

WATER PERMIT NO. 8524-3

Name of Applicant: Samantha Hagedorn

Address: 4604 Broadway Ave, Yankton SD 57078

Phone: 605 321-2441

Amount of Water Claimed: 1.78 cfs

Total Acres: 72

Source of Water Supply: groundwater (one existing well)

Water to be used for: irrigation

County: Yankton

Type of Waste Disposal System:

Location: 1/2 mile southeast of the Yankton Airport

PRIORITY

Date Received: 7-9-21

Application/License Fee: \$ 950

Corrected Application Received:

Period of Annual Use: May 1 – Sept 30

Remarks: Requestion diversion rate greater than statutory limit. It is an existing system.

Diversion Point: SW 1/4 NE 1/4 Sec 5-T93N-
R55W

Land to be Irrigated: NW 1/4 SE 1/4, SW 1/4 NE
1/4 Sec 5-T93N-R55W

Depth of Well: ¹⁰⁰
120 feet

Well Driller:

Remarks:

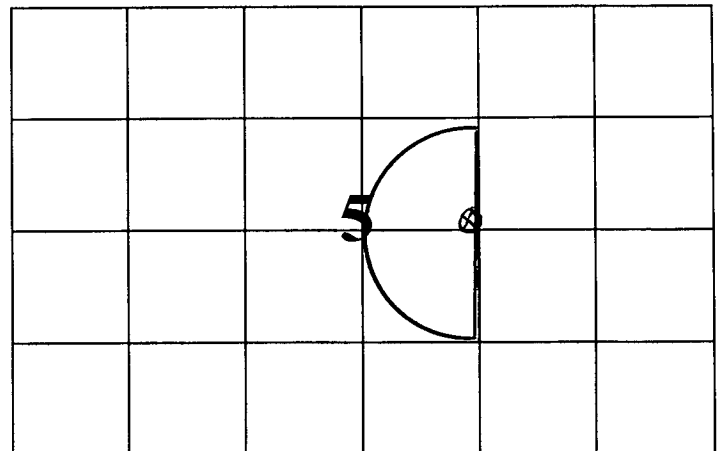
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 7-9-21

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



**SOUTH DAKOTA
WATER PERMIT NO. 8524-3**

Date of first receipt of application July 9, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8524-3 to Samantha Hagedorn, 4604 Broadway Ave, Yankton SD 57078 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. 8524-3 appropriates 1.78 cubic feet of water per second (cfs) from one well completed into the Lower James Missouri Aquifer (100 feet deep) located in the SW 1/4 NE 1/4 Section 5 for irrigation of 72 acres located in the NW 1/4 SE 1/4, SW 1/4 NE 1/4 Section 5; all in T93N-R55W. This site is located approximately one-half mile southeast of the airport at Yankton SD.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 – September 30.
3. The date from which applicant may claim right is July 9, 2021.
4. The date of approval of Permit No. 8524-3 is September 7, 2021.
5. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under Water Permit No. 8524-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals under this Permit shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8524-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 72 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

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

SEP 27 2021
date



RECEIVED

JUL 09 2021

FORM 2: Application for irrigation in South Dakota
(type or print)WATER RIGHTS
PROGRAM

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8524-3</u> (office use only)	Hydrologic Unit <u>10160011</u>
	Basin <u>James River</u>	
	Newspaper <u>Press & Dakotan</u>	

PAID

JUL 9 2021

Ck# 1094

Application For Permit To Appropriate Water For Irrigation

Type of Application: ☒ New ☐ Vested Right ☐ Amendment/Correction to Permit No. _____
(Use predates Mar 2, 1955)

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

1. Name to Appear on Irrigation Permit Samantha Hagedorn

Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.

Mailing Address 4604 Broadway Ave Yankton SD 57078
(Address) (City) (State) (Zip Code)Phone (605) 321-3441 Mobile (605) 321-3441 Email Samantha.hagedorn@yahoo.com2. Amount of water claimed 1.78 *CFS or 800 **GPM ***AF Total Acreage 72
(*Cubic Feet per Second) (**Gallons per Minute) (***) Acre Feet - storage capacity of dam/dugout or annual use if applicable)3. Source of water supply Lower James Missouri Aquifer4. Location of point of diversion 1 well in the SW 1/4 NE 1/4 5-T93N-R55W
(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)County Yankton5. County or counties where water will be used Yankton6. Annual period during which water is to be used May 1 to September 307. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
NW 1/4 SE 1/4 5-T93N-R55W	36	SW 1/4 NE 1/4 5-T93N-R55W	36

8. Give a description of the project. (Attach sheet if more space is needed)

I, Samantha Hagedorn Owner, 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 Sam Heine Co.
(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) 120' Depth to Top of Water Bearing Material 25' Depth to Water from Surface 25'

d) Distance to nearest domestic well on applicant's property 1/2 mile Property owned by others
unknown - closest Residence
is 1/2 mile

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)

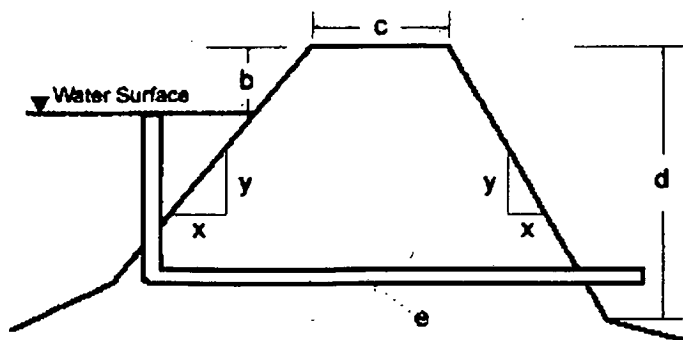
Upstream

Downstream

h) Surface Area of Impoundment

i) Storage Acre Feet

j) Drainage Area Above Dam Acres

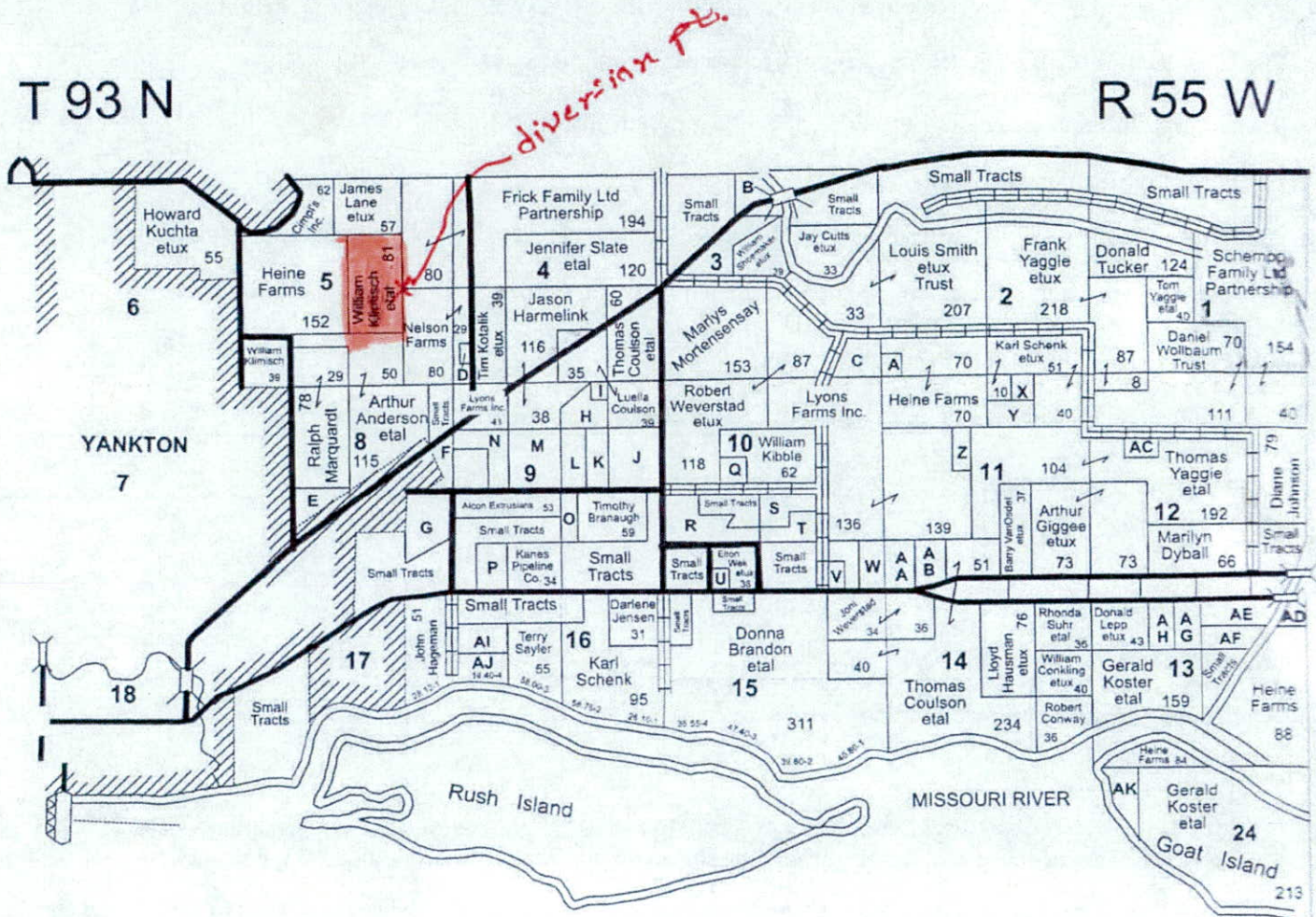


HILL TWP

Land Owner

T 93 N

R 55 W



Section 2 A Arnold Bierle etux - 8
 Section 3 B Daniel Hacecky etux - 32
 C Alan Sorensen etux - 27
 Section 4 D Mark Keehn - 6
 Section 8 E Donald Tucker - 22
 F Frank Yaggie - 27
 G Ralph Marquardt - 31
 Section 9 H Yankton Area Progressive Growth - 25
 I Mark Eide etux - 6
 J Max Brown etux Trust - 37
 K Hastings Filter - 19
 L Egon Weber - 21
 M Sweetman Construction Co. - 19

Section 9 N Frank Yaggie - 21
 O Thomas Holstrom etux - 10
 P Jr.'s Oasis Inc. - 21
 Section 10 Q Thomas Dilger - 14
 R William Kibble - 32
 S Arthur Giggie Trust - 28
 T East Winds Court - 19
 U Harvard Schulz - 12
 V Joyce Brandt - 9
 W Steven Ellis etux - 22
 Section 11 X Daryl Merkwan - 10
 Y Holly Hansen - 20
 Z Holly Hansen - 16

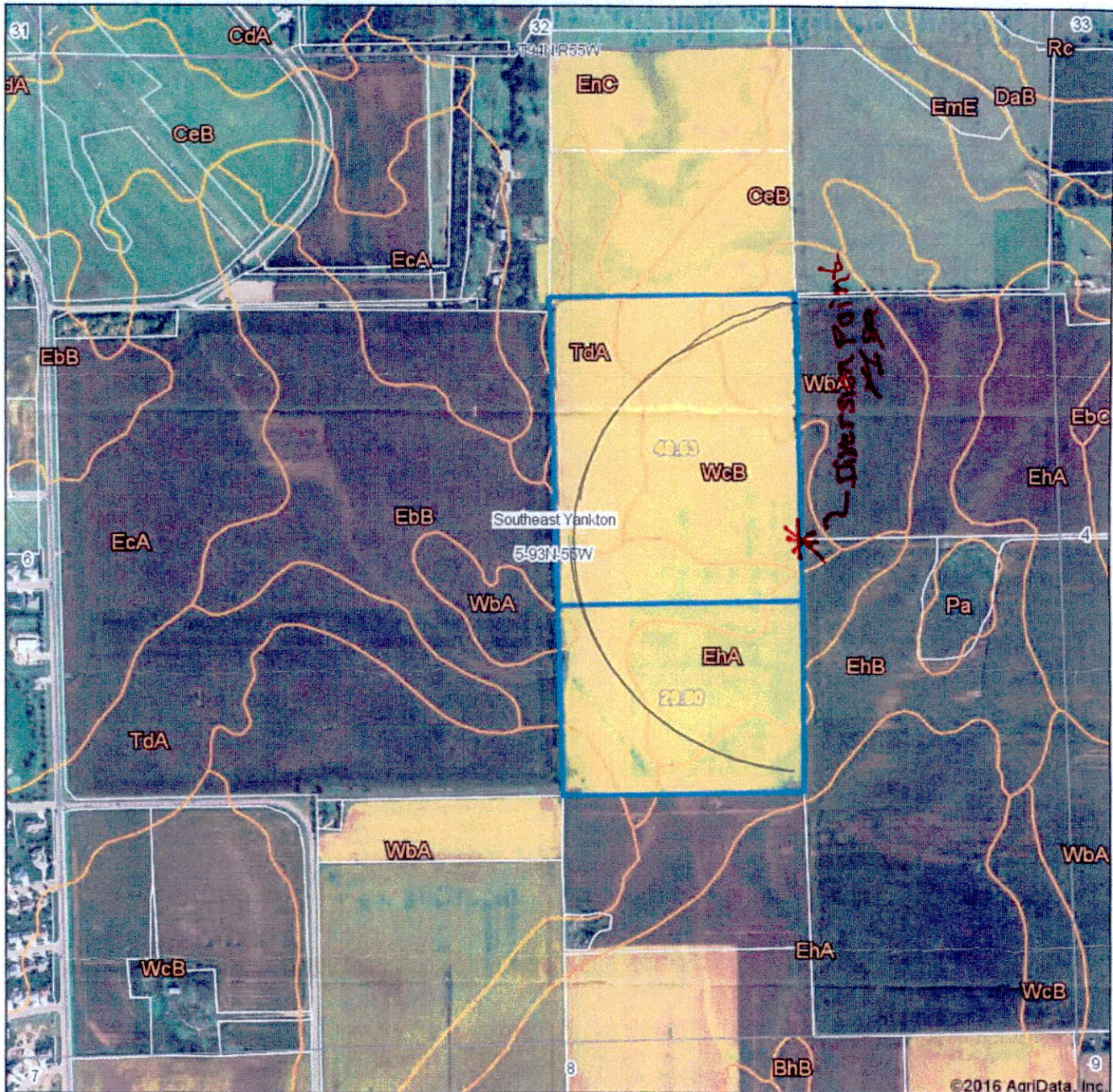
Section 11 AA Steven Ellis etux - 24
 AB Frank Yaggie etux - 8
 Section 13 AD Michael Portillo - 7
 AE Lyle Magorien etal - 26
 AF T.Brady - 34
 AG Rosella Brady Trust - 18
 AH Ruth Iverson Trust - 18
 Section 16 AI Kenneth Hansen - 24
 AJ Josephine Blakey - 19
 Section 24 AK Mary Henning - 15

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Aerial Map



Field borders provided by Farm Service Agency as of 5/21/2008.

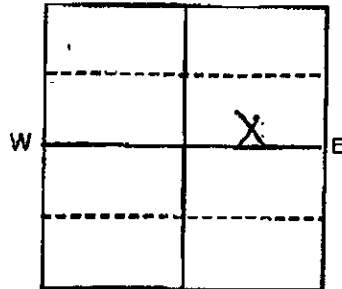
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW ¼ NE ¼ Sec 5 Twp 93N Rg 55W

County Yankton

North

Please mark well
location with an "X"

Well Completion Date

10-18-16

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
2500 ft. from Septic (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Reverse Circulation

CASING DATA:

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	16 IN	0 FT	60 FT	30 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
Bent Cement	60	Lb/gal	0 Ft	60 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

Tremie

SCREEN:

☒ Perforated pipe ☐ Manufactured
 Diameter 16 Inches Length 40 Feet

Material PVC

Slot Size .60 Set From 60 Feet to 100 Feet

Other information

WAS A PACKER OR SEAL USED?

☐ Yes ☐ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How?☐ No, Why Not?

Lab to which water

quality sample sent for analysis

Chlorine

Well Owner: Karl Schenk

Business Name:

Address: 44352 308th St

City, State, Zip: Mission Hill SD 57078

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	5
Brown Clay	5	42
Med To Coarse Sand	42	68
Coarse Gravel	68	95
Gravel And Rocks	95	100

STATIC WATER LEVEL 40 FEET

If flowing: closed in pressure PSI

GPM flow through inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe: Well Yields over 1000 GPM☐ Bailed☐ Other

Pumping Level Below Land Surface

46 Ft. After 2 Hrs. pumped 800 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

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NOV 30 2016

WATER RIGHTS
PROGRAM

Lower James: Missouri

RB

This well was drilled under license # 773 and this report is true and accurate.

Drilling firm: Quality Well Service LLC

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: 11/30/16

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date July 9, 2021

RECEIVED OF Samantha Hagedorn 204 S Dakota Ave., Irene SD 57037

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

Fee for Application for Permit No. <u>8524-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>750.00</u>
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>8524-3</u>	\$ <u>200.00</u>
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	\$ <u>950.00</u>

By *Eric Gronlund*
Chief Engineer
Um



**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. 8524-3, Samantha Hagedorn**

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. 8524-3, Samantha Hagedorn, 4604 Broadway Ave, Yankton SD 57078.

The Chief Engineer is recommending APPROVAL of Application No. 8524-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board with the following qualifications:

1. The well approved under Water Permit No. 8524-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals under this Permit shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8524-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 72 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Eric Gronlund, Chief Engineer
August 12, 2021

Report to the Chief Engineer
On Water Permit Application No. 8524-3

Samantha Hagedorn

August 4, 2021

Water Permit Application No. 8524-3 proposes to appropriate water at a maximum instantaneous diversion rate of 1.78 cubic feet per second (cfs) from one existing well completed into the Lower James Missouri aquifer (100 feet deep) for the irrigation of 72 acres located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 5. The well is located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 5; all in T93N-R55W. The applicant is requesting a diversion rate greater than the statutory limit. The site is located in Yankton County approximately one-half mile southeast of the airport in Yankton, SD.

AQUIFER: Lower James Missouri (LJM)

HYDROGEOLOGY:

The Lower James Missouri aquifer contains deposits of glacial outwash composed of coarse sands and gravels (Bugliosi, 1986). The Lower James Missouri aquifer is underlain by till, the Niobrara Formation, the Carlile Shale, and the Sioux Quartzite (Lindgren and Hansen, 1990). The Lower James Missouri aquifer underlies approximately 191,700 acres and contains approximately 2,795,400 million acre-feet (ac-ft) of recoverable water in storage within Clay, Hutchinson, and Yankton Counties in South Dakota (Hedges et. al, 1982). The Lower James Missouri aquifer can be under unconfined conditions; however, the aquifer can be buried by as much as 355 ft of till (Lindgren and Hansen, 1990). The Lower James Missouri aquifer is hydraulically connected to the Lower Vermillion-Missouri, Lower James Missouri: Scotland, Choteau: Tyndall, Dakota, Niobrara, Missouri: Elk Point aquifers and other bedrock aquifers, glacial aquifers, and surface water features (Bugliosi, 1986; Lindgren and Hansen, 1990; Stonesifer, 2014). The saturated thickness of the Lower James Missouri aquifer can range from approximately 50 to 150 ft (Bugliosi, 1986). The flow of groundwater in this area is commonly to the south toward the James and Missouri River (Bugliosi, 1986; Hedges et. al, 1982; Lindgren and Hansen, 1990). In Yankton County, the Lower James Missouri aquifer underlies approximately 92,500 acres and contains approximately 2,081,250 million acre-feet of recoverable water in storage (Hedges et al., 1982). The areal extent of the Lower James Missouri aquifer near Yankton, South Dakota along with the location of the diversion point is shown in Figure 1.

A well completion report was submitted with Water Permit Application No. 8524-3. The report lists “topsoil” from 0 to 5 feet below land surface, “brown clay” from 5 to 42 feet, “medium to coarse sand” from 42 to 68 feet, “coarse gravel” from 68 to 95 feet, and “gravel and rocks” from 95 to 100 feet (Water Rights, 2021d). The measured static water level in the well was 40 feet below land surface at the time of well completion (November 2016). The Lower James Missouri is confined at the diversion point based on the submitted well completion report and lithologic logs on file for nearby observation wells (SDGS, 2021; Water Rights, 2021b and 2021d).

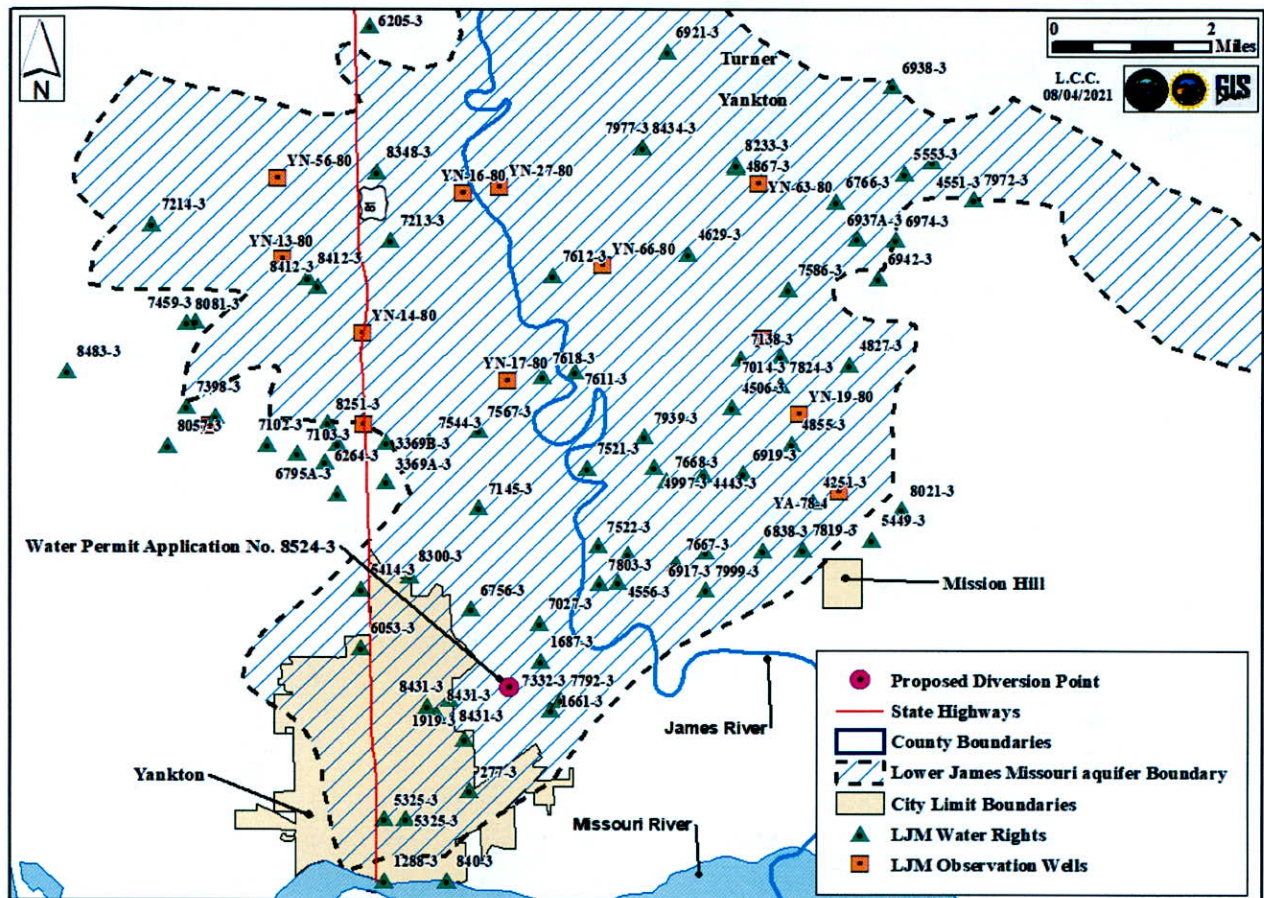


Figure 1: Map showing the approximate areal extent of the Lower James Missouri aquifer near Yankton, South Dakota including observation wells, water rights/permits, and the diversion point location of Water Permit Application No. 8524-3 (Hedges et al., 1982, Water Rights, 2021b and 2021c).

South Dakota Codified Law (SDCL) 46-5-6

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of 1 cfs for every 70 acres, or “the equivalent thereof.” The statute does provide that: “The Water Management Board may allow a greater diversion, in volume or rate or both, if the method of irrigation, any time constraints on diversion of water, or the type of soil so requires....” Water Permit Application No. 8524-3 proposes to divert water at a maximum rate of 1.78 cfs for the irrigation of 72 acres or at a rate of 1.73 cfs per 70 acres. The applicant is requesting a diversion rate greater than the statutory limit due to existing system parameters. The pivot is only making a half turn and not a full rotation but still requires the same diversion rate in order to operate properly as a pivot making a full rotation, which results in the exceedance. The request by the applicant is reasonable and has been historically accepted as a valid reason for exceeding the statutory limitation by the Water Rights Program and the Water Management Board.

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 domestic water uses and water rights, that the proposed use is a beneficial use and in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board.” This report will address the availability of unappropriated water and the potential for unlawful impairment of existing domestic water uses and water rights within the Lower James Missouri aquifer.

WATER AVAILABILITY:

Water Permit Application No. 8524-3 proposes to appropriate water from the Lower James Missouri aquifer for irrigation purposes. The probability of unappropriated water being available from the aquifer can be evaluated by considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source. An application may be approved, however, for withdrawals of groundwater from any groundwater formation older than or stratigraphically lower than the greenhorn formation in excess of the average estimated annual recharge for use by water distribution systems.” The Lower James Missouri aquifer is not older than or stratigraphically lower than the Greenhorn Formation, and the applicant’s proposed use is not for use in a water distribution system as defined by SDCL 46-1-6(17). Therefore, the average annual recharge and average annual withdrawal rates to and from the Lower James Missouri aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Lower James Missouri aquifer in Yankton County is primarily through seepage from streams and by infiltration of precipitation where the aquifer is at or near land surface (Bugliosi, 1986; Lindgren and Hansen, 1990). Other sources of recharge to the Lower James Missouri aquifer are from the Sioux Quartzite, Choteau, Dakota, and Niobrara aquifers in places where it is hydraulically connected to the Lower James Missouri aquifer (Lindgren and Hansen, 1990).

The recharge rate to the Lower James Missouri was estimated by Hedges and others (1985) by utilizing observation well data and flow-net analysis. Utilizing flow-net analysis, the annual recharge rate to the Lower James Missouri aquifer was estimated to be 1.5 in/yr (Hedges et al., 1985). The areal extent of the Lower James Missouri aquifer was estimated to be 191,700 acres total (Hedges et al., 1982). Therefore, the estimated recharge to the Lower James Missouri aquifer is approximately 23,963 acre-feet/year (ac-ft/yr). The observation well data was utilized to estimate the annual recharge rate to the unconfined portions of the Lower James Missouri aquifer. The annual recharge rate to the Lower James Missouri aquifer that was estimated from the observation well data was approximately 3.9 in/yr. The areal extent of the unconfined portions of the Lower James Missouri aquifer was estimated to be approximately 82,200 acres (Stonesifer; 2014). Therefore, the estimated recharge to the unconfined portions of the Lower

James Missouri aquifer is approximately 26,715 ac-ft/yr. The areal extent that was estimated for the unconfined portions of the Lower James Missouri aquifer included sections of the Plum Creek and Choteau East aquifers that were identified by Hedges et al. (1982). This implies that the estimated areal extent of the unconfined portions of the Lower James Missouri aquifer is estimated to be greater than the actual extent. The recharge estimate should be considered a likely maximum recharge rate for the Lower James Missouri aquifer. Thus, the annual recharge to the Lower James Missouri aquifer ranges between approximately 23,963 to 26,715 ac-ft/yr.

Discharge

Discharge from the Lower James Missouri aquifer is primarily through leakage to the James River, evapotranspiration where the aquifer is at or near land surface, groundwater outflow to nearby aquifers, and withdrawals (Bugliosi, 1986; Lindgren and Hansen, 1990). Currently, there are 133 water rights/permits authorized to appropriate water from the Lower James Missouri aquifer (Water Rights, 2021c). Of the 133 water rights/permits, 125 are for irrigation purposes and 8 are for commercial (COM), industrial (IND), or domestic (DOM) use (Water Rights, 2021c). There are no future use permits reserving water from the Lower James Missouri aquifer currently. The non-irrigation water rights/permits authorized to withdrawal from the Lower James Missouri aquifer are identified in Table 1, and annual irrigation withdrawals from the Lower James Missouri aquifer are shown in Table 2.

Table 1: Estimated annual non-irrigation water rights/permits from the Lower James Missouri aquifer (Water Rights, 2021c).

Permit No.	Name	County	Status	Use	Div. Rate (cfs)	Estimated Volume (ac-ft/yr)
840-3	Stuehnagels Inc	YA	LC	COM	1.11	482.2
1288-3	National Food Stores Inc	YA	LC	IND	0.16	69.5
4556-3	Concrete Materials	YA	LC	COM	0.44	191.1
6264-3	Yankton Land & Cattle Co	YA	LC	COM, LCO	0.56	243.3
6320-3	Wolf Creek Htrn Brth	HT	LC	COM, DOM	0.08	34.8
6925-3	Tschetter Colony	HT	LC	COM, LCO	0.07	30.4
7827-3	Maxwell Colony	HT	PE	COM, LCO	0.33	143.4
8412-3	Concrete Materials Company	YA	LC	IND	7.80	400*
YA: Yankton; HT: Hutchinson;					TOTAL	1,594.6
COM: Commercial; IND: Industrial; LCO: Livestock Confinement Operation; DOM: Domestic						
*Limited by annual volume						

The estimated average annual withdrawals for the eight non-irrigation water rights/permits authorized to appropriate water from the Lower James Missouri aquifer can be 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 permitted diversion rate for 60 percent of the time. Overall, the estimated average annual withdrawal rate for the Lower James Missouri aquifer for non-irrigation water rights/permits is approximately 1,595 acre-feet per year (Table 1) (Water Rights, 2021c).

Table 2: Reported historic irrigation use from the Lower James Missouri aquifer (Water Rights, 2021a).

Year	No. of Permits	Reported Pumpage (acre-feet)	Year	No. of Permits	Reported Pumpage (acre-feet)
1979	25	706	2002	53	4061.52
1980	26	1372	2003	53	2843.15
1981	32	1954	2004	47	2886.65
1982	28	1427.2	2005	48	2866.63
1983	34	1425.99	2006	50	3630.92
1984	34	1546	2007	56	3425.91
1985	33	1724	2008	79	4494.03
1986	37	1179.6	2009	84	1463.27
1987	37	1236	2010	85	665.37
1988	38	3104.3	2011	89	4147.47
1989	38	2441.8	2012	93	13058.45
1990	42	3345.1	2013	118	7855.75
1991	49	2882	2014	125	3347.27
1992	52	1279	2015	127	4822.86
1993	53	256.44	2016	126	5747.01
1994	45	1918.17	2017	126	5727.12
1995	41	1483.33	2018	126	1035.87
1996	49	2102.99	2019	127	328.01
1997	50	2320	2020	121	3864.53
1998	53	2787.03	Min	25	256.44
1999	50	2102.15	Max	53	3751.08
2000	51	3751.08	Avg	41	1968.88
2001	53	2940.09	Avg (2008-2020)	115	4350.5

The average annual withdrawal rate for the Lower James Missouri aquifer irrigation for water rights/permits that have reported over the period of record is approximately 1,969 acre-feet per year (Table 2) (Water Rights, 2021a). Since the number of irrigation water rights/permits authorized to appropriate water from the Lower James Missouri aquifer has continued to increase over the period of record, the estimated average annual withdrawal rate for irrigation appropriations for the entire period of record may not accurately reflect current level of development. The average annual withdrawal rate for irrigation appropriations from 2008 to 2020 was estimated to represent the current level of irrigation development in the Lower James Missouri aquifer. The estimated average annual withdrawal rate for irrigation appropriations from the Lower James Missouri aquifer from 2008 to 2020 is approximately 4,350.5 acre-feet per year (Table 2) (Water Rights, 2021a).

There are domestic wells completed into the Lower James Missouri aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2021d). Due to their relatively low diversion rates, withdrawals from domestic wells are not considered to be a significant portion of the hydrologic budget. Additionally, with the development of rural water systems in areas where the Lower James Missouri aquifer is the uppermost aquifer available; it is likely some domestic users may have transitioned to rural water. Therefore, the quantity of water withdrawn by domestic wells is estimated to be negligible to the hydrologic budget for the Lower James Missouri aquifer.

Hydrologic Budget Summary

The estimated average annual withdrawals from the Lower James Missouri aquifer totals approximately 5,945.5 ac-ft/yr (irrigation: 4,350.5 ac-ft/yr; non-irrigation: 1,595 ac-ft/yr). The estimated annual recharge to the Lower James Missouri at minimum is 23,963 ac-ft/yr and 26,715 ac-ft/yr at maximum. Therefore, unappropriated water is available for the appropriation proposed by this permit application.

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 DNR-Water Rights Program monitors 33 observation wells completed into the Lower James Missouri aquifer (Water Rights, 2021b). There are five observation wells within approximately five miles from the diversion point. The hydrographs for these five observation wells are displayed in Figures 2 through 6. These five hydrographs are representative for the other observation wells completed into the Lower James Missouri aquifer (Water Rights, 2021b).

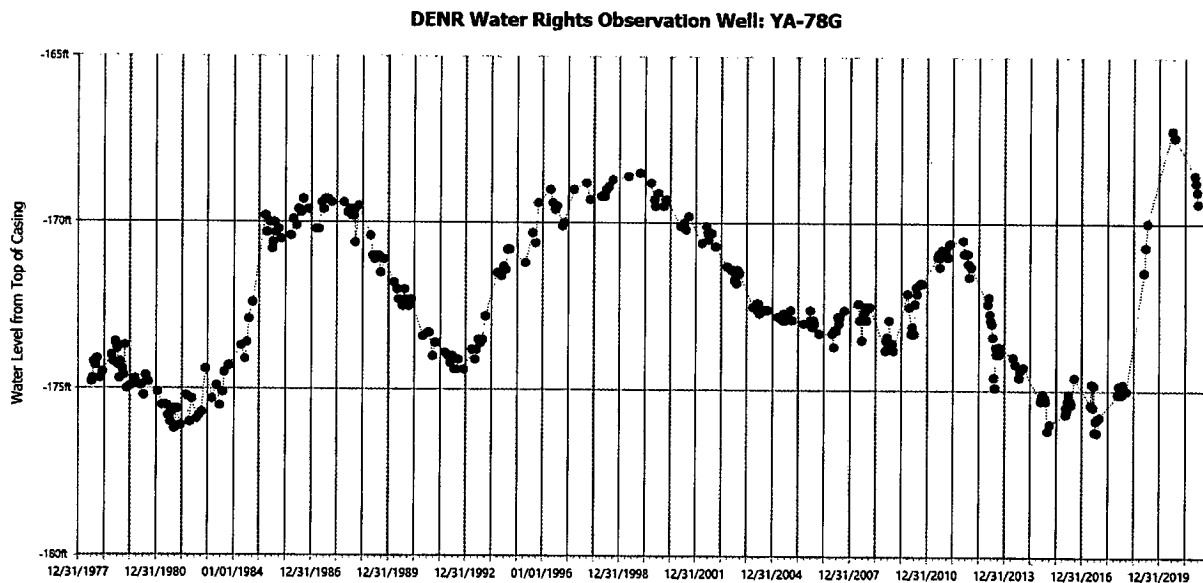


Figure 2: Hydrograph of the Lower James Missouri aquifer observation well YA-78G, located approximately 5.0 miles northwest of the diversion point (Water Rights, 2021b).

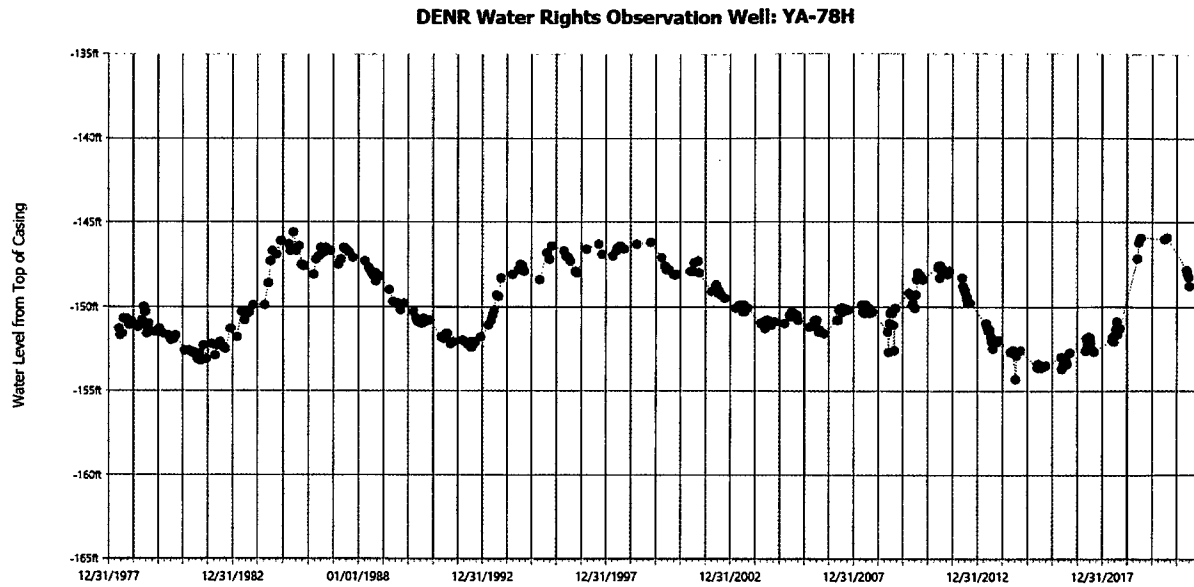


Figure 3: Hydrograph of the Lower James Missouri aquifer observation well YA-78H, located approximately 3.9 miles northwest of the diversion point (Water Rights, 2021b).

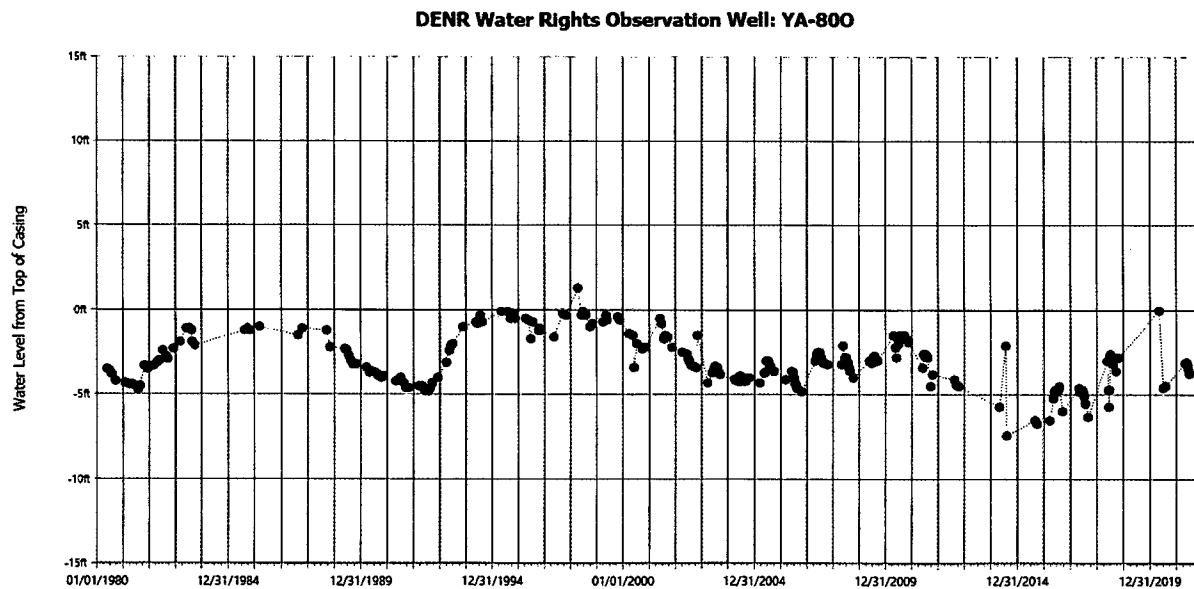


Figure 4: Hydrograph of the Lower James Missouri aquifer observation well YA-80O, located approximately 4.0 miles north of the diversion point (Water Rights, 2021b).

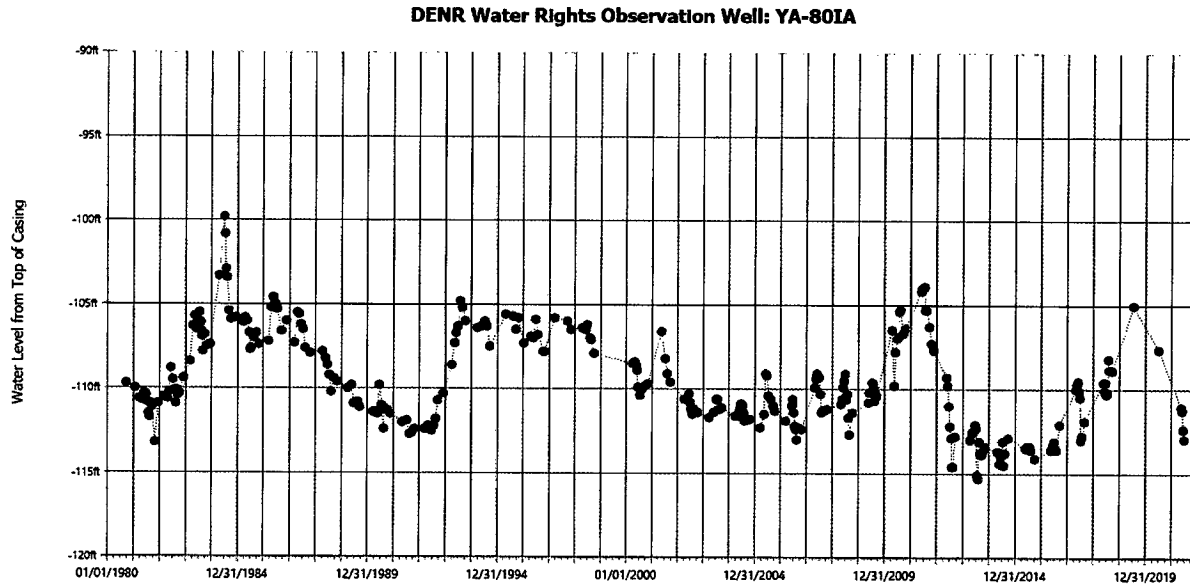


Figure 5: Hydrograph of the Lower James Missouri aquifer observation well YA-80IA located approximately 5.1 miles northeast of the diversion point (Water Rights, 2021b).

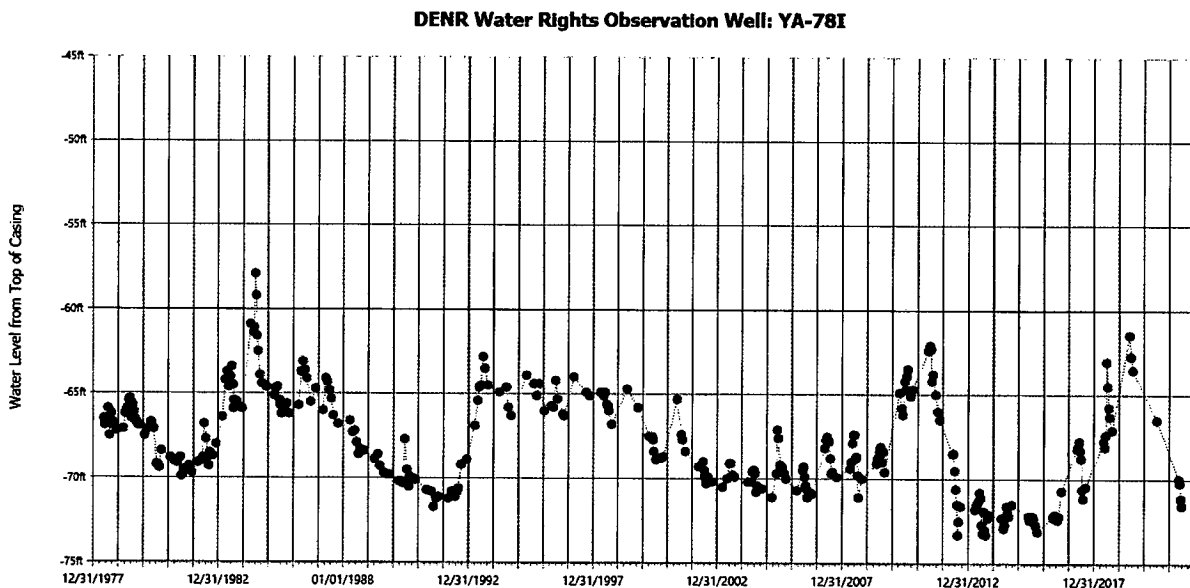


Figure 6: Hydrograph of the Lower James Missouri aquifer observation well YA-78I, located approximately 4.9 miles northeast of the diversion point (Water Rights, 2021b).

Observation wells YA-80IA and YA-78I present a slight decreasing trend in their static water levels. This decreasing trend has been attributed to separate events occurring in the northern and southern portions of the Lower James Missouri aquifer. In the northern portion of the aquifer, the decreasing trend was attributed to the development of the aquifer for appropriative use over the previous decade (Mathiowetz, 2021). This decreasing trend can be seen in certain observation wells such as HT-81D and HT-83D. In the southern portion of the aquifer, the decreasing trend was attributed to the increased entrenchment on the Missouri River below Gavin's Point dam

(Stonesifer, 2014). The Lower James Missouri and Missouri: Elk Point aquifers, and the Missouri River are all in hydraulic connection (Bugliosi, 1986; Lindgren and Hansen, 1990; Stonesifer, 2014). The lowering of the water level in the southern LJM is because of the entrenchment below Gavin's Point dam and thus the subsequent lowering of the Missouri River, and then the James River as a result. This decrease in water level can be seen on the hydrographs for wells completed into the Lower James Missouri and Missouri: Elk Point aquifers (Water Rights, 2021b).

Although water levels have slightly decreased within the Lower James Missouri aquifer, the hydrographs for the five nearest observation wells to the diversion point demonstrate that the aquifer responds well to climatic conditions of water levels, rising during wet periods and declining during dry periods. The water levels indicate that any drawdowns from pumping are temporary because the water levels typically recover to pre-pumping levels after irrigation season. This recovery of the aquifer indicates that the amount of recharge and natural discharge from the Lower James Missouri aquifer governs the long-term fluctuations within the aquifer instead of pumping. By recognizing that both recharge to and natural discharge from an aquifer can be captured from pumping, the observation well hydrographs document unappropriated water is available for this proposed appropriation.

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

There are nineteen water rights/permits that are authorized to appropriate water from the Lower James Missouri aquifer within approximately three miles of the diversion point. The nineteen water rights/permits are shown in Figure 7 and identified in Table 3. The nearest water right/permit to the diversion point completed into the Lower James Missouri aquifer is Water Right No. 1687-3 located approximately one-half mile northeast of the diversion point.

There are a number of completions reports on file for domestic wells with the SD-DANR-Water Rights Program within this area. The nearest domestic well on file with the SD-DANR-Water Rights Program (not held by the applicant) completed into the Lower James Missouri aquifer is approximately 0.4 miles south of the diversion point (Water Rights, 2021d). There may be other wells completed into the Lower James Missouri aquifer that are not on file with the Water Rights Program in the area of this application.

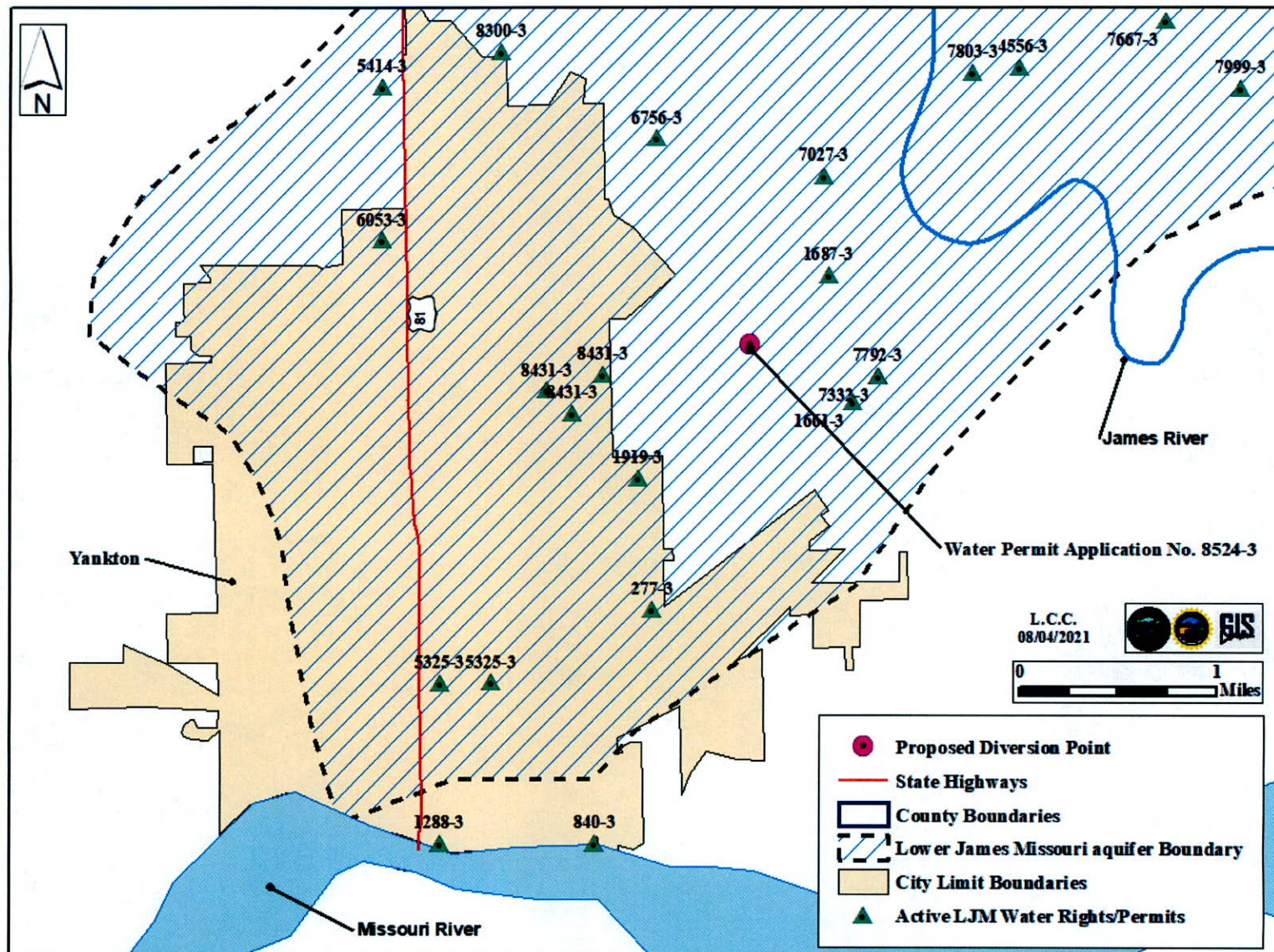


Figure 7: Map Showing the site locations of Water Right Permit Application No. 8524-3 and nearby water rights/permits completed into the Lower James Missouri aquifer (Water Rights, 2021b and 2021c).

Table 3: Water rights/permits from the Lower James Missouri aquifer within approximately 3 miles from the diversion point (Water Rights, 2021c).

Permit No.	Name	Use	Status	Rate (cfs)	Acres
277-3	Dakota Acres	IRR	LC	0.57	40
840-3	Stuelpnagels Inc	COM	LC	1.11	N/A
1288-3	National Food Stores Inc	IND	LC	0.16	N/A
1661-3	Gurney Seed & Nursery	IRR	LC	2.85	200
1687-3	John Frick	IRR	LC	1.2	120
1919-3	Dakota Acres	IRR	LC	2.23	156.7
4556-3	Concrete Materials	COM	LC	0.44	N/A
5325-3	Federal Prison Camp	IRR	LC	0.39	31
5414-3	Morris Nelson	IRR	LC	3	352
6053-3	City of Yankton	IRR	LC	0.21	50
6756-3	Nelson Family Partnership	IRR	LC	2.22	164.3
7027-3	Jack Frick	IRR	PE	0	160
7332-3	Rudolph Family Farm LLLP	IRR	PE	0	157.8
7667-3	Karl M Schenk	IRR	PE	0	32
7792-3	Rudolph Family Farm LLLP	IRR	PE	0	21.8
7803-3	Ralph Marquardt	IRR	PE	0	68
7999-3	Karl M Schenk	IRR	PE	0	96
8300-3	Samual & Adam Arens	IRR	PE	0	100
8431-3	Hillcrest Golf and Country Club	IRR	LC	3.67	27
COM: Commercial; IRR: Irrigation; IND: Industrial					
LC: Licensed Water Right; PE: Permitted Water Right.					

The Lower James Missouri aquifer is generally under confined conditions but can be unconfined in portions of the aquifer (Lindgren and Hansen, 1990). The lithologic logs for the nearby observation wells as well as the submitted well completion report show that the aquifer is under confined conditions at the diversion point (Water Rights, 2021d). Based on the well completion report submitted with Water Permit Application No. 8524-3, the top of the Lower James Missouri aquifer is approximately 42 feet below grade at the diversion point, with a static water level of approximately 40 below grade, which indicates there is approximately 2 feet of artesian head pressure at the diversion point. Observation well data (see Figures 2 through 6) documents minimal drawdown from withdrawals of existing irrigation wells near the diversion point. Therefore, pumping from the diversion point is not expected to significantly lower water levels within the aquifer. 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. In Yankton County, there have been no complaints submitted to the DANR-Water Rights Program regarding potential well interference for wells completed into the Lower James Missouri aquifer. Furthermore, the relatively small amount of artesian head pressure at this location means the aquifer is likely to act primarily in an unconfined manner not too long after pumping begins.

The Lower James Missouri aquifer is expected to have a saturated thickness of approximately 58 feet and a static water level approximately 40 feet below land surface at the diversion point (Water Rights, 2021d). This would allow for sufficient saturated thickness for a pump to be placed 20 feet below top of aquifer. 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 Lower James Missouri aquifer at their location. However, the limited amount of artesian head pressure in the well means that very soon after pumping begins the head pressure will be removed at the pumping well and the aquifer will start acting in an unconfined manner. Therefore, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated thickness of the aquifer, the amount of artesian head pressure in observation wells and appropriative user’s wells completed into the Lower James Missouri aquifer, and that the aquifer will act in an unconfined manner once the limited amount of artesian head pressure is depleted at the pumping well, 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.

CONCLUSIONS:

1. Water Permit Application No. 8524-3 proposes to appropriate water at a maximum instantaneous diversion rate of 1.78 cfs from one existing well completed into the Lower James Missouri aquifer. The site is located in Yankton County approximately one-half mile southeast of the airport in Yankton, SD.

2. Application No. 8524-3 has requests a diversion rate in excess of the statutory limit of one cfs per 70 acres. The request for this exceedance is the result of existing irrigation system swinging only half circle. This reason has been accepted by the Water Rights Program and Water Management Board in the past.
3. There is a reasonable probability that unappropriated water is available from the Lower James Missouri aquifer for this proposed appropriation based on the hydrological budget and observation well data.
4. There is a reasonable probability this diversion will not unlawfully impair adequate wells authorized by existing water rights or domestic use wells.



Lindsey Cederberg
Natural Resources Engineer I
SD DANR - Water Rights Program



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

References

- Bugliosi, E. F. 1986. Water Resources of Yankton County, South Dakota. Water resources Investigations Report 84-4241. US. Geological Survey, Huron, South Dakota.
- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., and Schoon, R.A., 1982. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa. Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
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- Water Rights, 2021a. "1979-2019 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.

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, August 16, 2021 9:02 AM
To: samanthahagedorn@yahoo.com
Subject: Water Permit Application No. 8524-3
Attachments: 1640.pdf

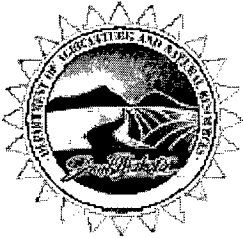
Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your water permit application. As stated in the letter, please contact the paper as soon as possible to authorize publication and arrange for payment. This information is being mailed to you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

Karen Schlaak

DANR - Water Rights Program

(605) 773-3352

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



AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

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AUG 30 2021

WATER RIGHTS
PROGRAM

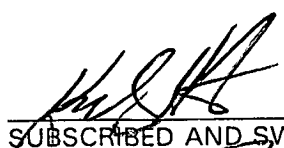
SAMANTHA HAGEDORN
4604 BROADWAY AVENUE
YANKTON SD 57078

STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
SAMANTHA HAGEDORN
8 + 25 NOTICE OF APPLICATIO
TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 25th DAY OF August, 2021
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$35.79 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 08/25/2021

FILED ON: 08/25/2021


SUBSCRIBED AND SWORN TO BEFORE ME THIS 25th DAY OF August, 2021


NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 07/04/2026

NOTICE OF APPLICATION NO. 8524-3 to Appropriate Water

Notice is given that Samantha Hagedorn, 4604 Broadway Ave, Yankton SD 57078 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second (cfs) from one well completed into the Lower James Missouri Aquifer (100 feet deep) located in the SW 1/4 NE 1/4 Section 5 for irrigation of 72 acres located in the NW 1/4 SE 1/4, SW 1/4 NE 1/4 Section 5; all in T93N-R55W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately one-half mile southeast of the airport at Yankton SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8524-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.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 this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by September 7, 2021.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by September 7, 2021.

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 \$35.79.

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, August 16, 2021 9:00 AM
To: Jackie Lammers (jackie.lammers@yankton.net)
Subject: 8524-3, Samantha Hagedorn
Attachments: 8524-3public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on August 25, 2021.

Samantha Hagedorn, 4604 Broadway Ave, Yankton SD 57078 (605 321-3441) has been notified to contact you to authorize publication and arrange for payment.

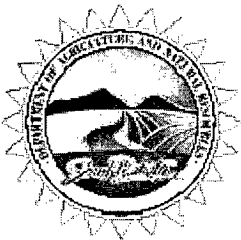
Please send the affidavit or return the attached Proof of Publication form ASAP to the Water Rights Program, 523 E Capitol, Pierre SD 57501.

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.**

August 16, 2021

Samantha Hagedorn
4604 Broadway Ave
Yankton SD 57078

Dear Ms. Hagedorn:

Water Permit Application No. 8524-3 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Press & Dakotan printed at Yankton SD (Ph # 605 665-7811). 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.

NOTICE OF APPLICATION NO. 8524-3 to Appropriate Water

Notice is given that Samantha Hagedorn, 4604 Broadway Ave, Yankton SD 57078 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second (cfs) from one well completed into the Lower James Missouri Aquifer (100 feet deep) located in the SW 1/4 NE 1/4 Section 5 for irrigation of 72 acres located in the NW 1/4 SE 1/4, SW 1/4 NE 1/4 Section 5; all in T93N-R55W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately one-half mile southeast of the airport at Yankton SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8524-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.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 this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by September 7, 2021.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by September 7, 2021.

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.

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**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

SEP 27 2021

Samantha Hagedorn
4604 Broadway Ave
Yankton SD 57078

Dear Ms. Hagedorn:

Enclosed is Water Permit No. 8524-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

We will schedule an inspection so that the Water License may be issued to you, thus completing your 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

**Report of Examination of Works and/or Application of Water to Beneficial Use
For Permit Nos. 8524-3**

I have this day, June 24, 2022, made a thorough examination of the water use systems owned by Samantha Hagedorn, 4604 Broadway Ave., Yankton, SD 57078, holder of Permit No. 8524-3, bearing the priority of July 9, 2021, authorizing the diversion of 1.78 cu. ft. per second of the waters of groundwater (Lower James Missouri Aquifer) for the irrigation of 72 acres located in Yankton County.

Inspection contact: Samantha Hagedorn and Adam Arens

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Quality Well Service LLC
- 2) No. of Wells: 1
- 3) Depth(s): 100 feet
- 4) Well log is available: Yes

Casing:

- 1) Diameter: 16 inches
- 2) Length: 60 feet
- 3) Type: Plastic

Screen:

- 1) Diameter: 16 inches
- 2) Length: 40 feet
- 3) Type: PVC
- 4) Static water level: 40 feet

Pump:

- 1) Make: Unknown
- 2) Model: Unknown
- 3) Capacity: 800 GPM

Motor:

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

B. Works used to transport water to place of use:

- 1) Type: Galvanized Size: 8 inches Length: 15 feet

C. Works used to apply water to beneficial use:**Center Pivot:**

- 1) Make: Lockwood
- 2) Overall length: 1,265 feet
- 3) Number of towers: 10
- 4) End gun: Yes, 100 feet
- 5) Capacity: 800 gpm

Chemigation Equipment:

- 1) Does chemigate: No

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by: Yes
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period: Yes
- 3) Exceptions to compliance are: None

E. Condition and Location:

- 1) The systems are in good condition with the point(s) of diversion located as follows:
The well is 1,360 feet west and 2,640 feet south of the northeast corner of Section 5-T93N-R55W (Latitude 42.90165, Longitude -97.36265 – SW1/4 of the NE1/4).
- 2) The works are capable of diverting and conveying to the place of use 1.78 cu. ft. per second of water which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows, all in:

Section 5, T93N-R55WNW1/4SE1/4 33 acresSW1/4SE1/4 33 acres

comprising a total of 66 acres of land and the license should be issued for 1.78 cfs.

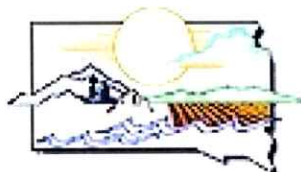
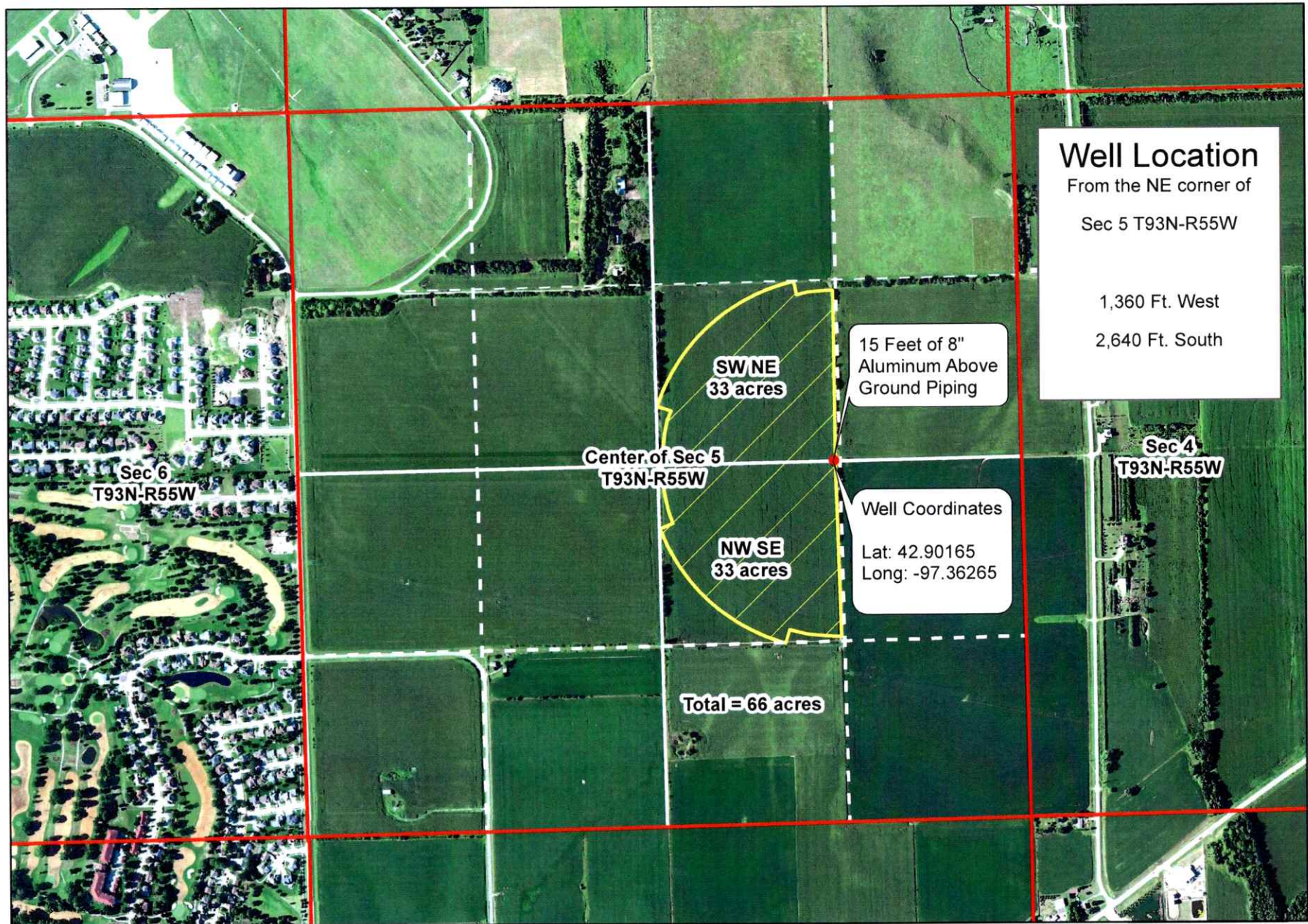
- 3) All structures, wells and lands on map: Yes

F. Comments or other permit(s) associated with the project: Neither Quality Well Service LLC nor the owner had accurate information available regarding the pump and motor for the well. The owner believes that the system was set up for 800 gpm (1.78 cfs), so that is what I have shown for a flow rate.

Keith DeJong, PE Ret.
Water Rights Inspector
DANR, Water Rights Program

Date report completed: January 18, 2024

Water Permit No. 8524-3



0 330 660 1,320 1,980 2,640
SCALE Feet



Keith DeJong
Keith DeJong, PE Ret.
Staff Engineer
June 24, 2022

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8524-3**

(1) Samantha Hagedorn; 4604 Broadway Ave, Yankton SD 57078, made Application No. 8524-3, July 9, 2021, for a water permit to divert 1.78 cubic feet of water per second from groundwater, one well (Lower James Missouri Aquifer), Yankton County, South Dakota for irrigation purposes. Permit No. 8524-3, with a priority date of July 9, 2021, was approved September 7, 2021.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.78 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 1,360 ft W & 2,640 ft S of the NE corner of Section 5, T93N, R55W (SW $\frac{1}{4}$ NE $\frac{1}{4}$)
(Latitude 42.90165 & Longitude -97.36265)

(3) The amount of appropriation may not exceed 2 acre-feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 – September 30.

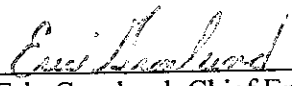
(4) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use to irrigate to following land:

Section 5, T93N, R55W
SW $\frac{1}{4}$ NE $\frac{1}{4}$ 33 acres NW $\frac{1}{4}$ SE $\frac{1}{4}$ 33 acres
TOTAL: 66 acres

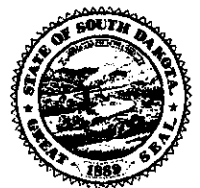
(5) Pursuant to South Dakota Water Law 46-5-30.1 Samantha Hagedorn, the holder and/or owner of Water Right No. 8524-3 is issued a license to appropriate water, the right to use 1.78 cubic feet of water per second from groundwater, one well (Lower James Missouri Aquifer), with a priority date of July 9, 2021, from the location specified in (2) of this license for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8524-3 and subject to the following qualifications:

1. The well approved under Water Right No. 8524-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals under this Water Right shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Water Right No. 8524-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 72 acres with an annual volume not to exceed 2 acre-feet of water per acre per year. (*Irrigation is limited to 66 acres, based on the system as developed.*)
3. This Water Right is approved subject to the irrigation water use questionnaire being submitted each year.


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

JAN 25 2024
date





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JAN 25 2024

8524-3

Samantha Hagedorn
4604 Broadway Ave
Yankton SD 57078

Dear Ms. Hagedorn:

Enclosed is Water License No. 8524-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Sincerely,

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

enclosures