

WATER PERMIT NO. 8585-3

Name of Applicant: Allen Vannorsdel

Address: 45515 288th St, Viborg SD 57070

Phone: 605 660-4988

Amount of Water Claimed: 2.22 cfs *

Total Acres: 156 acres

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation

County: Turner

Type of Waste Disposal System:

Location: 3 miles northwest of Viborg

PRIORITY

Date Received: 1-21-22

Application/License Fee: \$ 100

Corrected Application Received:

Period of Annual Use: June 1 – Sub 31

Remarks: Reinstatement of Water Permit No. 7715-3

Diversion Point: approximate center of SW 1/4

Sec 16-T97N-R53W

Land to be Irrigated: SW 1/4 Sec 16-T97N-R53W

Depth of Well: 160 feet deep

Well Driller:

Remarks:

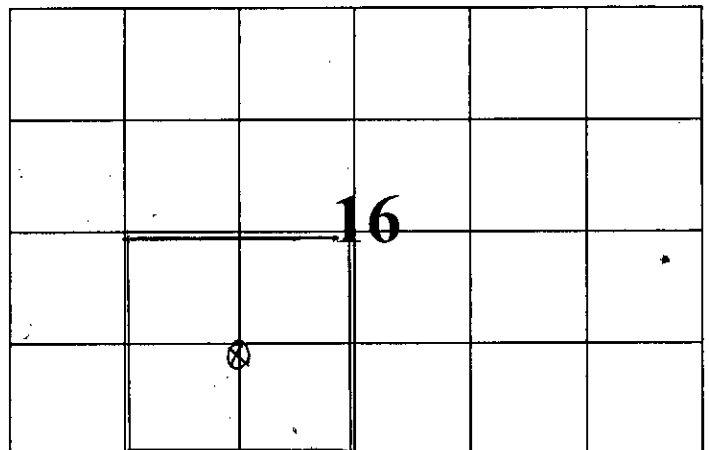
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 1-24-22

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



**SOUTH DAKOTA
WATER PERMIT NO. 8585-3**

Date of first receipt of application January 21, 2022.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8585-3 to Allen Vannorsdel, 45515 288th, Viborg SD 57070 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. 8585-3 reinstates Water Permit No. 7715-3. Water Permit No. 7715-3 appropriates 2.22 cubic feet of water per second from one well to be completed into the West Management Unit of the Upper Vermillion Missouri Aquifer (approximately 160 feet deep) located in the center of the SW 1/4 Section 16 for irrigation of 156 acres located in the SW 1/4 Section 16; all in T97N-R53W. The permit was approved March 6, 2014, and the project was to be completed March 6, 2019 with water being put to beneficial use by March 6, 2023. Permit No. 8585-3 reinstates Permit No. 7715-3 since the project has not been completed. This site is located approximately 3 miles northwest of Viborg 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: June 1 – August 31.
3. The date from which applicant may claim right is January 21, 2022.
4. The date of approval of Permit No. 8585-3 is April 4, 2022.
5. One-fifth of the construction is to be completed on or before October 4, 2024.
6. All construction is to be completed on or before April 4, 2027.
7. Water is to be put to beneficial use on or before April 4, 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. 8585-3 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. 8585-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

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

APR 28 2022
date



SD EForm - 0499LD V5

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

PAID

JAN 21 2022

Ck# 4142

Rec't#

Mail to: DANR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8585-3</u> (office use only)
	Hydrologic Unit <u>10170102</u>
	Basin <u>Vermillion River</u>
	Newspaper <u>Centerville Journal</u> <u>Argus Leader</u>

Application For Permit To Appropriate Water For Irrigation

Type of Application: ☐ New ☐ Vested Right ☐ Amendment/Correction to Permit No. 7715-3
(Use predates Mar 2, 1955)

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

Reinstatement of Water Permit No. 7715-3

1. Name to Appear on Irrigation Permit Allen Vannorsdel Shawn Vannorsdel, operator

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

Mailing Address 45515 288th St Viborg SD 57070
(Address) (City) (State) (Zip Code)

Phone _____ Mobile 660-4988 Email _____

2. Amount of water claimed 2.22 *CFS or _____ **GPM _____ ***AF _____ Total Acreage 156
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply ground water - one well (Upper Vermillion Missouri: West - 160' deep)

4. Location of point of diversion SW 1/4 Section 16, T97N, R53W
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

County: Turner5. County or counties where water will be used Turner6. Annual period during which water is to be used June, July and August

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
SW 1/4 Section 16, T97N, R53W	156		

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

The system authorized under Permit No. 7715-3 has not been constructed - would like to have the permit reinstated to enable development of the irrigation system.

I, Allen Vannorsdel, 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 x Drilling new well Using existing well(s)

a) If new wells, how many ____ Have test holes been drilled ☒ Yes ☐ No Drilled by Thein Well Company
 (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 160 feet Depth to Top of Water Bearing Material ____ Depth to Water from Surface ____

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

2. Wastewater Disposal System Information

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

b) System Capacity (gallons) ____ Year Constructed ____

c) Connected to the City of ____ Sanitary System

3. Dugout Information

a) Surface Dimensions ____ Depth ____

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

4. Water Storage Dams

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

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

b) Freeboard ____

c) Crest Width ____

Crest Length ____

d) Height ____

e) Primary Outlet Capacity ____

If pipe, diameter ____

f) Secondary Spillway Capacity ____

Spillway Width ____

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

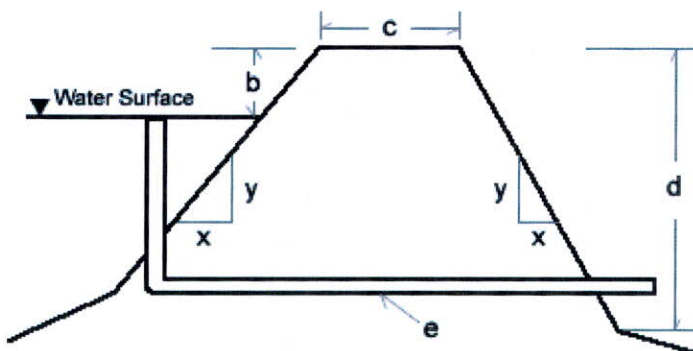
Upstream ____

Downstream ____

h) Surface Area of Impoundment ____

i) Storage ____ Acre Feet

j) Drainage Area Above Dam ____ Acres



Shawn Vanorsdel Viborg SD 260 ' Test Hole Formation Log

GPS 43 13.0120 w 64 6.9160 Sec 16 Swan Lake

Formation Log	From	To
Top	0	4
Clay brown	4	28
Clay blue	28	62
Sand w/ a few clay layers	62	72
Gravel	72	73
Clay blue	73	83
Sand med	83	89
Clay blue sandy	89	96
Sand and clay mix	96	101
Sand (drills like clay)	101	116
Sand	116	126
Very sandy clay (drills like clay)	126	171
Sand	171	180
Clay w/ gravel layers	180	198
Gravel	198	210
Clay w/ gravel layers	210	217
Gravel- a few clay layers @ 230	217	250
Clay gray	250	260

Lindsay Manufacturing Co.



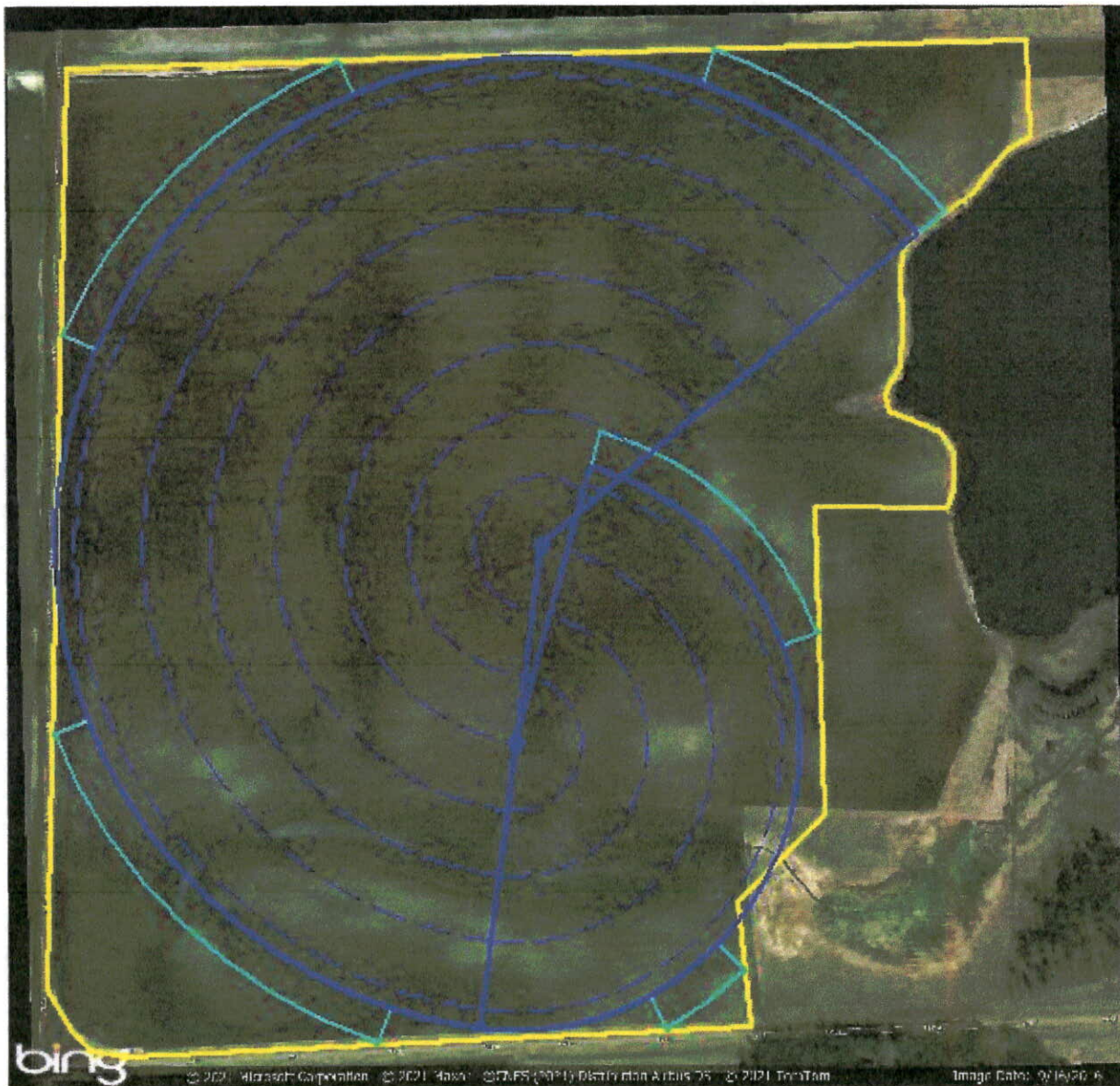
2707 North 108th Street
Omaha, NE 68164
800 - 829 - 5300 office

Farm: Lake Farm

Grower: Shawn Vannorsdel

12/7/2021

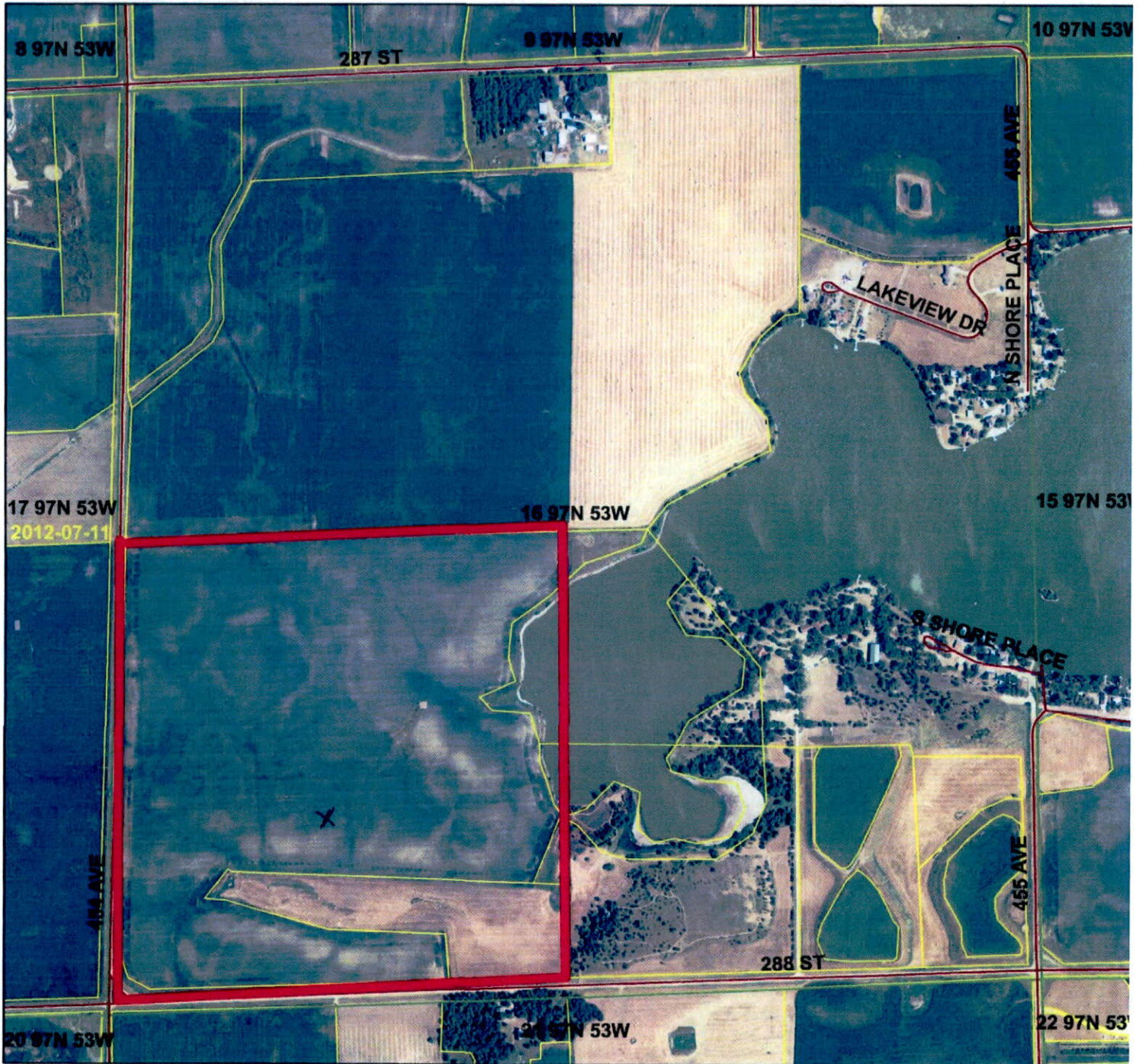
Systems:	Length	Spans	Total area including endgun
● Field Plus	1303.67 ft	7 spans + 44 ft o.h.	82.83 acres
● Field Plus	766.92 ft	4 spans + 44 ft o.h.	22.63 acres



Irrigation Map

Field Office: Parker FO
Certified By: M Miller
Legal Desc: 16-97-53

Agency: USDA-NRCS
Certified Date: -
Tract: -



SW 1/4 Highlighted

16-97-53

[Signature]

MERRIS MILLER
NRCS - DC

0 250 500 1,000 1,500 2,000
Feet

RECEIVED

FEB 25 2013

WATER RIGHTS
PROGRAM



RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date January 21, 2022

RECEIVED OF A & B Farms Inc./Shawn A Vannorsdel 45442 288th st., Viborg SD 57070

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	\$ _____
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. _____	\$ _____
Fee for Filing Transfer Form _____	\$ _____
Fee for <u>Reinstatement of Water Permit #7715-3</u>	\$100.00
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>100.00</u>

By Eric Gronlund
Chief Engineer

vm



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

November 19, 2021

Shawn Vannorsdel
45442 280th St
Viborg SD 57070

Dear Mr. Vannorsdel:

Enclosed as we discussed is a partially completed application for filing for a reinstatement of Water Permit No. 7715-3.

We already have a map on file from the initial application submitted for No. 7715-3. Please review the enclosed application and once it is signed, return it to us with a \$100 fee and we will begin processing the application.

If you have any questions or if something doesn't seem correct on the application I filled out, please let me know and we can work thru it.

Sincerely,

Genny McMath
Water Rights Program
605 773-3352
Genny.mcmath@state.sd.us

enclosures



**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. 8585-3, Allen Vannorsdel**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 8585-3, Allen Vannorsdel, 45515 288th St, Viborg SD 57070.

The Chief Engineer is recommending APPROVAL of Application No. 8585-3 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. 8585-3 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. 8585-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Eric Gronlund, Chief Engineer
March 14, 2022

Report to the Chief Engineer
On Water Permit Application No. 8585-3

Allen Vannorsdel

February 17, 2022

Water Permit Application No. 8585-3 proposes to reinstate Water Permit No. 7715-3. Water Permit No. 7715-3 appropriates 2.22 cubic feet of water per second (cfs) from one well to be completed into the West management unit of the Upper Vermillion Missouri aquifer (approximately 160 feet deep) located in the center of the SW $\frac{1}{4}$ of Section 16 for irrigation of 156 acres located in the SW $\frac{1}{4}$ of Section 16; all in T97N-R53W. The permit was approved March 6, 2014, with all construction to be completed on or before March 6, 2019 and water put to beneficial use by March 6, 2023. Water Permit Application No. 8585-3 proposes to reinstate Water Permit No. 7715-3 since the project has not been completed. This site is located in Turner County approximately three miles northwest of Viborg, SD.

AQUIFER: Upper Vermillion Missouri: West (UVM: W)

HYDROGEOLOGY:

The Upper Vermillion Missouri aquifer is a buried glacial outwash aquifer composed of fine to coarse sand and gravel with possible intermixed layers of clay and till deposits (Holmes and Filipovic, 2015; Niehus, 1994). The sand and gravel were deposited from braided stream systems or anastomosing channels with multiple depositional events into a bedrock channel which generally trends north to south (Holmes and Filipovic, 2015). The glacial outwash deposits of the Upper Vermillion Missouri aquifer can overlie the Sioux Quartzite, Carlile Shale, or the Greenhorn Limestone in South Dakota (Holmes and Filipovic, 2015). The Upper Vermillion Missouri aquifer is overlain by till that can reach a thickness of 160 feet (Holmes and Filipovic, 2015).

The Upper Vermillion Missouri aquifer is generally under confined conditions and overlain by till but can also be under water table conditions (Lindgren and Hansen, 1993). On average, the Upper Vermillion Missouri aquifer is 68 feet thick with the top of the aquifer recorded as deep as 355 ft below land surface (Lindgren and Hansen, 1993). The Upper Vermillion Missouri aquifer underlies approximately 204,832 acres and contains approximately 1,037,400 acre-feet (ac-ft) of recoverable water in storage within Clay, Hutchinson, Lincoln, and Turner Counties (Buhler, 2014; Hedges et al., 1982). It should be noted that the amount of recoverable water in storage of the Upper Vermillion Missouri aquifer was estimated prior to the 2014 update of the aquifer and management unit boundaries delineated by Buhler in 2014 (Holmes and Filipovic, 2015). As a result of the updated approximate boundary of the aquifer, the estimated amount of recoverable water in storage could vary.

The Upper Vermillion Missouri aquifer is composed of three management units (Buhler, 2014). The proposed diversion point for Water Permit Application No. 8585-3 is completed into the West management unit of the Upper Vermillion Missouri aquifer. The direction of groundwater

movement of the Upper Vermillion Missouri: West aquifer is commonly from north to south (Holmes and Filipovic, 2015). The approximate areal extent of the Upper Vermillion Missouri: West aquifer is displayed in Figure 1 along with the location of the proposed diversion point. Buhler (2014) has noted that the West management unit of the Upper Vermillion Missouri aquifer may possibly extent further northwest than what was mapped, but that extent is unknown.

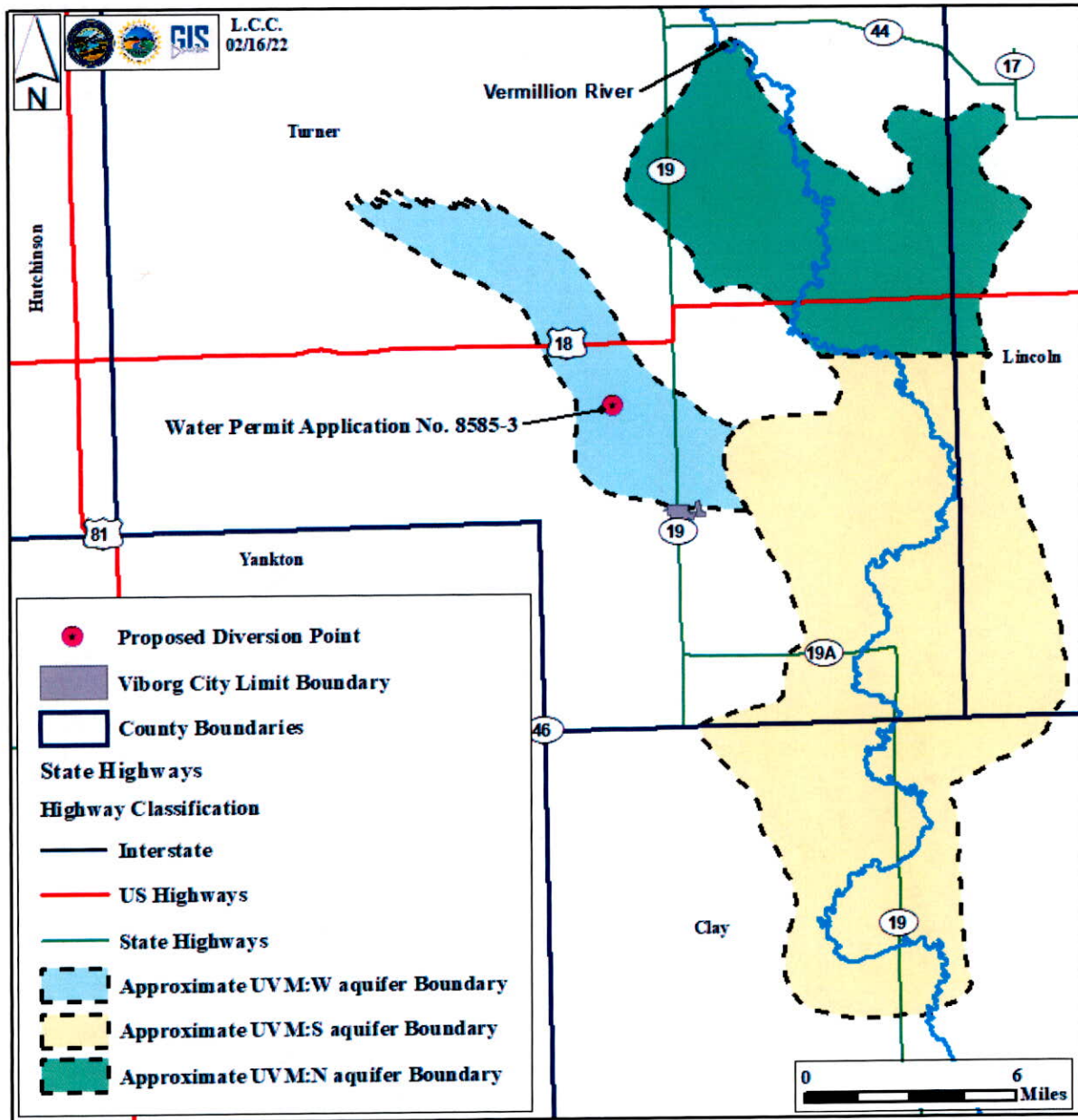


Figure 1: The approximate areal extent of the Upper Vermillion Missouri aquifer including the three management units and the proposed diversion point location of Water Permit Application No. 8585-3 (Buhler, 2014; Hedges et al., 1982; Water Rights, 2022b and 2022c).

A formation log was submitted with Water Permit Application No. 8585-3. The formation log was recreated in Table 1. The static water level was not recorded at the time the formation log

was recorded; however, well logs within two miles of the proposed diversion point list static water levels ranging from 5 to 70 feet below land surface. The Upper Vermillion Missouri: West aquifer is expected to be confined at the diversion point based on the submitted formation log report, water levels, and lithologic logs on file for nearby observation wells (SDGS, 2022; Water Rights, 2022b and 2022d).

Table 1: Formation log that was submitted with Water Permit Application No. 8585-3.

Formation Log	Starting Depth (ft)	Ending Depth (ft)
Top	0	4
Clay Brown	4	28
Clay Blue	28	62
Sand with a few Clay Layers	62	72
Gravel	72	73
Clay Blue	73	83
Sand Medium	83	89
Clay Blue Sandy	89	96
Sand and Clay Mix	96	101
Sand (drills like clay)	101	116
Sand	116	126
Very Sandy Clay (drills like clay)	126	171
Sand	171	180
Clay with Gravel Layers	180	198
Gravel	198	210
Clay with Gravel Layers	210	217
Gravel- a few Clay Layers at 230 feet	217	250
Clay Gray	250	260

South Dakota Codified Law (SDCL) 46-2A-8.1

Pursuant to SDCL 46-2A-8.1, “The Water Management Board may reinstate any water permit with a priority date after March 31, 1977, if unappropriated water is available and construction necessary to put water to beneficial use was not completed pursuant to SDCL 46-2A-8 or 46-5-26. Any application under this section shall be made within three years of the expiration of the original construction period pursuant to chapter 46-2A. The priority date for the application to reinstate a permit shall be the date the application to reinstate is filed”. This application is within the three-year time frame and this report addresses water availability and the potential for unlawful impairment of existing water rights within the Upper Vermillion Missouri: West aquifer.

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 Upper Vermillion Missouri: West aquifer.

WATER AVAILABILITY:

Water Permit Application No. 8585-3 proposes to appropriate water from the Upper Vermillion Missouri: West aquifer for irrigation. 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. However, an application may be approved for a water distribution system 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.” The Upper Vermillion Missouri: West 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 Upper Vermillion Missouri: West aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Upper Vermillion Missouri: West aquifer occurs through leakage from fractures in the Sioux Quartzite and direct infiltration of precipitation where the aquifer is at or near land surface (Lindgren and Hansen, 1990; Holmes and Filipovic, 2015).

Recharge to the Upper Vermillion Missouri: West aquifer has not yet been quantified. Since the Upper Vermillion Missouri: West is not fully delineated, but the available information indicates the areal extent of the aquifer is greater than currently mapped. Consequently, applying the general recharge rates for confined aquifers in eastern South Dakota would not be fully representative of water availability in the aquifer. The groundwater outflow from the Upper Vermillion Missouri: West aquifer was estimated in January of 2014 by Buhler using a flow net analysis. The estimated amount of groundwater outflow from the Upper Vermillion Missouri: West aquifer is approximately 2,681 acre-feet/year (ac-ft/yr). While this estimated groundwater outflow rate only consists of one data point, it is the best available estimate of the natural discharge from the West management unit of the Upper Vermillion Missouri aquifer (Buhler, 2014). When aquifer storage is stable, natural discharge from an aquifer represents the amount by which recharge exceeds withdrawals at the time of the estimate and therefore can serve as an estimate of water available for capture and appropriation.

Discharge

Discharge from the Upper Vermillion Missouri: West aquifer is primarily through well withdrawals and subsurface outflow into Clay County likely to the UVM: S aquifer (Lindgren

and Hansen, 1990; Water Rights 2022c). Currently, there are nine water rights/permits authorized to appropriate water from the Upper Vermillion Missouri: West aquifer, plus one pending application- Water Permit Application No. 8584-3 is estimated to use 156 ac-ft/yr (assuming an application rate of 1 foot per acre [ft/ac]) (Water Rights, 2022c). There are also three other active Upper Vermillion Missouri aquifer Water Rights (Water Right Nos. 2041-3, 4265-3, and 6662-3) within the aquifer boundary of the West management unit of the Upper Vermillion Missouri aquifer that do not currently have an assigned management unit (Water Rights, 2022c). There are no future use permits reserving water from the Upper Vermillion Missouri: West aquifer presently.

Table 1 summarizes the 12 water rights/permits authorized to appropriate water within the approximate boundary of the Upper Vermillion Missouri: West aquifer with the estimated annual use for each non-irrigation water right/permit as determined by their maximum permitted diversion rate or annual volume. The amount of water that can be withdrawn was estimated by assuming the non-irrigation water rights/permits limited by an annual volume will withdraw their entire appropriated volume every year. It is estimated that the non-irrigation water rights/permits limited only by a diversion rate will pump at their maximum permitted diversion rate for 60 percent of the time.

One municipal water right (Water Right No. 2041-3) was identified as being connected to a rural water system and maintain their wells for standby purposes (Friedeman, 2020; Water Rights, 2022c); as such, the average annual water use for this water right has been estimated to be zero ac-ft per year in Table 2. Water Permit No. 8395-3 is limited to an annual withdrawal of 460 ac-ft/yr; however, this permit has yet to report an annual withdrawal from the Upper Vermillion Missouri: West aquifer as a result of not being developed. For the purpose of estimating the average annual withdrawal rate from the Upper Vermillion Missouri: West aquifer, Water Permit No. 8395-3 is assumed to be fully developable for its authorized appropriation of 460 ac-ft/yr. Overall, the average annual withdrawal rate for the Upper Vermillion Missouri aquifer for non-irrigation water rights/permits is approximately 518.2 ac-ft/yr (Table 2) (Water Rights, 2022c).

Table 2: Estimated annual water use for irrigation and non-irrigation water rights/permits authorized to appropriate water within the Upper Vermillion Missouri: West aquifer (Water Rights, 2022c).

Permit No.	Name	Use	Status	Diversion Rate (cfs)	Estimated Volume (ac-ft/yr)
2041-3	City of Viborg	MUN	LC	0.96	0*
2506-3	James Reiners	IRR	LC	1.5	N/A
4265-3	James D Bondesen	IRR	LC	0.73	N/A
6662-3	Vannorsdel's Inc	COM, DOM	LC	0.134	58.2
7535-3	Donald Benson	IRR	PE	1.78	N/A
7588-3	Paul Petersen	IRR	PE	1.78	N/A
7602-3	Michael D Stevens	IRR	PE	1.89	N/A
7633-3	Smit Family Farms LLC	IRR	PE	1.78	N/A
7715-3	Allen Vannorsdel	IRR	PE	2.22	N/A
8395-3	Full Circle Dairy LLC	COM	PE	0.67	460
8488-3	Brett Petersen	IRR	PE	1.78	N/A
8555-3	Jon Miller	IRR	PE	2.22	N/A
IRR: Irrigation; COM: Commercial; MUN: Municipal; DOM: Domestic				TOTAL (non-irrigation):	518.2
LC: Licensed Water Permit; PE: Permitted Water Permit					
*Identified as being connected to a Rural Water System					

There are currently nine irrigation water rights/permits authorized to withdrawal water from the Upper Vermillion Missouri: West aquifer (Water Rights, 2022a). The reported annual irrigation withdrawals for the water rights/permits from the Upper Vermillion Missouri: West aquifer are shown in Table 3. The average annual withdrawal rate for the Upper Vermillion Missouri: West aquifer irrigation water rights/permits that have reported over the period of record is approximately 48.6 ac-ft/yr (Table 3) (Water Rights, 2022a).

Since the number of irrigation water rights/permits has continued to increase, the estimated average annual withdrawal rate for irrigation appropriations for the entire period of record may not accurately reflect the current level of development. The average annual withdrawal rate for irrigation appropriations from 2014 to 2020 better represents the current level of irrigation developments in the Upper Vermillion Missouri: West aquifer. The average annual withdrawal rate for the Upper Vermillion Missouri: West aquifer from 2014 to 2020 is approximately 140.1 ac-ft/yr (Table 2) (Water Rights, 2022a). It is worth noting that Water Permit Nos. 8488-3 and 8555-3 were approved in 2021 and have not reported an annual withdrawal yet (Water Rights, 2022c). The estimated annual usage (assuming an application rate of 1 ft/ac) for Water Permit Nos. 8488-3 and 8555-3 is 400 ac-ft/yr (Water Rights, 2022c).

Table 3: Reported historic irrigation use from the Upper Vermillion Missouri: West aquifer (Water Rights, 2022a).

Year	No. of Permits Reporting	Reported Pumpage (ac-ft)
1979	5	13.3
1980	5	53.0
1981	6	18.6
1982	3	53.0
1983	3	145.8
1984	5	0
1985	5	3
1986	5	0
1987	4	110
1988	4	1.4
1989	4	39
1990	4	0
1991	4	0
1992	4	0
1993	2	0
1994	2	0
1995	2	0
1996	2	88.4
1997	2	0
1998	3	0
1999	3	0
2000	3	13.9
2001	3	19.9
2002	3	39.8
2003	3	35.9
2004	2	166.3
2005	2	1.7
2006	2	66.3
2007	2	116.7
2008	2	0
2009	2	0
2010	2	0
2011	2	0
2012	1	49.7
2013	1	24.3
2014	5	146.0
2015	5	118.5
2016	5	179.0
2017	5	199.9
2018	5	42.7
2019	5	0
2020	5	294.7
MIN	1	0
MAX	6	294.7
AVG	3	48.6
AVG (2014-2020)	5	140.1

There are domestic wells completed into the Upper Vermillion Missouri: West aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2022d). Withdrawals from domestic wells on an average annual basis are not considered to be a significant portion of the hydrologic budget due to their relatively low diversion rates. Additionally, with the development of rural water systems in areas where the Upper Vermillion Missouri: West aquifer is the uppermost aquifer available; it is likely some domestic users may have transitioned to rural water. Therefore, the quantity of water withdrawn by domestic wells is estimated to be negligible to the hydrologic budget for the Upper Vermillion Missouri: West aquifer.

Hydrologic Budget Summary

The estimated average annual withdrawal rate from the Upper Vermillion Missouri: West aquifer totals approximately 1,370.3 ac-ft/yr (irrigation: 140.1 ac-ft/yr; non-irrigation: 518.2 ac-ft/yr; pending applications: 156 ac-ft/yr; Water Permit Nos. 8488-3 and 8555-3: 400 ac-ft/yr; Water Permit Application No. 8585-3 (if approved) (assuming an application rate of 1 ft/ac): 156 ac-ft/yr) (Water Rights 2022a and 2022c). The estimated amount of groundwater outflow of the Upper Vermillion Missouri: West aquifer is approximately 2,681 ac-ft/yr (Buhler, 2014). The estimated inflow of groundwater or recharge to the Upper Vermillion Missouri: West aquifer has yet to be quantified. Therefore, the estimated natural discharge from the Upper Vermillion Missouri: West aquifer is the best available estimate of unappropriated water available in the aquifer. Overall, the natural discharge Upper Vermillion Missouri: West aquifer is greater than the estimated average annual withdrawal rate from the aquifer. Therefore, there is a reasonable probability that unappropriated water is available for the appropriation proposed by this permit application.

OBSERVATION WELL DATA:

Administrative Rule of South Dakota (ARSD) 74:02:05:07 requires that the Water Management Board shall rely upon the record of observation well measurements in addition to other data to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge of the aquifer.

The DANR-Water Rights Program monitors two observation wells completed into the Upper Vermillion Missouri: West aquifer (Water Rights, 2022b). These observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The closest observation well to the diversion point is observation well TU-77T (approximately 2.8 miles southeast). The hydrographs for these two observation wells are displayed in Figures 2 through 3 (Water Rights, 2022b).

Over their respective periods of record, the observation well hydrographs for the Upper Vermillion Missouri: West aquifer indicate that the aquifer responds well to climatic conditions because water levels are rising during wetter periods (early spring snowmelt and precipitation) and declining to a stable water level during drier periods. Additionally, the water levels in the observation wells display that the amount of recharge to and natural discharge from the aquifer greatly exceeds pumping with the aquifer returning to pre-pumping conditions between irrigation

seasons. This recovery of the aquifer 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 Upper Vermillion Missouri: West 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.

The hydrographs for the two observation wells completed into the Upper Vermillion Missouri: West aquifer show a decrease in static water levels in 2021. Observation well TU-77T also shows a historic low static water level of -41.83 ft which was recorded on August 9, 2021 (Figure 2) (Water Rights, 2022b). This decrease in water level and historic low could potentially be attributed to an increase in pumping activity for irrigation as a result of Turner County being in moderate to severe drought conditions throughout the summer season of 2021 and the irrigation season (U.S. Drought Monitor, 2022). In addition, the low static water levels were recorded while the irrigation season was still occurring.

Turner County received 1.4 inches of precipitation less than what is considered normal in 2021 (NOAA, 2022). Moderate to severe drought conditions can cause topsoil to dry and crop yields to decline, which in return, creates a greater demand for groundwater use for irrigators instead of relying on precipitation (NOAA, 2022). The volume of water withdrawn in 2021 from the Upper Vermillion Missouri: West aquifer is not yet available as the DANR-Water Rights Program is currently processing the submitted 2021 irrigation questionnaires. If the average annual withdrawal rates from the irrigation permits within the Upper Vermillion Missouri: West aquifer increased in 2021, the full extent of that increase will be unknown until the irrigation questionnaire data is available.

Furthermore, these two observation wells generally have more than 60 feet of artesian head pressure. It is highly likely that the drawdown measured in 2021 is primarily reflective of the potentiometric surface of the aquifer equilibrating to the increased withdrawals. The Upper Vermillion Missouri: West aquifer is likely recovering from these low water levels since the irrigation season for 2021 is complete. The most recent data of static water levels for these two observation wells were recorded during the irrigation season (early August). Under the standard Water Rights Program measurement practice, the water level of these two observation wells will be measured next in spring of 2022. Given the available information and past response of the observation wells to drier conditions the water levels in these observation wells are expected to recover with the end on the irrigation season and return to more average climatic conditions. Therefore, by recognizing that both recharge to and natural discharge from an aquifer can be captured for pumping, the observation well hydrographs demonstrate unappropriated water is available for the proposed appropriation.

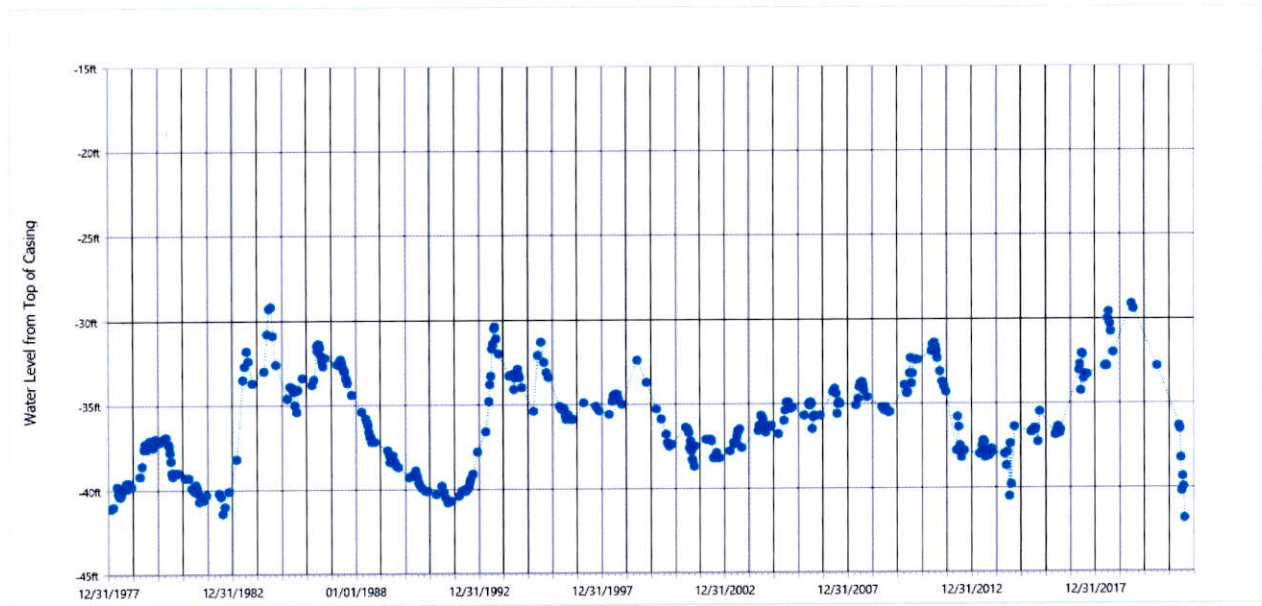


Figure 2: Hydrograph of the Upper Vermillion Missouri: West aquifer observation well TU-77T, located approximately 2.8 miles southeast of the proposed diversion point (Water Rights, 2022b).

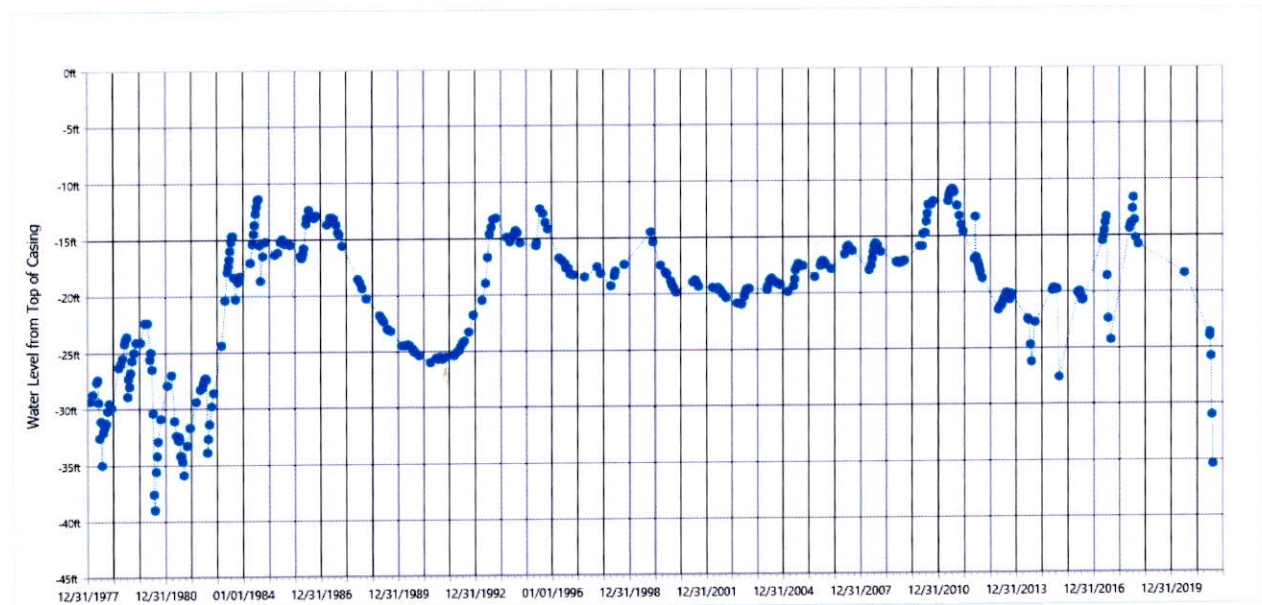


Figure 3: Hydrograph of the Upper Vermillion Missouri: West aquifer observation well TU-77S, located approximately 4.3 miles northwest of the proposed diversion point (Water Rights, 2022b).

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Currently, there are 12 water rights/permits authorized to appropriate water from the Upper Vermillion Missouri: West aquifer (Water Rights, 2022c). The 12 water rights/permits are shown in Figure 4 and identified in Table 2. The nearest water right/permit (not held by the applicant) to

the diversion point completed into the Upper Vermillion Missouri: West aquifer is Water Right No. 4265-3 located approximately 2.0 miles southeast of the proposed diversion point.

There are domestic wells on file with the DANR-Water Rights Program that are completed into the Upper Vermillion Missouri: West aquifer, with the closest domestic well on file (not held by the applicant) approximately 1.1 miles east of the proposed diversion point (Water Rights, 2022d). There could potentially be other domestic wells completed into the Upper Vermillion Missouri: West aquifer near the proposed diversion point that are not on file with the DANR-Water Rights Program.

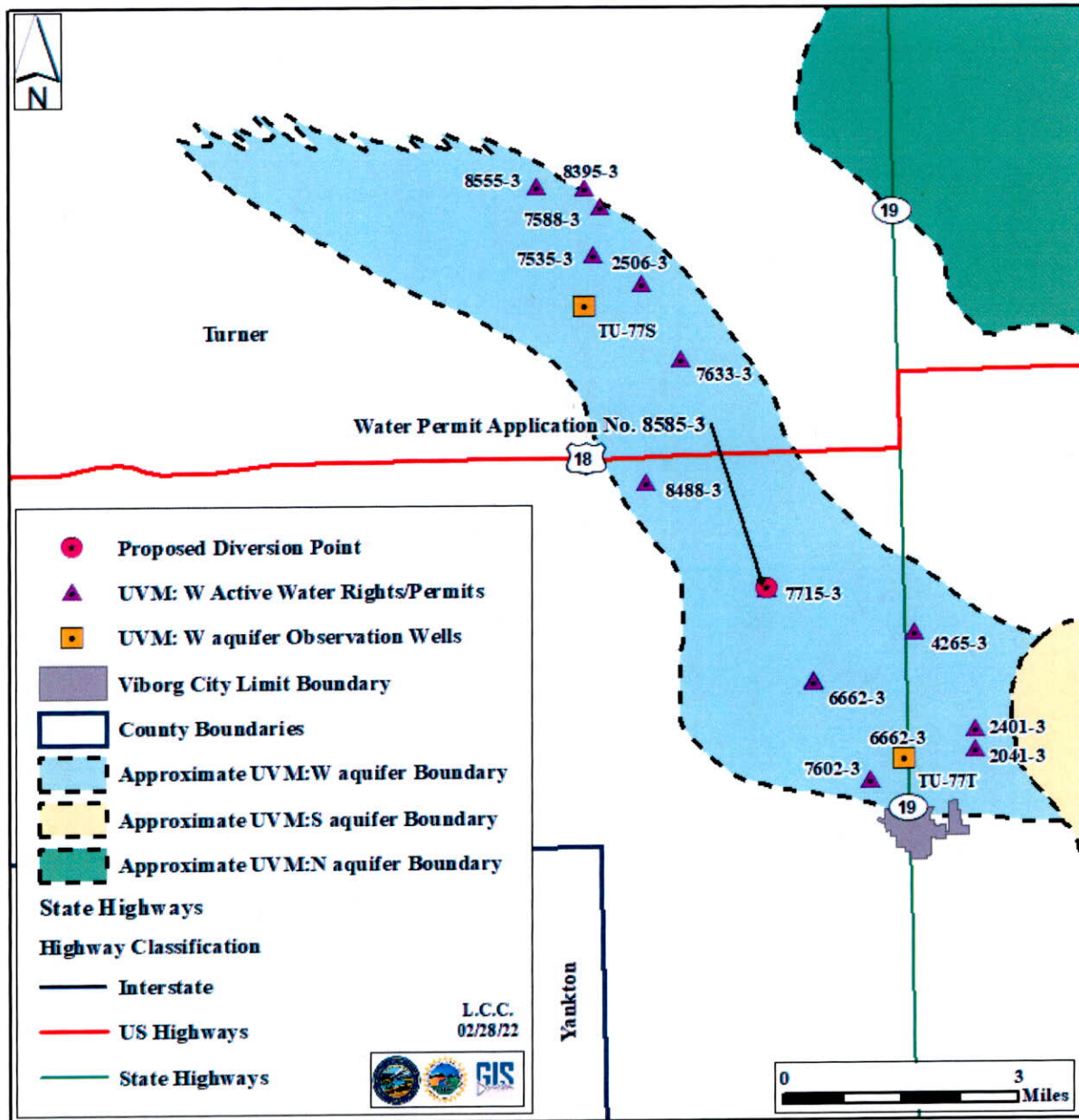


Figure 4: The site location of Water Right Permit Application No. 8585-3, nearby observation wells, and nearby water rights/permits completed into the Upper Vermillion Missouri: West aquifer (Water Rights, 2022b and 2022c).

The Upper Vermillion Missouri: West aquifer is generally under confined conditions in Turner County (SDGS, 2022). The proposed diversion point is expected to be under confined conditions based on the submitted test hole formation log, water levels, and lithologic logs on file for the nearby observation wells (Water Rights, 2022d). Observation well data (see Figures 2 through 3) documents drawdown from withdrawals of existing wells near the proposed diversion point. While the water levels shown in the two observation wells within the Upper Vermillion Missouri: West aquifer have declined in 2021, there is still approximately 15 feet of artesian head pressure available. Therefore, pumping from the proposed diversion point is not expected to significantly lower water levels within the aquifer. Drawdown created by pumping a well generally does not extend far from the pumped well in an unconfined aquifer; however, in a confined aquifer, drawdown from pumping could extend a distance from the proposed diversion point. The exact drawdown behavior cannot be known without an aquifer performance test. In Turner County, there have been no complaints submitted to the DANR-Water Rights Program regarding potential well interference for wells completed into the Upper Vermillion Missouri: West aquifer (Water Rights, 2022e).

Within approximately two miles of the diversion point for this application, the Upper Vermillion Missouri: West aquifer has a saturated aquifer thickness ranging from approximately 15 to 65 feet, with the depth to the top of aquifer materials ranging from approximately 25 to 130 feet below land surface, and static water levels at well completion varying from approximately 5 to 70 feet below land surface (SDGS, 2022; Water Rights 2022b and 2022d). The Water Management Board recognizes that the saturated thickness of an aquifer may be less than optimal for the placement of the pump intake. The Water Management Board defined an “adequate well” in ARSD 74:02:04:20(6) as:

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

The 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

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 Upper Vermillion Missouri: West aquifer at their location. However, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20(6) and (7)), the saturated thickness of the aquifer, the amount of artesian head pressure in observation wells, and appropriate user's wells completed into the Upper Vermillion Missouri: West aquifer, any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on existing water right/permit holders with adequate wells 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. 8585-3 proposes to reinstate Water Permit No. 7715-3. Water Permit No. 7715-3 appropriates 2.22 cubic feet of water per second (cfs) from one well to be completed into the West management unit of the Upper Vermillion Missouri aquifer (approximately 160 feet deep) for the irrigation of 156 acres.
2. Water Permit Application No. 8585-3 proposes to reinstate Water Permit No. 7715-3 since the project has not been completed. This site is located approximately three miles northwest of Viborg, SD.
3. There is a reasonable probability that unappropriated water is available from the Upper Vermillion Missouri: West aquifer for this proposed appropriation based on the hydrological budget and observation well data.
4. There is a reasonable probability this diversion will not unlawfully impair adequate wells authorized by existing water rights or domestic use wells.



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

Reviewed by:



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

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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: Tuesday, March 22, 2022 1:31 PM
To: svannorsdel1@gmail.com
Subject: Water Permit Application No. 8585-3, Allen Vannorsdel
Attachments: 3104.pdf

Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your Dad's 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>



*Sent info to Shawn Vannorsdel
he said his Dad was in A2
and he is the operator.*

Argus Leader

P.O. Box 677349, Dallas, TX 75267-7349

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APR 07 2022

WATER RIGHTS
PROGRAM

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Ad No.: 0005174522

PO #:

Lines : 174

Ad Total: \$55.12

ALLEN VANNORSDEL
445515 288TH ST
VIBORG, SD 57070

This is not an invoice

of Affidavits: 1

Account No.: 6056604988

Ad No.: 0005174522

Argus Leader AFFIDAVIT OF PUBLICATION

State of Wisconsin

County of Brown

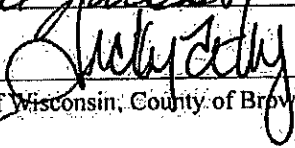
I being duly sworn, says: That The Argus Leader is, and during all the times hereinafter mentioned was, a daily legal newspaper published at Sioux Falls, Minnehaha County, South Dakota; that affiant is and during all of said times, was an employee of the publisher of such newspaper and has personal knowledge of the facts stated in this affidavit; that the notice, order or advertisement, a printed copy of which is hereto attached, was published in said newspaper issue(s) :

Friday, March 25, 2022

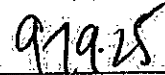
Sworn to and subscribed before me this 6 day of April, 2022.



Legal Clerk



Notary Public, State of Wisconsin, County of Brown



My Commission expires

VICKY FELTY
Notary Public
State of Wisconsin

**NOTICE OF
APPLICATION NO. 8585-3
to Reinstate Water Permit
No. 7715-3**

Notice is given that Allen Vannorsdel, 45515 288th St, Viborg SD 57070 has filed an application to reinstate Water Permit No. 7715-3. Water Permit No. 7715-3 appropriates 2.22 cubic feet of water per second from one well to be completed into the West Management Unit of the Upper Vermillion Missouri Aquifer (approximately 160 feet deep) located in the center of the SW 1/4 Section 16 for irrigation of 156 acres located in the SW 1/4 Section 16; all in T97N-R53W. The permit was approved March 6, 2014, and the project was to be completed March 6, 2019 with water being put to beneficial use by March 6, 2023. Application No. 8585-3 proposes to reinstate Permit No. 7715-3 since the project has not been completed. This site is located approximately 3 miles northwest of Viborg SD.

Application No. 8585-3 to reinstate No. 7715-3 is made pursuant to SDCL 46-2A-8.1 which allows reinstatement of a permit with a new priority date provided unappropriated water is available and the construction necessary to put water to beneficial use was not completed within the five years of approval of the original permit.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8585-3 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 Duval 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 el-

ther an interested person or the applicant must be filed by April 4, 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 April 4, 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 \$55.12
5174522 Mar 25, 2022

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APR 04 2022

WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA)

:SS
COUNTY OF TURNER)

Allyson Hill, being first duly sworn, on oath says the CENTERVILLE JOURNAL is a WEEKLY newspaper published in CENTERVILLE in said county of TURNER, State of South Dakota; and that she is authorized to and does make this affidavit on behalf of said CENTERVILLE JOURNAL; that affiant has personal knowledge of all facts stated in this affidavit; that said newspaper is a legal newspaper as defined by SDCL 17-2-2.1 through 17-2-2.4 inclusive as amended, has a bona fide circulation of at least two hundred copies WEEKLY, has been published in the English language within said county and has been admitted to the United States mail under the second class mailing privilege, for at last one year continuously next prior to the publication of the notice herein mentioned and was and is printed wholly or in part in an office maintained at said place of publication; that said notice, a printed copy of which taken from the paper in which the same was published is hereto attached and is made part of this affidavit, was published in said newspaper

1 time(s) as follows: that the first publication of said

notice in said newspaper aforesaid was on Thursday

the 24 day of March, 2022,

and that the succeeding publications were severally

on Thursday, the ____ day of _____, 2022;

on Thursday, the ____ day of _____, 2022;

on Thursday, the ____ day of _____, 2022;

on Thursday, the ____ day of _____, 2022;

Affiant further says that the full amount of the fees charged for the publication of said notice inures to the benefit of the publishers of said newspaper; that no agreement of understanding for the division thereof has been made with any other person, that no part therefore has been agreed to be paid to any person whomsoever; and that the fees charged for the publication thereof are:

DOLLARS (\$ 39.60)

(X) Allyson Hill, Allyson Hill

Subscribed and sworn to before me this 24th day of

March, 2022

Cheri O'Dell

Notary Public

My commission expires 03/12/2025.

Cheri O'Dell

NOTARY PUBLIC
SOUTH DAKOTA

**NOTICE OF
APPLICATION
NO. 8585-3 to
Reinstate Water Permit
No. 7715-3**

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Application No. 8585-3 to reinstate No. 7715-3 is made pursuant to SDCL 46-2A-8.1 which allows reinstatement of a permit with a new priority date provided unappropriated water is available and the construction necessary to put water to beneficial use was not completed

within the five years of approval of the original permit.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8585-3 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.

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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 April 4, 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 \$39.60

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

March 14, 2022

Allen Vannorsdel
45515 288th St
Viborg SD 57070

Dear Mr. Vannorsdel:

Water Permit Application No. 8585-3 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 Centerville Journal printed at Centerville (Ph # 605 563-2551) and the Argus Leader printed at Sioux Falls (Ph # 605 331-2200). 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. 8585-3 to Reinstate Water Permit No. 7715-3

Notice is given that Allen Vannorsdel, 45515 288th St, Viborg SD 57070 has filed an application to reinstate Water Permit No. 7715-3. Water Permit No. 7715-3 appropriates 2.22 cubic feet of water per second from one well to be completed into the West Management Unit of the Upper Vermillion Missouri Aquifer (approximately 160 feet deep) located in the center of the SW 1/4 Section 16 for irrigation of 156 acres located in the SW 1/4 Section 16; all in T97N-R53W. The permit was approved March 6, 2014, and the project was to be completed March 6, 2019 with water being put to beneficial use by March 6, 2023. Application No. 8585-3 proposes to reinstate Permit No. 7715-3 since the project has not been completed. This site is located approximately 3 miles northwest of Viborg SD.

Application No. 8585-3 to reinstate No. 7715-3 is made pursuant to SDCL 46-2A-8.1 which allows reinstatement of a permit with a new priority date provided unappropriated water is available and the construction necessary to put water to beneficial use was not completed within the five years of approval of the original permit.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8585-3 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 April 4, 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 April 4, 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_

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, March 14, 2022 12:55 PM
To: Argus Legals (arguslegals@argusleader.com)
Subject: 8585-3, Allen Vannorsdel
Attachments: 8585-3public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on March 24, 2022.

Allen Vannorsdel, 445515 288th St, Viborg SD 57070 (605 660-4988) 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>



Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, March 14, 2022 12:55 PM
To: 'journal@iw.net'
Subject: 8585-3, Allen Vannorsdel
Attachments: 8585-3public.short_final.docx; FORM8.FRM.doc

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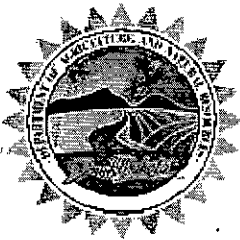
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Karen Schlaak

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

APR 28 2022

Alan Vannorsdel
45515 288 St
Viborg SD 57070

Dear Mr. Vannorsdel:

Enclosed is Water Permit No. 8585-3 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

c: Shawn Vannorsdel

Shawn Vannorsdel 5" test well Sec 16 turner county (Swan Lake Area)

<i>Formation</i>	<i>From</i>	<i>To</i>
Top soil	0	2
Clay brown	2	29
Clay gray	29	71
Clay gray, gravel layers- rocky	71	73
Gravel	73	78
Clay gray sandy and pebbly	78	137
Very sandy clay	137	193
Gravel and Sand	193	210
Clay w/ gravel layers	210	218
Gravel and sand w/ a few clay layers	218	231
Nice gravel	231	250
Clay blue	250	

Shawn Vannorsdel 5 " well

Legend
Feature 1

249' 5" well 4/19/2022 Shawn Vanorsdel 260' TH

35

288th St

288th St

288th St

33

Google Earth



1000 ft

Shawn Vannorsdel Viborg SD 249' well Formation Log

GPS 43 13.0120 w 97 6.9160 Sec 16 Swan Lake

<i>Formation Log</i>	<i>From</i>	<i>To</i>
Top	0	4
Clay brown	4	28
Clay blue	28	62
Sand w/ a few clay layers	62	72
Gravel	72	73
Clay blue	73	83
Sand med	83	89
Clay blue sandy	89	96
Sand and clay mix	96	101
Sand (drills like clay)	101	116
Sand	116	126
Very sandy clay (drills like clay)	126	171
Sand	171	180
Clay w/ gravel layers	180	198
Gravel	198	210
Clay w/ gravel layers	210	217
Gravel- a few clay layers @ 230	217	250
Clay gray	250	260

Shawn Vannorsdel Sec 16

Legend

 Feature

250' TH # 2

12" 249' IRR WELL DEC 2022 Shawn Vannorsdel 250' TH
249' 5" well 4/19/2022

TH # 3 250'

288th St

288th St



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

Date 10-30-23

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

FROM:

Allen Vannorsdel
(name)

45515 288th St
(address)

Viborg, SD 57070
(city, state, zip)

605-660-4988
(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. 8585-3 states that the water use system is to be constructed by

4-4-27
(date)

, and water is to be put to beneficial use by

4-4-31
(date)

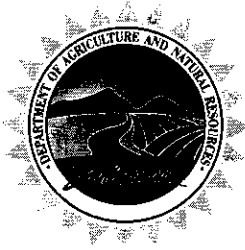
The water use system was completed on 6-8-23
(date)

Applying the water to beneficial use was completed on 6-21-23
(date)

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

Allen Vannorsdel
(signature)





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

October 31, 2023

8585-3

Allen Vannorsdel
45515 288th St
Viborg SD 57070

Dear Mr. Vannorsdel:

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

File: Water Right/Permit Nos. 2041-3, 4265-3, 6662-3, & 8585-3

Water Rights Program

File Documentation

DATE: March 29, 2026

NAME:

Permit No.	Name	Priority Date	Status	Use
2041-3	City of Viborg	12/13/1960	LC	MUN
4265-3	James D Bondesen	03/27/1978	LC	IRR
6662-3	Vannorsdel's Inc	09/16/2008	LC	COM/DOM/LCO
8585-3	Allen Vannorsdel	01/21/2022	PE	IRR

RE: Updated aquifer management unit designation and require annual reporting of withdrawals from the Upper Vermillion Missouri: West (UVM:W) aquifer

COMMENTS:

A review of following a two-year deferral of Application Nos. 8763-, 8797-3, and 8817-3, determined there were several water rights/permits that had not been updated to include the management unit designation, West management unit of the Upper Vermillion Missouri (UVM:W) aquifer, developed Buhler (2014) (Mathiowetz, 2026). Furthermore, it was determined several non-irrigation water rights have not been required to report annual withdrawal from the UVM:W aquifer. Since the deferral for Application Nos. 8763-, 8797-3, and 8817-3 was based on whether unappropriated water was available from the aquifer, it is prudent that the water rights that are not currently required to report annual withdrawals begin to report to increase the accuracy of the hydrologic budget estimates.

Water Right Nos. 6662-3 and 2041-3 are not currently required to report annual withdrawal from the UVM:W aquifer. Water Right No. 2041-3 is held by the City of Viborg. The City of Viborg currently receives all their water from a rural water system (Mathiowetz, 2026). However, annual reporting is recommended to ensure as much accuracy for the hydrologic budget as possible and to alert the Water Rights Program if the City of Viborg starts using their own water right again. Water Right No. 6662-3 is held by Vannorsdel's Inc for use in a livestock confinement operation. To ensure as accurate of a hydrologic budget for the aquifer as possible, it is recommended Water Right No. 6662-3 also be required to report average annual withdrawals from the UVM:W aquifer.

In 2014, Buhler as part of a review for several deferred applications pending completion of a DANR-Geological Survey study of the entire Upper Vermillion Missouri aquifer divided the aquifer into three separate management units. Water Right Nos. 2041-3, 4265-3, and 6662-3 predate the development of the management units and Water Permit No. 8585-3 was a

File: Water Right/Permit Nos. 2041-3, 4265-3, 6662-3, & 8585-3 reinstatement of Cancelled Permit No. 7715-3 which also predates the management unit designations. Based on the best information currently available and management unit naming conventions, Water Right Nos. 2041-3, 4265-3, and 662-3, and Water Permit No. 8585-3 should all be redesignated as withdrawing water from the West management unit of the Upper Vermillion Missouri (UVM:W) aquifer. The addition of the management unit designation does not represent physical change in water source, well location, or well depth. It is an update to the naming convention to reflect the currently best available information for aquifer and management unit extents. This update to the aquifer management unit name does not authorize any increase in the amount of water appropriated by previously stated Water Rights/Permits, relocation of existing wells, completion of additional wells into the aquifer, or change of acres permitted for irrigation.



Adam Mathiowetz
Acting Chief Engineer
DANR-Water Rights Program

REFERENCES:

Buhler, K.A. 2014. Report to the Chief Engineer on 21 Water Permit Applications from the Upper Vermillion Missouri Aquifer. Report in file for Water Permit No. 7715-3. SD DANR-Water Rights Program. Pierre, SD.

Mathiowetz, A.W. 2026. Supplementary Report on Deferred Water Permit Applications 8763-3 B&K Dairy Farms LLC; 8797-3 Donald D Benson; 8817-3 Merlin Vannorsdel. SD DANR-Water Rights Program. Pierre, SD