

WATER PERMIT NO. 8762-3

Name of Applicant: **James D. Gunderson**

Address: **30833 444th Ave, Mission Hill SD 57046**

Phone: **605-661-4747**

Amount of Water Claimed: **1.78 cfs**

Total Acres: **120**

Source of Water Supply: **Groundwater**

Water to be used for: **Irrigation**

County: **Yankton**

Type of Waste Disposal System:

Location: **3 miles east of Yankton**

PRIORITY

Date Received: **5-15-2023**

Application/License Fee: **\$950.00**

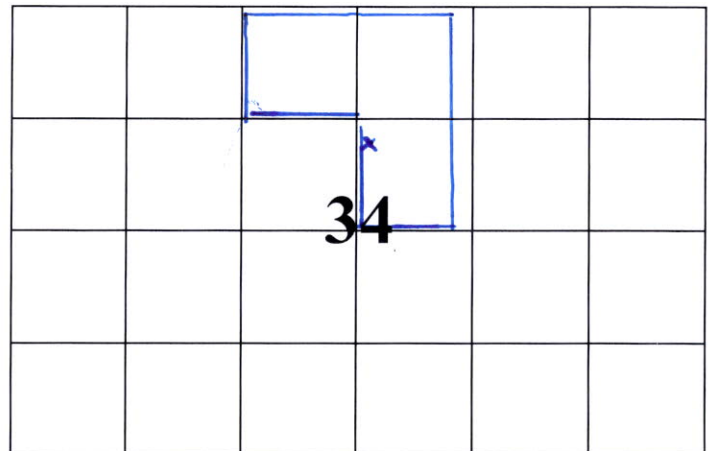
Corrected Application Received:

Period of Annual Use: **May 1 – October 31**

Remarks:

Diversion Point: **SW 1/4 NE 1/4 Section 34 -T94N-
R55W**

Land to be Irrigated: **NE 1/4 NW 1/4, NW 1/4 NE
1/4, SW 1/4 NE 1/4 Section 34 -T94N-55W**



Depth of Well: **112**

Well Driller: **Thein Well**

Remarks:

Type of Map: **aerial**

Reviewed and the Number Assigned on: **5-15-2023**

By: **Rachel Rodriguez**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 8762-3**

Date of first receipt of application May 15, 2023.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8762-3 to James D. Gunderson, 30833 444th Avenue, Mission Hill SD 57046 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. 8762-3 appropriates 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower James Missouri Aquifer (approximately 112 feet deep) located in the SW 1/4 NE 1/4 Section 34 for irrigation of 120 acres located in the NE 1/4 NW 1/4, W 1/2 NE 1/4 Section 34; all in T94N-R55W. This site is located approximately 3 miles northeast of Yankton SD.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 – October 31.
3. The date from which applicant may claim right is May 15, 2023.
4. The date of approval of Permit No. 8762-3 is July 31, 2023.
5. One-fifth of the construction is to be completed on or before January 31, 2026.
6. All construction is to be completed on or before July 31, 2028.
7. Water is to be put to beneficial use on or before July 31, 2032.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under Water Permit No. 8762-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 8762-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8762-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 120 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

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

AUG 04 2023
date



MAY 15 2023

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

OFFICE OF
WATER

PAID

MAY 15 2023

Ck# 737
Rec't# 8115123

Mail to: SD DANR, Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8762-3</u> Hydrologic Unit <u>10160011</u>
	Basin <u>Lower James</u>
	Newspaper <u>Daily Press & Dakotan</u>
	(office use only)

Application for Permit to Appropriate Water for Irrigation

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

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

- Name to Appear on Irrigation Permit James D. Gunderson
 Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.
 Mailing Address 30833 444 Ave Mission Hills SD 57046
 (Address) (City) (State) (Zip Code)
 Phone _____ Mobile 605-441-4747 Email jpgunde@hotmail.com
- Amount of water claimed 1.76 *CFS or 800 **GPM _____ ***AF Total Acreage 120
 (*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply water well/aquifer
- Location of point of diversion SW 1/4 of NE 1/4 Section 34-94N-55W
 (example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)
 County Yankton
- County or counties where water will be used Yankton County
- Annual period during which water is to be used May thru October 31
- 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 Section 34-94N 55W	40		
NW 1/4, NE 1/4 34-94N-55W	40		
SW 1/4 NE 1/4 34-94N-55W	40		

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

Drill a well to supply a Center Pivot Irrigation System
Applicant is requesting a diversion rate greater than statutory limit

James D. Gunderson owner, the applicant, certify under
 Name of Person Title (if applicable)
 penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

Supplemental Information

(type or print)

1. Well Information (check one or both as applicable)

☒ Drilling new well(s) ☐ Using existing well(s)

- a) If new wells, how many 1 Have test holes been drilled? ☒ Yes ☐ No Drilled by Thein Well
(if yes, please provide copies of logs)
- b) If existing wells, how many _____ Provide copy of log(s), if available. Drilled by _____

For either existing or proposed wells:

- c) Well Depth (required) 112' Depth to Top of Water Bearing Material 6' Depth to Water from Surface _____
- d) Distance to nearest domestic well on applicant's property 1500' Property owned by others 1500'

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

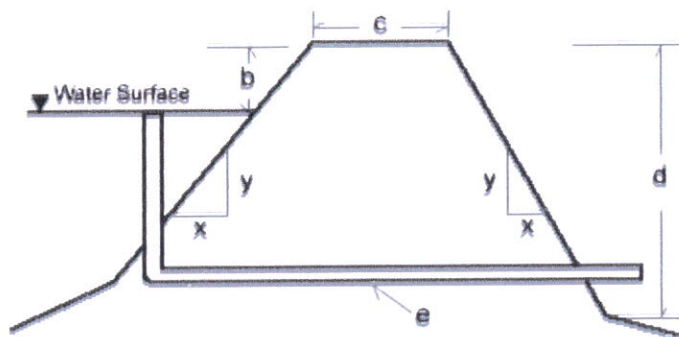
3. Dugout Information

- 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:

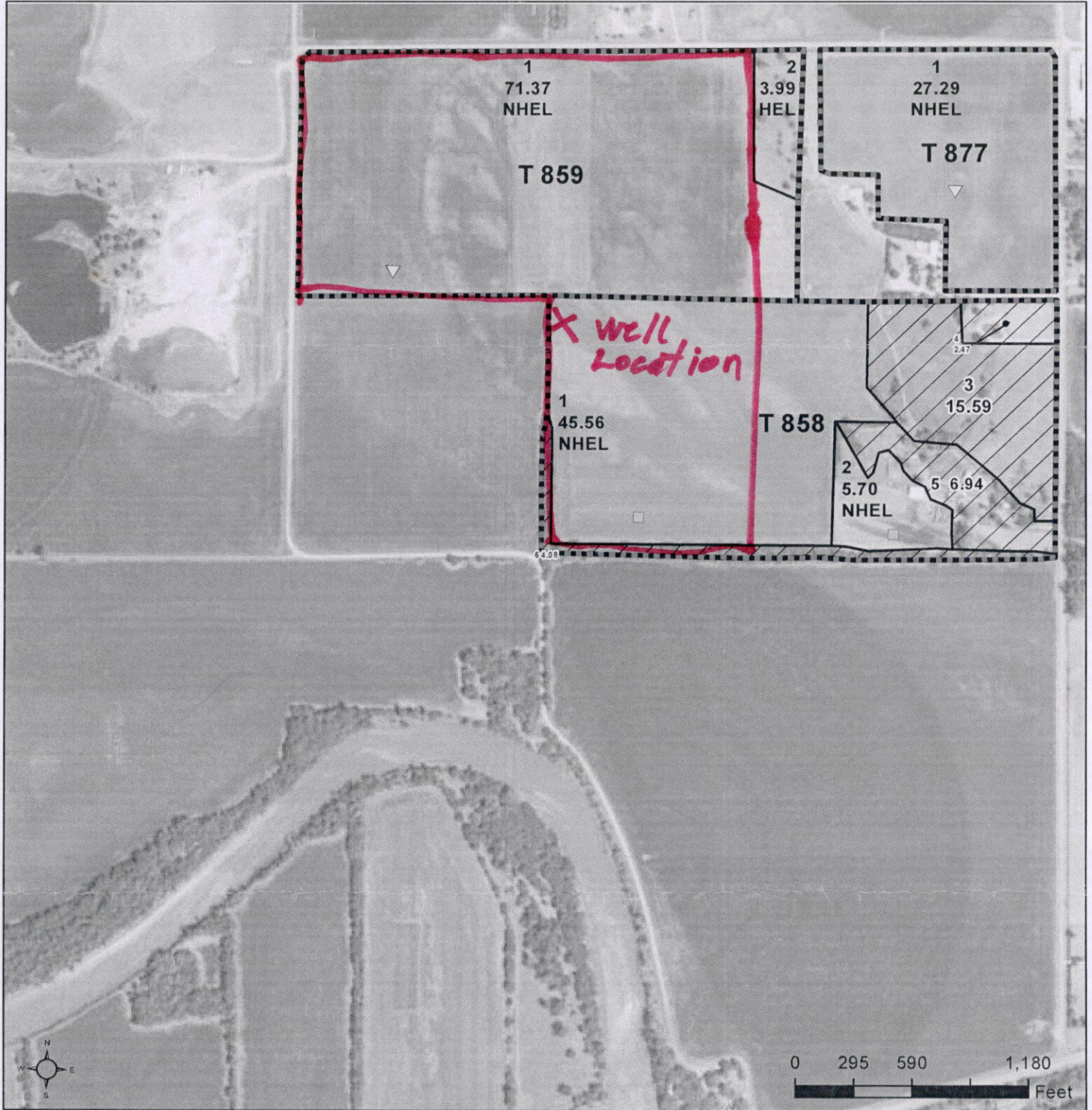


- b) Freeboard _____
- c) Crest Width _____
Crest Length _____
- d) Height _____
- e) Primary Outlet Capacity _____
If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream _____
Downstream _____
- h) Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres



United States
Department of
Agriculture

Yankton County, South Dakota



Common Land Unit

- Non-Cropland
- Cropland

Wetland Determination Identifiers

- Restricted Use
- ▽ Limited Restrictions
- Exempt from Conservation
- Compliance Provisions

Tract Boundary
PLSS

Unless otherwise noted,
crops listed below are:
Non-irrigated
Intended for Grain
Corn = Yellow
Soybeans = Common
Wheat - HRS or HRW
Sunflowers = Oil or Non

Producer initial _____
Date _____

2023 Program Year

Map Created April 21, 2023

Farm 4742

34 -94N -55W

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data 'as is' and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date May 15, 2023

RECEIVED OF Gunderson Cattle Co./James or Patricia Gunderson 30833 444 Ave. Mission Hill SD 57046

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

Fee for Application for Permit No. <u>8762-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>750.00</u>
Fee for Application for Permit No. _____ to Appropriate Water for Future use	\$ _____
Fee to retain Future Use Permit No. _____ after period of seven years.	\$ _____
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>8762-3</u>	\$ <u>200.00</u>
Fee for Filing Transfer Form _____	\$ _____
Fee for _____	\$ _____
Fee for Issuing New Well Driller's License No. _____	\$ _____
Fee for Renewal of Well Driller's License No. _____	\$ _____
Fee for Issuing Well Pump Installer's License No. _____	\$ _____
Fee for Renewal of Well Pump Installer's License No. _____	\$ _____
(Any Other Work Provided by Law)	
TOTAL	\$ <u>950.00</u>

By Eric Gronlund
Chief Engineer
EM



**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. 8762-3, James D. Gunderson**

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. 8762-3, James D. Gunderson, 30833 444th Avenue, Mission Hill SD 57046.

The Chief Engineer is recommending APPROVAL of Application No. 8762-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board with the following qualifications:

1. The well approved under Water Permit No. 8762-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 8762-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8762-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 120 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Eric Gronlund, Chief Engineer
July 10, 2023

Report to the Chief Engineer
On Water Permit Application No. 8762-3

James D. Gunderson

June 30, 2023

Water Permit Application No. 8762-3 proposes to appropriate water at a maximum instantaneous diversion rate of 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower James-Missouri aquifer (approximately 112 feet deep) located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 34 for the irrigation of 120 acres located in the NE $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$ of Section 34, all in T94N-R55W. The site is located approximately three miles northeast of Yankton, SD. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres.

AQUIFER: Lower James-Missouri (LJM)

HYDROGEOLOGY:

The Lower James-Missouri aquifer is a glacial outwash primarily consisting of interbedded medium sand and coarse gravel (Bugliosi, 1986), underlying portions of Clay, Hutchinson and Yankton Counties (Table 1). The Lower James-Missouri aquifer is hydraulically connected to many surface water features including the Lower Vermillion-Missouri aquifer, the Missouri: Elk Point aquifer, the Lower James-Missouri: Scotland aquifer, Choteau: East aquifer, the Dakota aquifer, the Niobrara aquifer, and in the northeast by the underlying Sioux Quartzite (Bugliosi, 1986; Lindgren and Hansen, 1990). Depth to the top of the aquifer can vary from 245 feet to less than one foot below the land surface within the James River floodplain (Lindgren and Hansen, 1990), but generally is within 100 feet of the land surface (Bugliosi, 1983). A portion of the Lower James-Missouri aquifer is designated as the Scotland management unit, but it is not included in the area of interest for Water Permit Application No. 8762-3 and will be excluded from this report. Figure 1 shows the approximate delineation of the Lower James-Missouri aquifer and location of the proposed diversion point.

Table 1: Estimated areal extent of Lower James-Missouri aquifer in Clay, Hutchinson, and Yankton Counties, and recoverable water in storage (Hedges et al., 1982).

County	Areal Extent (acres)	Recoverable Water in Storage (acre-feet)
Clay	5,400	81,000
Hutchinson	93,800	633,150
Yankton	92,500	2,081,250
Total	191,700	2,795,400

No water well or test hole completion report was submitted with Water Permit Application No. 8762-3. Within approximately three miles of the proposed diversion point, water well completion reports and lithologic logs on file for wells completed into the Lower James-Missouri aquifer for appropriate water uses vary between buried unconfined to confined conditions for the aquifer. Saturated aquifer thicknesses range from approximately 28 to 80 feet. Depth to top of the aquifer ranges from approximately 12 to 90 feet, and static water levels vary between approximately 19 to 84 feet. This would allow for sufficient saturated 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). Wells with a shallower top of aquifer depth are generally in the buried, unconfined portion of the Lower James-Missouri, and are often in the floodplain of the James River (Bugliosi, 1983). Based on the well completion reports, and lithologic logs on file for observation wells near the proposed diversion point, the Lower James-Missouri aquifer could be buried unconfined or confined near the proposed diversion point (SDGS, 2023; Water Rights 2023b and 2023d), but will most likely have confined aquifer conditions based on the estimated well depth (112 feet) requested by Water Permit Application No. 8762-3.

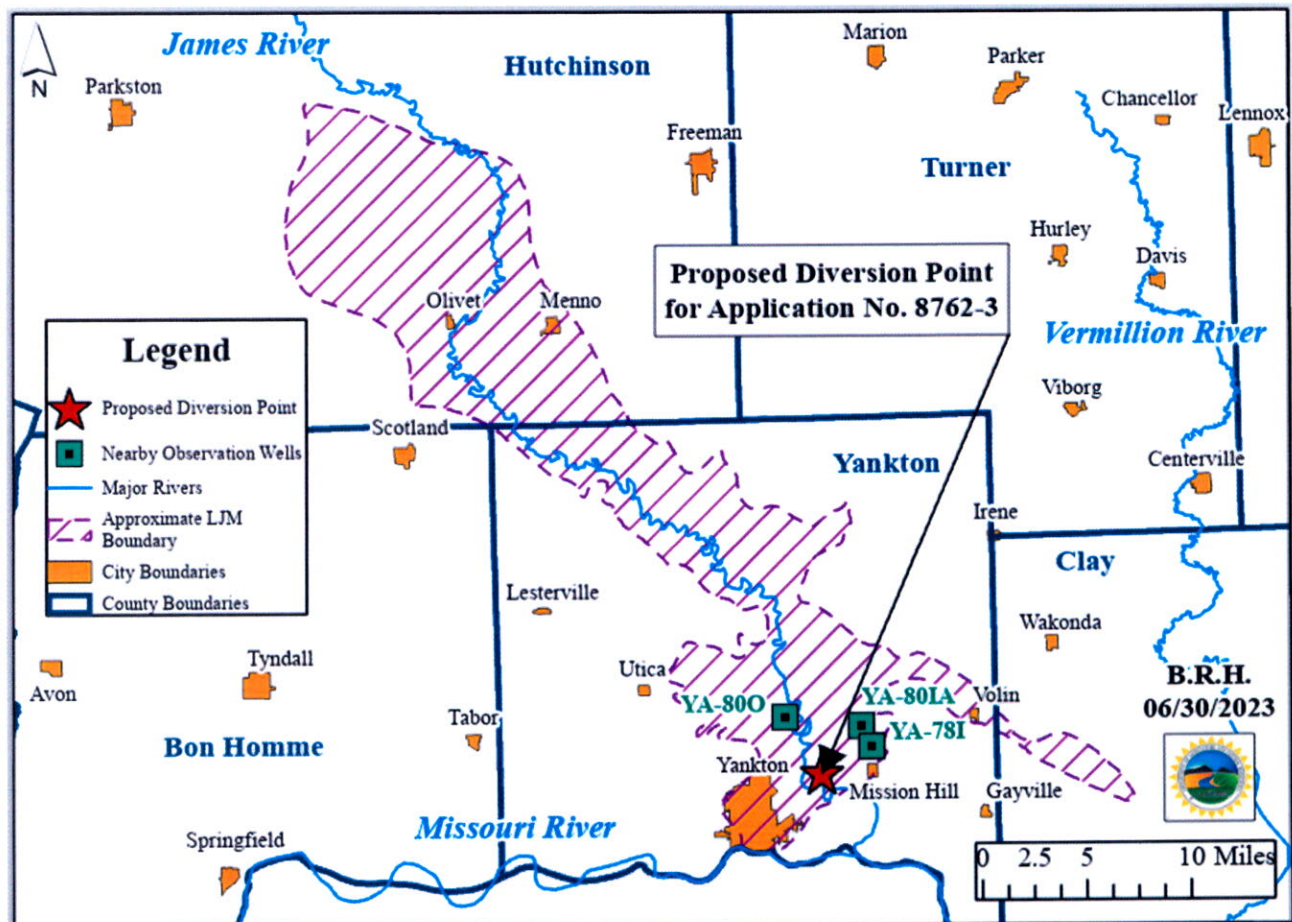


Figure 1: Map of the approximate Lower James-Missouri aquifer boundary (modified from Hedges et al., 1982), the location of the proposed diversion point for Water Permit No. 8762-3, and three closest observation wells (Water Rights, 2023b).

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 Lower James-Missouri aquifer.

SDCL 46-5-6:

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of 1.0 cfs per 70 acres, or “the equivalent thereof.” The statute provides that: “The Water Management Board may allow a greater diversion, in volume or rate or both, if the method of irrigation, any time constraints on diversion of water, or the type of soil so requires...”

If approved, Water Permit Application No. 8762-3 would authorize a maximum instantaneous diversion rate of 1.78 cfs from one well for the irrigation of 120 acres, from May 1st through October 31st, or at a rate of approximately 1.04 cfs per 70 acres. The applicant proposes to use a pivot making only a partial rotation. A center pivot making a partial rotation uses water at the same rate as a center pivot making a full rotation while irrigating less acres thus exceeding 1.0 cfs per 70 acres. This reason falls within SDCL 46-5-6 which allows the Water Management Board to allow a greater diversion rate and has been accepted by the Water Management Board and the Water Rights Program in the past.

WATER AVAILABILITY:

Water Permit Application No. 8762-3 proposes to appropriate water from the Lower James-Missouri aquifer. The probability of unappropriated water being available from the aquifer can be evaluated by considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source. An application may be approved, however, for withdrawals of groundwater from any groundwater formation older than or stratigraphically lower than the Greenhorn formation in excess of the average estimated annual recharge for use by water distribution systems.”

Water Permit Application No. 8762-3 does not involve a water distribution system as defined by SDCL 46-1-6 (17) and the aquifer is both younger and above the Greenhorn formation (Fahrenbach et al., 2010). Therefore, recharge and withdrawal must be considered. The methods of assessment are a hydrologic budget with quantified values of recharge and withdrawal, and observation well analysis.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Lower James-Missouri aquifer is primarily through the infiltration of precipitation, and seepage from surface water features, based on the significant permeability of the overlying soils which recharges the underlying alluvium and adjacent glacial aquifers (Bugliosi, 1986). These alluvial deposits and adjacent aquifers act as either a recharge or discharge area depending on the relative potentiometric-surface elevations (Bugliosi, 1986). Inflow from nearby Lower Vermillion-Missouri, Choteau: East, Dakota, and Niobrara aquifers are other sources of recharge (Bugliosi, 1986; Lindgren and Hansen 1990). Most recharge to glacial aquifers occurs during the spring and early summer months, and the amount of recharge varies due to fluctuating climatic conditions (Bugliosi, 1986).

Recharge rates have been calculated using regional flow-net analysis for the Lower James-Missouri aquifer and is estimated to be 1.5 inches/year (Hedges et al., 1985). The aquifer has an estimated total areal extent of 191,700 acres (Table 1). Therefore, the estimated average annual recharge rate is approximately 23,963 acre-feet/year.

Observation well data was analyzed to estimate a recharge rate of 3.9 inches/year for the unconfined portions of the Lower James-Missouri aquifer (Hedges et al., 1985). The areal extent of the unconfined portion of Lower James-Missouri aquifer was delineated to be approximately 82,200 acres (Stonesifer, 2014), however, this larger areal extent included portions of the aquifer that were delineated in McCook and Clay Counties based on SDGS lithologic logs (Stonesifer, 2014). The recharge rate of 3.9 inches/year was applied to this area to get a recharge for unconfined portions of the Lower James-Missouri aquifer of 26,700 acre-feet/year, which could be considered a maximum recharge rate. Overall, the estimated average annual recharge to the aquifer ranges between approximately 23,963 to 26,700 acre-feet/year (Hedges et al., 1982 and 1985; Stonesifer, 2014).

Discharge

Discharge from the Lower James-Missouri aquifer is primarily through well withdrawals, seepage to the James River via flood-plain alluvium, and evapotranspiration in areas where the aquifer is at or near land surface (Bugliosi, 1986; Lindgren and Hansen, 1990; Water Rights, 2023c). It is likely that areas of the Lower James-Missouri aquifer discharge into adjacent glacial aquifers depending on the relative potentiometric altitudes, however, the direction of water movement in the aquifer is toward the James River (Bugliosi, 1986; Lindgren and Hansen, 1990).

Currently, there are 132 established water rights/permits (irrigation and non-irrigation use) and one pending application (Water Permit Application No. 8765-3) that are authorized to appropriate or propose to appropriate water from the Lower James-Missouri aquifer (Water Rights, 2023c). Table 2 summarizes the eight non-irrigation water rights/permits authorized to appropriate water from the Lower James-Missouri aquifer with the estimated annual use in acre-feet per year for each water right/permit as determined by their permitted maximum diversion

rate or annual volume. Non-irrigation water rights/permits that are limited only by an instantaneous diversion rate are assumed to be pumping 60% of the time at the respective permitted diversion rates. Non-irrigation water rights/permits limited by an annual volume are assumed to withdraw their entire respective annual volume limitation. These are standard assumptions used by the DANR-Water Rights Program for estimating annual withdrawals from non-irrigation appropriations from an aquifer (Water Rights, 2023c). Overall, the estimated average annual withdrawal rate from the Lower James-Missouri aquifer by the non-irrigation water rights/permits is approximately 1,594.6 acre-feet/year (Table 2) (Water Rights, 2023c).

Table 2: Estimated annual use for the non-irrigation water rights/permits authorized to divert water from the Lower James-Missouri aquifer (Water Rights, 2023c).

Permit No.	Name	Use	Status	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet)	Estimated Use (acre-feet/year)
4556-3	Knife River	COM	LC	0.44	N/A	191.1
840-3	Stuelpnagels Inc.	COM	LC	1.11	N/A	482.2
6264-3	Yankton Land & Cattle Co.	COM	LC	0.56	N/A	243.3
6320-3	Wolf Creek Httrn. Brth.	COM	LC	0.08	N/A	34.8
6925-3	Tschetter Colony	COM	LC	0.07	N/A	30.4
7827-3	Maxwell Colony	COM	PE	0.33	N/A	143.4
1288-3	National Food Stores Inc.	IND	LC	0.16	N/A	69.5
8412-3	Knife River	IND	LC	7.8	400	400
COM (Commercial), IND (Industrial), LC (Licensed Water Right), PE (Water Permit)					TOTAL	1,594.6

Irrigation water rights/permits have been required to report their annual usage on an irrigation questionnaire since 1979. The estimated average annual withdrawal rate for the Lower James-Missouri aquifer irrigation water rights/permits that have reported over the period of record (1979 to 2021) is approximately 2,951 acre-feet/year (Table 3) (Water Rights, 2023a). To reflect the current development of irrigation water rights/permits more accurately, the average annual withdrawal rate for irrigation appropriations from 2012 to 2021 is approximately 5,398 acre-feet/year (Table 3) (Water Rights, 2023a).

There are currently 124 irrigation water rights/permits, including one pending irrigation application, authorized to appropriate water from the Lower James-Missouri aquifer (Water Rights, 2023c). Table 3 lists 120 water rights/permits as per the 2021 irrigation questionnaire (IQ) survey, and permit applications approved for irrigation use since then include Permit Nos. 8655-3, 8659-3, 8736-3, 8740-3 and the pending Water Permit Application No. 8765-3, authorizing the irrigation of 774 acres. Generally, irrigators in eastern South Dakota apply less than one foot of water per acre per year. To account for the fluctuation in wet and dry cycles from year to year, one foot of water per acre per year is used to overestimate the annual withdrawal rate for these irrigation water rights/permits. If Application No. 8765-3 is approved, the estimated average annual withdrawal rate for the five irrigation water rights/permits and the pending application not listed on Table 3 is approximately 774 acre-feet/year (Water Rights, 2023a and 2023c). The collective average annual withdrawal rate for the irrigation water

rights/permits from 2012 to 2021 (5,398 acre-feet/year), plus the estimated average annual withdrawal rate for the irrigation water rights/permits approved after the 2021 IQ survey (774 acre-feet/year) is approximately 6,172 acre-feet/year (Water Rights, 2023a and 2023c).

There are domestic wells completed into the Lower James-Missouri aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2023d). Due to their relatively low diversion rates, withdrawals from domestic wells are generally not considered to be a significant portion of the hydrologic budget. Additionally, rural water systems have been developed in areas where the Lower James-Missouri aquifer is the uppermost aquifer available, and it is likely that 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 aquifer.

Table 3: Reported historic irrigation use from the Lower James-Missouri aquifer and summary statistics from 1979 to 2021 (Water Rights, 2023a).

Year	No. of Permits Reporting	Reported Volume Pumped (acre-feet)
1979	22	588.00
1980	23	1,299.00
1981	33	1,835.00
1982	23	1,301.25
1983	27	1,306.54
1984	28	1,360.00
1985	27	1,483.00
1986	30	989.60
1987	30	1,041.60
1988	31	2,744.90
1989	31	2,144.80
1990	35	2,928.10
1991	42	2,599.00
1992	45	1,159.00
1993	45	230.44
1994	45	1,918.17
1995	41	1,483.32
1996	49	2,101.99
1997	50	2,320.00
1998	53	2,787.03
1999	50	2,102.15
2000	51	3,751.08
2001	53	2,940.09
2002	53	4,061.52
2003	53	2,843.15
2004	47	2,886.65
2005	48	2,866.63
2006	50	3,630.92
2007	56	3,425.91
2008	79	4,494.03
2009	84	1,463.27
2010	85	665.37
2011	89	4,147.47
2012	93	13,058.45
2013	118	7,855.75
2014	125	3,347.24
2015	127	4,822.86
2016	126	5,747.01
2017	126	5,727.12
2018	126	1,035.87
2019	127	328.01
2020	121	3,864.53
2021	120	8,195.56
Max	127	13,058.45
Min	22	230.44
Avg (1979-2021)	63	2,950.73
Avg (2012-2021)	121	5,398.24

Hydrologic Budget Summary

The estimated average annual recharge rate to the aquifer is approximately 23,963 to 26,700 acre-feet per year (Hedges et al, 1982 and 1985; Stonesifer, 2014). The estimated average annual withdrawal rate from the Lower James-Missouri aquifer is approximately 7,887 acre-feet per year (non-irrigation: 1,594.6 acre-feet/year; irrigation (2012 to 2021 IQ survey average plus the water rights/permits approved or pending since then): 6,172 acre-feet/year; Water Permit Application No. 8762-3 (if approved, assuming one foot application rate per authorized acre): 120 acre-feet/year). Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Lower James-Missouri aquifer for the proposed appropriation.

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 34 observation wells completed into the Lower James-Missouri aquifer (Water Rights, 2023b). The three closest observation wells to the proposed diversion point (as shown in Figure 1) are YA-78I (approximately 2.8 miles northeast), YA-80IA (approximately 3 miles northeast), and YA-80O (approximately 3.3 miles northwest) (Water Rights, 2023b). Hydrographs of observation wells are constructed by measuring the static water level from the top of the well casing over a period of record. The hydrographs of these nearest observation wells are displayed in Figures 2 to 4 (Water Rights, 2023b). It is worth noting that the hydrograph titles display DENR Water Rights Observation Well when the titles should display DANR Water Rights Observation Well. Observation well lithologic logs and water level data from hydrographs are useful for determining whether the well has been drilled in a confined or unconfined portion of the aquifer.

The overall trend for the hydrographs of the nearest observation wells to the proposed diversion point display stable with a recent slight lowering of water levels in some of the more southern observation wells over the respective periods of record. These three hydrographs were compared to the hydrographs for other observation wells completed in the Lower James-Missouri aquifer, and each display a similar trend (Water Rights, 2023b). The recent decline shown in a few of the southern observation wells is likely due to the connection between the Lower James-Missouri and Missouri: Elk Point aquifers. The Missouri: Elk point aquifer has significant connection to the Missouri River and the changes of the water level of the river affect the aquifer as documented in Future Use Permit Application No. 8754-3 (Water Rights, 2023c). This, in turn, affects the water levels of the observation wells near the Missouri: Elk Point aquifer.

The hydrographs for the Lower James-Missouri aquifer indicate that the aquifer responds well to climatic conditions because water levels are rising during wetter periods and declining to a stable and slightly lower water level during drier periods. Additionally, the water levels in the

observation wells display that the aquifer returns to pre-pumped conditions between irrigation seasons. Aquifer recovery indicates that climatic conditions and therefore, recharge to and natural discharges from the aquifer govern the long-term fluctuations of water levels in the aquifer rather than the impacts of pumping from the Lower James-Missouri aquifer. Therefore, observation well hydrographs demonstrate that unappropriated water is available for the proposed appropriation.

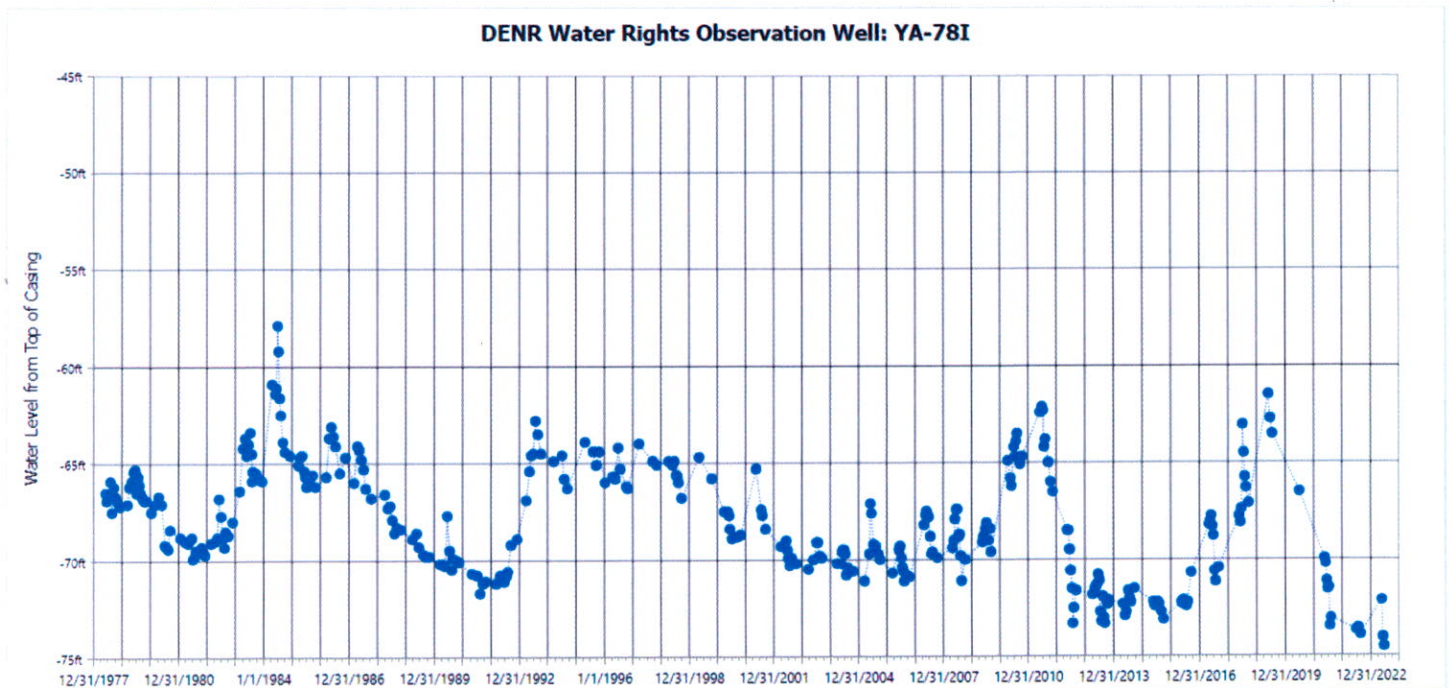


Figure 2: Hydrograph for observation well YA-78I (Water Rights, 2023b).

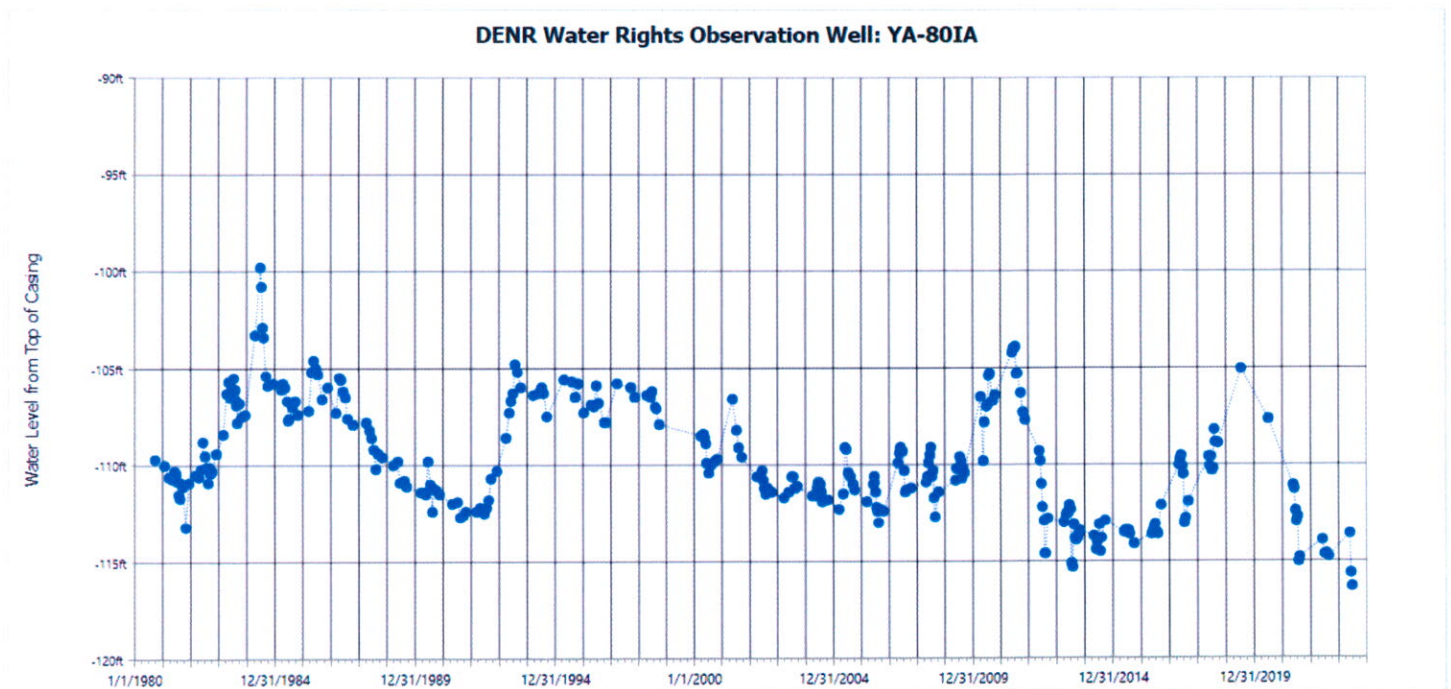


Figure 3: Hydrograph for observation well YA-80IA (Water Rights, 2023b).

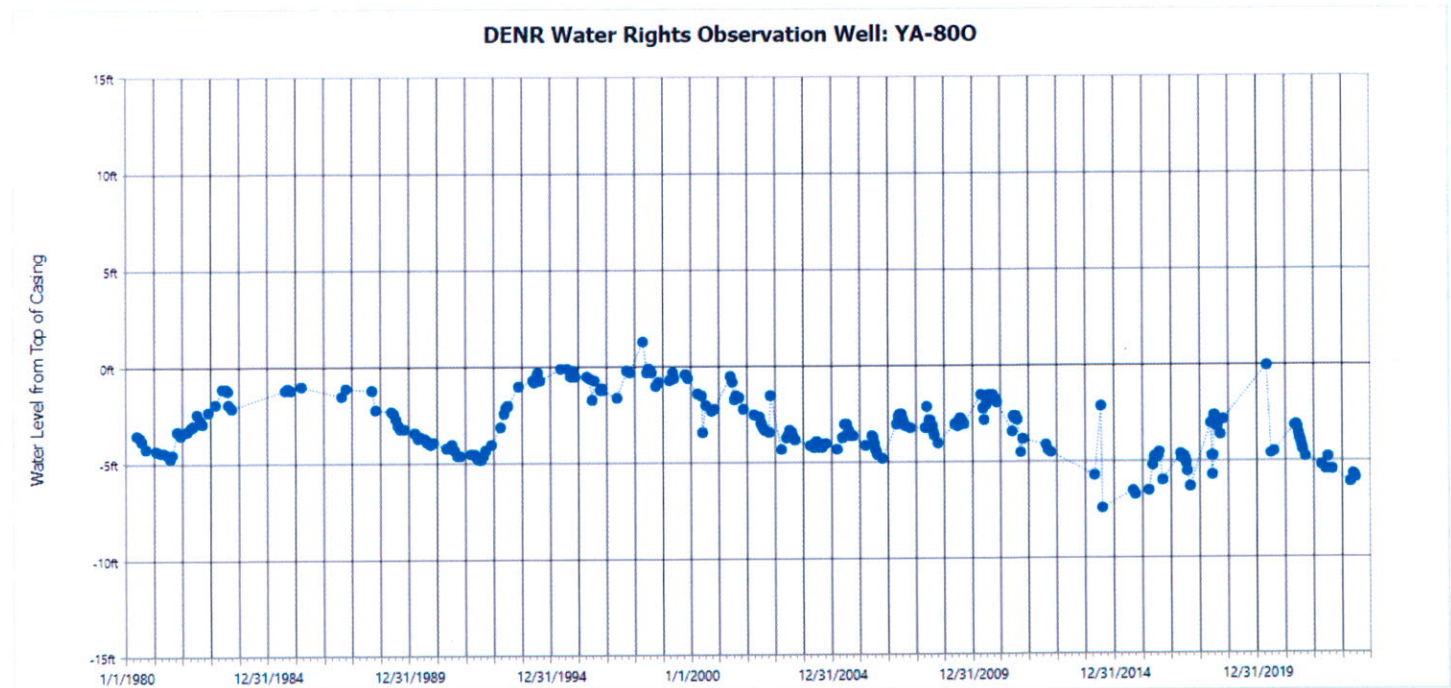


Figure 4: Hydrograph for observation well YA-80O (Water Rights, 2023b).

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 132 water rights/permits authorized (plus pending Water Permit Application No. 8765-3) to appropriate water from the Lower James-Missouri aquifer (Water Rights, 2023c). The closest water right/permit to the proposed diversion point is Water Right No. 4556-3, which is held by Knife River. The diversion point for Water Right No. 4556-3 is located approximately 0.42 miles northwest of the proposed diversion point for this application (Table 4) (Figure 5) (Water Rights, 2023c).

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Lower James-Missouri aquifer, with the closest domestic well on file (not held by the applicant) approximately 0.7 miles south of the proposed diversion point (Water Rights, 2023d). There could potentially be other domestic wells completed into the Lower James-Missouri aquifer near the proposed diversion point that are not on file with the DANR-Water Rights Program. The location of the domestic wells is based on the location provided at the time of completion by the well driller.

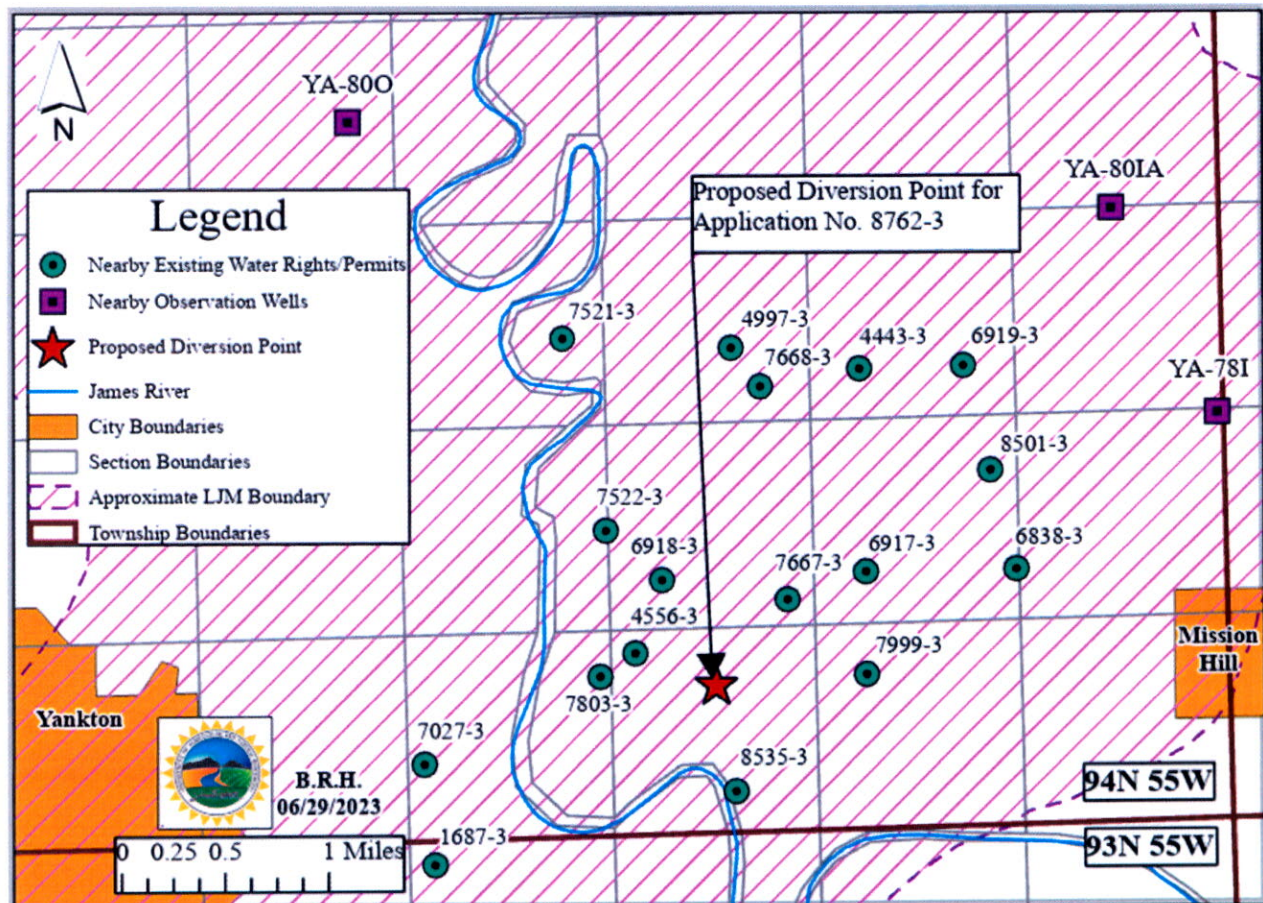


Figure 5: Map of the approximate Lower James-Missouri aquifer boundary (modified from Hedges et al., 1982; Water Rights, 2023f) showing nearby existing water rights/permits within approximately two miles around the proposed diversion point for Water Permit Application No. 8762-3 (Water Rights, 2023c).

Table 4: List of existing Lower James-Missouri aquifer water rights/permits near the proposed diversion point as shown on Figure 5 (Water Rights, 2023c).

Permit No.	Name	Priority	Status	Use	Authorized Diversion Rate (cfs)	Acres
1687-3	John Frick	07/03/1969	LC	IRR	1.2	83
4443-3	Dennis & Darrell Nelson	10/10/1979	LC	IRR	1.78	148
4556-3	Knife River	09/15/1980	LC	COM	0.44	N/A
4997-3	Dale Hebda	12/19/1983	LC	IRR	0.28	32
6838-3	Karl M. Schenk	03/22/2007	LC	IRR	2.0	120
6917-3	Karl M. Schenk	12/07/2007	LC	IRR	1.78	140
6918-3	Karl M. Schenk	12/07/2007	LC	IRR	1.33	55
6919-3	John & Jacqueline Smith	12/07/2007	LC	IRR	2.0	327
7027-3	Jack Frick	04/21/2008	LC	IRR	1.78	158
7521-3	John & Jackie Smith	11/16/2012	LC	IRR	1.44	100
7522-3	John & Jackie Smith	11/16/2012	LC	IRR	1.24	87
7667-3	Karl M. Schenk	01/28/2013	LC	IRR	0.67	31
7668-3	Karl M. Schenk	01/28/2013	LC	IRR	1.33	80
7803-3	Ralph Marquardt	02/27/2013	LC	IRR	1.56	67
7999-3	Karl M. Schenk	04/11/2014	PE	IRR	1.78	96
8501-3	John & Jackie Smith	03/19/2021	PE	IRR	1.33	80
8535-3	Jay Cutts	08/02/2021	PE	IRR	1.78	92

The Lower James-Missouri aquifer varies between confined and unconfined conditions (Bugliosi, 1986; Lindgren and Hansen, 1990). Based on water well completion reports and lithologic logs for observation wells near the proposed diversion point, the Lower James-Missouri aquifer is expected to be confined near the proposed diversion point (SDGS, 2023; Water Rights 2023b and 2023c). 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. Nearby observation wells YA-80IA and YA-78I are confined and can provide insight to how the aquifer responds to pumping. Lithologic logs for well YA-80IA state that the top of aquifer is at a depth of 135 feet with the top of the casing 2.2 feet above the ground (SDGS, 2023). Recent static water levels for this well (Figure 3) read a depth of approximately 116 feet, indicating that there is artesian head pressure in the well. YA-78I static water levels are also higher than the depth to top of aquifer, indicating artesian head pressure for that well. Both observation wells are within approximately two miles of 10 high-yield irrigation water rights/permits (Water Rights, 2023b and 2023c). A high yield well is one that is assumed to have a diversion rate greater than 0.2 cfs.

The Water Management Board recognizes that putting water to beneficial use requires a certain amount of drawdown to occur. The Board has developed rules to allow water to be placed to maximum beneficial use without the necessity of maintaining artesian head pressure for domestic use. The Water Management Board defined an “adversely impacted domestic well” in ARSD 74:02:04:20(7) as:

“A well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as near to the bottom of the aquifer as is practical and the water level of the aquifer

has declined to a level that the pump will no longer deliver sufficient water for the well owner's needs."

The Water Management Board considered the delivery of water by artesian head pressure versus maximum beneficial use during the issuance of Water Right No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Board adopted the Findings of Facts and Conclusions of Law that noted the reservation of artesian head pressure for delivery of water would be inconsistent with SDCL 46-1-4 which states, "general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable..." (Water Rights, 1995).

Furthermore, the Water Management Board found if increased cost or decreased production as a result of impacts on artesian head pressure by legitimate users is to be considered as an unlawful impairment, it would also conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to install or lower pumps depending on the specific characteristics of the Lower James-Missouri aquifer at their location.

When considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated aquifer thickness near the proposed diversion point, and the lack of well interference complaints for adequate wells completed into the Lower James-Missouri aquifer in Yankton County (Water Rights, 2023e), any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on existing water right/permit holders or domestic users with adequate wells. Therefore, there is a reasonable probability that any interference from the proposed appropriation will not impose unlawful impairments on existing users with adequate wells.

CONCLUSIONS:

1. Water Permit Application No. 8762-3 proposes to appropriate water at a maximum instantaneous diversion rate of 1.78 cfs from one well to be completed into the Lower James-Missouri aquifer (approximately 112 feet deep) for the irrigation of 120 acres. The site of interest is in Yankton County, approximately three miles northeast of Yankton, SD.
2. Based on observation well data and the hydrologic budget, there is a reasonable probability that unappropriated water is available from the Lower James-Missouri aquifer to supply the proposed appropriation.
3. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8762-3 will not unlawfully impair adequate wells for existing water rights/permits and domestic users.
4. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres due to the likely installation of a center pivot that will do a partial rotation. This reason falls within SDCL 46-5-6 which allows the Water Management Board to allow a greater diversion rate.



Brittan R. Hullinger
Natural Resources Engineer I
SD DANR - Water Rights Program



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

References

- Bugliosi, E.F. 1983. Major Aquifers in Yankton County, South Dakota. SD DANR Geological Survey Program. Information Pamphlet No. 28. Vermillion, South Dakota.
- Bugliosi, E.F. 1986. Water Resources of Yankton County, USGS Water Resources Investigations Report 84-4241. Huron, South Dakota.
- Fahrenbach, M.D., Steece, F.V., Sawyer, J.F., et al. 2010. South Dakota Stratigraphic Correlation Chart. Oil and Gas Investigations 3. SD DANR-Geological Survey. Vermillion, 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. et al. 1982. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa. Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
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- Stonesifer, J.R. 2014. Report to the Chief Engineer, Water Permit Application No. 7977-3, Dahlerup Family Trust, April 25, 2014. SD DANR Water Rights Program, Joe Foss Bldg. 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.

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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.



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

July 11, 2023

James D. Gunderson
30833 444th Avenue
Mission Hill SD 57046

Dear Mr. Gunderson:

Water Permit Application No. 8762-3 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Daily Press & Dakotan printed at Yankton SD (Ph # 605 665-7811). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

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. 8762-3 to Appropriate Water

Notice is given that James D. Gunderson, 30833 444th Avenue, Mission Hill SD 57046 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower James Missouri Aquifer (approximately 112 feet deep) located in the SW 1/4 NE 1/4 Section 34 for irrigation of 120 acres located in the NE 1/4 NW 1/4, W 1/2 NE 1/4 Section 34; all in T94N-R55W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately 3 miles northeast of Yankton SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8762-3 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 July 31, 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 July 31, 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: Tuesday, July 11, 2023 3:03 PM
To: Michael Pietz
Subject: 8762-3 James D. Gunderson - Public Notice
Attachments: 8762-3 public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on July 20, 2023.

James D. Gunderson, 30833 444th Avenue, Mission Hill SD 57046 (605 661-4747) has been notified to contact you to authorize publication and arrange for payment.

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

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

Thank you,

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



AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RECEIVED

JUL 24 2023

OFFICE OF
WATER

JIM GUNDERSON
30833 444TH AVE
MISSION HILL SD 57046

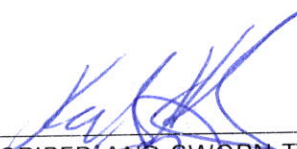
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

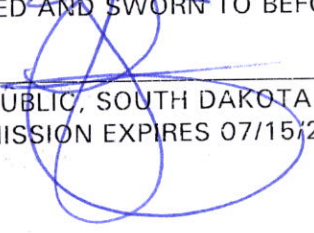
KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND 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 20th DAY OF July, 2023
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$40.96 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: 07/20/2023

FILED ON: 07/20/2023


SUBSCRIBED AND SWORN TO BEFORE ME THIS 20th DAY OF July, 2023


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

Notice is given that James D. Gunderson, 30833 444th Avenue, Mission Hill SD 57046 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower James Missouri Aquifer (approximately 112 feet deep) located in the SW 1/4 NE 1/4 Section 34 for irrigation of 120 acres located in the NE 1/4 NW 1/4, W 1/2 NE 1/4 Section 34; all in T94N-R55W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately 3 miles northeast of Yankton SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8762-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineers recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by July 31, 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 July 31, 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 \$40.96 and can be viewed free of charge at www.sdpublicnotices.com.

Published on July 20, 2023.

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Tuesday, July 11, 2023 3:06 PM
To: jpgunde@hotmail.com
Subject: 8762-3 James D. Gunderson - Public Notice
Attachments: 8762-3_rec.pdf; 8762-3_Ltr.pdf; 8762-3_Pub.pdf

Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your water permit application. As stated in the letter, **please contact the paper(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

AUG 04 2023

James D. Gunderson
30833 444th Avenue
Mission Hill SD 57046

Dear Mr. Gunderson:

Enclosed is Water Permit No. 8762-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

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

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

Sincerely,

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

enclosures



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

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

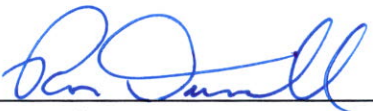
Pursuant to SDCL § 46-2A-4, public notice of the following application was posted on the DANR web site at <https://danr.sd.gov/public>. The posted public notice is the same notice as published in the pertinent newspaper(s) and a copy of the public notice is maintained in the application file. If the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

Application No.: 8762-3

Name of Applicant: James D. Gunderson

Date of Posting: 7/18/2023

Date of Removal: 8/4/2023

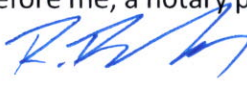


Ron Duvall, Engineer III

8/4/2023

Date

Subscribed and sworn to before me, a notary public, this 8th day of August, 2023.


Rachel Rodriguez
My Commission Expires
May 16, 2029

Notary Public - South Dakota
My commission expires:

(SEAL)





8762-3

**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

August 29, 2023

James D Gunderson
30833 444th Ave
Mission Hill SD 57046

8762-3

Dear Mr. Gunderson:

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

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

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

Sincerely,

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

RECEIVED

AUG 29 2023

NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEOFFICE OF
WATERDate 8/24/23TO: Water Rights Program, DANR
523 E. Capitol
Pierre, SD 57501-3181FROM: James D. Gunderson
(name)30833 444 Ave
(address)Mission Hill, SD 57046
(city, state, zip)605-661-4747
(phone)

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

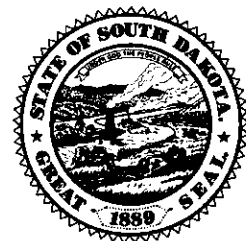
Water Permit No 8762-3 states that the water use system is to be constructed by 8-4-23, and water is to be put to beneficial use by 8-6-23.
(date) (date)

The water use system was completed on 8-6-23.
(date)

Applying the water to beneficial use was completed on 8-6-23.
(date)

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

James D. Gunderson
(signature)



8762-3

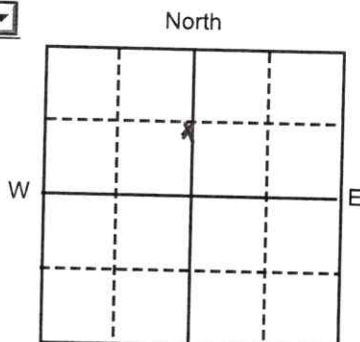
SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE 1/4 NW 1/4 Sec 34 Twp 94N Rg 55WCounty Yankton ☒

Please mark well location with an "X"



Well Completion Date

8/2/2023

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
1500 ft. from Septic (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Mud rotary

CASING DATA:

If other describe ☐ Steel ☒ Plastic ☐ Other

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	12 IN	0 FT	72 FT	18 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
Bentonite	25	Lb/gal	0 Ft	67 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

SCREEN:

☐ Perforated pipe ☒ Manufactured
 Diameter 12 Inches Length 20 Feet
Material PVCSlot Size .050 Set From 72 Feet to 92 FeetOther information 20' of 12" of Stainless steel screen, set from 92 to 112', .040 slot

WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☐ Yes, How?☒ No, Why Not?

Lab to which water quality sample sent for analysis

Irrigation well

Well Owner: Jim Gunderson

Business Name:

Address: 30833 444th AveCity, State, Zip: Mission Hill ☒ SD ☒ 57046

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top soil	0	3
Clay - brown	3	5
Gravel - dirty	5	6
Gravel	6	46
Sandy clay - gray	46	52
Sand	52	64
Gravel - medium	64	79
Gravel - fine	79	112
Sandy clay - gray	112	118

STATIC WATER LEVEL 24 FEETIf flowing: closed in pressure PSIGPM flow through Inch pipeControlled by ☐ Valve ☐ Reducers ☐ Other Reduced flow rate GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe: ☐ Bailed☐ Other

Pumping Level Below Land Surface

43.5 Ft. After 2 Hrs. pumped 776 GPM Ft. After Hrs. pumped GPMIf pump installed, pump rate: GPM

REMARKS

GPS: N42 55.1930 W97 19.6790

This well was drilled under license # 475 and this report is true and accurate.Drilling firm: THEIN WELL COMPANY, INCORPORATEDSignature of License Representative: Signature of Well Owner or Equitable Property Holder:

RECEIVED

OCT 10 2023

OFFICE OF
WATERDate:

Jim Gunderson

30833 444th Ave
Mission Hill SD 57046

Legend

 Feature 1

308th St

308th St

307th St

N42 55.1930 W97 19.6790  12" Irrigation well - 112' deep

444th Ave

307th St

Google Earth



1000 ft

**Report of Examination of Works and/or Application of Water to Beneficial Use
For Permit No. 8762-3**

I have this day, April 9, 2025, made a thorough examination of the water use system owned by James D. Gunderson, 30833 444th Ave., Mission Hill, SD 57046, holder of Permit No. 8762-3, bearing the priority date of May 15, 2023. This permit authorizes the diversion of 1.78 cu. ft. per second of the waters of groundwater (Lower James Missouri: Aquifer) authorizing the irrigation of 120 acres located in Yankton County.

Inspection contacts: James Gunderson

A. Works used to divert the water:

Well Information

- 1) Well Drilling Firm: Thein Well Company, Inc.
- 2) No. of Wells: 1
- 3) Depth(s): 112 feet
- 4) Well log is available: Yes

Casing:

- 1) Diameter: 12 inches
- 2) Length: 72 feet
- 3) Type: Plastic

Screen:

- 1) Diameter: 12 inches
- 2) Length: 20 feet of PVC
- 3) Length: 20 feet of SS
- 4) Static water level: 24 feet

Pump:

- 1) Make: Wolf
- 2) Model No.: 8MM7V
- 3) Capacity: 800 GPM

Motor:

- 1) Make: SME
- 2) Model No.: 65ME500T
- 3) Horsepower rating: 50 hp

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

- 1) Type: Aluminum Size: 8 inches Length: 30 feet

C. Works used to apply water to beneficial use:

Center Pivot:

- 1) Make: Zimmatic
- 2) Pivot length: 1,256 feet
- 3) End Gun: 109 feet
- 4) Number of towers: 7
- 5) End gun: Yes
- 6) Capacity: 805 GPM

Chemigation Equipment:

- 1) Does chemigate: No

D. Compliance with Permit Requirements:

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

E. Condition and Location:

- 1) The system is in good condition with the point(s) of diversion located as follows:
The well is 2,630 feet west and 1,340 feet south of the northeast corner of Section 34-T94N-R55W (Latitude 42.91982, Longitude -97.32805– SW1/4 of the NE1/4).
2) The works are capable of diverting and conveying to the places of use 1.79 cu. ft. per second of water from the well which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows:

<u>Section 34-T94N-R55W</u>	
<u>NE1/4NW1/4</u>	<u>32 acres</u>
<u>NW/4NE1/4</u>	<u>33 acres</u>
<u>SW1/4NE1/4</u>	<u>33 acres</u>

comprising a total of 98 acres of land and the license should be issued for 1.78 cfs.

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

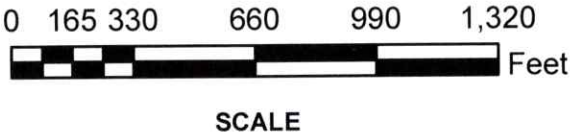
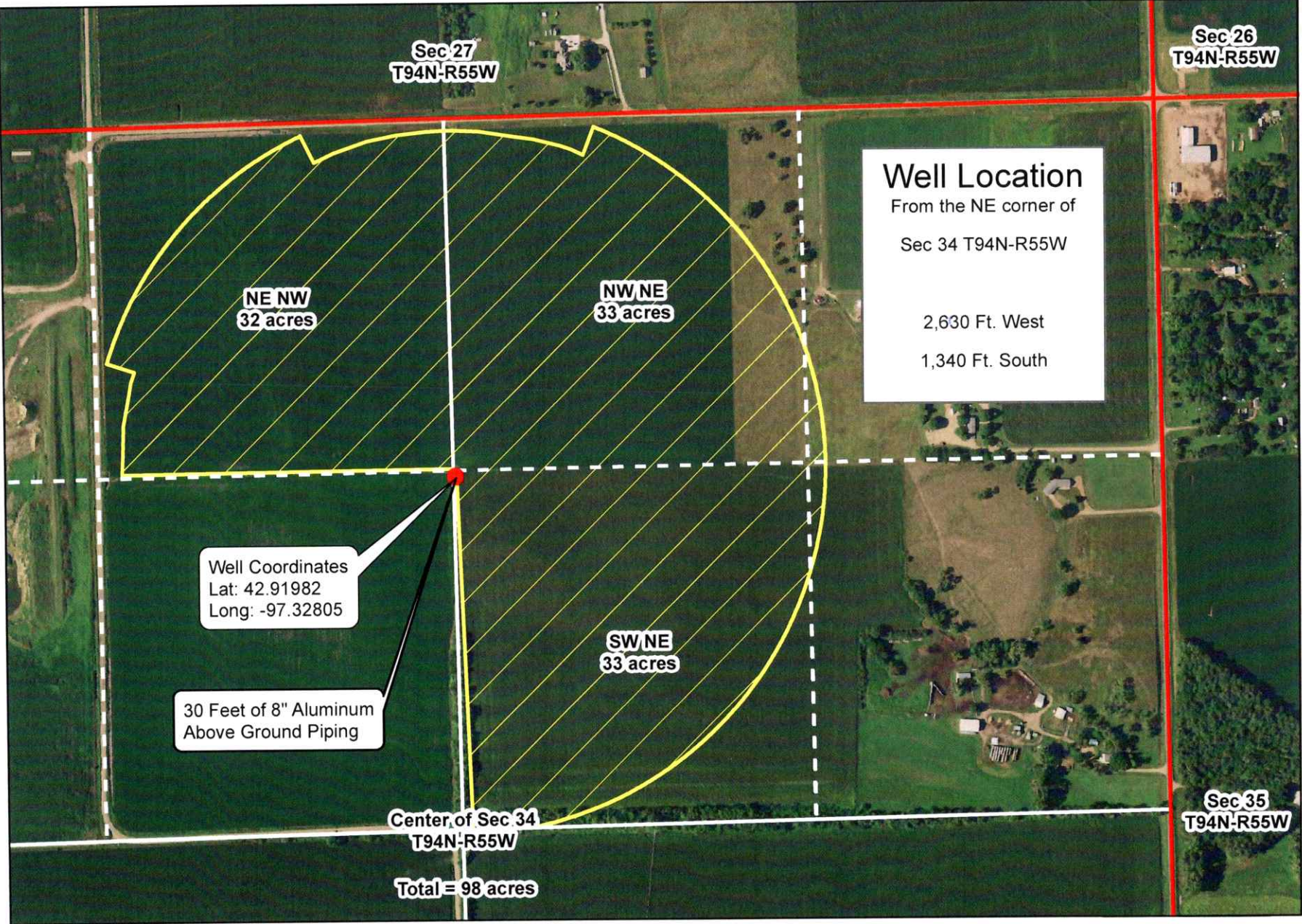
F. Comments or other permit(s) associated with the project: None.

Keith DeJong

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

Date report completed: April 10, 2025

Water Permit No. 8762-3



Keith DeJong
Keith DeJong, PE Ret.
Staff Engineer
April 9, 2025



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JUN 04 2025

James D Gunderson
30833 444th Ave
Mission Hill, SD 57046

No. 8762-3

Dear Mr. Gunderson:

Enclosed is Water License No. 8762-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Sincerely,

Mark Mayer, PE
Director of Office of Water
(605) 773-3352

Note: The inspection found your system for Water Right No. 8762-3 to be capable of diverting 1.79 cfs (approx. 804 gpm). Pursuant to SDCL 46-5-6 diversion of water under this license is limited to 1.78 cfs (approx. 800 gpm).

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8762-3**

(1) James D Gunderson, 30833 444th Ave, Mission Hill, SD 57046, made Application No. 8762-3, May 15, 2023, for a water permit to divert 1.78 cubic feet of water per second from groundwater, one well (Lower James Missouri Aquifer), Yankton County, South Dakota for irrigation purposes. Permit No. 8762-3, with a priority date of May 15, 2023, was approved July 31, 2023, and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before July 31, 2028, and for the application to beneficial use of water on or before July 31, 2032.

The permit holder submitted a Notice of Completion of Works and Application of Water to Beneficial Use form on August 29, 2023. The Notice stated the diversion system was completed on August 6, 2023 and the water was placed to beneficial use on August 6, 2023.

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

- 2,630 feet W and 1,340 feet S from the NE corner of Section 34, T94N, R55W (SW $\frac{1}{4}$ NE $\frac{1}{4}$)
(Latitude 42.91982 and Longitude -97.32805)

(3) The amount of appropriation may not exceed 2 acre-feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 – October 31.

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

Section 34, T94N, R55W
NW $\frac{1}{4}$ NE $\frac{1}{4}$ - 33 acres
SW $\frac{1}{4}$ NE $\frac{1}{4}$ - 33 acres
NE $\frac{1}{4}$ NW $\frac{1}{4}$ - 32 acres
Total – 98 acres

(5) Pursuant to South Dakota Water Law 46-5-30.1 James D Gunderson, the holder and/or owner of Water Right No. 8762-3 is issued a license to appropriate water, the right to use 1.78 cubic feet of water per second from groundwater, one well (Lower James Missouri Aquifer), with a priority date of May 15, 2023, from the location specified in (2) of this license for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8762-3 and subject to the following qualifications:

1. The well approved under Water Permit No. 8762-3 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals shall be controlled so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.

continued

2. The well authorized by Permit No. 8762-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *(The well was drilled in 2023 by Thein Well Co Inc. A copy of the well completion report is on file with the Water Rights Program.)*

3. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 8762-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 120 acres with an annual volume not to exceed 2 acre-feet of water per acre per year. *(The number of acres authorized for irrigation under Water Right 8762-3 was reduced to 98, based on the system as constructed.)*

4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.



Mark Mayer, PE
Director of Office of Water



date

