

WATER PERMIT NO. 1991-1

Name of Applicant: Black Hawk Water User District

Address: Phone: 5513 Oak St, Black Hawk SD 57718

Amount of Water Claimed: 1.78 cfs (1,120 AF) Total Acres: NA

Source of Water Supply: groundwater (one well)

Water to be used for: rural water system use County: Meade

Type of Waste Disposal System:

Location: 4 miles northwest of Black Hawk

PRIORITY Date Received: 5-30-19 Application/License Fee: \$ 1,750

Corrected Application Received: Period of Annual Use: Jan 1- Dec 31

Remarks:

Diversion Point: NE 1/4 Sec 26-T3N-R6E

Land to be Irrigated: NA

Depth of Well: 1280 feet deep

Well Driller:

Remarks:

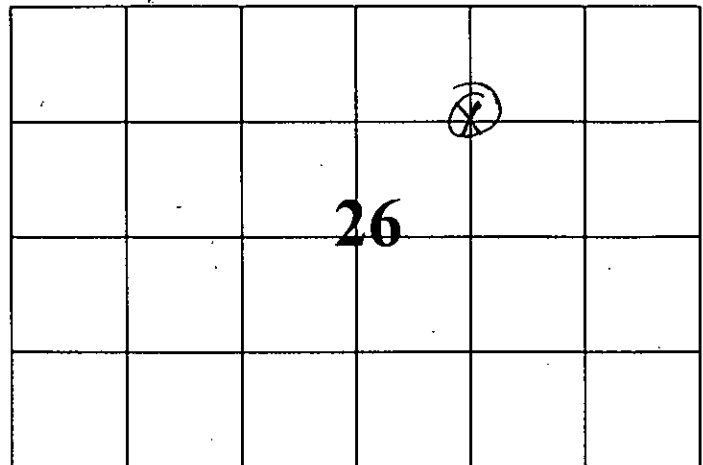
Type of Map: topo

Prepared by:

Reviewed and the Number Assigned on: 5-30-19

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



**SOUTH DAKOTA
WATER PERMIT NO. 1991-1**

Date of first receipt of application May 30, 2019.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1991-1 to Black Hawk Water User District, c/o Edmund L Striebel, PO Box 476, Black Hawk SD 57718 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. 1991-1 appropriates 760 acre-feet of water annually at a maximum pump rate of 1.78 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 1,280 feet deep) located in the NE 1/4 Section 26-T3N-R6E. This site is located approximately 3 miles northwest of Black Hawk SD.
2. The water appropriated shall be used for the purpose of rural water system use in Meade County 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. 1991-1 is August 19, 2019.
5. The date from which applicant may claim right is May 30, 2019.
6. One-fifth of the construction is to be completed on or before February 19, 2022.
7. All construction is to be completed on or before August 19, 2024.
8. Water is to be put to beneficial use on or before August 19, 2028.
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. 1991-1 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. 1991-1 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 authorized by Permit No. 1991-1 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. Black Hawk Water User District shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
4. Water Permit No. 1991-1 appropriates up to 760 acre feet of water annually.

WATER MANAGEMENT BOARD

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

AUG 21 2019
date



PAID

MAY 30 2019

Ck# 20579

RECEIVED

MAY 30 2019

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>1991-1</u> (office use only) Hydrologic Unit <u>10120111</u>
	Basin <u>Upper Cheyenne</u>
	Newspaper <u>Faith Independent</u> <u>Rapid City Journal</u>

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 Black Hawk Water User DistrictMailing Address 5513 Oak Street PO Box 476 Black Hawk SD 57718
(Address) (City) (State) (Zip Code)Phone 605-787-5777 Mobile _____ Email bhwud@rushmore.com2. Amount of water claimed 1.78 *CFS or 800 **GPM and 760 ***AF or 365,000,000 Gallons
Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use3. Source of water supply Madison Aquifer4. Location of point of diversion NE1/4 Section 26-T3N-R6E County Meade

(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 Meade County6. Annual period during which water is to be used January 1 to December 31

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

The appropriation is for the Black Hawk Water User District (BHWUD). Water will be put to beneficial use as a potable water supply for the BHWUD. The application is for additional groundwater to meet increased and projected demand for the BHWUD.

I, Edsel 2 Stutzel President, 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 1 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) ~1280 Depth to Top of Water Bearing Material ~880 Depth to Water from Surface ~40
- d) Distance to nearest domestic well on applicant's property N/A Property owned by others 400 feet

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

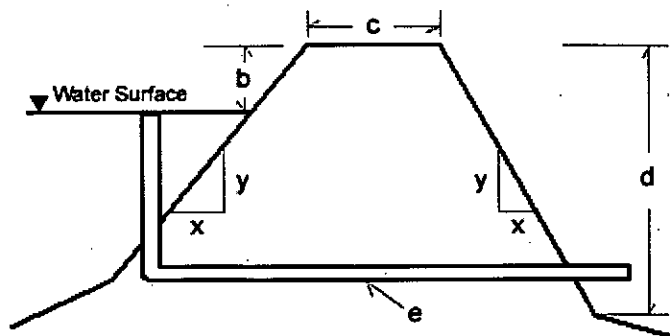
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

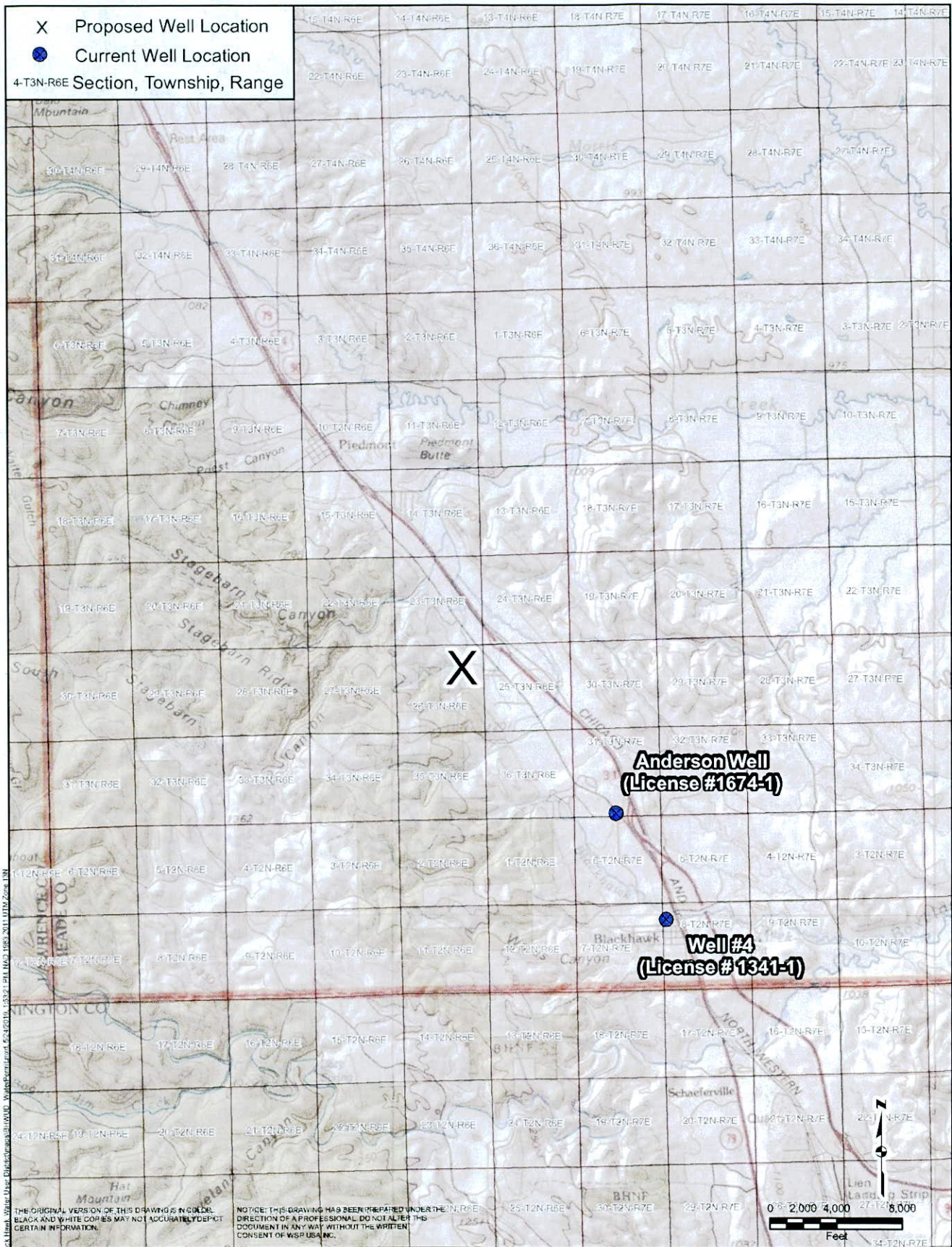
4. Water Storage Dams

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





 WSP USA Inc. 140 EAST HINKS LANE SUITE 120 SIOUX FALLS SD 57109 TEL: +1 605 394 6000	PROPOSED WELL SITE BLACK HAWK, SOUTH DAKOTA PREPARED FOR Black Hawk Water User District	FIGURE 1 PROPOSED WELL LOCATION
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May 24, 2019

RECEIVED

MAY 30 2019

WATER RIGHTS
PROGRAM

Mr. Eric Gronlund
South Dakota Department of Environment & Natural Resources
Water Rights Program
523 E. Capitol Avenue
Pierre, SD 57501-3182

**Subject: Water Permit Application
Black Hawk Water User District
5513 Oak Street
Black Hawk, South Dakota 57718**

Dear Mr. Gronlund:

Enclosed is an *Application for Permit to Appropriate Water within the State of South Dakota* completed by WSP USA, Inc. (WSP) on behalf of the Black Hawk Water User District (BHWUD). Also enclosed is a check in the amount of \$1,750 (\$1,550 for the filing fee and \$200 for the final inspection/licensing fee).

BHWUD is requesting an annual volume of 365,000,000 gallons of groundwater from the Madison aquifer, which is equivalent to a use of approximately 1 million gallons per day. The requested maximum flow rate is 800 gallons per minute (gpm). The proposed well (Well #6) will be located in the northeast quarter of Section 26, Township 3 North, Range 6 East (Figure 1).

Thank you for your assistance. If you have any questions or need additional information, please contact me at (605) 334-6000.

Kind regards,


Mitch Kannenberg
Supervising Engineer

H:\PROJECTS\Black Hawk Water Users District\Water Permit App\Well6_Permit_App_Cover_Letter.docx

MK/ms
Encl.

Application for Permit to Appropriate Water within the State of South Dakota and attachments
Check in the amount of \$1,750

WSP USA
Suite 126
140 East Hinks Lane
Sioux Falls, SD 57104

Tel.: +1 605 334-6000
Fax: +1 605 334-1850
wsp.com

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date May 30

2019

Black Hawk Water User District PO Box 476 Black Hawk, SD 57718

RECEIVED OF _____

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

Fee for Application for Permit No. <u>1991-1</u> to Appropriate Water, to construct and to put water to beneficial use	1550	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>1991-1</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	1750 00

No. **09152**

By Jeanne Goodman
Chief Engineer DM

Gronlund, Eric

From: Kannenberg, Mitch <Mitch.Kannenberg@wsp.com>
Sent: Tuesday, June 11, 2019 1:25 PM
To: Gronlund, Eric
Subject: RE: [EXT] Black Hawk Water User District

Hello Eric:

The purpose of this email is to provide a response to your June 5, 2019 emailed question regarding the requested annual volume for the Black Hawk Water User District water permit application. The volume requested in the permit application is intended to provide system redundancy should one or both of Black Hawk Water User District's existing wells go down. Well #4 is 33 years old, Well #5 is 20 years old.

Thank you.

Mitch

PS: I will call you to follow-up, in fact, I just tried, but Vickie indicated you are out today and tomorrow.

Mitch Kannenberg, PE
Supervising Engineer



Direct Phone: +1 (605) 305-5145
Office Phone: +1 (605) 334-6000
Cell: +1 (605) 310-1721
Email: mitch.kannenberg@wsp.com
Please note I have a new email address.

WSP USA
140 E. Hinks Lane, Suite 126
Sioux Falls, SD 57104

wsp.com

Leggett, Brashears & Graham is now WSP.

From: Gronlund, Eric [<mailto:Eric.Gronlund@state.sd.us>]
Sent: Thursday, June 6, 2019 11:15 AM
To: Kannenberg, Mitch <Mitch.Kannenberg@wsp.com>
Subject: RE: Black Hawk Water User District

Mitch – the application is deemed complete for the purpose of assigning to a staff engineer for our standard review. In the review process there is the possibility that questions will arise which will cause us to contact you.

The requested annual volume did get our attention. The requested volume is 1,120 acre feet/year. Based on the requested pump rate of 1.78 cfs that equates to the well being in use 87% of the time. That is much higher than we normally see. Considering Black Hawk Water User District currently reports 600 – 650 ac-ft/year in use, it does bring into question the requested volume is needed or if they are partly using the water permit also as a future use permit reservation. So I guess the question is how was the 1,120 acre feet/year arrived at?

From: Kannenberg, Mitch [<mailto:Mitch.Kannenberg@wsp.com>]
Sent: Thursday, June 06, 2019 10:52 AM
To: Gronlund, Eric
Subject: [EXT] Black Hawk Water User District

Hi Eric:

I am just emailing to check and see if you need any additional information for the water permit application recently submitted by Black Hawk Water User District, or if the application is considered complete?

Thanks, Eric.
Mitch

Mitch Kannenberg, PE
Supervising Engineer



Direct Phone: +1 (605) 305-5145
Office Phone: +1 (605) 334-6000
Cell: +1 (605) 310-1721
Email: mitch.kannenberg@wsp.com
Please note I have a new email address.

WSP USA
140 E. Hinks Lane, Suite 126
Sioux Falls, SD 57104

wsp.com

Leggette, Brashears & Graham is now WSP.

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Gronlund, Eric

From: Kannenberg, Mitch <Mitch.Kannenberg@wsp.com>
Sent: Wednesday, July 31, 2019 12:00 PM
To: Gronlund, Eric
Cc: Ed Striebel (clearwater@rap.midco.net); Ken LeBon; Cindy Swanson
Subject: [EXT] Black Hawk Water User District Water Permit Application

Dear Mr. Gronlund:

Subject: Water Permit Application dated May 24, 2019, submitted by Black Hawk Water User District.

As you know, Black Hawk Water User District in May 2019 submitted an *Application For Permit to Appropriate Water within the State of South Dakota* to authorize groundwater withdrawals from the Madison aquifer for a new well to be constructed northwest of Black Hawk, SD. The application requested a flow rate of 800 gallons per minute (gpm), and an annual volume of 1,120 acre-feet per year (ac-ft/yr).

As you and I discussed by telephone this morning, Black Hawk Water User District wishes to reduce the requested appropriation volume from 1,120 ac-ft/yr to 760 ac-ft/yr, while keeping everything else, including the 800 gpm flow rate, unchanged from the original application.

I discussed this with Black Hawk Water User District by telephone this morning, and received their permission to request this volume change on the District's behalf. I have copied the President (Ed Striebel), Manager (Cindy Swanson), and Assistant Manager (Ken LeBon) on this email. After making this volume change, please proceed with the public notification.

Please contact me if you have any questions, or need additional information.

Thank you very much for your timely assistance.
Mitch

Mitch Kannenberg, PE
Supervising Engineer



Direct Phone: +1 (605) 305-5145
Office Phone: +1 (605) 334-6000
Cell: +1 (605) 310-1721
Email: mitch.kannenberg@wsp.com
Please note I have a new email address.

WSP USA
140 E. Hinks Lane, Suite 126
Sioux Falls, SD 57104

wsp.com

Leggette, Brashears & Graham is now WSP.

Schlaak, Karen

From: Schlaak, Karen
Sent: Thursday, August 01, 2019 8:12 AM
To: 'mitch.kannenberga@wsp.com'; black hawk water user district (bhwud@rushmore.com)
Subject: Water Permit Application No. 1991-1, Black Hawk Water Users District
Attachments: 1991-1.pdf

Attached is a copy of the report, Chief Engineer recommendation, public notice and letter regarding the above water permit application. As stated in the letter, it is important that someone contact the two papers as soon as possible to authorize publication on August 7th and to arrange for payment. This information is being mailed today.

FYI – The notice is being published in the Faith Independent because it is the official newspaper in Meade County. We are required to publish in the official county paper as well as the nearest daily paper.

Karen Schlaak

SD DENR, Water Rights Program
(605) 773-3352





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1991-1, Black Hawk Water User District**

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. 1991-1, Black Hawk Water User District, c/o Edmund L Striebel, 5513 Oak St, Black Hawk SD 57718.

The Chief Engineer is recommending APPROVAL of Application No. 1991-1 with a 20 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. 1991-1 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. 1991-1 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 authorized by Permit No. 1991-1 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. Black Hawk Water User District shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
4. Water Permit No. 1991-1 appropriates up to 760 acre feet of water annually.

See report on application for additional information.

Eric Stromlund
for Jeanne Goodman, Chief Engineer
July 31, 2019

REPORT TO THE CHIEF ENGINEER

Water Permit Application No. 1991-1

Black Hawk Water User District

July 29, 2019

Water Permit Application No. 1991-1 proposes to appropriate 760 acre-feet of water annually at a maximum instantaneous diversion rate of 1.78 cubic feet per second (cfs) for rural water system use. The proposed diversion point is one well to be completed into the Madison aquifer with a well depth estimated by the applicant of 1,280 feet. The location of the proposed well is to be in the NE ¼ of Section 26 T003N R06E, adjacent to Summerset, SD and approximately 4 miles northwest of Black Hawk, SD in Meade County.

The Black Hawk Water User District currently holds Water Right Nos. 1341-1 and 1674-1 for the use of 1.15 cfs and 1.9 cfs of water from the Madison Aquifer and Water Right Nos. 1801A-2 and 1801B-2 for the use of 0.38 cfs and 0.18 cfs of water from the Minnelusa Aquifer. This application is for Rural Water System use to meet the increased and projected demand for the Black Hawk Water User District and to provide system redundancy.

AQUIFER: Madison (MDSN)

HYDROGEOLOGY

The Madison aquifer is a regional scale aquifer that underlies parts of South Dakota, North Dakota, Wyoming, Montana, and Canada (Peterson, 1984). In South Dakota, the aquifer underlies 35,231 square miles of the state, with 29,869 square miles in western South Dakota and 5,362 square miles in eastern South Dakota (Allen et al., 1985; Hedges et al., 1982).

The Madison aquifer occurs within the Mississippian aged Madison Limestone, known locally as the Pahasapa Limestone. The Madison Limestone is a gray to buff and lavender limestone that is locally dolomitic (Strobel et al., 1999). The Madison Limestone is estimated to be approximately 500 feet thick in this area (Carter and Redden, 1999a; Carter and Redden, 1999b). The Madison Limestone is underlain by the Englewood Formation and overlain by the Minnelusa Formation. The Madison aquifer is generally under confined conditions, except in areas where the Madison Limestone outcrops or near the outcrop. On the northeastern flank of the Black Hills uplift, the direction of groundwater flow within the Madison aquifer is generally towards the east-northeast near the outcrop and eventually curving around to the east (McKaskey, 2013).

The Madison aquifer is estimated to contain 644,827,000 acre-feet of recoverable water in western South Dakota (Allen et al., 1985). Eastern South Dakota has been estimated to contain 51,512,300 acre-feet of recoverable water in the Madison aquifer (Hedges et al., 1982), bringing the total estimated recoverable water from the Madison aquifer in South Dakota to 696,339,300 acre-feet.

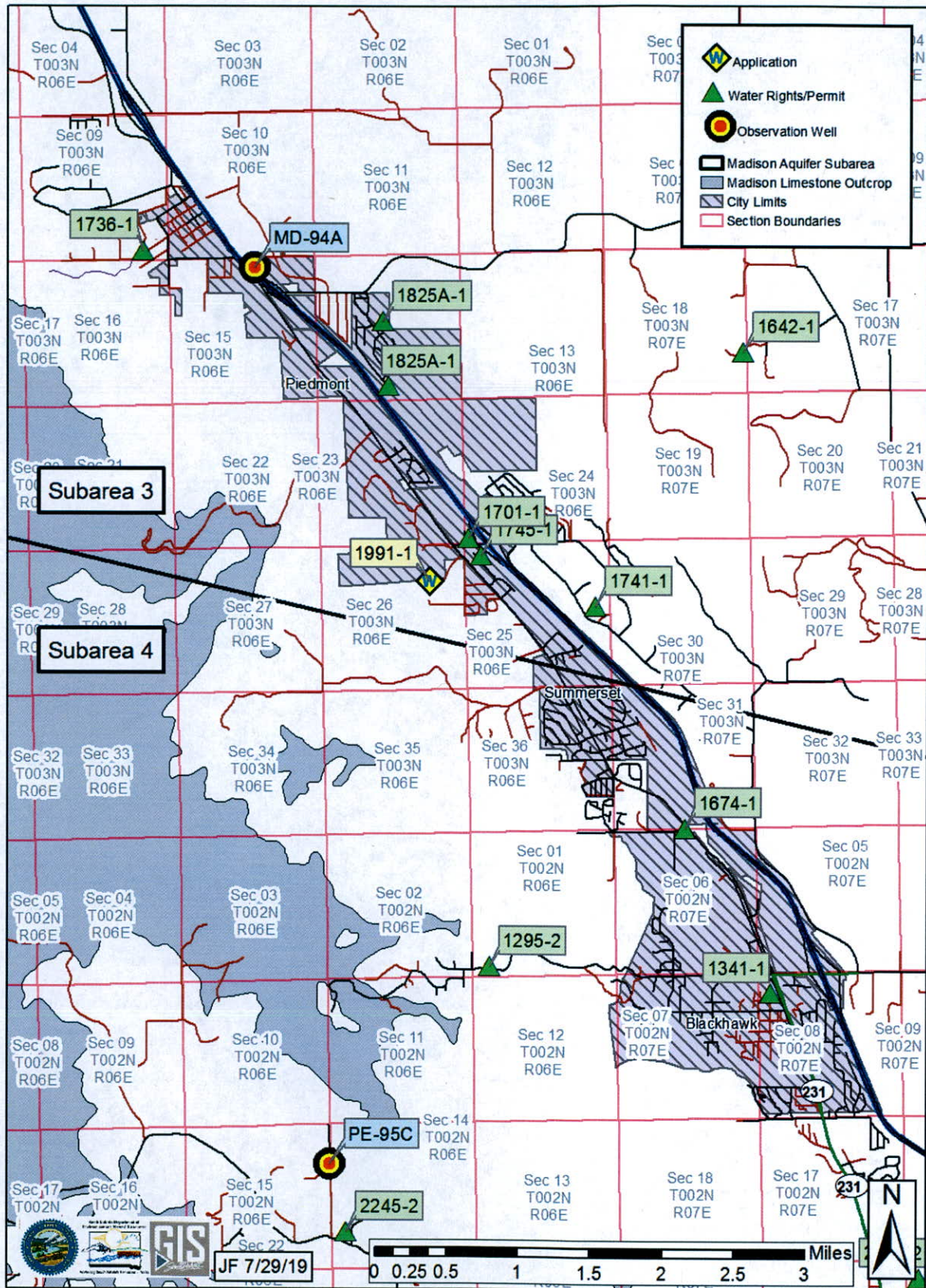


Figure 1. Map showing project area including the proposed well site, Madison aquifer observation wells, Madison aquifer water rights/permits and Madison aquifer subareas (modified from Carter et al, 2001b; Strobel et al, 1999; Water Rights, 2019a; Water Rights, 2019c)

South Dakota Codified Law 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 proposed diversion 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 existing rights within the Madison aquifer.

WATER AVAILABILITY

The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1, which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source." If the source of the water is older than or stratigraphically lower than the Greenhorn Formation and a water distribution system has applied for a permit, the Board need not take into consideration the balance of aquifer recharge and withdrawal. Here, the water source is older and lower than the Greenhorn Formation, and a water distribution system is involved. While the consideration of the balance of aquifer recharge and withdrawal is not required by the Board, it is included in this report.

Hydrologic Budget

Recharge

Recharge to the Madison aquifer occurs through streamflow losses and the direct infiltration of precipitation on the outcrop. Woodward-Clyde Consultants (1981) estimated an upper recharge volume of 400,000 ac-ft/yr by assuming that the recharge is equal to all precipitation that falls on the outcrop plus the gains made from streamflow losses, minus the amount of evapotranspiration and surface runoff. The lower recharge volume that was used in the Woodward-Clyde report was based upon Rahn and Gries (1973) report on large springs in the Black Hills. Rahn and Gries (1973) measured the discharge from 26 large springs that discharge from the Paleozoic carbonate aquifer in the Black Hills, and estimated the recharge to be at least 190.01 cfs (137,560 ac-ft/yr) to the Paleozoic carbonate aquifer. In Rahn and Gries' (1973) report, the Paleozoic carbonate aquifer consists of the Whitewood Formation, Englewood Formation, Pahasapa (Madison) Limestone, Minnelusa Formation, Opeche Formation, and the Minnekahta Limestone. Although these estimates have been used in the past, the upper recharge value is based upon broad assumptions of the hydrologic cycle, and Rahn and Gries' estimate is not specific to the Madison aquifer.

As part of the Black Hills Hydrology Study, Carter et al (2001a) estimated the annual recharge to the Madison and Minnelusa aquifers from the infiltration of precipitation and from streamflow losses. For the years 1931-98, the estimated annual recharge to the Madison and Minnelusa aquifers from both sources of recharge averaged approximately 344 cfs. This estimate was noted as probably being conservative due to assumptions made in the estimation of how much water infiltrates past the root zone (Carter et al, 2001a). With the differences between stratigraphic location, surface area of the outcrop, and other variables, Carter et al (2001a) estimated that the Madison aquifer receives 55% of the combined average annual recharge and that the Minnelusa aquifer receives the other 45%. Using the 55% estimate, the Madison aquifer is estimated to receive 189.2 cfs of recharge, or an estimated average annual recharge of 137,000 ac-ft/yr. The recharge rate estimated by Carter et al (2001a) is the best reasonably available estimate for

recharge to the Madison aquifer as it is specific to the Madison aquifer, uses more reasonable assumptions, and has a longer period of record.

Discharge

Discharge from the Madison aquifer occurs primarily through well withdrawals and discharge from springs. There are currently 152 water rights/permits that are licensed or permitted for appropriating water from the Madison aquifer (Water Rights, 2019a). Additionally, there are 9 future use permits reserving water from the Madison aquifer, 1 deferred application (Application No. 2585-2 for Southern Black Hills Water System), and 1 application held in abeyance (Application No. 2685-2 for Powertech (USA) Inc.) (Water Rights, 2019a).

The majority of water use from the Madison aquifer is for non-irrigation purposes, with 135 water rights/permits currently using water for purposes other than irrigation. The amount of water that can be expected to be withdrawn can be estimated by assuming water rights/permits limited by an annual volume will pump the entire volume appropriated annually and water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time. Estimated water use from appropriations limited by an annual volume total 19,003.5 ac-ft, and 22,474.12 ac-ft from appropriations limited by their diversion rate. The combined non-irrigation estimated average annual use from the Madison aquifer is 41,477.62 ac-ft/yr.

The estimated average annual use for future use permits is determined by assuming that the reserved amount will be fully developed in the future. The estimated average annual use for future use permits is 12,809 ac-ft/yr and summarized in Table 1. However, Future Use Permit No. 439-2 reserves 3,367 acre-feet from several different sources and does not quantify specific volumes from any of the sources. For the purposes of the hydrologic budget, the entire volume of Future Use Permit No. 439-2 will be assumed to appropriate water from the Madison Aquifer.

Table 1. Future Use Reservations from the Madison Aquifer (Water Rights, 2019a)

Permit No.	Name	Reservation Balance (ac-ft)
369-1	CITY OF BELLE FOURCHE	620
439-2	CITY OF RAPID CITY	3,367
1833-2	WESTON HEIGHTS HOME OWNERS	211
1872-1	CITY OF SPEARFISH	2,704
2086-2	CITY OF RAPID CITY	4,075
2560-2, 2560A-2, 2560B-2	FALL RIVER WATER USERS DISTRICT	358
2580-2	SOUTHERN BLACK HILLS WATER SYSTEM	1,474
Total	9 Reservations	12,809

The complexities of the location and accessibility of the Madison aquifer have made estimating the irrigation withdrawals difficult. Many of the water rights/permits that include irrigation as a use, also use the same Madison well for other permitted uses, or many different water sources are permitted for the same irrigation system. Irrigation use from the Madison aquifer does not make up a significant portion of the hydrologic budget; there are 32 water rights/permits that are

permitted for irrigation use (Water Rights, 2019a). The total number of acres currently permitted for irrigation is 3,803.16 acres. Kilts (2017) estimated the average annual withdrawals for irrigation to be 980 ac-ft per year for rights/permits that have more than 10 years of submitted irrigation questionnaires after their systems were constructed and then estimated the remaining rights/permits to use their appropriated amount (less than 2,342 ac-ft/yr). In the time since Kilts' (2017) analysis of the irrigation in the Madison aquifer there have been two additional permits approved for irrigation, and they are for the irrigation of 667 acres with a total appropriation of 1,334 ac-ft/yr. The current estimated average annual use from irrigation withdrawals is less than 4,656 ac-ft/yr.

In addition to the above permitted uses, the deferred application is for rural water system use and is requesting 1,600 ac-ft/yr with a priority date of 5/08/2006, and the application held in abeyance is requesting 888.8 ac-ft/yr for aquifer restoration following in-situ recovery (ISR) mining with a priority date of 6/12/2012. If successfully permitted, these two applications have a combined estimated average annual use of 2,488.8 ac-ft/yr.

There are a number of domestic wells on file that withdraw water from the Madison aquifer. Carter et al. (2001b) estimated that the well withdrawals attributed to domestic and livestock watering amount to about 2.25% of the total well withdrawals. This estimation used data from the 1987 to 1996 water years, as the change in storage within the aquifer over that period was considered to be approximately zero (Carter et al., 2001b). The annual quantity of water withdrawn for domestic use is considered to be not significant to the hydrologic budget of the aquifer.

This application, if approved, is for the use of 760 acre-ft/yr for Rural Water System use. Assuming the full appropriation is used, the estimated average annual use from this application would be 760 ac-ft/yr.

Hydrologic Budget

The estimated appropriative withdrawals from the Madison aquifer are 41,477.62 ac-ft/yr from non-irrigation withdrawals, 12,809 ac-ft/yr from future use, and less than 4,656 ac-ft/yr from irrigation withdrawals. The three existing applications have an estimated withdrawal of 2,488.8 ac-ft/yr. Including an estimated 760 ac-ft/yr from this application, the estimated average annual withdrawal from the Madison aquifer is less than 62,192 ac-ft/yr. The estimated average annual recharge to the Madison aquifer is 137,000 ac-ft/yr.

The estimated annual withdrawals equate to less than half of the estimated annual recharge to the Madison aquifer and both of these are small percentages of the total available water in storage within the Madison aquifer. However, access to all of the recharge occurring to the Madison aquifer or access to all of the water stored within the Madison aquifer is not possible at any one location. This hydrologic budget for the entire aquifer is intended to demonstrate the Madison aquifer is a large water resource.

Localized Hydrologic Budget

As the general hydrologic budget does not describe water availability on a local scale, Carter et al. (2001b) analyzed the hydrologic budgets of the Madison and Minnelusa aquifers for the water years 1987 to 1996 and divided the Black Hills region into nine subareas, each with their own

individual hydrologic budget. The subarea boundaries were placed as to minimize the flow of groundwater between subareas. This application is within the boundaries of Subarea 3. Recharge and discharge from Subarea 3 is documented in Table 3 and water rights/permits in Subarea 3 are listed in Table 4.

Table 3. Local Hydrologic Budget for Subarea 3 (modified from Carter et al., 2001b)

Recharge - Streamflow	Recharge - Precipitation	Groundwater Inflow - Minnelusa	Groundwater Inflow - Madison	Groundwater Outflow - Minnelusa	Groundwater Outflow - Madison	Discharge - Springflow	Discharge - Well Withdrawals
8.6 cfs	3.7 cfs	3.4 cfs	0 cfs	4.4 cfs	8.8 cfs	1.9 cfs	0.9 cfs
6,226 ac-ft/yr	2,679 ac-ft/yr	2,461 ac-ft/yr	0 ac-ft/yr	3,145 ac-ft/yr	6,371 ac-ft/yr	1,376 ac-ft/yr	652 ac-ft/yr

Table 4. Water Rights/Permits from the Madison Aquifer including Future Use located in Subarea 3 (Water Rights, 2019a; Carter et al., 2001b)

Permit No.	Name	Status	Use	CFS	Annual Volume [ac-ft]	Irrigation Acres
1642-1	EAGLE RIDGE HOMEOWNERS	LC	SHD	0.089	N/A	N/A
1701-1	STAGEBARN LODGING LLC	LC	COM	0.10	N/A	N/A
1736-1	ELK MOUNTAIN ESTATES	LC	SHD	0.189	N/A	N/A
1741-1	RENDEZVOUS RANCH	LC	SHD	0.089	N/A	N/A
1745-1	TIM HAGGAR	LC	COM	0.10	N/A	N/A
1825A-1	DIAMOND D WATER CO LLC	LC	SHD	0.26	N/A	N/A
1833-2	WESTON HEIGHTS HOME OWNERS	FU	RWS	N/A	211	N/A
1887-1	JKRK PROPERTIES LLC	LC	SHD	0.190	N/A	N/A
2631-2	CITY OF BOX ELDER	PE	MUN	1.00	435	N/A
LC = Licensed, PE = Permit, FU = Future Use COM = Commercial, MUN = Municipal, RWS = Rural Water System, SHD = Suburban Housing Development						

The estimated annual withdrawal from these water rights/permits in Subarea 3 is approximately 877 ac-ft for the non-irrigation water rights/permits and 211 ac-ft for the future use reservations if they are fully developed within Subarea 3. The average annual withdrawals from Subarea 8 are estimated to be 1,088 ac-ft/yr. If this application is approved, an estimated 760 ac-ft/yr would be withdrawn, bringing the total estimated average annual withdrawal to 1,848 ac-ft/yr.

The estimated average annual recharge to the Madison aquifer portion of Subarea 3 is 55% of the total recharge from the surface (Carter et al., 2001a), or 4,920 ac-ft/yr, and the groundwater flow from adjacent subareas into Subarea 3, or 0 ac-ft/yr. The total estimated average annual recharge to the Madison aquifer in Subarea 3 is approximately 4,920 ac-ft/yr, and the estimated average annual withdrawals are 1,848 ac-ft/yr.

The estimated average annual withdrawals are approximately 38% of the estimated average annual recharge to Subarea 3. The groundwater outflow from this subarea and the natural discharge from springs can also be captured, although there are public interest concerns in maintaining the flow from springs. Based upon the information available, and the natural

variation of the potentiometric surface, development of this application is not expected to impact the flow from the springs due to the distance and structural geology between this application and the known springs. Therefore, there is a reasonable probability unappropriated water is available for this proposed application.

Observation Well Data

In determining the availability of unappropriated water for a permit application Administrative Rule 74:02:05:07 requires the Water Management Board to rely on 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 annual recharge.

The Water Rights Program monitors 25 observation wells completed in the Madison aquifer (Water Rights, 2019c). The nearest observation well is MD-94A, located approximately 2.5 miles north-northwest of the proposed well location (Figure 1). Observation well MD-94A is the only observation well that monitors the Madison aquifer in Subarea 3. The next nearest observation well, PE-95C, is located approximately 4.1 miles to the south in Subarea 4. Observation Well MD-90A is located just inside Subarea 2 and approximately 8.25 miles to the north-northwest. With the exception of MD-94A, these observation wells are representative of the hydrographs for the other DENR observation wells completed into the Madison aquifer.

In general, the observation well data provides a qualitative means of assessing the aquifer and provides the best information reasonably available to evaluate the hydrologic budget of the aquifer. The observation wells for the Madison aquifer document that water levels in the aquifer are dominated by climactic conditions. Over the period of record, these observation wells show that the aquifer recharges during wetter periods of time and gradually declines during drier periods of time. This means that recharge to and natural discharge from the Madison aquifer greatly exceeds well withdrawals.

The hydrograph for Observation Well MD-94A shows that over the period of record the well has not accurately observed the behavior of the Madison aquifer. MD-94A was repaired in 2014 and has since resumed accurate observations of the Madison aquifer.

The observation well data indicates that there is a reasonable probability that there is unappropriated water available from the Madison aquifer and also supports the hydrologic budget data.

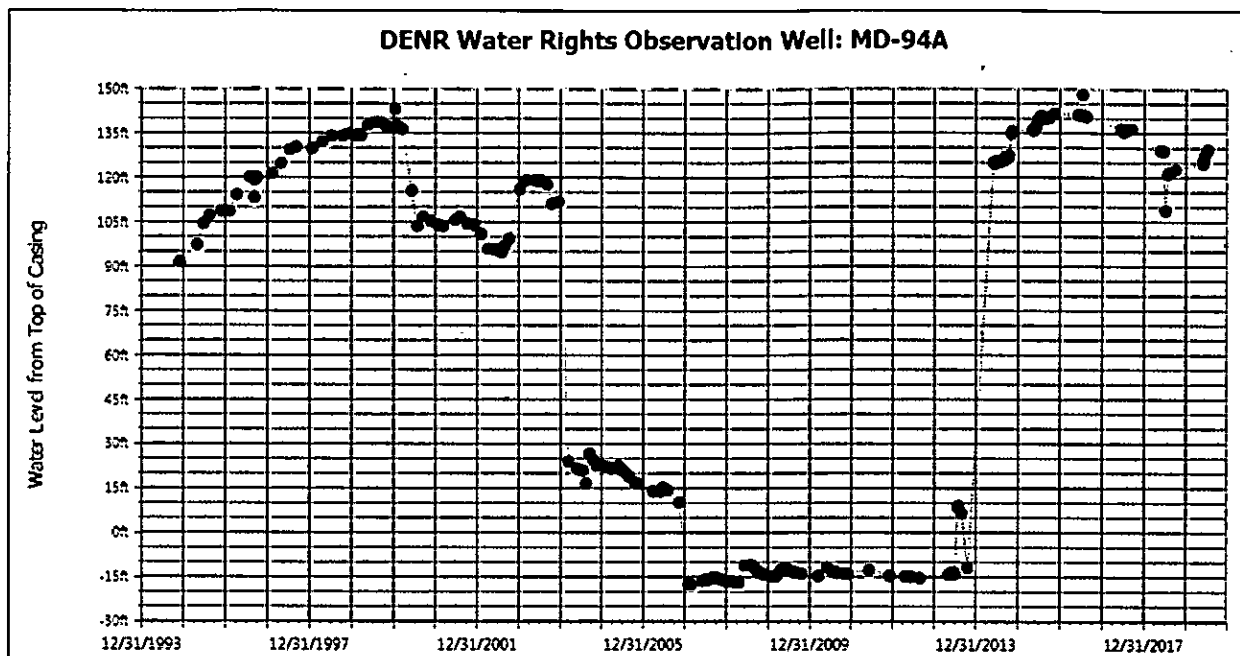


Figure 2: Hydrograph for Observation Well MD-94A (Water Rights, 2019c)

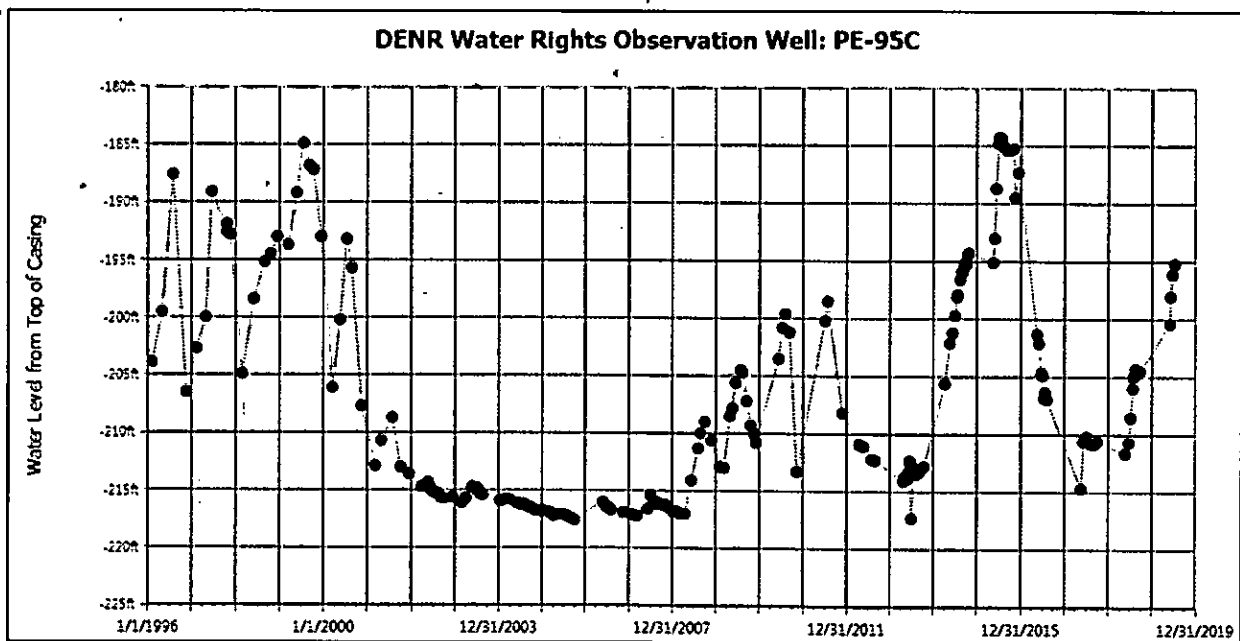


Figure 3: Hydrograph for Observation Well PE-95C (Water Rights, 2019c)

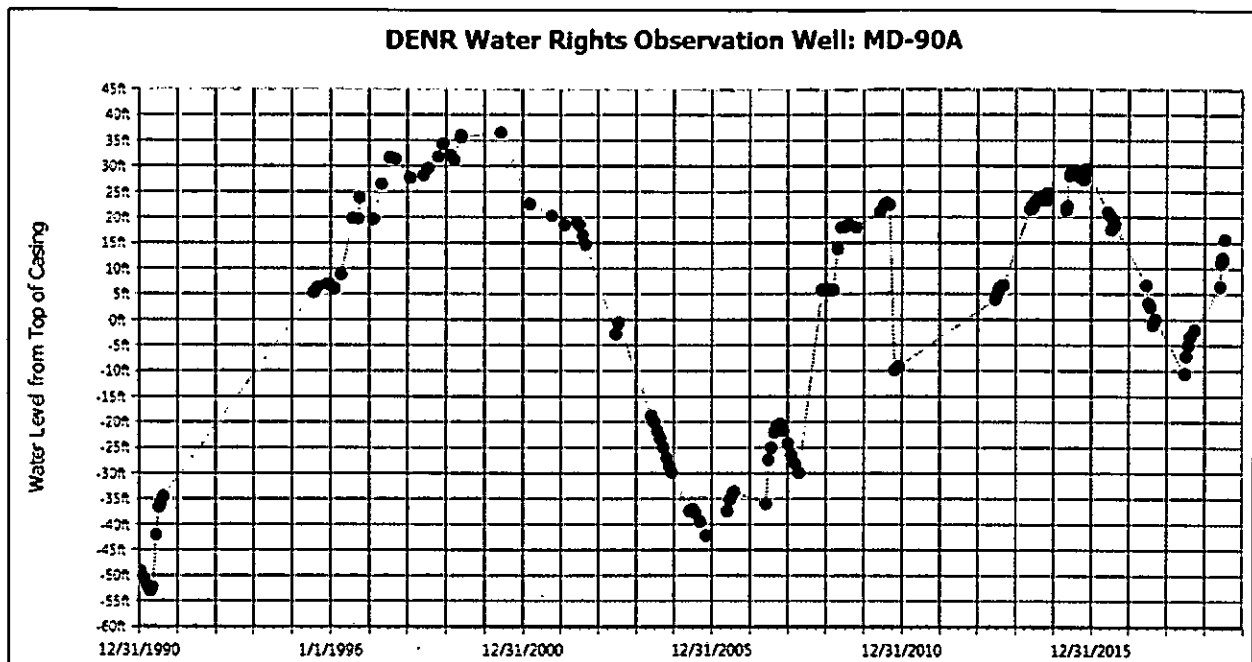


Figure 4: Hydrograph for Observation Well MD-90A (Water Rights, 2019c)

EXISTING WATER RIGHTS

Statewide, there are 152 Water Rights/Permits appropriating water from the Madison aquifer excluding 9 future use permits, 1 deferred application and 1 application held in abeyance (Water Rights, 2019a). The location of the diversion points for water rights/permits authorized to withdraw water from the Madison aquifer in the vicinity of this application are shown in Figure 1. The areas reserved for the future use permits within the map boundaries are also shown.

The Madison aquifer is a confined aquifer in this area, with the lower Minnelusa Formation serving as the upper confining layer, and the lower Madison Formation serving as the lower confining layer. Drawdown in the Madison aquifer at this location is not expected to affect water levels in other aquifers that are stratigraphically above or below the Madison aquifer.

The nearest water well on record with the Water Rights program and completed into the Madison aquifer is a domestic well located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of the same section as this application. Due to the location being defined by the Public Land Survey System, this well could be located anywhere between 0 and 0.7 miles from the proposed well location in the NE $\frac{1}{4}$ of the section (Water Rights, 2019b). The next nearest Madison aquifer wells are for Water Right Nos. 1701-1 and 1745-1, both for commercial use. These wells could be located anywhere from 0.05 miles to 0.75 miles from the proposed well location. Due to the karstic and heterogeneous nature of the Madison aquifer, there is no way to accurately quantify aquifer properties or potential drawdown without conducting a proper aquifer pumping test at the location of the proposed diversion.

This application is for the use of 760 acre-ft/yr of water from the Madison aquifer. If the pumping were spread out evenly over the entirety of the year, the average pump rate would be 471 gallons per minute (1.05 cfs). Given the applicant's existing water rights from the Madison

aquifer have a similar diversion rate and that there are no complaints on file within Meade County regarding water availability in the Madison aquifer, this application is not expected to adversely impact nearby adequate wells.

At the proposed well sites, there is approximately 400 feet of artesian head pressure above the top of the aquifer. South Dakota Codified Law (SDCL) 46-6-6.1 does not necessarily protect artesian head pressure as a means of delivery, and the Water Management Board has recognized that to place water to maximum beneficial use, a certain amount of drawdown may occur. In order to balance interests between appropriative use and delivery of water by artesian head pressure, the Water Management Board defined an “adversely impacted domestic well” in Administrative Rule of South Dakota (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 of water issue for Water Right No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Water Management Board adopted Findings of Facts and Conclusions of Law that noted 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 an adverse impact it would also be in conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to lower their pumps to accommodate for deeper water levels. However, when considering the statute (SDCL 46-6-6.1), rule (ARSD 74:02:04:20(7)), and the artesian head pressure, well interference from this proposed diversion is not expected to cause an adverse impact. Furthermore, it should be noted that DENR-Water Rights Program Madison aquifer observation wells located in areas with large capacity municipal Madison aquifer wells (i.e.: Rapid City, Spearfish, and Sturgis) show drawdown from pumping has historically not been adverse. The drawdown has ranged from a few feet to tens of feet (Water Rights, 2019a). When this is considered against the natural amplitude of water level changes in the Madison aquifer (several tens of feet), it shows this proposed diversion is not likely to unlawfully impact existing users.

Madison Aquifer Term Limitation:

SDCL 46-2A-20 requires that “... 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.”

Pursuant to SDCL 46-2A-21, “at the end of the twenty-year limitation, the board may cancel a permit or amend the permit with a new term limitation of up to twenty years, if the board is unable to make a finding after notice and hearing that sufficient information is available to delete the term limitation.”

Although the criteria for approval of a water permit established by SDCL 46-2A-9 are met, (i.e., there is a reasonable probability that unappropriated water is available for the applicant’s propose use, and this proposed diversion can be developed without unlawful impairment of existing rights); evidence is not available to justify issuing this permit without a term limitation of 20 years.

CONCLUSIONS

1. Water Permit Application No. 1991-1 proposes to appropriate 760 acre-feet of water annually at a maximum instantaneous diversion rate of 1.78 cubic feet per second (cfs) for rural water system use from one well to be completed into the Madison aquifer in Meade County.
2. The Madison aquifer is a major regional aquifer and a viable source of water for this proposed appropriation.
3. Based on observation well data and the hydrologic budget, there is a reasonable probability that unappropriated water is available from the Madison aquifer.
4. There is a reasonable probability that the diversion proposed by this application will not adversely impact adequate wells for existing water rights and domestic uses.
5. Evidence is not available to justify issuing this permit without the Madison aquifer 20 year term limit.



John Farmer
SD DENR – Water Rights Program

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Form 8

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
) SS
County of Meade)

I, Kris Stocklin-Johnson
certify that the attached printed Notice was taken

from the Faith Independent

printed and published in Faith

County of Meade and

state of South Dakota. The notice was published

in the newspaper on the following date:

7th day of August, 2019

Cost of Printing \$26.46


(Signature)

Editor/Office Manager
(Title)

08/19/2019
(Date Signed)

NOTICE OF APPLICATION NO. 1991-1 to Appropriate Water

Notice is given that Black Hawk Water User District, c/o Edmund L. Striebel, 5513 Oak St., Black Hawk SD 57718 has filed an application for a water permit to appropriate 760 acre-feet of water annually at a maximum pump rate of 1.78 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 1,280 feet deep) located in the NE 1/4 Section 26-T3N-R6E for rural water system use in Meade County. This site is located approximately 3 miles northwest of Black Hawk SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1991-1 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 Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by August 19, 2019.

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

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

Steven M. Pimer, Secretary, Department of Environment and Natural Resources.

Published August 7, 2019 at the total approximate cost of \$26.46.

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AUG 21 2019

WATER RIGHTS
PROGRAM

Affidavit of Publication

STATE OF SOUTH DAKOTA

County of Pennington

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WATER RIGHTS
PROGRAM

August 7 L21122372
NOTICE OF APPLICATION
NO. 1991-1 to Appropriate Water
Notice is given that Black Hawk
Water User District, c/o Edmund
L. Striebel, 5513 Oak St, Black
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for the applicant's proposed use, 2)
the proposed diversion can be de-
veloped without unlawful impair-
ment of existing rights, 3) the pro-
posed use is a beneficial use and,
4) it is in the public interest. The
Chief Engineer's recommendation
with qualifications, the applica-
tion, and staff report are available
at <http://denr.sd.gov/public> or con-
tact Eric Gronlund for this infor-
mation, or other information, at
the Water Rights Program ad-
dress provided below.

Any person interested in opposing
or supporting this application or
recommendation must file a writ-
ten petition with BOTH the appli-
cant and Chief Engineer. The ap-
plicant must file a petition if con-
testing the Chief Engineer's rec-
ommendation. The Chief
Engineer's address is "Water
Rights Program, Foss Building,
523 E Capitol, Pierre SD 57501 (605
773-3352)" and the applicant's mail-
ing address is given above. A peti-
tion filed by either an interested
person or the applicant must be
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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 ap-
plication pursuant to the recom-
mendation with no hearing held
before the Water Management
Board. If a petition opposing the
application or contesting the rec-
ommendation is filed, then a hear-
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consider this application. Notice
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applicant and any person filing a
petition.

Steven M. Pirner, Secretary,
Department of Environment and
Natural Resources

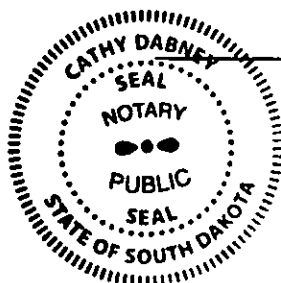
(Published once at the total approximate
cost of \$55.98)

*Sheri Sponder being first duly sworn, upon his/her oath says: That
he/she is now and was at all time hereinafter mentioned, an
employee of the RAPID CITY JOURNAL, a corporation of Rapid
City, South Dakota, the owner and publisher of the RAPID CITY
JOURNAL, 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
in the English language, at and within an office maintained by the
owner and publisher thereof, at Rapid City, in said Pennington
County, and has been admitted to the United States mail under the
second class mailing privilege for at least one year prior to the
publication herein mentioned; that the advertisement, a printed
copy of which, taken from said Rapid City Journal, the paper in
which the same was published, is attached to this sheet and made a
part of this affidavit, was published in said paper once each*

*_____ day _____ for _____ one _____ successive
_____ day _____, the first publication there of being on the
_____ 7th _____ day of _____ Aug 2019 _____ that the fees charged for
the publication there of are _____ 55 _____ dollars
and _____ 98 _____ cents.*

Sheri Sponder

*Subscribed and sworn to before me this _____ 7th _____
day of _____ August _____, 2019 _____.*



Cathy Dabney
Notary public

4-16-2024
My commission expires

Schlaak, Karen

From: Schlaak, Karen
Sent: Thursday, August 01, 2019 7:58 AM
To: RCY Legals (legals@rapidcityjournal.com)
Subject: 1991-1, Black Hawk Water User District
Attachments: 1991-1public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on August 7, 2019.

Black Hawk Water Users District, c/o Ed Striebel, 5513 Oak St, Black Hawk SD 57718 (605 787-5777) 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

SD DENR, Water Rights Program
(605) 773-3352





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

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

August 1, 2019

Black Hawk Water User District
c/o Edmund L Striebel
5513 Oak St
Black Hawk SD 57718

Dear Mr. Striebel:

Water Permit Application No. 1991-1 for rural water system use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Faith Independent printed at Faith SD (Ph # 605 967-2161) and the Rapid City Journal printed at Rapid City SD (Ph # 605 394-8300). You will need to contact the newspapers 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,

Eric Gronlund
Eric Gronlund
Natural Resources Engineer
(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. 1991-1 to Appropriate Water

Notice is given that Black Hawk Water User District, c/o Edmund L Striebel, 5513 Oak St, Black Hawk SD 57718 has filed an application for a water permit to appropriate 760 acre-feet of water annually at a maximum pump rate of 1.78 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 1,280 feet deep) located in the NE 1/4 Section 26-T3N-R6E for rural water system use in Meade County. This site is located approximately 3 miles northwest of Black Hawk SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1991-1 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 Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by August 19, 2019.

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

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

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



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

AUG 21 2019

Black Hawk Water User District
c/o Edmund L Striebel
PO Box 476
Black Hawk SD 57719

Dear Mr. Striebel:

Enclosed is Water Permit No. 1991-1 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,

A handwritten signature in black ink that reads "Jeanne Goodman". The signature is fluid and cursive, with the first name "Jeanne" being more prominent than the last name "Goodman".

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

enclosures

1991-1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

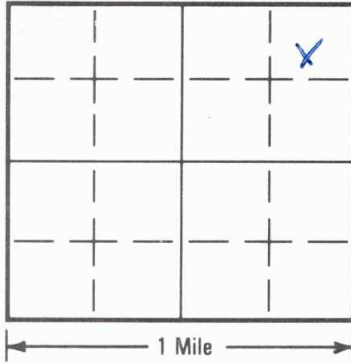
Location NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 26 Twp 3 Rg 6
County MEADE North

Please mark well location with an "X"

W

E

Well Completion Date

Aug 2020

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 90 ft. from SEPTIC (identify source).

PROPOSED USE:

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

METHOD OF DRILLING:

FLUID ROTARYCASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>55</u> LB/FT	<u>16</u> IN	<u>0</u> FT	<u>40</u> FT	<u>22</u> IN
<u>40.50</u> LB/FT	<u>10.75</u> IN	<u>0</u> FT	<u>853</u> FT	<u>14.75</u> IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Type G</u>	<u>600</u>	<u>14.8</u> lb./gal	<u>853</u> ft.	<u>SURFACE</u>
_____	_____	_____ lb./gal	_____ ft.	_____ ft.

Describe grouting procedure POSTIVE DISPLACEMENT THRU CASING

SCREEN: ☐ Perforated pipe ☐ Manufactured N/A

Diameter _____ IN 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: CHLORINE

_____ NO, Why Not? _____

Laboratory sent to for water quality analysis

M.O. CONTINUIT LABS RAPID CITYWell Owner: BLACK HAWK WATER USER DISTRICT

Business Name: _____

Address: 5513 OAK ST. / P.O. 476
BLACK HAWK SD 57718

WELL LOG:

DEPTH

FORMATION	DEPTH	
	FROM	TO
<u>SPEARFISH</u>	<u>0</u>	<u>190</u>
<u>MINNEKATA</u>	<u>190</u>	<u>228</u>
<u>OPECHE</u>	<u>228</u>	<u>344</u>
<u>MINNELUSA</u>	<u>344</u>	<u>844</u>
<u>MADISON</u>	<u>844</u>	<u>1155</u>

STATIC WATER LEVEL 65 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☐ Pumped Describe: AIR LIFT & Pump TEST☐ Bailed _____☐ Other _____

Pumping Level Below Land Surface

558 ft. After 60 Hrs. pumped 560 GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS PERMANENT Pump INSTALLED By OTHERS.This well was drilled under license # 698

And this report is true and accurate.

Drilling firm WATER SYSTEM DRILLING INC

Signature of License Representative:

Scott A. Hume

Signature of Well Owner or Equitable Property Holder:

RECEIVED

DEC 21 2020

WATER RIGHTS PROGRAM

Date: 12/3/2020

REQUEST FOR A VARIANCE FROM CHAPTER 74:02:04
SOUTH DAKOTA WELL CONSTRUCTION STANDARDS

Pursuant to Section 74:02:04:75 of the South Dakota Well Construction Standards, the following is the decision of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning the request for a well construction variance by Water System Drilling, Inc (Scott Heimer).

The Chief Engineer grants APPROVAL of the request for a variance as follows:

1. This is a request for a variance from SD Well Construction Standard 74:02:04:24(2) which requires that wells supplied by aquifers whose top is greater than 100 feet deep may be located no closer than 100 feet horizontally from a pollution source, 50 feet from wastewater system components, and 30 feet from sewer lines.
2. The reason for this request is to construct a water well for rural water system purposes for the Black Hawk Water User District. The well is to be located NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 26, T3N-R6E. The well will be completed into the Madison aquifer. The top of the aquifer is expected to be between 800 and 900 feet below ground surface and the total depth of the well is expected to be between 1,200 and 1,300 feet deep.
3. This variance allows the construction of the well within approximately 90 feet a neighboring pollution source (septic/drain field) under the following condition: 1) the well is constructed to all other standards within Section 74:02:04 excluding the requested variance to 74:02:04:24(2).
4. A notice must be attached to the official plat of the property, registered with Meade County, that states "NOTICE: THIS WELL HAS BEEN CONSTRUCTED VIA A VARIANCE FROM SOUTH DAKOTA WELL CONSTRUCTION STANDARD 74:02:04:24(2) WHICH ESTABLISHES A MINIMUM SEPARATION DISTANCE BETWEEN A WELL AND A POLLUTION SOURCE." The Chief Engineer shall be provided verification the notice has been affixed
5. This variance does not relieve you of the responsibility of complying with any other local, state or federal requirements that may be applicable to the drilling and construction of this well.



ERIC GRONLUND, Chief Engineer
Water Rights Program
April 24, 2020

Variance No. 1

CC: Matt Cherney, DENR
Ken LeBon, Black Hawk Water User District



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

April 24, 2020

Scott Heimer
Water System Drilling, Inc.
PO Box 368
Gillette, WY 82717

Dear Mr. Heimer:

Enclosed is a variance from the SD Well Construction Standards for your Black Hawk Water User District well project. Upon completion of the District's well project please note on the well completion report you submit to the DENR-Water Rights Program that this well required a variance for construction.

If you have any questions, please contact Adam Mathiowetz at (605) 773-3352.

Sincerely,

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

Enclosure

CC: Matt Cherney, DENR
Ken LeBon, Black Hawk Water User District