

WATER PERMIT NO. 8727-3

Name of Applicant: TR Golf, LLC

Address: 150 S Oak Tree Ln Phone: 712-253-9124

Amount of Water Claimed: No additional Total Acres: 10 additional

Source of Water Supply: ground water, 1 existing well

Water to be used for: irrigation County: Union

Type of Waste Disposal System:

Location: East side of Dakota Dunes

PRIORITY Date Received: February 27, 2023 Application/License Fee: \$700

Corrected Application Received: XX Period of Annual Use: April - October

Remarks: Change use and irrigation 10 additional acres on Permit No. 2011-3

Diversion Point: NW 1/4 NE 1/4 Sec26, T98N-
R48W

Land to be Irrigated: N 1/2 NW 1/4, SE 1/4 NW
1/4, NW 1/4 NE 1/4 Sec 26, Gov't Lot 3 Sec 23; all
in T89N- R48W

Depth of Well: 108

Well Driller:

Remarks:

Type of Map: Aerial

Reviewed and the Number Assigned on: March 3, 2023

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 8727-3**

Date of first receipt of application February 27, 2023.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8727-3 to TR Golf LLC, c/o Jay Layman, 150 S Oak Tree Ln, Dakota Dunes SD 57049 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. 8727-3 authorizes irrigation of an additional 10 acres from wells authorized by Water Right No. 2011-3 and Water Permit No. 8510-3. Water Right No. 2011-3 authorizes 1.31 cubic feet of water per second (cfs) from one well completed in the Missouri Elk Point Aquifer (108 feet deep) located in the Govt. Lot 1 for irrigation of 95 acres located in the N 1/2 NW 1/4, SE 1/4 NW 1/4, NW 1/4 NE 1/4; all in Section 26-T89N-R48W. Water Permit No. 8510-3 authorizes 1.11 cfs from one well completed in the Dakota aquifer located in Govt. Lot 1 Section 26 to irrigate 30 acres in the area described above, also known as Govt. Lots 1 and 2, NW 1/4 NW 1/4 Section 26, and in Govt. Lot 3 Section 23; all in T89N-R48W. This permit authorizes irrigation of an additional 10 acres located in Govt. Lot 3 Section 23-T89N-R48W with no increase in the 1.31 cfs diversion rate authorized by Water Right No. 2011-3 or the 1.11 cfs diversion rate authorized by Permit No. 8510-3. In addition, this permit also will authorize irrigation of the entire 105 acres area as described from either the Dakota aquifer well covered by Permit No. 8510-3 or the Missouri Elk Point aquifer well covered by Water Right No. 2011-3. This permit will also supplement filling two borrow pits (ponds) located in Govt. Lot 3 Section 23 and Govt. Lot 1 Section 26; all in T89N-R48W authorized by Water Permit No. 8559-3. This site is located east of Dakota Dunes.
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- October 31.
3. The date from which applicant may claim right is February 27, 2023.
4. The date of approval of Permit No. 8727-3 is June 5, 2023.
5. One-fifth of the construction is to be completed on or before December 5, 2025.
6. All construction is to be completed on or before June 5, 2028.
7. Water is to be put to beneficial use on or before June 5, 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 wells approved under Water Permit Nos. 8727-3 and 8510-3 and Water Right No. 2011-3 are located near domestic wells and other wells which may obtain water from the same aquifers. 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. This Permit is approved subject to the irrigation water use questionnaire being submitted each year. Water use from the Dakota aquifer and the Missouri: Elk Point aquifer shall be reported separately under this Permit and Water Permit Nos. 8354-3, 8510-3, 8560-3, and Water Right No. 2011-3.

WATER MANAGEMENT BOARD

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

JUN 23 2023
date



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

PAID

FEB 27 2023

Ck# 2914

Rec't#

RECEIVED

FEB 27 2023

OFFICE OF
WATER

Mail to: SD DANR, Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8727-3</u> Hydrologic Unit <u>10170101</u> Basin <u>Missouri River</u> Newspaper <u>Dakota Dunes North Sioux City Times</u> (Thurs) 232-3539 <u>Press & Dakotan</u> 605-7811 (office use only)
---	---

Application for Permit to Appropriate Water for Irrigation

Type of Application: ☒ New ☐ Vested Right ☒ Amendment/Correction to Permit No. 2011-3
(Use predates Mar 2, 1955)

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)
Change use: to irrigate and fill ponds on 105 acres of NW 1/4 Gov't Lot 1 and 2 Section 26 and Gov't Lot 3 Section 23 all in T89N-R48W

1. Name to Appear on Irrigation Permit TR Golf LLC

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

Mailing Address 150 S. Oak Tree Ln Dakota Dunes SD 57049
(Address) (City) (State) (Zip Code)

Phone 605 232-3241 Mobile 712 253-9124 Email 2riversgce@gmail.com

2. Amount of water claimed 1.31 ^(no add'l) *CFS or **GPM ***AF Total Acreage 10 add'l AC
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable

3. Source of water supply 2-Wells (No. 2011-3-No. 8510-3)

4. Location of point of diversion 125' & 1000' S of the N 1/4 corner, Section 26-T89N-R48W
(example - 3 wells in SW1/4 NE1/4 section 12-T10N-R53W)
Gov't Lot 1 County Union

5. County or counties where water will be used Union

6. Annual period during which water is to be used April - October 3'

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
NE 1/4 NW 1/4	40	Gov't Lot 3 Section 23-T89N-R48W	10
NW 1/4 NW 1/4	30		
SE 1/4 NW 1/4	20		
NW 1/4 NE 1/4	5		

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

- Amendment to add 10 acres to be irrigated in Gov't Lot 3 Sect 23
- Permit use to also include filling of ponds within the 105 acres.

I, Jay D Layman MANAGER, the applicant, certify under 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 _____ Have test holes been drilled? ☐ Yes ☐ No Drilled by _____
(if yes, please provide copies of logs)

b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by _____

For either existing or proposed wells:

c) Well Depth (required) _____ 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. 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)

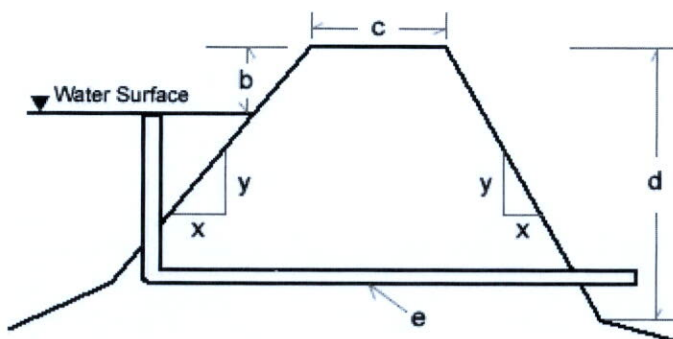
Upstream _____

Downstream _____

h) Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres





DRILLER'S LOG OF WELL

Location of Well: NORTHEAST, NORTHEAST, Section 26, Township 89N, Range 48W
 Well to be drilled for: Sioux City Post Club, Sioux City, Iowa
 Owner of land (if other than above): _____
 Date well drilling started 3-6-73 finished 8-6-73
 Purpose of well Irrigation
(domestic, irrigation, municipal, industrial, other)

Diameter			
Inches			
0 - 12'		CLAY	Ground Surface Elevation: _____ (If Available)
12 - 20 Feet		"Muck"	Kind and thickness of casing to be installed:
20 - 33		COARSE SAND	<u>Asbestos Cement</u>
33 - 42 Feet		Fine sand	<u>1" - 16" Diameter</u>
42 - 43		fine - log	Size of casing to be installed:
43 - 48 Feet		GRAVEL w/ Blue clay	<u>103'</u> feet of <u>16"</u> inches diameter
48 - 60		GRAVEL	_____ feet of _____ inches diameter
60 - 64 Feet		Blue clay	_____ feet of _____ inches diameter
64 - 70		GRAVEL	Type of Seal between casing sizes:
70 - 84 Feet		Blue clay	_____
84 - 108'		GRAVEL	_____
			Kind of perforated screen to be installed:
			Material <u>Asbestos Cement</u> (steel, wood, concrete, etc.)
			Size of Screen:
			Diameter <u>16"</u> inches
			Length <u>39'</u> feet
			Size openings _____ inches
			Depth below ground surface to which water rises
			in well <u>10'</u> feet.

RECEIVED
 AUG 20 1973
 STATE WATER RESOURCES COMM.
 PIERRE, SOUTH DAKOTA

2011-3

LOG OF WELL - SIOUX CITY BOAT CLUB

0-12'	CLAY
12-20'	MUCK
20-32'	COARSE SAND
32-42'	FINE SAND
42-43'	TREE LOG
43-48'	GRAVEL + BLUE CLAY
48-60'	GRAVEL
60-64'	BLUE CLAY
64-70'	GRAVEL
70-84'	BLUE CLAY
84-108'	GRAVEL

WATER BEARING MATERIAL

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2011-3

(1) WHEREAS, On the 23th day of August A. D. 19 73
the Sioux City Boat Club
 made Water Right Application No. 2011-3 for a permit to use 1.31 cubic feet per second of the water
 of groundwater (one well)
 County of Union State of South Dakota, for Irrigation
 purposes; and
 (2) WHEREAS, On the 14th day of November A. D. 19 73
 Permit No. 2011-3 with a date of priority of November 2, 1973
 was issued to said applicant 5 for the diversion of said water, and provided for the completion of construction of the water
 supply system therein described on or before the 14th day of November A. D. 19 74 and for the
 application to beneficial use of said water on or before the 14th day of November A. D. 19 75

Missouri: Elk Point

and:

(3) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota relating to completion of the construction of the water supply system and is entitled to divert 1.31 cubic feet per second of water for beneficial use and.

(4) WHEREAS, It is hereby certified that the applicant has complied with the provisions of the laws of the State of South Dakota relating to the application of water to beneficial use of the following extent.

to irrigate the following lands all in Section 26-T89N-R48W

<u>NE 1/4 NW 1/4</u>	<u>40 acres</u>
<u>NW 1/4 NW 1/4</u>	<u>30 "</u>
<u>SE 1/4 NW 1/4</u>	<u>20 "</u>
<u>NW 1/4 NE 1/4</u>	<u>5 "</u>
<u>TOTAL</u>	<u>95 acres</u>

**SOUTH DAKOTA
WATER PERMIT NO. 8559-3**

Date of first receipt of application October 25, 2021.

Date of return to applicant for corrections, amendments or changes October 26, 2021.

Date of receipt of corrected application November 8, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8559-3 to TR Golf LLC, 150 S Oak Tree Lane, Dakota Dunes SD 57049 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. 8559-3 appropriates 3 acre-feet of water annually at a maximum pump rate of 3.11 cubic feet of water per second (cfs) from the Big Sioux River located in Gov't Lot 3 Section 23 to fill two borrow pits (ponds) located in Gov't Lot 3 Section 23 and Gov't Lot 1 Section 26; all in T89N-R48W for recreational use on the golf course. This site is located on the east side of Dakota Dunes SD.
2. The water appropriated shall be used for the purpose of recreational use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: March 15 – November 15.
4. The date from which applicant may claim right is October 25, 2021.
5. The date of approval of Permit No. 8559-3 is January 24, 2022.
6. One-fifth of the construction is to be completed on or before July 24, 2024.
7. All construction is to be completed on or before January 24, 2027.
8. Water is to be put to beneficial use on or before January 24, 2031.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The pump intake in the Big Sioux River shall be constructed so that the intake velocities at the intake point do not exceed 0.50 feet per second and the intake screen is 1/4 inch diameter or 3/16 inch slotted stainless steel or corrosion resistant screen to avoid entrainment or impinging fish.
2. The permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Big Sioux River.
3. Water Permit No. 8559-3 authorizes a total annual diversion of up to 3.0 acre-feet of water.

WATER MANAGEMENT BOARD

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

MAR 01 2022
date



8559-3



RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date February 27, 2023

RECEIVED OF TR Golf LLC 150 S Oak Tree Ln., Dakota Dunes SD 57049

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

Fee for Application for Permit No. <u>8727-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>500.00</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>8727-3</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>700.00</u>

By Eric Gronlund
Chief Engineer
vm



531676484

ANNUAL REPORT

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

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

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

Filing Fee: \$50

Total Fee: \$50

2023
FILING YEAR

1. Business ID and Name:

DL175321
BUSINESS ID

TR GOLF, LLC
BUSINESS NAME

2. The jurisdiction under whose law it is formed **South Dakota**

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

Actual Street Address

**300 CENTENNIAL DRIVE, SUITE 200
NORTH SIOUX CITY, SD 57049**

Mailing Address

**300 CENTENNIAL DRIVE, SUITE 200
NORTH SIOUX CITY, SD 57049**

4. The South Dakota Registered Agent's Name:

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

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

Name **Collin Jay Gingerich**

Actual Street Address in this State

**300 CENTENNIAL DRIVE SUITE 100
NORTH SIOUX CITY, SD 57049**

Mailing Address in this State

**300 CENTENNIAL DRIVE SUITE 100
NORTH SIOUX CITY, SD 57049**

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

Name	Address
Bart J Connelly	300 Centennial Drive, Suite 200, North Sioux City, SD 57049
Jay D Layman	300 Centennial Drive, Suite 200, North Sioux City, SD 57049
Jan Vontobel	300 Centennial Drive, Suite 200, North Sioux City, SD 57049

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

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



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

File No. 8727-3

WATER RIGHTS PROGRAM -- FILE DOCUMENTATION

NAME: TR Golf, LLC (Rodd Slater)

ADDRESS: 150 S. Oak Ln., Dakota Dunes SD 57049

DATE: March 21, 2023

PHONE: 712-253-9124

RE: Water Permit Application No. 8727-3

COMMENTS:

I called the mobile number provided on Application No. 8727-3 and spoke to Rodd Slater regarding all the existing permits/rights held by the golf course in reference to what water sources may be used to irrigate the 10 additional acres and supplement filling the golf course water ponds. Water Permit No. 8354-3 was for an additional Missouri Elk Point well in the NW1/4 NW1/4 section 26 to irrigate 30 acres of the golf course. Later, Permit No. 8510-3 was approved to supplement the well authorized by No. 8354-3 and to irrigate the same acreage. Mr. Slater indicated that the Dakota well authorized by No. 8510-3 has replaced the well authorized by No. 8354-3. Rather than have the Dakota well authorize irrigation of only 30 acres of the 105 acres, the preference is that either well (Missouri Elk Point well covered by Water Right No. 2011-3 and Dakota well covered by Permit No. 8510-3) be able to be used to irrigate the entire golf course and supplement water in the ponds.

RECOMMENDED ACTION:

Add the Dakota well to Application No. 8727-3 to allow irrigation of the entire golf course including the 10 additional acres and adding water to the ponds. If approved, either well (No. 2011-3 and No. 8510-3) will be able to be used to irrigate up to 105 acres and be supplemental water sources for the ponds.

Ron Duvall, Water Rights Permitting Administrator
SD DANR, Water Rights Program



**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. 8727-3, TR Golf, LLC**

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. 8727-3, TR Golf, LLC, c/o Jay D Laymon, Manager, 150 S Oak Lane, Dakota Dunes SD 57049.

The Chief Engineer is recommending APPROVAL of Application No. 8727-3 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 wells approved under Water Permit Nos. 8727-3 and 8510-3 and Water Right No. 2011-3 are located near domestic wells and other wells which may obtain water from the same aquifers. 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. This Permit is approved subject to the irrigation water use questionnaire being submitted each year. Water use from the Dakota aquifer and the Missouri:Elk Point aquifer shall be reported separately under this Permit and Water Permit Nos. 8354-3, 8510-3, 8560-3, and Water Right No. 2011-3.

See report on application for additional information.

Eric Gronlund, Chief Engineer
April 18, 2023

Report to the Chief Engineer
On Water Permit Application No. 8727-3

TR Golf, LLC

April 21, 2023

Water Permit Application No. 8727-3 proposes to irrigate 10 acres from wells authorized Water Right No. 2011-3 and Water Permit No. 8510-3. Water Right No. 2011-3 authorizes a maximum instantaneous diversion rate of 1.31 cubic feet of water per second (cfs) from one well completed into the Missouri: Elk Point aquifer (108 feet deep) located in the Govt. Lot 1 for irrigation of 95 acres located in the N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$; all in Section 26-T89N-R48W.

Water Permit No. 8510-3 authorizes a maximum instantaneous diversion rate of 1.11 cfs from one well completed into the Dakota aquifer (290 feet deep) located in the Govt. Lot 1 of Section 26 for the irrigation of 30 acres in the area described above, also known as Govt. Lots 1 and 2, NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 26, and in Govt. Lot 3 of Section 23; all in T89N-R48W.

The application proposes to irrigate an additional 10 acres located in Govt. Lot 3 of Section 23-T89N-R48W with no increase in the 1.31 cfs diversion rate authorized by Water Right No. 2011-3 or the 1.11 cfs diversion rate authorized by Water Permit No. 8510-3. In addition, this application will authorize the irrigation of the entire 105 acres as described from either the Dakota aquifer well covered by Water Permit No. 8510-3 or the Missouri: Elk Point aquifer well covered by Water Right No. 2011-3.

This application will supplement filling two borrow pits (ponds) located in Govt. Lot 3 of Section 23 and Govt. Lot 1 of Section 26; all in T89N-R48W authorized by Water Permit No. 8559-3. The site of interest is located in Union County east of Dakota Dunes.

AQUIFER: Dakota (DKOT) and Missouri: Elk Point (M: EP)

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 Dakota and Missouri: Elk Point aquifers.

WATER AVAILABILITY:

Water Permit Application No. 8727-3 proposes to appropriate water from the Dakota and Missouri: Elk Point aquifers. 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; though, the Dakota aquifer is older than and stratigraphically lower than the Greenhorn Formation. Additionally, 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 Dakota and Missouri: Elk Point aquifers must be considered.

DAKOTA AQUIFER

DAKOTA AQUIFER - HYDROGEOLOGY:

The Dakota Formation is defined as the first relatively continuous sandstone below the Greenhorn Limestone, and it extends downward to the top of the Skull Creek Shale in western and central South Dakota (Schoon, 1971). In eastern South Dakota, the Skull Creek Shale is not continuous and when absent, the Dakota Formation directly overlies Precambrian bedrock or the Inyan Kara Group (Schoon, 1971). In western South Dakota, a stratigraphically equivalent formation to the Dakota Formation is the Newcastle Formation, which has outcrops in the Black Hills (Bredehoeft, et al., 1983). In South Dakota, the Dakota Formation has been subdivided into three units (Schoon, 1971). The upper unit consists of light brown to reddish-brown, fine to medium grained, friable sandstone, interbedded with gray to dark gray shale. Thin, discontinuous beds of lignite are present in the lower part of the upper unit. The middle unit consists of a gray silty clay with small siderite pellets disseminated throughout. The lower unit consists of medium to coarse grained sandstone (Schoon, 1971).

The Dakota aquifer is comprised of the saturated and permeable portions of the Dakota Formation and is primarily a confined bedrock aquifer throughout most of South Dakota (Schoon, 1971; Water Rights 2022b and 2022d). Schoon (1971) estimated the Dakota Formation underlies 66,500 square miles of South Dakota and has an average thickness of 150 feet. The amount of water stored in the Dakota aquifer can be estimated by assuming 15% porosity for the Dakota Formation (Schoon, 1971), multiplied by the average thickness (150 feet) and the areal extent (66,500 square miles or 42.5 million acres) of the aquifer to calculate approximately 960 million acre-feet of stored water in South Dakota.

In Lincoln and Union Counties, the average saturated thickness of the Dakota aquifer is approximately 216 feet, with a documented maximum aquifer thickness of approximately 423 feet (Niehus, 1997). The depth to Dakota aquifer materials ranges from approximately 53 to 558 feet below the ground surface, with an average depth to the top of aquifer approximately 281 feet below the ground surface (Niehus, 1997). The static water level in wells completed into the Dakota aquifer varies from approximately 12 to 372 feet below the ground surface, with an average static water level of approximately 155 feet below the ground surface (Niehus, 1997). In

Union County, Hedges and others (1982) estimated the areal extent of the Dakota aquifer to be approximately 452 square miles, or 289,280 acres, and the aquifer contains approximately 7,810,600 acre-feet of recoverable water in storage. The Dakota aquifer is generally under confined conditions and the direction of groundwater movement in the aquifer is generally to the south (Niehus, 1997).

A well completion report is on file for the existing well (authorized by Water Permit No. 8510-3) proposed to be used by Water Permit Application No. 8727-3 (Water Rights, 2023c and 2023d). The report lists “Top Soil” from 0 to 3 feet below the ground surface, “Grey Clay” from 3 to 17 feet, “Medium to Coarse Sand” from 17 to 106 feet, “Siltstone” from 106 to 135 feet, “Sandstone” from 135 to 194 feet, “Claystone/Siltstone Layers” from 194 to 254 feet, “Sandstone” from 254 to 280 feet, and “Claystone” from 280 to 290 feet below the ground surface (Water Rights, 2023d). The well was screened in siltstone and sandstone from 120 to 180 feet below the ground surface, and again in claystone, siltstone and sandstone from 240 feet to 280 feet below the ground surface (Water Rights, 2023d). The static water level was approximately 8 feet below the ground surface at the time of well completion (April 9, 2021). Based on the well completion report, the Dakota aquifer is confined at the existing well site (Water Rights, 2023d).

DAKOTA AQUIFER - 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 46 observation wells completed into the Dakota aquifer (Water Rights, 2023b). The two closest observation wells to the well the applicant proposes to use are UN-98A (approximately 4 miles northwest) and UN-77E (approximately 28 miles northwest (as shown in Figure 3) (Water Rights, 2023b). The hydrographs for these observation wells are displayed in Figures 1 and 2 (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. It is worth noting the hydrograph titles display DENR Water Rights Observation Well on the hydrographs when the titles should display DANR Water Rights Observation Well on the hydrographs.

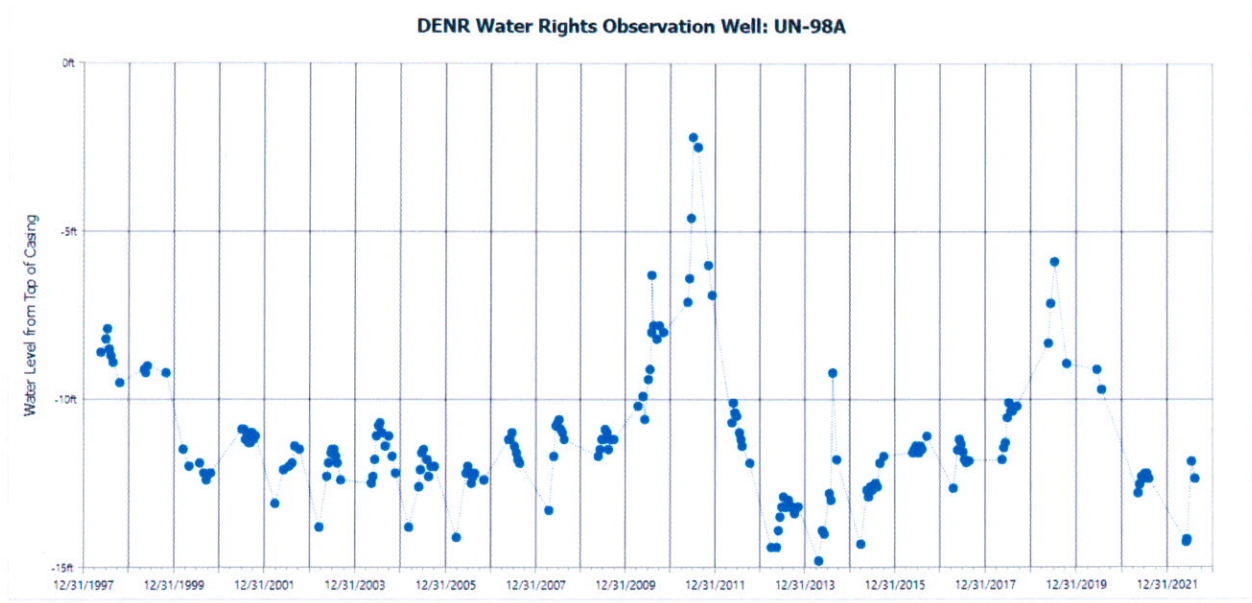


Figure 1. Hydrograph for observation well UN-98A (Water Rights, 2023b)

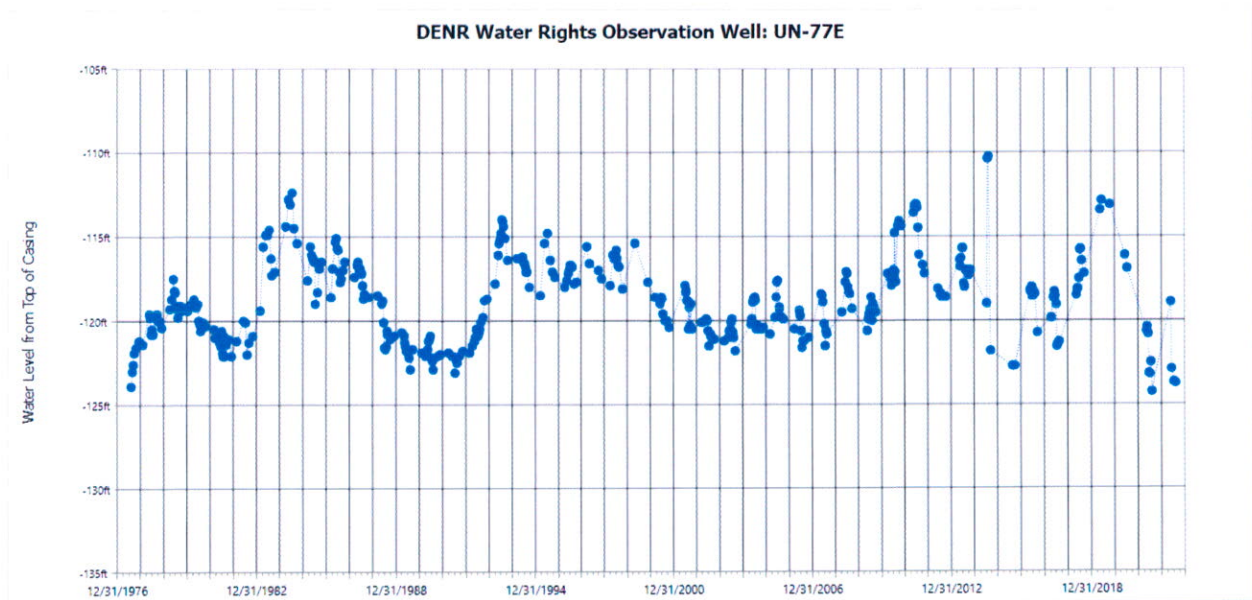


Figure 2. Hydrograph for observation well UN-77E (Water Rights, 2023b)

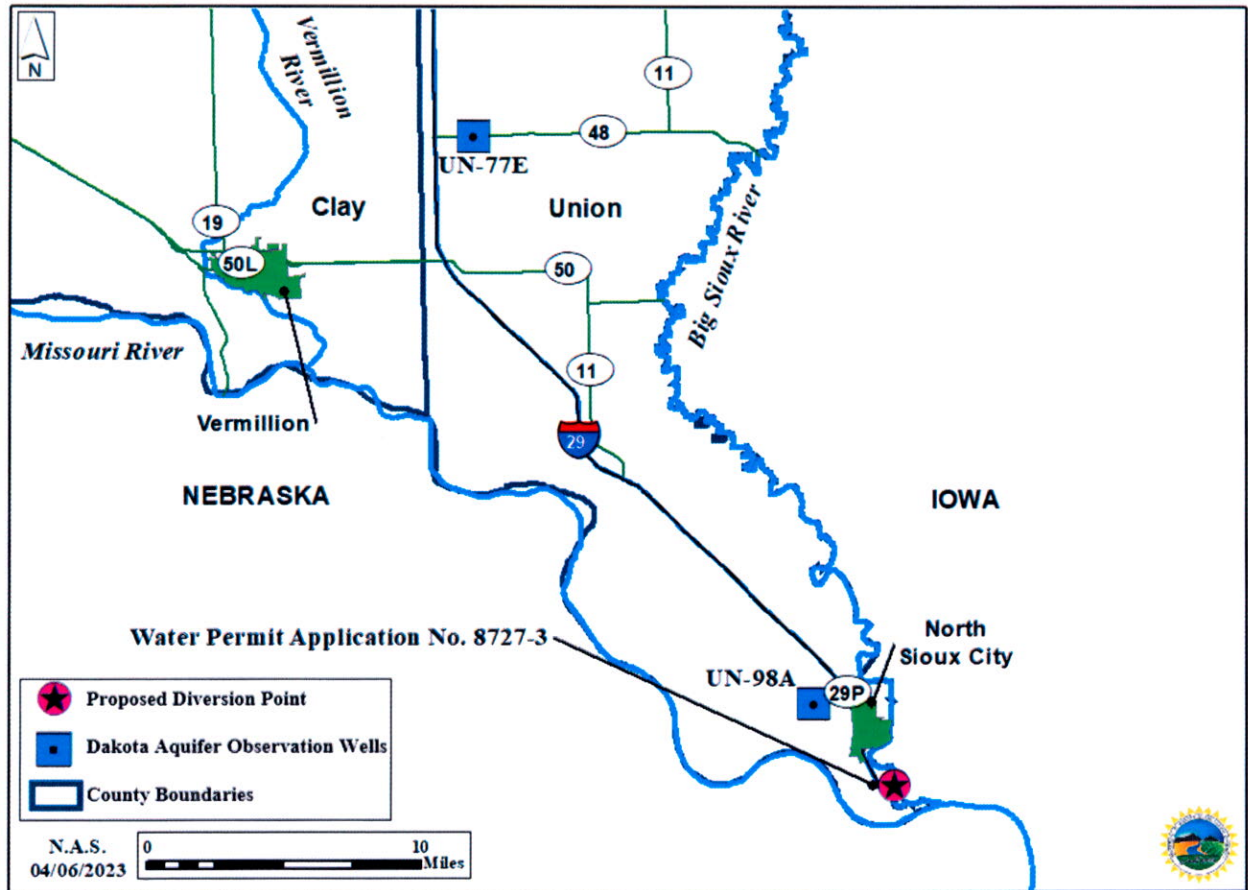


Figure 3. Location of the existing well completed into the Dakota aquifer proposed to be used by Water Permit Application No. 8727-3 with the Dakota aquifer observation wells within approximately 30 miles (Water Rights, 2023b and 2023c)

The hydrographs for the observation wells shown in Figures 1 and 2 display generally stable water levels over their respective periods of record (Water Rights, 2023b). When comparing the hydrographs for these two observation wells to hydrographs for other observations wells completed into the Dakota aquifer, some display slightly downward trending water levels over their respective periods of record (Water Rights, 2023b).

While the overall trend in the historic static water level measurements in the Dakota aquifer observation wells is generally slightly downward, observation well ED-85A (approximately 231 miles northwest of the existing well) completed into the Dakota aquifer has recorded a trend that has been stable to slightly increasing from 1991 to 2017 (Figure 4) (Water Rights, 2023b). An aquifer pumping test at the well was the cause for the drawdown in hydraulic head that occurred in 2018 (Figure 4) (Water Rights, 2023b).

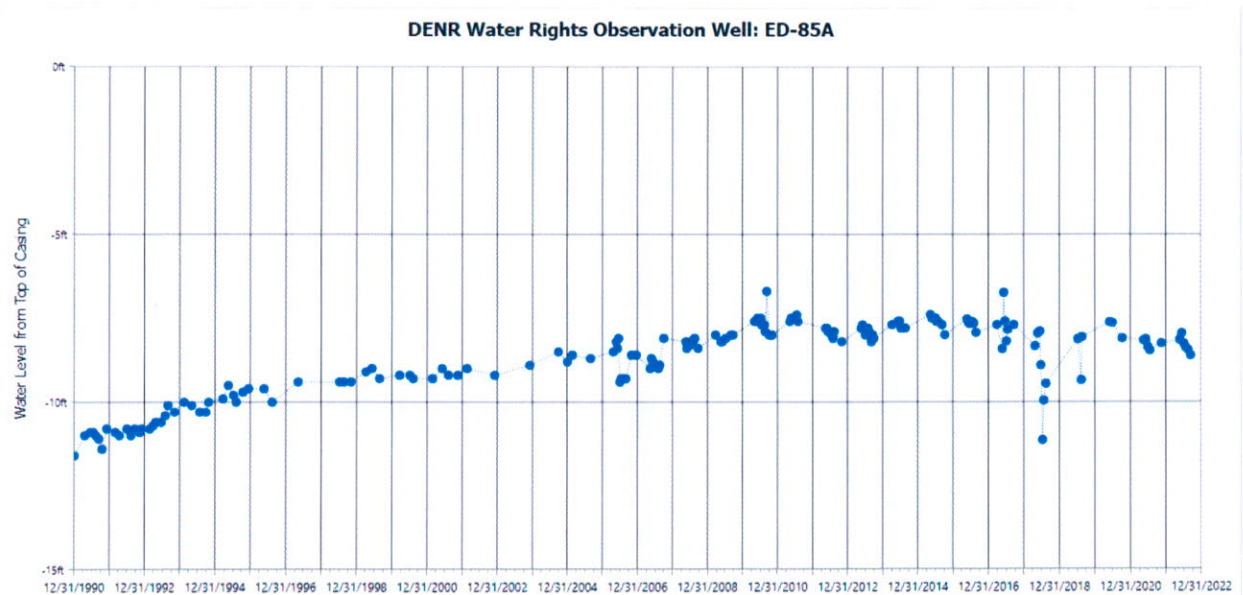


Figure 4. Hydrograph for observation well ED-85A (Water Rights, 2023b)

In addition to the observation well hydrographs, a record of the potentiometric surface is shown through historical accounts. Schoon (1971) developed maps of the potentiometric surface of the Dakota aquifer using data modified from Darton (1909), from the State Engineer's office for the period 1914 to 1915, and from a compilation of many reports over the period of 1936 to 1953. Wells that have been completed into the Dakota aquifer in the past ten years and within approximately one mile of the existing well were used to approximate the current potentiometric surface conditions (Table 1) (Water Rights, 2023d). The contour lines on the maps utilized in Schoon (1971) do not extend to the South Dakota state line boundary. As a result of the existing well's proximity to the state line, the use of "approximate" is stressed due to the interpolation needed to estimate the potentiometric surface in the vicinity of the well for this application.

Table 1. Historic and current approximate water level elevations near the existing well the applicant proposes to use (Schoon, 1971; Water Rights, 2023d)

Data Source	Year(s)	<i>Approximate</i> potentiometric surface in the vicinity of the existing well (feet)
Schoon (1971), after Darton	1909	1,000 to 1,100
Schoon (1971), State Engineer's Office	1914-1915	900 to 1,000
Schoon (1971)	1936-1953	1,000 to 1,100
Well Logs Database	2011-Present	1,000 to 1,100

Throughout South Dakota, most of the hydrographs for observation wells completed into the Dakota aquifer, and the potentiometric surface measurements of the Dakota aquifer show a decreasing trend in hydraulic head (Water Rights, 2023b). A decline in water levels in a confined aquifer does not necessarily indicate a significant decrease in water stored in the aquifer, as water levels above the top of the aquifer materials are representative of the hydraulic head (water pressure) inside the aquifer. Additionally, there are uncontrolled, flowing wells discharging water from the Dakota aquifer at ground surface, and it is expected water from the aquifer is also being discharged to other aquifers if wells completed into the Dakota aquifer have experienced casing failure.

Concerns have developed over time about the decline in artesian head pressure of the Dakota aquifer. Schoon (1971) stated, “The fact that withdrawal from the artesian system exceeds recharge is clearly demonstrated by declining pressures.” However, the Water Management Board has found that past declines of the potentiometric surface (as shown on Table 1) do not automatically constitute that withdrawals have exceeded recharge (Water Rights, 1987). The Board has concluded that withdrawals exceeding the average annual recharge cannot be determined based solely upon a decline in head pressure, and in theory the Dakota aquifer head pressure is stabilizing relative to withdrawals and discharges (Water Rights, 1987). Since discharge from uncontrolled flowing wells is likely to continue until water levels in the aquifer decline to being at or below the ground surface and continuing to allow beneficial pumping to occur reduces the amount of water being discharged to waste, the Water Management Board’s decision to optimize development of the Dakota aquifer is favorable to issuance of permits to appropriate water for beneficial uses. Therefore, there is a reasonable probability unappropriated water from the Dakota aquifer is available for the proposed appropriation.

DAKOTA AQUIFER - HYDROLOGIC BUDGET:

Recharge

Recharge to the Dakota aquifer in South Dakota occurs through upward leakage from underlying aquifers with higher artesian pressure than the Dakota aquifer, downward seepage from overlying confining layers, and through the infiltration of precipitation on the Newcastle Formation outcrops in the Black Hills (Bredehoeft, et al., 1983; Niehus, 1997). Using computer modeling, Bredehoeft, et al. (1983) attempted to match Darton’s (1909) potentiometric surface map of the Dakota aquifer to develop a recharge estimate of approximately 79.4 cfs (57,500 acre-feet per year) before well development began. However, many assumptions used in Bredehoeft, et al.’s (1983) recharge estimate were incorrect and outdated. For example, assuming steady-state flow conditions between aquifers is unrealistic of real-world conditions and the recharge estimates used for the Madison and Inyan Kara aquifers in Bredehoeft, et al.’s (1983) analysis are much lower than estimates measured by more recent research (Carter, et al., 2002). While Bredehoeft, et al.’s (1983) estimate can provide a scale of the Dakota aquifer’s recharge rate, it cannot be used as an exact value for water management purposes. As the physical properties of aquifers and the locations where adjacent aquifers are in contact with each other are relatively undefined among many other factors, it is unknown whether the true recharge rate of the Dakota aquifer is higher or lower than Bredehoeft et al.’s (1983) estimate.

Discharge

Discharge from the Dakota aquifer in South Dakota occurs through well withdrawals, uncontrolled flowing wells and outflow through corroded well casings, and outflow to overlying adjacent aquifers because of higher artesian pressure in the Dakota aquifer, such as the Lower Vermillion-Missouri and Missouri: Elk Point aquifers in Lincoln and Union Counties (Bredehoeft, et al., 1983; Kume, 1977; Niehus, 1997; Water Rights, 2023b and 2023c). In Lincoln and Union Counties, the aquifer may also discharge to fractures in the underlying Sioux Quartzite (Niehus, 1997).

Currently, there are 260 water rights/permits appropriating water from the Dakota aquifer within South Dakota (Water Rights, 2023c). Additionally, there are seven future use permits reserving water from the Dakota aquifer (Water Rights, 2023c). For the purpose of estimating average annual withdrawals, the seven future use permits are assumed to be fully developable for a total of 4,237 acre-feet per year (Table 2).

Table 2. Future use permits reserving water from the Dakota aquifer

Future Use Permit Holder	Amount of Reserved Water (acre-ft)
City of Canton (1262C-3, 5219-3)	1,849
City of Lennox (5101-3, 5101A-3)	0*
South Lincoln RWS (4817-3)	1,448
Lincoln RWS (5155-3)	440
City of Harrisburg (8400-3)	500
Total:	4,237
RWS: Rural Water System, *The City of Lennox has allocated the water they had reserved	

Of the 260 Dakota aquifer water rights/permits, 20 are for irrigation use and 240 are for non-irrigation use. Table 3 summarizes the 240 non-irrigation water rights/permits authorized to appropriate water from the Dakota aquifer with the estimated annual use for each water right/permit as determined by their limiting diversion rate or annual volume. The use type determined for each water right/permit was based on the primary use categorized for each water right/permit as some permits have additional uses (Water Rights, 2023c). 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).

Fifteen non-irrigation water rights/permits on Table 3 are authorized to withdraw from one or more aquifers, in addition to the Dakota aquifer. For the purpose of estimating average annual withdrawals, the non-irrigation water rights/permits that have a specified volume out of their entire appropriated volume that is authorized only for their Dakota aquifer well(s) are assumed to withdraw their full specified volume permitted only for their Dakota aquifer well(s). The

remaining non-irrigation water rights/permits that do not have a certain diversion rate or volume designated for what each well from each aquifer is authorized to divert are assumed to be withdrawing their entire appropriated volume from the Dakota aquifer.

Additionally, the municipal water rights/permits that are authorized to appropriate water from the Dakota aquifer, that are identified as being connected to a rural water system (RWS) 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 3. Overall, the average annual withdrawal rate for the Dakota aquifer non-irrigation water rights/permits is approximately 23,740 acre-feet per year (Table 3) (Water Rights, 2023c).

Table 3. Summary of the non-irrigation water rights/permits authorized to appropriate from the Dakota aquifer with estimated annual use determined by their respective diversion rate or annual volume (Drinking Water Program, 2023; Water Rights, 2023c)

Use Type	No. of Water Rights/Permits	Appropriation for Water Rights/Permits limited by Volume (acre-feet/year)	Appropriation for Water Rights/Permits limited by Diversion Rate (cfs)	Total Estimated Use (acre-feet/year)
RWS	6	2,005	2.2	2,961
SHD	7		3.33	1,447
REC	3	3.1	0.45	199
COM	110	1,539	13.19	7,268
DOM	11		1.753	762
FWP	4		2.73	1,186
GEO	2		2.33	1,012
INS	2		1.34	582
IND	6	160	0.84	527
MUN	89	3,274	10.41	7,798
TOTAL:	240	6,981	38.58	23,740
RWS: Rural Water System, SHD: Suburban Housing Development, REC: Recreation,				
COM: Commercial, DOM: Domestic, FWP: Fish & Wildlife Propagation, GEO: Geothermal,				
INS: Institutional, IND: Industrial, MUN: Municipal				

As development of the Dakota aquifer has increased over time, some of the appropriations have been made by rural water systems that are required to report their annual withdrawal rate (Water Rights, 2023c). The withdrawals that are annually reported from the Dakota aquifer by some appropriative users (South Lincoln RWS, Clay RWS, and Lincoln County RWS) are shown in Table 4 (Water Rights, 2023c and 2023f). The reported withdrawals by the RWS users listed on Table 4 are for comparison purposes only to show historically the average annual use has been less than the volume that is estimated on Table 3 (Water Rights, 2023c and 2023f). The estimated use for RWS users calculated on Table 3 will be used in the analysis.

Table 4. Non-irrigation rural water system water rights/permits required to report their respective annual use from the Dakota aquifer (Water Rights, 2023c and 2023f)

	South Lincoln RWS	Clay RWS	Lincoln County RWS
	5647-3, 6300-3, 6490-3, 6778A-3	5997B-3	5156-3
2003	725		
2004	904		
2005	769		
2006	863	72	
2007	860	126	
2008	863	124	0
2009	773	119	0
2010	775	122	0
2011	785	116	0
2012	865	186	0
2013	765	155	0
2014	739	148	0
2015	711.5	141	0
2016	640	163	0
2017	643	201	0
2018	503	170	0
2019	562	162	0
2020	530	197	0
2021	588	194.7	0
Max	904	201	0
Min	503	72	0
Avg	730	150	0
RWS: Rural Water System			

Currently, there are 20 irrigation water rights/permits authorized to appropriate water from the Dakota 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 Dakota aquifer irrigation water rights/permits that have reported over the period of record (1979 to 2021) is approximately 152 acre-feet per year (Table 5) (Water Rights, 2023a). To reflect the current development of irrigation water rights/permits more accurately, the average annual withdrawal rate for irrigation appropriations that have reported from 2012 to 2021 is approximately 214.5 acre-feet per year (Table 5) (Water Rights, 2023a).

Table 5 lists only 16 water rights/permits appropriating water from the Dakota aquifer as Water Right Nos. 394-3 and 762-3 are not required to submit an irrigation questionnaire. Collectively, Water Right Nos. 394-3 and 762-3 are authorized to irrigate 31.2 acres (Water Rights, 20231c). Generally, irrigators in eastern South Dakota apply less than one foot of water per acre per year. However, to account for the fluctuation in wet and dry cycles from year to year, a one foot of water per acre per year application rate will be used to liberally estimate the annual withdrawal rate for these irrigation water rights. Therefore, Water Right Nos. 394-3 and 762-3 are estimated to collectively withdraw approximately 31.2 acre-feet per year (Water Rights, 2023c).

Additionally, Water Permit Nos. 8510-3 and 8560-3 (same permit holder) were approved in 2021 and 2022 and have not submitted an irrigation questionnaire at this time (Water Rights, 2023a and 2023c). Water Permit Nos. 8510-3 and 8560-3 collectively authorize 95 acres of a golf course to be irrigated and are limited to an annual appropriation that may not exceed two-acre feet annually for each acre of land authorized to be irrigated (Water Rights, 2023c). Generally, irrigators in eastern South Dakota apply less than one foot of water per acre per year (Water Rights, 2023a). However, because this permit holder is authorized to irrigate a golf course, the two foot of water per acre per year application rate will be used to somewhat overestimate the annual withdrawal rate for Water Permit Nos. 8510-3 and 8560-3. Therefore, the average annual withdrawal rate for Water Permit Nos. 8510-3 and 8560-3 is approximately 190 acre-feet per year. Overall, the average annual withdrawal rate for the four water rights/permits not accounted for on Table 5 is approximately 221.2 acre-feet per year.

By combining the calculated withdrawal rate for the four irrigation water rights/permits that are not accounted for on Table 5 with the average annual withdrawal rate based on the development of the Dakota aquifer over the last ten years, the average annual withdrawal rate for the 20 Dakota aquifer irrigation water rights/permits is approximately 435.7 acre-feet per year (Water Rights, 2023a and 2023c).

Table 5. Reported historic irrigation use from Dakota aquifer (Water Rights, 2023a)

Year	No. of Permits Reporting	Reported Pumpage (acre-feet)
1979	2	38
1980	2	110
1981	4	45
1982	5	33.2
1983	5	64.4
1984	4	0
1985	5	8.1
1986	5	238.9
1987	5	1.3
1988	4	452.8
1989	4	265.4
1990	4	234
1991	5	165.4
1992	5	40.4
1993	7	112.4
1994	7	51.9
1995	8	30.8
1996	8	34.4
1997	9	48
1998	9	175.8
1999	10	101.6
2000	10	172.8
2001	11	160.9
2002	10	178.9
2003	10	205
2004	10	154
2005	12	146.5
2006	13	232.3
2007	14	200
2008	14	196.4
2009	15	130.8
2010	17	171.7
2011	18	174.6
2012	18	298.3
2013	18	256.5
2014	17	162.9
2015	17	236.1
2016	16	196
2017	16	229.1
2018	16	156.7
2019	15	107.5
2020	16	245.6
2021	16	255.9
Min	2	0
Max	18	453
Avg (1979 to 2020)	10	152
Avg (2012 to 2021)	17	214.5

There are domestic wells completed into the Dakota aquifer that do not require a water right/permit, so the withdrawal amount for domestic use is unknown (Water Rights, 2023d). Since the introduction of rural water systems, many domestic wells are likely no longer in use or are not being used as primary water sources. Due to their relatively low diversion rates and the availability of rural water, withdrawals from domestic wells are not considered to be a significant portion of the hydrologic budget for the Dakota aquifer. It is currently unknown how much water is being discharged from the Dakota aquifer through uncontrolled flowing wells. The Water Management Board has previously determined water being discharged through uncontrolled flowing wells is not a beneficial use and does not constitute appropriation pursuant to SDCL 46-6-3.1 (Water Rights, 1987).

Hydrologic Budget Summary

The estimated average annual recharge to the Dakota aquifer has not been accurately quantified. Bredehoeft et al. (1983) estimated a recharge rate of approximately 57,500 acre-feet per year, but several factors make it uncertain if that is a high or low estimate. The estimated average annual withdrawal rate from the Dakota aquifer is approximately 28,603 acre-feet per year (including the estimated use for Water Permit Application No. 8727-3, if approved) (Table 6). Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Dakota aquifer for the proposed appropriation.

Table 6. Estimated use from Dakota aquifer (Water Rights, 2023a and 2023c)

Type of Water Right/Permit	Estimated Use (acre-feet/year)
Future Use Reservations	4,237
Non-Irrigation	23,740
Irrigation (average reported from 2012 to 2021, plus four permits that do not have to report/have not reported)	435.7
Application No. 8727-3 (if approved, assuming two acre-feet, per acre, annually)	190
TOTAL:	28,603

DAKOTA AQUIFER - POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 260 water rights/permits authorized to appropriate water from the Dakota aquifer and an additional seven future use permits reserving water in the Dakota aquifer (Water Rights, 2023c). The closest water right/permit (not held by the applicant) to the existing well is Water Right No. 6110-3 held by Dakota Dunes Community Improvement District (Water Rights, 2023c). The diversion point for Water Right No. 6110-3 is located approximately 0.3 miles northwest of the well the applicant proposes to use for this application (Figure 5) (Table 7) (Water Rights, 2023c).

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Dakota aquifer, with the closest domestic well on file (not held by the applicant) approximately 0.9 miles northwest of the existing well based on the location provided by the well driller (Water Rights, 2023d). There could potentially be other domestic wells completed into the Dakota aquifer near the well the applicant proposes to use that are not on file with the DANR-Water Rights Program.

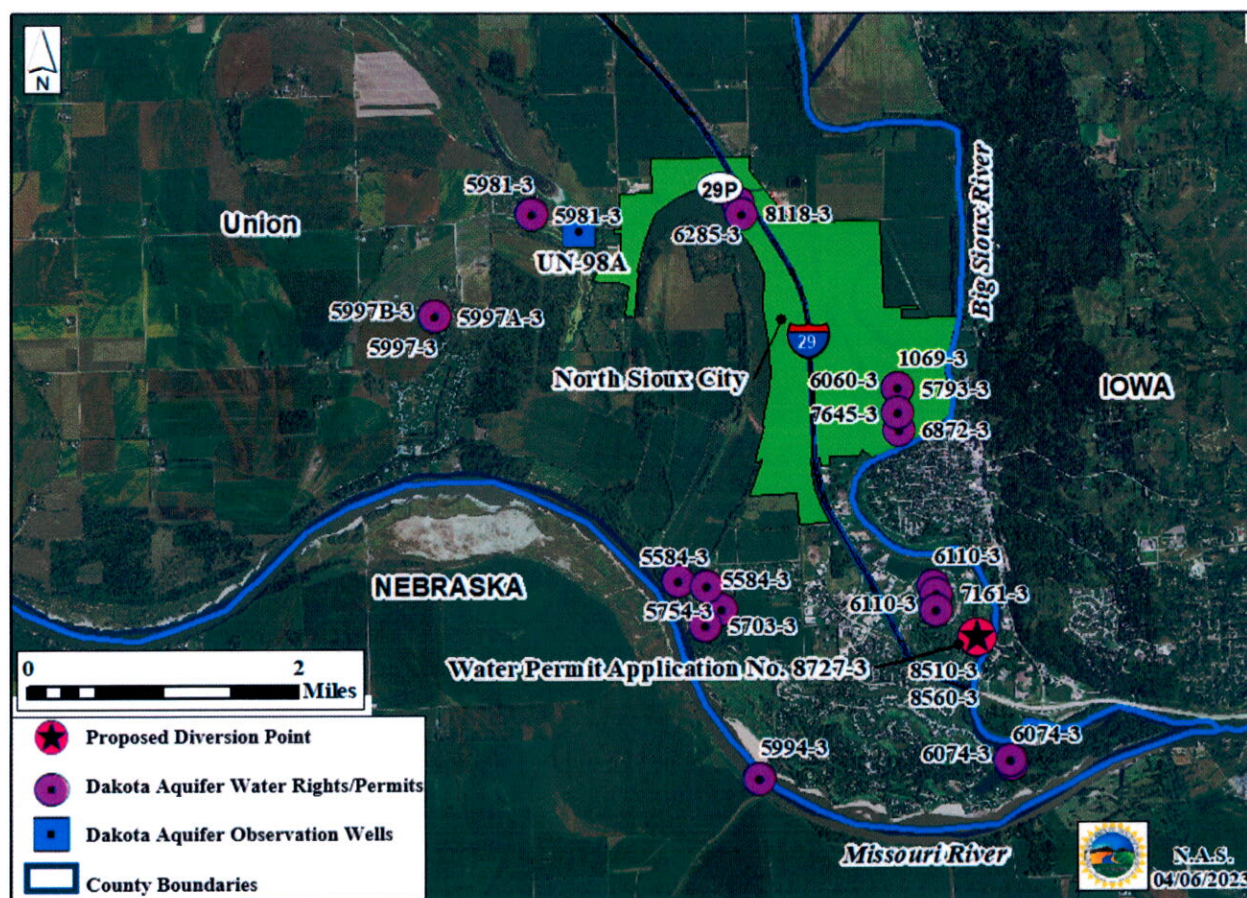


Figure 5. Location of the existing well completed into the Dakota aquifer proposed to be used by Water Permit Application No. 8727-3, with the Dakota aquifer water rights/permits and observation well within approximately five miles (Water Rights, 2023b and 2023c)

Table 7. Water rights/permits authorized to withdraw water from the Dakota aquifer within approximately five miles of the existing well site, as shown in Figure 5 (Water Rights, 2023c)

Permit No.	Name	Status	Use	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet/year)
1069-3	City of North Sioux City	LC	MUN	0.55	
5584-3	Sandy Mead Homeowners	LC	SHD	0.37	
5703-3	Charles A Long	LC	IRR	0.06	
5754-3	Riv-R-Land Estates Inc	LC	SHD	0.4	
5793-3	City of North Sioux City	LC	MUN	1.22	
5981-3	Deer Run Homeowners Association	LC	SHD	1.22	
5994-3	Robert L Peterson	LC	IRR	0.053	
5997-3	Clay Rural Water System Inc	PE	SHD	1.11	
5997A-3	Clay Rural Water System Inc	PE	SHD		
5997B-3	Clay Rural Water System Inc	PE	SHD		
6060-3	City of North Sioux City	LC	MUN	2.22	1,500
6074-3	Dakota Dunes Community Improvement District	LC	MUN	3.34	2,419
6110-3	Dakota Dunes Community Improvement District	LC	IRR	0.12	
6285-3	City of North Sioux City	LC	MUN	0.89	386
6872-3	City of North Sioux City	LC	MUN	0.89	
7161-3	BPI Technology	PE	COM	0.01	
7645-3	City of North Sioux City	PE	MUN	1.33	483
8118-3	City of North Sioux City	PE	MUN	1.34	905
8510-3	TR Golf LLC	PE	IRR	1.11	
8560-3	TR Golf LLC	PE	IRR	0.12	
LC: Licensed Water Right; PE: Water Permit, COM: Commercial, IRR: Irrigation					
MUN: Municipal, SHD: Suburban Housing Development					

The Dakota aquifer is under confined conditions at the existing well site based on the well completion report on file with the DANR-Water Rights Program (Water Rights, 2023d). Since the Dakota aquifer is confined at the existing well site, drawdown can extend some distance but the exact drawdown behavior of a well cannot be known without an aquifer performance test. However, observation wells completed into the Dakota aquifer near permitted/licensed diversion points can provide some insight on how the aquifer responds to pumping.

Observation well UN-98A (approximately 4 miles northwest of the existing well) has fourteen high-yield wells (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) within approximately three miles of it (as shown on Figure 5) (Water Rights, 2023b and 2023c). The lithologic log on file for UN-98A noted the well was drilled 312 feet deep below the ground surface, had a casing stick up height of approximately 2 feet, and the top of aquifer materials approximately 165 feet below the ground surface (SDGS, 2023). The lowest recorded static water level on the hydrograph (displayed in Figure 1) is approximately 15 feet below the top of the well casing, which indicates there was still approximately 150 feet of artesian head pressure in UN-98A even during drier periods when high-yield wells are expected to be pumping more water and when water levels are generally naturally lower in response to drier conditions (SDGS, 2023; Water Rights, 2023b).

At the existing well site, the Dakota aquifer has a saturated aquifer thickness of approximately 80 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 is not expected to unlawfully impair nearby adequate wells. In Union County, there are no substantiated complaints on file with the DANR-Water Rights Program regarding well interference for adequate wells completed into the Dakota aquifer (Water Rights, 2023e).

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 Dakota aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated thickness of the Dakota aquifer in Union and Lincoln Counties, the artesian head pressure in observation wells and appropriative user’s wells completed into the Dakota aquifer near the existing well, and the lack of well interference complaints from the Dakota aquifer in the area, 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.

Special Consideration: Well Construction

The well completion report submitted for the well the applicant proposes to use meets adequate well construction standards as defined in ARSD 74:02:04:20.

An adequate well has been defined in ARSD 74:02:04:20(6) as:

“A well constructed or rehabilitated to allow various withdrawal methods to be used, to allow the inlet to the pump to be placed not less than 20 feet into the saturated aquifer or formation material when the well is constructed, or to allow the pump to be placed as near to the bottom of the aquifer as is practical if the aquifer thickness is less than 20 feet.”

The alternative well construction requirements for certain Dakota aquifer wells (74:02:04:35) are not permitted for appropriative uses. Additionally, the alternative well construction requirements for certain Dakota aquifer wells (74:02:04:35) are not met for this area as the Greenhorn Limestone does not appear to be present (SDGS, 2023; Water Rights, 2023d). Any future replacement wells shall meet the adequate well construction standard as defined in ARSD 74:02:04:20. Replacement wells may not be constructed using the alternative construction requirements that are allowed for domestic use wells outlined in ARSD 74:02:04:35.

MISSOURI: ELK POINT AQUIFER

MISSOURI: ELK POINT AQUIFER - HYDROGEOLOGY:

The Missouri: Elk Point aquifer is a 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 Lower Vermillion Missouri and Lower James Missouri aquifers, and the Big Sioux, James, Missouri, and Vermillion Rivers (Niehus, 1994; Stephens, 1967).

In Union County, the average saturated thickness of the Missouri: Elk Point aquifer is approximately 84 feet, with a documented maximum aquifer thickness of approximately 146 feet (Niehus, 1997). 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).

A well completion report is on file for the existing well (authorized by Water Right No. 2011-3) proposed to be used by Water Permit Application No. 8727-3 (Water Rights, 2023c and 2023d). The report identifies sand and gravel deposits intermixed with clay and occasional layers of clay. The well was screened into a sand and gravel deposit from 84 to 108 feet below the ground surface for a well completed around August 6, 1973, with an approximate static water level of 10 feet below the ground surface (Water Rights, 2023d). The Missouri: Elk Point aquifer is confined

at the existing well location for the well referenced above but may act more like an unconfined aquifer well based on the lateral extent of the clay deposits encountered while drilling the well (Water Rights, 2023c and 2023d).

Figure 6 displays a map of the approximate Missouri: Elk Point aquifer boundary (modified from Hedges et al., 1982) and the location of the existing well proposed to be used by Water Permit Application No. 8727-3 (Water Rights, 2023c and 2023d).

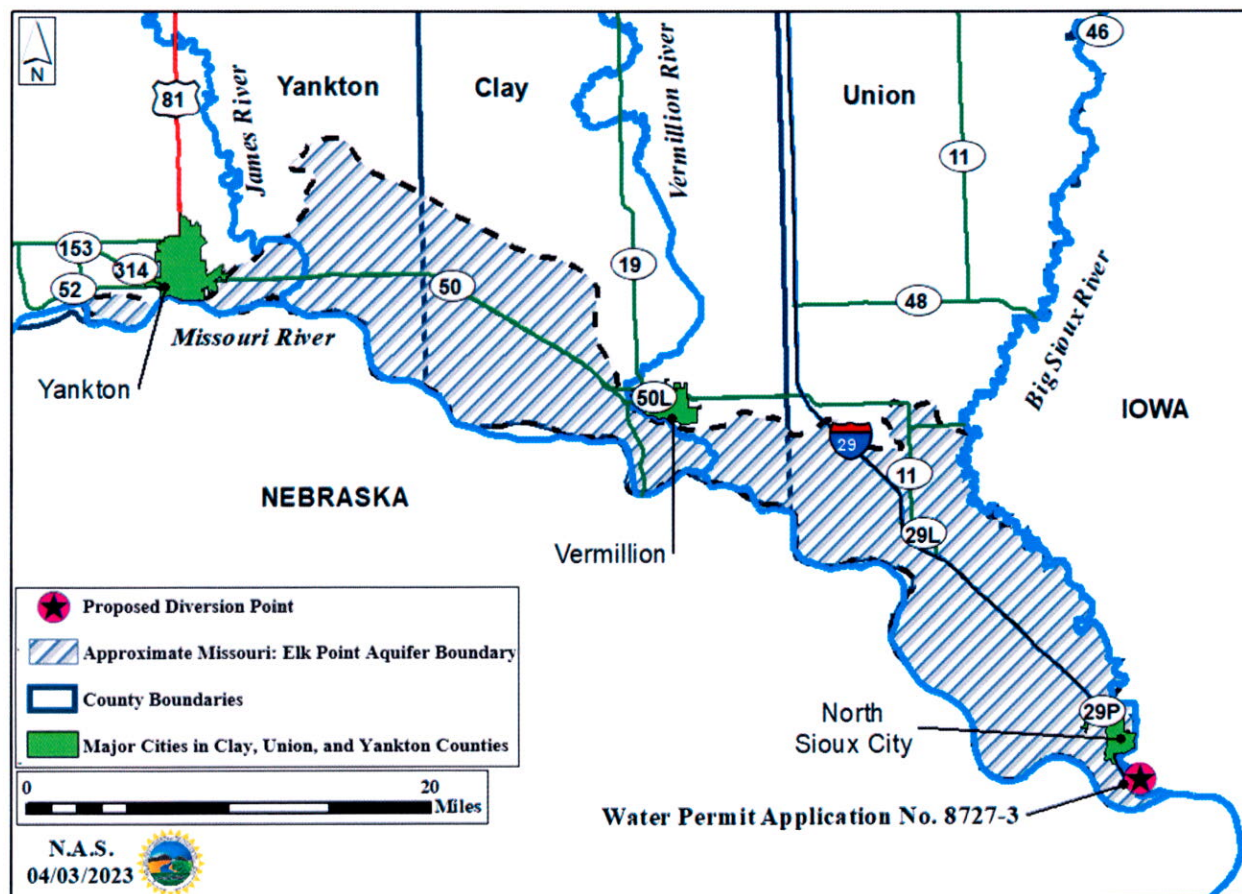


Figure 6. Map of the approximate Missouri: Elk Point aquifer boundary modified from Hedges and others (1982) with the location of the existing well proposed to be used by Water Permit Application No. 8727-3 (Water Rights, 2023c and 2023d)

MISSOURI: ELK POINT AQUIFER - 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 aquifer 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 held by Lewis & Clark Regional Water System (Mathiowetz, 2022).

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 646 water rights/permits authorized to appropriate water from Missouri: Elk Point aquifer, plus one pending application – Water Permit Application No. 8716-3 requesting to irrigate 160 acres in Clay County (Water Rights, 2023c).

Additionally, 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.

Table 8 summarizes the 43 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).

Water Permit No. 5998-3 is permitted for turf irrigation 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 8, 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 9 (Water Rights, 2023c).

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 8.

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 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 average annual total precipitation at the Sioux City, Iowa airport was determined to be approximately 29.27 inches over the 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 43 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 70,648 acre-feet per year (Table 8) (Water Rights, 2023c and 2023f).

Table 8. Estimated annual use for the non-irrigation water rights/permits (plus two irrigation water permits) 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	162
8381-3	RP Constructors	PE	11/19/2018	COM	0.04	1	1
8403-3	Stockmen's Livestock Inc	PE	06/27/2019	COM	2.0	40	40
8415-3	RC Investments Inc	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		339.0
7388-3	Clay RWS Inc	PE	07/30/2012	DOM, IRR	2.0		346
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		1,642
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		1,159.8
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	Concrete Materials	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		1,237
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		10
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		2,412
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
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	77.61	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:	70,648
*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 43 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 9 (Water Rights, 2023c and 2023f). The reported usage (as shown on Table 9) 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 three years of reported withdrawals (Water Rights, 2023f). Therefore, the estimated use for Permit Nos. 8031-3, 8415-3, 8435-3, 8381-3, and 8403-3 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 8.

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 – 8614-3 was recently approved in 2023) (as shown on Table 9) is steadily increasing (Water Rights, 2023f), as these water users are continually undergoing development (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 8 (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 346 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 2012 to 2021 on Table 9 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 9 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 in Table 9) is reasonably reflective of the future withdrawals likely to be made by these appropriate users. The average annual withdrawal rate based off the reported annual withdrawal rates averaged over the period of record on Table 9 for these water rights/permits will be used in this analysis.

Table 9. 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, 8614-3
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
Max	0.2	5.5	525	202	1,440	3,065	23,537
Min	0.0171	1	21	98	1,071	66	0
Avg	0.091	3.57	281	162	1,237	1,410	14,425*
RWS: Rural Water System *Excluded reported zero values							

Currently, there are 605 irrigation water rights/permits authorized to appropriate water from the Missouri: Elk Point aquifer, plus pending application requesting to irrigate 160 acres (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 is approximately 18,703 acre-feet per year (Table 10) (Water Rights, 2023a). To reflect the current development of irrigation water rights/permits more accurately, the average annual withdrawal rate for irrigation appropriations that have reported from 2012 to 2021 is approximately 27,247 acre-feet per year (Table 10) (Water Rights, 2023a).

The usage for two irrigation water permits (Nos. 5998-3 and 5998A-3) was accounted for on Table 8 with the non-irrigation water rights/permits, as the permit holder is not required to submit an annual irrigation questionnaire (Water Rights, 2023c), resulting in only 603 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 605 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, 602 water rights/permits remain.

Table 10 lists only 572 water rights/permits as reporting in 2021 (Water Rights, 2023a and 2023c). These 572 water rights/permits listed as reporting in 2021 includes eight water rights/permits (Nos. 3722-3, 5658A-3, 6940-3, 6941-3, 7066-3, 7447-3, 7663-3, 7800-3, and 7941-3) that were incorporated into another water right or cancelled in 2022 (Water Rights, 2023c), resulting in only 563 of the water rights/permits listed as reporting in 2021 being currently active.

Thirty-nine water permits/rights did not submit an irrigation questionnaire form in 2021 that are currently active, accounting for the difference between the 563 currently active water rights/permits listed as reporting in 2021 and the 602 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 39 permits, 36 were issued in 2021, 2022, or 2023 and have not submitted an irrigation questionnaire at this time. Of the remaining three water rights (Nos. 3154-3, 4745-3, and 5935-3), Water Right No. 5935-3 is not required to submit an irrigation questionnaire and Water Right Nos. 3154-3 and 4745-3 did not submit an irrigation questionnaire in 2021 for an unknown reason. Overall, these 36 water permits/rights are authorized to irrigate approximately 2,951 acres (Water Rights, 2023c).

Table 10. 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
Min	259	1,475.2
Max	575	56,994.7
Avg (1979 to 2021)	369	18,703
Avg (2012 to 2021)	553	27,247

Farmer (2018a, 2018b, and 2021) analyzed the amount of water pumped per permitted acre for the period from 1979 to 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 to 2013/2014. Since 2013/2014 the total number of permitted acres has 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 annual 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 approximately 82,889.6 acres authorized to be irrigated from the Missouri: Elk Point aquifer (plus one pending irrigation application – Water Permit Application No. 8716-3 proposing to crop irrigate 160 acres), with 809.6 of those acres authorized for turf irrigation (Water Rights, 2023c). Table 11 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 809.6 acres being turf irrigated (Water Rights, 2023c), the annual use for turf irrigation yields approximately 735.1 acre-feet per year (Table 11). By multiplying the application rate of 0.331 feet per acre per year (Mathiowetz, 2022) by the 82,080 (total acres minus turf irrigated acres) acres being crop irrigated (Water Rights, 2023c), plus the pending application requesting to crop irrigate 160 acres, the annual use for crop irrigation yields approximately 27,221.4 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 27,956.5 acre-feet per year.

Table 11. 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
TOTAL:				809.6	735.1

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. The average annual withdrawal rate for the water rights/permits authorized to appropriate water from the Missouri: Elk Point aquifer totals approximately 100,508 acre-feet per year (including the estimated use for Water Permit Application No. 8727-3, if approved) (listed on Table 12). 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 12. 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	1,900
Non-Irrigation	70,648
Irrigation (Mathiowetz's (2022) turf and crop application rates) including pending application: No. 8716-3	27,957
Application No. 8727-3 (if approved, assuming Mathiowetz's (2022) crop application rate of 0.331 per acre)	3
TOTAL:	100,508

MISSOURI: ELK POINT AQUIFER - OBSERVATION WELL DATA:

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 five closest observation wells to the well the applicant proposes to use are UN-78C (approximately 1.8 miles northwest), UN-77U

(approximately 3.2 miles northwest), UN-77V (approximately 3.2 miles northwest), UN-78D (approximately 3.5 miles northwest), and UN-77Q (approximately six miles northwest) (as shown in Figure 13) (Water Rights, 2023b). The hydrographs for these observation wells are displayed in Figures 7 to 11 (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. It is worth noting the hydrograph titles display DENR Water Rights Observation Well on the hydrographs when the titles should display DANR Water Rights Observation Well on the hydrographs.

The hydrographs for the observation wells display generally stable water levels over their respective periods of record, with the exception of some observation wells located in close proximity to the Missouri River. The hydrographs for the Missouri: Elk Point aquifer indicate that the aquifer responds well to climatic conditions because water levels are rising during wetter periods (early spring snowmelt and precipitation) and declining to a stable water level during drier periods. Additionally, the water levels in the observation wells display that the amount of recharge to and natural discharge from the aquifer greatly exceeds pumping with the aquifer returning to pre-pumping conditions between irrigation seasons. Aquifer recovery indicates that climatic conditions and therefore, the effects of recharge to and natural discharges from the aquifer govern the long-term fluctuations of waters levels in the aquifer rather than the impacts of pumping from the Missouri: Elk Point aquifer. By recognizing that both recharge to and natural discharge from an aquifer can be captured for pumping, the observation well hydrographs demonstrate unappropriated water is available for the proposed appropriation.

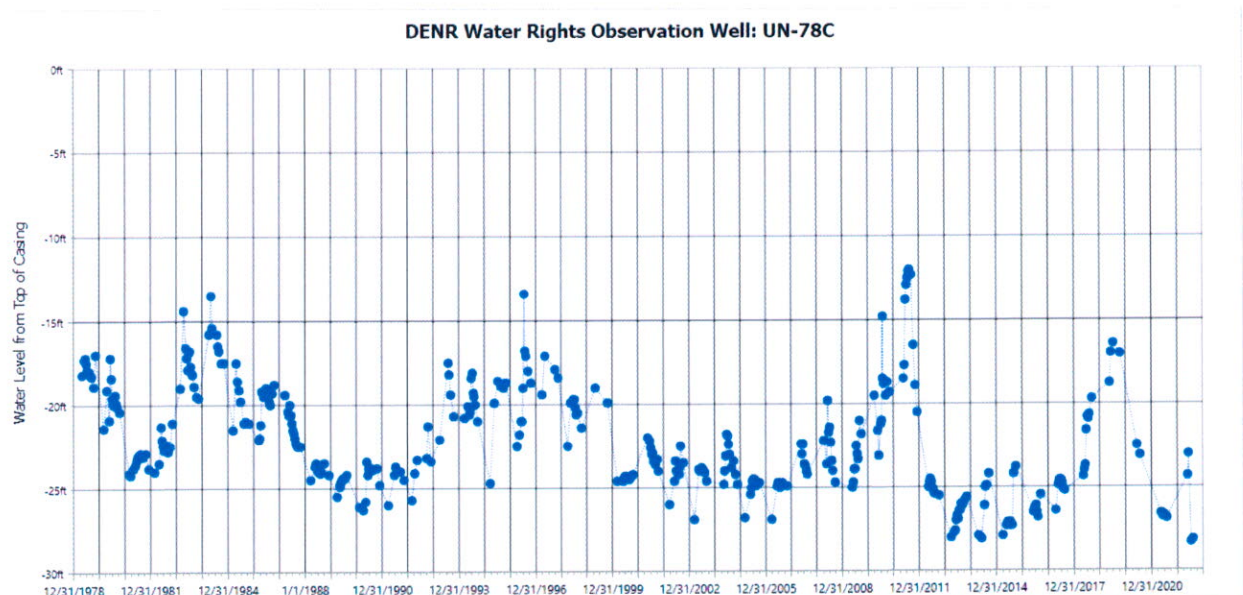


Figure 7. Hydrograph for observation well UN-78C (Water Rights, 2023b)

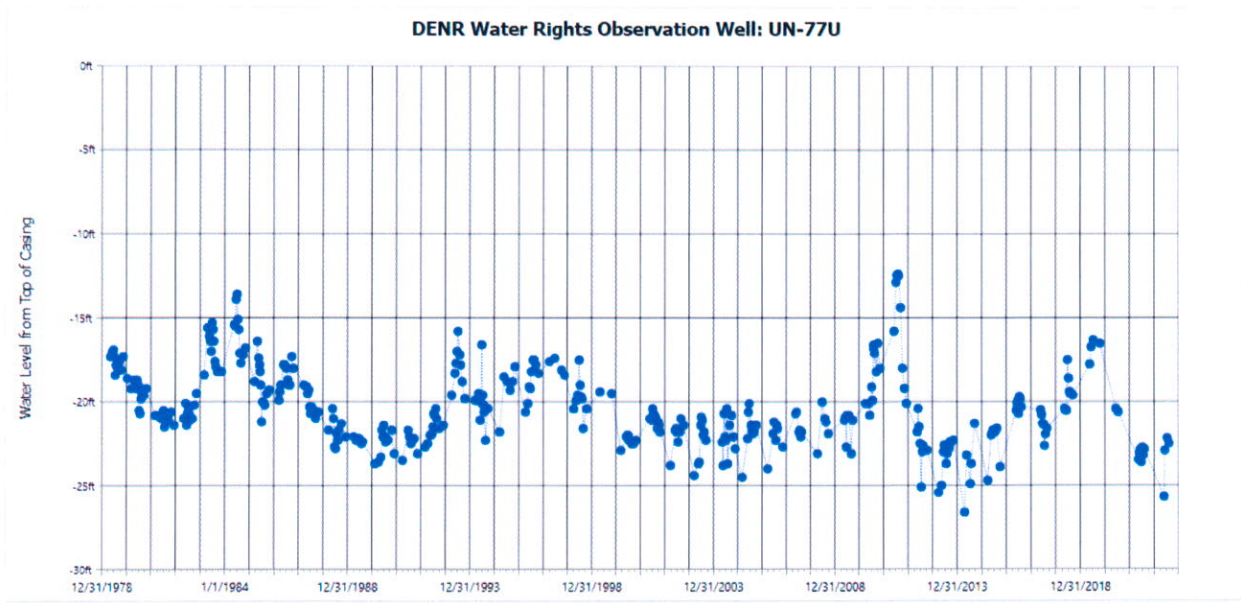


Figure 8. Hydrograph for observation well UN-77U (Water Rights, 2023b)

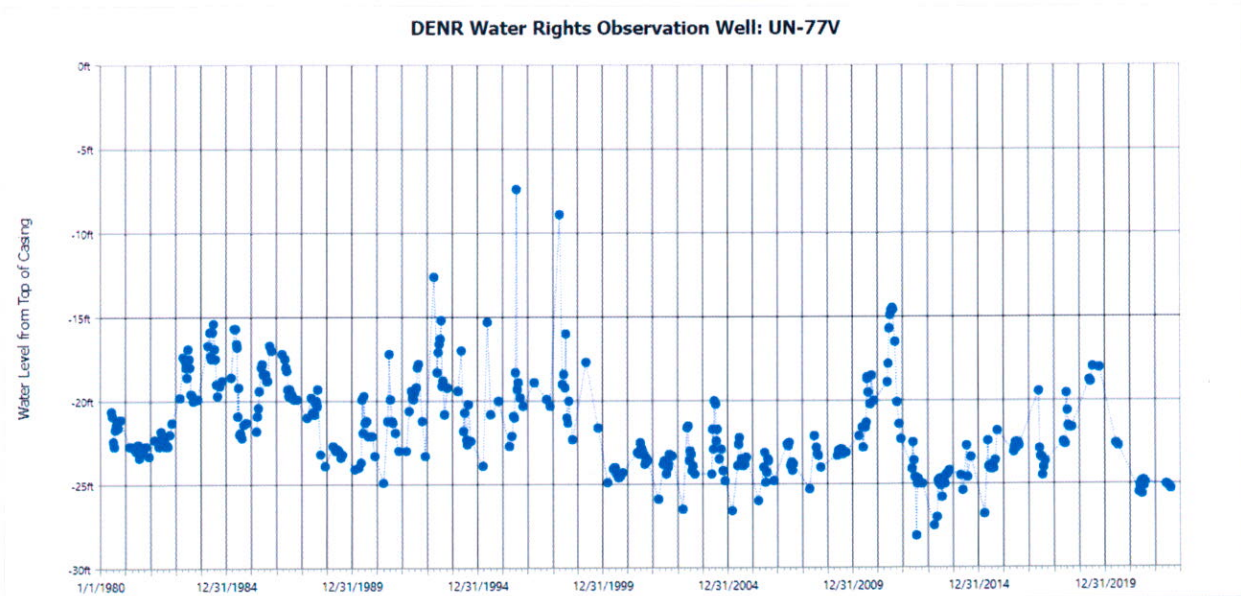


Figure 9. Hydrograph for observation well UN-77V (Water Rights, 2023b)

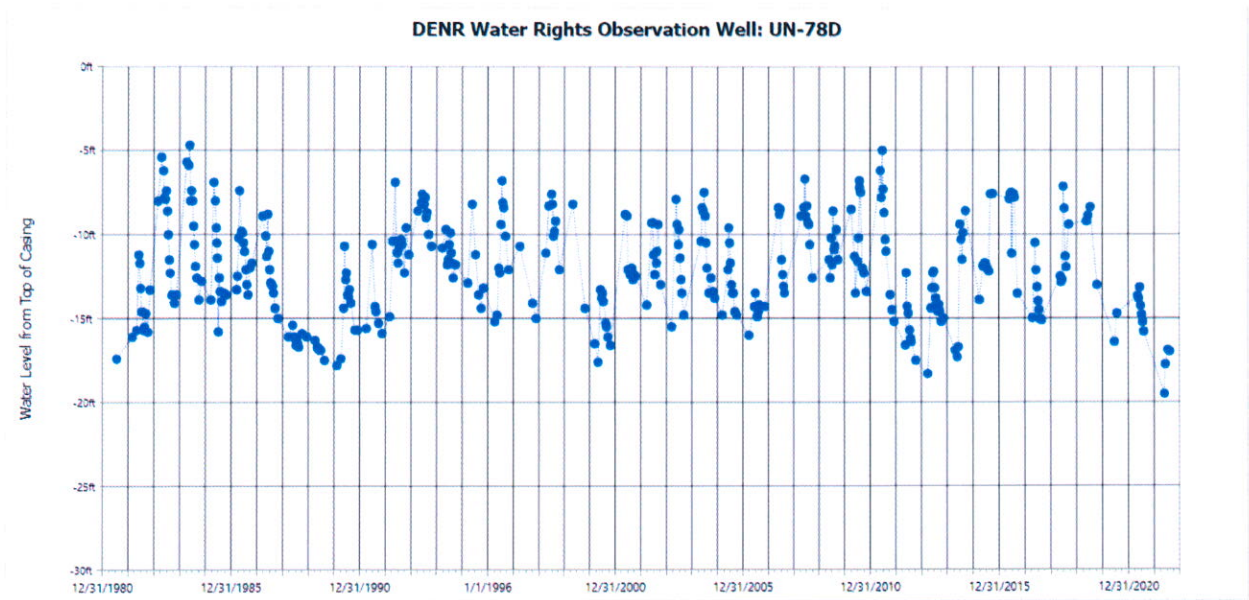


Figure 10. Hydrograph for observation well UN-78D (Water Rights, 2023b)

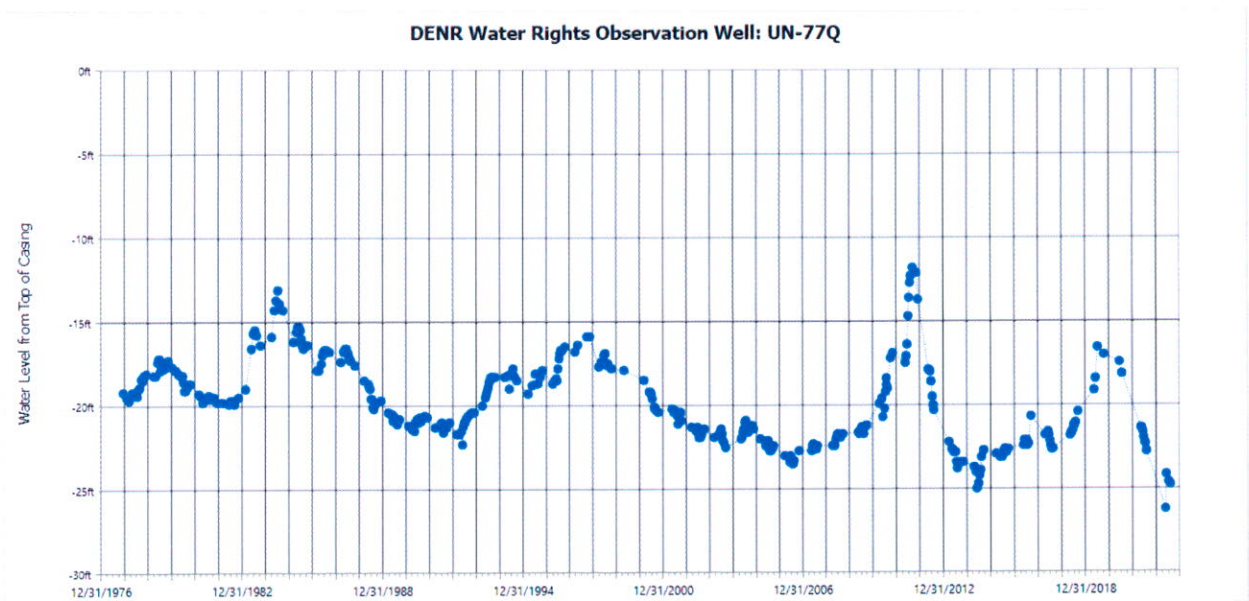


Figure 11. Hydrograph for observation well UN-77Q (Water Rights, 2023b)

Several of the Missouri: Elk Point aquifer observation well hydrographs show a gradual long-term downward trend especially those close to the Missouri River (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 7 to 12. 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. 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.

The United States Geological Survey (USGS) maintains Stream Gage #06467500, located on the Missouri River at Yankton, SD, and the hydrograph for this gage is shown in Figure 12 (USGS, 2023). By comparing the hydrograph for Stream Gage #06467500 to the observation well hydrographs of the Missouri: Elk Point aquifer (Figures 7 to 11), 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 (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.

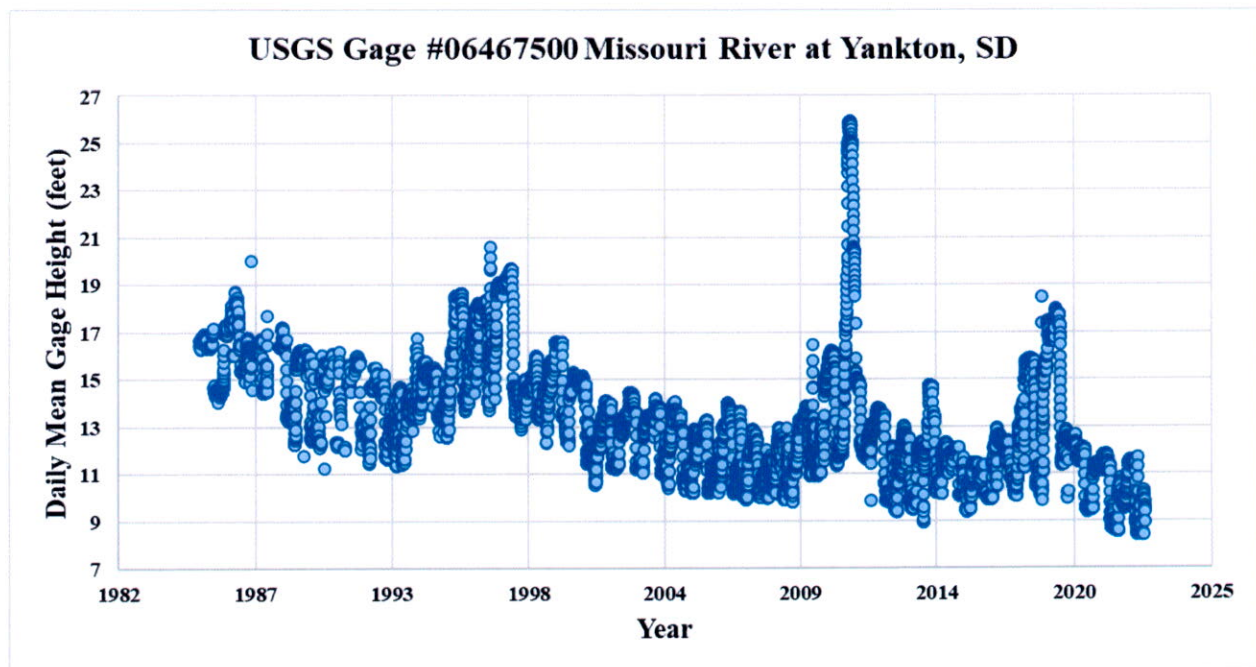


Figure 12. Hydrograph for USGS Stream Gage #06467500 Missouri River at Yankton, SD from 1985 to 2023 (USGS, 2023)

MISSOURI: ELK POINT AQUIFER - POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 646 water rights/permits authorized to appropriate water from Missouri: Elk Point aquifer, plus one pending application – Water Permit Application No. 8716-3 (Water Rights, 2023c). Additionally, there are five future use permits reserving water from the Missouri: Elk Point aquifer (Water Rights, 2023c). The closest water rights/permits to the existing well site are Water Right No. 5786-3 and Water Permit No. 8029-3, which are held by Dakota Dunes Golf Course and Dakota Dunes Community Improvement District (Water Rights, 2023c). The diversion point for Water Right No. 5786-3 and Water Permit No. 8029-3 is located approximately 1.1 miles southwest of the existing well site for this application (Figure 13) (Table 13) (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) approximately 0.8 miles west of the existing well site based on the location provided by the well driller (Water Rights, 2023d). There could potentially be other domestic wells completed into the Missouri: Elk Point aquifer near the well the applicant proposes to use that are not on file with the DANR-Water Rights Program.

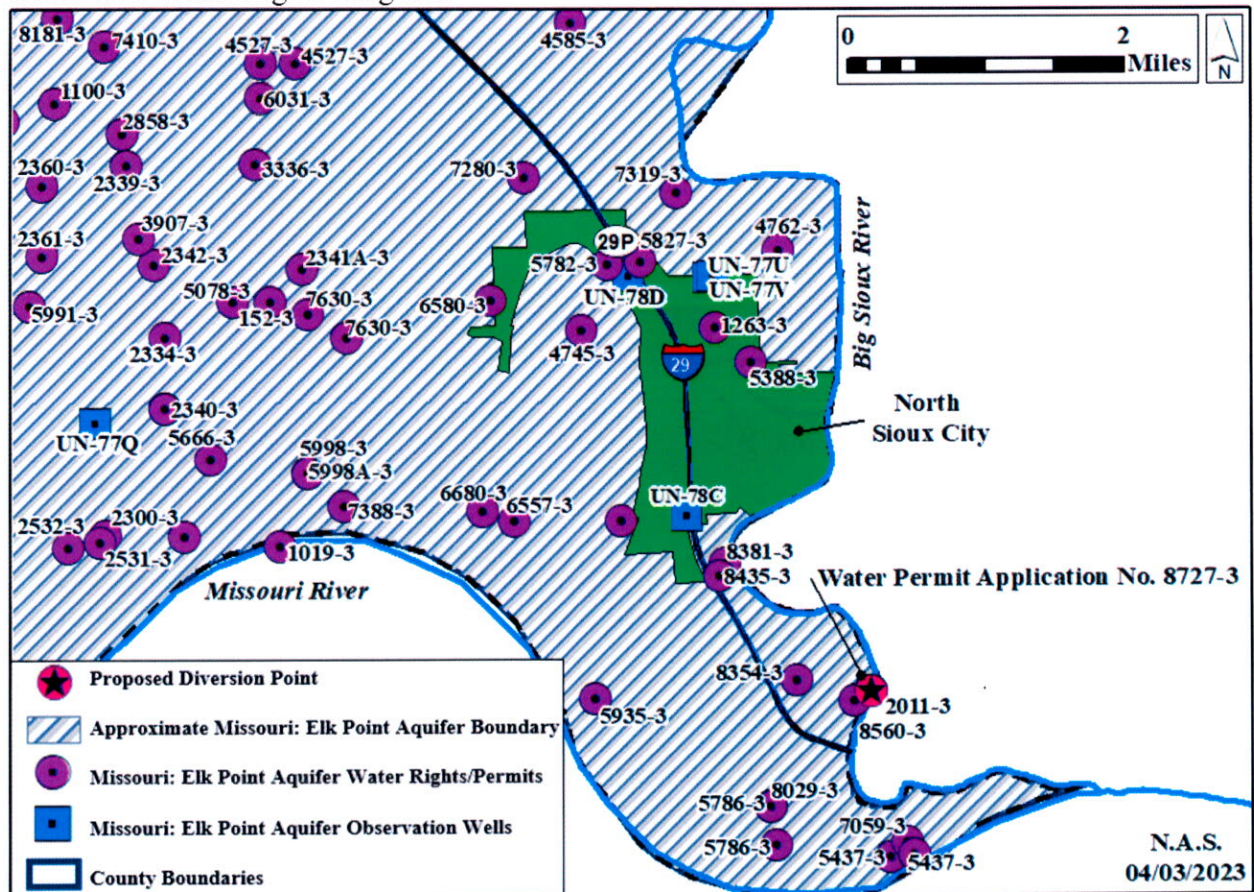


Figure 13. Location of the existing well completed into the Missouri: Elk Point aquifer proposed to be used by Water Permit Application No. 8727-3, with the Missouri: Elk Point aquifer water rights/permits and observation wells within approximately five miles (Water Rights, 2023b and 2023c)

Table 13. Water rights/permits authorized to withdraw water from the Missouri: Elk Point aquifer within approximately five miles of the existing well, as shown in Figure 13 (Water Rights, 2023c)

Permit No.	Name	Status	Use	Authorized Acres if IRR	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet)
152-3	Stephen F Jones	LC	IRR	39	0.56	
1019-3	Leonard, James, & Richard Dailey	LC	IRR	230	3.27	
1100-3	Vincent Trudeau	LC	IRR	64.5	0.92	
1263-3	Eugene Flynn	LC	IRR	152	2.16	
2011-3	TR Golf LLC	LC	IRR	95	1.31	
2300-3	Michael A Dailey	LC	IRR	125	1.78	
2334-3	Bradley J & Constance J Beavers	LC	IRR	190	2.68	
2339-3	Derochie Farms LLC	LC	IRR	120	1.71	
2340-3	Steve Heitman	LC	IRR	216	2.7	
2341A-3	Alvin J Howe	LC	IRR	216	1.94	
2342-3	Russell Lafleur	LC	IRR	100	1.43	
2360-3	Meryln Karpen	LC	IRR	132	1.9	
2361-3	Meryln Karpen	LC	IRR	132	1.9	
2531-3	Paul E Dailey	LC	IRR	255	2.7	
2532-3	Paul E Dailey	LC	IRR	200	2.7	
2858-3	Alvin J Howe	LC	IRR	136	1.94	
3336-3	LaFleur Farms	LC	IRR	197	2.22	
3907-3	Russell Lafleur	LC	IRR	73	1.04	
4527-3	Booge Properties Limited Partnership	LC	IRR	238	3.4	
4585-3	JFR-INV-LTD, LLC	LC	IRR	167	2.38	
4745-3	McCook Lake Izaak Walton League	LC	IRR	211	3	
4762-3	Mike or Matt Schmitz	LC	IRR	136	1.89	
5078-3	Bradley & Constance Beavers	LC	IRR	40	0.57	
5388-3	L G Everist Inc	LC	IND		0.45	
5437-3	Dakota Dunes Community Improvement District	LC	MUN		3.33	
5666-3	Joe & John Trudeau	LC	IRR	203	1.56	
5782-3	City of North Sioux City	LC	MUN		1.14	
5786-3	Dakota Dunes Golf Course	LC	IRR	173	4.5	
5827-3	Don Lantis	LC	COM		0.022	
5935-3	Ted Waitt	LC	IRR	1	0.044	
5991-3	Donald G Jorgensen	LC	IRR	95	1.36	
5998-3	Clay Rural Water System Inc	PE	IRR	300	2.22	
5998A-3	Clay Rural Water System Inc	PE	IRR		0	
6031-3	LaFleur Farms	LC	IRR	95	1.77	
6557-3	Mike Chicoine	PE	IRR	60	1.55	
6580-3	West Shore Acres LLC	LC	COM		0.1	
6680-3	Parks & Wildlife Foundation	LC	IRR	310	2.44	
7059-3	WE Investments	PE	REC		3.11	
7280-3	Tami Norton-Schrempp	PE	IRR	136	1.78	
7319-3	Matt Schmitz	PE	IRR	120	1.45	
7388-3	Clay Rural Water System Inc	PE	DOM, IRR		2	
7410-3	Eugene Mollet	PE	IRR	67	1.33	
7630-3	Mark A Nylen	PE	IRR	160	3.34	
8029-3	Dakota Dunes Community Improvement District	PE	IRR	17.8	0.78	
8181-3	Marc T Bernard	PE	IRR	40	0.89	
8354-3	TR Golf LLC	PE	IRR	30	1.11	
8381-3	R P Constructors	PE	COM		0.04	1
8435-3	Sioux City Insulation	PE	COM		0.33	1
8560-3	TR Golf LLC	PE	IRR	65	0.12	
LC: Licensed Water Right; PE: Water Permit; COM: Commercial; DOM: Domestic; IND: Industrial; IRR: Irrigation;						
MUN: Municipal; REC: Recreation						

The Missouri: Elk Point aquifer ranges from confined to unconfined aquifer conditions, but is primarily under unconfined conditions (Niehus, 1994 and 1997). The aquifer is expected to be locally confined at the existing well site based on well completion report on file for the existing well; however, the lithologic log on file for observation well UN-78C indicates the aquifer varies to unconfined conditions nearby (SDGS, 2023; Water Rights, 2023b and 2023d). However, the confined conditions locally encountered in the Missouri: Elk Point aquifer often react to pumping in a manner more similar to unconfined conditions than confined conditions (Mathiowetz, 2021). 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).

Near the existing well site, the Missouri: Elk Point aquifer has a saturated aquifer thickness of approximately 20 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).

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 Missouri: Elk Point aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated thickness of the Missouri: Elk Point aquifer in Union and Lincoln Counties, and the lack of well interference complaints from the Missouri: Elk Point aquifer in the area, 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. Additionally, the well proposed to be used is an existing well that has been in place and is presumed to have been in use since roughly 1973 without any reported well interference complaints on file with the DANR-Water Rights Program (Water Rights, 2023c, 2023d, and 2023e). Therefore, there is a reasonable probability that any interference from the proposed appropriation will not impose unlawful impairments on existing users with adequate wells.

DAKOTA AND MISSOURI: ELK POINT AQUIFERS - CONCLUSIONS:

1. Water Permit Application No. 8727-3 proposes to irrigate 10 acres from wells authorized Water Right No. 2011-3 and Water Permit No. 8510-3. Water Right No. 2011-3 authorizes a maximum instantaneous diversion rate of 1.31 cfs from one well completed into the Missouri: Elk Point aquifer (108 feet deep) for the irrigation of 95 acres. Water Permit No. 8510-3 authorizes a maximum instantaneous diversion rate of 1.11 cfs from one well completed into the Dakota aquifer (290 feet deep) for the irrigation of 30 acres.
2. The application proposes to irrigate an additional 10 acres with no increase in the 1.31 cfs diversion rate authorized by Water Right No. 2011-3 or the 1.11 cfs diversion rate authorized by Water Permit No. 8510-3. In addition, this application will authorize the irrigation of the entire 105 acres as described in the application from either the Dakota aquifer well covered by Water Permit No. 8510-3 or the Missouri: Elk Point aquifer well covered by Water Right No. 2011-3.
3. This application will supplement filling two borrow pits (ponds) authorized by Water Permit No. 8559-3. The site of interest is located in Union County east of Dakota Dunes.
4. Based on observation well data and the hydrologic budget, there is a reasonable probability that unappropriated water is available from the Dakota and Missouri: Elk Point aquifers to supply the proposed appropriation.
5. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8727-3 will not unlawfully impair adequate wells for existing water rights/permits and domestic users.

Nakaila Steen

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.
- Bredehoeft, J.D., Neuzil, C.E., and Milly, P.C., 1983. Regional Flow in the Dakota Aquifer: A Study of the Role of Confining Layers. Alexandria, Virginia: U.S. Geological Survey, 1983. Water-Supply Paper 2237.
- Carter, J.M., Driscoll, D.G., Williamson, J.E., and Lindquist, V.A., 2002. Atlas of Water Resources in the Black Hills area, South Dakota. Rapid City South Dakota: U.S. Geological Survey, 2002. Hydrologic Investigations Atlas HA-747.
- 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.
- Darton, N.H., 1909. Geology and Underground Waters of South Dakota. Water Supply Paper 227. U.S. Geological Survey, Washington D.C.
- Drinking Water Program, 2023. Drinking Water System Information. SD DANR – Drinking Water Program Online Database. Accessed March 3, 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.
- Kume, J., 1977. Geology and Water Resources of Charles Mix and Douglas Counties, South Dakota, Part II – Water Resources. South Dakota Geological Survey. Bulletin 22. Vermillion, SD.
- Mathiowetz, A.W., 2022. Report on Water Permit Application No. 8614-3: 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.
- Schoon, R.A., 1971. Geology and Hydrogeology of the Dakota Formation in South Dakota. South Dakota Geological Survey Report of Investigations No. 104. Vermillion, SD.
- SDGS, 2023. South Dakota Geological Survey Lithologic Logs Database. Accessed April 3, 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 April 12, 2023. https://waterdata.usgs.gov/nwis/uv?site_no=06467500&legacy=1
- Water Rights, 1987. Findings of Fact, Conclusions of Law, and Final Decision in the Matter of Water Permit Application No. 5136-3, Farmland Industries Inc of Huron, SD. DANR-Water Rights Program file for Water Right No. 2313-2. Pierre, SD.
- Water Rights, 1995. Findings of Fact, Conclusions of Law, and Final Decision in the Matter of Water Permit Application No. 2313-2, Coca-Cola Bottling Company of the Black Hills. DANR-Water Rights Program file for Water Right No. 2313-2. Pierre, SD.
- Water Rights, 2023a. "1979-2021 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. "2003-2021 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.**

April 24, 2023

TR Golf, LLC
c/o Jay D Layman
150 S. Oak Tree Ln
Dakota Dunes SD 57049

Dear Mr. Layman:

Water Permit Application No. 8727-3 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 Dakota Dunes North Sioux City Times printed at North Sioux City/Dakota Dunes SD (Ph # 605 232-3539) and the Daily Press & Dakotan printed at 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.

NOTICE OF APPLICATION NO. 8727-3 to Appropriate Water

Notice is given that TR Golf, LLC 150 S. Oak Tree Ln, Dakota Dunes, SD 57049 has filed an application for a water permit to irrigate an additional 10 acres from wells authorized by Water Right No. 2011-3 and Water Permit No. 8510-3. Water Right No. 2011-3 authorizes 1.31 cubic feet of water per second (cfs) from one well completed in the Missouri Elk Point Aquifer (108 feet deep) located in the Govt. Lot 1 for irrigation of 95 acres located in the N 1/2 NW 1/4, SE 1/4 NW 1/4, NW 1/4 NE 1/4; all in Section 26—T89N—R48W. Water Permit No. 8510-3 authorizes 1.11 cfs from one well completed in the Dakota aquifer located in Govt. Lot 1 Section 26 to irrigate 30 acres in the area described above, also known as Govt. Lots 1 and 2, NW 1/4 NW 1/4 Section 26, and in Govt. Lot 3 Section 23; all in T89N-R48W. The application proposes to irrigate an additional 10 acres located in Govt. Lot 3 Section 23—T89N—R48W with no increase in the 1.31 cfs diversion rate authorized by Water Right No. 2011-3 or the 1.11 cfs diversion rate authorized by Permit No. 8510-3. In addition, this application also will authorize irrigation of the entire 105 acres area as described from either the Dakota aquifer well covered by Permit No. 8510-3 or the Missouri Elk Point aquifer well covered by Water Right No. 2011-3. This application will also supplement filling two borrow pits (ponds) located in Govt. Lot 3 Section 23 and Govt. Lot 1 Section 26; all in T89N-R48W authorized by Water Permit No. 8559-3. This site is located east of Dakota Dunes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8727-3 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 May 15, 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 May 15, 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: Monday, April 24, 2023 9:44 AM
To: Kelly Kronaizl
Subject: 8727-3 TR Golf, LLC - Public Notice
Attachments: FORM8.FRM.doc; 8727-3 public.short_final.docx

Attached is a notice to be published on May 4, 2023 in the Daily Press & Dakotan newspaper.

TR Golf, LLC, c/o Jay Layman, 150 S Oak Tree Ln, Dakota Dunes SD 57049, (605-232-3241) 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.

Thank you,

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



Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Monday, April 24, 2023 9:27 AM
To: 'timesleader@gmail.com'
Subject: 8727-3 TR Golf, LLC - Public Notice
Attachments: FORM8.FRM.doc; 8727-3 public.short_final.docx

Attached is a notice to be published on May 4, 2023 in the Dakota Dunes newspaper.

TR Golf, LLC, c/o Jay Layman, 150 S Oak Tree Ln, Dakota Dunes SD 57049, (605-232-3241) 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.

Thank you,

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



Rodriguez, Rachel

From: Shannon Jost <timesleader1@gmail.com>
Sent: Thursday, May 18, 2023 11:11 AM
To: Rodriguez, Rachel
Subject: Re: [EXT] 8727-3 TR Golf, LLC - Public Notice
Attachments: FORM8.FRM.doc; 8727-3 public.short_final.docx

Received, and I have added you to my contacts so this won't happen again. We will publish 5-25.

Thank you,

Shannon Jost

Publisher

Dakota Dunes/North Sioux City Times &
Southern Union County Leader-Courier

Legacy Publishing, L.L.C.

Email: timesleader1@gmail.com

Office: 605-356-2632

Cell: 712-541-1029

www.leadercourier-times.com

On May 18, 2023, at 11:08 AM, Rodriguez, Rachel <Rachel.Rodriguez@state.sd.us> wrote:

Oh dear, all right then **please publish on May 25, 2023**, attached is the updated public notice.

Also, please contact Jay Layman at (605-232-3241) 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.

Thank you,

Rachel Rodriguez

DANR | Program Assistant

Rachel.Rodriguez@state.sd.us



AFFIDAVIT OF PUBLICATION

State of South Dakota)

:ss

County of Union)

Shannon L. Jost,

the publisher of the Dakota Dunes / North Sioux City Times,
deposes and says that

The Dakota Dunes / North Sioux City Times

is a legal weekly newspaper of a general circulation, printed and published in North Sioux City, County of Union, State of South Dakota, and has been such legal newspaper during the time hereinafter mentioned, and that affiant is and was during all the time hereinafter mentioned in charge of the advertising department thereof, and has personal knowledge of all the facts stated in this affidavit: and that the notice and advertisement headed:

NO. 8727-3

Appropriate Water

a printed copy of which is hereunto attached and made a part hereof, was printed and published in the said newspaper at least once in

each week for 1 successive weeks; that said newspaper at the time of the first publication of said notice hereinafter stated, had, and still has, a bona fide circulation of over two hundred paid copies weekly, and had been published in the said County of Union for more than one year immediately prior to the date of the said publication of said notice, and that said newspaper during said times, was, and is, printed in part in an office maintained at said city of North Sioux City, the said place of publication; that the first publication of said notice in said newspaper was

on Thursday, the 25 day of May, 2023

and that the succeeding publications were

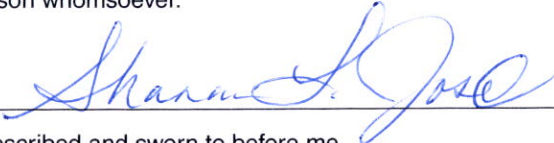
on Thursday, the _____ day of _____, _____

on Thursday, the _____ day of _____, _____

on Thursday, the _____ day of _____, _____

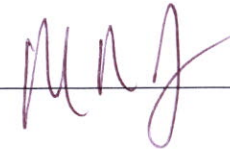
that the fees for the printing and publishing of said notice and advertisement in said newspaper as aforesaid were

\$ 51.95, that the full amount of the fee charged insures to the benefit of the publisher of the said newspaper, that no agreement or understanding for the division thereof has been made with any other person and that no part thereof has been agreed to be paid to any other person whomsoever.



Subscribed and sworn to before me

this 25 day of May, 2023



Notary Public

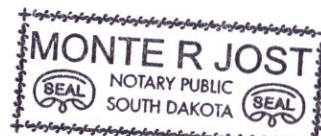
NOTICE OF APPLICATION NO. 8727-3 TO APPROPRIATE WATER

Notice is given that TR Golf, LLC 150 S. Oak Tree Ln, Dakota Dunes, SD 57049 has filed an application for a water permit to irrigate an additional 10 acres from wells authorized by Water Right No. 2011-3 and Water Permit No. 8510-3. Water Right No. 2011-3 authorizes 1.31 cubic feet of water per second (cfs) from one well completed in the Missouri Elk Point Aquifer (108 feet deep) located in the Govt. Lot 1 for irrigation of 95 acres located in the N 1/2 NW 1/4, SE 1/4 NW 1/4, NW 1/4 NE 1/4; all in Section 26-T89N-R48W. Water Permit No. 8510-3 authorizes 1.11 cfs from one well completed in the Dakota aquifer located in Govt. Lot 1 Section 26 to irrigate 30 acres in the area described above, also known as Govt. Lots 1 and 2, NW 1/4 NW 1/4 Section 26, and in Govt. Lot 3 Section 23; all in T89N-R48W. The application proposes to irrigate an additional 10 acres located in Govt. Lot 3 Section 23-T89N-R48W with no increase in the 1.31 cfs diversion rate authorized by Water Right No. 2011-3 or the 1.11 cfs diversion rate authorized by Permit No. 8510-3. In addition, this application also will authorize irrigation of the entire

105 acres area as described from either the Dakota aquifer well covered by Permit No. 8510-3 or the Missouri Elk Point aquifer well covered by Water Right No. 2011-3. This application will also supplement filling two borrow pits (ponds) located in Govt. Lot 3 Section 23 and Govt. Lot 1 Section 26; all in T89N-R48W authorized by Water Permit No. 8559-3. This site is located east of Dakota Dunes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8727-3 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.



My Commission Expires August - 08 - 2028

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 June 5, 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 June 5, 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 May 25, 2023
Published once at the total approximate cost of \$51.95 and may be viewed free of charge at www.sdpublicnotices.com

T20-7-161

RECEIVED

JUN 01 2023

OFFICE OF
WATER

AFFIDAVIT OF PUBLICATION

RECEIVED

MAY 18 2023

OFFICE OF
WATER

YANKTON DAILY PRESS AND DAKOTAN

JAY LAYMAN TR GOLF LLC
150 S OAK TREE LANE
DAKOTA DUNES SD 57049

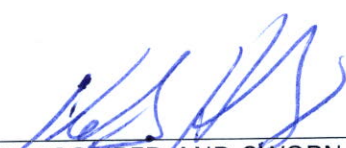
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

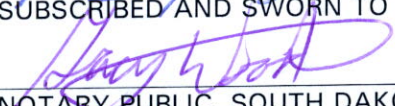
KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND 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 4th DAY OF May, 2023
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$49.60 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: 05/04/2023

FILED ON: 05/16/2023


SUBSCRIBED AND SWORN TO BEFORE ME THIS 16th DAY OF May, 2023


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

Notice is given that TR Golf, LLC 150 S. Oak Tree Ln, Dakota Dunes, SD 57049 has filed an application for a water permit to irrigate an additional 10 acres from wells authorized by Water Right No. 2011-3 and Water Permit No. 8510-3. Water Right No. 2011-3 authorizes 1.31 cubic feet of water per second (cfs) from one well completed in the Missouri Elk Point Aquifer (108 feet deep) located in the Govt. Lot 1 for irrigation of 95 acres located in the N 1/2 NW 1/4, SE 1/4 NW 1/4, NW 1/4 NE 1/4; all in Section 26T89NR48W. Water Permit No. 8510-3 authorizes 1.11 cfs from one well completed in the Dakota aquifer located in Govt. Lot 1 Section 26 to irrigate 30 acres in the area described above, also known as Govt. Lots 1 and 2, NW 1/4 NW 1/4 Section 26, and in Govt. Lot 3 Section 23; all in T89N-R48W. The application proposes to irrigate an additional 10 acres located in Govt. Lot 3 Section 23T89NR48W with no increase in the 1.31 cfs diversion rate authorized by Water Right No. 2011-3 or the 1.11 cfs diversion rate authorized by Permit No. 8510-3. In addition, this application also will authorize irrigation of the entire 105 acres area as described from either the Dakota aquifer well covered by Permit No. 8510-3 or the Missouri Elk Point aquifer well covered by Water Right No. 2011-3. This application will also supplement filling two borrow pits (ponds) located in Govt. Lot 3 Section 23 and Govt. Lot 1 Section 26; all in T89N-R48W authorized by Water Permit No. 8559-3. This site is located east of Dakota Dunes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8727-3 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 May 15, 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 May 15, 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.

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Monday, April 24, 2023 9:48 AM
To: '2riversgce@gmail.com'
Subject: 8727-3 TR Golf, LLC - Public Notice
Attachments: 8727-3_rec.pdf; 8727-3 APPL2.docx; 8727-3 public.short_final.docx

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(s) as soon as possible to authorize publication and arrange for payment. This information is being mailed to you today.

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

JUN 23 2023

TR Golf, LLC.
c/o Jay Layman
150 S. Oak Tree Ln
Dakota Dunes SD 57049

Dear Mr. Layman:

Enclosed is Water Permit No. 8727-3 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
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.: 8727-3

Name of Applicant: TR Golf, LLC, Jay Layman

Date of Posting: 5/4/2023

Date of Removal: 6/23/2023



Ron Duvall, Water Rights Permitting Administrator

6/23/23

Date

Subscribed and sworn to before me, a notary public, this 23rd day of June, 2023.



Notary Public - South Dakota
My commission expires: 5/16/2029

(SEAL)

