

WATER PERMIT NO. 8480-3

Name of Applicant: **David Zubke**

Address: **44769 149th St, Waubay SD 57273**

Phone: **605 265-0069**

Amount of Water Claimed: **0.67 cfs**

Total Acres: **40 acres**

Source of Water Supply: **groundwater (2 wells)**

Water to be used for: **irrigation**

County: **Day**

Type of Waste Disposal System:

Location: **approximately 7 miles southwest of Waubay**

PRIORITY

Date Received: **2-25-21**

Application/License Fee: **\$ 700**

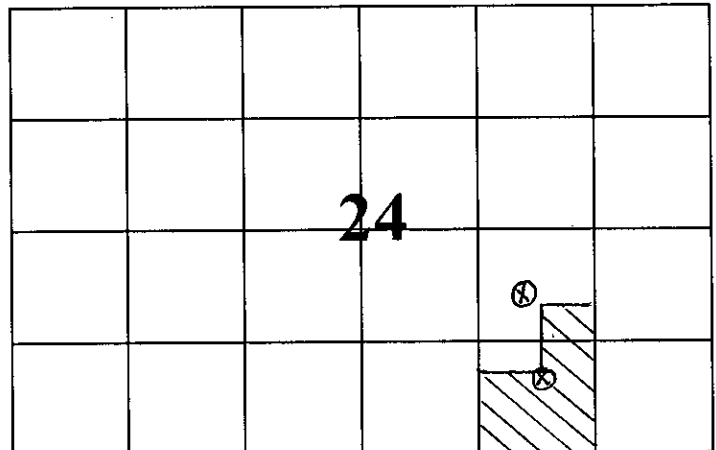
Corrected Application Received:

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

Remarks: **Requesting diversion rate greater than statutory limit**

Diversion Point: **E 1/2 SE 1/4 Sec 24-T121N-R53W**

Land to be Irrigated: **S 1/2 SE 1/4, NE 1/4 SE 1/4
Sec 24-T121N-R53W**



Depth of Well: **42**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **1-25-21**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

SOUTH DAKOTA
WATER PERMIT NO. 8480-3

Date of first receipt of application January 25, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8480-3 to David Zubke, 44769 149th St, Waubay SD 57273 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. 8480-3 appropriates 0.67 cubic feet of water per second (cfs) from two wells to be completed into the Big Sioux North Aquifer (42 feet deep) located in the E 1/2 SE 1/4 Section 24 for irrigation of 40 acres located in the S 1/2 SE 1/4, NE 1/4 SE 1/4 Section 24; all in T121N-R53W. This site is located approximately 7 miles southeast of Waubay SD.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: April 1 – October 31.
3. The date from which applicant may claim right is January 25, 2021.
4. The date of approval of Permit No. 8480-3 is April 8, 2021.
5. One-fifth of the construction is to be completed on or before October 8, 2023.
6. All construction is to be completed on or before April 8, 2026.
7. Water is to be put to beneficial use on or before April 8, 2030.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

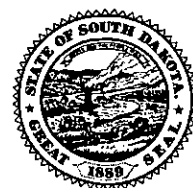
1. The wells approved under Water Permit No. 8480-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 8480-3 shall be constructed by a licensed well driller and construction of the wells and installation of the pumps 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. 8480-3 authorizes a maximum diversion rate of 0.67 cfs for the irrigation of 40 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

APR 19 2021

date



RECEIVED

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8480-3</u>	(office use only) Hydrologic Unit <u>10170202</u>	JAN 25 2021
	Basin <u>Sioux River</u>	WATER RIGHTS PROGRAM	
	Newspaper <u>Reporter & Farmer, Webster</u>		
	<u>Public Opinion, Watertown</u>		

PAID

JAN 25 2021

Ck# 3965

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 David Zubke

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

Mailing Address 44769 149th St Waubay ☒ SD ☒ 57273
(Address) (City) (State) (Zip Code)Phone _____ Mobile 6052650069 Email dzubke@itctel.com2. Amount of water claimed 0.67 *CFS or 300 **GPM _____ ***AF Total Acreage 40
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)3. Source of water supply wells (two)4. Location of point of diversion SE1/4 Sec 24 121N-53W (E1/2 SE1/4)
(example - 3 wells in SW1/4 NE1/4 section T2-T104N-R53W)County _____ Day _____ ☒5. County or counties where water will be used Day6. Annual period during which water is to be used April through October7. 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
SE1/4 of the SE1/4 Sec 24	30		
SW1/4 of the SE1/4 Sec 24	2		
NE1/4 of the SE1/4 Sec 24	8		
<u>all in T121N-R53W (R)</u>			

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

irrigation to increase production

Requesting diversion rate greater than statutory limit.I, David Zubke owner _____, the applicant, certify under
Name of Person Title (if applicable)

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

OPTIONAL GUIDELINES -- SOIL/WATER ANALYSIS

An important consideration in developing a new irrigation project is assessing the compatibility of the soils with the quality of the water to be used for irrigation. Some soils need careful management and others may not be suitable for irrigation with water having a high sodium or salt content. Reduced crop yields and damage to the soil structure may occur without proper irrigation management. A soil/water analysis may make the difference between a successful or an unsuccessful irrigation project. For this reason, completion of an analysis is recommended.

Completion of a soil/water analysis may also prevent unnecessary delays if your application is contested. If contested, the Water Management Board will conduct a contested case hearing and suitability of the acreage for irrigation may be an issue raised at the hearing. Also, the chief engineer may request that the applicant complete an analysis if the chief engineer believes that a soil/water compatibility problem may exist.

1. **COMPLETION OF THE SOIL/WATER ANALYSIS:** One option is to have a soil/water compatibility analysis completed by the Water Resources Institute at South Dakota State University, Brookings, SD 57007. For guidance on what information the Institute needs to prepare an analysis, please contact the Institute at (605) 688-4910.

Another option is contracting with any qualified water quality lab and having a qualified person perform the analysis.

2. **WATER QUALITY:** A water sample may not be needed since the quality of some water sources is well documented. Again, the Water Resources Institute, Brookings, SD at (605) 688-4910 may be able to assist you with sampling questions. If collecting a water sample, please follow this procedure:
 - a) Use a pint or quart jar which can be cleaned with a brush or dish cloth. Do not use gallon containers, metal containers, or containers with metal lids. Bottles used for bleach, fabric softener, detergents, and shampoos make very good sample bottles, but are difficult to get clean.
 - b) Wash the container with hot, soapy water and rinse in boiling water (some containers may require washing with hot vinegar to remove foreign residues).
 - c) Rinse the container vigorously three times with the water to be sampled. If the container doesn't look clean, don't use it.
 - d) Allow enough time for pumping a well to insure "fresh" ground water, instead of "drill water and mud" or stagnant water. It is common for water quality to improve with extended pumping (up to six hours of pumping a new well is recommended).
 - e) When taking surface water samples, obtain the water far enough from the shore to avoid excessive soil and algae. Samples from different depths should be combined into one sample.
 - f) Try to get the water sample to the laboratory as soon as possible. Time affects water quality.
3. **SOILS INFORMATION:** If you need to provide a soils map to whomever is preparing your analysis, the Natural Resources Conservation Service or the local Conservation District may be able to provide you a soils map. At a minimum the person preparing your analysis will need to know the legal descriptions of the acreage to be irrigated. If the county soil survey is not completed, then the Natural Resources Conservation Service or a professional soil classifier may be able to provide you soils information.

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 2 Have test holes been drilled ☒ Yes ☐ No Drilled by Wieber Well Drilling
(if yes, please provide copies of logs)b) If existing wells, how many Provide copy of log(s), if available. Drilled by Wieber Well Drilling

For either Existing or Proposed Wells:

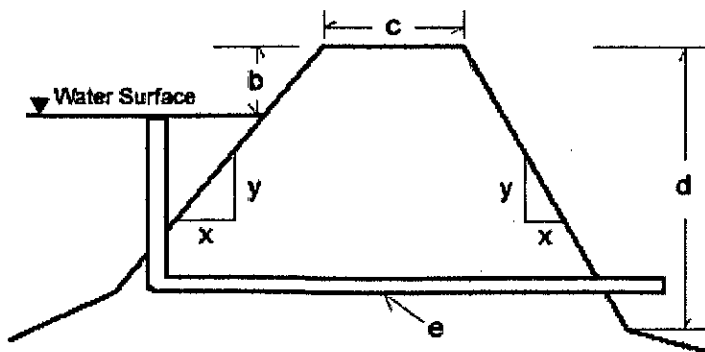
c) Well Depth (required) 42 Depth to Top of Water Bearing Material 25 Depth to Water from Surface d) Distance to nearest domestic well on applicant's property NA Property owned by others 3/8 mile**2. Wastewater Disposal System Information**a) Type of System (i.e. septic tank, drain field) b) System Capacity (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:

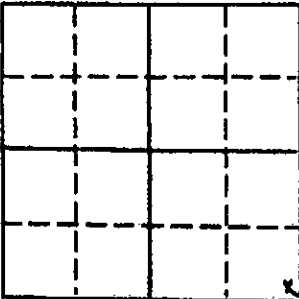
b) Freeboard c) Crest Width Crest Length d) Height e) Primary Outlet Capacity If pipe, diameter f) Secondary Spillway Capacity Spillway Width

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

Upstream Downstream h) Surface Area of Impoundment i) Storage Acre Feetj) Drainage Area Above Dam Acres

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location <u>SE 1/4 SE 1/4</u> Sec <u>24</u> Twp <u>121-122-9</u> <u>S354</u> County <u>Day</u> Please mark well location with an "X" North  1 Mile Well completion Date <u>11/16/18</u> Distance from nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.) ? <u>None</u> ft. from <u>None</u> (Identify source)		Well Owner: <u>DAVID Zabkeg</u> Business Name: _____ Address1: <u>44769 149th</u> Address2: _____ City, State, Zip: <u>Waubay SD 57273</u> WELL LOG: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">FORMATION</th> <th colspan="2">DEPTH</th> </tr> <tr> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td>top soil</td> <td>0</td> <td>2</td> </tr> <tr> <td>yellow clay</td> <td>2</td> <td>12</td> </tr> <tr> <td>Blue clay</td> <td>12</td> <td>25</td> </tr> <tr> <td>gravel water 54%</td> <td>25</td> <td>42</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		FORMATION	DEPTH		FROM	TO	top soil	0	2	yellow clay	2	12	Blue clay	12	25	gravel water 54%	25	42															
FORMATION	DEPTH																																		
	FROM	TO																																	
top soil	0	2																																	
yellow clay	2	12																																	
Blue clay	12	25																																	
gravel water 54%	25	42																																	
PROPOSED USE: ☐ Domestic/Stock ☐ Municipal ☐ Business ☒ Test Holes ☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well METHOD OF DRILLING: <u>Forced Rotary</u> CASING DATA: ☐ Steel ☐ Plastic ☐ Other If other describe _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>PIPEWEIGHT</th> <th>DIAMETER</th> <th>FROM</th> <th>TO</th> <th>HOLE DIAMETER</th> </tr> <tr> <th>LB/FT</th> <th>IN</th> <th>FT</th> <th>FT</th> <th>IN</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER	LB/FT	IN	FT	FT	IN																STATIC WATER LEVEL _____ 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								
PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER																															
LB/FT	IN	FT	FT	IN																															
GROUTING DATA: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Grout Type</th> <th>No. of Sacks</th> <th>Grout Weight</th> <th>From</th> <th>To</th> </tr> <tr> <th> </th> <th> </th> <th>Lb/gal</th> <th>FT</th> <th>FT</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Describe grouting procedure _____ SCREEN: ☐ Perforated pipe ☐ Manufactured Diameter _____ Inches Length _____ Feet Material _____ Slot Size _____ Set From _____ Feet to _____ 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? _____ ☐ No, Why Not? _____ Lab sample sent to for water quality analysis _____		Grout Type	No. of Sacks	Grout Weight	From	To			Lb/gal	FT	FT											REMARKS This well was drilled under license # <u>480</u> And this report is true and accurate. Drilling firm: <u>Wieber Well Drilling</u> Signature of License Representative: <u>[Signature]</u> Signature of Well Owner or Equitable Property Holder: _____ Date: <u>11/19/21</u> 523 E. Capitol Ave., Pierre SD 57501													
Grout Type	No. of Sacks	Grout Weight	From	To																															
		Lb/gal	FT	FT																															

Please return White Copy to DENR Water Rights



United States Department of Agriculture
Farm Service Agency

May 12, 2010

PLSS: 24_121N_53W
Farm: 4402

Day County, SD
1:8,238



Wetland Determination Identifiers

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

Common Land Units

Disclaimer: Wetland identifiers do not represent the size, shape or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact wetland boundaries and determinations, or contact NRCS.

2008 Ortho-Photography - Not to Scale

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Environment and Natural Resources

Date January 25, 2021

RECEIVED OF David/Marilyn Zubke 44769 149th St Waubay SD 57273

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

Fee for Application for Permit No. <u>8480-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$500.00
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>8480-3</u>	\$200.00
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	\$700.00

By Eric Gronlund
Chief Engineer
me



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8480-3, David Zubke**

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. 8480-3, David Zubke, 44769 149th St, Waubay SD 57273.

The Chief Engineer is recommending APPROVAL of Application No. 8480-3 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 rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The wells approved under Water Permit No. 8480-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 8480-3 shall be constructed by a licensed well driller and construction of the wells and installation of the pumps 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. 8480-3 authorizes a maximum diversion rate of 0.67 cfs for the irrigation of 40 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
March 18, 2021

REPORT ON WATER PERMIT APPLICATION NO. 8480-3

David Zubke

March 18, 2021

Water Permit Application No. 8480-3 by David Zubke requests a maximum diversion rate of 0.67 cubic feet per second (cfs) of water from two wells to be completed into the North management unit of the Big Sioux aquifer (approximately 42 feet deep) located in the E $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 24 for irrigating 40 acres located in the S $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 24; all in T121N-R53W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres due to the soil being "lighter ground" (more sandy). The well sites for this application are located approximately 7 miles southeast of Waubay, SD.

Aquifer: Big Sioux: North (BS:N)

Hydrogeology

This portion of the Big Sioux: North aquifer is deposited along a small, surficial channel that lies between Bitter Lake and the Big Sioux River. This small channel is filled with sand and gravel and may connect the sand and gravel deposits around Bitter Lake (a portion of the Coteau Lakes aquifer) to the sand and gravel deposits that comprise the Big Sioux: North aquifer.

The Big Sioux: North aquifer is comprised of surficial outwash that ranges from medium sand to medium gravel with alluvium present in and along stream beds (Hansen, 1990; Jensen, 2004). The aquifer is usually found in the flood plain of the Big Sioux River and its tributaries and is hydraulically connected to lakes in the area, such as Pelican Lake, Lake Kampeska, and Still Lake, as well as the Big Sioux River and its tributaries (Hansen, 1990; Putnam & Thompson, 1996).

Hedges, Burch, Iles, Barari, & Schoon (1982) estimated that the Big Sioux: North aquifer covers an areal extent of approximately 83,500 acres and contains an estimated 187,880 acre-feet (ac-ft) of recoverable water in storage covering areas of Codington, Grant, Hamlin, Roberts, and Day counties. Stonesifer (2013) used several studies to refine the delineation of the aquifer from that of Hedges, Burch, Iles, Barari, & Schoon (1982). The aquifer delineation by Stonesifer (2013) resulted in an estimated areal extent of approximately 111,700 acres.

The test hole log submitted with the application states topsoil from ground surface to 2 feet, yellow clay from 2 to 12 feet, blue clay from 12 to 25 feet, and gravel water sand from 25 to 42 feet below ground surface. The Big Sioux: North aquifer has a thickness that ranges from 2 to 54 feet thick with an average of 22 feet (Hansen, 1994)

South Dakota Codified Law 46-5-6

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of 1 cfs for every 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....” Water Permit Application No. 8480-3 proposes to divert water at a maximum rate of 0.67 cfs for the irrigation of 40 acres or at a rate of 1.17 cfs per 70 acres. The applicant is requesting a diversion rate greater than the statutory limit due to the soil being “lighter ground” (more sandy). The request by the applicant is reasonable and has been accepted by the Water Management Board in the past.

South Dakota Codified Law 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 proposed diversion can be developed without unlawful impairment of existing rights, and that the proposed use is a beneficial use and in the public interest. This report will address the availability of unappropriated water and the existing rights within the North management unit of the Big Sioux aquifer.

Water Availability

SDCL 46-6-3.1 is considered when evaluating the probability of unappropriated water from an aquifer and states, “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 Big Sioux: North aquifer is not older or lower than the Greenhorn Formation, and there is no water distribution system involved. Therefore, the recharge and withdrawal rates must be considered.

Hydrologic Budget

Recharge

Recharge to the aquifer is from infiltration of precipitation and seepage from lakes, ponds, streams, and rivers when water levels are higher than the aquifer water levels (Putnam & Thompson, 1996). There are several estimates for recharge rates to the Big Sioux aquifer. Hedges, Allen, & Holly (1985) estimated recharge rates if flow-net analysis was not taken into account to the Big Sioux aquifer to range from 2.7 to 6.9 inches per year. Hedges, Allen, & Holly (1985) used observation well analysis and estimated a recharge rate of 3.2 inches per year for the Big Sioux: North aquifer

specifically. Hansen (1988) estimated recharge to the Big Sioux aquifer in Moody County to range from 2.7 to 7.02 inches per year and averaging 4.86 inches per year using a specific yield of 0.15 multiplied by the range of water-levels in observation well data from 1970 to 1979. Putnam and Thompson (1996) used observation well data for the years 1978 to 1985 and a specific yield range from 0.10 to 0.20 to estimate the average annual recharge rate to the Big Sioux aquifer primarily in Grant and Codington Counties to be 2.9 to 5.8 inches per year. Putnam and Thompson (1996) also used steady-state modeling of the Big Sioux aquifer primarily in Grant and Codington Counties and found a recharge rate of 5.53 inches per year best reproduced average water levels during the study period (1978-1985). Applying the highest and lowest recharge rates cited from the studies listed above for the Big Sioux aquifer results in 2.7 to 7.02 inches per year. Applying this range over the areal extent estimated by Stonesifer (2013) (111,700 acres) results in an estimated average annual recharge range of 25,130 to 65,340 ac-ft/year (ac-ft/yr) for the Big Sioux: North aquifer.

Withdrawals

Withdrawals from the Big Sioux: North aquifer occurs through evapotranspiration in areas where the aquifer is near land surface, well withdrawals, and outflow to hydraulically connected sediments and surface water (Hansen, 1990). Currently, there are 99 water rights/permits and three future use permits appropriating water from the Big Sioux: North aquifer (Water Rights, 2021a). The three future use permits combined have reserved 3,469 ac-ft/yr.

All current non-irrigation water rights/permits not required to report usage and appropriating water from the Big Sioux: North aquifer are summarized in Table 1. The amount of water that can be expected to be withdrawn by non-irrigation water rights/permits not required to report usage can be estimated by assuming water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time and those limited by an annual volume will use the entire permitted volume annually.

Table 1: Summary of expected water use of non-irrigation rights/permits not required to report water usage that are authorized to withdraw water from the Big Sioux: North aquifer (Water Rights, 2021a).

Use Type	No. of Water Rights/Permits	Permitted Diversion Rate (cfs)	Permitted Annual Volume (ac-ft)	Expected Annual Use (ac-ft)
MUN	13	11.700	1,160	6,246
IND	5	3.813	N/A	1,657
RWS	1	2.440	N/A	1,061
COM	15	2.381	41	1,075
SHD	1	0.080	N/A	35
Total	35	20.414	1,201	10,074
MUN = Municipal, IND = Industrial, RWS = Rural Water System, COM = Commercial, SHD = Suburban Housing Development				

Non-irrigation water rights/permits that are required to report their annual usage are summarized in Table 2, and their usage is calculated using the average of the reported pumpage for the years 2007 to 2019 (Water Rights, 2021f).

Table 2: Non-irrigation water rights/permits completed into the Big Sioux: North aquifer that are required to report their annual usage and the reported usage over the period of record (Water Rights, 2021f).

Year	6595-3 (RWS)	6856-3, 7055-3 (MUN)
2007	44	4,052
2008	127	468
2009	164	3,726
2010	143	1,918
2011	143	1,918
2012	108	2,528
2013	127	4,095
2014	136	2,233
2015	140	2,728
2016	156	2,055
2017	150	2,222
2018	124	3,295
2019	137	2,800
average (ac-ft/yr)	131	2,618
MUN = Municipal, RWS = Rural Water System		

There are a number of well completion reports on file with SD DENR Water Rights Program for domestic wells that appear to be completed into the Big Sioux: North aquifer. However, due to the low population density and the availability of rural water systems, their annual withdrawal is not significant to the hydrologic budget for the aquifer (Water Rights, 2021b).

There are 61 water rights/permits for irrigation currently authorized to appropriate water from the Big Sioux: North aquifer. The historical irrigation pumpage for the Big Sioux: North aquifer is shown in Figure 1. The reported average annual irrigation pumpage over the period of record for the Big Sioux: North aquifer is 2,384.62 ac-ft/yr or approximately 14% of the average total appropriation authorized for irrigation.

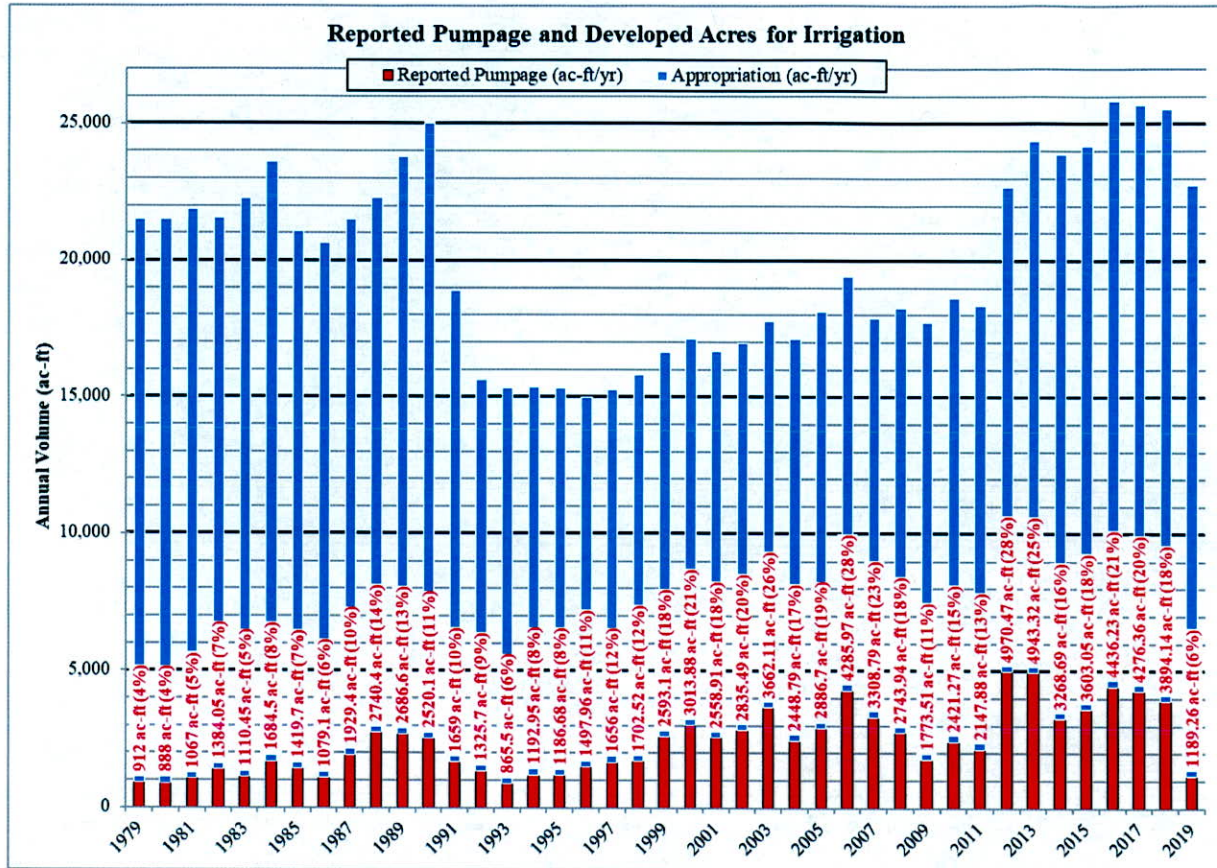


Figure 1: Historical irrigation questionnaire data for irrigation rights/permits in the Big Sioux: North (BS:N) aquifer with labels showing the reported pumpage by year and the approximate percentage pumped of the total appropriation authorized for that year (Water Rights, 2021a; Water Rights, 2021d).

Hydrologic Budget Summary

The estimated average annual withdrawals from the Big Sioux: North aquifer are 3,469 ac-ft/yr reserved for future use permits, 10,074 ac-ft/yr from non-irrigation users not required to report usage, 2,749 ac-ft/yr from non-irrigation users required to report usage, and 2,384.62 ac-ft/yr from irrigation. If approved, Permit Application No. 8480-3 will use 80 ac-ft/yr, assuming full use of the proposed appropriation (2 ft/ac). Therefore, the total estimated average annual withdrawal from the Big Sioux: North aquifer is 18,757 ac-ft/yr.

The estimated average annual recharge to the Big Sioux: North aquifer ranges between approximately 25,130 to 65,340 ac-ft/yr. Subtracting the estimated average annual withdrawals from the estimated average annual recharge results in 6,373 to 46,583 ac-ft/yr of unappropriated water. There is a reasonable probability there is unappropriated water available from the Big Sioux: North aquifer for the proposed appropriation.

Observation Well Data

In determining the availability of unappropriated water for a permit application, Administrative Rule of South Dakota (ARSD) 74:02:05:07 requires the Water Management Board to rely on 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 to the aquifer.

The DENR-Water Rights Program monitors 29 observation wells completed into the Big Sioux: North aquifer (Water Rights, 2021c). Observation wells provide data on how the aquifer reacts to regional climatic conditions and pumping in the immediate vicinity of those observation wells. The nearest observation wells that can be used for analysis are GT-77D (1.5 miles southeast) and GT-77B (2.4 miles northeast). The hydrographs for these wells are shown in Figure 2.

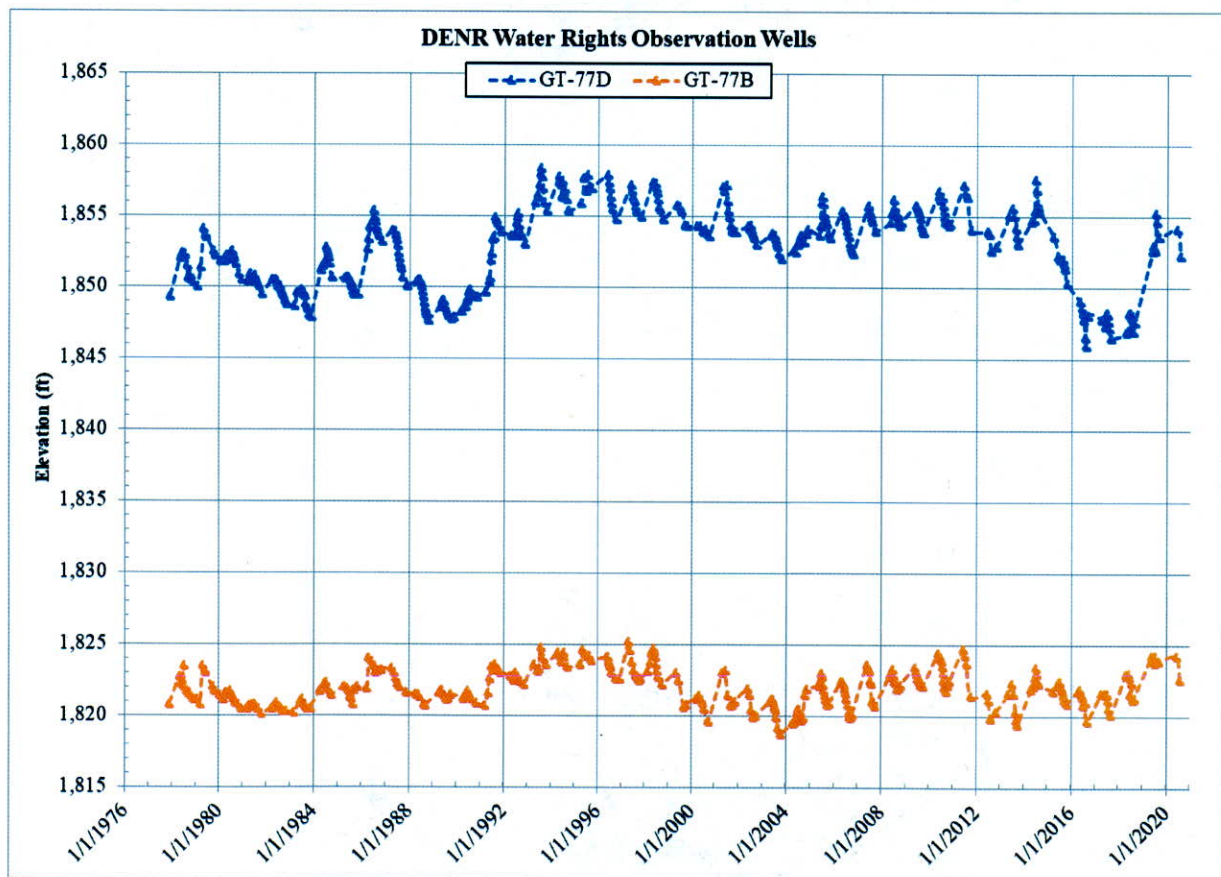


Figure 2: Hydrograph for observation wells GT-77D (1.5 miles southeast) and GT-77B (2.4 miles northeast) (Water Rights, 2021c).

Water levels shown in the observation wells change in response to climatic conditions declining during drier periods and rising during wetter periods and show no or minimal responses to pumping. Any responses to pumping are relatively short-term and are masked by recharge to and

natural discharge from the aquifer indicating climatic conditions govern the changes in water level and not the effects of pumping. Recognizing recharge to and natural discharge from the Big Sioux: North aquifer can be captured for pumping, the hydrographs document that unappropriated water is available for this proposed appropriation.

Potential For Unlawful Impairment Of Existing Water Rights

Currently, there are 99 water rights/permits and three future use permits appropriating water from the Big Sioux: North aquifer (Water Rights, 2021a). The nearest water right/permit from the proposed diversion points not owned by the applicant is approximately 0.63 miles to the northeast (Table 3 and Figure 3). There are a number of domestic wells on file with the SD DENR-Water Rights Program, which appear to be completed into the Big Sioux: North aquifer within the area illustrated in Figure 3 (Water Rights, 2021b).

Table 3: Nearby water rights/permits currently authorized to withdraw water from the Big Sioux: North aquifer, shown in Figure 3 (Water Rights, 2021a).

Permit No.	Name	Status	Use	Rate (cfs)	Acres
2717-3A	Kristopher Bronson	LC	IRR	1.66	231
6030-3	Endres Family Trust	LC	IRR	2.12	132
6099-3	Endres Family Trust	LC	IRR	2.11	132
7453-3	Berger Farms	LC	IRR	1	130
7516-3	David Zubke	LC	IRR	2	145
7969-3	Bronson Custom Farms Inc	PE	COM	0.67	N/A
8157-3	David C Zubke	PE	IRR	1.55	60
8158-3	David C Zubke	PE	IRR	2.22	355
LC = Water Right, IRR = Irrigation, PE = Water Permit, COM = Commercial					

The Big Sioux: North aquifer switches between confined and unconfined in this area, so drawdown from pumping could extend a significant distance from the proposed well site. The thickness of the Big Sioux: North aquifer in the area of this application is expected to range from 15 to 22 feet (South Dakota Geological Survey, 2021; Water Rights, 2021b). The applicant has existing diversion points in the area, with the nearest being approximately 0.32 miles to the north of the proposed diversion point. Given the proposed diversion point is closer to the applicant's existing wells than those owned by other water right/permit holders, any well interference generated by this diversion would affect the applicant first, and as a result, the applicant would compensate for the interference. Nearby adequate wells should not be adversely impacted by pumping at this proposed diversion rate.

“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.”

SDCL 46-6-6.1 does not necessarily protect artesian head pressure as a means of delivery, and in the past, the Water Management Board has recognized that to place water to maximum beneficial use, a certain amount of drawdown may occur (Water Rights, 1995). The Water Management Board has also found if increased cost or decreased production as a result of impacts on artesian head pressure by legitimate users is to be considered an adverse impact, it would also be in conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to lower their pumps to accommodate deeper water levels. Considering the applicant's existing wells are the closest to the proposed diversion points, and any well interference would affect the applicant first, resulting in the applicant compensating for any interference generated by the proposed diversion, and the laws and rules governing water use and protecting adequate wells, well interference from this proposed diversion is not expected to cause an adverse impact. Therefore, there is a reasonable probability that any interference created by pumping for this proposed appropriation will not unlawfully impair existing water rights and domestic users with adequate wells.

The Big Sioux: North aquifer has some areas that can be relatively thin with a limited amount of water in storage. The best available information indicates that long-term average annual withdrawals will not exceed average annual recharge to the aquifer; however, conditions may occur when withdrawals exceed recharge. When this occurs, water will be removed from storage, and as a result, the saturated thickness of the aquifer will be reduced. If the saturated thickness is reduced to the point that existing water rights/permits can no longer pump at their developed or "historically established" rates, this may be considered an adverse impact. Therefore, as a precaution, this water permit, if approved, should include a qualification that the well owner shall control their withdrawals, so there is not a reduction of needed water supplies for adequate domestic wells or for adequate wells having prior water rights. However, when all of the above is considered, nearby adequate wells as defined by ARSD 74:02:04:20(6) are not expected to be unlawfully impaired.

Conclusions

1. Water Permit Application No. 8480-3 by David Zubke requests a maximum diversion rate of 0.67 cubic feet per second (cfs) of water from two wells to be completed into the North management unit of the Big Sioux aquifer (approximately 42 feet deep) for irrigating 40 acres.
2. This application is seeking a diversion rate that exceeds the statutory limit of 1 cfs for every 70 acres. This application is seeking an equivalent rate of 1.17 cfs per 70 acres. The applicant is requesting a diversion rate greater than the statutory limit due to the soil being

“lighter ground” (more sandy). This is a reasonable request that has been accepted by the Water Management Board in the past.

3. Based on observation well data and the hydrologic budget, there is a reasonable probability that unappropriated water is available from the Big Sioux: North aquifer.
4. There is a reasonable probability that the diversion proposed by this application will not unlawfully impair adequate wells for existing water rights and domestic use.



Timothy Magstadt
Natural Resources Engineer II
SD DENR – Water Rights Program

References

- Hansen, D. S. (1988). *Appraisal of the Water Resources of the Big Sioux Aquifer, Moody County, South Dakota; Water-Resources investigation Report 87-4057*. Huron, South Dakota: U.S. Geological Survey.
- Hansen, D. S. (1990). *Water Resources of Codington and Grant Counties, South Dakota; Water-Resources Investigation Report 89-4147*. Huron: U.S. Geological Survey.
- Hansen, D. S. (1994). *Major Aquifers in Codington and Grant Counties, South Dakota; Information Pamphlet No. 47*. Vermillion: South Dakota Geological Survey.
- Hedges, L. S., Allen, J., & Holly, D. E. (1985). *Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River South Dakota and Iowa Task 7*. Vermillion: Department of Water and Natural Resources.
- Hedges, L. S., Burch, S. L., Iles, D. L., Barari, R. A., & Schoon, R. A. (1982). *Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa*. Department of Water and Natural Resources, Office of Geological Survey.
- Jensen, A. R. (2004). *First Occurrence of Aquifer Materials in Grant County, South Dakota; Aquifer Materials Map 17*. Geological Survey.
- Putnam, L. D., & Thompson, R. C. (1996). *Appraisal of the water resources of the Big Sioux aquifer, Codington and Grant Counties, South Dakota: Water-Resources Investigations Report 96-4275*. Rapid City: U.S. Geological Survey.

South Dakota Geological Survey. (2021). *Lithologic Logs Database*. Akeley-Lawrence Science Center, Vermillion, SD. SD DENR-Geological Survey.

Stonesifer, J. R. (2013). *Report to the Chief Engineer Water Permit Application No. 7857-3: Casey and April Johnston*. Pierre, South Dakota: SD DENR-Water Rights Program, Joe Foss Building.

Water Rights. (1995). *Findings of Fact, Conclusions of Law, and Final Decision in the Matter of Water Permit Application No. 2313-2, Coca-Cola Bottling Company of the Black Hills*. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

Water Rights. (2021a). *Water Right/Permit Files*. Joe Foss Bldg., Pierre, South Dakota.: SD DENR-Water Rights Program.

Water Rights. (2021b). *Well Completion Report Files*. Joe Foss Bldg., Pierre, South Dakota.: SD DENR-Water Rights Program.

Water Rights. (2021c). *Observation Well Database*. Joe Foss Bldg., Pierre, South Dakota.: SD DENR-Water Rights Program.

Water Rights. (2021d). *Irrigation Questionnaire database*. Joe Foss Bldg., Pierre, South Dakota.: SD DENR-Water Rights Program.

Water Rights. (2021f). *2003-2019 Non-Irrigation Water Use Data*. SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Schlaak, Karen

From: Schlaak, Karen
Sent: Thursday, March 18, 2021 4:14 PM
To: dzubke@itctel.com
Subject: Water Permit Application No. 8480-3
Attachments: 0921.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 tomorrow.

Karen Schlaak

Water Rights Program
(605) 773-3352



RECEIVED

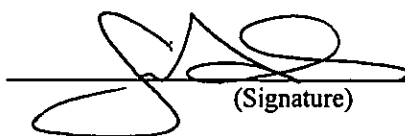
MAR 31 2021

WATER RIGHTS
PROGRAM

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County of DAY) SSI, JOHN SUTHER
certify that the attached printed Notice was taken
from the _____Reporter + Farmer
WEBSTER
printed and published in March 29, 2021County of Day and
state of South Dakota. The notice was published
in the newspaper on the following date:March 29, 2021

Cost of Printing _____

29.96
(Signature)Publisher
(Title)3/29/2021
(Date Signed)

An application to appropriate water

NOTICE OF APPLICATION
NO. 8480-3 TO
APPROPRIATE WATER

Notice is given that David Zubke, 44769 149th St., Waubay, SD 57273 has filed an application for a water permit to appropriate 0.67 cubic feet of water per second (cfs) from two wells to be completed into the Big Sioux North Aquifer (42 feet deep) located in the E 1/2 SE 1/4 Section 24 for irrigation of 40 acres located in the S 1/2 SE 1/4, NE 1/4 SE 1/4 Section 24; all in T121N-R53W. The applicant is requesting a diversion rate greater than the statutory limit of one cfs per 70 acres. This site is located approximately seven miles southeast of Waubay, SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8480-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application and staff report are available at <http://denr.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 or supporting this application or recommending this application must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E. Capitol, Pierre, SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by April 8, 2021. The petition may be contested 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 \$29.96.

Watertown Public Opinion AFFIDAVIT OF PUBLICATION

NOTICE OF APPLICATION NO. 8480-3
to Appropriate Water

Notice is given that David Zubke, 44769 149th St, Waubay SD 57273 has filed an application for a water permit to appropriate 0.67 cubic feet of water per second (cfs) from two wells to be completed into the Big Sioux North Aquifer (42 feet deep) located in the E 1/2 SE 1/4 Section 24 for irrigation of 40 acres located in the S 1/2 SE 1/4, NE 1/4 SE 1/4 Section 24; all in T121N-R53W. 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 southeast of Waubay SD.

Pursuant to SDCL 45-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8480-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.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 or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by April 8, 2021.

The petition may be informal but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

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 \$45.03

David Zubke
44769 149th St
Waubay, SD 57273

STATE OF SOUTH DAKOTA
COUNTY OF CODINGTON

Ken Pappas

Signature

Ken Pappas

Printed Name

I being duly sworn says: That Watertown Public Opinion is, and during all the times hereafter mentioned was, a daily legal newspaper as defined in SDCL 17-2-2.1 through 17-2-2.4, as amended, published at Watertown, Codington County, South Dakota, by Watertown Public Opinion; 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 attached, was published in said newspaper upon:

Published Dates:
03/23/21

that the full amount of the fee charged for publishing the same, including a \$5.00 affidavit fee, to-wit, the sum of \$45.03 insures solely to the benefit of the publisher of said newspaper; that no agreement or understanding for the division of the fee has been made with any person, and that no part of the fee has been agreed to be paid to any other person.

Subscribed and sworn to before me this 13th
day of
April,
A.D.
2021

Signed:

Vicky Felty

NOTARY PUBLIC
State of Wisconsin
County of Brown

My commission expires

9/19/21

VICKY FELTY
Notary Public
State of Wisconsin

Ad ID 948994

Schlaak, Karen

From: Schlaak, Karen
Sent: Thursday, March 18, 2021 4:09 PM
To: 'legals@thepublicopinion.com'
Subject: 8480-3, David Zubke
Attachments: 8480-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on March 29, 2021.

David Zubke, 44769 149th St, Waubay SD 57273 (605 265-0069) 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
Water Rights Program
(605) 773-3352



Schlaak, Karen

From: ✓ Schlaak, Karen
Sent: Thursday, March 18, 2021 4:08 PM
To: 'news@reporterandfarmer.com'
Subject: 8480-3, David Zubke
Attachments: 8480-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on March 29, 2021.

David Zubke, 44769 149th St, Waubay SD 57273 (605 265-0069) 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

Water Rights Program
(605) 773-3352





DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

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

March 19, 2021

David Zubke
44769 149th St
Waubay SD 57273

Dear Mr. Zubke:

Water Permit Application No. 8480-3 for irrigation use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Reporter & Farmer printed at Webster SD (Ph # 605 345-3356) and the Public Opinion printed at Watertown SD (Ph # 605 886-6901). 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. 8480-3 to Appropriate Water

Notice is given that David Zubke, 44769 149th St, Waubay SD 57273 has filed an application for a water permit to appropriate 0.67 cubic feet of water per second (cfs) from two wells to be completed into the Big:Sioux North Aquifer (42 feet deep) located in the E 1/2 SE 1/4 Section 24 for irrigation of 40 acres located in the S 1/2 SE 1/4, NE 1/4 SE 1/4 Section 24; all in T121N-R53W. 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 southeast of Waubay SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8480-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.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 or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by April 8, 2021.

The petition may be informal but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

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

APR 19 2021

David Zubke
44769 149th St
Waubay SD 57273

Dear Mr. Zubke:

Enclosed is Water Permit No. 8480-3 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

8480-3



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

January 16, 2024

David Zubke
44769 149th St
Waubay SD 57273

Dear Mr. Zubke:

On November 13, 2023, staff engineer Darrell DeBoer conducted an on-site field inspection of your irrigation authorized by Permit No. 8480-3, located in the S $\frac{1}{4}$ SE $\frac{1}{4}$ & NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 24, T121N, R53W.

Your irrigation system is found to be fully developed and ready for licensing. Please find enclosed, a Notice of Completion of Works and pre-paid envelope. Once our office has received this completed form, we will proceed with licensing.

Sincerely,

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

8480-3



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

RECEIVED

JAN 26 2024

**OFFICE OF
WATER**

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

TO: Water Rights Program, DANR
523 E. Capitol Ave.
Pierre, SD 57501-3182
or via email to DANRmail@state.sd.us

Date 1-18-2024

FROM: David Zubke 605-265-0069
(name) (phone)
44769 149th St dzubke@itctel.com
(address) (email)
Waubay SD 57273
(city, state, zip)

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. 8480-3 states that the water use system is to be constructed by
4/8/2025, and water is to be put to beneficial use by 4/8/2030.
(date) (date)

The water use system was completed on 7-1-21
(date)

Applying the water to beneficial use was completed on 7-1-21
(date)

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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8480-3

I have this day, November 13, 2023, made a thorough examination of the water use system constructed by David Zubke, 44769 149th St, Waubay, SD 57273 of Permit No. 8480-3, bearing the priority of January 25, 2021 authorizing the diversion of 0.67 cu. ft. per second of the waters of the Big Sioux – North Aquifer for irrigation purposes, in Day County.

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Wieber Well Drilling
- 2) No. of Wells 1
- 3) Depth(s) 42 ?? feet
- 4) Well log is available Y

Casing:

- 1) Diameter 12 inches
- 2) Length Unknown feet
- 3) Type PVC

Screen:

- 1) Type Unknown
- 2) Length 15 ??? feet
- 3) Static water level Unknown feet

Pump:

- 1) Make Submersible
- 2) Model Unknown
- 3) Size Unknown
- 4) Capacity 300 GPM

Motor:

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

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

- 1) Type Buried PVC
- 2) Size 8 inches
- 3) Length 950 feet

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make Valley
- 2) Overall length 700 feet
- 3) Number of towers 4
- 4) End gun Y
- 5) Capacity 300 GPM

Chemigation Equipment:

- 1) Does chemigate N

D. Compliance with Permit Requirements:

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

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: WELL LOCATION
From the SE corner Sec 24 T121N R53W 1785 ft N & 1050 ft W, Lat 45.24401 Long -97.23009 (NE ¼
SE ¼)

The works are capable of diverting and conveying to the place of use 0.67 cu. ft. per second of water which is to be used for irrigation. Water has been put to beneficial use to the maximum extent as follows:

legal description/acreage

SE SE – 34acres

SW SE – 2 acres

legal description/acreage

NE SE – 4 acres

comprising a total of 40 acres of land and the license should be issued for 0.67 cfs

2. All structures, wells and lands on map Y

F. Comments or other permit(s) associated with the project:

The irrigated acreage was estimated with the aid of FSA imagery and ArcMAPS software.

The pump rate reported in a recent Irrigation Questionnaire was used to establish the system flow capacity.

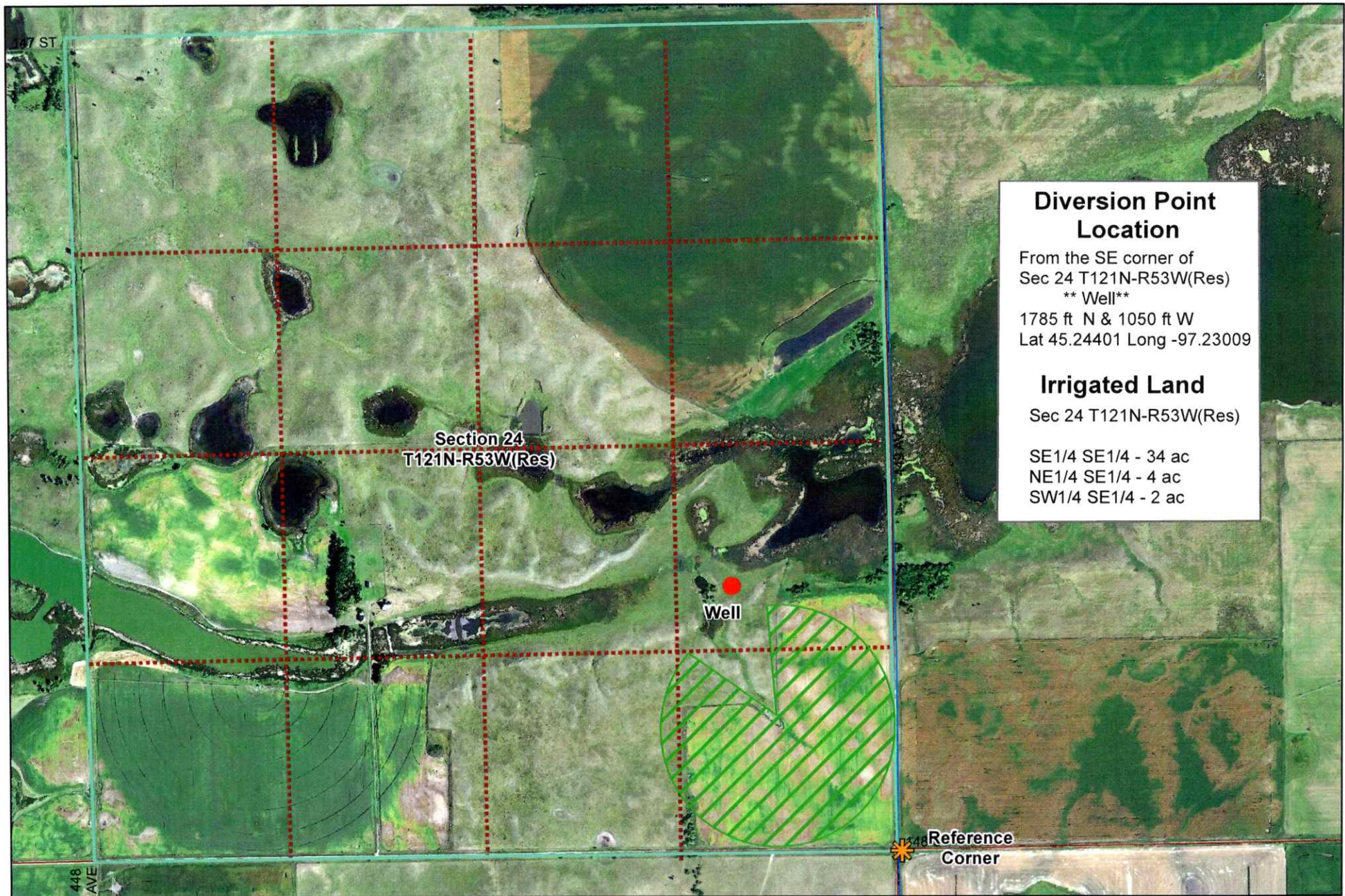
The mailing address and the telephone number in the permit materials are current

I talked to David Zubke during a previous field inspection visit.



Darrell W DeBoer
Water Rights Inspector
DANR, Water Rights Program

Date report completed: November 21, 2023



Diversion Point Location

From the SE corner of
Sec 24 T121N-R53W(Res)
** Well**

1785 ft N & 1050 ft W
Lat 45.24401 Long -97.23009

Irrigated Land

Sec 24 T121N-R53W(Res)

SE1/4 SE1/4 - 34 ac
NE1/4 SE1/4 - 4 ac
SW1/4 SE1/4 - 2 ac



0 625 1,250 2,500 3,750 5,000 Feet

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8480-3**

(1) David Zubke; 44769 149th St, Waubay SD 57273, made Application No. 8480-3, January 25, 2021, for a water permit to divert 0.67 cubic feet of water per second (cfs) from groundwater, two wells (Big Sioux: North Aquifer), Day County, South Dakota for irrigation purposes. Permit No. 8480-3, with a priority date of January 25, 2021, was approved April 8, 2021, and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before April 8, 2026, and for the application to beneficial use of water on or before April 8, 2030.

The permit holder submitted a "Notice of Completion of Works" indicating that construction of the water use system was completed, and water put to beneficial use on July 1, 2021.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 0.67 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 1,785 ft N & 1,050 ft W of the SE corner of Section 24, T121N, R53W (NE $\frac{1}{4}$ SE $\frac{1}{4}$)
(Latitude 45.24401 & Longitude -97.23008)

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

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

Section 24, T121N, R53W
NE $\frac{1}{4}$ SE $\frac{1}{4}$ 4 acres
SW $\frac{1}{4}$ SE $\frac{1}{4}$ 2 acres
SE $\frac{1}{4}$ SE $\frac{1}{4}$ 34 acres
TOTAL: 40 acres

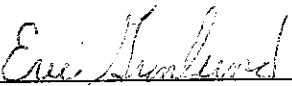
(5) Pursuant to South Dakota Water Law 46-5-30.1 David Zubke, the holder and/or owner of Water Right No. 8480-3 is issued a license to appropriate water, the right to use 0.67 cubic feet of water per second from groundwater, one well (Big Sioux: North Aquifer), with a priority date of January 25, 2021, from the location specified in (2) of this license for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8480-3 and subject to the following qualifications:

1. The well approved under Water Right No. 8480-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Water Right shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.

continued

2. The well authorized by Water Right No. 8480-3 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, Water Right No. 8480-3 authorizes a maximum diversion rate of 0.67 cfs for the irrigation of 40 acres with an annual volume not to exceed 2 acre-feet of water per acre per year.
4. This Water Right is subject to the irrigation water use questionnaire being submitted each year.


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

FEB 05 2024

date





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**
JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

FEB 05 2024

8480-3

David Zubke
44769 149th St
Waubay SD 57273

Dear Mr. Zubke:

Enclosed is Water License No. 8480-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Sincerely,

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

enclosures