

WATER PERMIT NO. 2816-2

Name of Applicant: Sudbury Ranch LLC

Address: PO Box 3372, Rapid City SD 57709

Phone: 605 391-7200

Amount of Water Claimed: 0.11 cfs

Total Acres: NA

Source of Water Supply: groundwater (1 well)

Water to be used for: water distribution system

County: Pennington

Type of Waste Disposal System:

Location: 4.5 miles southwest of Rapid City

PRIORITY

Date Received: 4-19-21

Application/License Fee: \$ 700

Corrected Application Received:

Period of Annual Use: January 1 – December 31

Remarks:

Diversion Point: SE 1/4 SE 14 Sec 21-T1S-R7E

Land to be Irrigated: NA

Depth of Well: 900

Well Driller:

Remarks:

Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 4-19-21

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

			21		
				⊗	

SOUTH DAKOTA
WATER PERMIT NO. 2816-2

Date of first receipt of application April 19, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2816-2 to Sudbury Ranch LLC c/o Casey Skyberg, PO Box 3372, Rapid City SD 57709 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. 2816-2 appropriates 8.3 acre-feet of water annually at a maximum pump rate of 0.11 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 900 feet deep) located in the S 1/2 SE 1/4 Section 21-T1S-R7E. This site is located approximately 4.5 miles southwest of Rapid City SD.
2. The water appropriated shall be used for the purpose of a water distribution system 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 from which applicant may claim right is April 19, 2021.
5. The date of approval of Permit No. 2816-2 is June 28, 2021.
6. One-fifth of the construction is to be completed on or before December 28, 2023.
7. All construction is to be completed on or before June 28, 2026.
8. Water is to be put to beneficial use on or before June 28, 2030.
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. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2816-2 is issued for a twenty-year term. Pursuant to SDCL 46-2A-21, the twenty-year term may be deleted at any time during the twenty-year period or following its expiration. If the twenty-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2816-2 may also be cancelled for nonconstruction, forfeiture, abandonment or three permit violations pursuant to SDCL 46-1-12, 46-5-37.1 and ARSD 74:02:01:37.
2. The well 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.
3. The well authorized by Permit No. 2816-2 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.

(continued)

4. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
5. Water Permit No. 2816-2 appropriates up to 8.3 acre-feet of water annually.

WATER MANAGEMENT BOARD

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

JUL 02 2021

date



Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>2816-2</u>	(office use only) Hydrologic Unit <u>10120109</u>
	Basin <u>Upper Cheyenne</u>	
	Newspaper <u>Rapid City Journal</u>	

PAID
APR 19 2021
Ck# 001126

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 Sudbury Ranch, LLC

Mailing Address PO Box 3372 Rapid City SD 57709
(Address) (City) (State) (Zip Code)
Phone 605-391-7200 Mobile _____ Email solid1const@gmail.com

2. Amount of water claimed 0.11 *CFS or 50 **GPM and 8.3 ***AF or 2.7 M 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 Madison aquifer

4. Location of point of diversion S1/2 SE1/4 Section 21, T1S, R7E County Pennington
(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)

5. County or counties where water will be used Pennington

6. Annual period during which water is to be used January - December

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)

Domestic water to supply proposed Sudbury Ranch Subdivision 20 single family residential homes.

RECEIVED

APR 19 2021

I, Casey Skyberg Pres, 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 0 Have test holes been drilled ☐ Yes ☒ No Drilled by _____
(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) 900 Depth to Top of Water Bearing Material 550 Depth to Water from Surface 650

d) Distance to nearest domestic well on applicant's property 0.4 Miles Property owned by others 0.25 miles

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)

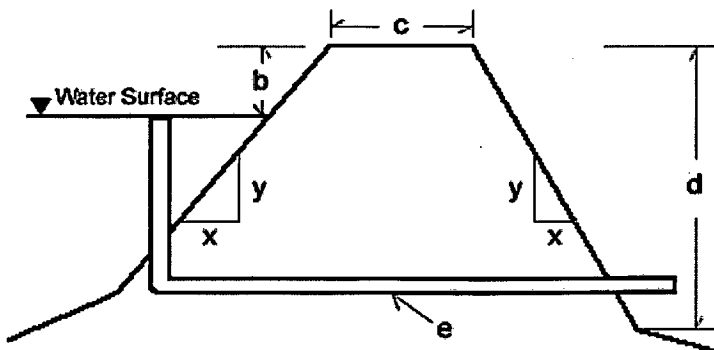
Upstream _____

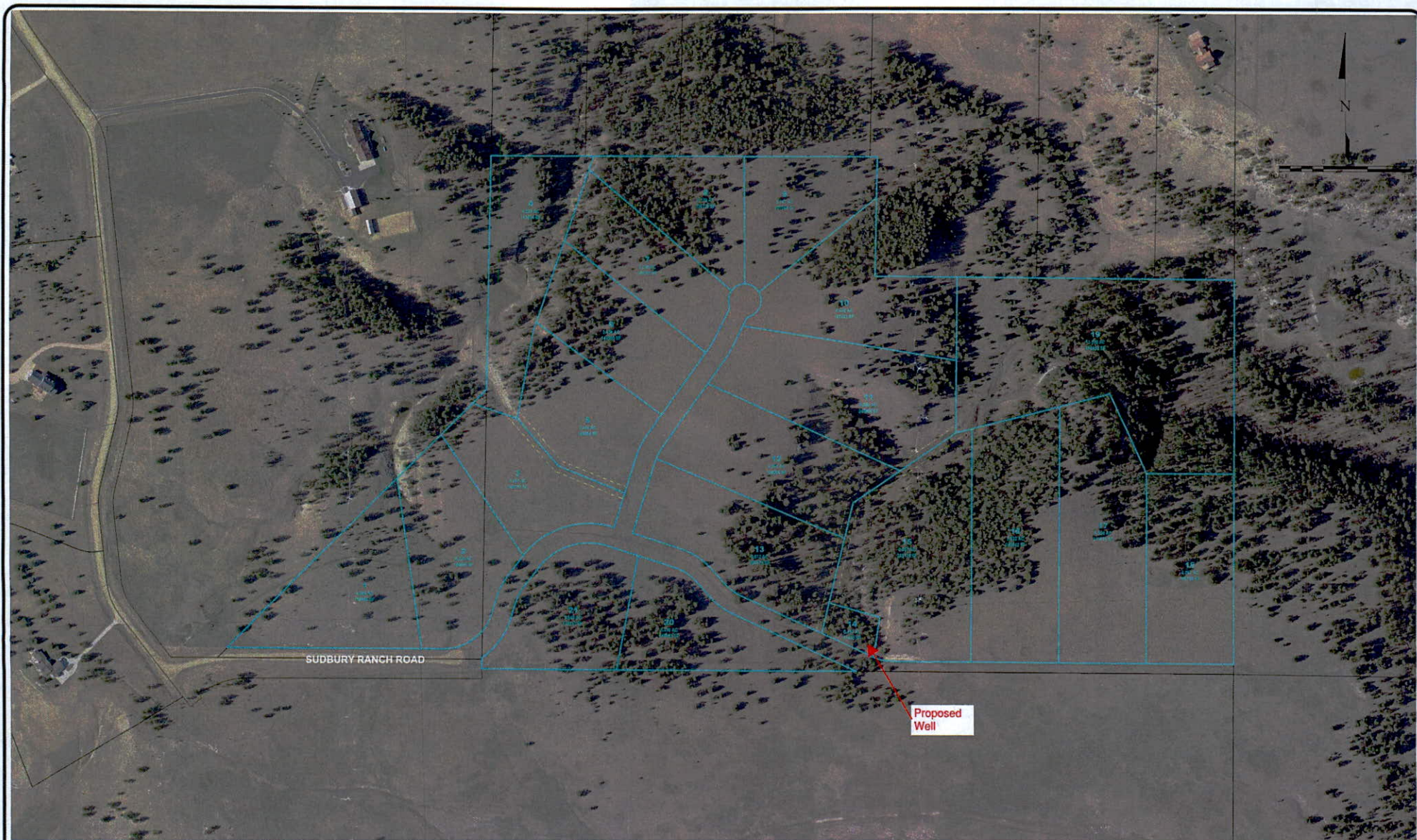
Downstream _____

h) Surface Area of Impoundment _____

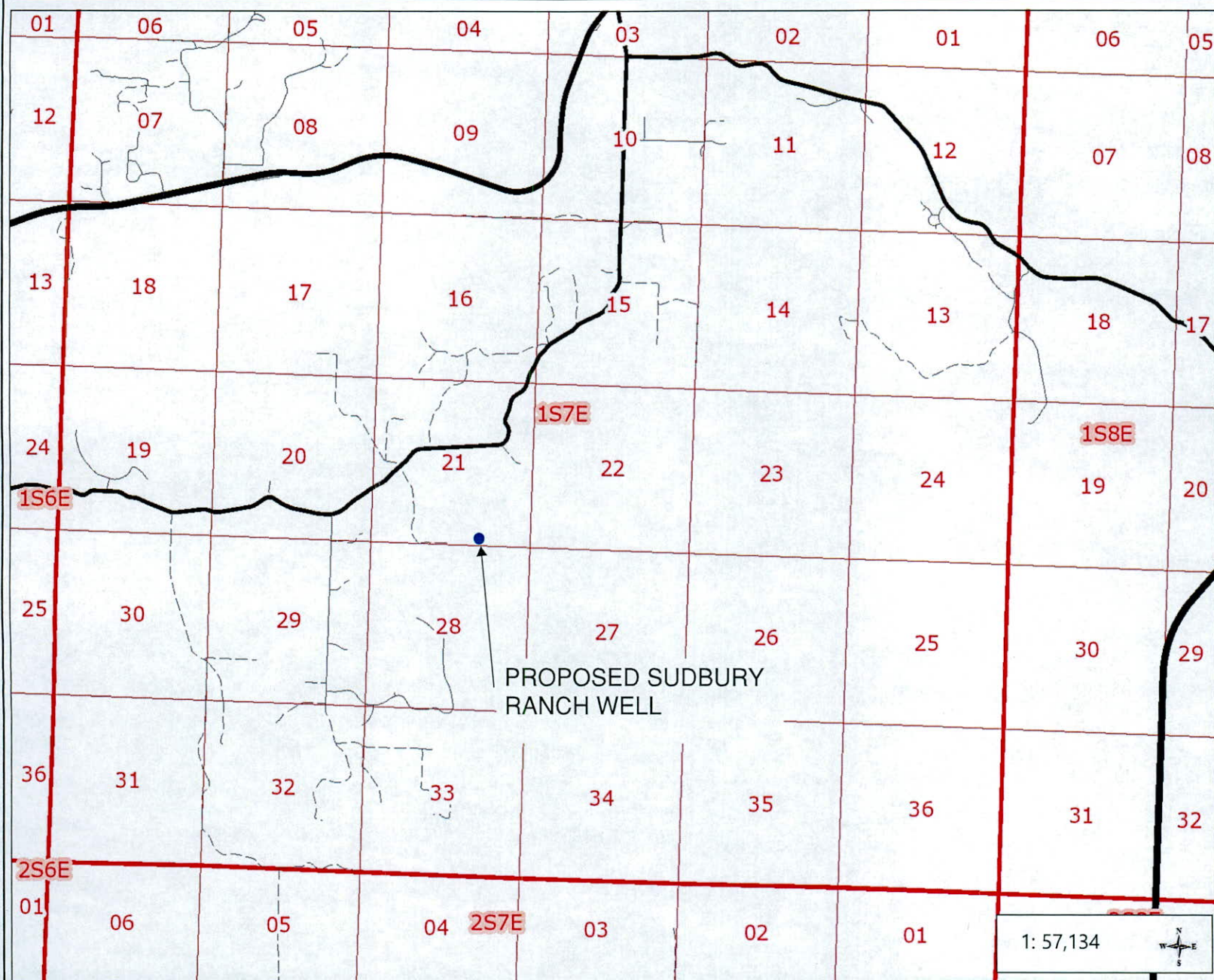
i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres





PRELIMINARY - NOT FOR CONSTRUCTION



Legend

Roads

- Interstate
- US highway
- SD highway
- County highway
- Main road
- Minor arterial
- Collector
- Ramp
- Paved road
- Unpaved road
- Unimproved road
- Trail
- Airport Runway
- Not yet coded

PLSS

Townships

City Limits

- BOX ELDER
- ELLSWORTH AFB
- HILL CITY
- HILL CITY
- KEYSTONE
- NEW UNDERWOOD
- QUINN
- RAPID CITY
- WALL
- WASTA

Map Notes:

9,522.4 0 4,761.18 9,522.4 Feet

NAD_1983_StatePlane_South_Dakota_South_FIPS_4002_Feet
© Rapid City-Pennington County GIS Division

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

1: 57,134



1S7E
Section: 17

1S7E
Section: 16

1S7E
Section: 15

1S7E
Section: 20

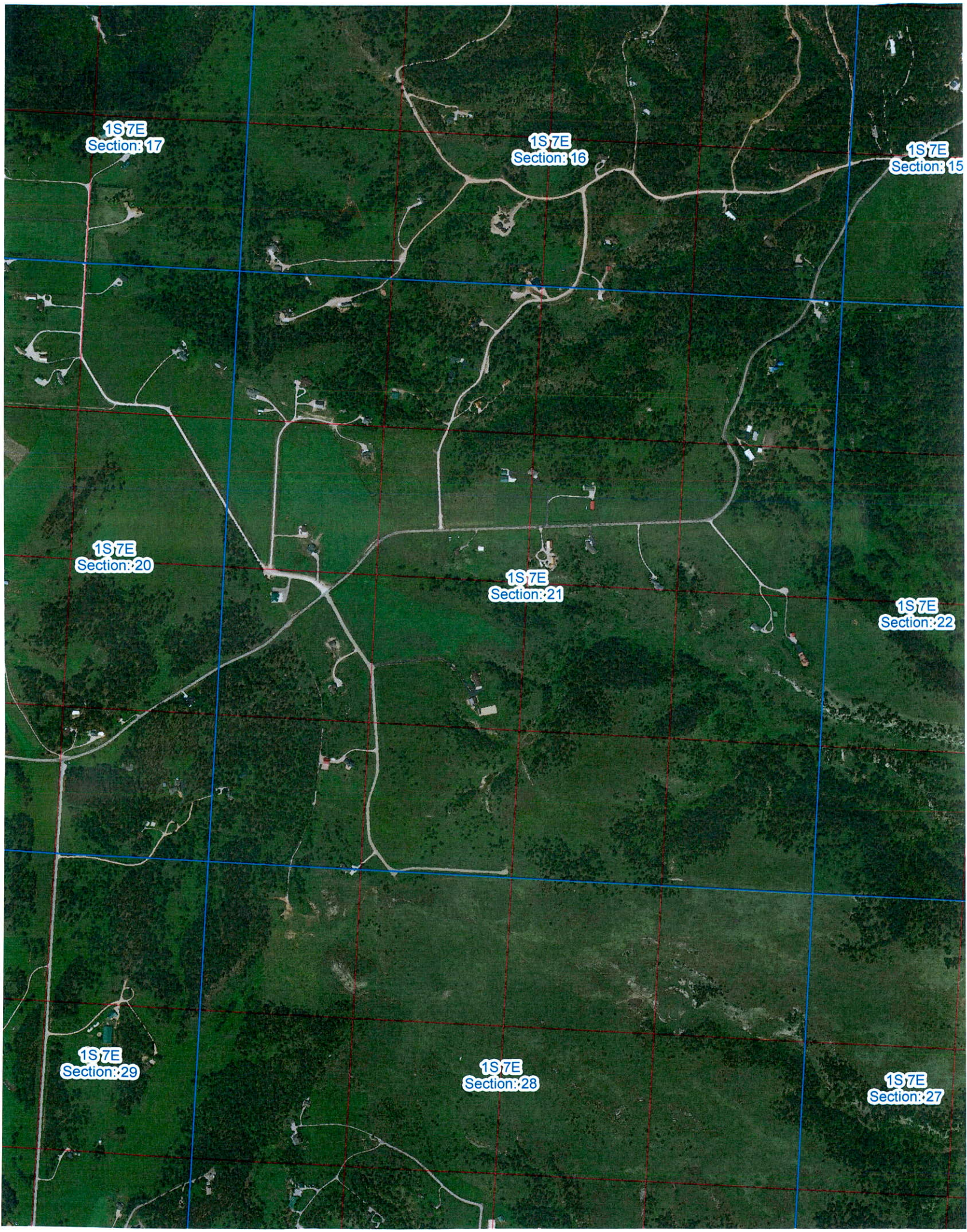
1S7E
Section: 21

1S7E
Section: 22

1S7E
Section: 29

1S7E
Section: 28

1S7E
Section: 27





DL198131

ARTICLES OF ORGANIZATION

DOMESTIC LIMITED LIABILITY COMPANY
SDCL 47-34A-203, 212

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

Filing Fee: \$150

Total Fee: \$150

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

Article I

The name of the Company: **Sudbury Ranch Land Holding, LLC**

Article II

The address of the initial designated office in or out of the State of South Dakota where the company conducts its business:

Actual Street Address

**4102 PENROSE PLACE
RAPID CITY, SD 57702**

Mailing Address

**PO BOX 3372
RAPID CITY, SD 57709-3372**

Article III

SDCL 59-11-6

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 **JEFFERY D COLLINS**

Actual Street Address in this State

**909 ST JOSEPH ST STE 800
RAPID CITY, SD 57701**

Mailing Address in this State

Article IV

The name and address of each organizer

Name

Address

Casey Skyberg

PO Box 3372, Rapid City, SD 57709

Tamara Jo Skyberg

PO Box 3372, Rapid City, SD 57709

Article V

The duration of the company if other than perpetual is: **Perpetual**

If the document is not to be effective upon filing by the Secretary of State, the delayed effective date is: _____

B0172-4532 03/08/2021 11:45AM Rec'd by SD SOS

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Ag and Natural Resources

Date April 19, 2021

RECEIVED OF Solid Construction Inc./Sudberry Ranch LLC. PO Box 3372 Rapid City SD 57709

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

Fee for Application for Permit No. <u>2816-2</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. _____ after period of seven years.	\$
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>2816-2</u>	\$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	\$700.00

By Eric Gronlund
Chief Engineer

VM



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

May 13, 2021

Sudbury Ranch LLC
c/o Casey Skyberg
PO Box 3372
Rapid City, 57709

Dear Mr. Skyberg:

As requested by phone on your behalf by Frank Conway of Dakota Bice Drilling LLC, pursuant to South Dakota Well Construction Standard 74:02:04:21, you are authorized to have Dakota Bice Drilling LLC or another SD licensed well driller construct a test well into the Madison aquifer prior to approval of a water permit. The test well will be located in the S ½ SE ¼ Section 21-T1S-R7E in Pennington County. All test wells must be constructed in accordance with the SD Well Construction Standards. Any test holes or test wells that are abandoned must be plugged pursuant to the SD Well Construction Standards.

Authorization must be obtained before water from the well can be used in excess of domestic use as defined by South Dakota Codified Law 46-1-6(7) or for uses other than domestic use. Approval of this test well does not assure issuance of a water permit. Following review of a Water Permit Application and assessing the availability of water, the potential impacts to existing users, the beneficial use, and the public interest of a permit, the Chief Engineer will make a recommendation to the Water Management Board regarding the application. The recommendation to approve, deny, or defer the application will be publicly noticed and an opportunity afforded for the public to intervene. A public hearing may be required to consider the water permit. If you have questions regarding permitting, please call Ron Duvall at (605) 773-3352.

Sincerely,

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

CC: Dakota Bice Drilling, LLC, 3818 Hagen Court, Rapid City, SD 57702

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, June 7, 2021 3:40 PM
To: 'solid1const@gmail.com'
Cc: 'Dana Foreman'
Subject: Water Permit Application No. 2816-2
Attachments: 1292.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.

Karen Schlaak

DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2816-2, Sudbury Ranch 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. 2816-2, Sudbury Ranch LLC, PO Box 3372, Rapid City SD 57709.

The Chief Engineer is recommending APPROVAL of Application No. 2816-2 with a twenty-year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, 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. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2816-2 is issued for a twenty-year term. Pursuant to SDCL 46-2A-21, the twenty-year term may be deleted at any time during the twenty-year period or following its expiration. If the twenty-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2816-2 may also be cancelled for nonconstruction, forfeiture, abandonment or three permit violations pursuant to SDCL 46-1-12, 46-5-37.1 and ARSD 74:02:01:37.
2. The well 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.
3. The well authorized by Permit No. 2816-2 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.
4. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
5. Water Permit No. 2816-2 appropriates up to 8.3 acre-feet of water annually.

See report on application for additional information.

Eric Gronlund, Chief Engineer
June 7, 2021

Report to the Chief Engineer

On Water Permit Application No. 2816-2

Sudbury Ranch LLC, c/o Casey Skyberg, President

June 3, 2021

Water Permit Application No. 2816-2 proposes to appropriate up to 8.3 acre-feet of water annually at a maximum instantaneous diversion rate of 0.11 cubic feet of water per second (cfs) from one well to be completed into the Madison aquifer (approximately 900 feet deep) in the S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 21-T1S-R7E for use in a water distribution system. The site is in Pennington County approximately 4.5 miles southwest of Rapid City, South Dakota.

AQUIFER: Madison (MDSN)

HYDROGEOLOGY:

The Madison aquifer in South Dakota exists in the permeable and saturated portions of the Paleozoic Era, late-Devonian-aged to early-Mississippian-aged, Madison Group (Fahrenbach et al., 2010). The Madison aquifer is a part of the larger Carbonate aquifer, which is comprised of permeable Paleozoic limestones and sandy dolomites (Rahn and Gries, 1973). In South Dakota, the Madison Group is composed of the overlying Pahasapa Limestone and underlying Englewood Limestone (Fahrenbach et al., 2010). The Pahasapa Limestone is a Lower Mississippian Age “white, light-gray to tan, fine to medium grained limestone and dolomite containing brown to gray chert,” that ranges in thickness from 300 to 630 feet (Martin et al., 2004). The Englewood Limestone is a Lower Mississippian and Upper Devonian Age “pink to lavender to light-gray, thin to medium bedded, fine to medium grained, argillaceous, dolomitic limestone,” that ranges in thickness from 30 to 63 feet (Martin et al., 2004).

The Madison Group underlies portions of Montana, Nebraska, North Dakota, South Dakota, Wyoming, and parts of Canada (Peterson, 1984). In western South Dakota, the Madison Group is estimated to have an areal extent of approximately 19,116,160 acres, and the Madison aquifer is estimated to contain approximately 644,827,200 acre-feet of recoverable water in storage (Allen et al., 1985). In Pennington County, the Madison Group is estimated to have an areal extent of approximately 1,489,920 acres, and the Madison aquifer is estimated to contain approximately 29,798,400 acre-feet of recoverable water in storage (Allen et al., 1985). The Madison Group outcrops in the Black Hills (see Figure 1) but is otherwise buried in South Dakota (Martin et al., 2004). The Madison aquifer is primarily under confined conditions except where it outcrops in the Black Hills in South Dakota (Water Rights, 2021b and 2021d). Water movement in the Madison aquifer is primarily influenced by the geologic structure in the Black Hills and eastern Powder River Basin region; however, prominent zones of faulting in which little displacement of strata occurs may also influence water movement in the aquifer (Rahn and Gries, 1973).

No water well or test hole completion report was submitted with Water Permit Application No. 2816-2. The elevation of the ground surface within one half mile of the proposed diversion point ranges from approximately 4,100 feet to 4,250 feet above mean sea level. By utilizing the

“Altitude of the Top of the Madison Group in the Black Hills Area, South Dakota” map completed by Carter and Redden (1999a), the depth to the Madison Group near the proposed diversion point ranges from approximately 3,300 to 3,400 feet above mean sea level. Therefore, the Madison Group is expected to be approximately 800 to 850 feet below grade near the proposed diversion point. By utilizing the “Potentiometric Surface of the Madison Aquifer in the Black Hills Area, South Dakota” map completed by Strobel and others (2000), the Madison aquifer near the proposed diversion point has a potentiometric surface of approximately 3,500 to 3,600 feet above mean sea level. Lastly, by utilizing the “Altitude of the Top of the Deadwood Group in the Black Hills Area, South Dakota” map completed by Carter and Redden (1999b), the saturated aquifer thickness of the Madison Group near the proposed diversion point is approximately 600 feet. Therefore, the static water level of the Madison aquifer is expected approximately 600 to 650 feet below grade near the proposed diversion point with a saturated aquifer thickness of approximately 600 feet. Overall, the Madison aquifer is expected to be confined at the proposed diversion point based on the depths to the Madison Group and the Madison aquifer estimated at the proposed diversion point (Carter and Redden, 1999a and 1999b; Strobel et al., 2000).

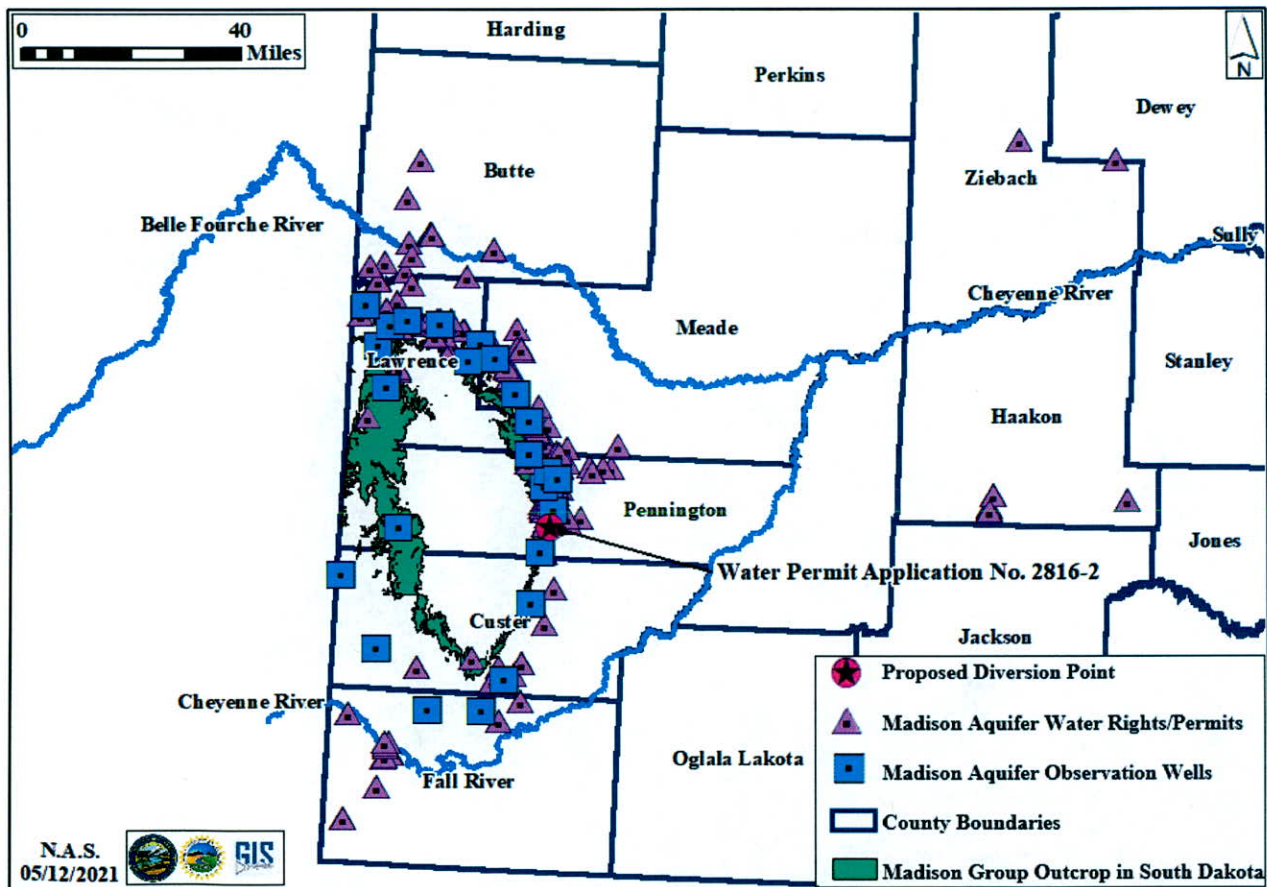


Figure 1. Madison Group outcrop in the Black Hills in South Dakota (Strobel et al., 1999), the location of the proposed diversion point for Water Permit Application No. 2816-2, the Madison aquifer water rights/permits, and observation wells (Water Rights, 2021b and 2021c)

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 Madison aquifer.

WATER AVAILABILITY:

Water Permit Application No. 2816-2 proposes to appropriate water from the Madison 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." Although, the Madison aquifer is older than and stratigraphically lower than the Greenhorn Formation, and the applicant's proposed use is for a water distribution system as defined by SDCL 46-1-6(17), a brief discussion on the recharge to and withdrawals from the aquifer will be considered in this analysis.

Pursuant to SDCL 46-2A-20, "no water permit for construction of works to withdraw water from the Madison formation in Butte, Fall River, Custer, Lawrence, Meade and Pennington counties may be issued for a term of more than twenty years, unless the Water Management Board determines, based upon the evidence presented at a hearing that:

- (1) Sufficient information is available to determine whether any significant adverse hydrologic effects on the supply of water in the Madison formation would result if the proposed withdrawal were approved; and
- (2) The information, whether provided by the applicant or by other means, shows that there is a reasonable probability that issuance of the proposed permit would not have a significant adverse effect on nearby Madison formation wells and springs."

This application proposes to withdraw water from the Madison formation in Pennington County; therefore, SDCL 46-2A-20 applies.

HYDROLOGIC BUDGET:

Water Permit Application No. 2816-2 is approximately two miles from the nearest Madison Group outcrop. It is possible to withdraw too much water from a localized area and induce drawdown, while the overall hydrologic budget remains balanced. Therefore, the hydrologic budget of the Madison aquifer will be assessed in its entirety (in SD) and on a localized scale.

Statewide Recharge

Recharge to the Madison aquifer is primarily through the infiltration of precipitation and streamflow on the outcrop, and some recharge occurs through upward leakage from the Deadwood aquifer (Carter et al., 2001a; Long & Putnam, 2002).

Historically, many studies have been completed estimating average annual recharge to the Madison and Minnelusa aquifers. Rahn and Gries (1973) estimated that the minimum amount of recharge to the Carbonate aquifer by precipitation falling directly on the outcrop to be 146.14 cfs (105,870 acre-feet/year) and 33.87 cfs (31,780 acre-feet/year) from streamflow contributions, which totals to approximately 137,650 acre-feet per year. Woodward-Clyde Consultants (1981) estimated an upper bound for recharge to the Madison aquifer by subtracting estimated evapotranspiration and runoff calculations for the Madison and Minnelusa Formations from the streamflow contribution estimates determined by Rahn and Gries (1973). Woodward-Clyde Consultants (1981) estimated the upper bound for average annual recharge to the Madison aquifer to be approximately 400,000 acre-feet per year. The recharge rate estimated by Woodward-Clyde Consultants (1981) has technical issues including the “minimum” recharge rate used from Rahn and Gries (1973) was based on precipitation infiltration to all Paleozoic rocks, instead of just to the Madison aquifer. Additionally, the maximum possible recharge rate assumed 100% of the precipitation that falls on the outcrop, infiltrates the aquifer, which is highly unlikely. While these reports provide a possible range for the average annual recharge rate to the Madison aquifer and have been used for hydrologic budget analysis by the DANR-Water Rights Program in the past, there has been a more recent study completed that includes newer streamflow and precipitation data, makes more reasonable assumptions, and is more aquifer specific.

Carter and others (2001a) analyzed streamflow and precipitation data from 1931 to 1998 within the Black Hills of South Dakota and Wyoming to determine the average annual recharge to the Madison and Minnelusa aquifers. The average annual recharge rate to the Madison and Minnelusa aquifers from streamflow contributions was estimated to be approximately 67,500 acre-feet per year, and 181,760 acre-feet per year from precipitation falling on the outcrop in the Black Hills, for a combined average annual recharge rate of 249,260 acre-feet per year. Carter and others (2001a) determined that of the combined average annual recharge rate, approximately 55% of the total recharge goes to the Madison aquifer, and the remaining 45% recharges to the Minnelusa aquifer. Therefore, the average annual recharge rate to the Madison aquifer is approximately 137,093 acre-feet per year.

Statewide Discharge

Discharge from the Madison aquifer is primarily through headwater and artesian springs, well withdrawals, evapotranspiration, and upward leakage to adjacent aquifers (Carter and Driscoll, 2001b).

Currently, there are 157 water rights/permits appropriating water from the Madison aquifer within South Dakota, plus one pending application – Water Permit Application No. 2005-1, and two water permit applications that are either deferred or in abeyance (Water Rights, 2021c). Water Permit No. 1954-1 is permitted to withdraw from both the Minnelusa and Madison aquifers but for the purpose of estimated average annual withdrawals, this water permit is assumed to be withdrawing its full permitted volume from the Madison aquifer. Water Permit Application No. 2585-2 for Southern Black Hills Water System proposes to appropriate 1,600 acre-feet per year from the Madison aquifer, and is currently deferred until the potential impacts on cave pools in Wind Cave National Park and to Beaver Creek are assessed (Water Rights, 2021c). Water Permit Application No. 2685-2 for Powertech (USA) Inc. proposes to appropriate 888.8 acre-feet per year from the Madison aquifer, and is held in abeyance until other permitting processes are completed (SD-DANR, 2020).

Additionally, there are ten future use permits reserving water from the Madison aquifer (Water Rights, 2021c). For the purpose of estimated average annual withdrawals, the ten future use permits are assumed to be fully developable for a total of 14,109 acre-feet per year (Table 1).

Table 1. Future use permits reserving water from the Madison aquifer (Water Rights, 2021c)

Permit No.	Name	Use Type	Priority Date	Reserved Annual Volume (acre-feet/year)
369-1	City of Belle Fourche	MUN	12/10/1958	620
439-2	City of Rapid City	MUN	09/22/1956	3,367
1833-2	Weston Heights Home Owners	RWS	02/18/1983	211
1872-1	City of Spearfish	MUN	11/13/2006	2,704
1995-1	Black Hawk Water Users District	RWS	04/15/2020	1,300
2086-2	City of Rapid City	MUN	05/18/1989	4,075
2560-2	Fall River Water Users District	RWS	05/16/2005	358
2560A-2	Fall River Water Users District	RWS	05/16/2005	0
2560B-2	Fall River Water Users District	RWS	05/16/2005	0
2580-2	Southern Black Hills Water System	RWS	03/02/2006	1,474
MUN: Municipal; RWS: Rural Water System			TOTAL:	14,109

Table 2 summarizes the 127 non-irrigation water rights/permits authorized to appropriate water from the Madison aquifer with the estimated annual use for each water right/permit as determined by their limiting diversion rate or annual volume. 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 will pump at their maximum authorized diversion rate for 60 percent of the time. The use type determined for each water right/permit on Table 2 was based on the primary use categorized for each water right/permit as some permits have multiple uses. Five municipal water rights were identified as being connected

to a rural water system (listed on Table 3) and likely maintain their wells for standby purposes (Friedeman, 2020; Water Rights, 2021c); as such, the average annual water use for these water rights has been estimated to be zero acre-feet per year on Table 2 as the usage for them is reflected in the rural water system's water rights/permits they are served by. Overall, the average annual withdrawal rate for the Madison aquifer non-irrigation water rights/permits is approximately 38,076 acre-feet per year (Table 2) (Water Rights, 2021c).

Table 2. Summary of the non-irrigation water rights/permits authorized to appropriate from the Madison aquifer with estimated annual use determined by their respective diversion rate or annual volume (Friedeman, 2020; Water Rights, 2021c)

Use Type	No. of Water Rights/Permits	Permitted Diversion Rate (cfs)	Permitted Volume (acre-feet)	Expected Annual Use (acre-feet/year)
REC	1	1	N/A	434
MUN	33	16.82	16,026	23,333
IND	11	4.88	301.3	2,421
INS	2	0.2	N/A	87
DOM	4	0.22	71	167
RWS	17	5.183	3,323	5,574
COM	16	2.038	1,081.3	1,967
SHD	41	6.906	471.6	3,472
GEO	2	1.43	N/A	621
TOTAL:	127	39	21,274	38,076
REC: Recreation; MUN: Municipal; IND: Industrial; INS: Institutional; DOM: Domestic				
RWS: Rural Water System; COM: Commercial; SHD: Suburban Housing Development;				
GEO: Geothermal				

Table 3. Municipalities served full time by rural water systems (Friedeman, 2020; Water Rights, 2021c)

Permit No.	Name	Status	Use Type	Permitted Diversion Rate (cfs)	Served by
272-1	City of Eagle Butte	LC	MUN	0.6	Tri-County RWS
568-2	Town of Midland	LC	MUN	1.33	WR/LJ-North Stanley
574-2	City of Philip	LC	MUN	0.8	WR/LJ-North Stanley
743-1	City of Dupree	LC	MUN	0.19	Tri-County RWS
1858-2	City of Philip	LC	MUN	0.42	WR/LJ-North Stanley
MUN: Municipal; RWS: Rural Water System					

Currently, there are 33 water rights/permits with irrigation as a primary use, that are authorized to appropriate water from the Madison aquifer, with 15 of those water rights/permits having more than one licensed/permitted use type (Water Rights, 2021c). Three of those water rights/permits (Nos. 419-2, 1496-1, and 1650-1) have irrigation as a use type listed, just not as a primary use, and their respective non-irrigation use is calculated on Table 2, which accounts for only 30 water rights/permits being listed in Tables 4, 5, and 6. Irrigation water rights/permits are typically required to report their annual usage on an irrigation questionnaire since 1979; however, no Madison aquifer water rights/permits reported irrigating until 1981 (Water Rights,

2021c). To be more representative of the current aquifer development, the estimated withdrawal rate for water rights/permits that have reported their respective annual appropriation for at least ten years will be assessed on Table 4 (Water Rights, 2021a and 2021c). Table 4 includes the estimated annual non-irrigation appropriation by each water right/permit for their respective multiple uses, if applicable, assuming that the non-irrigation water rights/permits will pump at their maximum authorized diversion rate for 60 percent of the time. Overall, the average annual withdrawal rate for the Madison aquifer irrigation water rights/permits that have reported for over ten years, plus the estimated annual non-irrigation appropriation by each water right/permit for their respective multiple uses (if applicable) is approximately 3,900.1 acre-feet per year (Table 4) (Water Rights, 2021a and 2021c).

Table 4. Water rights/permits with more than 10 years of reported irrigation use with their respective average reported irrigation use for the years 1982 to 2019, and estimated non-irrigation use for irrigation water rights/permits with multiple use types assuming water right/permit holders pump at their respective maximum diversion rate 60% time of the time (Water Rights, 2021a and 2021c)

Permit No.	Name	Priority Date	Use Type(s)	Authorized Diversion Rate (cfs)	Authorized Acres	Years of Reported Irrigation	Average Reported Irrigation Use (acre-feet/year)	Estimated Non Irrigation Use (acre-feet/year)	Total Estimated Withdrawal Rate (acre-feet/year)
858-2	John & Heidi McBride	02/05/1965	IRR	9.36	655.75	36	7.1	N/A	7.11
1009-1	Donald F/Ann J Brady	02/01/1974	IRR	0.78	53.73	38	31.6	N/A	31.64
1185-1	Donald F/Ann J Brady	01/18/1979	IRR, REC, FWP	0.38	22.52	38	104.1	165.1	269.1
1223-1	Montata Dakota Land LLC	03/10/1981	IRR	0.67	263	38	205.6	N/A	205.64
1363-1	Spearfish Canyon Country Club	09/15/1986	IRR	0.9	80.1	33	60.7	N/A	60.66
1452-1	Black Hills State College	12/19/1988	IRR, MUN	3.33	25.44	31	17.7	1,446.6	1,464.3
1635-1	Black Hills National Cemetery	04/02/1990	IRR, INS	0.82	54.5	24	96.5	356.2	452.7
1725-2	Janice R Crowser	08/20/1980	IRR	1.07	75.1	21	1.1	N/A	1.06
1842-1	Tom C Davis	04/05/2005	IRR	0.44	330	15	0	N/A	0
1858-1	Glencoe Camp Resort II LLC	03/08/2006	IRR, COM	0.86	34	14	0	373.6	373.6
1899-1	Davis Ranches Inc	08/25/2008	IRR	1.43	100	11	0	N/A	0
1911-2	Hart Ranch Development Co	09/27/1984	IRR, SHD, REC	0.88	124	26	123.2	382.3	505.4
2106-2	Stuart Rice	06/06/1990	IRR, DOM	0.08	2.8	27	0.9	34.8	35.7
2286-2	Donald Konechne	04/28/1993	IRR	0.1	38.5	26	11.2	N/A	11.2
2313-2	Coca-Cola Bottling	04/08/1994	IRR, COM	0.33	3	25	7.2	143.4	150.6
2458-2	City of Rapid City	03/30/2001	IRR	0.8	107	19	104.7	N/A	104.7
2593-2	Hart Ranch Development	06/15/2006	SHD	0.49	72.5	13	14	212.9	226.8
TOTAL:				22.72	2,041.9	435	785.5	3,114.7	3,900.1

IRR: Irrigation; REC: Recreation; FWP: Fish and Wildlife Propagation; MUN: Municipal; INS: Institutional; SHD: Suburban Housing Development; COM: Commercial

Table 5 accounts for the remaining irrigation water rights/permits that have reported their respective annual appropriation for less than ten years and are assumed to apply 2 acre-feet of water per year per authorized acre or are not required to report their annual usage (Water Rights, 2021c). Table 5 includes the estimated annual non-irrigation appropriation by each water right/permit, if applicable, assuming that the non-irrigation water rights/permits will pump at their maximum authorized diversion rate for 60 percent of the time. Overall, the average annual withdrawal rate for the Madison aquifer irrigation water rights/permits that have reported for less

than ten years, plus the estimated annual non-irrigation appropriation by each water right/permit for their respective multiple uses (if applicable) is approximately 3,542.3 acre-feet per year (Table 5) (Water Rights, 2021a and 2021c).

Table 5. Water rights/permits with less than 10 years of reported irrigation use, or that are not required to report their annual usage, with estimated irrigation use calculated using two acre-feet per year per acre method, and estimated non-irrigation use for irrigation water rights/permits with multiple use types assuming water right/permit holders pump at their respective maximum diversion rate 60% time of the time (Water Rights, 2021a and 2021c)

Permit No.	Name	Priority Date	Use Type(s)	Authorized Diversion Rate (cfs)	Authorized Acres	Years of Reported Irrigation	Estimated Irrigation Use (acre-feet/year)	Estimated Non Irrigation Use (acre-feet/year)	Total Estimated Withdrawal Rate (acre-feet/year)
419-2	Wind Cave National Park	12/29/1955	COM, IRR	0.15	6	N/A	12	0*	12
1707A-1	Elkhorn Ridge @ Frawley Ranches LLC	01/06/2000	IRR, SHD, COM, DOM	3.705	100	N/A	200	302.5***	502.5
1707E-1	Elkhorn Ridge @ Frawley Ranches LLC	01/06/2000	IRR	N/A	N/A	13	0**	0**	0**
1885-1	John T & Veronica Widdoss	04/09/2007	IRR, DOM	0.11	22	3	44	35.64***	79.64
1923-1	Roger & Jean Ranschau	02/15/2011	IRR, DOM	0.11	3	8	6	47.8	53.8
1931-1	Elkhorn Ridge @ Frawley Ranches LLC	08/17/2012	IRR, COM	0.17	3.3	7	6.6	73.8	80.4
1945-1	Frawley Ranches LLC	02/10/2014	IRR	1.11	265	6	530	N/A	530
1960-1	One Diamond Inc	04/11/2016	IRR, COM	1.28	150	4	300	556	856
2002-1	City of Spearfish	12/28/2020	IRR	1.33	40	0	80	N/A	80
2673-2	Diocese of Rapid City	05/27/2011	IRR	0.12	7	7	14	N/A	14
2741-2	Tubbs Land & Cattle LLC	08/20/2018	IRR	3.34	567	1	1,134	N/A	1,134
2773-2	Arrowhead Country Club	07/27/2017	IRR	1.11	100	2	200	N/A	200
TOTAL:				12.535	1,263.3	51	2,526.6	1,015.7	3,542.3
*No. 419-2 has respective non-irrigation use calculated on Table 2									
** No. 1707E-1 authorized an extension of time to place water to beneficial use for Water Permit No. 1707A-1, IRR use accounted for under 1707A-1									
***Nos. 1707A-1 and 1885-1 are assumed to pump at maximum rate 100% of the time due to the sum of their respective estimated withdrawal for irrigation and estimated non-irrigation use being greater than what is physically possible at the licensed diversion rate									
IRR: Irrigation; MUN: Municipal; INS: Institutional; SHD: Suburban Housing Development; COM: Commercial; DOM: Domestic									

On Table 6, there are five irrigation water rights/permits authorized to appropriate water from the Madison aquifer that have estimated use calculated separately. Water Right No. 1650-1 is not required to report their respective annual withdrawal rate and has no authorized acres for irrigation. However, the well authorized under Water Right No. 1650-1 supplies water for Water Right No. 1231-1, which authorizes 100 acre-feet of water in a dam for commercial livestock and the irrigation of 134 acres (Water Rights, 2021c). Based on the reported annual usage for Water Right No. 1231-1, the average withdrawal rate is approximately 55.9 acre-feet per year (Table 6) (Kilts, 2017).

Water Right/Permit Nos. 1096-1, 1096A-1, 1496-1, and 1670-1 withdraw water from one dam and one well completed into the Madison aquifer for either irrigation or rural water system use (Water Rights, 2021c). Water Right No. 1096A-1 and Water Permit No. 1496-1 are authorized to withdraw water over the entire year for rural water system use (Water Rights, 2021c). The administrative file for Water Right No. 1670-1 indicates the well was not valved and cannot be shut off when flow is not being put to beneficial use (Water Rights, 2021c). A letter dated

September 9, 1998, submitted as a public comment prior to approval of Water Right No. 1670-1, stated that when water is not used for irrigation or rural water system use, the water is used for fish and wildlife propagation, thus requesting flow from the well remain unrestricted (Water Rights, 2021c). Water Right No. 1231-1 has an authorized maximum instantaneous diversion rate of 1.33 cfs, and all four water rights/permits assumed to collectively be using approximately 963 acre-feet per year (Table 6) (Water Rights, 2021c).

Table 6. Water rights/permits with estimated average annual withdrawal rate calculated separately (Water Rights, 2021c)

Permit No.	Name	Priority Date	Use Type(s)	Years of Reported Irrigation	Authorized Acres	Permitted Diversion Rate (cfs)	Average Reported Irrigation Use (acre-feet/year)	Total Estimated Withdrawal Rate (acre-feet/year)
1096-1	Bar Bar V Livestock LLC	04/16/1976	IRR	29	216	1.88	63.3	963
1096A-1	Butte Meade Sanitary District	04/16/1976	RWS, IRR	N/A	N/A	1.33	N/A	
1670-1	Bar Bar V Livestock LLC	06/09/1998	IRR	22	253	3.61	51.7	
1496-1	Butte Meade Sanitary District	06/20/1990	RWS	N/A	N/A	1.33	N/A	
1650-1	Foothill Land and Cattle LLC	04/03/1997	COM, IRR	N/A	N/A	0.89	N/A	55.9
IRR: Irrigation; RWS: Rural Water System; COM: Commercial				TOTAL:	469	9.04	115	1,018.9

There are domestic wells completed into the Madison aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2021d). Since the introduction of rural water systems, many domestic wells are likely no longer in use or are not being used as primary water sources. Additionally, Carter and others (2001b) estimated domestic use and livestock watering was less than 2% of all withdrawals over the period of study (1987 to 1996). Due to their relatively low diversion rates and the availability of rural water, withdrawals from domestic wells are not considered to be a significant portion of the hydrologic budget. Therefore, the quantity of water withdrawn by domestic wells is estimated to be negligible to the hydrologic budget for the Madison aquifer.

Statewide Hydrologic Budget Summary

The average annual recharge rate to the Madison aquifer is approximately 137,093 acre-feet per year. The average annual withdrawal rate from the Madison aquifer is approximately 63,172 (Table 7). Therefore, there is a reasonable probability unappropriated water is available from the Madison aquifer for the proposed appropriation.

Table 7. Summary of well withdrawals from the Madison aquifer

Well Withdrawal Type	Withdrawal Rate (acre-feet/year)
Deferred/Abeyance Applications	2,488.8
Future Use (Table 1)	14,109
Non-Irrigation Water Rights (Tables 2, 4, and 5)	42,206
Average Reported Irrigation (Table 4)	785.5
Estimated Irrigation Use (Table 5)	2,526.6
Other (Table 6)	1,018.9
Water Permit Application No. 2816-2 (<i>pending</i>)	8.3
Water Permit Application No. 2005-1 (<i>pending</i>)	28.2
TOTAL:	63,172

Localized Hydrologic Budget: *Carter, Driscoll, Hamade, & Jarrell (2001b)*

Carter and others (2001b) calculated hydrologic budgets for the Madison and Minnelusa aquifers for the Black Hills (in SD and WY) during the water years of 1987 to 1996. The budgets were calculated by dividing the Black Hills into nine subareas with the intent of minimizing groundwater flow to and from adjacent subareas. These subareas were determined based on several factors, including locations of major artesian springs, streamflow loss zones, and areas dominated by precipitation recharge. The proposed diversion point for Water Permit Application No. 2816-3 is located in Subarea 5 (Figure 2). The hydrologic budget for Subarea 5 is displayed on Table 8.

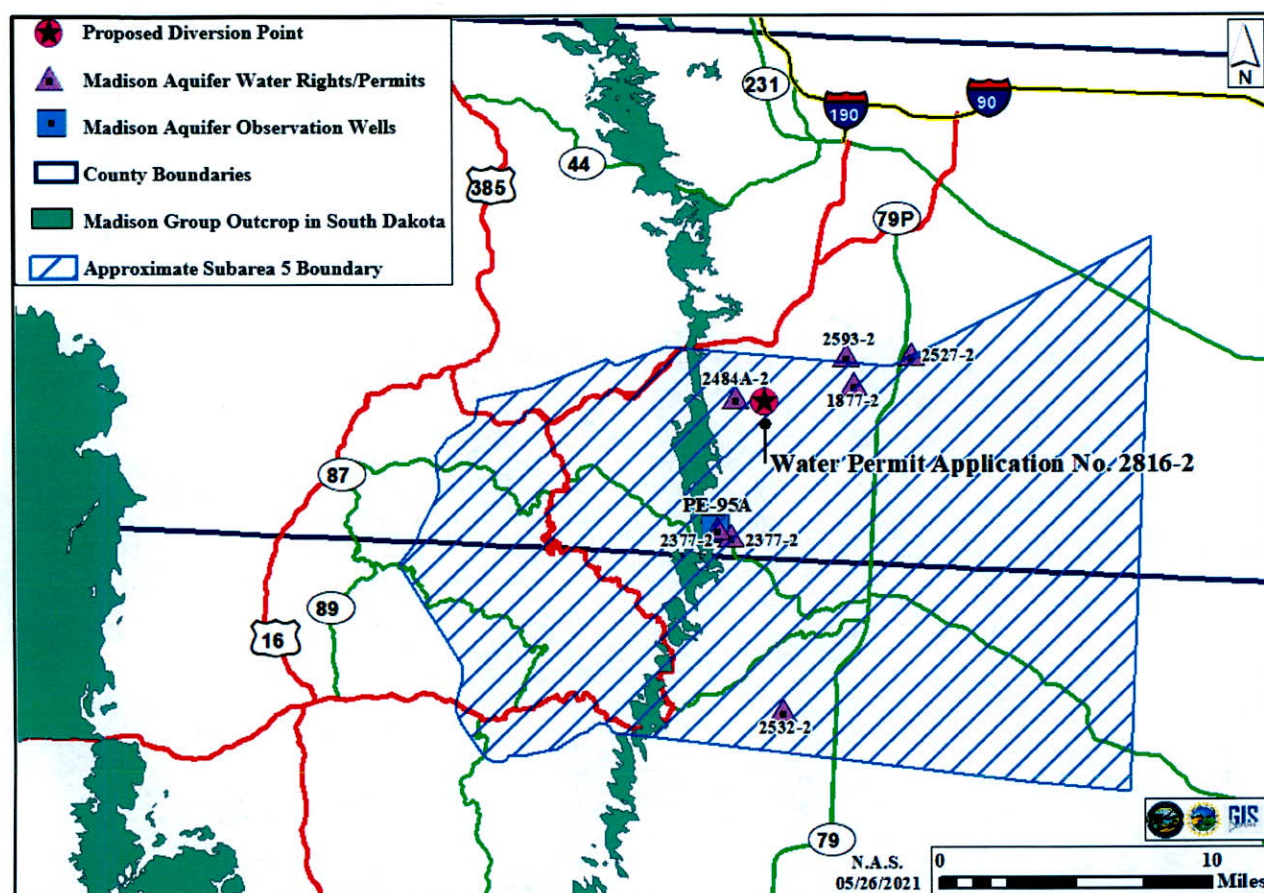


Figure 2. Subarea used for the Madison and Minnelusa aquifers localized hydrologic budgets (modified from Carter et al., 2001b), the Madison Group outcrop (Strobel et al., 1999), the location of the proposed diversion point for Water Permit Application No. 2816-2, and the Madison aquifer water rights/permits and observation well within Subarea 5 (Water Rights, 2021b and 2021c)

Table 8. Estimated average annual hydrologic budget for Subarea 5 for the Madison and Minnelusa aquifers in the Black Hills (in SD and WY) for the water years 1987 to 1996 (modified from Carter et al., 2001b).

Subarea 5	Inflow:			Outflow:		
	Streamflow Recharge	Precipitation Recharge	Net Groundwater Inflow	Artesian Springflow	Wells	Net Groundwater Outflow
cfs	11.4	3.2	0	7	1.6	6
acre-feet/year	8,253.2	2,316.7	0.0	5,067.8	1,158.3	4,343.8

As shown in Table 8, Carter and others (2001b) estimated the average annual recharge rate to Subarea 5 for the Madison and Minnelusa aquifers due to streamflow, precipitation and groundwater inflow recharge to be 4,343.8 acre-feet per year. Carter and others (2001a) determined that of the combined average annual recharge rate, approximately 55% of the total recharge goes to the entire Madison aquifer. Although 55% of the total recharge goes to the entire Madison aquifer, this percentage can still be used to roughly approximate the average annual recharge rate to Subarea 5, which equates to approximately 2,389 acre-feet per year.

Currently in Subarea 5, there are six water rights/permits authorized to withdraw from the Madison aquifer (Water Rights, 2021c). Using the same methods to calculate withdrawal rates from the previous discharge section and including Water Permit Application No. 2816-2 (if approved), the average annual withdrawal rate from the Madison aquifer is approximately 1,571 acre-feet per year from Subarea 5.

Groundwater models rely on several assumptions and the hydrologic budget for the subarea determined by Carter and others (2001b) does not account for other factors contributing to recharge. Since additional recharge is likely available through upward leakage from underlying aquifers, infiltration of precipitation at areas other than the Black Hills where the Madison aquifer outcrops, streamflow losses, well withdrawals inducing groundwater inflow from outside the subarea, there is a reasonable probability that unappropriated water is available for this proposed appropriation.

Localized Hydrologic Budget: *Long and Putnam (2002)*

Long and Putnam (2002) performed an analysis of the flow-system of the Madison and Minnelusa aquifers in the Rapid City area encompassing a region of approximately 525 square miles or 336,000 acres, excluding the outcrop areas for either the Madison or Minnelusa aquifers (as shown in Figure 3). For their water budget, Long and Putnam (2002) assumed the sum of inflows to an aquifer minus the sum of outflows from an aquifer was equal to a change in storage (Equation 1).

Equation 1:
$$\Delta S = (SD + SR + AR) - (SF + WU + OO + OE)$$

Where: ΔS = change in groundwater storage; SD = seepage from Deadwood aquifer (inflow);

SR = streamflow recharge (inflow); AR = areal recharge (inflow); SF = spring flow (outflow);

WU = water use (outflow); OO = outflow to overlying units (outflow);

and OE = outflow across eastern boundary (outflow)

The change in storage was calculated for three separate water budgets from water years 1988 to 1997 (Table 9) (modified from Long and Putnam, 2002).

Table 9. Average water budget estimates for the Madison aquifer from Long and Putnam's (2002) conceptual model of the aquifer in the Rapid City area

Period	Dry Period (WY 1988 - 1992)		Wet Period (WY 1993 - 1997)		Entire Period (WY 1988 - 1997)	
Units	cfs	acre-feet/year	cfs	acre-feet/year	cfs	acre-feet/year
Inflow	38.6	27,945	89.1	64,506	61.2	44,307
Outflow	46.4	33,592	68	49,230	56.1	40,615
ΔS	-7.8	-5,647	21.1	15,276	5.1	3,692

There are 58 water rights/permits authorized to appropriate water, and four future use permits (Nos. 439-2, 1833-2, 1995-1, and 2086-2) reserving water from the Madison aquifer, within the study boundaries of the analysis completed by Long and Putnam (2002) (Water Rights, 2021c). Using the same methods to calculate withdrawal rates from the previous discharge section, including the estimated use by future use permits (7,718 acre-feet/year) and Water Permit Application No. 2816-2 (8.3 acre-feet/year, if approved), the average annual withdrawal rate from the Madison aquifer is approximately 27,559 acre-feet per year within the study boundaries of the analysis completed by Long and Putnam (2002). That is the equivalent to a constant diversion rate of 38.1 cfs from the Madison aquifer across the entire year.

Direct comparison of the estimated withdrawal rate with the estimated recharge rate within the study boundaries of the analysis completed by Long and Putnam (2002) show the estimated average annual withdrawals plus the future use reservations (27,559 acre-feet per year) is only 386 acre-feet per year less than the estimated average annual recharge to the Madison aquifer during the dry period (WY 1988 to 1992) (27,945 acre-feet per year). However, the estimated average annual use is much less than the estimated average annual recharge during the wet period (WY 1993 to 1997), as well as the estimated average annual recharge over the entire 10-year study period. Furthermore, natural outflow from an aquifer can be captured for pumping. Therefore, based on the hydrologic budgets, there is a reasonable probability unappropriated water is available for the proposed appropriation.

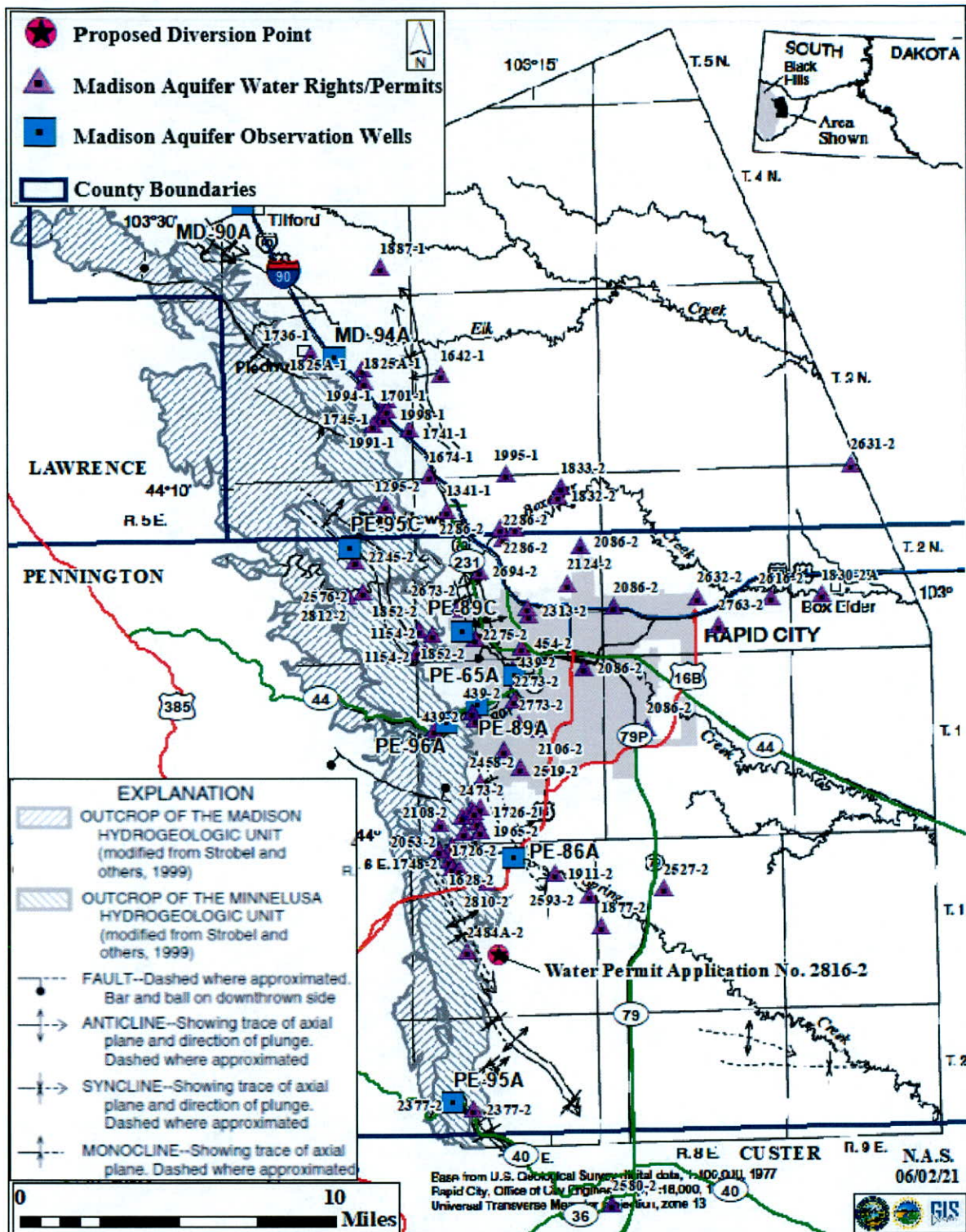


Figure 3. Modified map of the study area from Long and Putnam (2002) with the location of the proposed diversion point for Water Permit Application No. 2816-2, and the Madison aquifer water rights/permits and observation wells within the study area (Water Rights, 2021b and 2021c)

OBSERVATION WELL DATA:

Administrative Rule of South Dakota (ARSD) 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 DANR-Water Rights Program monitors 25 observation wells completed into the Madison aquifer (Water Rights, 2021b). These observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The five closest observation wells to the proposed diversion point are PE-86A (approximately 3.2 miles northeast), PE-95A (approximately 5 miles southwest), PE-96A (approximately 7.8 miles northwest), PE-89A (approximately 8.2 miles north), and PE-65A (approximately 9.2 miles northeast) (as shown in Figure 1). The hydrographs for these observation wells are displayed in Figures 4 to 8 (Water Rights, 2021b). The data points utilized to construct the hydrographs are measurements of depth to the static water level in the observation wells from the top of the well casing.

These five Madison aquifer observation wells are all within approximately 3.5 miles from the nearest Madison Limestone outcrop, which is a primary recharge area for the Madison aquifer. As such, the hydrographs for these observation wells are more reactive to the magnitude of recharge occurring on the outcrop than areas downgradient from the outcrop, resulting in observation wells near the outcrop showing greater fluctuations to seasonal recharge and withdrawals, while observation wells further away show more attenuated readings.

The hydrographs for the Madison aquifer indicate that the aquifer responds well to climatic conditions because water levels are rising during wetter periods (through early spring snowmelt, precipitation, and streamflow loss) and declining to a stable water level during drier periods. The observation well hydrographs demonstrate the long-term fluctuations of the water level in the Madison aquifer are governed by climatic conditions, and therefore recharge to and natural discharge from the aquifer, instead of pumping. 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.

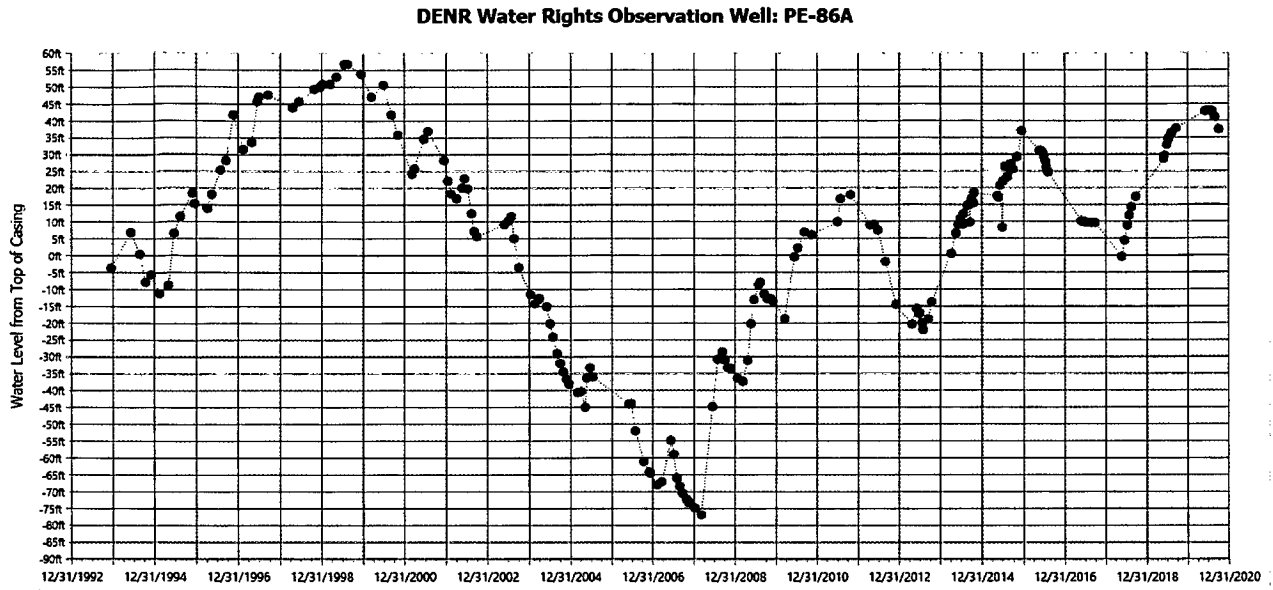


Figure 4. Hydrograph for observation well PE-86A (Water Rights, 2021b)

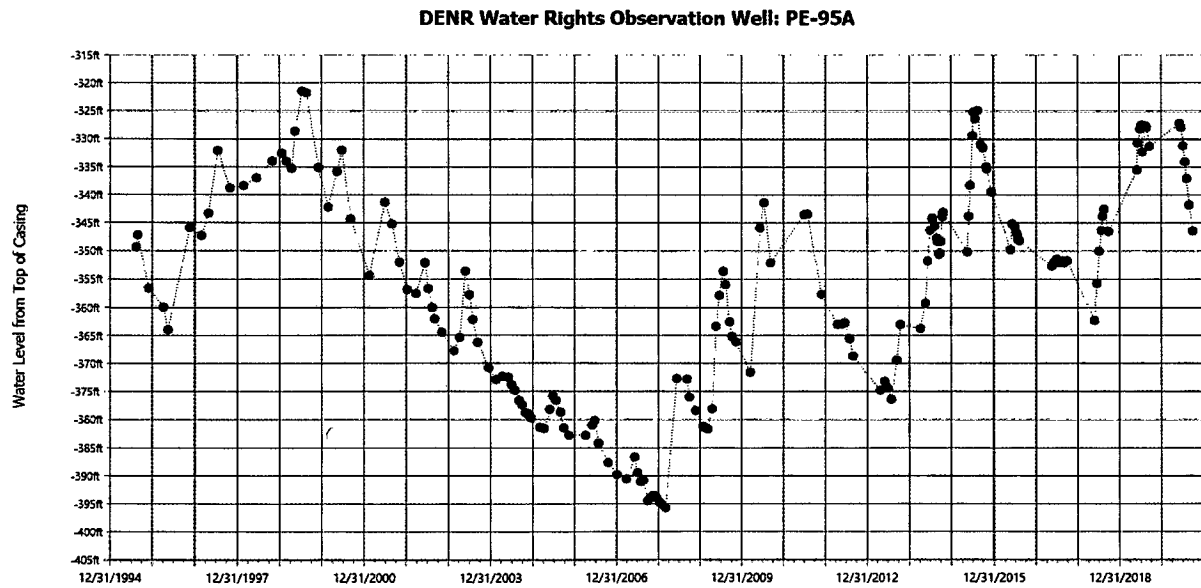


Figure 5. Hydrograph for observation well PE-95A (Water Rights, 2021b)

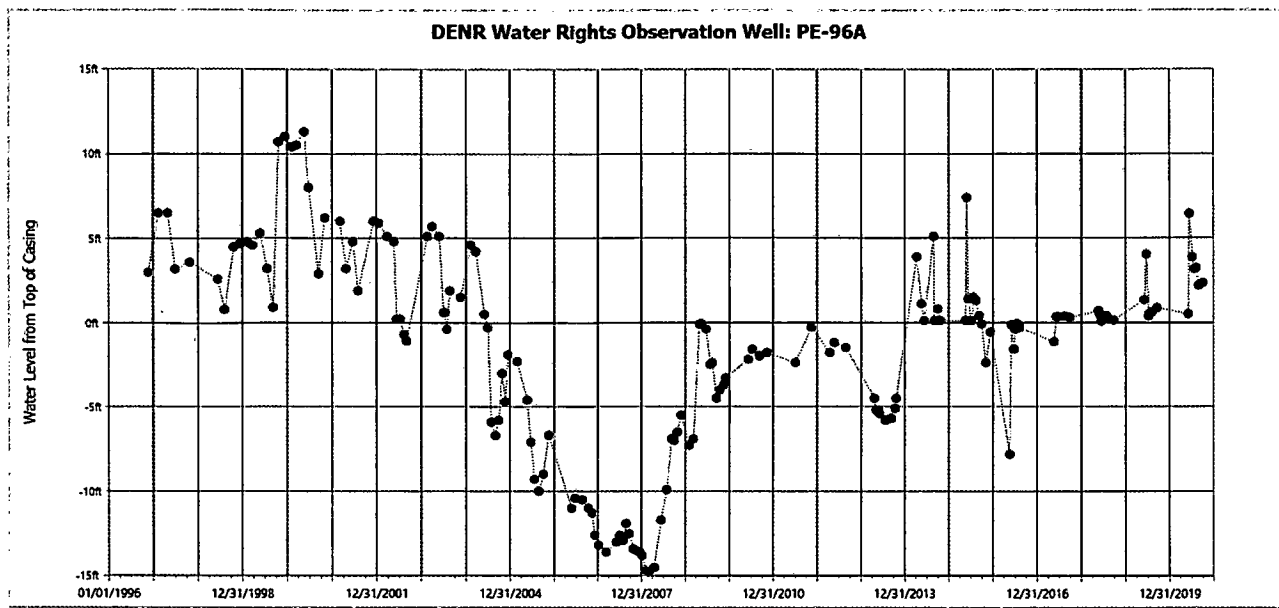


Figure 6. Hydrograph for observation well PE-96A (Water Rights, 2021b)

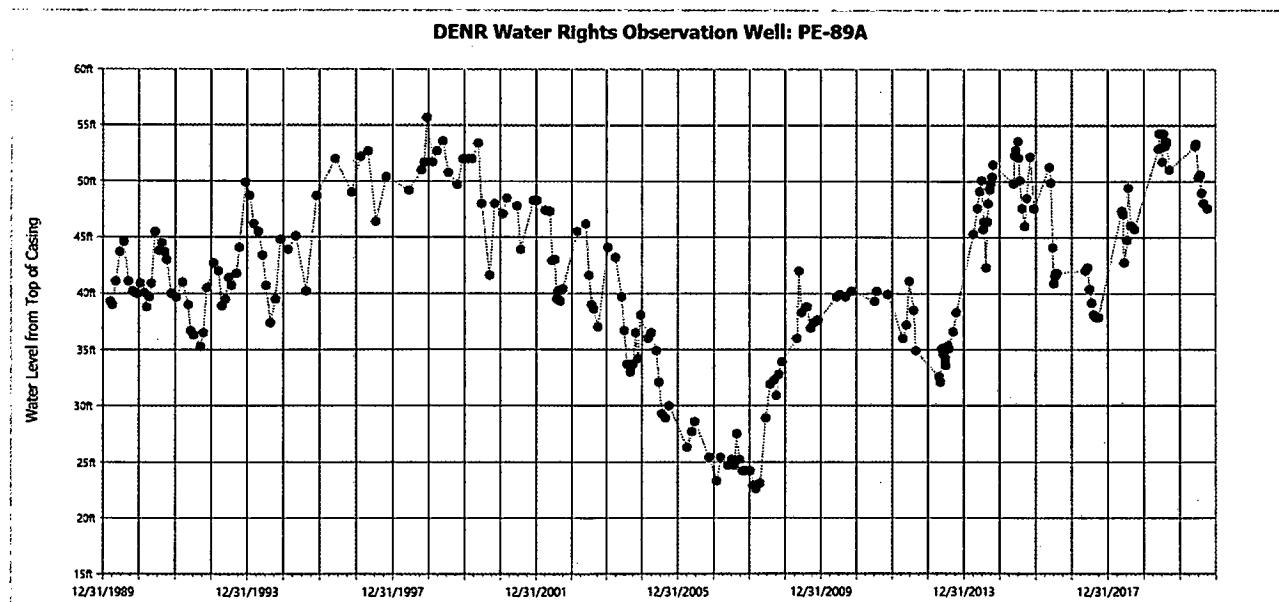


Figure 7. Hydrograph for observation well PE-89A (Water Rights, 2021b)

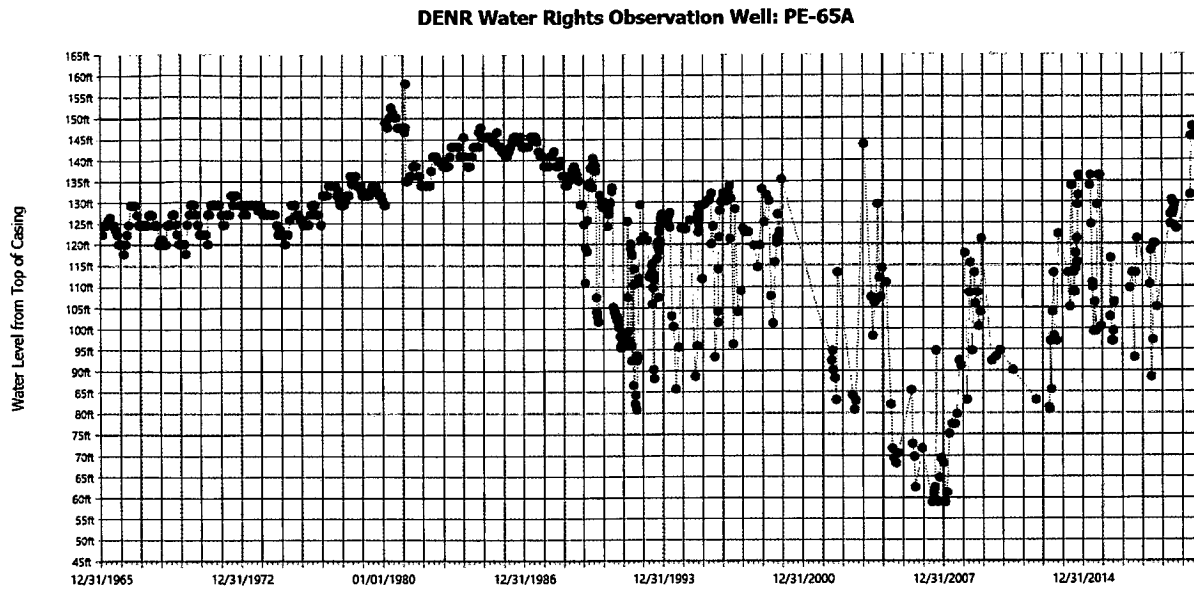


Figure 8. Hydrograph for observation well PE-65A (Water Rights, 2021b)

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 156 water rights/permits authorized to appropriate water from the Madison aquifer, plus one pending permit – Water Permit Application No. 2005-1, two water permit applications that are either deferred or in abeyance, and ten future use permits reserving water from the Madison aquifer (Water Rights, 2021c). The closest water right/permit to proposed diversion point is Water Right No. 2484A-2 which is held by Pine Grove Community Water. The diversion point for Water Right No. 2484A-2 is located approximately one mile west of the proposed diversion point for this application (Figure 9) (Table 10) (Water Rights, 2021c).

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Madison aquifer, with the closest domestic well on file (not held by the applicant) approximately 1.1 miles northwest of the proposed diversion point (Water Rights, 2021d). There could potentially be other domestic wells completed into the Madison aquifer near the proposed diversion point that are not on file with the DANR-Water Rights Program.

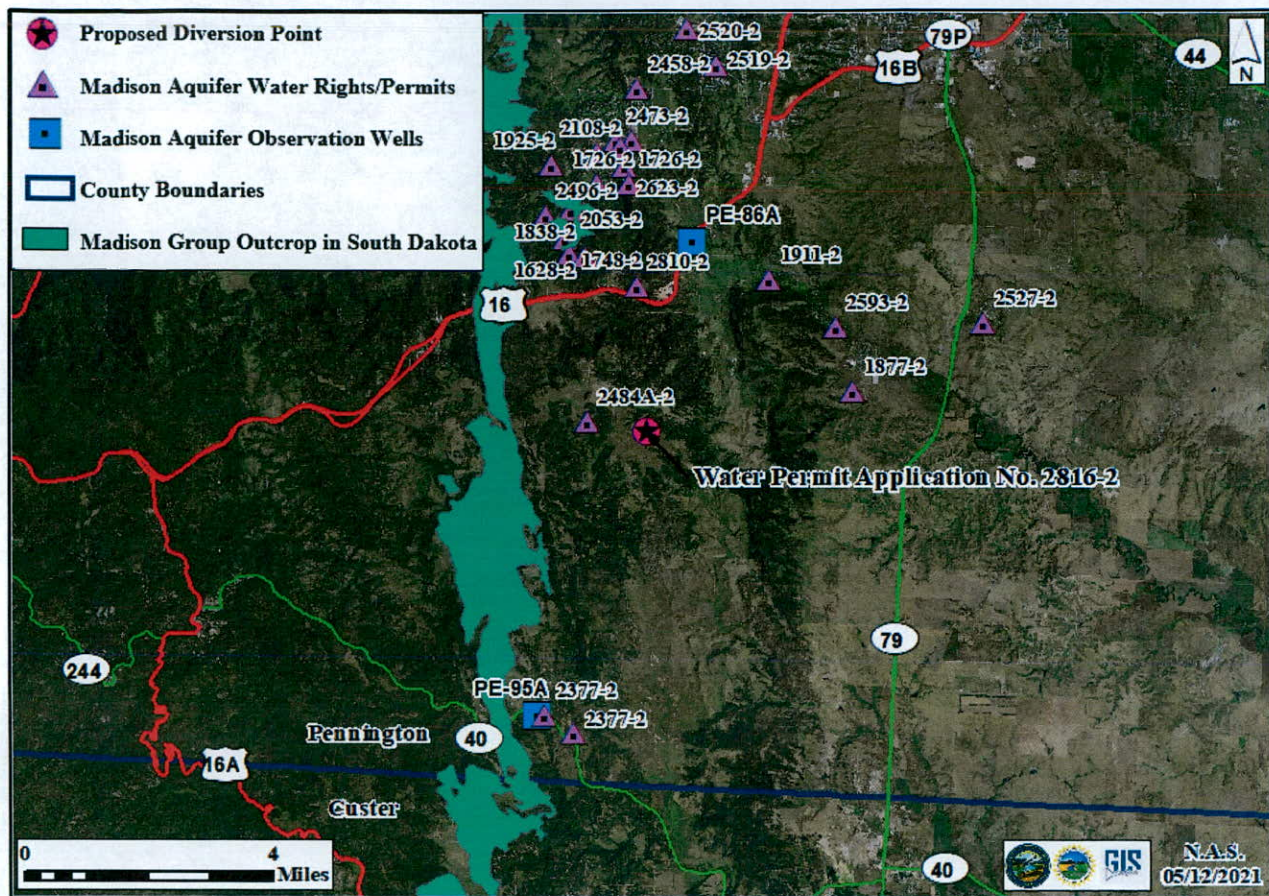


Figure 9. Location of the proposed diversion point for Water Permit Application No. 2816-2 with the Madison aquifer water rights/permits and observation wells within approximately five miles (Water Rights, 2021b and 2021c)

Table 10. Water rights/permits authorized to withdraw water from the Madison aquifer within approximately five miles of the proposed diversion point, as shown in Figure 8 (Water Rights, 2021c)

Permit No.	Name	Status	Use Type(s)	Permitted Diversion Rate (cfs)	Permitted Annual Volume (acre-feet/year)
1628-2	Copper Oaks Water Association	LC	SHD	0.05	
1726-2	Colonial Pine Hills Sanitary District	LC	SHD	0.38	
1748-2	Warren Water Company Inc	LC	SHD	0.03	
1838-2	Canyon Shadows Water Company	LC	SHD	0.03	
1877-2	Hart Ranch Development Company	LC	SHD/REC/COM	0.55	
1911-2	Hart Ranch Development Company	LC	IRR/SHD/REC	0.88	
1925-2	Ponderosa Park Development Association	LC	SHD	0.033	
1965-2	Highland Hills Water Association	LC	SHD	0.056	
2053-2	Spring Canyon Water Company	LC	SHD	0.05	
2108-2	Colonial Pine Hills Sanitary District	LC	SHD	0.044	
2377-2	Southern Black Hills Water System	LC	COM/SHD	0.333	
2458-2	City of Rapid City	LC	IRR	0.8	
2473-2	Cregut Inc	LC	COM	0.04	
2484A-2	Pine Grove Community Water	LC	SHD	0.392	
2496-2	Spring Canyon Water Company	LC	SHD	0.17	
2519-2	City of Rapid City	LC	MUN	4.12	1,936
2520-2	City of Rapid City	LC	MUN	1.78	773
2527-2	Signature Development Company	LC	SHD	0.67	300
2593-2	Hart Ranch Development Company	LC	IRR/SHD	0.49	
2607A-2	Colonial Pine Hills Sanitary District	LC	SHD	0.51	
2623-2	Colonial Pine Hills Sanitary District	LC	SHD	0.4	
2810-2	Croell Inc	LC	IND/DOM	0.33	25.1

COM: Commercial; IRR: Irrigation; IND: Industrial; REC: Recreation; SHD: Suburban Housing Development

In Pennington County, the Madison aquifer is primarily confined with some variation in depth to the top of the aquifer and saturated aquifer thickness (SDGS, 2021; Water Rights, 2021c and 2021d). The Madison aquifer is expected to be confined near the proposed diversion point based on the depths to the Madison Group and the Madison aquifer estimated at the proposed diversion point (Carter and Redden, 1999a; Strobel et al., 2000). 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 point. The exact drawdown behavior of a well cannot be known without an aquifer performance test. However, observation wells completed into the Madison aquifer in Pennington County near permitted/licensed diversion points can provide some insight on how the aquifer responds to pumping.

Observation well PE-65A (approximately 9.2 miles northeast of the proposed diversion point) has ten high-yield wells within approximately three miles of it (Water Rights, 2021b and 2021c). The drawdown from pumping can be seen on the hydrograph for PE-65A, along with the aquifer returning to pre-pumping conditions between seasons (Figure 8) (Water Rights, 2021b). The lithologic log on file for PE-65A noted the well was drilled 1,171 feet deep, has a casing stickup height of one foot, with the top of aquifer is expected to be approximately 1,116 feet below the

top of well casing (SDGS, 2021). The lowest recorded static water level on the hydrograph is approximately 60 feet above the top of well casing, which indicates there was still about 1,146 feet of artesian head pressure in PE-65A even during drier periods when high-yield wells are expected to be pumping more water (Water Rights, 2021b).

Near the proposed diversion point, the Madison aquifer has a saturated aquifer thickness of approximately 600 feet, and the depth to the top of aquifer materials ranges from 800 to 850 feet below the ground surface (Carter and Redden, 1999a and 1999b; Water Rights, 2021d). This would allow for enough thickness for a pump inlet 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 because of the proposed diversion is not expected to unlawfully impair nearby adequate wells. In Pennington and Custer Counties, there are no complaints on file with the DANR-Water Rights Program regarding well interference for adequate wells completed into the Madison aquifer (Water Rights, 2021e).

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 No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Board adopted the 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 Madison aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated aquifer thickness of the Madison aquifer in Pennington County, the artesian head pressure in observation well completed into the Madison aquifer near the proposed diversion point, and the lack of well interference complaints for adequate wells completed into the Madison aquifer in Pennington and Custer Counties, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on existing water right/permit holders 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.

Springs

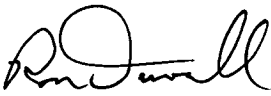
In the past, there have been concerns that development of the Madison aquifer will affect spring discharge. The nearest major springs that are sourced primarily by water from the Madison aquifer are Battle Creek Spring (approximately 7 miles south of proposed diversion point) and Cleghorn/Jackson Spring (approximately 8 miles north of proposed diversion point) (Naus et al., 2001). When considering the deferral of Water Permit Application No. 2585-2 for the Southern Black Hills Water System, the Water Management Board adopted a conclusion of law stating in part "...The only protection South Dakota law provides when considering an application for an underground water permit for flow from an artesian spring is under the public interest criteria" (Water Rights, 1997). Given the distance between the proposed diversion point and Battle Creek or Cleghorn/Jackson Springs, there is a reasonable probability Water Permit Application No. 2816-2 can be developed without making an impact that would be measurable above the natural fluctuations of the nearest spring.

Term Limit

Although there is a reasonable probability unappropriated water is available, and the applicant can develop the proposed use without unlawful impairment of existing rights, the Water Management Board has not determined in a hearing that the requirements of SDCL 46-2A-20 to omit the term limit requirement have been met. Therefore, Water Permit Application No. 2816-2 is subject to a 20-year term limit.

CONCLUSIONS:

1. Water Permit Application No. 2816-2 proposes to appropriate up to 8.3 acre-feet of water annually at a maximum instantaneous diversion rate of 0.11 cfs from one well to be completed into the Madison aquifer (approximately 900 feet deep) for use in a water distribution system. The site is in Pennington County approximately 4.5 miles southwest of Rapid City, South Dakota.
2. Based on the observation well data and hydrologic budgets, there is a reasonable probability that unappropriated water is available from the Madison aquifer to supply the proposed appropriation.
3. There is a reasonable probability that the proposed diversion by Water Permit Application No. 2816-2 will not unlawfully impair adequate wells for existing water right/permit holders and domestic users.
4. Water Permit Application No. 2816-2 is subject to a 20-year term limit.


for Nakaila Steen
Natural Resources Engineer I
SD DANR - Water Rights Program

Reviewed by:


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

References

- Allen, J., Illes, D., & Petres, A., 1985. Analysis of Groundwater and Streamflow Data, Western Dakotas Region of South Dakota, Task 3A.B.C. and 4A.B.: Groundwater Resource Inventory: Final Report, US Army Corps and Engineers Contract DAWC 45-82-C-015. SD-DANR Geological Survey Program, Vermillion, SD.
- Carter, J.M., Driscoll, D.G., & Hamade, G.R., 2001a. Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 1931-98; Water-Resources Investigations Report 00-4278. United States Geological Survey, Rapid City, SD.
- Carter, J.M., Driscoll, D.G., Hamade, G.R., & Jarrell, G.J. 2001b. Hydrologic Budgets for the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 1987-96; Water-Resources Investigations Report 01-4119. United States Geological Survey, Rapid City, SD.
- Carter, J.M., and Redden, J.A., 1999a. Altitude of the Top of the Madison Group in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-744-D, Plate 2: Southern Part of Area, Scale 1:100,000.
- Carter, J.M., and Redden, J.A., 1999b. Altitude of the Top of the Deadwood Group in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas HA-744-E, Plate 2: Southern Part of Area, Scale 1:100,000.
- Fahrenbach, M.D., Steece, F.V., Sawyer, J.F., McCormick, K.A., McGillivray, L.D., Schulz, L.D., and Redden, J.A., 2010. "South Dakota Stratigraphic Correlation Chart, OGI-03." SD-DANR Geological Survey Program, Vermillion, SD.
- Friedeman, B., 2020. "Public Water Systems on Full-Time Basis List." Environmental Scientist DANR-Drinking Water Program, Joe Foss Bldg, Pierre, SD.
- Kilts, W. 2017. Report to the Chief Engineer on Water Permit Application No. 2763-2. SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Long, A.J., & Putnam, L.D., 2002. Flow-System Analysis of the Madison and Minnelusa Aquifers in the Rapid City Area, South Dakota-Conceptual Model; Water-Resources Investigations Report 02-4185. United States Geological Survey, Rapid City, SD.

- Martin, J.E., Sawyer, J.F., Fahrenbach, M.D., Tomhave, D.W., and Schulz, L.D., 2004. "Geologic Map of South Dakota," SD-DANR Geological Survey Program, Vermillion, SD.
- Naus, C.A., Driscoll, D.G., and Carter, J.M., 2001. Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills area, South Dakota; Water-Resources Investigations Report 01-4129. Rapid City, SD. U.S. Geological Survey
- Peterson, J.A., 1984. Stratigraphy and Sedimentary Facies of the Madison Limestone and Associated Rocks in Parks of Montana, Nebraska, North Dakota, South Dakota, and Wyoming: U.S. Geological Survey Professional Paper 1273-A, 34 p.
- Rahn, P.H., & Gries, J.P., 1973. Large springs in the Black Hills, South Dakota and Wyoming. Report of Investigations No. 107. South Dakota School of Mines and Technology. Rapid City, SD. SD-DANR Geological Survey Program, Vermillion, SD.
- SD-DANR, 2020, July 21. Powertech (USA) Inc. Consolidated Contested Case. Retrieved from SD DANR - Water Rights Program, Joe Foss Building, Pierre, SD.
- SDGS, 2021. South Dakota Geological Survey Lithologic Logs Database. Accessed May 13, 2021. <http://cf.sddanr.net/lithdb/>.
- Strobel, M.L., Galloway, J.M., Hamade, G.R., & Jarrell, G.J., 2000. Potentiometric Surface of the Madison Aquifer in the Black Hills Area, South Dakota: U.S. Geological Survey Hydrologic Investigations Atlas 745-D, Plate 2: Southern Part of Area, Scale: 1:100,000.
- Strobel, M.L., Jarrell, G.J., Sawyer, J.F., Schleicher, J.R., & Fahrenbach, M.D., 1999. Distribution of hydrogeologic units in the Black Hills area, South Dakota. Hydrologic Investigations Atlas 743. U.S. Geological Survey. Denver, CO.
- 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. DANR-Water Rights Program file for Water Right No. 2313-2. Pierre, SD.
- Water Rights, 1997. Findings of Fact, Conclusions of Law, and Final Decision in the Matter of Water Permit Application No. 2585-2, Southern Black Hills Water System. DANR-Water Rights Program file for Water Right No. 2585-2. Pierre, SD.
- Water Rights, 2021a. "1982-2019 Irrigation Summaries by Aquifer", SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights, 2021b. Observation Well Data, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021c. Water Right/Permit Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021d. Well Completion Reports, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2021e. County Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Woodward-Clyde Consultants, 1981. Well-field hydrology technical report for the ETSI Coal Slurry Pipeline Project. United States Bureau of Land Management.

*** Proof of Publication ***

STATE OF SOUTH DAKOTA)

County of Pennington)

SS:

63 Industries

PO BOX 3372

RAPID CITY SD 57709

ORDER NUMBER 31878

The undersigned, being duly sworn, upon his/her oath says: That he/she is now and was at all time hereinafter mentioned, a clerk of the RAPID CITY JOURNAL, a corporation of Rapid City, South Dakota, a legal and daily newspaper printed and published in Rapid City, in said County of Pennington, and has full and personal knowledge of all the facts herein stated as follows: that said newspaper is and at all of the times herein mentioned has been a legal and daily newspaper with a bonafide paid circulation of at least Two Hundred copies daily, and has been printed and published for at least one year prior to the first date of the published notice.

This affidavit is a true and corrected copy of notice which appeared

in said newspaper once each day for one
successive day, the first publication there of being on the
17th day of June, 20 21

Section: Legal

Category: 0084 Water Permits

PUBLISHED ON: 06/17/2021

TOTAL AD COST: 51.41

FILED ON: 6/17/2021

Subscribed and sworn to before me this

17th day of June, 20 21
Sheri Spender Notary Public

My commission expires

November 21, 20 25

June 17 L31878

NOTICE OF APPLICATION NO. 2816-2 to Appropriate Water
Notice is given that Sudbury Ranch LLC, c/o Casey Skyberg, President, PO Box 3371, Rapid City SD 57709 has filed an application for a water permit to appropriate 8.3 acre-feet of water annually at a maximum pump rate of 0.11 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 900 feet deep) located in the S 1/2 SE 1/4 Section 21-T1S-R7E for a water distribution system. This site is located approximately 4.5 miles southwest of Rapid City SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2816-2 with qualifications because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, 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. 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 June 28, 2021.

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.

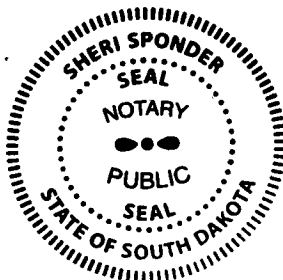
If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. If a petition opposing the application 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 \$51.41)

RECEIVED

JUN 21 2021

WATER RIGHTS PROGRAM



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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_

Schlaak, Karen

From: Lacy Broesder <LBroesder@rapidcityjournal.com> on behalf of RCY Legals <legals@rapidcityjournal.com>
Sent: Monday, June 14, 2021 5:19 PM
To: Schlaak, Karen; RCY Legals
Subject: RE: [EXT] 2816-2, Sudbury Ranch LLC
Attachments: AdProof Notice of Application no. 2816-2.pdf

I got that correction made, attached is Ad Proof. Let me know if you need anything else.

Thanks,

From: Schlaak, Karen [mailto:Karen.Schlaak@state.sd.us]
Sent: Monday, June 14, 2021 3:28 PM
To: RCY Legals
Subject: RE: 2816-2, Sudbury Ranch LLC

This Message Is From an External Sender

This message came from outside your organization.

I do have a correction on this notice. The date at the end of the third paragraph should be June 28, 2021 not July 28, 2021. I can resend the entire corrected notice, if you want me to.

Let me know.

Thanks,

Karen

From: Lacy Broesder <LBroesder@rapidcityjournal.com> **On Behalf Of** RCY Legals
Sent: Monday, June 14, 2021 11:59 AM
To: Schlaak, Karen <Karen.Schlaak@state.sd.us>; RCY Legals <legals@rapidcityjournal.com>
Subject: RE: [EXT] 2816-2, Sudbury Ranch LLC

This is scheduled to publish June 17th at the approximate cost of \$52.55. Attached is ad proof.

Thank you,

From: Schlaak, Karen [mailto:Karen.Schlaak@state.sd.us]
Sent: Monday, June 07, 2021 2:34 PM
To: RCY Legals
Subject: 2816-2, Sudbury Ranch LLC

Attached is a notice to be published on June 17, 2021.

Sudbury Ranch LLC, c/o Casey Skyberg, PO Box 3371, Rapid City SD 57709 (605 391-7200) 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

DANR - Water Rights Program

(605) 773-3352

Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

June 8, 2021

Sudbury Ranch LLC
c/o Casey Skyberg
PO Box 3371
Rapid City SD 57709

Dear Mr. Skyberg:

Water Permit Application No. 2816-2 for water distribution use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Rapid City Journal printed at Rapid City SD (Ph # 605 394-8336). 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 newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper 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.



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JUL 02 2021

Sudbury Ranch LLC
c/o Casey Skyberg
PO Box 3372
Rapid City SD 57709

Dear Mr. Skyberg:

Enclosed is Water Permit No. 2816-2 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,

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

enclosures

2816-2

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 21 Twp 15 Rg 7EWell Owner: Sudbury Ranch LLC

Business Name:

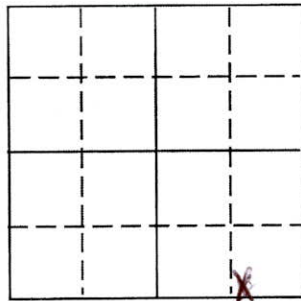
Address:

City, State, Zip:

County

Pennings

North



Please mark well location with an "X"

Well Completion Date

7-19-21

1 Mile

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

? ft. from Nothing Nearby (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

AIR Rotary

CASING DATA:

☒ Steel
 ☐ Plastic
 ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>23</u> LB/FT	<u>7</u> IN	<u>+1.5</u> FT	<u>806</u> FT	<u>8 3/4</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Portland</u>	<u>12</u>	<u>14</u> Lb/gal	<u>806</u> Ft	<u>0</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

Pressure grout through casing

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?

☐ No, Why Not?

Lab sample sent to for water quality analysis

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Red & brown clay	0	60
Tan limestone	60	100
Clay & limestone	100	140
Gravel & clay	140	200
Red & orange sandstone	200	480
Multicolored limestone/clay	480	760
off white limestone	760	990

STATIC WATER LEVEL

☒ @ 700' FEET

If flowing: closed in pressure

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:

☐ Bailed

☒ Other

Pumping Level Below Land Surface

970 Ft. After 2 Hrs. pumped 105 GPM

850 Ft. After 2 Hrs. pumped 50 GPM

If pump installed, pump rate: _____ GPM

REMARKS

This well was drilled under license # 705

And this report is true and accurate.

Drilling firm:

Signature of License Representative:

Frank Conway

Signature of Well Owner or Equitable Property Holder:

RECEIVED

JAN 27 2022

Date:

WATER RIGHTS PROGRAM

2816-2

Form 10

**NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE**

Date June 15, 2022

TO: Water Rights Program, DANR
523 E. Capitol
Pierre, SD 57501-3181

FROM:

Casey Skyrberg
(name)Po Box 3372
(address)Rapid City SD 57709
(city, state, zip)605-391-7200
(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. 2816-2 states that the water use system is to be constructed by

May 2022
(date)

, and water is to be put to beneficial use by

July 2022
(date)

The water use system was completed on May 2022
(date)

Applying the water to beneficial use was completed on Sept 2021
(date)

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

Daarf

(signature)

- KLS Project Engineer



McMath, Genny

From: Gronlund, Eric
Sent: Wednesday, June 15, 2022 9:46 AM
To: McMath, Genny
Subject: FW: [EXT] Sudbury Ranch Well permit 2816-2 Form 10
Attachments: SudburyRanchForm10_BeneficialUse.pdf

From: Dana Foreman <Dana.Foreman@kljeng.com>
Sent: Wednesday, June 15, 2022 9:43 AM
To: Gronlund, Eric <Eric.Gronlund@state.sd.us>
Subject: [EXT] Sudbury Ranch Well permit 2816-2 Form 10

Hi Eric,

Attached for your review and processing is Form 10 for Sudbury Ranch well permit 2816-2. Please let me know when you are able to provide an investigation.

Thanks,

Dana Foreman PE
KLJ
605-600-3850 Direct
605-484-1626 Cell
330 Knollwood Drive
Rapid City, SD 57701-6611
kljeng.com



2816-2

**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

January 23, 2024

2816-2

Pine Grove Community Water Assoc Inc.
c/o Gerald A Broer, President
23884 Hart Ranch Rd W
Rapid City SD 57702

Dear Mr. Broer:

I have received your "Notice of Transfer of Ownership" form and the required fees. Enclosed is a receipt of payment for your records.

Water Permit No. 2816-3 previously owned by Sudbury Ranch LLC, is now listed under Pine Grove Community Water Assoc Inc. I have also updated your contact information in our system.

As a reminder, so long as you use the water beneficially, as stated in the Water Permit, State Water Laws provide that you have a continuing right to use the water. Should the water not be put to beneficial use for a period longer than 3 consecutive years, without legal excuse, the permit will be subject to cancellation.

If you have any questions, please contact me.

Sincerely,

Amanda Dewell
Water Rights Program
605 773-3352
Amanda.Dewell@state.sd.us

enclosure

NOTICE OF TRANSFER OF OWNERSHIP

For assistance call (605) 773-3352

Mail to: SD DANR, Water Rights Program
523 E Capitol Ave
Pierre, SD 57501-3182

Water Right/Permit No. 2816-2
Date: 01/16/2024

PAID
JAN 19 2024
Ck# 4070
Rec't# 1/19/24

I/We request that Water Right/Permit No. 2816-2 formerly owned by:
Sudbury Ranch LLC clo Casey Skyberg be transferred to:

New Owner Name: Pine Grove Community Water Ass Inc
Address: 23884 Hart Ranch Rd W mobile: 605 390-1967
City, State, Zip: Rapid City SD 57702 email: pinegrovewater@hotmail.com

Title to the following described land(s)/property has been transferred as described above:

Legal Description: Sudbury Ranch, Lot 3
Purchased 8/23/2023 - See Attached

☒ I understand that the validity of Water Right/Permit No. 2816-2 has not been determined by this transfer action. If I have any questions on validity, I understand that only the Water Management Board has the authority to determine if a water right/permit is valid (see note below).

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Fifty Dollars (\$50.00) is included to cover the filing fee as required by SDCL 46-2-13.

I, Pine Grove Community Water Assn, the new owner, certify that the above information is true and correct. Inc

Gerald A. Bruer
(signed by new owner) President

NOTE: Water permits may be cancelled for nonconstruction after the five-year construction period has expired. Once a water permit is developed, an inspection is conducted to issue a water right license for the project as developed. A water permit/right may be cancelled for one or more of the following reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three-year period without legal excuse.
3. For a third violation of a condition of a water permit/right.

RECEIVED

JAN 19 2024

OFFICE OF
WATER

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date January 19, 2024

RECEIVED OF Pine Grove Community Water 23884 Hart Rach Rd. W. Rapid City SD 57702

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	\$ _____
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, confirming beneficial use and issuing Water License No. _____	\$ _____
Fee for Filing Transfer Form <u>2816-2</u> _____	<u>\$50.00</u>
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	<u>\$50.00</u>

By Eric Gronlund
Chief Engineer

ONE

File Nos.
2484A-2 & 2816-2

WATER RIGHTS PROGRAM -- FILE DOCUMENTATION

NAME & ADDRESS: Jerry Brewer w/ Pine Grove Comm. Water Assoc. – Rapid City SD

DATE: 08/13/2024

TELEPHONE: 605-390-1967

RE: Sudbury Well (2816-2)

COMMENTS:

In January 2024 Pine Grove Community Water Association took ownership of WP No. 2816-2, previously owned by Sudbury Ranch. For all intents and purposes, the well authorized by WP No. 2816-3-2 is referred to as the Sudbury Well.

Jerry called today to inform me that the Sudbury well had successfully been hooked up to the water supply lines for Pine Grove. It is the intent to maintain the Sudbury well strictly to be used as a backup water source for WR No. 2484A-2.

If at some point in time the pump in the Sudbury well (currently rated for 35-45 GPM) is replaced for a higher capacity pump, Jerry said he would call to discuss any additional requirements our office might have.



Amanda Dewell
Water Rights Program