

WATER PERMIT NO. 8051-3

Name of Applicant: **Wilbur Van Grootheest and Mike Reitz**

Address: **802 Heritage Dr, Rock Valley IA 51247** Phone: **712 470-1717**

Amount of Water Claimed: **1.78 cfs** Total Acres: **136**

Source of Water Supply: **groundwater (3 wells)**

Water to be used for: **irrigation** County: **Brookings**

Type of Waste Disposal System:

Location: **4 miles northwest of Bruce**

PRIORITY Date Received: **9-15-14** Application/License Fee: **\$ 1050**

Corrected Application Received: **9-24-14** Period of Annual Use: **April 1 – August 31**

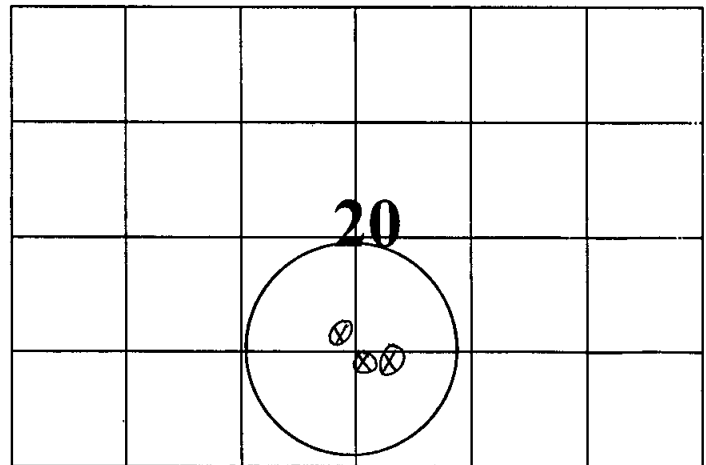
Remarks:

Diversion Point: **NE 1/4 SW 1/4, SW 1/4 SE 1/4**

Sec 20-T112N-R50W

Land to be Irrigated: **E 1/2 SW 1/4, W 1/2 SE 1/4**

Sec 20-T112N-R50W



Depth of Well: **25 feet**

Well Driller: **Kaiser Well Drilling**

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **9-24-14**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

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

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8051-3</u> (office use only)	Hydrologic Unit <u>10170202</u>
	Basin <u>Sioux River</u>	
	Newspaper <u>Brookings Register</u>	
	<u>Box 177-52006 605-692-6271</u>	

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SEP 15 2014

WATER RIGHTS
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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 Wilbur Van Groothuest, Mike Reitz
(check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address 802 Heritage Dr Rock Valley IA 51247
(Address) (City) (State) (Zip Code)Home Phone _____ Cell 712-470-1717 Email _____2. Amount of water claimed 1.78 *CFS or 900 **GPM 900 ***AF Total Acreage 136
(*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 (3)4. Location of point of diversion 20-112W-50W
(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)NE 1/4 SW 1/4, SW 1/4 SE 1/4 County Brookings5. County or counties where water will be used Brookings6. Annual period during which water is to be used Apr. 1 - Aug. 307. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
		<u>NE 1/4 SW 1/4 Sec 20-T112N-R50W</u>	<u>34</u>
		<u>SE 1/4 SW 1/4</u>	<u>34</u>
		<u>SW 1/4 SE 1/4</u>	<u>34</u>
		<u>NW 1/4 SE 1/4</u>	<u>34</u>

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

For Irrigation of cropsI, Wilbur Van Groothuest, the applicant, certify that I have read this application, have examined the attached map, and that the matters stated are true.

**SOUTH DAKOTA
WATER PERMIT NO. 8051-3**

Date of first receipt of application September 15, 2014.

Date of return to applicant for corrections, amendments or changes September 15, 2014.

Date of receipt of corrected application September 24, 2014.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8051-3 to Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr, Rock Valley IA 51247 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. 8051-3 appropriates 1.78 cubic feet of water per second from three wells to be completed into the Big Sioux:Brookings Aquifer (25 feet deep) located in the NE 1/4 SW 1/4, SW 1/4 SE 1/4 Section 20 for irrigation of 136 acres located in the E 1/2 SW 1/4, W 1/2 SE 1/4 Section 20; all in T112N-R50W.
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 – August 30.
3. The date from which applicant may claim right is September 15, 2014.
4. The date of approval of Permit No. 8051-3 is December 1, 2014.
5. One-fifth of the construction is to be completed on or before June 1, 2017.
6. All construction is to be completed on or before December 1, 2019.
7. Water is to be put to beneficial use on or before December 1, 2023.
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 this Permit 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. 8051-3 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: *Jeanne Goodman*
Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

DEC 18 2014

date



SEP 24 2014

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Aerial Map

map center: 44° 29' 34.02, 96° 51' 29.29
scale: 10116

Maps provided by:

©AgriData, Inc. 2012
www.AgrDataInc.com20-112N-50W
Brookings County
South Dakota

8/20/2012

Field borders provided by Farm Service Agency as of 5/21/2008. Aerial photography provided by Aerial Photography Field Office

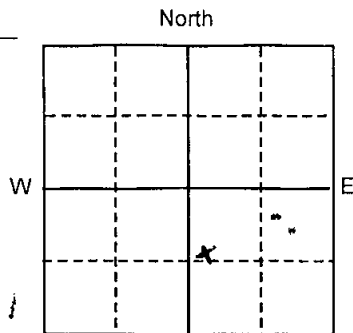
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SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location 1/4 1/4 Sec 20 Twp 112N Rg 50WCounty BrookingsPlease mark well
location with an "X"

Well Completion Date _____

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 3,000.0 ft. from well (identify source) _____

PROPOSED USE:

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

METHOD OF DRILLING:

CASING DATA:

☐ Steel ☐ Plastic ☐ Other
If other describe none- test hole

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
GrtWellIDF	2	54.0 Lb/gal	0.0 Ft	25.0 Ft
		Lb/gal	Ft	Ft

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 to which water quality sample sent for analysis _____
Well Owner: Mike Reitz

Business Name: _____

Address: 19977 468th AVECity, State, Zip: Bruce S.D.57226
Wilbur Van Gootheert
802 Heritage Dr
Rock Valley Ia
57226

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	1
Fine Sand	1	15
Med to fine	15	25
Blue Clay	25	30

STATIC WATER LEVEL 8.0 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☐ Pumped Describe: _____☐ Bailed☐ Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

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This well was drilled under license # _____ and this report is true and accurate.

Drilling firm: _____

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Wilbur Van GootheertDate: Sept 11- 2014

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 9/15, 20 14

RECEIVED OF Wilbur Van Grootheest 802 Heritage Dr Rock Valley IA 51247

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

Fee for Application for Permit No. <u>8051-3</u> to Appropriate Water, to construct and to put water to beneficial use	850	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>8051-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	1050 00

No. **06950**

By Jeane Hodgman
Chief Engineer



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov



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September 15, 2014

Wilbur Van Grootheest
802 Heritage Dr
Rock Valley IA 51247

Dear Mr. Van Grootheest:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation in Brookings County. In order to complete the application, the following is required.

- Enclosed is the aerial photo map submitted with the application. Please clarify if the area you are proposing to irrigate is the land outlined in yellow? If so, do you agree that the 136 acres proposed for irrigation are located in portions of the SW 1/4 and the SW 1/4 SE 1/4 Section 20-T113N-R50W? *Yes marked in Red*
- I am assuming you are proposing to drill three wells as indicated by the "X"s on the map. Is that correct? *We are thinking 3 wells*
- Also, Mike Reitz is listed on the application. Should he be listed as the operator? Do you want correspondence regarding this application sent to him also? *I will be the operator just send to me*

If you have any questions, please contact me.

thanks WTB

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

enclosures



**DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

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**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8051-3, Wilbur Van Grootheest and Mike Reitz**

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. 8051-3, Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr, Rock Valley IA 51247.

The Chief Engineer is recommending APPROVAL of Application No. 8051-3 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 this Permit 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. 8051-3 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.

Jeanne Goodman, Chief Engineer
November 13, 2014

Report to the Chief Engineer
Water Permit Application No. 8051-3
Wilbur Van Grootheest and Mike Reitz
October 9, 2014

Water Permit Application No. 8051-3 proposes to appropriate groundwater at a maximum diversion rate of 1.78 cubic feet per second (cfs) from three wells in the Brookings management unit of the Big Sioux aquifer. The wells are to be located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 20, T112N-R50W in Brookings County and are expected to be 25 feet deep. Water is to be used for irrigation of 136 acres located in the E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 20, T112N-R50W.

AQUIFER: Big Sioux: Brookings management unit (BS:B)

Aquifer Characteristics and Hydrogeology:

The Big Sioux aquifer is a shallow, glacial aquifer that underlays the Big Sioux River Valley and many of its tributaries (Koch, 1980). It is made up of very permeable, well-sorted glacial outwash sand (mostly medium to very coarse) and gravel (mostly very fine to medium) that overlies a relatively impermeable glacial till (Hamilton, 1989 and Koch, 1980). The average thickness of the aquifer is 25 feet, and depths ranging from 0 to 212 feet (Koch, 1980 and Hamilton, 1989). Near the Big Sioux River and major tributaries the aquifer is under unconfined conditions; elsewhere it can underlie glacial till and be under confined conditions (but it is primarily an unconfined aquifer) (Hamilton, 1989). Based on the submitted well report and nearby lithological information the proposed well location and surrounding area are under unconfined conditions (SDGS, 2014; Water Rights, 2014a; Water Rights, 2014b; and Water Rights, 2014c).

The Brookings management unit of the Big Sioux aquifer underlies approximately 191,100 acres of Brookings, Deuel, Hamlin, and Moody counties (Hedges et al., 1982). Kingsbury County has approximately 44,800 acres of the Big Sioux: Brookings mostly covered by glacial till (Hamilton, 1989). This results in an estimated total areal extent of 235,900 acres for the management unit. It is worth noting that the actual areal extent of the aquifer maybe somewhat larger when comparing the Hedges et al. (1982) map with the aquifer map in Hamilton (1989). The aquifer map done by Hamilton shows the aquifer is extended notable further in western Brookings County, although the amount of area that would be added is difficult to quantify since the Hamilton report is county based and not management unit based (Hedges et al., 1982 and Hamilton, 1989). As previously noted the Big Sioux: Brookings is primarily an unconfined aquifer, and this type of aquifer is readily rechargeable by infiltration; however in some areas the Big Sioux: Brookings is covered by glacial till to the point it is not readily rechargeable by infiltration. The areas of this nature that have been noted in published investigations are as follows: the vast majority of the aquifer in Kingsbury county (Hamilton,

1989), the area in Brookings county that was previously noted as an addition to the Brookings county area in the Hedges et al. (1982) report (Hamilton, 1989), an area of about 9,920 acres in northwestern Brookings county (Koch, 1980 and Hamilton, 1989), and an area of about 1,139 acres in Deuel county (Koch, 1980). This yields an estimate of approximately 180,041 acres for the unconfined portion of the aquifer.

The Brookings management unit is hydraulically connected to the surface water resources of the Big Sioux River, its tributaries, and area lakes (Koch, 1980). Groundwater in the Brookings management unit is hydraulically connected to the Big Sioux management units of Big Sioux: North, Big Sioux: North Deer Creek, Big Sioux: Unnamed Creek, Big Sioux: Six Mile Creek, Big Sioux: Aurora, and the Big Sioux: Moody (Hedges et al., 1982). Groundwater flow is locally in the direction of the slope of the land, which is generally toward the Big Sioux River and local lakes and regionally toward the south (Hedges et al., 1982; Hamilton, 1989; and Kume, 1985). Hedges et al. (1982) estimated that there are approximately 642,230 acre-feet of recoverable water (where recoverable water is water that could be extracted from the aquifer by pumping) in the Brookings management unit (not including Kingsbury county) (Hedges et al., 1982). This does not mean that this amount of water is recoverable at any one location, since the Big Sioux aquifer varies in depth and thickness over its areal extent. Water storage/recoverability of the aquifer varies by location.

Based on the well report submitted with the application, the well depth would be 25 feet with 24 feet of medium to fine sand under a foot of top soil. At the time of the well report (September 2014) the static water level was 8 feet below grade, which is a saturated thickness of 16 feet at this location.

South Dakota Legal Considerations:

Water Permit Application No. 8051-3 proposes to appropriate water from the Big Sioux: Brookings aquifer. Approval of this application is likely to result in an average annual water use of less than 136 acre-feet annually (ac-ft/yr). The probability of unappropriated water available from an 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." If the source of the water is older or lower than the Greenhorn Formation and a public water system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, a public water system is not involved and the Big Sioux aquifer is not older or lower than the Greenhorn Formation, therefore the withdrawal/recharge issue must be considered.

In applying SDCL 46-6-3.1, the Sixth Judicial Circuit Court ruled in 2005 that if the Water Management Board uses average annual recharge, then it should also use average annual withdrawals to determine if unappropriated water is available from the aquifer (*Hines v. South Dakota Dept. of Environ. and Nat'l. Resources*, Hughes County 04-37) (Memorandum Decision, April 29, 2005).

A 2012 First Judicial Circuit Court's rulings basically stated that data must be presented to show it is probable the average annual recharge exceeds the average annual discharge by at least the amount requested by the water permit application being considered (Hanson County Dairy v. Robert Bender and Stace Nelson) (Memorandum Decision, April 11, 2012).

Later in 2012, the First Judicial Circuit Court stated that in deciding whether or not it is probable that the quantity of water withdrawn will exceed the quantity of the average estimated annual recharge is to be based according to the best information reasonably available, and that nothing in South Dakota law requires a recharge study (Longview Farms, LLP v. South Dakota Dept. of Environ. and Nat'l. Resources) (Memorandum Decision, May 17, 2012).

Hydraulic Budget:

Recharge:

The primary source of recharge for the Big Sioux: Brookings aquifer is infiltration from snowmelt and rainfall (Hamilton, 1989). A 1985 study by Hedges et al. reported recharge to the Big Sioux: Brookings utilizing three different methods. Based on observation well analysis recharge was estimated at 4.0 inches per year, which yields an estimated recharge rate of 60,013 acre-feet per year (Hedges et al., 1985). Based on the compiled best fit modeling data from various investigations recharge was reported at 3.6 inches per year (information included from other management unit in estimate), which yields an estimated recharge rate of 54,012 acre-feet per year (Hedges et al., 1985). The third method used regional flow net analysis to estimate recharge at 1.0 inch per year for the entirety of the Big Sioux aquifer; this yields an estimated annual recharge for the Brookings management unit of 15,003 acre feet (Hedges et al., 1985). Of the regional flow net analysis Hedges et al. (1985) comments, "It should be noted that recharge rates calculated using flownet analysis are suspect and conclusions based on this method are questionable." Of these three methods the observation well analysis is considered to be the most reflective of actual conditions since it utilized management unit specific data and was most closely based on real world observation. The observation well value for recharge will also be utilized in this report as the most conservative of the recharge estimates that are more reflective of actual conditions when evaluating the hydraulic budget for the aquifer.

There are various county and multi-county level water resource reports that include portions of the Big Sioux: Brookings in the reports. In the modeling done in Koch (1980), a recharge rate of 6.57 inches per year for the water table portions of the aquifer and 3.29 inches per year in the artesian part of the aquifer was estimated for Brookings, Deuel, and Hamlin counties using the permeability rates of the overlaying soils (Koch, 1980). In Hanson (1988) an average recharge rate of 4.86 inches per year was estimated based on observation well data and a storage coefficient of 0.15 for Moody County and 6.5 inches per year with a storage coefficient in 0.2 (Hanson, 1988). This yields an estimated yearly recharge of about 98,330 to 98,563 acre feet.

Withdrawals:

Withdrawals from the aquifer include evapotranspiration, seepage to surface water, and pumping (Hamilton, 1989). Domestic wells are not considered a significant portion of the hydraulic budget, especially with the expansion of rural water systems in the area. The remainder of withdrawals can be split into irrigation and non-irrigation uses.

The Water Rights Program collects and maintains irrigation data from throughout the state, with the period of record extending from 1979 to 2013. The number of water rights/permits for irrigation in the Big Sioux: Brookings has held relatively steady over the period of record with an average of 167, a maximum of 198, and a minimum of 149 (Water Rights, 1980-2014). Figure 1 shows the number of water rights/permits by year over the period of record. Using the groundwater pumping data the average annual withdrawal from the aquifer due to irrigation can be estimated at 8,803 acre-feet per year (Water Rights, 1980-2014). The maximum pumping rate for the management unit during the period of record is 19,482 acre-feet, and the minimum is 1,042 acre feet (Water Rights, 1980-2014). The yearly use of groundwater for irrigation for the management unit over the period of record is shown in Figure 2. In examining Figures 1 and 2 it can be noted that the number of water rights/permits is not indicative of the amount of groundwater utilized for the year. While the number water rights/permits have remained relatively steady over the period of record, the amount of groundwater use for irrigation has widely varied. This variation is the result of unpredictable variations in yearly climate and economic conditions. However, in examining the years included in the period of record it is safe to note that the average withdrawal rate from the aquifer reflects both wet and dry conditions as well as both high and low economic conditions.

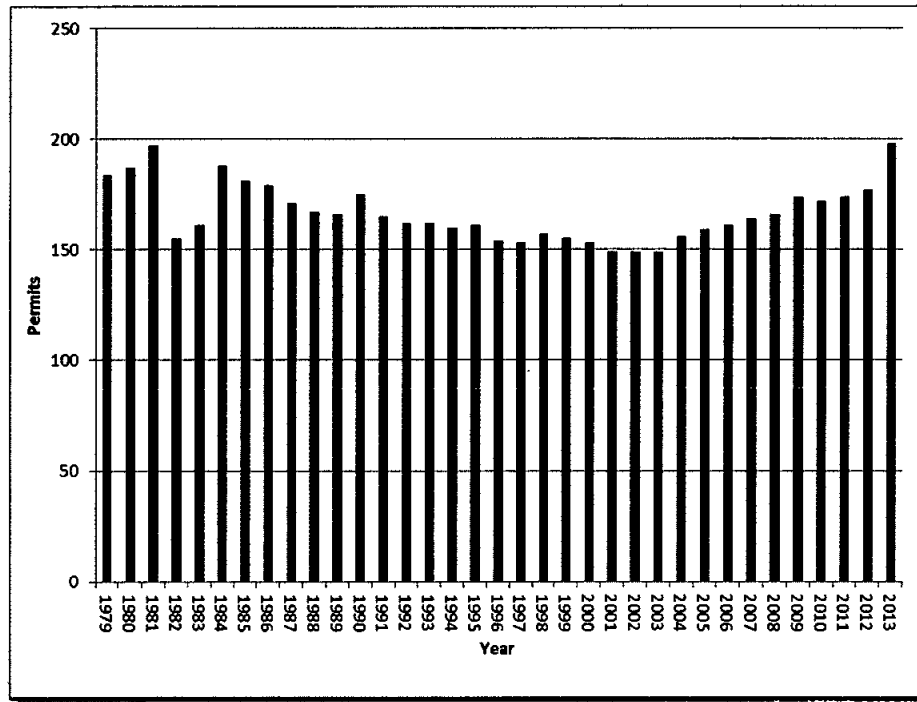


Figure 1: Number of Irrigation Water Rights/Permits by Year from the Big Sioux: Brookings (Water Rights, 1980-2014)

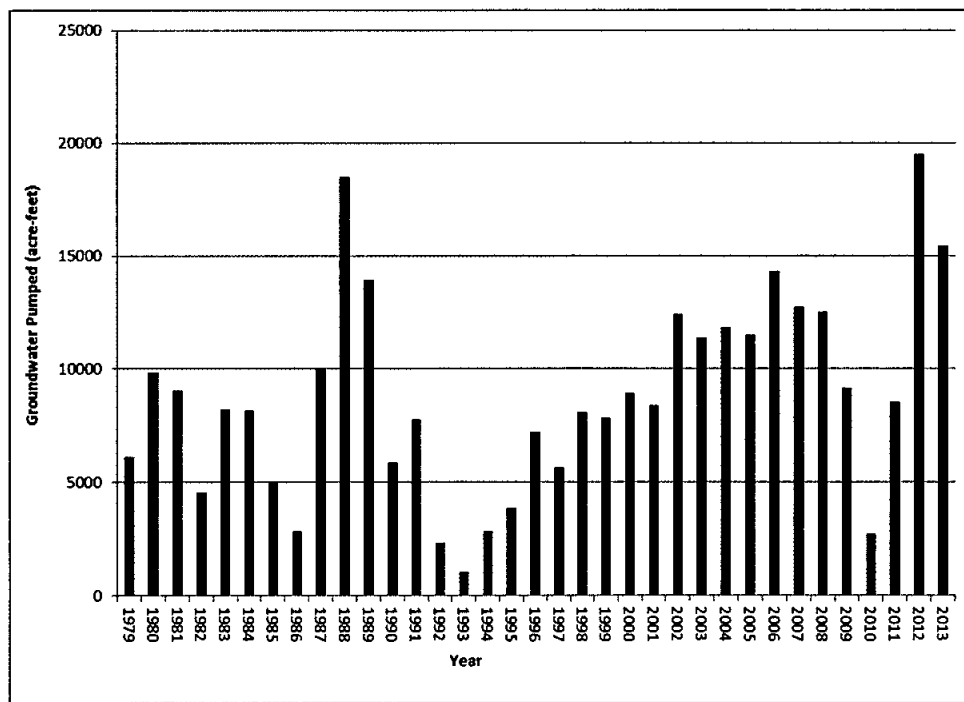


Figure 2: Groundwater Pumping Rates by Year from the Big Sioux: Brookings (Water Rights, 1980-2014)

Non-irrigation uses include commercial, municipal, rural water systems, geothermal, recreational, industrial, institutional, and suburban housing developments. Average annual non-irrigation use can be estimated by assuming that pumping will occur at the maximum diversion rate 60% of the time for non-irrigation water rights/permits limited by rate only. For water rights/permits limited to an annual volume 100% of use is used for estimation. This results in an estimated non-irrigation water use of 13,553 acre-feet per year.

There are seven future use permits located in the Big Sioux: Brookings for various municipal and rural water systems with remaining undeveloped acre feet. Future use permits reserve water for future development and are 100 percent developable. The future use permits in the Big Sioux: Brookings reserve an annual amount of 8,977 acre-feet.

This results in a total estimated average annual withdrawal and future use rate of 31,333 acre-feet per year. Considering the most realistic estimated recharge rate of 60,013 acre-feet per year there is a reasonable probability of available water in the aquifer.

Observation Wells:

In determining the availability of unappropriated water for a permit application Administrative Rule 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 annual recharge. The Water Rights Program monitors 80 observation wells in the Big Sioux: Brookings aquifer. These observation wells offer a picture of conditions in the aquifer over the period of record. Observation well data is especially useful in examining local conditions in an aquifer. The importance of this is further emphasized by noting that estimated annual recharge to the aquifer and estimated storage in the aquifer cannot be accessed in totality at any one location in the aquifer.

The observation wells of the Big Sioux: Brookings generally show static or increasing water levels over time. The observation well hydrographs show cyclic patterns based on the effect of climatic conditions on the aquifer, which is expected of an unconfined aquifer. An increase in water levels occurs in the spring consistent with recharge from snowmelt and spring precipitation and a decrease in water levels occurs during the rest of the year consistent with evapotranspiration and other withdrawals during the drier portion of the year. Multiyear trends can also be observed as higher water levels in wet periods and lower water levels in dry periods. An increasing water level is a result of recharge exceeding withdrawals. This gives reasonable indication that unappropriated water is available in the aquifer. Two of the observation wells in the Big Sioux: Brookings in Brookings county do show a decreasing water level, however on inspection this is due to localized pumping effects related to their proximity to a high density area of high capacity wells and their effect on the amount of water in local aquifer storage.

The Big Sioux River acts as a recharge boundary for the aquifer in this area. Due to this in order to examine observation wells reflective of local conditions to application no. 8051-3 in the aquifer the nearest observation wells on the east side of the Big Sioux will be considered,

even though there are closer wells on the west side of the river. Observation well BG-80C is located approximately 1.3 miles south, and its hydrograph is shown in Figure 3. It shows a very slight increase in water levels over time, consequently more water is in storage. Shown in Figure 4 is observation well BG-77A located about 2.8 miles to the north. BG-77A shows increasing water levels over time. Both wells show cyclic patterns in response to climatic conditions, which is masking any effects of pumping on these wells. The increasing water levels over time in these wells are indicative of available groundwater in the area.

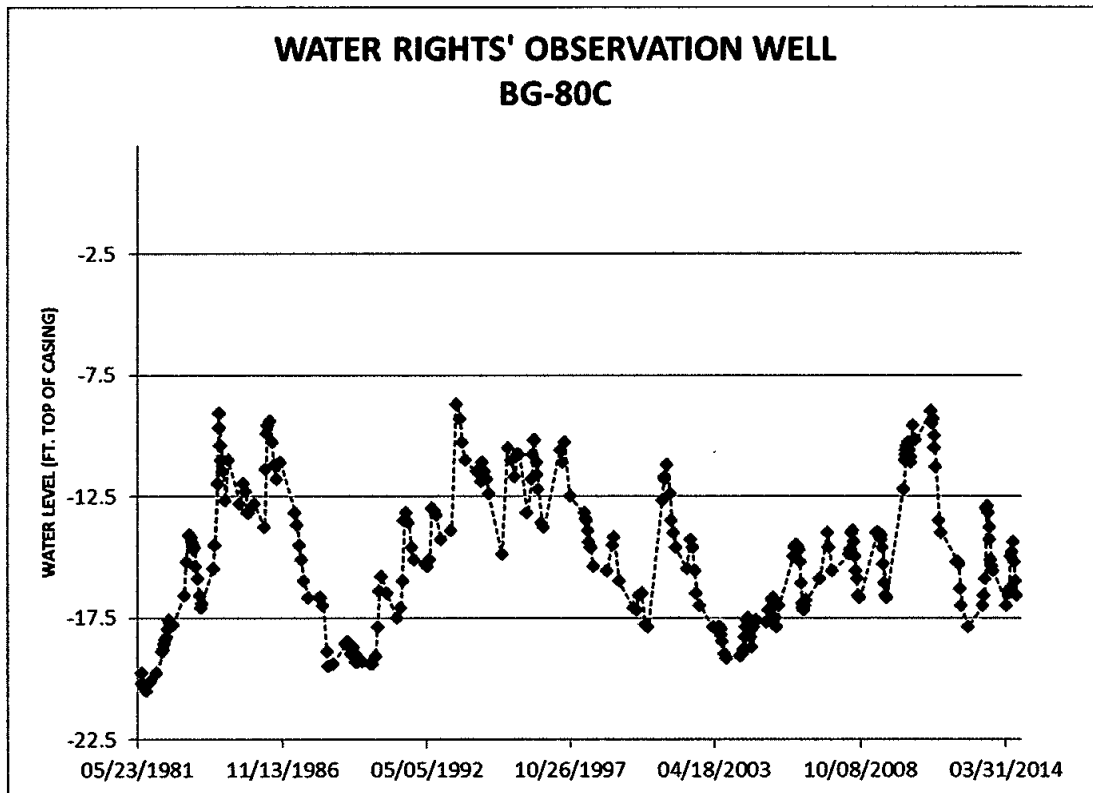


Figure 3: Hydrograph for Observation Well BG-80C (Water Rights 2014a)

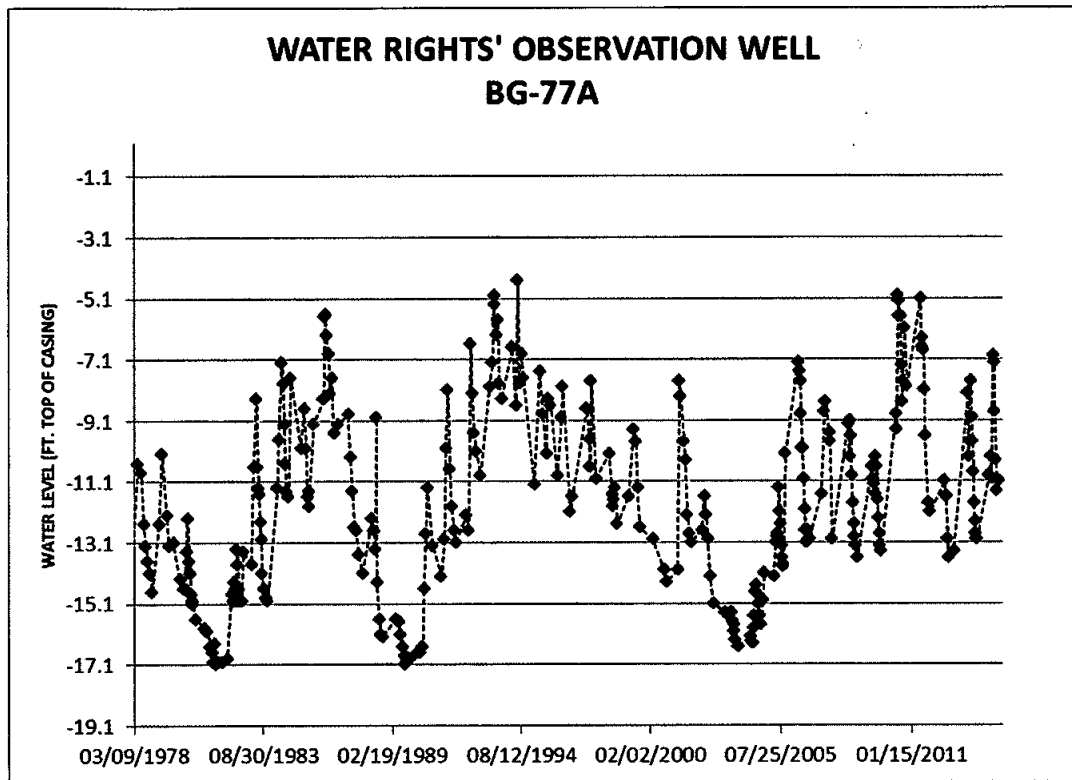


Figure 4: Hydrograph for Observation Well BG-77A (Water Rights 2014a)

Existing Water Rights/Permits:

There are five records for existing water rights/permits within one mile of the proposed well location summarized in Table 1 (Water Rights, 2014b). Figure 5 shows a map of the area with nearby existing water rights/permits marked. Based on the satellite imagery for the area there are several farm places within one mile of the proposed location, so the existence of domestic wells in addition to that of the applicant within one mile is possible. Since the Big Sioux: Brookings is under unconfined conditions at this location, the effects of drawdown from application no. 8051-3 are **not** expected to adversely impact adequate wells in the area. An adequate well as defined by South Dakota Law is “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 the 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.”

Table 1: Nearby Water Rights/Permits to Application No. 8051-3 (Water Rights, 2014b)					
Permit	Status	Use	Rate (cfs)	Acres	Owner
2166-3	LC	IRR	1	123	Mostad
4462-3A	LC	IRR	1.11	128	Mostad
5170-3	LC	IRR	1.78	136	Peterson
6722-3	LC	IRR	1.33	156	Peterson
7902-3	PE	IRR	2.67	260	Adee
LC=licensed, PE=permit, IRR=irrigation, and cfs= cubic feet per second					

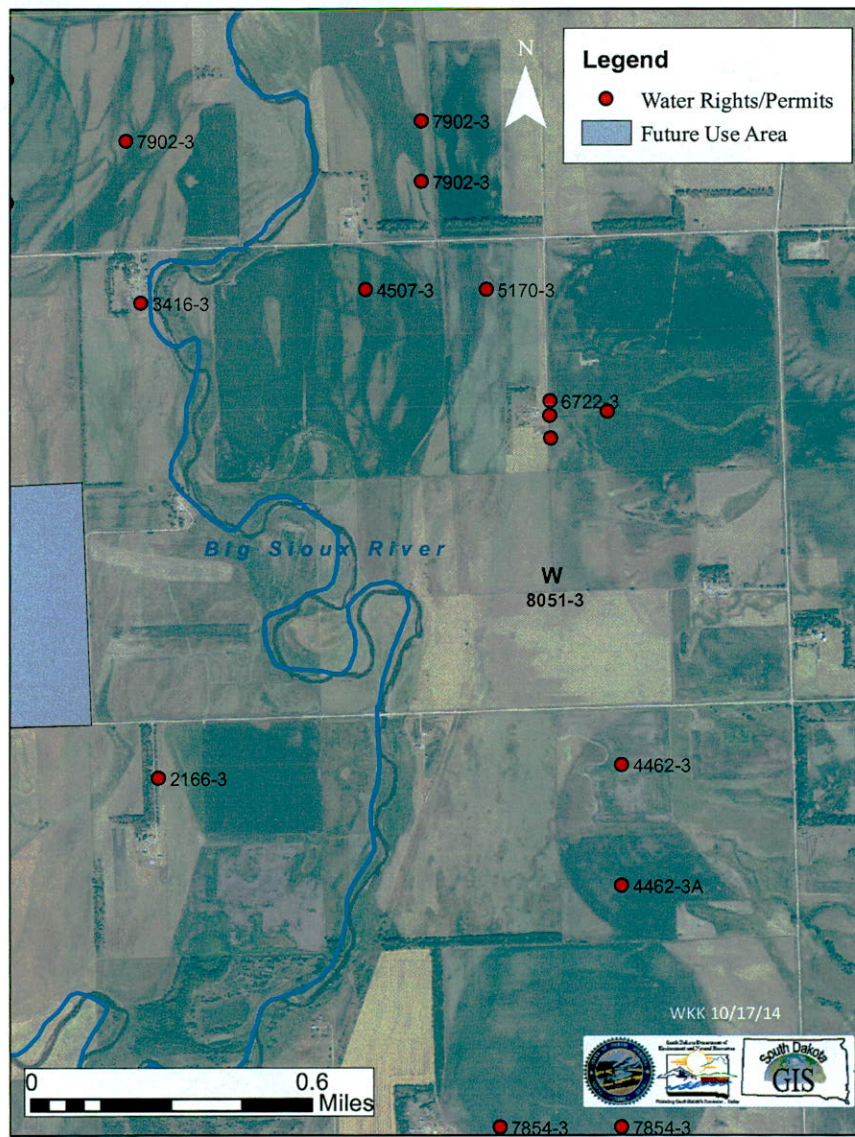


Figure 5: Map of Existing Water Rights/Permits in Relation to Application Number 8051-3 (rights with a cancelled status not shown) (Water Rights, 2014b)

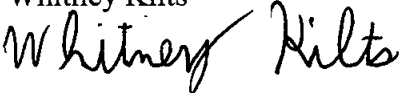
In the past, the Water Management Board has recognized that to place water to maximum beneficial use, a certain amount of drawdown may occur. Since the aquifer is under unconfined conditions drawdown due to pumping would not be significant far from the well site. There has also been a history of large capacity wells in the area and from this aquifer. Therefore nearby adequate wells are not expected to be adversely or unlawfully impacted by the proposed diversion.

The Big Sioux: Brookings aquifer is relatively thin with a limited amount of water in storage. While the average annual withdrawal would not exceed average annual recharge to the aquifer, conditions may occur when the withdrawal exceeds recharge. When this occurs, water will be removed from storage, consequently reducing the saturated thickness of the aquifer. If the saturated thickness is reduced to the extent that the water rights/permits can no longer pump at their developed or "historically established" rates, this may be considered an adverse impact.

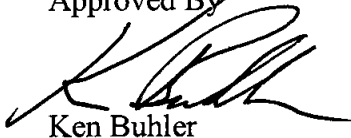
Conclusions:

1. Water Permit Application No. 8051-3 propose to appropriate groundwater at a maximum diversion rate of 1.78 cfs from three wells to be completed into the Big Sioux: Brookings aquifer for the irrigation of 136 acres.
2. There is a reasonable probability that there is water available in the aquifer.
3. The wells proposed by 8051-3 are not expected to adversely impact adequate wells in the area.
4. If the saturated thickness is reduced in this relatively thin aquifer to the extent that water rights/permits can no longer pump at their developed diversion rates, this may be considered an adverse impact.

Whitney Kilts



Approved By



Ken Buhler

References:

- Beissel, D. and Barari, A. 1976. Ground-Water Study for the Brooking-Deuel Rural Water System. USGS, Vermillion, SD.
- Hamilton, L. 1989. Water Resources of Brookings and Kingsbury Counties, South Dakota. USGS, Huron, SD.
- Hansen, D. S. 1988. Appraisal of Water Resources of the Big Sioux Aquifer, Moody County, South Dakota. USGS, Huron, SD.
- Hedges, L.S., Burch, S. L., Iles, D. L., Barari, R. A., and Schoon, R. A. 1982. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota, and Iowa. Task 3: Ground-Water Storage. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Hedges, L.S., Allen, J. and Holly, D.E. 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota, and Iowa. Task 7: Ground-Water Recharge. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- In the Matter of Water Permit Application No. 6431-3, by Phillip W. Hines v. SD Department of Environment and Natural Resources, South Dakota Sixth Judicial Court Civ. No. HU04-37 (Memorandum Decision, April 29, 2005)
- In the Matter of Water Permit Application No. 7239-3, by Hanson County Dairy v. Robert Bender and Stace Nelson, South Dakota First Judicial Court Civ. No. 11-54 (Memorandum Decision, April 11, 2012)
- In the Matter of Water Permit Application 7209-3, Longview Farms, LLP v. South Dakota Dept. of Environment and Natural Resources, South Dakota First Judicial Court Civ. No. 11-146 (Memorandum Decision, May 17, 2012)
- Koch, N. C. 1980. Appraisal of the Water Resources of the Big Sioux Aquifer, Brookings, Deuel and Hamlin Counties, South Dakota. USGS, Huron, SD.
- Kume, J. 1985. Water Resources of Deuel and Hamlin Counties, South Dakota. USGS, Huron, SD.
- SD Geological Survey. 2014. Lithological Logs Database, SD DENR-Geological Survey Program, Vermillion, SD.
- i•calcul⁸. Theis Equation Calculator. Retrieved Oct 2014. <http://www.icalcul8.com/theis.php>
- Water Rights. 1980-2014. "1979-2013 Irrigation Summaries by Aquifer": SD DENR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.

Water Rights. 2014a Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

Water Rights. 2014b. Water Right/Permit Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

Water Rights. 2014c. Well Completion Reports. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

Affidavit of Publication
State of South Dakota
County of Brookings

RECEIVED
DEC 04 2014
WATER RIGHTS
PROGRAM

10/

Exhibit "A"

Katherine Ishol of said county, first duly sworn, on oath, says: That she is the office clerk of THE BROOKINGS REGISTER, a daily newspaper, printed and published in the City of Brookings, in said County of Brookings, and State of South Dakota; that she has full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper and has a bona fide circulation of at least two hundred copies of each issue daily; that said newspaper has been published within the said County of Brookings and State of South Dakota, for more than one year prior to the first publication of Exhibit "A," hereto attached and herein mentioned, and was and is printed that the

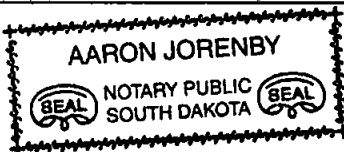
Leg#357 Notice of Application NO.8051-3 to Appropriate Water

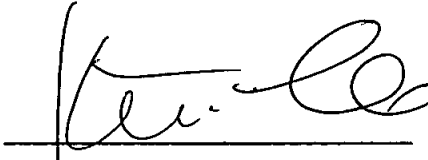
same was published, is hereto attached marked Exhibit
said newspaper for _____ 1 times, to-wit:

November 20, 2014

said Exhibit "A" inures to the sole benefit for the publishers of said newspaper; that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person whomsoever; that the fees charged for the publication thereof are:

Twenty four dollars and sixty five cents \$24.65





21st day of

November

2014

Notary Public in and for the County of Brookings, South Dakota
My Commission expires February 22, 2020.

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. Information concerning this application is available at <http://denr.sd.gov/public>. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of \$24.65.

Legal 357, 1x, 11/20
NOTICE OF APPLICATION NO. 8051-3 to Appropriate Water
Notice is given that Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr, Rock Valley IA 51247 have filed an application for a water permit to appropriate 1.78 cubic feet of water per second from three wells to be completed into the Big Sioux:Brookings Aquifer (25 feet deep) located in the NE 1/4 SW 1/4, SW 1/4 SE 1/4 Section 20, all in T112N:R50W. Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8051-3 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. 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. 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 December 1, 2014.



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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



November 13, 2014

Brookings Register
PO Box 177
Brookings SD 57006

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 8051-3 to Appropriate Water. Please publish the notice once on November 20, 2014. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr, Rock Valley IA 51247 (Ph # 712-470-1717).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



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 NEWSPAPER(S) RIGHT AWAY.**

November 13, 2014

Wilbur Van Grootheest & Mike Reitz
802 Heritage Dr
Rock Valley IA 51247

Dear Sirs:

Water Permit Application No. 8051-3 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 Brookings Register printed at Brookings SD (Ph # 605-692-6271). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Eric Gronlund
Natural Resources Engineer
(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.

Instruction to Newspaper - Publish the Notice on November 20, 2014. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NO. 8051-3 to Appropriate Water

Notice is given that Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr, Rock Valley IA 51247 have filed an application for a water permit to appropriate 1.78 cubic feet of water per second from three wells to be completed into the Big Sioux:Brookings Aquifer (25 feet deep) located in the NE 1/4 SW 1/4, SW 1/4 SE 1/4 Section 20 for irrigation of 136 acres located in the E 1/2 SW 1/4, W 1/2 SE 1/4 Section 20; all in T112N-R50W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8051-3 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. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. 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.

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 December 1, 2014.

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. Information concerning this application is available at <http://denr.sd.gov/public>. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Published once at the total approximate cost of_____.



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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



DEC 18 2014

Wilbur Van Grootheest & Mike Reitz
802 Heritage Rock Dr
Rock Valley IA 51247

Dear Sirs:

Enclosed is Water Permit No. 8051-3 authorizing construction of your 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,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

SOUTH DAKOTA WATER WELL COMPLETION REPORT

8051-3

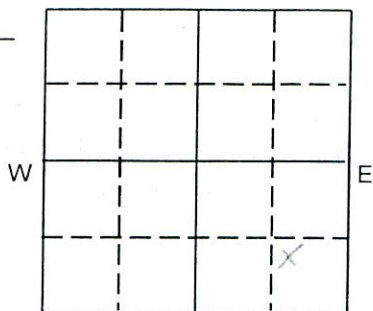
11-02

Location NW 1/4 SE 1/4 Sec 20 Twp 42 N Rg 50 W

County Brookings

North

Please mark well location with an "X"



Well completion Date

11-12-14

1 Mile

Distance from nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)

? 3/4 so ft. from Home-site (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Bucket-Fake

CASING DATA:

- ☒ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>25</u> LB/FT	<u>14</u> IN	<u>+ 2</u> FT	<u>25</u> FT	<u>20</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Grout</u>		Lb/gal	<u>0</u> Ft	<u>6</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

SCREEN:

- ☐ Perforated pipe ☒ Manufactured

Diameter 14 Inches Length 9 Feet

Material PVC 160M

Slot Size .080 Set From 23 Feet to 34 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? Chlorine is pack

Lab sample sent to for water quality analysis

Yes

Well Owner:

Lizilbur Van Gort

Business Name:

Address1:

802 Heeling Ave.

Address2:

Box 1

City, State, Zip:

Rock Valley, Iowa 52477

WELL LOG:

DEPTH

FORMATION

FROM

TO

<u>Topsoil</u>	<u>0</u>	<u>2</u>
<u>Brown Sand</u>	<u>2</u>	<u>9</u>
<u>Rock / Gravel</u>	<u>9</u>	<u>34</u>

STATIC WATER LEVEL

9'

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:

Sub

☐ Bailed

☐ Other

Pumping Level Below Land Surface

25' Ft. After 2 Hrs. pumped 550 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate:

GPM

REMARKS

RECEIVED

DEC 24 2014

WATER RIGHTS PROGRAM

This well was drilled under license #

And this report is true and accurate:

Drilling firm:

Lacey Well Drilling Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

Dec 18-2014

Please return **WHITE COPY** to: DENR Water Rights, 523 E. Capitol Ave., Pierre SD 57501

SOUTH DAKOTA WATER WELL COMPLETION REPORT

8051-3

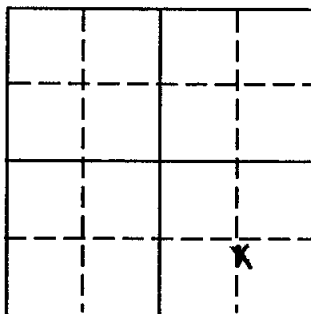
11-02

Location NW 1/4 SE 1/4 Sec 20 Twp 12-N Rg 50-W

County Brookings

North

Please mark well location with an "X"



Well completion Date

5-28-15

1 Mile

Distance to nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)

? 3/4 mi. ft. from House-site (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Bucket - Face Casing

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>25</u> LB/FT	<u>14</u> IN	<u>+2</u> FT	<u>25</u> FT	<u>20</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Grout</u>		Lb/gal	<u>0</u> Ft	<u>8</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 14 Inches Length 10 Feet

Material PVC 110 PR

Slot Size .080 Set From 25 Feet to 35 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?

Chlorine in pack

☐ No, Why Not?

Lab sample sent to for water quality analysis

Joe

Please return **WHITE COPY** to: DENR Water Rights

Well Owner: Wilbur Van Grootheemst

Business Name:

Address: 802 Heritage Dr.

City, State, Zip: Rock Valley, ND 58247

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Topsoil</u>	<u>0</u>	<u>1</u>
<u>Rocks</u>	<u>1</u>	<u>8</u>
<u>Sand + Rocks</u>	<u>8</u>	<u>15</u>
<u>Fine Sand + Rocks</u>	<u>15</u>	<u>20</u>
<u>20-35 Grey Sand</u>	<u>20</u>	<u>35</u>

STATIC WATER LEVEL

8'3"

FEET Ground

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:

Submersible

☐ Bailed

☐ Other

Pumping Level Below Land Surface

24 Ft. After

2 Hrs. pumped

350 GPM

Ft. After

Hrs. pumped

GPM

If pump installed, pump rate:

GPM

REMARKS

RECEIVED

JUN 29 2015

WATER RIGHTS PROGRAM

This well was drilled under license # 111

And this report is true and accurate.

Drilling firm:

Lacey Well Drilling

Signature of License Representative:

Joan Reddick

Signature of Well Owner or Equitable Property Holder:

Wilbur Van Grootheemst

Date: 6-25-2015

523 E Capitol Ave. Pierre SD 57501

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8051-3

I have this day, June 5, 2021, made a thorough examination of the water use system constructed by Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr., Rock Valley, Iowa 51247 of Permit No. 8051-3, bearing the priority of September 24, 2014 authorizing the diversion of 1.78 cu. ft. per second of the waters of the Big Sioux: Brookings Aquifer for irrigation purposes, in Brookings County.

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Lacey Well Drilling
- 2) No. of Wells 2
- 3) Depth(s) 35 feet
- 4) Well log is available Y

Casing:

- 1) Diameter 14 inches
- 2) Length 25 feet
- 3) Type Plastic

Screen:

- 1) Type PVC
- 2) Length 10 feet
- 3) Static water level 9 feet

Pump:

- 1) Make NA
- 2) Model Submersible
- 3) Size NA
- 4) Capacity 400 GPM

Motor:

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

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

1000 feet of buried pipe

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make Valley
- 2) Overall length 1300 feet
- 3) Number of towers 7
- 4) End gun Y
- 5) Capacity 400 GPM

Chemigation Equipment: None

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: From the SE corner of Sec 20 T112N-R50W WELL #1 1320 ft N & 3670 ft W, Lat 44.48900 Long -96.86195. WELL #2 1320 ft N & 3380 ft W, Lat 44.48900 Long -96.86083 (E ½ SW ¼ Sec 20)
2. The works are capable of diverting and conveying to the place of use 0.89 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:

All land in Sec 20-T112N-R50W

NE 1/4 SW 1/4 - 32 ac

SE 1/4 SW 1/4 - 32 ac

SW 1/4 SE 1/4 - 32 ac

NW 1/4 SE 1/4 - 32 ac

comprising a total of 128 acres of land and the license should be issued for 0.89 cfs.

3. All structures, wells and lands on map Y

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

The irrigated acreage was determined by using FSA maps and the ArcMap software. The 400 gpm water supply is not a typo. This Inspector was told by Mr. Wilbur Van Grootheest that Mr. Mike Reitz is no longer a participant in the Water Permit. (see note below)**



Darrell W DeBoer

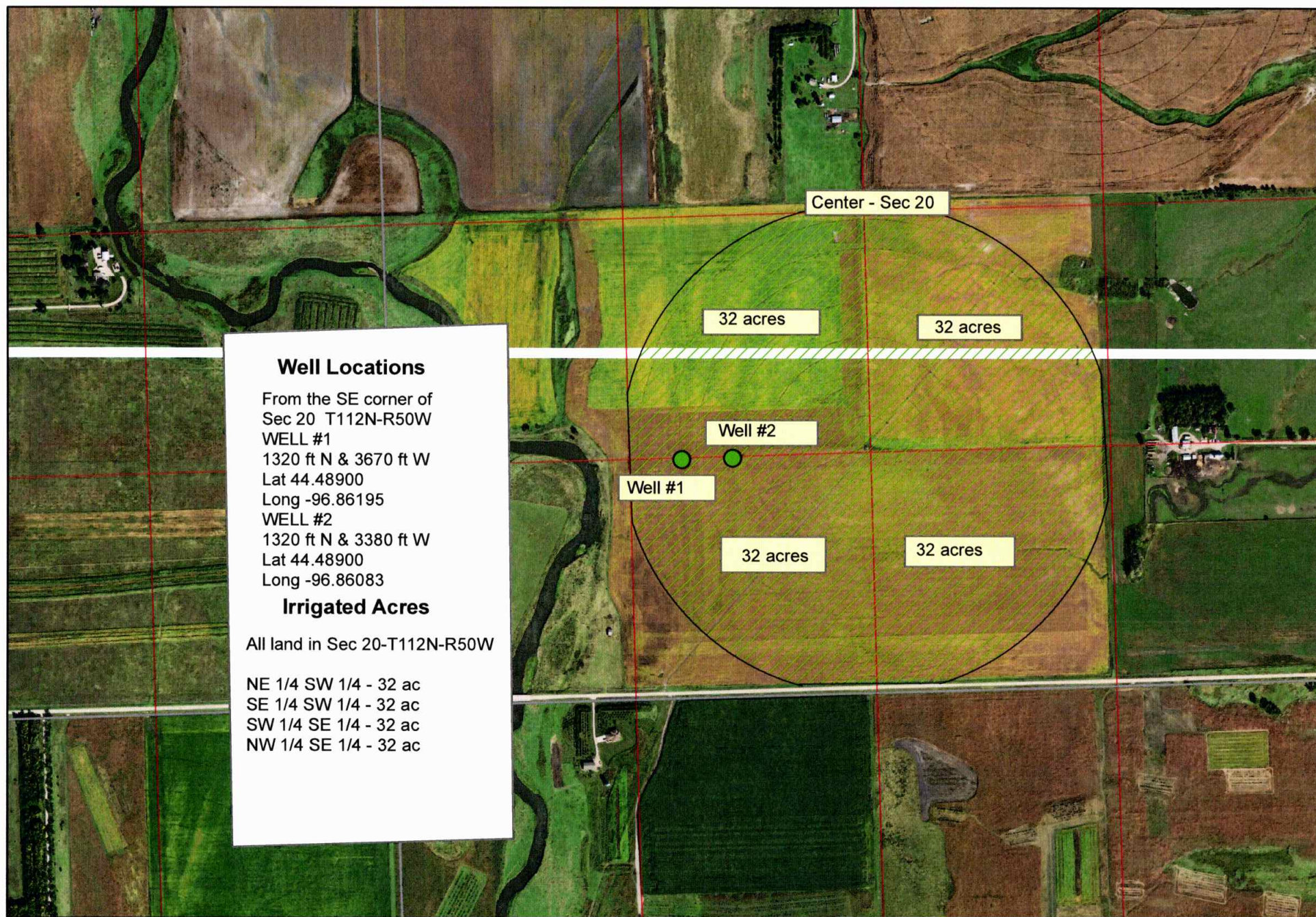
Water Rights Inspector

DANR, Water Rights Program

Date report completed: June 7, 2021

** Letters were written to Mr. Van Grootheest on June 8th & July 27th, 2021 to transfer ownership to his name only. On August 2, 2021, he replied and indicated he had no interest in changing ownership. License will be issued in both names.

- Genny



0 0.1 0.2 0.4 0.6 0.8 Miles



Darrell DeBoer
Water Right Inspector
DANR-Water Rights Program

Approval of Location Change and/or Additional Diversion Point(s)

NAME: Wilbur Van Grootheest and Mike rentz

ADDRESS: 802 Heritage Dr, Rock Valley Iowa 51247

DATE: August 4, 2021

COUNTY: Brookings

GENERAL DESCRIPTION OF AUTHORIZED PROJECT:

The permit holder is authorized to construct three wells into the Big Sioux:Brookings Aquifer in the NE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 20 T112N-R50W. The authorized diversion rate is 1.78 cfs to irrigate 136 acres in the E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{2}$ of Section 20 T112N-R50W

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional diversion points may be licensed provided the following conditions are met and the potential for interference with other existing diversions is not increased:

- **Developed water source same as permitted source and no additional water appropriated**

The permit holder developed two wells into the Big Sioux:Brookings Aquifer.

- **If irrigation, no new land is irrigated**

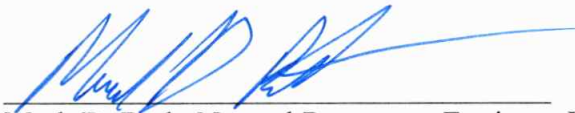
The permit holder is irrigating 128 acres in the E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 20 T112N-R50W

- **Review of Existing Diversions**

The two wells are located in the E $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 20 T112N-R50W.

RECOMMENDED ACTION

Based on the above criteria, it is recommended that the diversion point(s) be licensed as developed.



Mark D. Rath, Natural Resources Engineer III
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:

This change in location and/or additional diversion point(s) does not increase the potential for adverse effects to existing diversions.



Eric Gronlund, Chief Engineer
Water Rights Program



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

AUG 05 2021

8051-3

Wilbur Van Grootheest & Mike Reitz
802 Heritage Dr
Rock Valley IA 51247

Dear Sirs:

Enclosed is Water License No. 8051-3. 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.

As 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

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8051-3

(1) Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr., Rock Valley IA 51247 made Application No. 8051-3, September 15, 2014 for a water permit to divert 1.78 cubic feet of water per second from ground water, three wells (Big Sioux Brookings Aquifer), Brookings County, South Dakota for irrigation purposes. Permit No. 8051-3, with a priority date of September 15, 2014 was approved December 1, 2014 and issued to the applicants for diversion of water with construction of the described water supply system to be completed on or before December 1, 2019 and for the application to beneficial use of said water on or before December 1, 2023.

Permit No. 8051-3 authorized three wells to be located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ and SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 20, T112N, R50W. Two wells were developed in the E $\frac{1}{2}$ SW $\frac{1}{4}$ Section 20. Pursuant to SDCL 46-5-13.1 and ARSD 74:02:01:14.01, the Chief Engineer made a finding the change in location of the diversion points did not increase the potential for adverse effects to existing diversions.

(2) It is certified that the permit holders have complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and are entitled to divert 0.89 cubic feet of water per second for beneficial use. The diversion points are located as follows:

Well #1: 1,320'N and 3,670'W of the SE corner of Section 20, T112N, R50W
 Latitude 44.48900, Longitude -96.86195 (E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec 20)

Well #2: 1320'N and 3,380'W of the SE corner of Section 20, T112N, R50W
 Latitude 44.48900, Longitude -96.86083 (E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec 20)

(3) The permit holders have complied with the provisions of South Dakota State Law relating to the application of water to beneficial use to irrigate the following land:

Section 20, T112N, R50W	NE $\frac{1}{4}$ SW $\frac{1}{4}$	32 acres	SW $\frac{1}{4}$ SE $\frac{1}{4}$	32 acres
	SE $\frac{1}{4}$ SW $\frac{1}{4}$	32 acres	NW $\frac{1}{4}$ SE $\frac{1}{4}$	32 acres
Total 128 acres				

(4) Pursuant to South Dakota Water Law 46-5-30.1 Wilbur Van Grootheest and Mike Reitz, 802 Heritage Dr., Rock Valley IA 51247 the holders and/or owners of Water Right No. 8051-3 are issued a license to appropriate water, the right to use 0.89 cubic feet of water per second from ground water, two wells (Big Sioux Brookings Aquifer) with a priority date of September 15, 2014 from the locations 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. 8051-3 and subject to the following qualifications:

- The wells approved under this water right 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

- The wells authorized by Permit No. 8051-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with the Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *The two wells were drilled in 2014 and 2015 by Lacey Well Drilling. Copies of the well completion reports are on file with the Water Rights Program.*
- This Water Right is approved subject to the irrigation water use questionnaire being submitted each year.

Eric Gronlund

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

AUG 05 2021

date





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

December 27, 2021

No. 8051-3

Tom Hammink
19890 470th Ave
Bruce SD 57220

Dear Mr. Hammink:

Enclosed is a partially completed "Notice of Transfer" form for use in filing an ownership change on Water Right No. 8051-3. Also enclosed is a copy of Water Right No. 8051-3 for your records.

The transfer form should be completed, checked over for accuracy, and **signed by the new owner.** Upon completion, return the form to our office with a required filing fee of \$50.00.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352
email: karen.schlaak@state.sd.us

enclosures

NOTICE OF TRANSFER OF OWNERSHIP

PAID
JAN 3 2022

2351

To: Chief Engineer
Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

RECEIVED

JAN 03 2022

WATER RIGHTS
PROGRAM

No. 8051-3

Date: 12/29/21

I/We request that Water Right No. 8051-3

formerly owned by: Wilber Van Grootheest and Mike Reitz

be transferred to: (name & address) X Tom Hammink 2021 Derrdell dr
Brookings SD 57006

Telephone No. 605 690 3154

Title to the following described land(s)/property has been transferred as described above:

128 acres - E 1/2 SW 1/4, W 1/2 SE 1/4 Section 20-T112N-R50W

I/We understand that the validity of Water Right/Permit No. 8051-3 has not been determined by this transfer action. If I/We have any questions on validity, I/We understand that only the Water Management Board has the authority to determine if a water permit/right is valid (see note).

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Fifty Dollars (\$50.00) is required to cover the filing fees as required under SDCL 46-2-13. This form must be signed by the new owner.

X I/We Tom Hammink, the new owner, certify that the above information is true and correct.

X TH
(Signed by new owner)

NOTE: Water permits may be cancelled for nonconstruction after the five year construction period has expired. Once a water permit is developed and the water used, the permit becomes a right. A water right may be lost for three reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three year period without legal excuse.
3. For a third violation of a condition of a water permit/right.

8051-3

RECEIPT**WATER RIGHTS PROGRAM**
South Dakota Department of Agriculture and Natural ResourcesDate January 3, 2022RECEIVED OF Tom Hammink 2021 Derald Dr., Brookings SD 57006

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 <u>8051-3</u>	<u>\$50.00</u>
Fee for _____	\$ _____
Fee for Issuing New Well Driller's License No. _____	\$ _____
Fee for Renewal of Well Driller's License No. _____	\$ _____
Fee for Issuing Well Pump Installer's License No. _____	\$ _____
Fee for Renewal of Well Pump Installer's License No. _____	\$ _____
(Any Other Work Provided by Law)	
TOTAL	<u>\$50.00</u>

By Eric Gronlund
Chief Engineer
vrm



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

January 4, 2022

8051-3

Tom Hammink
2021 Derald Dr
Brookings SD 57006

Dear Sir:

I am writing to acknowledge receipt of the transfer form and filing fee you submitted for changing ownership on Water Right No. 8051-3.

The ownership change has been completed. Water Right No. 8051-3 formerly held by Wilbur Van Grootheest and Mike Reitz is now listed in your name.

Enclosed for records is a copy of the water license issued this past summer and a receipt for the filing fee you paid. If you have any questions, please let me know.

Sincerely,

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

enclosures