 gallons per minute (gpm), would need to be at least 30 ft. below the static water level; and the bottom of a well with a specific capacity of 0.5 gpm/ft, permitted for 20 gpm, would need to be at least 50 feet deeper than the static water level.

If the depth of a well allows for pump placement per ARSD 74:02:04:60 and interference requires the well be deepened, that interference could be considered an adverse impact. Conversely, if the affected well is not deep enough to allow compliance with the requirements of ARSD 74:02:04:60, interference that would require deepening of the well would not be an adverse impact. It is important to note that unlike the standard defining an adequate well, the pump installation standard does not fix the setting to the static water level or the specific capacity at the time of construction. The pump setting and ultimately the depth of a well must be able to accommodate for seasonal and climatic fluctuations of the static water level and/or a change of the well's specific capacity.

In a well interference situation involving the Sioux Quartzite, the static water level and specific capacity would be used to determine the minimum (i.e. highest) pump setting for the affected well. After allowing for seasonal and climatic conditions, well interference that caused the pump to be lowered below the calculated pump setting would be unlawful impairment.

With that said, if this application is approved, well interference is not expected to be adverse to existing wells due to the distance between wells and the relatively low diversion rate proposed by this application.

CONCLUSIONS:

1. The Sioux Quartzite is a viable aquifer in this area.
2. The Sioux Quartzite is under confined/artesian conditions in this area.
3. Recharge to the Sioux Quartzite aquifer is through infiltration of precipitation and possibly through streamflow losses.
4. Average annual recharge has not been quantified for the Sioux Quartzite aquifer.
5. The DENR-Water Rights Program does not monitor any observation wells completed into the Sioux Quartzite aquifer.
6. Historic water level data for the aquifer is limited to water well completion reports. Completion reports on file with the DENR-Water Rights Program indicate withdrawals from the aquifer have not exceeded recharge.
7. There is a reasonable probability that approval of this application will not cause withdrawals from the aquifer to exceed average annual recharge to the aquifer.
8. Unlawful impairment in the Sioux Quartzite aquifer can be considered drawdown to the extent that an affected well that is both adequate pursuant to ARSD 74:02:04:20(7) and allows for a pump setting pursuant to ARSD 74:02:04:60 experiences a loss of water production or increased operating expense that can be attributed to another well.
9. The nearest well supplied from the Sioux Quartzite aquifer to this application site is located approximately three quarters of a mile south.
10. Well interference if this application is approved is not expected to be adverse.



Ken Buhler

SD DENR-Water Rights Program

REFERENCES:

- Baldwin, B, 1949, A Preliminary Report on the Sioux Quartzite: South Dakota Geological Survey Report of Investigations 063, 34 p.
- McCormick, K.A., 2010, Elevation Contour Map of the Precambrian surface of South Dakota: South Dakota Geological Survey General Map 11 Sioux Ridge Inset, scale 1:160,000
- Stonesifer, J.R., 2013, Report to the Chief Engineer, Water Permit Application No. 7805-3, City of Sioux Falls Parks & Recreation, c/o Don Kearney, April 17, 2013: SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights Program, 2016a, "Water Permit/Right Files", South Dakota DENR-Water Rights Program, Joe Foss Building, Pierre, SD
- Water Rights Program, 2016b, "Well Completion Report Files", South Dakota DENR-Water Rights Program, Joe Foss Building, Pierre, SD

Affidavit of Publication

State of South Dakota

SS

County of Brookings

RECEIVED

JAN 11 2017

WATER RIGHTS PROGRAM

Exhibit "A"

Katherine Foiles of said county, first duly sworn, on oath says: That she is the office clerk of THE BROOKINGS REGISTER, a daily newspaper, printed and published in the City of Brookings, in said County of Brookings, and State of South Dakota; that she has full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper and has a bona fide circulation of at least two hundred copies of each issue daily; that said newspaper has been published within the said County of Brookings and State of South Dakota, for more than one year prior to the first publication of Exhibit "A," hereto attached and herein mentioned, and was and is printed that the

Legal 818, 1x, 12/21
NOTICE OF APPLICATION NO. 8243-3 to
Appropriate Water
Notice is given that
Kodiak Pork RE, LLC,
c/o Dr. Barry Kerkaert,
PO Box 188, Pipestone
MN 56164 has filed an
application for a water
permit to appropriate
46.03 acre-feet annually
at a maximum diversion
rate of 0.13 cubic feet
of water per second
from two wells to be
completed into the
Sioux Quartzite Aquifer
(approximately 600 feet
deep) located in the SE
1/4 SE 1/4 Section 3 for

commercial use in a
swine facility located in
the SE 1/4 Section 3; all
in T109N-R48W.

Pursuant to SDCL 46-
2A-2, the Chief
Engineer recommends
APPROVAL of
Application No. 8243-3
with qualifications
because 1) unappropri-
ated water is available,
2) existing rights will not
be unlawfully impaired,
3) it is a beneficial use
of water, and 4) it is in
the public interest. The
Chief Engineer's recom-
mendation with quali-
fications, the application,
and staff report are
available at
<http://denr.sd.gov/public>
or contact Eric
Gronlund for this infor-
mation, or other infor-
mation, at the Water
Rights Program
address provided
below.

Any person interested in
opposing or supporting
this application or rec-
ommendation must file
a written petition with
BOTH the applicant and
Chief Engineer. The
applicant must file a
petition if contesting the
Chief Engineer's recom-
mendation. The Chief
Engineer's address is
"Water Rights Program,
Foss Building, 523 E
Capitol, Pierre SD
57501 (605 773-3352)"
and the applicant's mail-
ing address is given
above. A petition filed
by either an interested
person or the applicant
must be filed by January
2, 2017.

The petition may be
informal, but must
include a statement
describing the petition-
er's interest in the appli-
cation, the petitioner's
reasons for opposing or

supporting the applica-
tion, and the signature
and mailing address of
the petitioner or the
petitioner's legal coun-
sel, if legal counsel is
obtained.

If the applicant does not
contest the recommen-
dation of the Chief
Engineer and no peti-
tion to oppose the appli-
cation is received, the
Chief Engineer shall act
on the application pur-
suant to the recommen-
dation with no hearing
held before the Water
Management Board. If
a petition opposing the
application or contest-
ing the recommendation
is filed, then a hearing
will be scheduled and
the Water Management
Board will consider this
application. Notice of
the hearing will be given
to the applicant and any
person filing a petition.
Steven M. Pirner,
Secretary, Department
of Environment and
Natural Resources.
Published once at the
total approximate cost
of \$25.16.

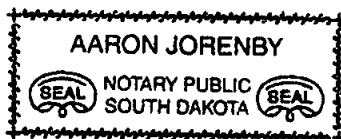
Leg#818 Application 8243-3

same was published, is hereto attached marked Exhibit
said newspaper for _____ 1 times, to-wit:

December 21, 2016

said Exhibit "A" inures to the sole benefit for the publishers of
said newspaper; that no agreement or understanding for the
division thereof has been made with any other person, and
that no part thereof has been agreed to be paid to any
person whomsoever; that the fees charged for the publication
thereof are:

Twenty-Five Dollars and Sixteen Cents \$25.16



K M Foiles

22 day of

December

2016

Notary Public in and for the County of Brookings, South Dakota.

My Commission expires February 22, 2020.

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, December 12, 2016 1:33 PM
To: registerclassifieds (registerclassifieds@brookingsregister.com)
Subject: 8243-3, Kodiak Pork RE, LLC
Attachments: 8243-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on December 21, 2016.

Kodiak Pork RE LLC, Dr. Barry Kerkaert, PO Box 188, Pipestone MN 56164 has been notified to contact you to authorize publication and arrange for payment.

Please send the affidavit or return the attached Proof of Publication form ASAP.

Let me know if you have questions. Please acknowledge receipt of this email.

Karen Schlaak
Water Rights Program
523 E Capitol Ave
Pierre SD 57501
Phone: 605 773-3352



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

**NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER(S) RIGHT AWAY.**

December 12, 2016

Kodiak Pork RE, LLC
Dr. Barry Kerkaert
PO Box 188
Pipestone MN 56164

Dear Dr. Kerkaert:

Water Permit Application No. 8243-3 for commercial use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Brookings Register printed at Brookings SD (Ph # 605-692-6271). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

cc: Stockwell Engineering, Brad Woerner, 215 Walnut St, Yankton SD 57078

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper - Publish the Notice on December 21, 2016. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 8243-3 to Appropriate Water

Notice is given that Kodiak Pork RE, LLC, c/o Dr. Barry Kerkaert, PO Box 188, Pipestone MN 56164 has filed an application for a water permit to appropriate 46.03 acre-feet annually at a maximum diversion rate of 0.13 cubic feet of water per second from two wells to be completed into the Sioux Quartzite Aquifer (approximately 600 feet deep) located in the SE 1/4 SE 1/4 Section 3 for commercial use in a swine facility located in the SE 1/4 Section 3; all in T109N-R48W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8243-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by January 2, 2017.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of _____.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

JAN 30 2017

Kodiak Pork RE LLC
PO Box 188
Pipestone MN 56164

Dear Sir:

Enclosed is Water Permit No. 8243-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

JUN - 9 2017

WATER RIGHTS
PROGRAMNOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEDate 6/6/17TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

FROM:

Kodiak Park RE, LLC
(name)P.O. Box 188
(address)Pipestone, MN 56164
(city, state, zip)507 825 4211
(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 8243-3 states that the water use system is to be constructed by Jan 2, 2022, and water is to be put to beneficial use by Jan 2, 2026.
(date) (date)

The water use system was completed on 6/6/17.
(date)

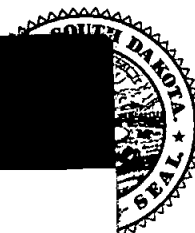
Applying the water to beneficial use was completed on 6/6/17.
(date)

You may schedule an investigation so that the water license may be issued.

[Signature]
(signature)

MARTY ROST
Swine Specialist1300 South Highway 75, PO Box 188
Pipestone, MN 56164
Phone: 507.825.7029
Mobile: 507.215.0482

mrost@pipevet.com





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

June 13, 2017

8243-3

Marty Rost
Kodiak Park RE, LLC
PO Box 188
Pipestone MN 56164-0188

Dear Mr. Rost:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know the water use system authorized under Permit No. 8243-3 has been completed.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit.

Someone from our office will contact you prior to the inspection to set up a time that is convenient for you. If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink that reads "Genny McMath".

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8243-3

I have this day, May 20, 2021, made a thorough examination of the water use system constructed by Kodiak Pork RE LLC, PO Box 188, Pipestone, MN 56164 of Permit No. 8243-3, bearing the priority of October 17, 2016 authorizing the diversion of 0.13 cu. ft. per second of the waters of the Sioux Quartzite Aquifer for commercial purposes, in Brookings County.

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Dave Putzke Well Drilling
- 2) No. of Wells 1
- 3) Depth(s) 182 feet
- 4) Well log is available Y

Casing:

- 1) Diameter 6 inches
- 2) Length 182 feet
- 3) Type steel (19.18 lb/ft)

Screen:

- 1) Type None
- 2) Length feet
- 3) Static water level 75 feet

Pump:

- 1) Make NA
- 2) Model submersible
- 3) Size NA
- 4) Capacity 60 GPM

Motor:

- 1) Make NA
- 2) Model No. NA
- 3) Horsepower rating NA hp

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Y

2) Exceptions to compliance are: None

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: From the SE corner of
2. Sec 3 T109N-R48W 850 ft N & 55 ft W Lat 44.27005 Long -96.56764 (SE ¼ SE ¼ Sec 3).
3. The works are capable of diverting and conveying to the place of use 0.13 cu. ft. per second of water which is to be used for commercial purposes.
4. All structures, wells and lands on map Y

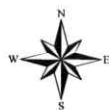
F. Comments or other permit(s) associated with the project:

The facility is currently using water from one well and a rural water system.



Darrell W DeBoer
Water Rights Inspector
DANR, Water Rights Program

Date report completed: May 25, 2021



0 0.1 0.2 0.4 0.6 0.8 Miles



Darrell DeBoer
Water Right Inspector
DANR-Water Rights Program



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

8243-3

MAY 27 2021

Barry Kerkaert
Kodiak Pork RE LLC
PO Box 188
Pipestone MN 56164-0188

Dear Mr. Kerkaert:

Enclosed is Water License No. 8243-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if in the future, the owner of an existing well, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

As long as you use the water beneficially, as stated in the Water License, State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Eric Gronlund, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8243-3**

(1) Kodiak Pork RE LLC, PO Box 188, Pipestone MN 56164 made Application No. 8243-3, October 17, 2016 for a water permit to divert 0.13 cubic feet of water per second with an annual volume of 46.03 acre feet from ground water, two wells (Sioux Quartzite Aquifer), Brookings County, South Dakota for commercial purposes. Permit No. 8243-3, with a priority date of October 17, 2016 was approved January 2, 2017 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before January 2, 2022 and for the application to beneficial use of water on or before January 2, 2026.

The Permit holder submitted a "Notice of Completion of Works and Application of Water to Beneficial Use" on June 9, 2017. The "Notice" stated the water use system was completed and the water placed to beneficial use on June 6, 2017.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the water supply system and is entitled to divert 0.13 cubic feet of water per second for beneficial use. The investigation of the water use system found only one of the wells had been constructed. The location of the diversion point is as follows:

- 850'N & 55'W of the SE corner of Section 3, T109N, R48W (SE ¼ SE ¼ Section 3)
Latitude 44.27005 Longitude -96.56764

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use in a swine facility. Additional water for the facility is obtained from the rural water system.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Kodiak Pork RE LLC, PO Box 188, Pipestone MN 56164 the holder and/or owner of Water Right No. 8243-3 is issued a license to appropriate water, the right to use 0.13 cubic feet of water per second from ground water, one well (Sioux Quartzite Aquifer) with a priority date of October 17, 2016 from the location specified in (2) of this license for commercial purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8243-3 and subject to the following qualifications:

- The well approved under Water Right No. 8243-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under this water right shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- The new well authorized by Permit No. 8243-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with the Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. ***The well was drilled in August, 2016 by Dave Putzke Well Drilling. A copy of the well completion report is on file with the Water Rights Program.***

Water License No. 8243-3

Page 2

- Water Right No. 8243-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-112 for concentrated animal feeding operations.
- Water Right No. 8243-3 is subject to compliance with all existing and applicable Water Management Board Rules including but not limited to:
 - a) Chapter 74:54:01 Ground Water Quality Standards,
 - b) Chapter 74:54:02 Ground Water Discharge Permit,
 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - d) Chapter 74:51:02 Uses Assigned to Lakes,
 - e) Chapter 74:51:03 Uses Assigned to Streams, and
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
- The water right holder shall report to the Chief Engineer annually the amount of water withdrawn from the Sioux Quartzite Aquifer.
- Water Right No. 8243-3 authorizes a total annual diversion of 46.03 acre feet of water


Eric Gronlund, Chief Engineer
Water Rights Program
Department of Agriculture and Natural Resources

MAY 27 2021

date

