

WATER PERMIT NO. 8799-3

Name of Applicant: **Calvin Hanson**

Address: **31524 452nd Avenue, Meckling SD 57069** Phone: **605-661-6393**

Amount of Water Claimed: **2.11 cfs** Total Acres: **175**

Source of Water Supply: **Groundwater**

Water to be used for: **Irrigation** County: **Clay**

Type of Waste Disposal System:

Location: **Approx. 11 miles northwest of Vermillion SD**

PRIORITY Date Received: **9-28-2023**

Application/License Fee: **\$1,050.00**

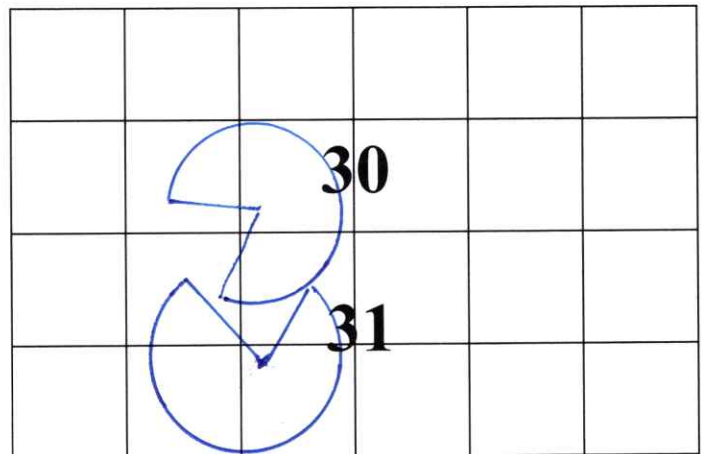
Corrected Application Received: **9-29-2023**

Period of Annual Use: **April 1 – September 30**

Remarks: **1 well, 2 pivots**

Diversion Point: **SE 1/4 NW 1/4 Sec 31-T93N-R53W**

Land to be Irrigated: **SW 1/4 SW 1/4, SE 1/4 SW 1/4 Sec 30, NW 1/4 NW 1/4, NE 1/4 NW 1/4, S 1/2 NW 1/4 Sec 31; all in T93N-R53W**



Depth of Well: **100**

Well Driller:

Remarks:

Type of Map: **aerial**

Reviewed and the Number Assigned on: **9-29-2023**

By: **Rachel Rodriguez**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 8799-3**

Date of first receipt of application September 28, 2023.

Date of return to applicant for corrections, amendments or changes September 28, 2023.

Date of receipt of corrected application September 29, 2023.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8799-3 to Calvin Hanson, 31524 452nd Avenue, Meckling SD 57069 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. 8799-3 appropriates 2.11 cubic feet of water per second from one well to be completed into the Missouri: Elk Point Aquifer (approximately 100 feet deep) located in the SE 1/4 NW 1/4 Section 31 for irrigation of 175 acres located in the S 1/2 SW 1/4 Section 30; NW 1/4 Section 31; all in T93N-R53W. This site is located approximately 4 miles south of Gayville 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: April 1 – September 30.
3. The date from which applicant may claim right is September 28, 2023.
4. The date of approval of Permit No. 8799-3 is November 29, 2023.
5. One-fifth of the construction is to be completed on or before May 29, 2026.
6. All construction is to be completed on or before November 29, 2028.
7. Water is to be put to beneficial use on or before November 29, 2032.
8. 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. 8799-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals 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. The well authorized by Permit No. 8799-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. 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

JAN 02 2024.
date



Mail to:

SD DANR, Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182

ph. (605) 773-3352

No. 8799-3 Hydrologic Unit 10170102

Basin Vermillion

Newspaper Plain Talk

Daily Press & Dakotan
(office use only)

PAID

SEP 28 2023

Ck# 4131

Rec't# 9/28/23

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

Calvin Hanson

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

Mailing Address

31524 452nd Ave

Meckling

SD

57069

(Address)

(City)

(State)

(Zip Code)

Phone 605-661-6393

Mobile 605-661-6393

Email calmary57@gmail.com

2. Amount of water claimed

2.11

*CFS or

950**GPM

950

***AF

Total Acreage

175

(*Cubic Feet per Second)

(**Gallons per Minute)

(***Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply

well

4. Location of point of diversion

Section 31-T093N-R53W, NW 1/4

(SE 1/4 NW 1/4)

(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)

Section 30-T093N-R53W, S 1/2 SW 1/4

County

Clay

5.

Clay, Meckling Township

County or counties where water will be used

RECEIVED

SEP 28 2023

6. Annual period during which water is to be used

April - September³⁰

OFFICE OF
WATER

7. 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
tillable acres	175	NW 1/4 NW 1/4 Sec 31-T93N-R53W	16.5
SW 1/4 SW 1/4 Sec 30-T93N-R53W	27	NE 1/4 NW 1/4 "	33.5
SE 1/4 SW 1/4 "	34	S 1/2 NW 1/4 "	64

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

1 well 2 pivots / well to be placed at South Pivot

~~Requesting a diversion rate greater than statutory limit.~~
See map

I, Calvin Hanson 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.

2021-08

Form 2A

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Also, attach map and any other technical information. (see instructions)

Supplemental Information

(Complete applicable portions only)

(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) 100' Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____

d) Distance to nearest domestic well on applicant's property _____ Property owned by others 2 miles

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) N/A

b) System Capacity (gallons) _____

Year Constructed _____

c) Connected to the City of _____

Sanitary System _____

3. Dugout Information

a) Surface Dimensions N/A Depth _____

b) Depth to water (ground surface to water level) _____

4. Water Storage Dams N/A

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:

93N 54W
Section: 25

93N 53W
Section: 30

93N
Section

93N 54W

93N 53W

93N
Section

93N 54W
Section: 36

UNION SCHOOL RD

93N 53W
Section: 31

92N

92N 53W

31567

452 AVE

8799-3

SD EForm - 1621LD V1

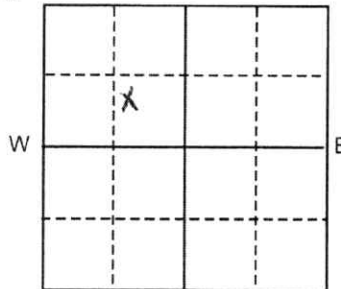
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE SW 1/4 NW 1/4 Sec 31 Twp 93N Rg 53County CLAY

North

Please mark well location with an "X"



Well Completion Date

10/17/23

1 Mile

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

1300' ft. from septic tank (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Reverse Rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other
 If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>60</u> LB/FT	<u>16</u> IN	<u>0</u> FT	<u>70</u> FT	<u>28</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>	<u>70</u>	<u>0</u> Lb/gal	<u>0</u> Ft	<u>26</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

Pumped down w/ pressure grouter

SCREEN:

☐ Perforated pipe ☒ Manufactured
 Diameter 16 Inches Length 40 Feet
Material PVCSlot Size .050 Set From 70 Feet to 110 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?

Lab to which water quality sample sent for analysis

Well Owner: Calvin Hansen

Business Name:

Address: 31524 452nd AVECity, State, Zip: Meckling SD 57069

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Top Soil</u>	<u>6</u>	<u>3</u>
<u>Brown clay</u>	<u>3</u>	<u>17</u>
<u>Medium Green Sand</u>	<u>17</u>	<u>44</u>
<u>Medium Gravel</u>	<u>44</u>	<u>50</u>
<u>Coarse Green Sand</u>	<u>50</u>	<u>95</u>
<u>Medium Green Gravel</u>	<u>95</u>	<u>114</u>
<u>Gray Shale</u>	<u>114</u>	<u>120</u>

STATIC WATER LEVEL

22

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: Pumped w/ turbine pump
☐ Bailed test pumped w/ engine
☐ Other

Pumping Level Below Land Surface

34 Ft. After 2 Hrs. pumped 1100 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: 950 GPM

REMARKS

This well was drilled under license # 444 and this report is true and accurate.

Drilling firm:

Christensen Well & Irrigation

Signature of License Representative:

Carly Christensen

Signature of Well Owner or Equitable Property Holder:

RECEIVED**DEC 28 2023**

Date:

12/27/23OFFICE OF
WATER

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date September 28, 2023

RECEIVED OF Calvin/Mary Hanson 31524 452nd Ave., Meckling SD 57069

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

Fee for Application for Permit No. <u>8799-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>850.00</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>8799-3</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>1050.00</u>

By Eric Gronlund
Chief Engineer
vm



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8799-3, Calvin Hanson**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning Water Permit Application No. 8799-3, Calvin Hanson, 31524 452nd Avenue, Meckling SD 57069.

The Chief Engineer is recommending APPROVAL of Application No. 8799-3 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. 8799-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals 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. The well authorized by Permit No. 8799-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. 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
October 30, 2023

Report to the Chief Engineer
On Water Permit Application No. 8799-3

Calvin Hanson

November 11, 2023

Water Permit Application No. 8799-3 proposes to divert water at a maximum instantaneous diversion rate of 2.11 cubic feet of water per second (cfs) from one well to be completed into the Missouri: Elk Point aquifer (100 feet deep) located in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 31 for the irrigation of 175 acres located in the S $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 30; NW $\frac{1}{4}$ of Section 31; all in T93N-R53W. The site of interest is located in Clay County approximately four miles south of Gayville, SD.

AQUIFER: Missouri: Elk Point (M: EP)

HYDROGEOLOGY:

The Missouri: Elk Point aquifer is a Quaternary-aged glacial outwash deposit consisting of fine sand to very coarse gravel (Niehus, 1997). The Missouri: Elk Point aquifer underlies approximately 219,100 acres in Clay, Union, and Yankton Counties in South Dakota, and the aquifer contains approximately 3,287,100 acre-feet of recoverable water in storage (Hedges et al., 1982). The Missouri: Elk Point aquifer is hydrologically connected to the Big Sioux, Lower Vermillion-Missouri, and Lower James-Missouri aquifers, and the Big Sioux, James, Missouri, and Vermillion Rivers (Niehus, 1994; Stephens, 1967).

The Missouri: Elk Point aquifer is generally under confined conditions in the northwestern part of the aquifer and unconfined conditions in the southern part of the aquifer, and the direction of groundwater movement in the aquifer is generally from the northwest to the southeast (Niehus, 1994 and 1997).

No water well or test hole completion report was submitted with Water Permit Application No. 8799-3. Water well completion reports on file with the DANR-Water Rights Program for wells completed into the Missouri: Elk Point aquifer within approximately one mile of the proposed diversion point have saturated aquifer thicknesses ranging from approximately 70 to 100 feet, with the depth to the top of aquifer materials ranging from approximately 10 to 25 feet below the ground surface, and static water levels at well completion varying from approximately 10 to 25 feet below the ground surface (Water Rights, 2023d). The Missouri: Elk Point aquifer is expected to be unconfined at the proposed diversion point based on the well completion reports on file for nearby wells completed into the aquifer (Water Rights, 2023d).

Figure 1 displays a map of the approximate extent of the Missouri: Elk Point aquifer (modified from Hedges et al., 1982) and the location of the proposed diversion point for Water Permit Application No. 8799-3.

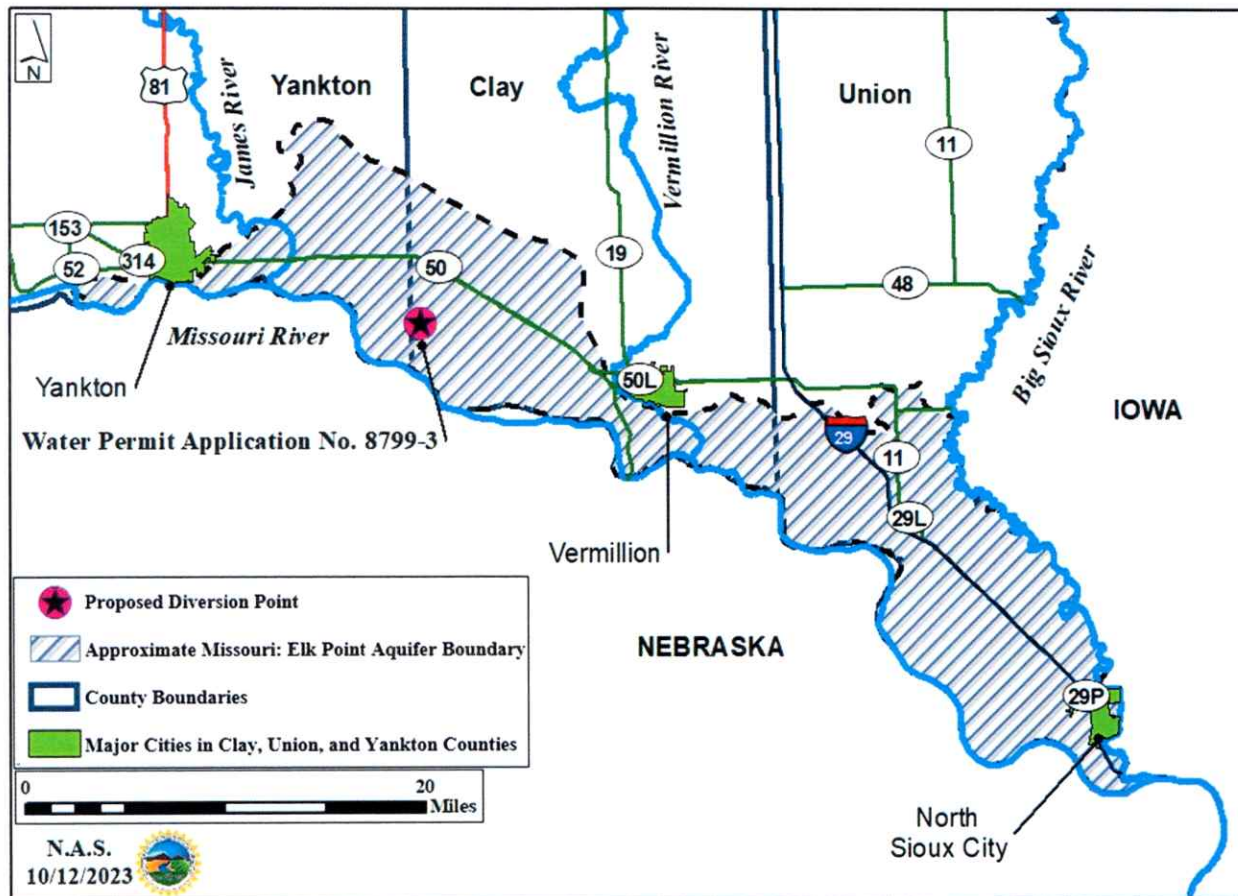


Figure 1. Map of the approximate Missouri: Elk Point aquifer boundary modified from Hedges and others (1982) with the location of the proposed diversion point for Water Permit Application No. 8799-3

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, and 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 as defined by SDCL 46-2-9 and 46-2-11.” 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 Missouri: Elk Point aquifer.

WATER AVAILABILITY:

Water Permit Application No. 8799-3 proposes to appropriate water from the Missouri: Elk Point aquifer. The probability of unappropriated water being available from the aquifer can be evaluated by considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source. An

application may be approved, however, for withdrawals of groundwater from any groundwater formation older than or stratigraphically lower than the greenhorn formation in excess of the average estimated annual recharge for use by water distribution systems.” The Missouri: Elk Point aquifer is not older than or stratigraphically lower than the Greenhorn Formation (Fahrenbach et al., 2010), 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 Missouri: Elk Point aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Missouri: Elk Point aquifer is primarily through the infiltration of precipitation where the aquifer is at or near the ground surface, seepage from the Big Sioux, James, Missouri, and Vermillion Rivers, inflow from the Lower Vermillion-Missouri and Lower James-Missouri aquifers at the northern boundary of the Missouri aquifer and inflow from the Big Sioux aquifer at the extreme northeastern boundary of the Missouri aquifer, and from the underlying Dakota aquifer in Union County (Condley and Lamkey, 2022; Niehus, 1994 and 1997).

Several studies have been completed to estimate average annual recharge to the Missouri: Elk Point aquifer (Condley and Lamkey, 2022; Hedges et al., 1985; Mathiowetz, 2022; Stephens, 1967; Stonesifer, 2013). A discussion of these studies is available in the hydrologic budget section within the report for Water Permit No. 8614-3 - Lewis & Clark Regional Water System completed by Mathiowetz (2022). Collectively, the estimated average annual recharge rate to the Missouri: Elk Point aquifer is approximately 114,593.9 acre-feet per year assuming full development of the existing water rights/permits currently held by Lewis & Clark Regional Water System (Mathiowetz, 2022). If Future Use Permit Application No. 8754-3 (with a priority date senior to this application), applied for by Lewis & Clark Regional Water System, requesting to appropriate and reserve 19,121 acre-feet per year, is approved and fully developed, the estimated average annual recharge rate to the Missouri: Elk Point aquifer is approximately 130,770.3 acre-feet per year due to the induced recharge component from the Missouri River to the Missouri: Elk Point aquifer that results from Lewis & Clark Regional Water System’s pumping (Mathiowetz, 2023).

Discharge

Discharge from the Missouri: Elk Point aquifer is primarily through well withdrawals, evapotranspiration where the aquifer is at or near the ground surface, outflow to the Big Sioux and Missouri Rivers during periods of low flow and stage, and leakage to the underlying Dakota aquifer (Niehus, 1994 and 1997; Water Rights, 2023c).

Currently, there are 651 water rights/permits authorized to appropriate water from the Missouri: Elk Point aquifer, plus one pending application - Future Use Permit Application No. 8754-3, applied for by Lewis & Clark Regional Water System, requesting to appropriate and reserve 19,121 acre-feet per year for future use (Water Rights, 2023c).

There are five future use permits (Nos. 5832-3, 6237-3, 6869-3, 6869A-3, and 7208-3) reserving 1,900 acre-feet of water annually from the Missouri: Elk Point aquifer (Water Rights, 2023c). For the purpose of estimating average annual withdrawals, the future use permits are assumed to be fully developable for a total of 1,900 acre-feet per year. If pending Future Use Permit Application No. 8754-3, requesting to appropriate and reserve 19,121 acre-feet per year, is approved, the future use permits are assumed to be fully developable for a total of 21,021 acre-feet per year.

Table 1 summarizes the 44 non-irrigation water rights/permits (including two irrigation water permits, see paragraph below) authorized to appropriate water from the Missouri: Elk Point aquifer with the estimated annual use for each water right/permit as determined by their limiting diversion rate or annual volume. Historically, average water use by non-irrigation appropriations limited by an instantaneous diversion rate have been assumed to be pumping 60% of full time at the respective permitted diversion rate. Water rights/permits limited by an annual volume are assumed to withdraw their entire respective annual volume limitation. This is a standard method used by the DANR-Water Rights Program for estimating annual withdrawals by non-irrigation appropriations from an aquifer (Water Rights, 2023c). This method is likely an overestimation of withdrawals. Three municipal water rights were identified as being connected to a rural water system and likely maintain their wells for standby purposes (Drinking Water Program, 2023; Water Rights, 2023c); as such, the average annual water use for these water rights has been estimated to be zero acre-feet per year on Table 1.

Water Right No. 5437-3 was licensed for a reduced diversion rate which prevents pumping the allotted volume of water specified on the permit (Water Rights, 2023c). The estimated average annual withdrawal rate for Water Right No. 5437-3 was approximated assuming pumping 60% of full time at the respective licensed diversion rate method as mentioned above on Table 1.

Water Permit No. 5998-3 is permitted for the irrigation of turf and Water Permit No. 5998A-3 extends the amount of time allowed for water to be put to beneficial use as authorized by Water Permit No. 5998-3 (Water Rights, 2023c). The estimated use for these two irrigation permits is included with the non-irrigation water rights/permits listed on Table 1, as the permit holder is not required to submit an annual irrigation questionnaire. However, Water Permit No. 5998-3 is authorized for use in a rural water system and the permit holder reports the annual use by Water Permit No. 5998-3 with their other rural water system Missouri: Elk Point aquifer permits, listed on Table 2 (Water Rights, 2023c).

Water Permit No. 7059-3 is permitted for recreational use for maintaining the water level of a small lake with a surface area of 17.6 acres (Water Rights, 2023c). It is assumed that the only consumptive use of this water is due to evaporation; however, it is likely there is some seepage through the bottom of the pond (Water Rights, 2023c). Annual evaporation of water from shallow lakes is estimated to be approximately 42 inches per year at the location of the authorized diversion point for Water Permit No. 7059-3 (NOAA, 1982; Water Rights, 2023c), and normal annual total precipitation at the Sioux City, Iowa airport was determined to be approximately 29.27 inches over a 30-year period of record (1991 to 2020) (Arguez et al., 2020), which results in the lake to fluctuate approximately 12.73 inches per year. To maintain the water

level of the small lake, the estimated use of Water Permit No. 7059-3 is approximately 18.7 acre-feet per year. Overall, the average annual withdrawal rate for the 44 non-irrigation water rights/permits (including the two irrigation permits not required to submit an annual irrigation questionnaire) authorized to appropriate water from the Missouri: Elk Point aquifer is approximately 69,720 acre-feet per year (Table 1) (Water Rights, 2023c and 2023f).

Table 1. Estimated annual use for the non-irrigation water rights/permits (plus two irrigation water permits for Clay RWS) authorized to divert water from the Missouri: Elk Point aquifer (Drinking Water Program, 2023; Water Rights, 2023c and 2023f)

Permit No.	Name	Status	Priority Date	Use	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet/year)	Total Estimated Use (acre-feet/year)
4501-3	Eddie Wohl	LC	03/27/1980	COM	0.05		21.7
5616-3	Cimpls Inc	LC	01/31/1992	COM	0.44		191.2
5827-3	Don Lantis	LC	06/08/1994	COM	0.022		9.6
5953-3	H & K Oil Co	LC	08/19/1996	COM	0.037		16.1
6151-3	Vernon & Norma Vakoc	LC	10/04/1999	COM	0.67		291
6580-3	West Shores Acres LLC	LC	01/28/2005	COM	0.10		43.5
8031-3	Dakota Protein Conversion Inc	PE	06/18/2014	COM	0.22		95.6
8147-3	Doug Lafleur	PE	04/06/2015	COM, LCO	1.0	160	159
8381-3	RP Constructors	PE	11/19/2018	COM	0.04	1	1
8403-3	Stockmen's Livestock Inc	LC	06/27/2019	COM	1.06	40	40
8415-3	3 Sons Properties	PE	11/14/2019	COM	0.10	25	25
8435-3	Sioux City Insulation	PE	07/30/2012	COM	0.33	1	1
6744-3	Judith I Grant	PE	07/24/2006	DOM, COM	0.78		339
7388-3	Clay RWS Inc	PE	07/30/2012	DOM, IRR	2.0		349
5998-3	Clay RWS Inc	PE	04/21/1997	IRR, DOM	2.2		
5998A-3	Clay RWS Inc	PE	04/21/1997	IRR, DOM	0.0		
5490-3	USGS CERC Field Research Station	LC	11/15/1990	FWP	0.09		39.1
5907-3	US Fish and Wildlife Service	LC	01/26/1996	FWP	3.78		1,643
6733-3	US Fish and Wildlife Service	LC	06/07/2006	FWP	1.11		482.5
7094-3	US Fish and Wildlife Service	LC	12/01/2008	FWP	2.67		1,160
5021-3	Vishay-Dale Electronics Inc	LC	05/04/1984	IND	0.10		43.5
5388-3	LG Everist Inc	LC	01/30/1990	IND	0.45		195.6
5453-3	Aaladin Industries Inc	LC	05/24/1990	IND	0.05		21.7
5593-3	Vishay-Dale Electronics Inc	LC	10/31/1991	IND	0.056		24.3
6170-3	Knife River	LC	01/03/2000	IND	0.222		96.5
1255-3	City of Elk Point	LC	01/01/1914	MUN	1.13		491.1
143-3	City of Vermillion	LC	01/21/1956	MUN	1.78		773.7
147-3	City of Vermillion	LC	01/01/1935	MUN	2.66		1,245
6236-3	City of Vermillion	LC	11/06/2000	MUN	2.6	1,161	
6354-3	City of Vermillion	LC	08/12/2002	MUN	0.022		
1965-3	Town of Gayville	LC	01/01/1914	MUN	0.37		0*
4207-3	Town of Jefferson	LC	01/01/1916	MUN	0.90		391
5118-3	Town of Gayville	LC	01/28/1987	MUN	0.33		0*
5437-3	Dakota Dunes Community Improvement District	LC	04/12/1990	MUN	3.33		1,447
5782-3	City of North Sioux City	LC	08/12/1993	MUN	1.14		495.5
8212-3	City of Yankton	LC	03/25/2016	MUN	20.12	6,050	6,050
7059-3	WE Investments LLC	PE	08/28/2008	REC	3.11		18.7
8744-3	Dakota Bay	PE	03/29/2023	REC	1.55	28.6	28.6
6736-3	Lewis and Clark RWS	PE	07/08/1994	RWS	27.85	20,165	53,442
7207-3	Lewis and Clark RWS	PE	07/08/1994	RWS	20	12,000	
8613-3	Lewis and Clark RWS	PE	07/16/2007	WDS	29.8	13,000	
8614-3	Lewis and Clark RWS	PE	03/04/2022	RWS	0.0	8,277	
5581-3	Larson's Landing	LC	07/30/1991	SHD	0.089		38.7
5592-3	East Winds Court Inc	LC	10/09/1991	SHD	0.11		0*
						TOTAL:	69,720

*Identified as being connected to a RWS; therefore, water use from aquifer is presumed to be zero acre-feet/year

COM: Commercial; DOM: Domestic; FWP: Fish and Wildlife Propagation; IND: Industrial; IRR: Irrigation; LCO: Livestock Confinement Operation; MUN: Municipal; REC: Recreation; RWS: Rural Water System; SHD: Suburban Housing Development

Of the 44 non-irrigation water rights/permits (including the two irrigation permits not required to submit an annual irrigation questionnaire), there are 16 non-irrigation water rights/permits that are required to report their annual usage from the Missouri: Elk Point aquifer (Water Rights, 2023c and 2023f).

Four of the non-irrigation water rights/permits that are required to report (Nos. 8031-3, 8415-3, 8435-3, and 8614-3) are currently under development (or were approved in 2023) and have not reported any withdrawals from the Missouri: Elk Point aquifer to the DANR-Water Rights Program (Water Rights, 2023c). The remaining twelve non-irrigation water rights/permits that are required to report their annual usage from the Missouri: Elk Point aquifer are shown on Table 2 (Water Rights, 2023c and 2023f). The reported usage (as shown on Table 2) for Permit Nos. 8381-3 and 8403-3 (approved in 2018 and 2019) is not necessarily reflective of the future usage of these permits based on information within their respective water permit files (Water Rights, 2023c), and only four years of reported withdrawals (Water Rights, 2023f). Therefore, the estimated use for Permit Nos. 8031-3, 8415-3, 8435-3, 8381-3, 8403-3, and 8614-3 will be based on the method used above: water rights/permits limited by an instantaneous diversion rate have been assumed to be pumping 60% of full time at the respective permitted diversion rate; water rights/permits limited by an annual volume are assumed to withdraw their entire respective annual volume limitation. The estimated average annual withdrawal rate for these permits is listed on Table 1.

Next, the reported use for the City of Yankton (8212-3) and Lewis and Clark Regional Water System (6736-3, 7207-3, and 8613-3) (as shown on Table 2) is steadily increasing (Water Rights, 2023f), as these water users are continually undergoing development (8614-3 was approved in 2023) (Water Rights, 2023c). It is likely these water users will use up to their entire respective annual volume limitation in the future; therefore, the average annual withdrawal rate for these water rights/permits is assumed to be their entire respective annual volume listed on Table 1 (Water Rights, 2023c).

The annual withdrawal rate for Clay Rural Water System Inc (Permit Nos. 5998-3, 5998A-3, and 7388-3) averaged over the last ten years (approximately 349 acre-feet per year) is more reflective of current usage than the entire period of record of reported withdrawals because the first few years the permit holder reported values were during a construction period (Water Rights, 2023c and 2023f). The average annual withdrawal rate based off the reported annual withdrawal rates averaged from 2013 to 2022 on Table 2 for these water permits will be used in this analysis.

Lastly, the annual withdrawal rates for Doug Lafleur (8147-3) and City of Vermillion (147-3, 6236-3) on Table 2 are relatively steady over their respective periods of record (Water Rights, 2023c and 2023f); therefore, the average annual withdrawal rate based on the reported values from each of these water users (as shown on Table 2) is reasonably reflective of the future withdrawals likely to be made by these appropriative users. The average annual withdrawal rate based off the reported annual withdrawal rates averaged over the period of record on Table 2 for these water rights/permits will be used in this analysis.

Table 2. Non-irrigation water rights/permits required to report their respective annual use from the Missouri: Elk Point aquifer (Water Rights, 2023c and 2023f)

	RP Constructors	Stockmen's Livestock Inc	Clay RWS Inc	Doug Lafleur	City of Vermillion	City of Yankton	Lewis and Clark RWS
	8381-3	8403-3	5998-3, 5998A-3, 7388-3	8147-3	147-3, 6236-3	8212-3	6736-3, 7207-3, 8613-3
2003			238		1,363		
2004			483		1,226		
2005			21		1,247		
2006			170		1,252		
2007			217		1,344		0
2008			213		1,199		0
2009			215		1,140		0
2010			183		1,071		0
2011			137		1,127		92
2012			525		1,317		3,836
2013			301		1,183		9,368
2014			307		1,121		11,532
2015			278	202	1,161		15,591
2016			231	202	1,175	66	17,091
2017			276	202	1,215	531	18,051
2018			305	98	1,168	504	18,143
2019	0.0171	1	292	135	1,440	1,370	20,397
2020	0.0224	4.2	461	121	1,373	2,923	21,039
2021	0.2332	5.5	486	170	1,378	3,065	23,537
2022	0.0252	5.7	550	142	1,394	3,405	24,693
Max	0.2	5.7	550	202	1,440	3,405	24,693
Min	0.0171	1	21	98	1,071	66	0
Avg	0.074	4.10	294	159	1,245	1,695	15,281*
RWS: Rural Water System *Excluded reported zero values							

Currently, there are 609 irrigation water rights/permits authorized to appropriate water from the Missouri: Elk Point aquifer (Water Rights, 2023c). Irrigation water rights/permits have been typically required to report their annual usage on an irrigation questionnaire since 1979. The estimated average annual withdrawal rate for the Missouri: Elk Point aquifer irrigation water rights/permits that have reported over the period of record (1979 to 2022) is approximately 19,299 acre-feet per year (Table 3) (Water Rights, 2023a). To reflect the current development of irrigation water rights/permits more accurately, the average annual withdrawal rate for irrigation appropriations from 2013 to 2022 is approximately 26,040 acre-feet per year (Table 3) (Water Rights, 2023a).

The usage for two irrigation water permits (Nos. 5998-3 and 5998A-3) was accounted for on Table 1 with the non-irrigation water rights/permits, as the permit holder is not required to report their respective annual irrigation usage (Water Rights, 2023c), resulting in only 607 of the Missouri: Elk Point aquifer irrigation water rights/permits being currently required to submit an annual irrigation questionnaire (Water Rights, 2023c).

Additionally, Water Right No. 6110-3 is authorized to divert water from a well completed into the Dakota aquifer and pump the water into two ponds that receive incidental surface runoff and possible groundwater inflow from the Missouri: Elk Point aquifer (Water Rights, 2023c). Water Right No. 6110-3 is included in the 609 irrigation water rights/permits authorized to appropriate water from the Missouri: Elk Point aquifer; however, the estimated use for this permit is assumed to be negligible to the overall hydrologic budget due to the minimal amount of water from the Missouri: Elk Point aquifer the permit holder is expected to withdraw. When omitting Water Right No. 6110-3 and Water Permit Nos. 5998-3 and 5998A-3 from this analysis of Missouri: Elk Point aquifer irrigation water rights/permits, 606 water rights/permits remain.

Table 3 lists only 579 water rights/permits as reporting in 2022 (Water Rights, 2023a and 2023c). These 579 water rights/permits listed as reporting in 2022 includes three water rights/permits (Nos. 6901B-3, 6939-3, and 7635-3) that were incorporated into another water right in 2022 and 2023 (Water Rights, 2023c), resulting in only 576 of the water rights/permits listed as reporting in 2022 being currently active.

Thirty water permits/rights did not submit an irrigation questionnaire form in 2022 that are currently active, accounting for the difference between the 576 currently active water rights/permits listed as reporting in 2022 and the 606 irrigation water rights/permits currently required to submit an annual irrigation questionnaire and annual use being estimated in this analysis (Water Rights, 2023a and 2023c). Of these 30 permits, 29 were issued in 2022 or 2023 and have not submitted an irrigation questionnaire at this time. The remaining permit, Water Right No. 5935-3, is not required to submit an irrigation questionnaire. Overall, these 30 water permits/rights are authorized to irrigate approximately 2,243 acres (Water Rights, 2023c).

Table 3. Reported historic irrigation use from Missouri: Elk Point aquifer (Water Rights, 2023a)

Year	No. of Permits Reporting	Reported Pumpage (acre-feet)
1979	259	10,258
1980	263	14,937
1981	297	13,931
1982	269	19,143.1
1983	273	11,081
1984	281	9,605.5
1985	282	14,020.7
1986	286	6,324.8
1987	281	13,369
1988	282	28,558.1
1989	292	25,904.3
1990	297	19,508
1991	300	18,877.7
1992	295	1,895
1993	298	1,475.2
1994	295	10,314.9
1995	292	18,761.3
1996	296	9,473.6
1997	305	17,236
1998	313	11,079.5
1999	308	14,877
2000	309	26,551
2001	313	19,115.2
2002	315	23,326.9
2003	314	27,007
2004	322	24,309
2005	335	24,206.1
2006	353	27,943.3
2007	366	30,652
2008	396	16,439
2009	410	6,346
2010	419	2,906.9
2011	431	12,330
2012	445	56,994.7
2013	543	35,090.5
2014	557	12,423.5
2015	563	17,884.1
2016	564	27,869.3
2017	567	37,209.9
2018	570	9,160.7
2019	575	8,736.3
2020	570	26,601
2021	572	40,503.4
2022	579	44,925
Min	259	1,475.2
Max	579	56,994.7
Avg (1979 to 2022)	374	19,299
Avg (2013 to 2022)	566	26,040

Farmer (2018a, 2018b, and 2021) analyzed the amount of water pumped per permitted acre for the period from 1979 through 2005. This period was chosen due to the relatively stable number of permitted acres across the entire period. There was a continual annual increase in the number of permitted acres from 2006 through 2013/2014. From 2013/2014 through 2021, the total number of permitted acres had been relatively stable (Mathiowetz, 2022; Water Rights, 2023c). Farmer (2021) determined that it would be best to separate the review of pumpage per permitted acres between crops, such as corn and soybeans, and turf, such as golf courses and lawn irrigation, to describe the pumpage more accurately per permitted acres. Turf irrigation typically requires more water per acre annually than crop irrigation. Mathiowetz (2022) determined over the entire period of record (1979 through 2021), the crop application rate per permitted acre is 0.331 feet per year (3.97 inches per year), and 0.908 feet per year for turf (10.9 inches per year) (Water Rights, 2023a and 2023c).

Currently, there are 83,029.5 acres authorized to be irrigated from the Missouri: Elk Point aquifer, with 819.6 of those acres authorized for turf irrigation (Water Rights, 2023c). Table 4 contains the turf irrigation permits with their respective authorized permitted acres and an estimated average annual use based on Mathiowetz's (2022) application rate per permitted acre (Water Rights, 2023c). By multiplying the application rate of 0.908 feet per acre per year (Mathiowetz, 2022), by the 819.6 acres being turf irrigated (Water Rights, 2023c), the annual use for turf irrigation yields approximately 744.2 acre-feet per year (Table 4). By multiplying the application rate of 0.331 feet per acre per year (Mathiowetz, 2022), by the 82,209.9 acres (total acres minus turf irrigated acres) acres being crop irrigated (Water Rights, 2023c), the annual use for crop irrigation yields approximately 27,211.5 acre-feet per year. Collectively, the average annual use from the Missouri: Elk Point aquifer for both crop and turf irrigation water rights/permits utilizing Mathiowetz's (2022) application rates is approximately 27,955.7 acre-feet per year.

Table 4. Water rights/permits authorized for irrigation of turf (Water Rights, 2023c)

Permit No.	Name	Status	County	Acres	Total Estimated Use (acre-feet/year)
1294-3	Recreation Development Assn. Inc.	LC	Union	102	92.6
2011-3	TR Golf LLC	LC	Union	95	86.3
5786-3	Dakota Dunes Golf Course	LC	Union	173	157.1
5998-3	Clay Rural Water System Inc	PE	Union	300	272.4
5998A-3	Clay Rural Water System Inc	PE	Union	0	0
5935-3	Ted Waitt	LC	Union	1	0.908
5936-3	Applied Engineering	LC	Yankton	1.8	1.6
8010-3	Ryan Rusher	LC	Yankton	2.5	2.3
8029-3	Dakota Dunes Comm Improvement District	PE	Union	17.8	16.2
8040-3	Heine Electric & Irrigation Inc	LC	Clay	1	0.908
8354-3	TR Golf LLC	PE	Union	30	27.24
8407-3	Gayville-Volin School District 63-1	LC	Yankton	4.5	4.1
8530-3	National Field Archery Association Foundation	LC	Yankton	16	14.5
8560-3	TR Golf LLC	PE	Union	65	59
8727-3	TR Golf LLC	PE	Union	10	9.1
TOTAL:				819.6	744.2

There are domestic wells completed into the Missouri: Elk Point aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2023d). 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 Missouri: Elk Point 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 Missouri: Elk Point aquifer.

Hydrologic Budget Summary

The average annual recharge rate to the Missouri: Elk Point aquifer is approximately 114,593.9 acre-feet per year. If Future Use Permit Application No. 8754-3 (with a priority date senior to this application), applied for by Lewis & Clark Regional Water System, requesting to appropriate and reserve 19,121 acre-feet per year, is approved and fully developed, the estimated average annual recharge rate to the Missouri: Elk Point aquifer is approximately 130,770.3 acre-feet per year (Mathiowetz, 2023).

The estimated average annual withdrawal rate for the water rights/permits authorized to appropriate water from the Missouri: Elk Point aquifer totals approximately 118,755 acre-feet per year (including the estimated use for Water Permit Application No. 8799-3, and Future Use Permit Application No. 8754-3, if approved) (listed on Table 5) - with an average annual recharge rate of approximately 130,770.3 acre-feet per year. If Future Use Permit Application No. 8754-3 is not approved, then the average annual withdrawal rate is approximately 99,634 acre-feet, with an average annual recharge rate of approximately 114,593.9 acre-feet per year. Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Missouri: Elk Point aquifer for the proposed appropriation.

Table 5. Estimated use from Missouri: Elk Point aquifer (Water Rights, 2023a, 2023c, and 2023f)

Type of Water Right/Permit	Estimated Use (acre-feet/year)
Future Use Reservations (including pending Future Use Application No. 8754-3, if approved)	21,021
Non-Irrigation	69,720
Irrigation (Mathiowetz's (2022) turf and crop application rates)	27,956
Application No. 8799-3 (if approved, assuming Mathiowetz's (2022) crop application rate of 0.331 per acre)	58
TOTAL:	118,755

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.

Observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The DANR-Water Rights Program monitors 36 observation wells completed into the Missouri: Elk Point aquifer (Water Rights, 2023b). The three closest observation wells to the proposed diversion point are YA-80KA (approximately 1.5 miles southwest), CL-80B (approximately 3.8 miles southeast), and YA-78J (approximately 6.2 miles northwest) (Water Rights, 2023b). The hydrographs for these observation wells are displayed in Figures 2 to 4 (Water Rights, 2023b). The data points utilized to construct the hydrographs are measurements of the static water level in the observation wells from the top of the well casing.

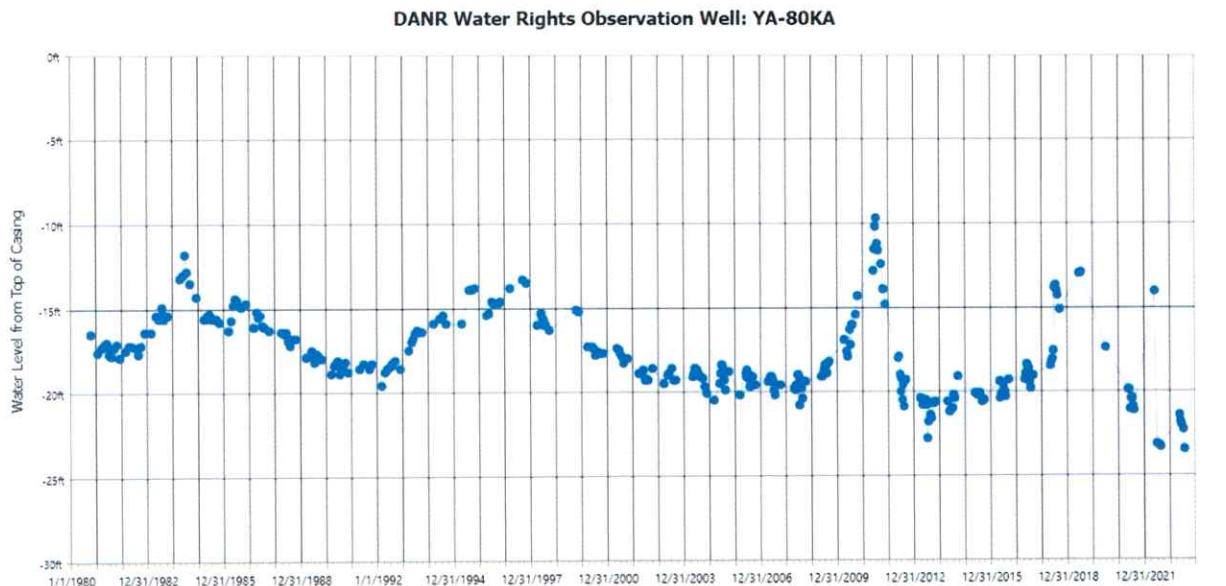


Figure 2. Hydrograph for observation well YA-80KA (Water Rights, 2023b)

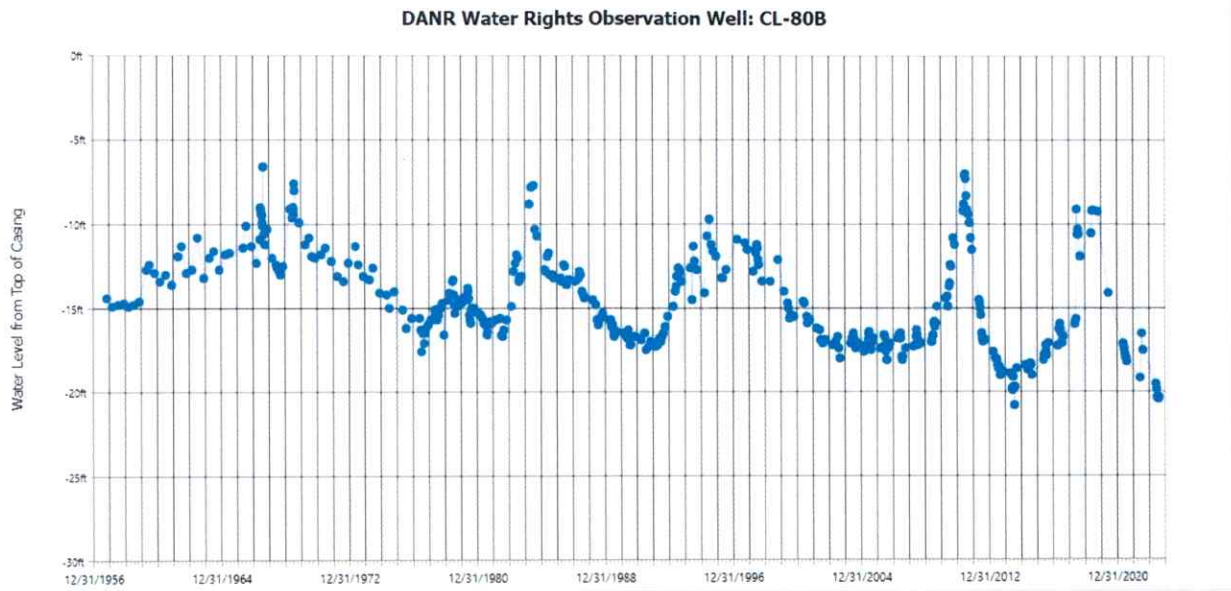


Figure 3. Hydrograph for observation well CL80B (Water Rights, 2023b)

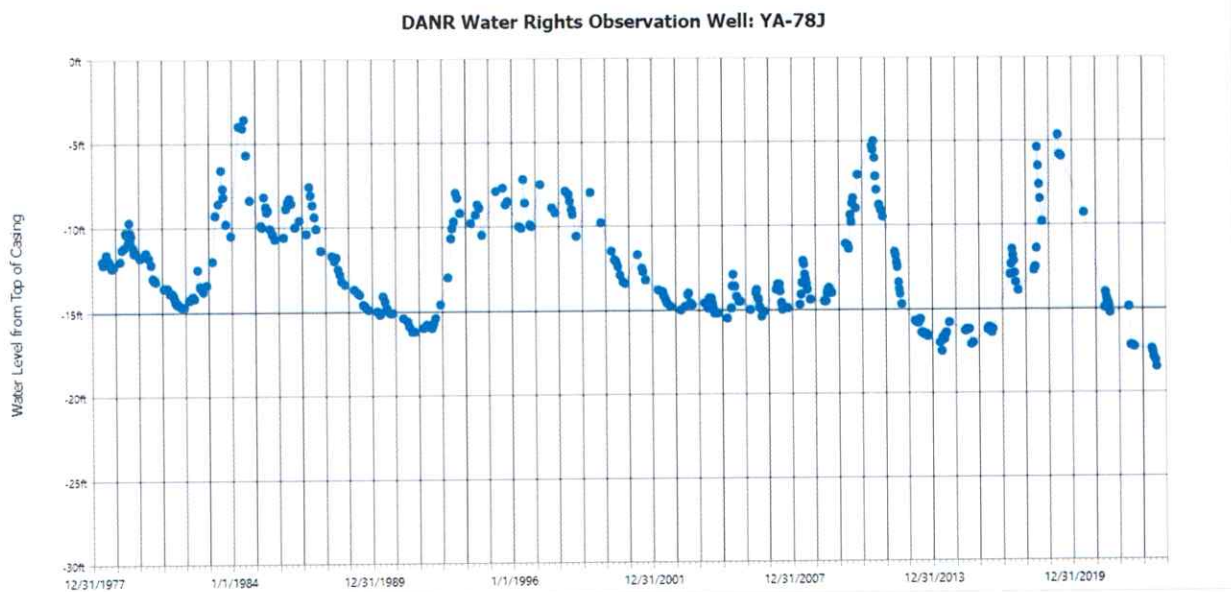


Figure 4. Hydrograph for observation well YA-78J (Water Rights, 2023b)

The hydrographs for these observation wells were compared to hydrographs for other observations wells completed into the Missouri: Elk Point aquifer and all displayed a generally similar trend as shown on the hydrographs displayed in Figures 2 to 4 (Water Rights, 2023b), except for several Missouri: Elk Point aquifer observation wells close to the Missouri River whose respective hydrographs show a gradual long-term downward trend (Water Rights, 2023b). This downward trend is caused by entrenchment of the Missouri River riverbed and in some places a widening of the channel leading to lower water levels despite the river having the same rate of flow (Elliott and Jacobson, 2022). The lowering of the water level in the Missouri River downstream of the Gavins Point Dam and the subsequent lowering of the water level of Missouri: Elk Point aquifer observation wells in close proximity to the river show the strong hydrologic connection between the Missouri River and the Missouri: Elk Point aquifer. This is demonstrated by the very similar water levels between the aquifer and river as shown in the hydrographs in Figures 2 to 5. The lowering of the water levels in the aquifer, especially in close proximity to the Missouri River, is not a sign of over appropriation of the Missouri: Elk Point aquifer.

To demonstrate the connection between the aquifer and the Missouri River, consider the United States Geological Survey (USGS) Stream Gage #06467500, located on the Missouri River at Yankton, SD, and the hydrograph for this gage is shown in Figure 5 (USGS, 2023). By comparing the hydrograph for Stream Gage #06467500 to the observation well hydrographs of the Missouri: Elk Point aquifer (Figures 2 to 4), both show the river and aquifer react to climatic conditions by rising and falling over similar trends (USGS, 2023; Water Rights, 2023b). Additionally, during flood events (such as, the years 2011 and 2019), the water level in the Missouri: Elk Point aquifer, especially where in closer proximity to the Missouri River, rises very quickly beyond what is typically seen for glacial outwash aquifers that are only responding to the infiltration of precipitation (Water Rights, 2023b). This indicates there is a hydrologic connection between the Missouri: Elk Point aquifer and the Missouri River. Therefore, when the elevation of the water in the Missouri River is higher than the elevation of water in the aquifer, the river will recharge the aquifer. In contrast, when the elevation of water is higher in the Missouri: Elk Point aquifer, the aquifer naturally discharges to the Missouri River. The observation well water levels simply show the connection between the river and the aquifer and how the aquifer reacts to climatic conditions without showing any long-term effects from pumping. Therefore, there is a reasonable probability unappropriated water is available for this proposed appropriation.

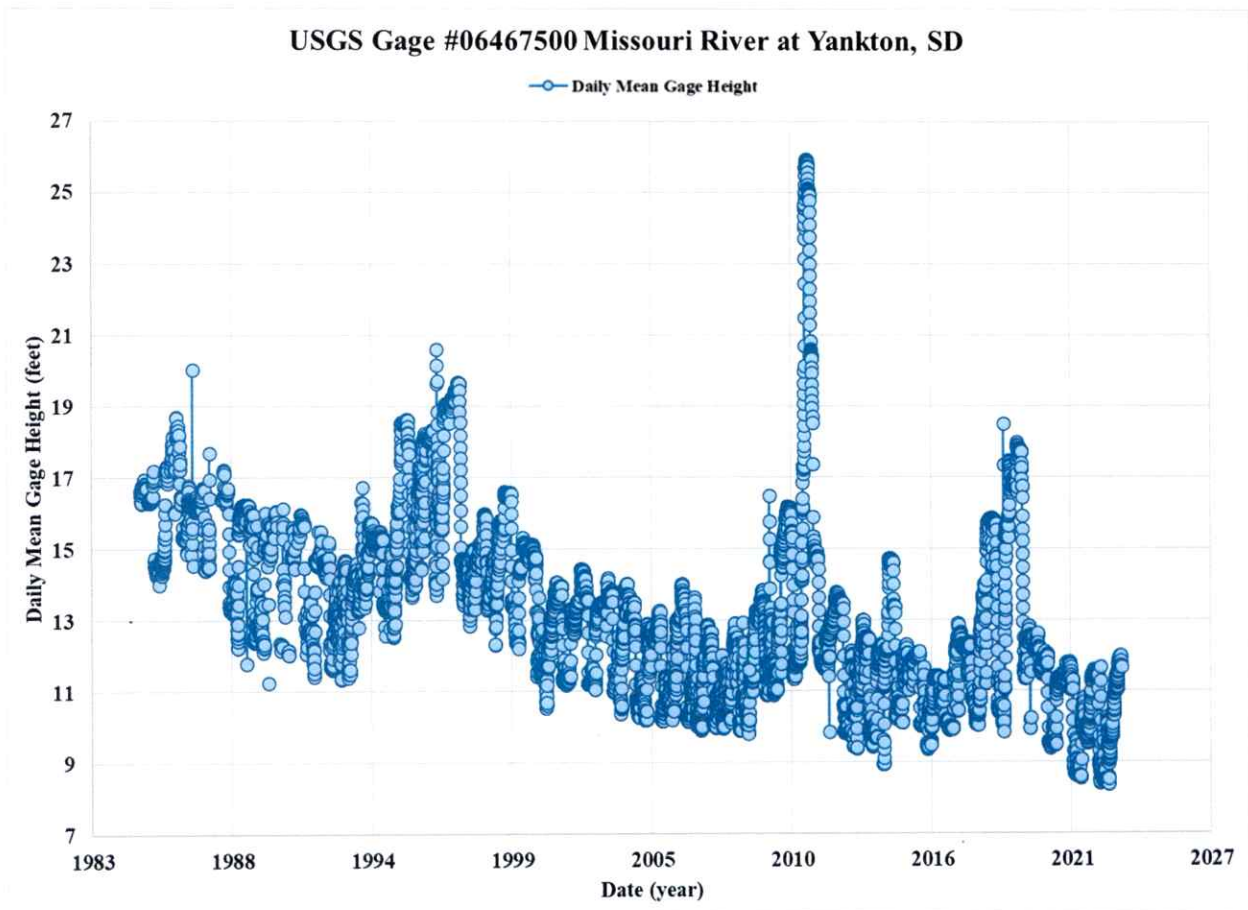


Figure 5. Hydrograph for USGS Stream Gage #06467500 Missouri River at Yankton, SD from 1985 to 2023 (USGS, 2023)

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 651 water rights/permits authorized to appropriate water from the Missouri: Elk Point aquifer, plus one pending future use application (Water Rights, 2023c). The closest water right/permit to the proposed diversion point is Water Right No. 7749-3, which is held by Kirk Sorensen. The diversion point for Water Right No. 7749-3 is located approximately 0.4 miles northeast of the proposed diversion point for this application (Figure 6) (Table 6) (Water Rights, 2023c).

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Missouri: Elk Point aquifer, with the closest domestic well on file (not held by the applicant) located approximately 0.4 miles southwest of the proposed diversion point (Water Rights, 2023d). There could potentially be other domestic wells completed into the Missouri: Elk Point aquifer near the proposed diversion point that are not on file with the DANR-Water Rights Program. The location of the domestic wells in the well completion report database maintained by the Water Rights Program is based on the location on the report listed by the driller at the time of well completion.



Figure 6. Location of the proposed diversion point for Water Permit Application No. 8799-3 and the Missouri: Elk Point aquifer water rights/permits within approximately one mile (Water Rights, 2023c and 2023d)

Table 6. Water rights/permits authorized to withdraw water from the Missouri: Elk Point aquifer within approximately one mile of the proposed diversion point, as shown in Figure 6 (Water Rights, 2023c)

Permit No.	Name	Status	Use	Authorized Acres if IRR	Authorized Diversion Rate (cfs)
1007-3	Nels Jensen	LC	IRR	107	1.5
3611-3	William Fargo	LC	IRR	130	1.86
3628-3	Brian Huth	LC	IRR	130	1.9
6458-3	Paul Young	LC	IRR	262	3.74
6767-3	Freeburg Limited Partnership	LC	IRR	121	1.56
7437-3	Glenn Nelson	LC	IRR	132	1.78
7622-3	Kyle Jensen	LC	IRR	136	1.89
7663-3	Paul Young	LC	IRR	114	1.45
7749-3	Kirk Sorensen	LC	IRR	139	1.61
LC: Licensed Water Right; PE: Water Permit; IRR: Irrigation					

The Missouri: Elk Point aquifer ranges from confined to unconfined aquifer conditions, but is primarily under unconfined conditions (Niehus, 1994 and 1997). Based on the water well completion reports on file for nearby wells completed into the aquifer, and the lithologic logs on file for nearby observation wells, the Missouri: Elk Point aquifer is expected to be unconfined near the proposed diversion point (SDGS, 2023; Water Rights, 2023d). 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. Examination of the hydrographs for observation wells completed into the Missouri: Elk Point aquifer show no signs of being significantly impacted by drawdown caused by pumping, despite usually being located within a mile of several high-yield wells (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) (Water Rights, 2023b and 2023c).

Within one mile of the proposed diversion point, the Missouri: Elk Point aquifer has a saturated aquifer thickness of approximately 70 to 100 feet (Water Rights, 2023d). This would generally allow for enough thickness for a pump to be placed 20 feet below the top of the aquifer, which is required for the well to be considered adequate under ARSD 74:02:04:20(6). Any drawdown as a result of the proposed diversion for this application is not expected to unlawfully impair nearby adequate wells. In Clay, Union, and Yankton Counties, there are no substantiated complaints on file with the DANR-Water Rights Program regarding well interference for adequate wells completed into the Missouri: Elk Point aquifer (Water Rights, 2023e).

When considering the saturated thickness of the Missouri: Elk Point aquifer near the proposed diversion point, the generally unconfined nature of the aquifer, and the lack of well interference complaints for adequate wells completed into the Missouri: Elk Point aquifer, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment to 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 to existing users with adequate wells.

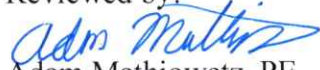
CONCLUSIONS:

1. Water Permit Application No. 8799-3 proposes to divert water at a maximum instantaneous diversion rate of 2.11 cfs from one well to be completed into the Missouri: Elk Point aquifer (100 feet deep) for the irrigation of 175 acres. The site of interest is located in Clay County approximately four miles south of Gayville, SD.
2. Based on observation well data and the hydrologic budget, there is a reasonable probability that unappropriated water is available from the Missouri: Elk Point aquifer to supply the proposed appropriation.
3. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8799-3 will not unlawfully impair adequate wells for existing water rights/permits and domestic users.



Nakaila Steen
Natural Resources Engineer II
SD DANR - Water Rights Program

Reviewed by:



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

References

- Arguez, A., I. Durre, S. Applequist, R. Vose, M. Squires, X. Yin, R. Heim, and T. Owen, 2020. NOAA's U.S. Climate Normals (1991-2020). Annual Precipitation Normals for Station USW00014943 Sioux City Airport, Iowa. NOAA National Center's for Environmental Information. Accessed August 29, 2022.
- Condley, J. and Lamkey, N. 2022. Investigation of Induced River Recharge in the Lewis and Clark Regional Water System Wellfield. Open-File Report 97-UR. SD DANR-Geological Survey. Vermillion, South Dakota.
- Drinking Water Program, 2023. Drinking Water System Information. SD DANR – Drinking Water Program Online Database. Accessed October 17, 2023.
<<http://danr.sd.gov/des/dw/sysinfomap.aspx>>
- Elliott, C.M., and Jacobson, R.B. 2022. Sixty years of channel adjustments to dams in the two segments of the Missouri National Recreational River, South Dakota and Nebraska. U.S. Geological Survey Scientific Investigations. Report 2022–5087. 75 p.
- Fahrenbach, M.D., Steece, F.V., Sawyer, J.F., McCormick, K.A., McGillivray, G.L., Schulz, L.D., and Redden, J.A. 2010. South Dakota Stratigraphic Correlation Chart. Oil and Gas Investigations 3. SD DANR-Geological Survey, Vermillion, SD.
- Farmer, J., 2018a. Report on Water Permit Application No. 8322-3: Shawn Guthmiller. SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Farmer, J., 2018b. Report on Water Permit Application No. 8364-3: Daniel and Scott Hanson. SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Farmer, J., 2021. Report on Water Permit Application No. 8503-3: Sorensen Family Farm, LLC. SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Hedges, L.S., Allen, J., Holly, D.E., 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge; United States Army Corps of Engineers Contract DACW 45-80-C-0185.
- 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.
- Mathiowetz, A.W., 2022. Report on Future Use Permit Application No. 8614-3: Lewis & Clark Regional Water System. SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Mathiowetz, A.W., 2023. Report on Future Use Permit Application No. 8754-3: Lewis & Clark Regional Water System. SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Niehus, C.A., 1994. Water Resources of Lincoln and Union Counties, South Dakota. U.S. Geological Survey Water-Resources Investigations Report 93-4195. U.S. Geological Survey. Vermillion, SD.
- Niehus, C.A., 1997. Major Aquifers in Lincoln and Union Counties, South Dakota. U.S. Geological Survey - Information Pamphlet 49. U.S. Geological Survey. Vermillion, SD.
- NOAA, 1982. Evaporation Atlas for the Contiguous 48 United State. NOAA Technical Report NWS 33.
- SDGS, 2023. South Dakota Geological Survey Lithologic Logs Database. Accessed October 17, 2023. <http://cf.sddanr.net/lithdb/>.
- Stephens, J.C., 1967. Geology and Water Resources of Clay County, South Dakota, Part II. Water Resources. South Dakota DANR-Geological Survey Bulletin 19, Vermillion, SD.
- Stonesifer, J.R., 2013. Water Availability of the Missouri: Elk Point Aquifer. SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.
- USGS, 2023. USGS Surface-Water Daily Statistics for the Nation, Stream Gage #06467500, Missouri River at Yankton, SD. Accessed October 16, 2023. https://waterdata.usgs.gov/nwis/uv?site_no=06467500&legacy=1
- Water Rights, 2023a. "1979-2022 Irrigation Summaries by Aquifer", SD DANR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights, 2023b. Observation Well Data, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2023c. Water Right/Permit Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2023d. Well Completion Reports, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2023e. County Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2023f. "2003-2022 Non-Irrigation Yearly Reports", SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.



**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 NEWSPAPERS RIGHT AWAY.**

November 8, 2023

Calvin Hanson
31524 452nd Ave
Meckling SD 57069

Dear Mr. Hanson:

Water Permit Application No. 8799-3 for irrigation use have been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Plain Talk printed in Vermillion SD (Ph # 605 624-2695) and the Daily Press & Dakotan printed in Yankton SD (Ph # 605 665-7811). 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 publishers have been instructed to publish your notice. The newspapers have 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,

Rachel Rodriguez

Rachel Rodriguez
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.

Instruction to Newspaper - Publish the Notice on November 17, 2023. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 8799-3 to Appropriate Water

Notice is given that Calvin Hanson, 31524 452nd Avenue, Meckling SD 57069 has filed an application for a water permit to appropriate 2.11 cubic feet of water per second from one well to be completed into the Missouri: Elk Point Aquifer (approximately 100 feet deep) located in the SE 1/4 NW 1/4 Section 31 for irrigation of 175 acres located in the S 1/2 SW 1/4 Section 30; NW 1/4 Section 31; all in T93N-R53W. This site is located approximately 4 miles south of Gayville SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8799-3 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 November 29, 2023.

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 November 29, 2023.

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_

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Wednesday, November 8, 2023 8:47 AM
To: Kelly Kronaizl
Subject: 8799-3 Calvin Hanson - Public Notice
Attachments: 8799-3 public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on November 17, 2023 in the Plain Talk and Daily Press & Dakotan.

Calvin Hanson, 31524 452nd Avenue, Meckling SD 57069, (605-661-6393) 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 Ave, Pierre SD 57501.

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

Thank you,

Rachel Rodriguez
DANR | Program Assistant
Rachel.Rodriguez@state.sd.us



AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RECEIVED

DEC 06 2023

OFFICE OF
WATER

CALVIN HANSON
31524 452ND AVE
MECKLING SD 57069

STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

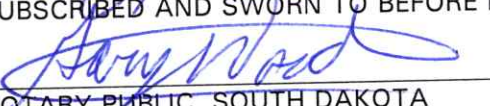
KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
NOTICE OF APPLICATION NO.

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 17th DAY OF November, 2023
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$39.68 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: 11/17/2023

FILED ON: 12/04/2023


SUBSCRIBED AND SWORN TO BEFORE ME THIS 4th DAY OF December, 2023


NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION 03/06/2029



Notice is given that Calvin Hanson, 31524 452nd Avenue, Meckling SD 57069 has filed an application for a water permit to appropriate 2.11 cubic feet of water per second from one well to be completed into the Missouri: Elk Point Aquifer (approximately 100 feet deep) located in the SE 1/4 NW 1/4 Section 31 for irrigation of 175 acres located in the S 1/2 SW 1/4 Section 30; NW 1/4 Section 31; all in T93N-R53W. This site is located approximately 4 miles south of Gayville SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8799-3 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 Engineers 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 November 29, 2023.

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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 \$39.68 and can be viewed free of charge at www.sdpublicnotices.com

Published November 17, 2023.

AFFIDAVIT OF PUBLICATION

PLAIN TALK

CALVIN HANSON
31524 452ND AVE
MECKLING SD 57069

RECEIVED

NOV 20 2023

OFFICE OF
WATER

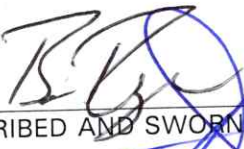
STATE OF SOUTH DAKOTA
COUNTY OF CLAY

BETH RYE, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE ADVERTISING DIRECTOR OF YANKTON
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IN THE CITY OF VERMILLION, SAID COUNTY AND STATE, AND ONE OF
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HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 11/17/2023

FILED ON: 11/17/2023


SUBSCRIBED AND SWORN TO BEFORE ME THIS 17th DAY OF November, 2023

NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 07/15/2028



Notice is given that Calvin Hanson, 31524 452nd Avenue, Meckling SD 57069 has filed an application for a water permit to appropriate 2.11 cubic feet of water per second from one well to be completed into the Missouri: Elk Point Aquifer (approximately 100 feet deep) located in the SE 1/4 NW 1/4 Section 31 for irrigation of 175 acres located in the S 1/2 SW 1/4 Section 30; NW 1/4 Section 31; all in T93N-R53W. This site is located approximately 4 miles south of Gayville SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8799-3 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 Engineers 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.

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Published once at the total approximate cost of \$39.68 and can be viewed free of charge at www.sdpublicnotices.com

Published November 17, 2023.

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Wednesday, November 8, 2023 8:52 AM
To: Calvin Hanson
Subject: 8799-3 Calvin Hanson - Public Notice
Attachments: 8799-3 Rec.pdf; 8799-3 Ltr.pdf; PublicNotice.pdf

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

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

Thank you,

Rachel Rodriguez
DANR | Program Assistant
Rachel.Rodriguez@state.sd.us





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JAN 02 2024

Calvin Hanson
31524 452nd Avenue
Meckling SD 57069

Dear Mr. Hanson:

Enclosed is Water Permit No. 8799-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

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

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

Sincerely,

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

enclosures



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

**Affidavit of Public Notice
Posting on DANR Website**

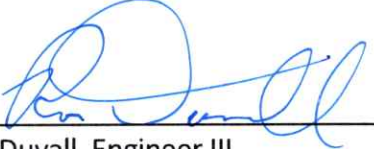
Pursuant to SDCL § 46-2A-4, public notice of the following application was posted on the DANR web site at <https://danr.sd.gov/public>. The posted public notice is the same notice as published in the pertinent newspaper(s) and a copy of the public notice is maintained in the application file. If the application is contested, the posting is moved to the DANR contested case website at <https://danr.sd.gov/public/ContestedCase.aspx> until final action is taken on the application pursuant to SDCL § 46-2A-4.

Application No.: 8799-3

Name of Applicant: Calvin Hanson

Date of Posting: 11/13/2023

Date of Removal: 1/2/2024



Ron Duvall, Engineer III

1/2/2024

Date

Subscribed and sworn to before me, a notary public, this 2nd day of January, 2024.



Notary Public - South Dakota
My commission expires:

(SEAL) Rachel Rodriguez
My Commission Expires
May 16, 2029





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

April 19, 2024

8799-3

Calvin Hanson
31524 452nd Ave
Meckling SD 57069

Dear Hanson:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that you are completed with your water use system.

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

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

Sincerely,

Amanda Dewell
Water Rights Program
(605) 773-3352
email: Amanda.Dewell@state.sd.us

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

Date 4/16/24

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

FROM: Colvin Hanson
(name)

31524 452nd Ave
(address)

Meckling SD 57069
(city, state, zip)

(phone)

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

Water Permit No. 8799-3 states that the water use system is to be constructed by

6-1-24 (date), and water is to be put to beneficial use by 6-1-24 (date).

The water use system was completed on 4-10-24 (date).

Applying the water to beneficial use was completed on 4-10-24 (date).

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

Colvin Hanson
(signature)



RECEIVED

APR 19 2024

OFFICE OF
WATER

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8799-3

I have this day, July 30, 2024, made a thorough examination of the water use systems owned by Calvin Hanson, 31524 452nd Avenue, Meckling, SD 57069, holder of Permit No. 8799-3, bearing the priority date of September 28, 2023. This permit authorizes the diversion of 2.11 cu. ft. per second of the waters of groundwater (Missouri: Elk Point Aquifer) authorizing the irrigation of 175 acres located in Clay County.

Inspection contacts: Calvin Hanson

A. Works used to divert the water:

Well Information

- 1) Well Drilling Firm: Christensen Well & Irrigation
- 2) No. of Wells: 1
- 3) Depth(s): 110 feet
- 4) Well log is available: Yes

Casing:

- 1) Diameter: 16 inches
- 2) Length: 70 feet
- 3) Type: Plastic

Screen:

- 1) Diameter: 16 inches
- 2) Length: 40 feet
- 3) Type: PVC
- 4) Static water level: 22 feet

Pump:

- 1) Make: Layne Bowler
- 2) Model: 12RML-B
- 3) Capacity: 950 GPM

Motor:

- 1) Make: US Motors
- 2) Model No.: HF70
- 3) Horsepower rating: 60 hp

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

- 1) Type: Aluminum Size: 8 inches
- 2) Type: PVC Size: 8 inches

Length: 15 feet (well to the south pivot)

Length: 1,530 feet (well to the north pivot)

C. Works used to apply water to beneficial use:

Center Pivot: (North Pivot)

- 1) Make: T&L
- 2) Overall length: 1,245 feet
- 3) Number of towers: 8
- 4) End gun: Yes Range: 110 feet
- 5) Capacity: 950 GPM

Center Pivot: (South Pivot)

- 1) Make: T&L
- 2) Overall length: 1,151 feet
- 3) Number of towers: 7
- 4) End gun: Yes Range: 112 feet
- 5) Capacity: 950 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: New in 2024
3) Exceptions to compliance are: None

E. Condition and Location:

- 1) The system is in good condition with the point(s) of diversion located as follows:
The well is 1,480 feet south and 1,390 feet east of the northwest corner of Section 31-T93N-R53W (Latitude 42.83312, Longitude -97.15530– SE1/4 of the NW1/4).
2) The works are capable of diverting and conveying to the places of use 2.11 cu. ft. per second of water from the well which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows: All in

<u>Section 30-T93N-R52W</u>	
<u>SW1/4SW1/4</u>	<u>31 acres</u>
<u>SE1/4SW1/4</u>	<u>31 acres</u>

<u>Section 31-T93N-R52W</u>	
<u>NW1/4NW1/4</u>	<u>17 acres</u>
<u>NE1/4NW1/4</u>	<u>37 acres</u>
<u>SW1/4NW1/4</u>	<u>26 acres</u>
<u>SE1/4NW1/4</u>	<u>33 acres</u>

comprising a total of 175 acres of land and the license should be issued for 2.11 cfs.

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

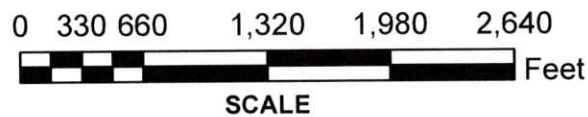
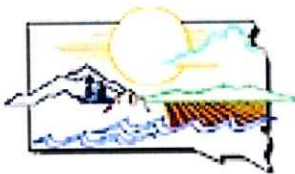
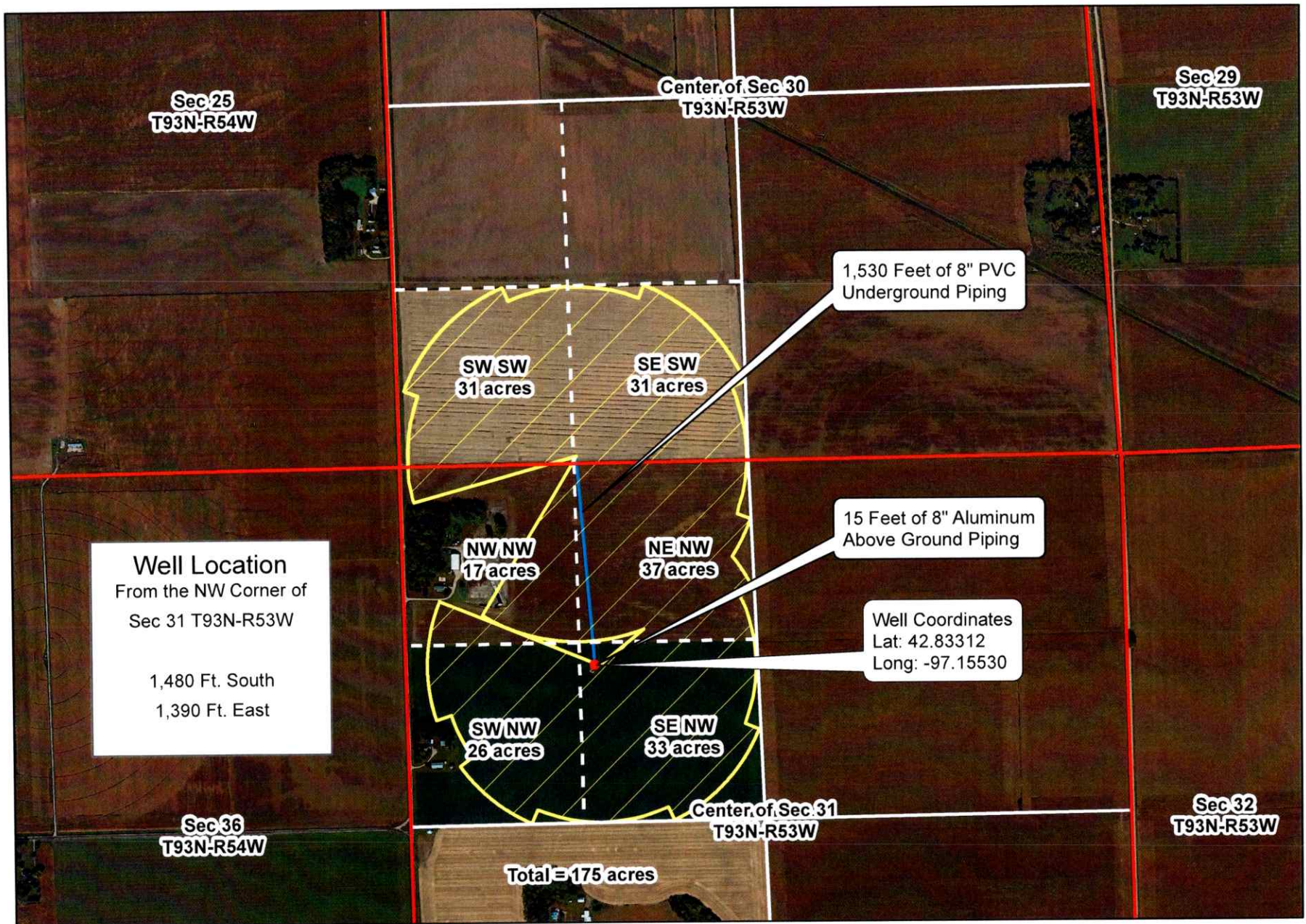
F. Comments or other permit(s) associated with the project: None.

Keith DeJong

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

Date report completed: July 31, 2024

Water Permit No. 8799-3



Keith DeJong
Keith DeJong, PE Ret.
Staff Engineer
July 31, 2024



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

AUG 12 2024

8799-3

Calvin Hanson
31524 452nd Ave
Meckling SD 57069

Dear Mr. Hanson:

Enclosed is Water License No. 8799-3. 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

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8799-3

(1) Calvin Hanson, 31524 452nd Ave, Meckling SD 57069, made Application No. 8799-3, September 28, 2023, for a water permit to divert 2.11 cubic feet of water per second from groundwater, one well (Missouri: Elk Point Aquifer), Clay County, South Dakota for irrigation purposes. Permit No. 8799-3, with a priority date of September 28, 2023, was approved November 29, 2023, and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before November 29, 2028, and for the application to beneficial use of water on or before November 29, 2032.

The permit holder submitted a Notice of Completion of Works and Application of Water to Beneficial Use form on April 16, 2024. The Notice stated the diversion system was completed and the water was placed to beneficial use on April 10, 2024.

(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 2.11 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 1,480 ft S & 1,390 ft E of the NW corner Section 31, T93N, R53W (SE $\frac{1}{4}$ NW $\frac{1}{4}$)
(Latitude 42.83312 & Longitude -97.15530)

(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: April 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: *all in T93N-R53W*

Section 30		Section 31	
SW $\frac{1}{4}$ SW $\frac{1}{4}$	31 acres	NE $\frac{1}{4}$ NW $\frac{1}{4}$	37 acres
SE $\frac{1}{4}$ SW $\frac{1}{4}$	31 acres	NW $\frac{1}{4}$ NW $\frac{1}{4}$	17 acres
		SW $\frac{1}{4}$ NW $\frac{1}{4}$	26 acres
		SE $\frac{1}{4}$ NW $\frac{1}{4}$	33 acres

TOTAL: 175 acres

(5) Pursuant to South Dakota Water Law 46-5-30.1 Calvin Hanson, the holder and/or owner of Water Right No. 8799-3 is issued a license to appropriate water, the right to use 2.11 cubic feet of water per second from groundwater, one well (Missouri: Elk Point Aquifer), with a priority date of September 28, 2023, 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. 8799-3 and subject to the following qualifications:

1. The well approved under Water Permit No. 8799-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals 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.

continued

2. The well authorized by Permit No. 8799-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well causing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *(The well was drilled in 2023 by Christensen Well & Irrigation. A copy of the well completion report is on file with the Water Rights Program.)*
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

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

AUG 12 2024
date

