

WATER PERMIT NO. 8443-3

Name of Applicant: Linde Dairy LLC

Address: 47988 207th St, White SD 57276 Phone: 605 690-8727

Amount of Water Claimed: 0.67 cfs Total Acres: NA

Source of Water Supply: groundwater (2-3 wells)

Water to be used for: commercial County: Brookings

Type of Waste Disposal System:

Location: 3 miles SE of White

PRIORITY Date Received: 8-31-20

Application/License Fee: \$ 1,050

Corrected Application Received: 9-2-20

Period of Annual Use: January 1 – December 31

Remarks:

Diversion Point: S 1/2 SE 1/4 Sec 29-T111N-R48W

Facility location: same as above

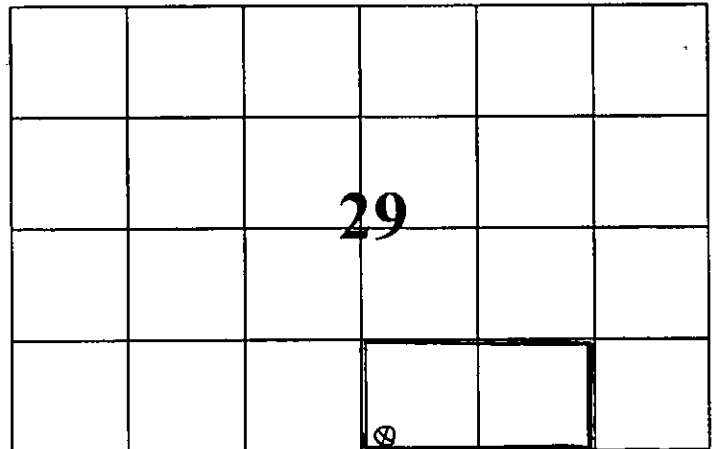
Depth of Well: 65 feet deep

Well Driller:

Remarks:

Type of Map: aerial

Prepared by:



Reviewed and the Number Assigned on: 9-8-20

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 8443-3**

Date of first receipt of application August 31, 2020.

Date of return to applicant for corrections, amendments or changes August 31, 2020.

Date of receipt of corrected application September 2, 2020.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8443-3 to Linde Dairy LLC, c/o Rein Landman, 47988 207th St, White SD 57276 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. 8443-3 appropriates 323 acre-feet of water annually at a maximum pump rate of 0.67 cubic feet of water per second from up to three wells to be completed into the Big Sioux:Aurora Aquifer (60 feet deep) located in the S 1/2 SE 1/4 Section 29 for commercial use in a dairy operation located in the S 1/2 SE 1/4 Section 29; all in T111N-R48W. This site is located approximately 3 miles southeast of White SD.
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. 8443-3 is November 16, 2020.
5. The date from which applicant may claim right is August 31, 2020.
6. One-fifth of the construction is to be completed on or before May 16, 2023.
7. All construction is to be completed on or before November 16, 2025.
8. Water is to be put to beneficial use on or before November 16, 2029.
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. 8443-3 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 wells authorized by Permit No. 8443-3 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. Water Permit No. 8443-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-36.2 or 34A-2-112 or 34A-2-124 for concentrated animal feeding operations.

(continued)

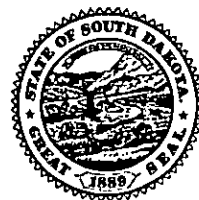
4. Water Permit No. 8443-3 is subject to compliance with all existing and applicable Water Management Board Rules including but not limited to:
 - a) Chapter 74:54:01 Ground Water Quality Standards,
 - b) Chapter 74:54:02 Ground Water Discharge Permit,
 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - 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 Big Sioux Aurora aquifer.
6. Water Permit No. 8443-3 authorizes a total annual diversion of 323 acre-feet of water from the Big Sioux Aurora aquifer.

WATER MANAGEMENT BOARD

By: *Eric Gronlund*
Eric Gronlund, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JAN 19 2021

date



Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8443-3</u> (office use only) Hydrologic Unit <u>10170202</u>
	Basin <u>Sioux River</u>
	Newspaper <u>Brookings Register</u>

PAID
AUG 31 2020
Ck# 27699

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.)

lindedairy@gmail.com

- Name to Appear on Water Permit Linde Dairy, LLC
 Mailing Address 47988 207th Street White SD 57276
 (Address) (City) (State) (Zip Code)
 Phone 605 690 8727 Mobile _____ Email linde@itctel.com
- Amount of water claimed 0.67 *CFS or 300 **GPM and 323 ***AF or 105,000,000 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)
- Source of water supply 2-3 new wells (1/2 SE 1/4)
- Location of point of diversion T111 N R48W Sec 29 SE 1/4 County Brookings
 (example - 3 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 ☒ No
 If "Yes," where will water be used? _____
 (example - NW1/4 section 12-T104N-R53W)
- County or counties where water will be used Brookings
- Annual period during which water is to be used year round Jan 1 - Dec 31
- 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)

new wells for dairy use. Currently using rural water and they can't supply enough GPM

RECEIVED

AUG 31 2020

I, Rein Landman, member, the applicant, certify under
 Name of Person Title (if applicable)

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.

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 2-3 Have test holes been drilled ☒ Yes ☐ No Drilled by KAISER WELL DRILLING INC
(if yes, please provide copies of logs)

b) If existing wells, how many Provide copy of log(s), if available. Drilled by

For either Existing or Proposed Wells:

c) Well Depth (required) 65 Depth to Top of Water Bearing Material 30 Depth to Water from Surface 30

d) Distance to nearest domestic well on applicant's property none on property Property owned by others

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)

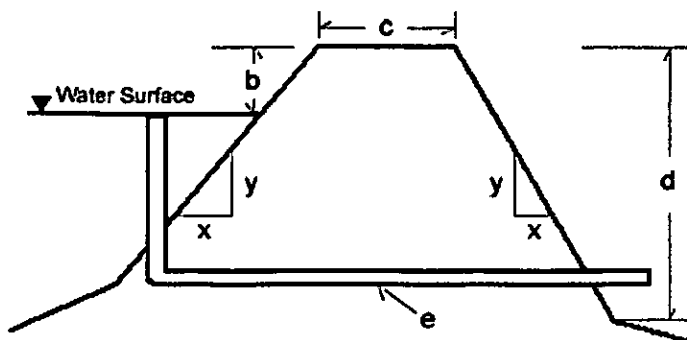
Upstream

Downstream

h) Surface Area of Impoundment

i) Storage Acre Feet

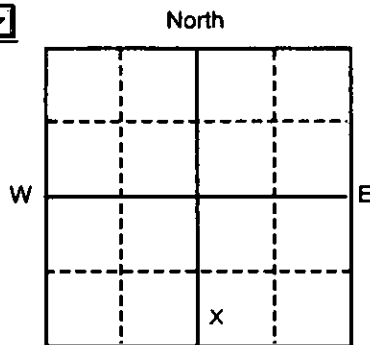
j) Drainage Area Above Dam Acres



8443-3

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW 1/4 SE 1/4 Sec 29 Twp 111N Rg 48WCounty BROOKINGS ☒Please mark well
location with an "X"

Well Completion Date

8-19-2020

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
ft. from _____ (identify source)

PROPOSED USE:

☒ Domestic/Stock ☐ Municipal ☒ Business ☐ Test holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

DIRECT ROTARY

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
sdr17 LB/FT	5 IN	+2 FT	40 FT	8.75 IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
grtweldf	7	54 Lb/gal	0 Ft	40 Ft
_____	_____	_____ Lb/gal	_____ Ft	_____ Ft

Describe grouting procedure
pressure pull

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 5 Inches Length 20 FeetMaterial PVCSlot Size 25 Set From 40 Feet to 60 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? _____☐ No, Why Not? _____Lab to which water
quality sample sent for analysisWARD LABS FOR DAIRY
ANALYSISWell Owner: REIN LANDMANBusiness Name: LINDE DAIRYAddress: 47988 207TH STCity, State, Zip: WHITE ☒ SD ☒ 57276

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
TOP SOIL	0	1
YELLOW CLAY	1	4
YELLOW GRAVEL MIX	4	10
YELLOW CLAY	10	20
YELLOW GRAVEL- MIXED	20	40
YELLOW ROCKY MIX- TIGHT	40	65

STATIC WATER LEVEL _____ 30 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: 89 GPM WITH SUBMERSIBLE PUMP☐ Bailed☐ Other

Pumping Level Below Land Surface

_____ 38 Ft. After _____ 24 Hrs. pumped _____ 89 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

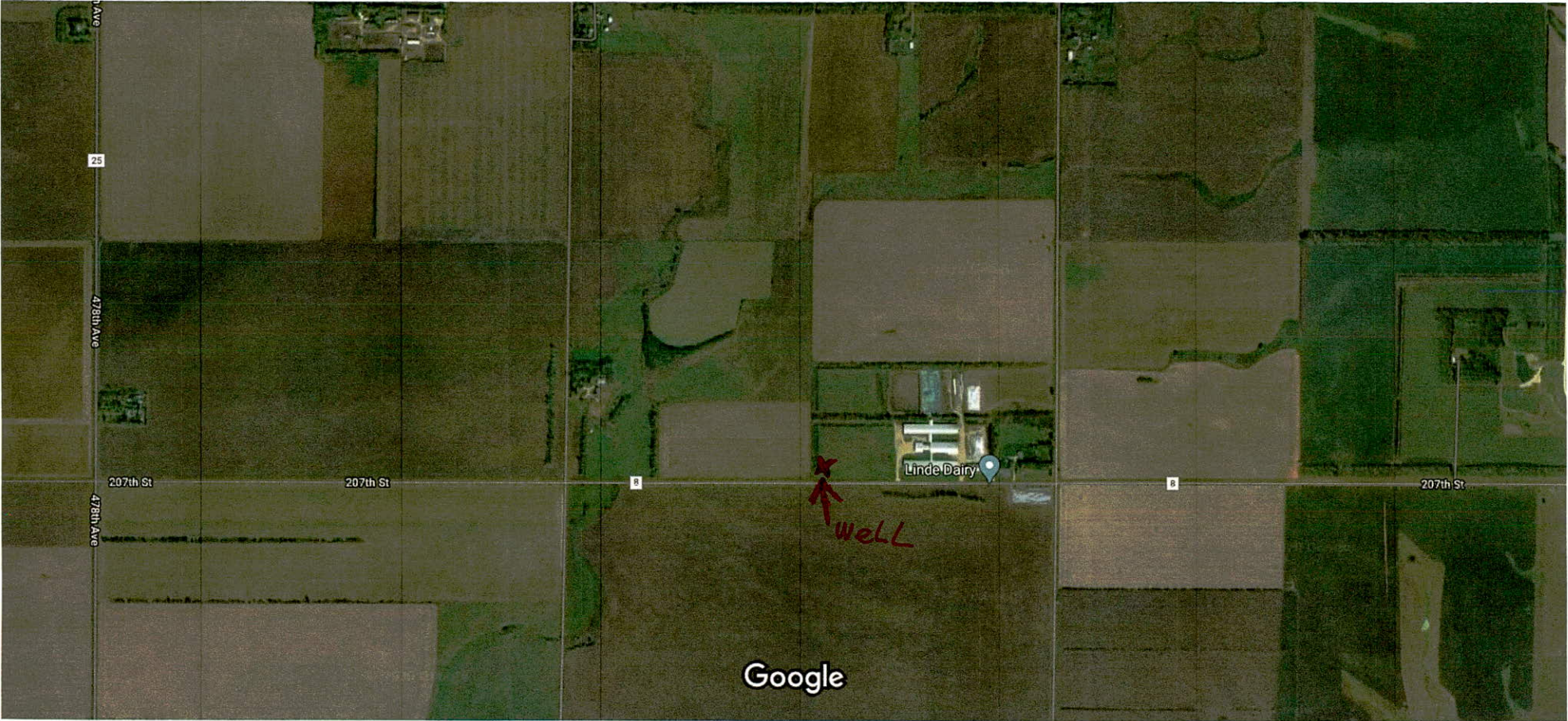
REMARKS

This well was drilled under license # 689 and this
report is true and accurate.Drilling firm: KAISER WELL DRILLING INC

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Date: 08/16/2020







530912708

ANNUAL REPORT

Secretary of State
500 E. Capitol Ave
Pierre, SD 57501-5070
(605) 773-4845

Domestic Limited Liability Company
SDCL 47-34A-211; 59-11-24, 24.1

Please Type or Print Clearly in Ink
Please submit one Original
Make payable to the SECRETARY OF STATE

Filing Fee: \$50

Total Fee: \$50

2020
FILING YEAR

1. Business ID and Name:

DA020526
BUSINESS ID

LINDE DAIRY, LLC
BUSINESS NAME

2. The jurisdiction under whose law it is formed **SOUTH DAKOTA**

3. The address of the principal executive office (business address):

Actual Street Address

47988 207TH STREET
WHITE, SD 57276-6034

Mailing Address

47988 207TH STREET
WHITE, SD 57276-6034

4. The South Dakota Registered Agent's Name:

South Dakota law permits the registered agent to be either (a) a noncommercial registered agent, or (b) a commercial registered agent.

(a) The South Dakota Noncommercial Registered Agent's name

Name **REIN LANDMAN**

Actual Street Address in this State

47988 207TH STREET
WHITE, SD 57276-6034

Mailing Address in this State

5. If the LLC is manager-managed, list the names and addresses of its Managers. SDCL 59-11-24. If the LLC is member-managed, this section may be left blank.

Name	Address
Sietse Douwe Landman	47988 207th Street White, SD 57276
REIN LANDMAN	47988, 207TH STREET, WHITE, SD, 57276
BOUKJE LANDMAN	47988, 207TH STREET, WHITE, SD, 57276
GERBEN LANDMAN	47988, 207TH STREET, WHITE, SD, 57276

6. Beneficial Owners (optional): A beneficial owner is a person who has or in some manner controls an equity security. Please consult an attorney for legal advice if you have any questions concerning this entry. Any question under this heading is considered a request for legal advice and the secretary of state's office is, by statute, not permitted, to provide legal advice.

No person may execute this report knowing it is false in any material respect. Any violation may be subject to a criminal penalty (SDCL 22-39-36).

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date August 31, 2020

RECEIVED OF Linde Dairy, LLC 47988 207th Street White SD 57276

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	\$950.00
Fee for Application for Permit No. _____ to Appropriate Water for Future use	\$
Fee to retain Future Use Permit No. _____ after period of seven years.	\$
Fee for Inspecting Constructed Works, continuing beneficial use and issuing Water License No. _____	\$200.00
Fee for Filing Transfer Form _____	\$
Fee for _____	\$
Fee for Issuing New Well Driller's License No. _____	\$
Fee for Renewal of Well Driller's License No. _____	\$
Fee for Issuing Well Pump Installer's License No. _____	\$
Fee for Renewal of Well Pump Installer's License No. _____	\$
(Any Other Work Provided by Law)	
TOTAL	\$1150.00

By Eric Gronlund
Chief Engineer EM



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

August 31, 2020

Linde Dairy LLC
c/o Rein Landman
47988 207th St
White SD 57276

Dear Mr. Landman:

Thank you for submitting the *Application for a Permit to Appropriate Water* for your dairy operation in Brookings County. In order to complete the application, the following is required.

- The application requests an appropriation of 300 gallons per minute (gpm). In addition to the pump rate, the application needs to include the annual volume in either gallons/year or acre feet/year. In calculating the annual volume, be reasonable but also plan for the maximum annual volume of use from the wells at full development. It is unrealistic that 300 gpm will be pumped continuously during an entire year. Therefore, DENR requests an annual volume to be used at the facility.
- The map submitted with the application indicates the location of the proposed well in the SW 1/4 SE 1/4 Section 29-T111N-R48W. From the map, it appears that your dairy operation is located in the S 1/2 SE 1/4 Section 29. Will the other well or wells will be located in the S 1/2 SE 1/4 Section 29 also?

If you have any questions, please contact Ron Duvall or me.

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

enclosures

WATER RIGHTS PROGRAM -- FILE DOCUMENTATION

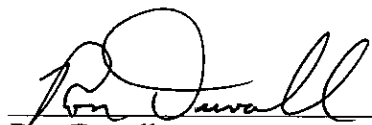
NAME: Rein Landman, Linde Dairy LLC
ADDRESS: 47988 207th St, White SD 57276
DATE: September 2, 2020
RE: Application for Water Permit to Supply Livestock

COMMENTS:

Rein Landman called regarding a letter dated August 31, 2020, from Karen Schlaak, SD DENR, requesting additional information to complete an application received on August 31, 2020.

Mr. Landman indicated the facility is currently using 25,000,000 gallons per year from rural water to meet their water needs. However, the amount the rural water system can supply is inadequate for current needs which Mr. Landman estimated to be as high as 35,000,000 gallons per year. In addition the facility is going to be expanded which will triple the amount of water needed so the total required for the application is 105,000,000 gallons per year.

In regard to the location of the proposed wells, the location for those wells will be within the S1/2 SE1/4 section 29-T111N-R48W.



Ron Duvall
Water Rights Permitting Administrator
Water Rights Program



DENR
SOUTH DAKOTA

**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. 8443-3, Linde Dairy 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. 8443-3, Linde Dairy LLC, c/o Rein Landman, 47988 207th St, White SD 57276.

The Chief Engineer is recommending APPROVAL of Application No. 8443-3 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 and, 4) it is in the public interest with the following qualifications:

1. The wells approved under Water Permit No. 8443-3 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 wells authorized by Permit No. 8443-3 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. Water Permit No. 8443-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-36.2 or 34A-2-112 or 34A-2-124 for concentrated animal feeding operations.
4. Water Permit No. 8443-3 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 Big Sioux Aurora aquifer.
6. Water Permit No. 8443-3 authorizes a total annual diversion of 323 acre-feet of water from the Big Sioux Aurora aquifer.

See report on application for additional information.



Eric Gronlund, Chief Engineer

October 28, 2020

Report to the Chief Engineer
On Water Permit Application No. 8443-3
Linde Dairy LLC c/o Rein Landman

October 23, 2020

Water Permit Application No. 8443-3 proposes to appropriate up to 323 acre-feet of water annually at a maximum instantaneous diversion rate of 0.67 cubic feet of water per second (cfs) from up to three wells (60 feet deep) to be completed into the Big Sioux: Aurora aquifer and located in the S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 29-T111N-R48W. The proposed use is for commercial use in a dairy operation located in the S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 29-T111N-R48W. The area of interest is located in Brookings County approximately 3 miles southeast of White, South Dakota.

AQUIFER: Big Sioux: Aurora (BS: A)

HYDROGEOLOGY:

The Big Sioux aquifer is a shallow, well-sorted, very permeable, glacial outwash aquifer that consists of sand (mostly medium to very coarse) and gravel (very fine to medium). The Big Sioux aquifer underlies the Big Sioux River valley and many of its tributaries and overlies bedrock or glacial till. The Big Sioux aquifer is generally unconfined near the river and its major tributaries; however, as distance increases from the Big Sioux River valley and its tributaries, the aquifer is buried under large thicknesses of till and is expected to be under confined conditions (Hamilton, 1989). In Brookings County, Hamilton (1988) estimated the Big Sioux aquifer to underlie 300,800 acres and contain approximately 1,900,000 acre-feet of recoverable water in storage. The depth to the top of Big Sioux aquifer materials ranges from 0 to 212 feet below grade, with the aquifer having an average thickness of 30 feet and a documented maximum thickness of 93 feet (Hamilton, 1989). The Big Sioux aquifer has been recognized by the Water Management Board to have twelve different management units, with the Aurora management unit being the component of interest for this application (Water Rights, 2020c).

In Brookings County, Hedges and others (1982) estimated the Big Sioux: Aurora aquifer to underlie 39,300 acres and contain approximately 165,060 acre-feet of recoverable water in storage. More recent mapping estimates completed by Buhler (2012) estimated the Big Sioux: Aurora aquifer to underlie approximately 83,000 acres in Brookings and Moody Counties in South Dakota, and Pipestone and Lincoln Counties in Minnesota. Farmer (2017) made additional revisions to the mapping completed by Buhler (2012) and estimated the Big Sioux: Aurora aquifer to underlie approximately 72,485 acres in Brookings and Moody Counties in South Dakota, and Pipestone and Lincoln Counties in Minnesota. The areal extent of the Aurora management unit of the Big Sioux aquifer is likely in the range of the estimates calculated by Buhler (2012) and Farmer (2017). However, there are portions of the Big Sioux: Aurora aquifer mapped by Hamilton (1989) not included in either Buhler (2012) or Farmer's (2017) areal extent estimates. Hamilton's (1989) mapping estimates of the Big Sioux aquifer for Brookings and Kingsbury Counties indicated sections of the aquifer that are buried under glacial till, particularly in the northeastern extreme of the Big Sioux: Aurora aquifer which is the same vicinity as the

applicant's site of interest. The available lithologic evidence indicates that the Big Sioux: Aurora aquifer does exist in at least portions of Hamilton's delineation of the aquifer (Hamilton, 1989; SDGS; 2020; Water Rights, 2020d).

There is a groundwater divide in the Big Sioux: Aurora aquifer that exists near Elkton, South Dakota (near the approximate center of T109N-R47W) that can be seen on the first occurrence of aquifer materials map for Brookings County and the potentiometric surface map for the Big Sioux: Aurora aquifer (Hamilton, 1989; Schulz, 2004). The direction of groundwater movement north of the divide flows to the west, and groundwater south of the divide flows to the southwest (Hamilton, 1989). As such, the groundwater divide isolates the flow of the northern portion of the aquifer from the southern portion, essentially creating two sub-units in the Aurora management unit as shown in Figure 1. The proposed diversion points for this application (if approved) are to be located in the northern sub-unit of the Big Sioux: Aurora aquifer. For the remainder of this report, the term "Big Sioux: Aurora aquifer" will be referencing the northern sub-unit of the Big Sioux: Aurora aquifer. Farmer (2017) estimated the areal extent of the northern sub-unit of the Big Sioux: Aurora aquifer to be approximately 54,245 acres.

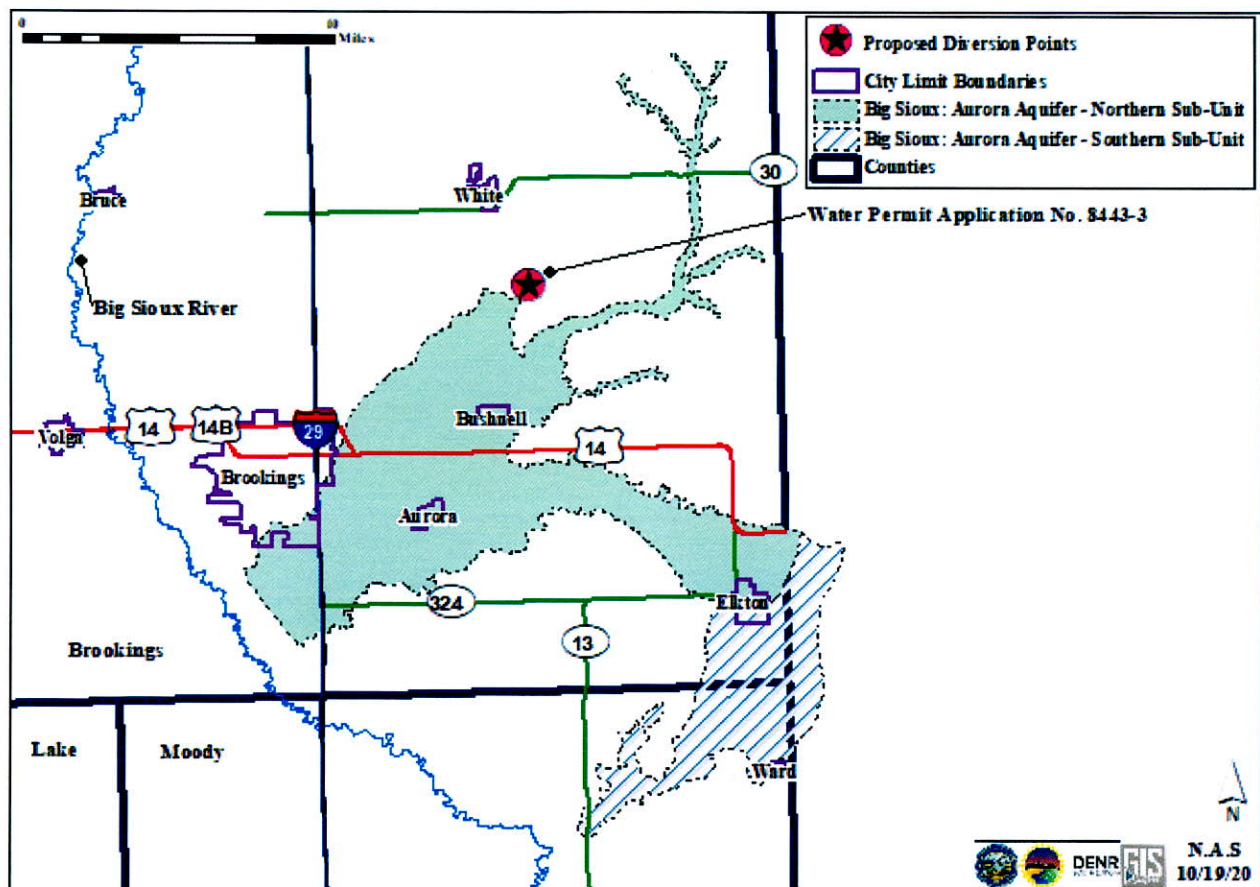


Figure 1. Map of the approximate Big Sioux: Aurora aquifer boundary (modified from Farmer, 2017) with the northern and southern sub-unit delineation, and the proposed diversion points by Water Permit Application No. 8443-3

A water well completion report was submitted with Water Permit Application No. 8443-3. The report indicated top soil from 0 to 1 feet below the ground surface, yellow clay from 1 to 4 feet, yellow gravel mix from 4 to 10 feet, yellow clay from 10 to 20 feet, yellow gravel mix from 20 to 40 feet, and yellow rocky mix (tight) from 40 to 65 feet deep in the SW ¼ SE ¼ of Section 29-T111N-R48W (Water Rights, 2020d). The well was screened from 40 to 60 feet below grade, and the static water level at the time of completion (August 19, 2020) was reported at 30 feet below the ground surface (Water Rights, 2020d). The Big Sioux: Aurora aquifer is generally unconfined, but it is expected to be locally confined at the proposed diversion points based on the available hydrogeologic information for this location (Hamilton, 1989; SDGS, 2020; Water Rights, 2020b and 2020d).

South Dakota Codified Law (SDCL) 46-2A-9

Pursuant to SDCL 46-2A-9, “A permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant’s proposed use, that the diversion point can be developed without unlawful impairment of existing rights, and that the proposed use is a beneficial use and in the public interest.” This report will address the availability of unappropriated water and the potential for unlawful impairment of existing water rights within the Big Sioux: Aurora aquifer.

WATER AVAILABILITY:

Water Permit Application No. 8443-3 proposes to appropriate water from the Big Sioux: Aurora aquifer. The probability of unappropriated water being available from the 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. An application may be approved, however, for withdrawals of groundwater from any groundwater formation older than or stratigraphically lower than the greenhorn formation in excess of the average estimated annual recharge for use by water distribution systems.” The Big Sioux: Aurora aquifer is not older than or stratigraphically lower than the Greenhorn Formation, and the applicant’s proposed use is not for use in a water distribution system. Therefore, the average annual recharge and average annual withdrawal rates to and from the Big Sioux: Aurora aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Big Sioux: Aurora aquifer is through infiltration of precipitation and by slow seepage through till, lake deposits and underlying aquifers when the potentiometric surface of the aquifer is lower than the potentiometric surface of the surface or ground water source (Hamilton, 1989).

Using observation well analysis, Hedges and others (1985) estimated a recharge rate of 5.0 inches per year to the Big Sioux: Aurora aquifer. Farmer (2017) estimated the areal extent of the northern sub-unit of the Big Sioux: Aurora aquifer to be approximately 54,245 acres. Therefore, the average annual recharge rate to the northern sub-unit of the Big Sioux: Aurora aquifer is estimated at approximately 22,602 acre-feet per year.

Discharge

Discharge from the Big Sioux: Aurora aquifer is through evapotranspiration, leakage to surface water sources when the potentiometric surface of the aquifer is above the potentiometric surface of the surface water source, and well withdrawals (Hamilton, 1989; Water Rights, 2020c). Currently, there are 81 water rights/permits authorized to appropriate water from the Big Sioux: Aurora aquifer (Water Rights, 2020c). Of those, 59 water rights/permits are located in the northern sub-unit of the Big Sioux: Aurora aquifer. Additionally, Future Use Permit No. 1598-3 reserves 2,426 acre-feet of water annually from the northern sub-unit of the Big Sioux: Aurora aquifer for the City of Brookings (Water Rights, 2020c).

Table 1 summarizes the 15 non-irrigation water rights/permits authorized to appropriate water from the northern sub-unit of the Big Sioux: Aurora aquifer with their limiting diversion rate or appropriation and estimated annual use. The amount of water that can be withdrawn was estimated by assuming the non-irrigation water rights/permits limited by an annual volume will withdraw their entire appropriated volume every year. It is estimated that the non-irrigation water rights/permits limited only by a diversion rate are estimated to pump at their maximum permitted diversion rate for 60 percent of the time. Water Right No. 4038-3, held by the City of Elkton, was identified as being connected to a rural water system and have since plugged and abandoned the well (Drinking Water Program, 2020; Water Rights, 2020c); therefore, the estimated annual use from Water Right No. 4038-3 is assumed to be zero acre-feet in Table 1. Overall, the estimated average annual use for non-irrigation water rights/permits authorized to withdraw from the northern sub-unit of the Big Sioux: Aurora aquifer is 7,641 acre-feet/year.

Table 1. Summary of the limiting diversion rate or appropriation and estimated use for the non-irrigation water rights/permits for the northern sub-unit of the Big Sioux: Aurora aquifer (Drinking Water Program, 2020; Water Rights, 2020c)

Permit No.	Name	County	Status	Use	Rate (cfs)	Volume (acres)	Estimation Method	Estimated Use (acre-feet/year)
1952-3	City of Aurora	BG	LC	MUN	0.2		60% Pumping	86.9
3979-3	City of Brookings	BG	LC	MUN	6.69		Accounted for under Water Right 6048-3	0
4038-3	City of Elkton	BG	LC	MUN	0.72		Connected to RWS	0
4980-3	Brookings-Deuel RWS	BG	LC	RWS	0.89		60% Pumping	386.6
5433-3	Brookings-Deuel RWS	BG	LC	RWS	0.44		60% Pumping	191.1
6048-3	City of Brookings	BG	LC	MUN	2.9	2,100	Volume	2,100
6325-3	Valero Renewable Fuels Company LLC	BG	LC	IND	2.67	1,935	Volume	1,935
6437-3	Crosswind Jersey's Inc	BG	LC	COM	0.056		60% Pumping	24.3
7167-3	Basin Electric Power Cooperative	BG	LC	IND	0.22		60% Pumping	95.6
7182-3	Agfirst Farmers Cooperative	BG	LC	COM	0.35	10	Volume	10
7887-3	Novita Aurora LLC	BG	PE	IND	1.11		60% Pumping	482.2
8146-3	Brookings Economic Dev Ag Tech Center	BG	PE	IND	0.19	48.4	Volume	48.4
8285-3	Norm's Greenhouse & Nursery LLC	BG	PE	COM	0.1	9.2	Volume	9.2
8379-3	Bobcat Farms RE LLC	BG	PE	COM	0.1	62	Volume	62
8401-3	LG Everist Inc	BG	PE	IND	13.37	2,210	Volume	2,210
							Total:	7,641

FU: Future Use Permit; LC: Licensed Water Right; PE: Water Permit; MUN: Municipal; RWS: Rural Water System; IND: Industrial; COM: Commercial

There are 44 water rights/permits authorized to appropriate water from the northern sub-unit of the Big Sioux: Aurora aquifer for irrigation use (Water Rights, 2020c). Generally, irrigation water rights/permits are required to report their annual water usage. The average annual withdrawal rate for irrigation appropriations from the northern sub-unit of the Big Sioux: Aurora aquifer over the period of record (1979-2019) is approximately 2,190 acre-feet per year (Table 2) (Water Rights, 2020a). Water Right 5467A-3, held by South Dakota State University, reported their irrigation usage for this water right under Water Permit No. 7252-3 in 2019 (McMath, 2020). It was reported that neither Water Right 5467A-3 or Water Permit No. 7252-3 needed to use their wells due to enough moisture in 2019, so zero acre-feet was recorded on one irrigation questionnaire form (McMath, 2020). This accounts for the discrepancy of 44 water rights/permits being authorized to appropriate water from the northern sub-unit of the Big Sioux: Aurora aquifer for irrigation use, but only 43 listed as having reported in 2019 on Table 2.

There are domestic wells completed into the Big Sioux: Aurora aquifer that do not require a water right/permit, so the withdrawal amount is unknown (Water Rights, 2020d). Due to their relatively low diversion rates, withdrawals from domestic wells are not considered to be a significant portion of the hydrologic budget. Additionally, with the development of rural water systems in areas where the Big Sioux: Aurora aquifer is the uppermost aquifer available; it is likely some domestic users may have transitioned to rural water. Therefore, the annual quantity of water withdrawn by domestic wells is estimated to be negligible to the overall hydrologic budget of the Big Sioux: Aurora aquifer.

Table 2. Reported historic irrigation use from the northern sub-unit of the Big Sioux: Aurora aquifer (Water Rights, 2020a)

Year	No. of Permits	Annual Appropriation (acre-feet)	Reported Pumpage (acre-feet)
1979	34	16,729	1,034.7
1980	34	17,341	1,231.3
1981	43	17,410	2,607
1982	41	17,791.8	1,405.2
1983	40	17,602.8	1,937.8
1984	41	18,099	2,393
1985	44	19,626	2,642
1986	46	17,316.8	1,476
1987	47	20,501.8	2,579.7
1988	46	19,999.8	3,959.5
1989	48	20,503	3,108.7
1990	39	15,642	2,408.5
1991	40	15,719	1,299.4
1992	40	15,719	660.2
1993	40	15,719	208.1
1994	38	15,200.5	1,557.6
1995	35	14,635	250.1
1996	35	14,635	1,840.1
1997	35	14,635	2,863
1998	36	14,922	3,318.6
1999	36	14,922	2,319.5
2000	36	14,922	2,698.1
2001	37	15,226	2,812.1
2002	38	15,330	2,799.5
2003	37	14,856	3,176.0
2004	35	14,364	2,695.6
2005	35	14,364	2,312.5
2006	35	14,364.5	2,829.7
2007	35	14,364.5	3,221.4
2008	38	15,062.5	3,732.3
2009	38	15,086	3,431.3
2010	39	15,366	537.0
2011	39	15,974.6	2,673.9
2012	39	15,730	4,464.9
2013	44	17,220	3,972.4
2014	44	17,174	2,246.5
2015	44	17,165.1	1,474.8
2016	44	16,016.1	1,264.2
2017	44	16,016.1	1,392.3
2018	44	16,016.1	835.2
2019	43	15,786.1	118.01
Min	34	14,364	118.01
Max	48	20,503	4,464.9
Avg	39.7	16,221.3	2,189.9

Hydrologic Budget Summary

The average annual recharge rate to the northern sub-unit of the Big Sioux: Aurora aquifer is approximately 22,602 acre-feet per year. The average annual withdrawal rate from the northern sub-unit of the Big Sioux: Aurora aquifer (including the proposed appropriation, if approved) is approximately 12,580 acre-feet per year: (irrigation: 2,190 acre-feet/year; non-irrigation: 7,641 acre-feet/year; Future Use Permit No. 1598-3: 2,426 acre-feet/year, Water Permit Application No. 8443-3 (if approved) 323 acre-feet/year). Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Big Sioux: Aurora aquifer for the proposed appropriation.

OBSERVATION WELL DATA:

Administrative Rule of South Dakota (ARSD) Section 74:02:05:07 requires that the Water Management Board shall rely upon the record of observation well measurements in addition to other data to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge of the aquifer.

The DENR – Water Rights program monitors 15 observation wells completed into the Big Sioux: Aurora aquifer, with 14 of those observation wells completed into the northern sub-unit of the aquifer (Water Rights, 2020b). These observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The nearest observation wells to the proposed diversion points are BG-63D (approximately 2.9 miles southwest of diversion points), BG-63C (approximately 3.3 miles east of diversion points), BG-79C (approximately 4.9 miles southwest of diversion points), BG-79E (approximately 5.6 miles southwest of diversion points), and BG-77T (approximately 5.7 miles southwest of diversion points) (as shown in Figure 7) (Water Rights, 2020b and 2020c). The hydrographs for these observation wells are displayed in Figures 2 to 6 (Water Rights, 2020b). The data points utilized to construct the hydrographs are measurements of the static water level in the observation wells from the top of the well casing.

The hydrographs for the observation wells display relatively stable water levels over the respective period of record. The effects of climatic conditions are clear in the hydrographs because water levels are rising during wetter periods (early spring snowmelt and precipitation) and slowly declining to a stable water level during drier periods. The hydrographs show the aquifer consistently recovers after an irrigation season is finished and the stable to rising water levels in observation wells shows the aquifer is not being stressed by pumping. Aquifer recovery indicates that climatic conditions and therefore, the effects of recharge to and natural discharges from the aquifer dominate the effects of pumping from the Big Sioux: Aurora aquifer. That indicates recharge to and natural discharge from the aquifer greatly exceeds withdrawals. By recognizing that both recharge to and natural discharge from an aquifer can be captured for pumping, the observation well hydrographs demonstrate unappropriated water is available for the proposed appropriation.

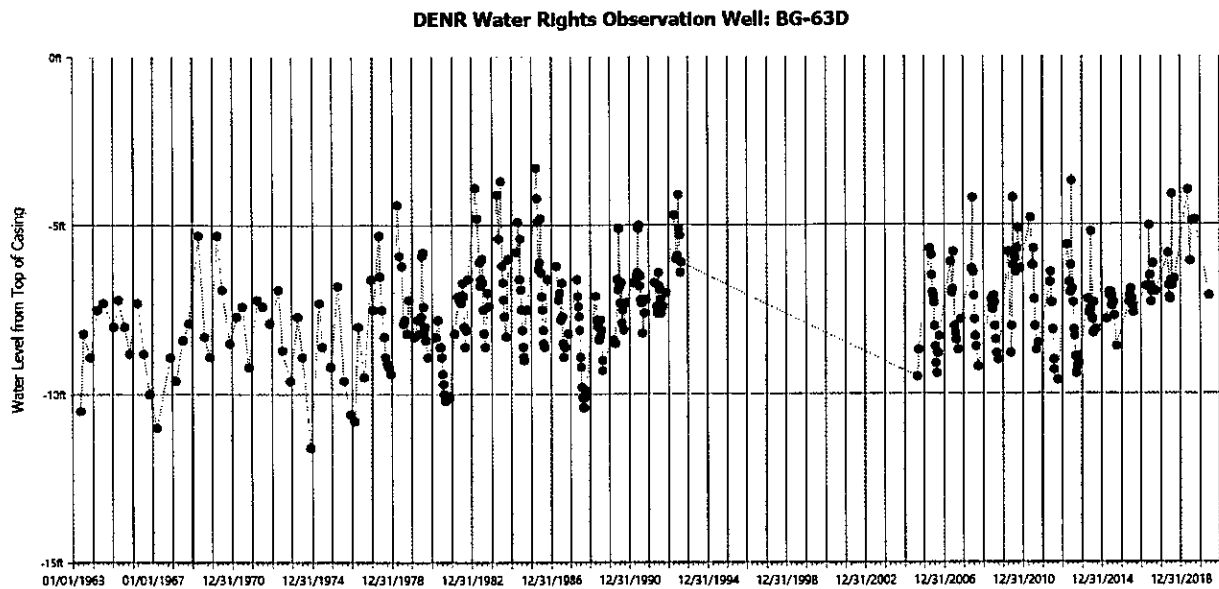


Figure 2. Hydrograph for observation well BG-63D (Water Rights, 2020b)

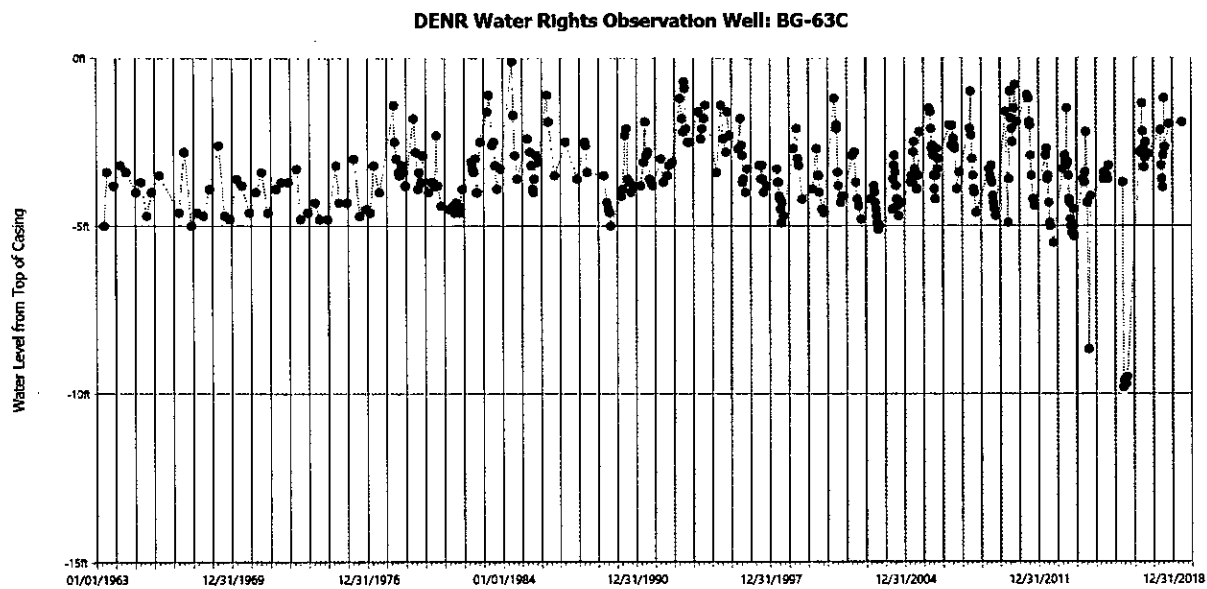


Figure 3. Hydrograph for observation well BG-63C (Water Rights, 2020b)

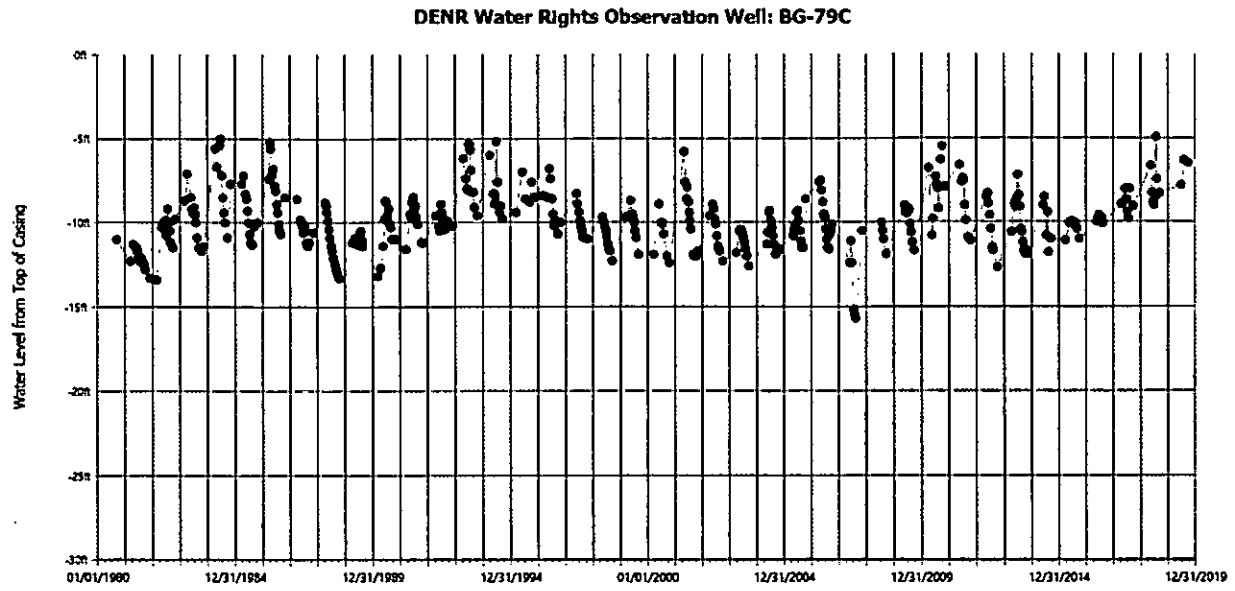


Figure 4. Hydrograph for observation well BG-78C (Water Rights, 2020b)

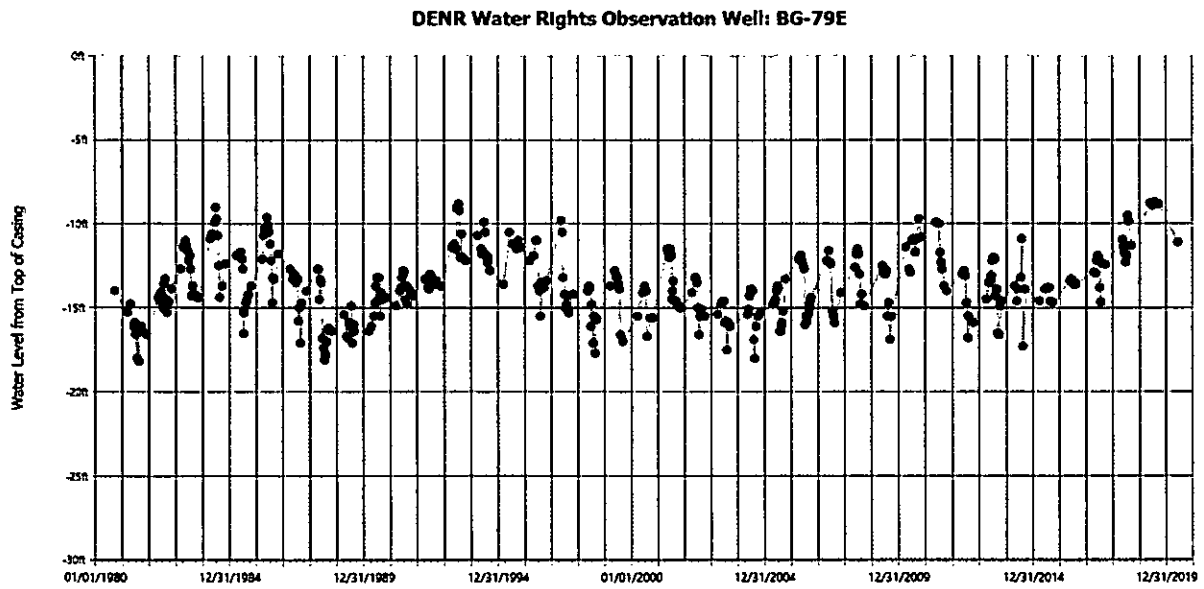


Figure 5. Hydrograph for observation well BG-79E (Water Rights, 2020b)

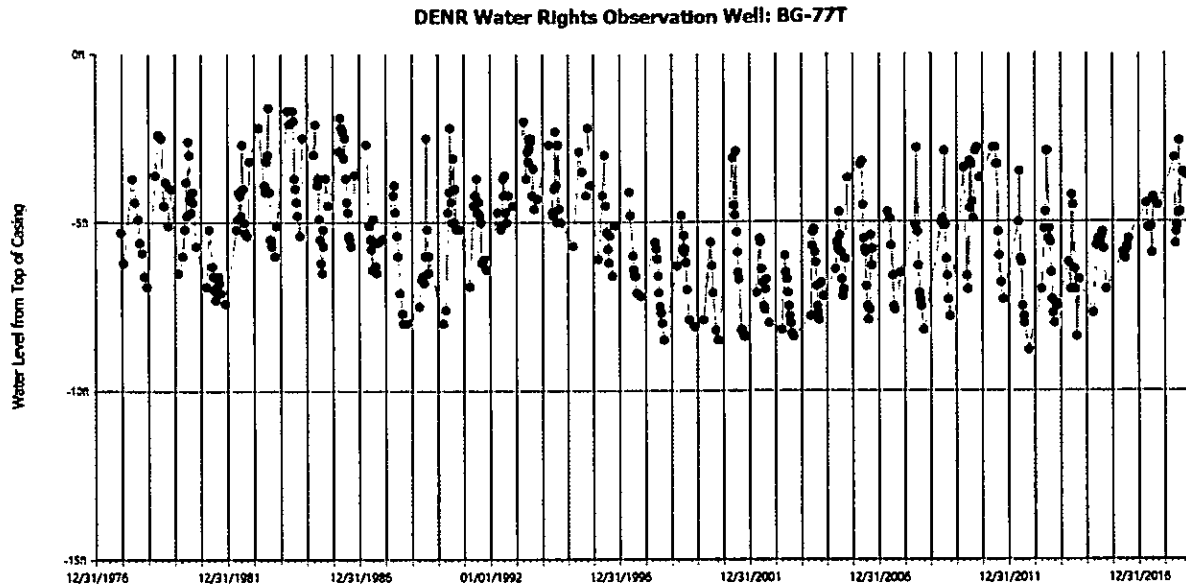


Figure 6. Hydrograph for observation well BG-77T (Water Rights, 2020b)

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 59 water rights/permits authorized to appropriate water from the northern sub-unit of the Big Sioux: Aurora aquifer, plus one future use permit reserving a volume of water (Water Rights, 2020c). The closest water right to the applicant is Water Right No. 4859-3, held by Rolland Hutterian Brethren Colony, which is located approximately 2 miles south of the proposed diversion points (Table 2) (Figure 7) (Water Rights, 2020c).

There are domestic wells on file with the DENR-Water Rights Program that are completed into the Big Sioux: Aurora aquifer, with the closest domestic wells on file (not held by the applicant) approximately 1.3 miles northwest of the proposed diversion points (Water Rights, 2020d). It is possible there are other domestic wells completed into the Big Sioux: Aurora aquifer near the proposed diversion points that are not on file with the DENR-Water Rights Program.

Table 2. Water rights/permits authorized to withdraw water from the Big Sioux: Aurora aquifer as shown in Figure 7 (Water Rights, 2020c)

Permit No.	Name	Status	Use	Diversion Rate (cfs)
2677-3	Terrance A Hill	LC	IRR	1.89
2787-3	Jan Sanderson	LC	IRR	0.43
3213-3A	Sanderson Farms Inc	LC	IRR	5.09
3218-3	Rolland Httm Brth Inc	LC	IRR	2
3347-3	Sandra Hanson	LC	IRR	3.07
3386-3	Reuben Nicolai	LC	IRR	1.78
3452-3	Rolland Httm Brth Inc	LC	IRR	1.88
3668-3	Jan Sanderson	LC	IRR	1.78
4477-3	Bradley Hanson	LC	IRR	1.74
4515A-3	Bill and Marilyn Bailie	LC	IRR	1.81
4600-3	David Pankonin	LC	IRR	1.78
4859-3	Rolland Httm Brth Inc	LC	IRR	1.78
4971-3	Charles Dupraz	LC	IRR	1.34
5241-3	Doris Jean Pahl	LC	IRR	1.67
5467A-3	SD State University	LC	IRR	0.67
7167-3	Basin Electric Power Cooperative	LC	IND	0.22
7463-3	Gerard and David Moriarty	PE	IRR	1.78
8193-3	Charles Dupraz	PE	IRR	1.56

LC: Licensed Water Right; PE: Water Permit; IRR: Irrigation; IND: Industrial

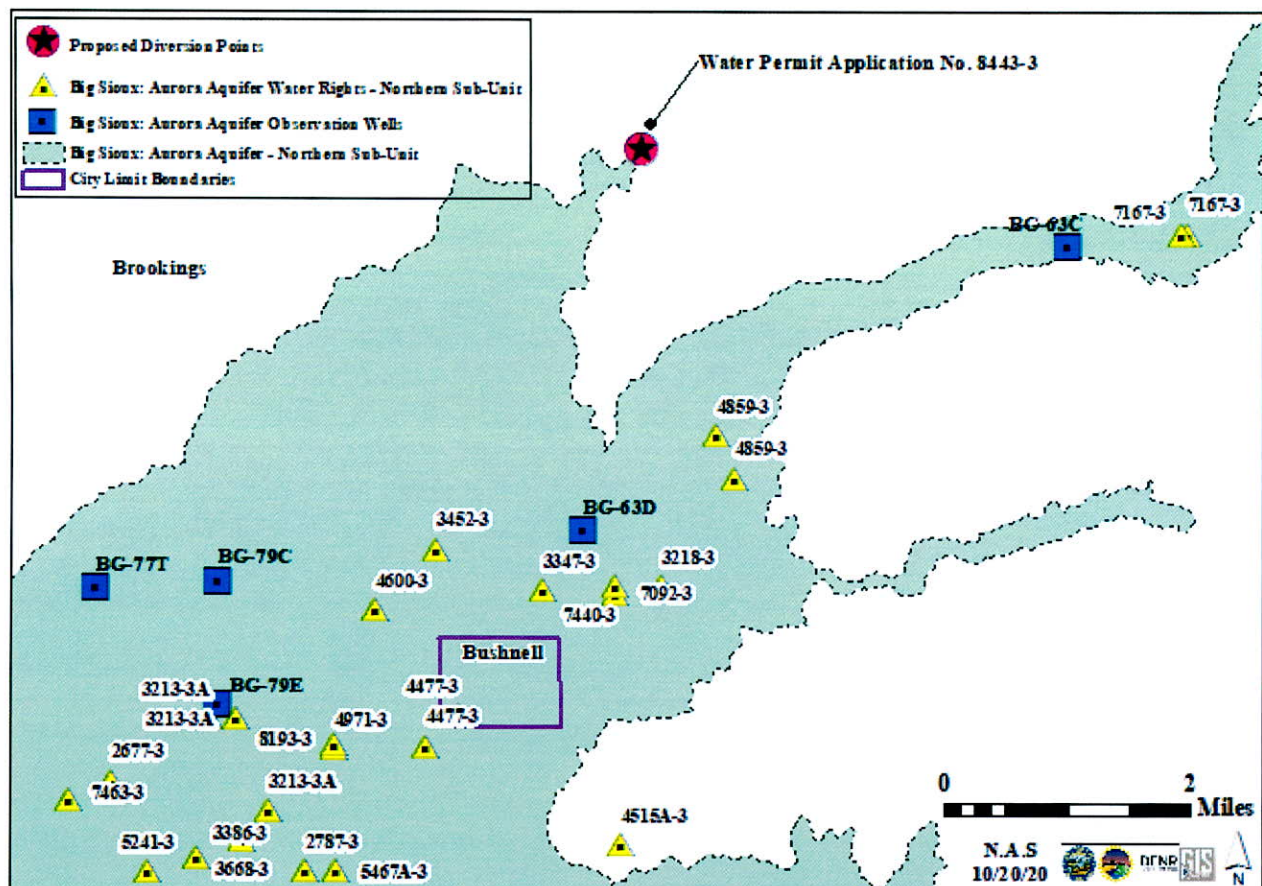


Figure 7. Location of the proposed diversion points by Water Permit Application No. 8443-3 with nearby Big Sioux: Aurora aquifer water rights/permits, and the observation wells used for this analysis (Water Rights, 2020b and 2020c)

The Big Sioux: Aurora aquifer is generally unconfined, but it is expected to be locally confined at the proposed diversion points based on the well completion report submitted with Water Permit Application No. 8443-3 and the lithologic logs on file for nearby Big Sioux: Aurora aquifer domestic wells (Hamilton, 1989; SDGS, 2020; Water Rights, 2020b and 2020d). Drawdown created by pumping a well generally does not extend far from the pumped well in an unconfined aquifer; however, in a confined aquifer, drawdown from pumping could extend a distance from the diversion points. The exact drawdown behavior of a well cannot be known without an aquifer performance test. Observation well BG-63C (approximately 3.3 miles southwest of proposed diversion points) has two high-yield wells within approximately one mile of it (Water Rights, 2020b and 2020c). The drawdown from pumping can be seen in the hydrograph for BG-63C, along with the aquifer returning to pre-pumping conditions (Figure 5) (Water Rights, 2020b).

The lithologic log on file for BG-63C noted the well was drilled 38 feet deep with the depth to the top of aquifer approximately 14 feet below grade (SDGS, 2020; Water Rights, 2020b). The lowest recorded static water level on the hydrograph is approximately 10 feet deep, which indicates there was still approximately 4 feet of artesian head pressure in BG-63C even during a drier period when high-yield wells are expected to be pumping more water (Water Rights, 2020b).

At the proposed diversion points, the Big Sioux: Aurora aquifer has a saturated aquifer thickness of approximately 35 feet with a depth to the top of aquifer around 30 feet below grade according to the well completion report submitted with Water Permit Application No. 8443-3 (Water Rights, 2020d). This would allow for enough thickness for a pump to be placed 20 feet below the top of the aquifer, which is required for the well to be considered adequate under ARSD 74:02:04:20 (6). Any drawdown as a result of the proposed diversion is not expected to unlawfully impair nearby adequate wells. In Brookings County, there are no complaints on file with the Water Rights Program regarding well interference for adequate wells completed into the Big Sioux: Aurora aquifer (Water Rights, 2020e).

The Water Management Board recognizes that putting water to beneficial use requires a certain amount of drawdown to occur. The Board has developed rules to allow water to be placed to maximum beneficial use without the necessity of maintaining artesian head pressure for domestic use. The Water Management Board defined an “adversely impacted domestic well” in ARSD 74:02:04:20(7) 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 Water Management Board considered the delivery of water by artesian head pressure versus maximum beneficial use during the issuance of Water Right 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Board adopted Findings of Facts and Conclusions of Law that noted the reservation of artesian head pressure for delivery of water would be inconsistent with SDCL 46-1-4 which states, “general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable...” (Water Rights, 1995). Furthermore, the Water Management Board found if increased cost or decreased production as a result of impacts on artesian head pressure by legitimate users is to be considered as an unlawful impairment, it would also conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to install or lower pumps depending on the specific characteristics of the Big Sioux: Aurora aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1) and ARSD 74:02:04:20 (6) and (7), the thickness of the Big Sioux: Aurora aquifer at the applicant’s location, and the lack of well interference complaints, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on existing water rights/permits or domestic users with adequate wells. Therefore, there is a reasonable probability that any interference from the proposed appropriation will not impose unlawful impairments on existing users with adequate wells.

CONCLUSIONS:

1. Water Permit Application No. 8443-3 proposes to appropriate up to 323 acre-feet of water annually at a maximum instantaneous diversion rate of 0.67 (cfs) from up to three wells (60 feet deep) to be completed into the Big Sioux: Aurora aquifer and located in the S ½ SE ¼ of Section 29-T111N-R48W.
2. The proposed use is for commercial use in a dairy operation located in the S ½ SE ¼ of Section 29-T111N-R48W. The area of interest is located in Brookings County approximately 3 miles south east of White, South Dakota.
3. Based on the hydrologic budget and observation well data, there is a reasonable probability that unappropriated water is available from the Big Sioux: Aurora aquifer to supply the proposed appropriation.
4. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8443-3 will not unlawfully impair adequate wells for existing water rights/permits and domestic users.

Nakaila Steen

Nakaila Steen
Natural Resources Engineer I
SD DENR - Water Rights Program

Reviewed by:

Adam Mathiowetz

Adam Mathiowetz, PE
Natural Resources Engineer III
SD DENR - Water Rights Program

References

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- McMath, G., 2020, October 23. Personal Communication. Environmental Scientist DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
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- Water Rights, 1995. Findings of Fact, Conclusions of Law, and Final Decision in the Matter of Water Permit Application No. 2313-2, Coca-Cola Bottling Company of the Black Hills. DENR-Water Rights Program file for Water Right No. 2313-2. Pierre, SD.

Water Rights, 2020a. "1979-2019 Irrigation Summaries by Aquifer," SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.

Water Rights, 2020b. Observation Well Data, SD-DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2020c. Water Right/Permit Files, SD-DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2020d. Well Completion Reports, SD-DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2020e. County Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Schlaak, Karen

From: Schlaak, Karen
Sent: Wednesday, October 28, 2020 9:03 AM
To: linde@itctel.com
Subject: Water Permit Application No. 8443-3
Attachments: 0124.pdf

Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your water permit application. As stated in the letter, please contact the paper as soon as possible to authorize publication and arrange for payment. This information is being mailed to you today.

Karen Schlaak
Water Rights Program
(605) 773-3352



Affidavit of Publication

State of South Dakota

ss

County of Brookings

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

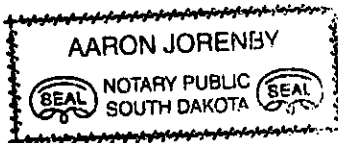
Leg#419 Application 8443-3, Linde Dairy

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

November 5, 2020

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:

Thirty Dollars and Thirty-Two Cents \$30.32



Km Foiles

6 day of

November

2020

Notary Public in and for the County of Brookings, South Dakota.
My Commission expires February 22, 2026

Legal 419 1X
11/5

NOTICE OF
APPLICATION
NO. 8443-3 TO

APPROPRIATE WATER

Notice is given that Linde Dairy LLC, c/o Rein Landman, 47988 207th St, White SD 57276 has filed an application for a water permit to appropriate 323 acre-feet of water annually at a maximum pump rate of 0.67 cubic feet of water per second from up to three wells to be completed into the Big Sioux-Aurora Aquifer (60 feet deep) located in the S 1/2 SE 1/4 Section 29 for commercial use in a dairy operation located in the S 1/2 SE 1/4 Section 29; all in T111N-R48W. This site is located approximately 3 miles southeast of White SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8443-3 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 Ron Duvall 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 November 16, 2020. 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. Published 1X at the total approximate cost of \$30.32.

RECEIVED

NOV 16 2020

WATER RIGHTS
PROGRAM

Schlaak, Karen

From: Schlaak, Karen
Sent: Wednesday, October 28, 2020 8:53 AM
To: registerclassifieds (registerclassifieds@brookingsregister.com)
Subject: 8443-3, Linde Dairy LLC
Attachments: 8443-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on November 5, 2020.

Linde Dairy LLC, c/o Rein Landman, 47988 207th St, White SD 57276 (605 690-8727) 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 to the Water Rights Program, 523 E Capitol, Pierre SD 57501.

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

Karen Schlaak
Water Rights Program
(605) 773-3352





DENR
SOUTH DAKOTA

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 RIGHT AWAY.**

October 28, 2020

Linde Dairy LLC
c/o Rein Landman
47988 207th St
White SD 57276

Dear Mr. Landman:

Water Permit Application No. 8443-3 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 (Ph # 605 692-6271). You will need to contact the newspaper 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 newspapers to authorize publication of your Notice and to arrange for payment. Early contact with the papers 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,

Karen Schlaak

Karen Schlaak
Water Rights Program
(605) 773-3352

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.

NOTICE OF APPLICATION NO. 8443-3 to Appropriate Water

Notice is given that Linde Dairy LLC, c/o Rein Landman, 47988 207th St, White SD 57276 has filed an application for a water permit to appropriate 323 acre-feet of water annually at a maximum pump rate of 0.67 cubic feet of water per second from up to three wells to be completed into the Big Sioux-Aurora Aquifer (60 feet deep) located in the S 1/2 SE 1/4 Section 29 for commercial use in a dairy operation located in the S 1/2 SE 1/4 Section 29; all in T111N-R48W. This site is located approximately 3 miles southeast of White SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8443-3 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 Ron Duvall 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 November 16, 2020.

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.

Published once at the total approximate cost of_

January 19, 2021

PAYMENT REQUEST FORM

PAYEE: Linde Dairy LLC
c/o Rein Landman
47988 207th St
White SD 57276

FROM: DENR Water Rights Program
523 E. Capitol Ave
Pierre, SD 57501-3181

DESCRIPTION OF SERVICE, PRODUCE OR TRANSFER

Over payment for Application/License Fee

AMOUNT: \$100.00

FUNDING SOURCE:

GENERAL: X

FEDERAL:

OTHER:

COMMENTS:

AUTHORIZATION: *Eve Henderson 1/19/2021*

I declare and affirm under the penalties of perjury that this claim is in all things, true and correct.
I further agree to comply with the provisions of the Civil Rights Act of 1964 and regulations issued
thereunder relating to nondiscrimination in federal assisted programs.



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

JAN 19 2021

Linde Dairy LLC
c/o Rein Landman
47988 207th St
White SD 57276

Dear Mr. Landman:

Enclosed is Water Permit No. 8443-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

An application/license filing fee of \$1,150.00 was submitted with the application. The fee should have been \$1,050.00. \$100.00 will be refunded to Linde Dairy LLC. The refund check should be received within the next couple of weeks.

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,

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

enclosures

8443-3

RECEIVED

JUN 21 2021

WATER RIGHTS
PROGRAM**NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE**Date 06/01/2021TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181FROM: LINDE Dairy, LLC
(name)
47988 207th Street.
(address)
White SD 57276 605-690-8727
(city, state, zip) (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. 8443-3 states that the water use system is to be constructed by 06/01/2021, and water is to be put to beneficial use by 06/01/2021.
(date) (date)

The water use system was completed on 06/01/2021.
(date)

Applying the water to beneficial use was completed on 06/01/2021.
(date)

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

[Signature]
(signature)



Rein Landman



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

June 21, 2021

8443-3

Rein Landman
Linde Dairy LLC
47988 207th St
White SD 57276

Dear Mr. Landman:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that you are completed with the water use system authorized under Water Permit No. 8443-3.

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 the 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,

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. 8443-3

I have this day, August 27, 2021, made a thorough examination of the water use system constructed by Linde Dairy LLC, 47988 207th St., White, SD 57276 of Permit No. 8443-3, bearing the priority of August 31, 2020 authorizing the diversion of 0.67 cu. ft. per second of the waters of the Big Sioux: Aurora Aquifer for commercial (dairy) use purposes, in Brookings County.

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Kaiser Well Drilling Inc
- 2) No. of Wells 2 (twins)
- 3) Depth(s) 65 feet
- 4) Well log is available Y

Casing:

- 1) Diameter 5 inches
- 2) Length 40 feet
- 3) Type Plastic

Screen:

- 1) Type PVC
- 2) Length 20 feet
- 3) Static water level 30 feet

Pump:

- 1) Make NA
- 2) Model Submersible
- 3) Size NA
- 4) Capacity 65 each 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 points of diversion located as follows:
Both wells are in the SW ¼ SE ¼
85 ft N & 2560 ft W of the SW corner of Section 29, T111N, R48W, Lat 44.38367 Long -96.61669
50 ft N & 2565 ft W of the SW corner of Section 29, T111N, R48W, Lat 45.28976 Long -96.57085
2. The works are capable of diverting and conveying to the place of use 0.29 cu. ft. per second (130 gpm) of water which is to be used for commercial (dairy).
3. All structures, wells and lands on map Y

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

The location of the wells on the map was done the aid of FSA maps and ArcMAP software.

The address and the telephone number contained in the review materials are current.



Darrell W DeBoer
Water Rights Inspector
DANR, Water Rights Program

Date report completed: August 28, 2021

Note: The inspection was conducted earlier than the end of the construction period because Mr. Landman submitted a completion of works form on June 21, 2021 indicating completion of the system.

On October 5, 2021, I spoke to Mr. Landman who indicated they finished the first part of the system but not everything. They want to be able to triple their operation. Since the construction date is not up until 2025, a license will not be issued at this time. The project will need to be reinspected at a later date for licensing purposes.

Genny

Diversion Point Locations

From the SE corner of
Sec 29 T111N-R48W

Well #1

85 ft N & 2560 ft W

Lat 45.28985

Long -96.57085

Well #2

50 ft N & 2565 ft W

Lat 45.28976

Long -96.57085

Section 29
T111N-R48W

Well #1

Well #2

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



0 625 1,250 2,500 3,750 5,000 Feet



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

September 30, 2021

8443-3

Rein Landman
Linde Dairy LLC
47988 207th St
White SD 57276

I am writing regarding licensing of your water use system developed under Water Permit No. 8443-3. The water permit authorizes diversion of 300 gallons of water per minute with an annual volume of 323 acre feet from three wells for your dairy operation.

In June, you submitted a completion of works form indicating the system was complete and ready for inspection. One of our staff engineers conducted the investigation on August 27th. The investigation found two wells were drilled and produced a total of 130 gallons per minute.

With the above investigation findings, once issued, the water license would limit your use of water for the dairy to 130 gpm with an annual volume of 210 acre feet from the two wells.

Under your water permit, you have until **November 2025** to complete the works and **November 2029** to put the water to beneficial use. If you have completed everything and the above numbers are satisfactory, we will go ahead and process the water license. Prior to issuing the license, we wanted to check with you to ensure you were ready for the license to be issued.

Please give me a call to discuss the above information. Thank you in advance.

Sincerely,

Genny McMath
Water Rights Program
605 773-3352
Genny.mcmath@state.sd.us



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

October 5, 2021

8443-3

Rein Landman
Linde Dairy LLC
47988 207th St
White SD 57276

Dear Mr. Landman:

I am writing in follow-up to our phone conversation regarding licensing of your water use system authorized under Water Permit No. 8443-3.

An on-site investigation was conducted in August, 2021 for licensing purposes based on a "Completion of Works" form you submitted earlier this year. It is my understanding you still plan on increasing the size of the dairy and would then be using more water.

Since the permit allows until 2025 to complete the project and until 2029 for placing the water to beneficial use, we will hold up on licensing of the water permit until you are completed with development. Another on-site investigation will be conducted after November 2025.

Thank you for visiting with me about the project. If you have any questions, please let me know.

Sincerely,

Genny McMath
Water Rights Program
605 773-3352
Genny.mcmath@state.sd.us

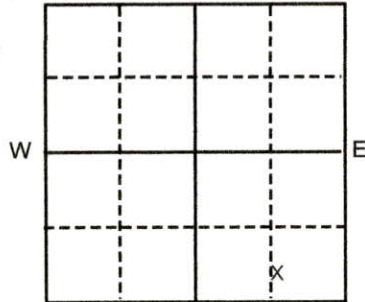
8443-3

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE 1/4 SE 1/4 Sec 29 Twp 111N Rg 48WCounty BROOKINGS ☒

North

Please mark well
location with an "X"

Well Completion Date

8-18-2020

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
_____ ft. from _____ (identify source)

PROPOSED USE:

☒ Domestic/Stock ☐ Municipal ☒ Business ☐ Test holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

DIRECT ROTARY

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
sdr17 LB/FT	5 IN	+2 FT	25 FT	8.75 IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
grtweldf	5	54 Lb/gal	0 Ft	40 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure
pressure pull

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 5 Inches Length 20 FeetMaterial PVCSlot Size 25 Set From 25 Feet to 45 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? _____☐ No, Why Not? _____Lab to which water
quality sample sent for analysisWARD LABS FOR DAIRY
ANALYSISWell Owner: REIN LANDMANBusiness Name: LINDE DAIRYAddress: 47988 207TH STCity, State, Zip: WHITE ☒ SD ☒ 57276

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
TOP SOIL	0	2
YELLOW CLAY	2	4
ROCKS MIXED W/ GRAVEL	4	5
YELLOW CLAY	5	10
YELLOW GRAVEL MIXED	10	16
YELLOW CLAY	16	25
YELLOW ROCKY MIXED TIGHT	25	45
BLUE CLAY	45	107
GREY MED-COURSE	107	125

STATIC WATER LEVEL _____ 33 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: 30 GPM WITH SUBMERSIBLE PUMP☐ Bailed☐ Other

Pumping Level Below Land Surface

_____ 36 Ft. After _____ 24 Hrs. pumped _____ 30 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

BLUE CLAY 127-137

YELLOW CLAY 137

This well was drilled under license # 689 and this
report is true and accurate.Drilling firm: KAISER WELL DRILLING INC

Signature of License Representative: _____

RECEIVED

Signature of Well Owner or Equitable Property Holder: _____

JAN 19 2021
WATER RIGHTS
PROGRAMDate: 08/26/2020