

WATER PERMIT NO. 8632-3

Name of Applicant: Bottolfson Brothers

Address: 46003 Timber Rd, Vermillion SD 57069

Phone: 605 677-9582

Amount of Water Claimed: 1.78 cfs

Total Acres: 122.04

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation

County: Clay

Type of Waste Disposal System:

Location: 7 miles north of Vermillion

PRIORITY

Date Received: 2-3-22

Application/License Fee: \$ 1050

Corrected Application Received: 2-4-22

Period of Annual Use: May 1 – Sept 30

Remarks: Requesting diversion rate greater than statutory limit

Diversion Point: center NE 1/4 Sec 11-T93N-
R52W

Land to be Irrigated: NE 1/4 Sec 11-T93N-R52W

Depth of Well: 120 feet deep

Well Driller:

Remarks:

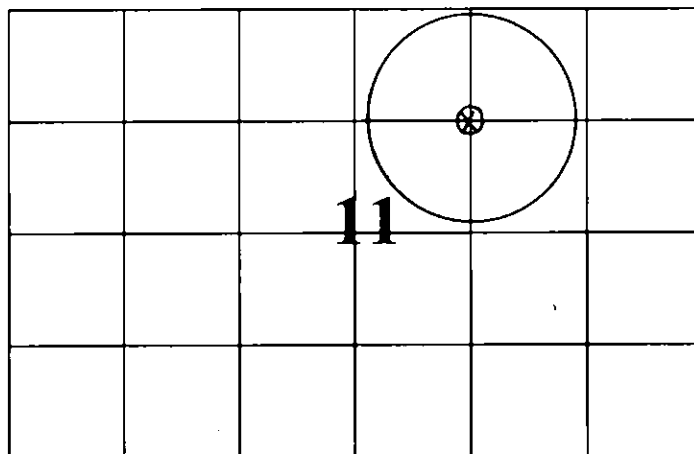
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 4-20-22

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



**SOUTH DAKOTA
WATER PERMIT NO. 8632-3**

Date of first receipt of application February 3, 2022.

Date of return to applicant for corrections, amendments or changes February 3, 2022.

Date of receipt of corrected application April 14, 2022.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8632-3 to Bottolfson Brothers, 46003 Timber Rd, Vermillion SD 57069 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 8632-3 appropriates 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower Vermillion:Missouri Aquifer (approximately 120 feet deep) located in the center of the NE 1/4 Section 11 for irrigation of 122.04 acres located in the NE 1/4 Section 11; all in T93N-R52W . This site is located approximately 7 miles north of Vermillion SD.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: May 1 – September 30.
3. The date from which applicant may claim right is February 3, 2022.
4. The date of approval of Permit No. 8632-3 is May 31, 2022.
5. One-fifth of the construction is to be completed on or before December 1, 2024.
6. All construction is to be completed on or before May 31, 2027.
7. Water is to be put to beneficial use on or before May 31, 2031.
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. 8632-3 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. 8632-3 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. 8632-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 122.04 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

JUN 28 2022
date



FORM 2: Application for irrigation in South Dakota

(type or print)

RECEIVED

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8632-3</u> (office use only) Hydrologic Unit <u>10170102</u>	FEB 03 2022
	Basin <u>Vermillion R.</u>	WATER RIGHTS PROGRAM FEB 3 2022
	Newspaper <u>Plain Talk</u>	Ck# <u>2227</u>
	<u>Press & Dakotan</u>	Rec't# _____

Application For Permit To Appropriate Water For Irrigation

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

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

1. Name to Appear on Irrigation Permit BOTTOLFSON BROTHERS

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

Mailing Address 46003 TIMBER RD VERMILLION SD 57069
(Address) (City) (State) (Zip Code)

Phone 605-624-8249 Mobile 605-677-9592 Email bottolfson64@hotmail.com

2. Amount of water claimed 1.78 *CFS or 800 **GPM ***AF Total Acreage 122.04
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply 1 well in the lower missouri aquifer

4. Location of point of diversion 1 well in the center of NE 1/4 T93N R52W S11
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

County CLAY

5. County or counties where water will be used CLAY

6. Annual period during which water is to be used may 1st - September 30

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
<u>NE 1/4 T93N R52W S11</u>	<u>122.04</u>		

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

To drill a well to supply water to a center pivot located in the NE 1/4 of T93N R52W S11 to irrigate 122.04 acres diverted from a center point pivot making a full 360° rotation.

* ASKING FOR MORE THAN STATUTORY LIMIT DUE TO SOIL TYPE

I, Bottolfson Brothers by Mark Bottolfson partner, 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 HEINE ELECTRIC IRRIGATION
(if yes, please provide copies of logs)

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

For either Existing or Proposed Wells:

c) Well Depth (required) 120 Depth to Top of Water Bearing Material 78' Depth to Water from Surface 63'

d) Distance to nearest domestic well on applicant's property NA Property owned by others NO

2. Wastewater Disposal System Information

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

b) System Capacity (gallons) Year Constructed

c) Connected to the City of Sanitary System

3. Dugout Information

a) Surface Dimensions Depth

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

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

b) Freeboard

c) Crest Width

Crest Length

d) Height

e) Primary Outlet Capacity

If pipe, diameter

f) Secondary Spillway Capacity

Spillway Width

g) X & Y Slope (e.g. 3 to 1 is a typical slope)

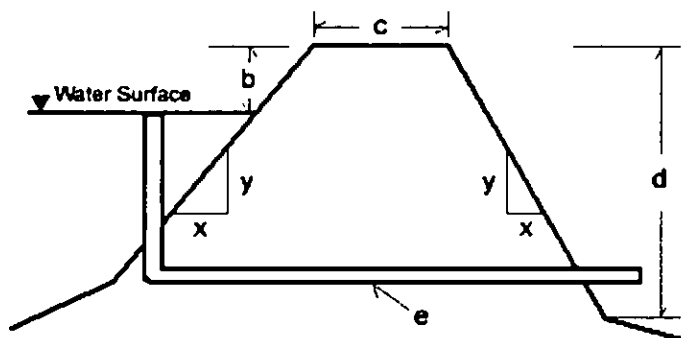
Upstream

Downstream

h) Surface Area of Impoundment

i) Storage Acre Feet

j) Drainage Area Above Dam Acres



Water Well Completion Reports

SEARCH WELLS

DRILLERS

PUMP INSTALLERS

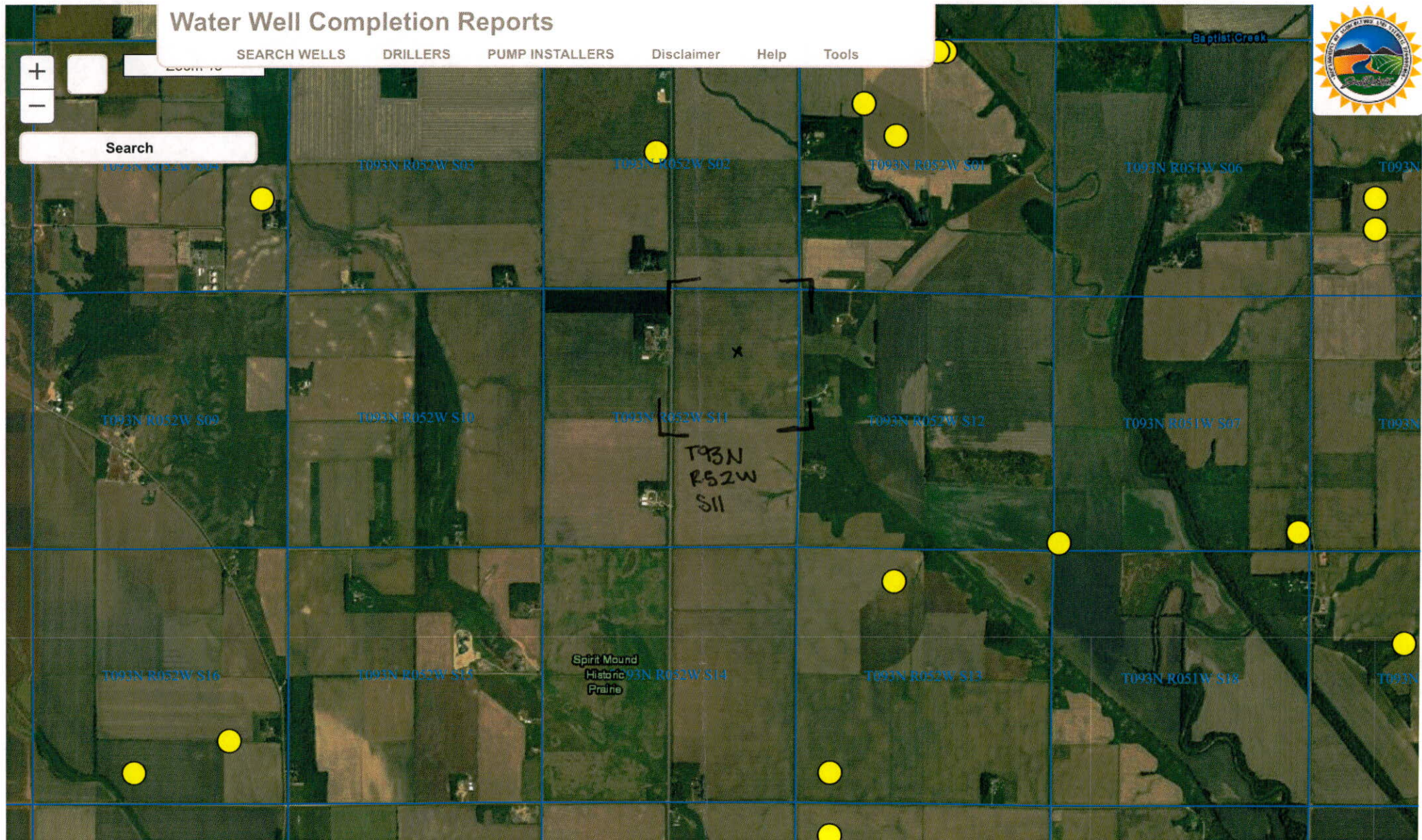
Disclaimer

Help

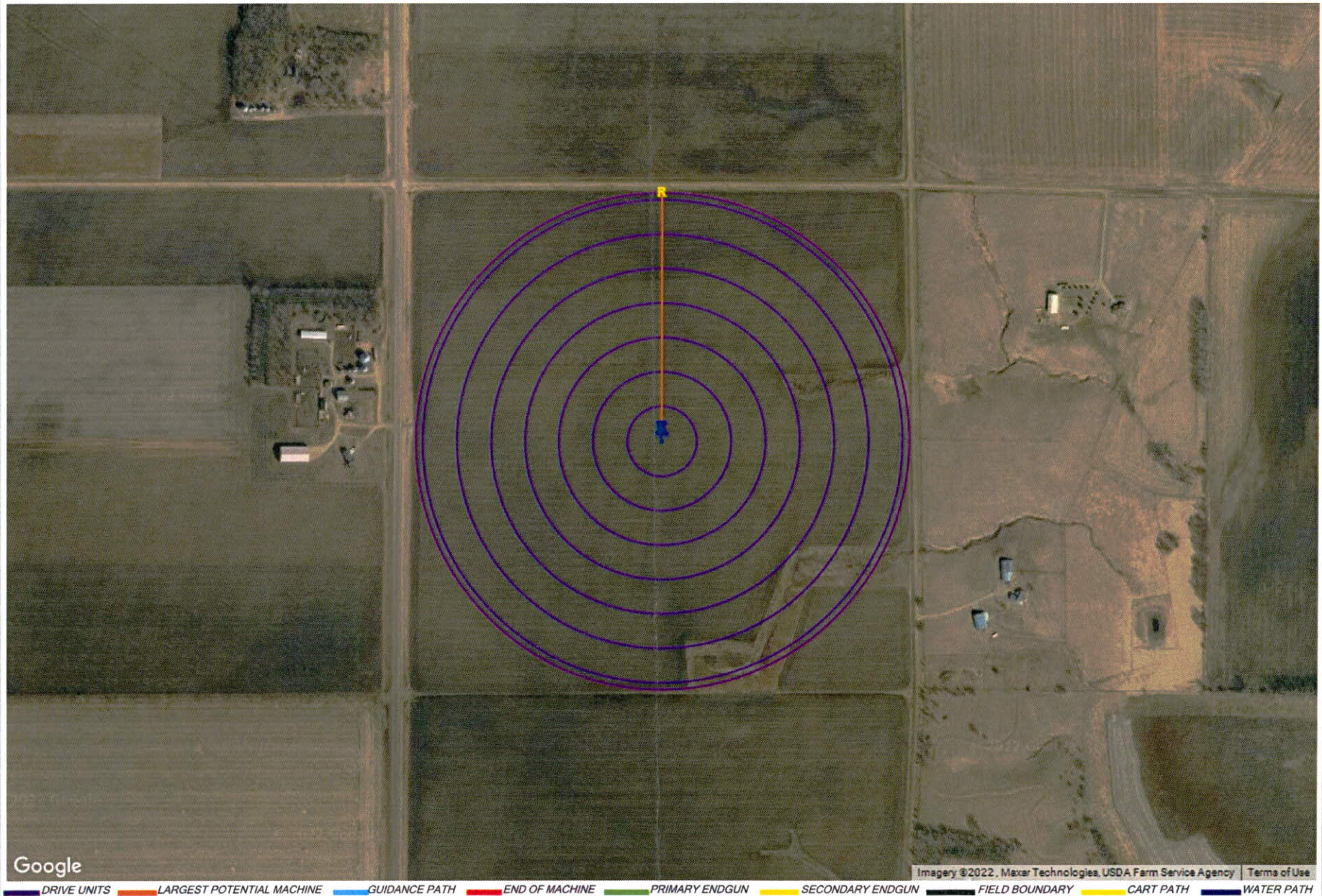
Tools



Search



Streets





Project Name - Mark Bottolfson - 2022

Version Name - Mark Bottolfson - 2022_Version

Map Summary Report



Field Name	Design Name	Machine Category	Machine Area (ac)	No. of Towers	Total Machine Length (ft)	Total Irrigated Area (ac)
 Pivot_1_1252022134842189	Mark Bottolfson - 2022	Large Field Electrical Pivot 8000	122.39	7	1298.12	122.04

Total Project Irrigated Area (ac): 122.04

(Mark Bottolfson - 2022)	Spans and Overhang	Comer	Endgun*	Bender / DropSpan	Polygon
Irrigated Area using (ac)	122.04	0	0	0	0.00

* Estimated

Total Span Length (ft) 1260.00

Overhang Length (ft) 36.00

Flex/Transition/Other Lengths (ft) 2.12

S.No	Diameter	Length (ft)	Cable Size	Motor Options	Tire Size	Bender / DropSpan	Profile
1	6 5/8	180.00	12 ga cable / 11 cond shielded	34 RPM Baldor Helical	14.9 x 24 Non-Directional Tubeless	None	Standard
2	6 5/8	180.00	12 ga cable / 11 cond shielded	34 RPM Baldor Helical	14.9 x 24 Non-Directional Tubeless	None	Standard
3	6 5/8	180.00	12 ga cable / 11 cond shielded	34 RPM Baldor Helical	14.9 x 24 Non-Directional Tubeless	None	Standard
4	6 5/8	180.00	12 ga cable / 11 cond shielded	34 RPM Baldor Helical	14.9 x 24 Non-Directional Tubeless	None	Standard
5	6 5/8	180.00	12 ga cable / 11 cond shielded	34 RPM Baldor Helical	14.9 x 24 Non-Directional Tubeless	None	Standard
6	6 5/8	180.00	12 ga cable / 11 cond shielded	34 RPM Baldor Helical	14.9 x 24 Non-Directional Tubeless	None	Standard
7	6 5/8	180.00	12 ga cable / 11 cond shielded	34 RPM Baldor Helical	14.9 x 24 Non-Directional Tubeless	None	Standard

Field Name	Latitude	Longitude	Pivot Road Angle	Pivot Road Offset	Start Angle	End Angle
Pivot_1_1252022134842189	42.892048492112984	-96.94894226222497	-	-	0 deg	360 deg

Duvall, Ron

From: Mark Bottolfson <bottolfson64@hotmail.com>
Sent: Friday, February 4, 2022 8:37 AM
To: Duvall, Ron
Cc: Schlaak, Karen
Subject: Re: [EXT] Water Permit Application to irrigate 122.04 acres

Follow Up Flag: Follow up
Flag Status: Flagged

It was done last week. I will check with them

Sent via the Samsung Galaxy S10e, an AT&T 5G Evolution capable smartphone
Get [Outlook for Android](#)

From: Duvall, Ron <Ron.Duvall@state.sd.us>
Sent: Thursday, February 3, 2022 2:18:26 PM
To: bottolfson64@hotmail.com <bottolfson64@hotmail.com>
Cc: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Subject: Water Permit Application to irrigate 122.04 acres

Mr. Bottolfson:

We have received your application for an irrigation permit. The second page of the application indicates that a test hole has been drilled by Heine Electric and Irrigation. How long ago was the test hole completed? I have reviewed the records submitted to us by well drillers and I cannot locate a copy of the test hole completion report. If it was done recently, it may not have been submitted to us yet. In the alternative, if you have a copy, could you please provide a copy to us?

Thank you,

Ron Duvall
Dept. of Agriculture & Natural Resources
Office of Water, Water Rights Program
605.773.3352
danr.sd.gov



DANR
SOUTH DAKOTA

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date February 3, 2022

RECEIVED OF Bottolfson Bros 1834 Constance Dr., Vermillion SD 57069

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

Fee for Application for Permit No. <u>8632-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>850.00</u>
Fee for Application for Permit No. _____ to Appropriate Water for Future use	\$ _____
Fee to retain Future Use Permit No. _____ after period of seven years.	\$ _____
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>8632-3</u>	\$ <u>200.00</u>
Fee for Filing Transfer Form _____	\$ _____
Fee for _____	\$ _____
Fee for Issuing New Well Driller's License No. _____	\$ _____
Fee for Renewal of Well Driller's License No. _____	\$ _____
Fee for Issuing Well Pump Installer's License No. _____	\$ _____
Fee for Renewal of Well Pump Installer's License No. _____	\$ _____
(Any Other Work Provided by Law)	
TOTAL	\$ <u>1050.00</u>

By Eric Groenlund
Chief Engineer

vm



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8632-3, Bottolfson Brothers**

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. 8632-3, Bottolfson Brothers, 46003 Timber Road, Vermillion SD 57069.

The Chief Engineer is recommending APPROVAL of Application No. 8632-3 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. 8632-3 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. 8632-3 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. 8632-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 122.04 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

May 5, 2022

Report to the Chief Engineer
On Water Permit Application No. 8632-3
Bottolfson Brothers c/o Mark Bottolfson

May 6, 2022

Water Permit Application No. 8632-3 proposes to divert water at a maximum instantaneous diversion rate of 1.78 cubic feet per second (cfs) from one well to be completed into the Lower Vermillion Missouri aquifer (approximately 120 feet deep) located in the center of the NE ¼ of Section 11 for the irrigation of 122.04 acres located in the NE ¼ of Section 11; all in T93N-R52W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. The site of interest is located in Clay County approximately seven miles north of Vermillion, SD.

AQUIFER: Lower Vermillion Missouri (LVM)

HYDROGEOLOGY:

The Lower Vermillion Missouri aquifer is a buried glacial outwash that is comprised of materials that range in size from a coarse sand to a coarse gravel (Niehus, 1994; Stephens, 1967). The Lower Vermillion Missouri aquifer underlies approximately 106,000 acres in Clay and Union Counties (Water Rights, 2022c). A more thorough discussion of the aquifer is detailed in the hydrogeology section within the report for Water Permit No. 8589-3 (Water Rights, 2022c).

No water well or test hole completion report was submitted with Water Permit Application No. 8632-3. Well completion reports on file with the DANR-Water Rights Program for wells completed into the Lower Vermillion Missouri aquifer within approximately one mile of the proposed diversion point for this application have saturated aquifer thicknesses ranging from approximately 25 to 85 feet, with the depth to the top of aquifer materials ranging from approximately 75 to 115 feet below the ground surface, and static water levels at well completion varying from approximately 60 to 70 feet below the ground surface (SDGS, 2022; Water Rights, 2022b and 2022d). The Lower Vermillion Missouri aquifer is expected to be confined at the proposed diversion point based on the well completion reports on file for nearby water rights/permits, and lithologic logs on file for nearby observation wells (SDGS, 2022; Water Rights, 2022b and 2022d).

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 Vermillion Missouri aquifer.

WATER AVAILABILITY:

Water Permit Application No. 8632-3 proposes to appropriate water from the Lower Vermillion 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." The Lower Vermillion Missouri aquifer is not older than or stratigraphically lower than the Greenhorn Formation (Fahrenbach et al., 2010), and the applicant's proposed use is not for use in a water distribution system as defined by SDCL 46-1-6(17). Therefore, the average annual recharge and average annual withdrawal rates to and from the Lower Vermillion Missouri aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Lower Vermillion Missouri aquifer occurs through seepage from the Vermillion River, groundwater inflow from the Upper Vermillion Missouri aquifer, and leakage from the underlying Dakota aquifer (Niehus, 1994; Stephens, 1967). The Lower Vermillion Missouri aquifer may also receive some recharge from the infiltration of precipitation, particularly near the unconfined portion of the aquifer in the Vermillion River floodplain (Niehus, 1994).

Using observation well analysis, Hedges and others (1985) estimated a recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer to be approximately 3.8 inches per year. Stonesifer (2013) recalculated Hedges and others (1985) estimated recharge rate to be approximately 4.58 inches per year using observation well analysis with additional years of data. Stonesifer (2013) noted recharge and discharge/withdrawals occur concurrently. This results in the calculated recharge rate estimated by using Hedges and other's (1985) method, being less than the actual recharge rate, because Hedges and others (1985) are only accounting for the recharge rate in excess of discharge plus withdrawals. The unconfined portion of the Lower Vermillion Missouri aquifer underlies approximately 12,000 acres (modified from Jensen, 2000; modified from Stonesifer, 2013). Using Stonesifer's (2013) recharge rate multiplied by the areal extent estimation, the average annual recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer is approximately 4,580 acre-feet per year.

For this analysis, it is assumed that the confined portion of the Lower Vermillion Missouri aquifer recharges at a similar rate and is hydrologically similar to the confined portion of the Upper Vermillion Missouri aquifer. Using regional flow-net analysis, Hedges and others (1985) estimated a recharge rate to the Upper Vermillion Missouri aquifer, which is primarily confined, to be approximately 0.25 inches per year. This recharge rate is lower than the average annual recharge rate estimated for other large (in areal extent) primarily buried and confined aquifers in eastern South Dakota (Hedges et al., 1985). It is worth noting that recharge rates calculated using

regional flow-net analysis are suspect and conclusions based on this method are questionable (Hedges et al., 1985). The confined portion of the Lower Vermillion Missouri aquifer underlies approximately 94,000 acres. Using Hedges and others' (1985) recharge rate multiplied by the areal extent estimation, the average annual recharge rate to the confined portion of the Lower Vermillion Missouri aquifer is approximately 1,958 acre-feet per year. In its entirety, the average annual recharge rate to the Lower Vermillion Missouri aquifer (within the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others' (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary) (confined and unconfined portions) is approximately 6,538 acre-feet per year.

Discharge

Discharge from the Lower Vermillion Missouri aquifer occurs through well withdrawals, groundwater outflow to the Missouri: Elk Point aquifer, and seepage to the Vermillion River when the stage of the river is lower than the potentiometric surface of the aquifer (Niehus, 1994; Water Rights, 2022c and 2022d).

There are 89 water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the historic aquifer boundary delineated by Hedges and others (1982), with 60 of those water rights/permits within the historic aquifer boundary minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer (Water Rights, 2022c). This results in 29 water rights/permits within the Lower Vermillion Missouri aquifer boundary delineated by Hedges and others (1982) that are also within the Upper Vermillion Missouri: South aquifer boundary identified by Buhler (2014) that are still labeled as withdrawing water from the Lower Vermillion Missouri aquifer.

Table 1 summarizes the estimated average annual withdrawal rate for the non-irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the historic aquifer boundary (Hedges et al., 1982), and within the historic aquifer boundary minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer. The estimated annual use for each water right/permit was 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, 2022c). There are seven non-irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the historic aquifer boundary delineated by Hedges and others (1982). There are five non-irrigation water rights/permits authorized to appropriate water within the historic Lower Vermillion Missouri aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014). The estimated average annual withdrawals from the Lower Vermillion Missouri aquifer by non-irrigation water rights/permits within the historic aquifer boundary is approximately 1,224.4 acre-feet per year, and approximately 48.6 acre-feet per year

within the historic aquifer boundary minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer (Table 1) (Water Rights, 2022c).

Table 1. Estimated average annual water use from the non-irrigation water rights authorized to appropriate water from the UVM aquifer within the historic aquifer boundary (Hedges et al., 1982), and within the historic aquifer boundary minus Buhler's (2014) delineation of the UVM:S aquifer (Water Rights, 2022c)

Permit No.	Name	Use	Status	Authorized Diversion Rate (cfs)	Authorized Annual Volume (acre-feet)	Estimated Use (acre-feet/year)
1870-3	USD Facilities MGMT	INS	I.C	0.03		13.0
6397-3	SD Dept of Transportation	INS	LC	0.033		14.3
8222-3	Southeast Farmers COOP	COM	PE	0.167	18.4	18.4
8257-3	Thein Well Co Inc	COM	PE	0.089	1	1
8479-3	Concrete Materials	IND	PE	0.133	1.84	1.84
					Total:	48.6
3905-3*	Clay Rural Water System Inc	RWS	I.C	2		868.8
5979-3*	Clay Rural Water System Inc	RWS	LC	2	307	307
					Total:	1,175.8
* Within aquifer boundary delineated by Hedges and others' (1982) and Buhler's (2014) UVM S boundary						
I.C: Licensed Water Right, PE: Water Permit, COM: Commercial, INS: Institutional, RWS: Rural Water System						

There are 82 irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within Hedges and others' (1982) historic aquifer boundary (Table 2) (Water Rights, 2022c). Irrigation water rights/permits have been typically required to report their annual usage on an irrigation questionnaire since 1979. However, Water Permit Nos. 8459-3, 8482-3, 8484-3, and 8589-3 were approved in 2020, 2021, or 2022 and have not submitted an irrigation questionnaire form yet (Water Rights, 2022a and 2022c). Water Permit Nos. 8459-3, 8482-3, 8484-3, and 8589-3 collectively authorize the irrigation of 326 acres (Water Rights, 2022c). Generally, irrigators using center pivots 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, the one foot of water per acre per year application rate will be used to somewhat overestimate the annual withdrawal rate for Water Permit Nos. 8459-3, 8482-3, 8484-3, and 8589-3. When applying one foot of water over the 326 acres currently authorized to be irrigated under Water Permit Nos. 8459-3, 8482-3, 8484-3, and 8589-3, the estimated annual withdrawal rate is approximately 326 acre-feet per year (Water Rights, 2022c). These four permits account for the difference with the number of currently authorized irrigation water rights/permits (82 water rights/permits), compared to the 78 water right/permits listed as reporting in 2020 on Table 2 (Water Rights, 2022c). The average annual withdrawal rate for the Lower Vermillion Missouri aquifer irrigation water rights/permits within the historic aquifer boundary that have reported over the period of record (1979 to 2020) is approximately 1,728.8 acre-feet per year (Table 2) (Water Rights, 2022a). The estimated average annual withdrawal rate for the Lower Vermillion Missouri aquifer irrigation water rights/permits within the historic aquifer boundary that have reported over the period of record (1979 to 2020) calculated on Table 2, plus the estimated use

for Water Permit Nos. 8459-3, 8482-3, 8484-3, and 8589-3, is approximately 2,055 acre-feet per year (Water Rights, 2022a).

There are 55 irrigation water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the current aquifer boundary, which was compiled by removing the water rights/permits that are within the Upper Vermillion Missouri: South aquifer identified by Buhler (2014) from the historic aquifer boundary estimated by Hedges and others (1982) (Table 2) (Water Rights, 2022c). The estimated average annual withdrawal rate for the Lower Vermillion Missouri aquifer irrigation water rights/permits within the historic aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014), that have reported over the period of record (1979 to 2020), plus the estimated use for Water Permit Nos. 8459-3, 8482-3, 8484-3, and 8589-3 is approximately 1,535 acre-feet per year (Table 2) (Water Rights, 2022a).

There are domestic wells completed into the Lower Vermillion Missouri aquifer that do not require a water right/permit, so the withdrawal amount for domestic use is unknown (Water Rights, 2022d). 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 Lower Vermillion Missouri aquifer.

Table 2. Reported irrigation use from LVM aquifer for water rights/permits within the historic aquifer boundary, and the historic aquifer boundary minus Buhler's (2014) delineation of the UVM:S aquifer (Water Rights, 2022a)

Historical Boundary of LVM aquifer (Hedges et al., 1982)			Historical Boundary of LVM aquifer (Hedges et al., 1982) Excluding UVM: S Aquifer Boundary (Buhler, 2014)		
Year	No. of Permits	Reported Pumpage (acre-feet)	Year	No. of Permits	Reported Pumpage (acre-feet)
1979	49	1.163	1979	41	1,008.40
1980	47	2.417	1980	39	2,198.25
1981	49	1.543	1981	40	1,500
1982	37	870.04	1982	28	788.17
1983	38	716.3	1983	29	716.3
1984	47	691	1984	38	669
1985	46	1,328.20	1985	37	1,147.20
1986	45	1,047.50	1986	36	937.5
1987	37	1.115	1987	28	934
1988	38	2,083.80	1988	29	1,617.10
1989	38	2,301.20	1989	29	1,705.20
1990	38	2,113.20	1990	29	1,496.20
1991	39	1,670.10	1991	30	1,254.10
1992	39	168.8	1992	30	133.7
1993	39	0	1993	30	0
1994	39	517.28	1994	30	348.85
1995	37	506.61	1995	29	485.77
1996	36	997.6	1996	28	698.87
1997	36	1.085	1997	28	826
1998	36	1,032.91	1998	27	862.55
1999	38	900.63	1999	28	698.89
2000	38	2,041.72	2000	28	1,726.04
2001	38	2,036.96	2001	28	1,932.97
2002	40	1,762.32	2002	30	1,341.48
2003	40	1,800.56	2003	30	1,630.17
2004	39	1,747.48	2004	29	1,346.60
2005	45	1,410.24	2005	29	1,209.63
2006	43	2,674.51	2006	28	1,881.28
2007	50	2,909.12	2007	26	1,327.02
2008	55	4,301.25	2008	28	911.87
2009	58	482.64	2009	30	460.77
2010	59	144.56	2010	30	133.95
2011	62	2,195.06	2011	33	1,219.42
2012	61	7,759.51	2012	33	3,355.27
2013	71	4,109.10	2013	45	2,856.49
2014	75	1,576.28	2014	48	1,006.38
2015	78	1,925.76	2015	50	1,473.52
2016	79	2,187.54	2016	51	1,779.00
2017	79	3,156.60	2017	51	2,439.28
2018	79	427.68	2018	52	419.39
2019	79	339.6	2019	52	332.97
2020	78	3,353.21	2020	51	1,972.48
Min	36	0	Min	26	0
Max	79	7,759.5	Max	52	3,355.3
Avg	49.9	1,728.8	Avg	34	1,209.1

Hydrologic Budget Summary

The average annual recharge rate to the unconfined portion of the Lower Vermillion Missouri aquifer is approximately 4,580 acre-feet per year. The average annual recharge rate to the confined portion of the Lower Vermillion Missouri aquifer is approximately 1,958 acre-feet per year. In its entirety, the average annual recharge rate to the Lower Vermillion Missouri aquifer (within the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others' (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary) is approximately 6,538 acre-feet per year.

Based on the historic aquifer boundary delineation (Hedges et al., 1982), the average annual withdrawal rate from the Lower Vermillion Missouri aquifer totals approximately 3,402 acre-feet per year: non-irrigation: 1,224.4 acre-feet/year; irrigation: 2,055 acre-feet/year; Water Permit Application No. 8632-3 (if approved, assuming one-foot application rate per acre), 122.04 acre-feet/year.

Based on the historic Lower Vermillion Missouri aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014), the average annual withdrawal rate from the Lower Vermillion Missouri aquifer totals approximately 1,706 acre-feet per year: non-irrigation: 48.6 acre-feet/year; irrigation: 1,535 acre-feet/year; Water Permit Application No. 8632-3 (if approved, assuming one-foot application rate per acre), 122.04 acre-feet/year.

The average annual recharge rate to the Lower Vermillion Missouri aquifer (within the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others' (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary) is higher than the withdrawal rates estimated for the historic Lower Vermillion Missouri aquifer boundary, and the historic Lower Vermillion Missouri aquifer boundary minus the Upper Vermillion Missouri: South aquifer delineated by Buhler (2014). Based on the hydrologic budget, there is a reasonable probability unappropriated water is available from the Lower Vermillion 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 DNR-Water Rights Program monitors ten observation wells completed into the Lower Vermillion Missouri aquifer plus two other observation wells (CL-80J and CL-66AR) that are within the historic aquifer boundary delineated by Hedges and others (1982) but are now within the Upper Vermillion Missouri: South aquifer boundary as defined by Buhler (2014) (Water Rights, 2022b). The Lower Vermillion Missouri aquifer observation wells that are completed within the historic Lower Vermillion Missouri aquifer boundary delineated by Hedges and others' (1982) minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer boundary are UN-77I, UN-77H, UN-77K, CL-80G, CL-57A, CL-66BR, CL-80F, CL-80H, CL-80IR, and CL-57B (Water Rights, 2022b). The three closest observation wells to the proposed diversion point are CL-80IR (approximately 2.6 miles northwest), CL-80H (approximately 3.6 miles northeast), and CL-80G (approximately 3.9 miles southwest). The hydrographs for these observation wells are displayed in Figures 1 to 3 (Water Rights, 2022b). 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 DNR Water Rights Observation Well on the hydrographs when the titles should display DNR Water Rights Observation Well on the hydrographs.

The hydrographs for the observation wells display generally stable water levels over their respective periods of record. The hydrographs for these three observation wells were compared to the hydrographs for the other observations wells completed into the Lower Vermillion Missouri aquifer and each displayed a relatively similar trend as shown on the hydrographs displayed in Figures 1 to 3 (Water Rights, 2022b). The hydrographs for the Lower Vermillion Missouri aquifer indicate that the aquifer responds well to climatic conditions because water levels are rising during wetter periods 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 Lower Vermillion Missouri 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. It is worth noting the most recent water level readings for the Lower Vermillion Missouri aquifer observation wells are approximately the lowest readings on the hydrographs displayed in Figures 1 to 3. These water level readings are not of concern at this time as they were measured during the middle of the irrigation season in 2021 (Water Rights, 2022b).

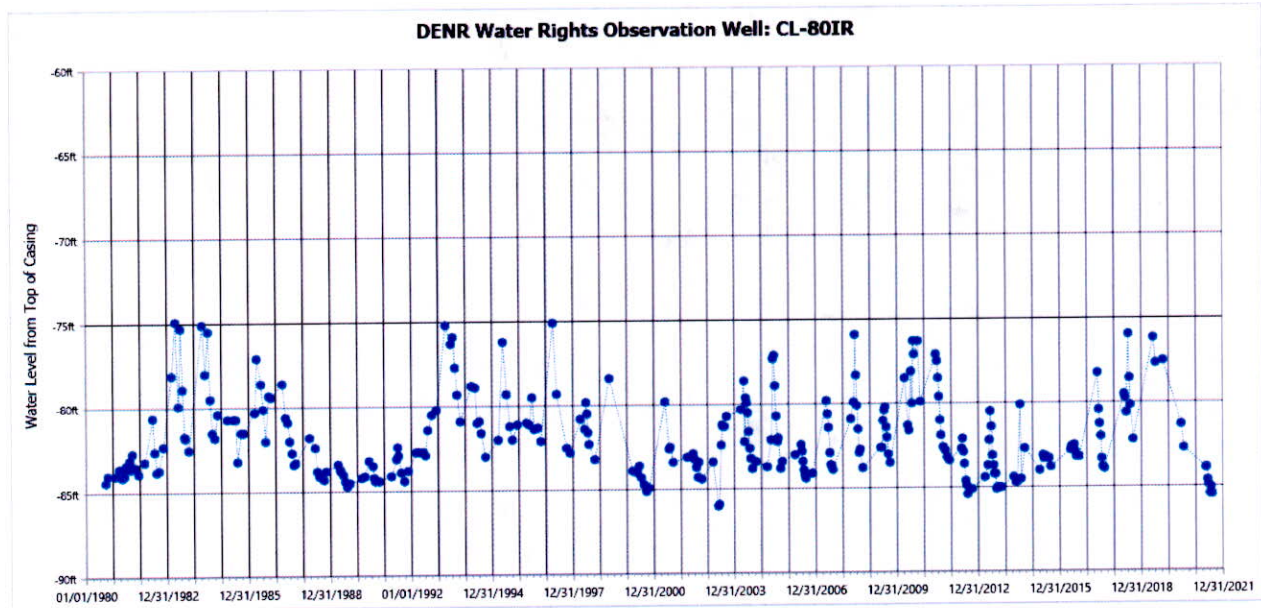


Figure 1. Hydrograph for observation well CL-80IR (Water Rights, 2022b)

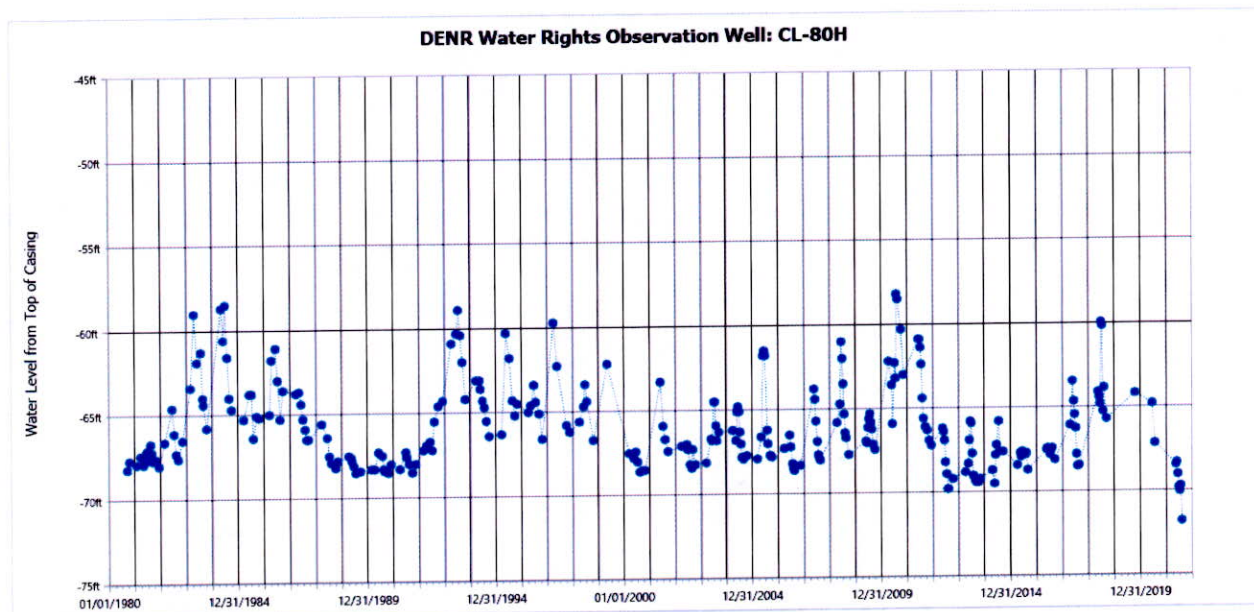


Figure 2. Hydrograph for observation well CL-80H (Water Rights, 2022b)

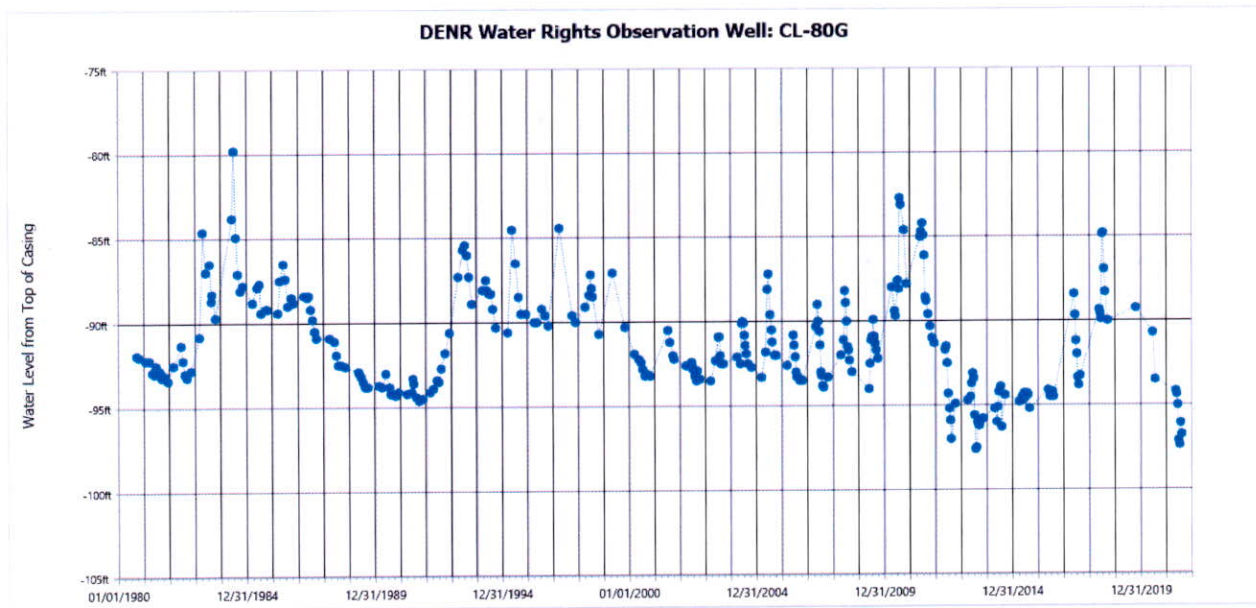


Figure 3. Hydrograph for observation well CL-80G (Water Rights, 2022b)

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 60 water rights/permits authorized to appropriate water from the Lower Vermillion Missouri aquifer within the historic aquifer boundary minus Buhler's (2014) delineation of the Upper Vermillion Missouri: South aquifer (Water Rights, 2022c). The diversion points authorized by Water Right No. 7472-3 and Water Permit Nos. 7679-3 and 8257-3 are located approximately one mile from the proposed diversion point for this application (Water Rights, 2022c).

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Lower Vermillion Missouri aquifer, with the closest domestic well on file (not held by the applicant) approximately 0.8 miles northwest of the proposed diversion point (Water Rights, 2022d). There could potentially be other domestic wells completed into the Lower Vermillion Missouri aquifer near the proposed diversion point that are not on file with the DANR-Water Rights Program.

The Lower Vermillion Missouri aquifer is primarily under confined conditions but can be locally unconfined particularly near the Vermillion River floodplain (Niehus, 1994; Stephens, 1967). Based on the well completion reports on file for nearby water rights/permits, and lithologic logs on file for nearby observation wells, the Lower Vermillion Missouri aquifer is expected to be confined at the proposed diversion point (SDGS, 2022; Water Rights, 2022b and 2022d). The 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. However, observation wells completed into the Lower Vermillion Missouri aquifer near permitted/licensed diversion points can provide some insight on how the aquifer responds to pumping.

Observation well CL-80IR (approximately 2.6 miles northwest of the proposed diversion point) has seven high-yield (assumed to be a well with an authorized diversion rate greater than 0.2 cfs) irrigation wells within approximately two miles of it (Water Rights, 2022b and 2022c). The drawdown from pumping is shown on the hydrograph for CL-80IR, along with the aquifer returning to pre-pumping conditions between irrigation seasons (Figure 1) (Water Rights, 2022b). The lithologic log on file for CL-80IR noted the well was drilled 182 feet deep with the top of aquifer at 90 feet below the ground surface (SDGS, 2022). The lowest recorded static water level on the hydrograph is approximately 86 feet, which indicates there was still approximately four feet of artesian head pressure in CL-80IR even during drier periods when high-yield irrigation wells are expected to be pumping more water (Water Rights, 2022b).

In Clay County, the Lower Vermillion Missouri aquifer has an average saturated thickness of approximately 100 feet (Stephens, 1967). Within approximately one mile of the proposed diversion point, the saturated aquifer thickness ranges between 25 to 85 feet (Water Rights, 2022d). 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 Clay and Union Counties, there are no complaints on file with the DNR-Water Rights Program regarding well interference for adequate wells completed into the Lower Vermillion Missouri aquifer (Water Rights, 2022e).

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 Vermillion Missouri aquifer at their location. This would not be considered an unlawful impairment of existing water rights/permit holders or domestic users

with adequate wells. 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 of the Lower Vermillion Missouri aquifer in Clay County, and the lack of well interference complaints for adequate wells completed into the Lower Vermillion Missouri aquifer in Clay and Union Counties, 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.

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 does provide that: "The Water Management Board may allow a greater diversion, in volume or rate or both, if the method of irrigation, any time constraints on diversion of water, or the type of soil so requires..."

If approved, Water Permit Application No. 8632-3 would collectively authorize a maximum instantaneous diversion rate of 1.78 cfs from one well for the irrigation of 122.04 acres, from May 1 to September 30, or at a rate of 1.02 cfs per 70 acres. The applicant provided the reason for exceedance being due to the soil type at the proposed diversion point location. This type of reason has been accepted by the Water Management Board in past.

CONCLUSIONS:

1. Water Permit Application No. 8632-3 proposes to divert water at a maximum instantaneous diversion rate of 1.78 cfs from one well to be completed into the Lower Vermillion Missouri aquifer (approximately 120 feet deep) for the irrigation of 122.04 acres. The site of interest is located in Clay County approximately seven miles north of Vermillion, SD.
2. Based on the hydrologic budget and observation well data, there is a reasonable probability that unappropriated water is available from the Lower Vermillion Missouri aquifer to supply the proposed appropriation.
3. There is a reasonable probability that the proposed diversion by Water Permit Application No. 8632-3 will not unlawfully impair adequate wells for existing water right/permit holders and domestic users.
4. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres to accommodate the soil type at the proposed diversion point location. This request is reasonable and has been accepted by the Water Management Board in past.

Nakaila Steen

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

Reviewed by:

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

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Water Rights, 2022c. Water Right/Permit Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2022d. Well Completion Reports, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2022e. County Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, May 9, 2022 8:37 AM
To: bottolfson64@hotmail.com
Subject: Water Permit Application No. 8632-3
Attachments: 3396.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.

Karen Schlaak
DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>



AFFIDAVIT OF PUBLICATION

PLAIN TALK

BOTTOLFSON BROTHERS
1834 CONSTANCE DR
VERMILLION SD 57069

RECEIVED

MAY 23 2022

OFFICE OF
WATER

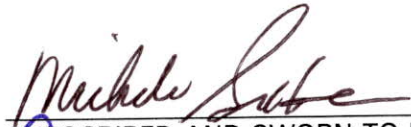
STATE OF SOUTH DAKOTA
COUNTY OF CLAY

MICHELE SCHIEVELBEIN, BEING FIRST DULY SWORN ON OATH DEPOSES AND SAYS THAT (S)HE IS THE ADVERTISING DIRECTOR OF YANKTON MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE PLAIN TALK, A LEGAL WEEKLY NEWSPAPER PUBLISHED AND CIRCULATED IN THE CITY OF VERMILLION, 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 May, 2022
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: 05/20/2022

FILED ON: 05/20/2022



SUBSCRIBED AND SWORN TO BEFORE ME THIS 20th DAY OF May, 2022



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

Ad text : NOTICE OF APPLICATION NO. 8632-3 to Appropriate Water

Notice is given that Bottolfson Brothers, c/o Mark Bottolfson, 46003 Timber Rd, Vermillion SD 57069 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 Vermillion:Missouri Aquifer (approximately 120 feet deep) located in the center of the NE 1/4 Section 11 for irrigation of 122.04 acres located in the NE 1/4 Section 11; all in T93N-R52W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately 7 miles north of Vermillion SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8632-3 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 31, 2022.

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 31, 2022.

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 \$40.26 and can be viewed free of charge at www.sdpublicnotices.com

Published May 20, 2022.

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

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MAY 20 2022

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WATER

BOTTOLFSO BROTHERS
1834 CONSTANCE DR
VERMILLION SD 57069

STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

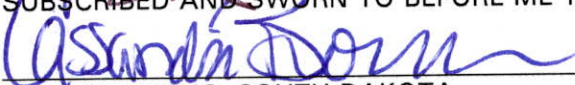
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PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
5 + 18 NOTICE OF APPLICATIO

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 18th DAY OF May, 2022
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$40.80 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: 05/18/2022

FILED ON: 05/18/2022


SUBSCRIBED AND SWORN TO BEFORE ME THIS 18th DAY OF May, 2022


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

Ad text : 5 + 18

NOTICE OF APPLICATION NO. 8632-3 to Appropriate Water

Notice is given that Bottolfson Brothers, c/o Mark Bottolfson, 46003 Timber Rd, Vermillion SD 57069 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 Vermillion:Missouri Aquifer (approximately 120 feet deep) located in the center of the NE 1/4 Section 11 for irrigation of 122.04 acres located in the NE 1/4 Section 11; all in T93N-R52W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately 7 miles north of Vermillion SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8632-3 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 31, 2022.

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.

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

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MAY 20 2022

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Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, May 9, 2022 8:34 AM
To: Kelly Kronaizl
Subject: 8632-3, Bottolfson Brothers
Attachments: 8632-3public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on May 18, 2022 in both the Plain Talk and the Press & Dakotan.

Bottelfson Brothers, c/o Mark Bottolfson, 46003 Timber Rd, Vermillion SD 57069 (605 677-9582) has been notified to contact you to authorize publication and arrange for payment.

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

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

Karen Schlaak

DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

May 9, 2022

Bottolfson Brothers
c/o Mark Bottolfson
460003 Timber Rd
Vermillion SD 57069

Dear Mr. Bottolfson:

Water Permit Application No. 8623-3 for irrigation use have been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Plain Talk printed at Vermillion (Ph # 605 624-2695) and the Press & Dakotan printed at Yankton (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,

Karen Schlaak

Karen Schlaak
Water Rights Program
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

NOTICE OF APPLICATION NO. 8632-3 to Appropriate Water

Notice is given that Bottolfson Brothers, c/o Mark Bottolfson, 46003 Timber Rd, Vermillion SD 57069 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 Vermillion:Missouri Aquifer (approximately 120 feet deep) located in the center of the NE 1/4 Section 11 for irrigation of 122.04 acres located in the NE 1/4 Section 11; all in T93N-R52W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately 7 miles north of Vermillion SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8632-3 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 31, 2022.

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 31, 2022.

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_



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JUN 28 2022

Bottolfson Brothers
46003 Timber Rd
Vermillion SD 57069

Dear Sirs:

Enclosed is Water Permit No. 8632-3 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

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

Date 7-26-22

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

FROM: Bottolfson Bros
(name)
46003 Timber Rd
(address)
Vermillion, SD 57069
(city, state, zip) 605 677-9582
(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. 8632-3 states that the water use system is to be constructed by May 31, 2027, and water is to be put to beneficial use by May 31, 2031.
(date) (date)

The water use system was completed on ~~July~~ July 19, 2022.
(date)

Applying the water to beneficial use was completed on July 19, 2022.
(date)

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

Mark Bottolfson
(signature)



RECEIVED

JUL 29 2022

OFFICE OF
WATER



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

August 5, 2022

8632-3

Mark Bottolfson
Bottolfson Brothers
46003 Timber Rd
Vermillion SD 57069

Dear Mr. Bottolfson:

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 irrigation system in the NE ¼ Section 11, T93N, R52W.

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,

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

SL 32-3

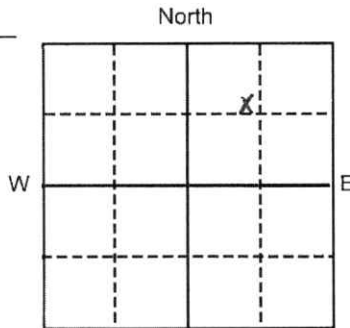
SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NW ¼ NE ¼ Sec 11 Twp 93N Rg 52WCounty CLAY

Please mark well location with an "X"



Well Completion Date

7/13/22

1 Mile

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

PROPOSED USE:

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

METHOD OF DRILLING:

RotaryCASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>16</u> IN	<u>0</u> FT	<u>90</u> FT	<u>22</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Groutwell DF</u>	<u>19</u>	Lb/gal	<u>0</u> Ft	<u>60</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

TREMMIESCREEN: ☐ Perforated pipe ☒ ManufacturedDiameter 16 Inches Length 20 FeetMaterial PVCSlot Size .080 Set From 90 Feet to 110 Feet

Other information

WAS A PACKER OR SEAL USED? ☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? HTH TABLETS☐ No, Why Not?

Lab to which water quality sample sent for analysis

Well Owner:

Business Name: BOTTOLFSOHN BROSAddress: 46003 TIMBER RDCity, State, Zip: VERMILION SD 57069

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
TOPSOIL	0	2
Tan CLAY	2	18
Gray Clay	18	20
Silty Clay	20	78
Sm-med Sand & Gravel	78	100
Fine Sand & Gravel	100	110

per driller
Jan 3 12/23STATIC WATER LEVEL 64' FEET

If flowing: closed in pressure PSI

GPM flow through Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate GPM

Can well be completely shut in?

WELL TEST DATA:

☐ Pumped Describe:☐ Bailed☐ Other

Pumping Level Below Land Surface

Ft. After Hrs. pumped GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

This well was drilled under license # 810 and this report is true and accurate.Drilling firm: HEINE ELECTRIC & IRRIGATION

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

RECEIVED

Date:

JAN 12 2023

OFFICE OF
WATER

**Report of Examination of Works and/or Application of Water to Beneficial Use
For Permit No. 8632-3**

I have this day, November 6, 2024, made a thorough examination of the water use systems owned by Bottolfson Brothers, c/o Mark Bottolfson, 46003 Timber Road, Vermillion, SD 57069, holder of Permit No. 8632-3, bearing the priority date of February 3, 2022. This permit authorizes the diversion of 1.78 cubic feet per second of the waters of groundwater (Lower Vermillion Missouri Aquifer) authorizing the irrigation of 122.04 acres located in Clay County.

Inspection contacts: Mark Bottolfson

A. Works used to divert the water:

Well Information

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

Casing:

- 1) Diameter: 16 inches
- 2) Length: 90 feet
- 3) Type: Plastic

Screen:

- 1) Diameter: 16 inches
- 2) Length: 20 feet
- 3) Type: PVC Manufactured
- 4) Static water level: 64 feet

Pump:

- 1) Make: Wilo
- 2) Model: SPI08.800-2.500
- 3) Capacity: 800 gpm

Motor:

- 1) Make: Grundfos
- 2) Model No.: Unknown
- 3) Horsepower rating: 50 hp

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

- 1) Type: Aluminum Size: 8 inches Length: 10 feet

C. Works used to apply water to beneficial use:

Center Pivot:

- 1) Make: Valley
- 2) Overall length: 1,299 feet
- 3) Number of towers: 7
- 4) End gun: Yes Range: 99 feet
- 5) Capacity: 800 gpm

Chemigation Equipment:

- 1) Does chemigate: No

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by: No
 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period: Yes
 3) Exceptions to compliance are: Additional acres are being irrigated.

E. Condition and Location:

- 1) The system is in good condition with the point(s) of diversion located as follows:
The well is 1,350 feet south and 1,310 feet west of the northeast corner of Section 11-T93N-R52W (Latitude 42.89204, Longitude -96.94893– approx. center of the NE1/4).
 2) The works are capable of diverting and conveying to the places of use 1.78 cu. ft. per second of water from the well which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows: All in

Section 11-T93N-R52W

<u>NW1/4NE1/4</u>	<u>33 acres</u>
<u>NE1/4NE1/4</u>	<u>33 acres</u>
<u>SW1/4NE1/4</u>	<u>33 acres</u>
<u>SE1/4NE1/4</u>	<u>33 acres</u>

comprising a total of 132 acres of land and the license should be issued for 1.78 cfs.

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

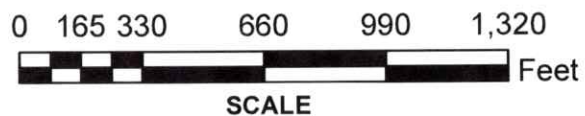
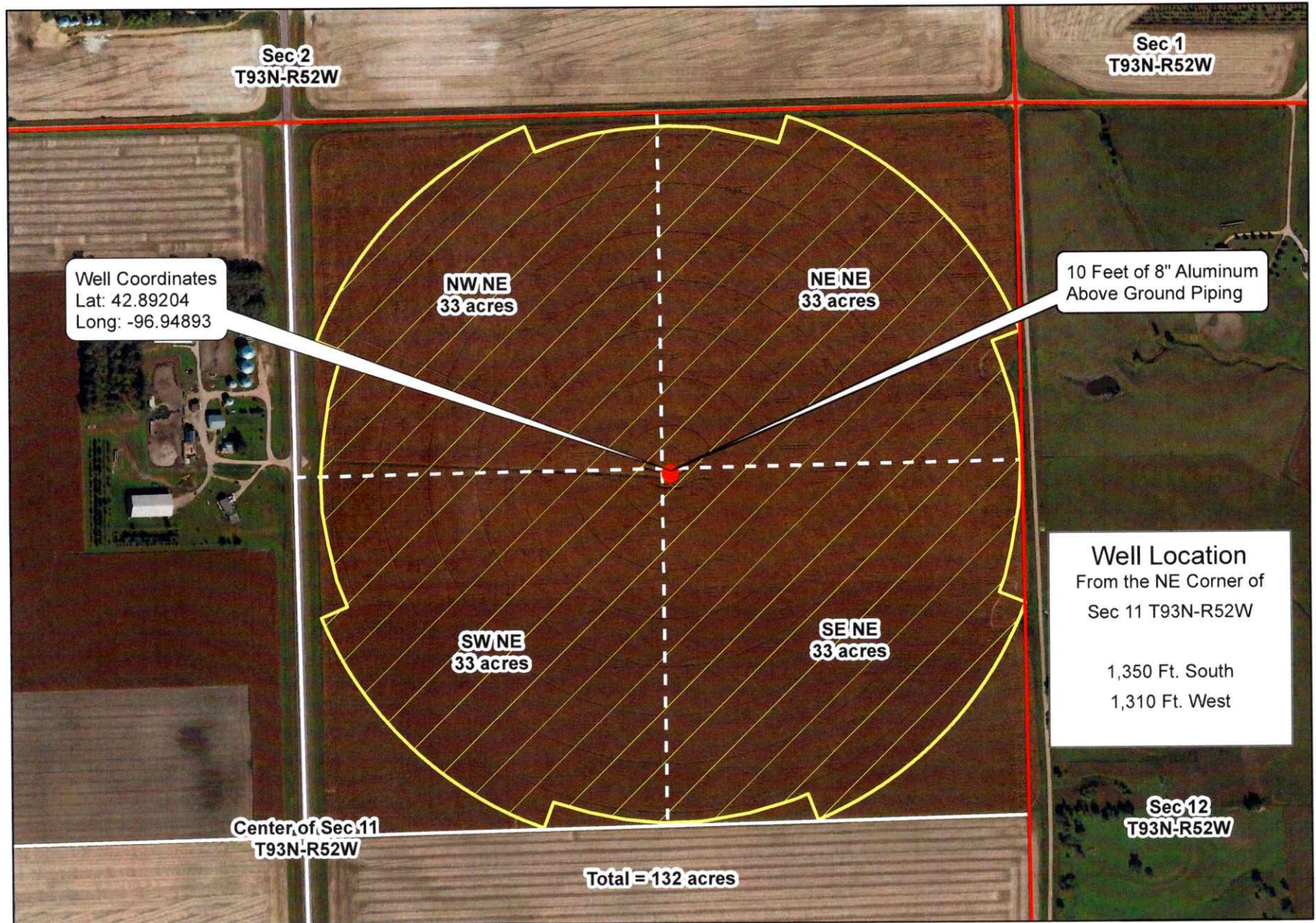
F. Comments or other permit(s) associated with the project: More acres are being irrigated than allowed by the permit. The pump and motor information was obtained from Heine Electric & Irrigation, Inc.

Keith DeJong

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

Date report completed: November 13, 2024

Water Permit No. 8632-3



Keith DeJong
Keith DeJong, PE Ret.
Staff Engineer
November 6, 2024



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

March 31, 2025

8632-3

Bottolfson Brothers
c/o Mark Bottolfson
46003 Timber Rd
Vermillion SD 57069

Dear Mr, Bottolfson:

This letter is intended to follow up on an inspection conducted by Water Rights Program staff last fall for the purpose of licensing the irrigation system authorized under Permit No. 8632-3.

Water Permit No. 8632-3 authorizes the diversion of 1.78 cfs (800 gpm) from 1 well located in the approx. center NE ¼ Section 11, for the irrigation of 122.04 acres located in the NE ¼ Section 11; all in T93N, R52W.

The inspection found the irrigated system developed for irrigation of 132 acres, which is 9.96 acres more than authorized (see enclosed inspection map). The development of these additional acres results in the need for additional permitting.

Please find enclosed a partially completed application representing the system as developed. The fees required for this application total \$500, as we have waived the inspection/licensing fee. The completed application may be returned in the pre-paid envelope with payment in the form of a check (payable to SD Water Rights).

If you have any questions or concerns, please contact me.

Sincerely,

Amanda Dewell
Water Rights Program
605 773-3352
Amanda.Dewell@state.sd.us

enclosures