

WATER PERMIT NO. 8153-3

Name of Applicant: Marvin O Rentsch

Address: 20244 464th Ave, Bruce SD 57220

Phone: 605 695-3489

Amount of Water Claimed: no add'l

Total Acres: 51 acres

Source of Water Supply: groundwater (one existing well)

Water to be used for: irrigation

County: Brookings

Type of Waste Disposal System:

Location: 1 mile west of Bruce

PRIORITY

Date Received: 5-13-15

Application/License Fee: \$ 700

Corrected Application Received:

Period of Annual Use: April 1 – Oct 31

Remarks: Additional acres to Water Right No. 5404A-3

Diversion Point: NW 1/4 SW 1/4 Sec 2-T111N-
R51W

Land to be Irrigated: W 1/2 SW 1/4, E 1/2 SE 1/4
Sec 2 -T111N-R51W

Depth of Well: 45 feet deep

Well Driller: Pullman Well Drilling

Remarks:

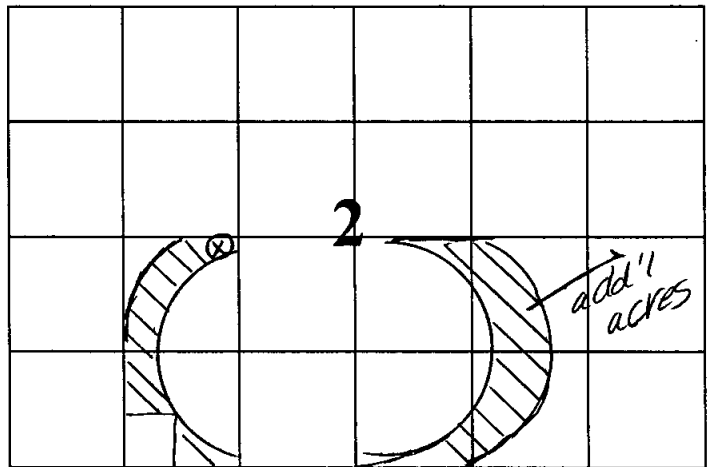
Type of Map: aerial

Prepared by: Mark Rath

Reviewed and the Number Assigned on: 5-13-15

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>8153-3</u>	(office use only) Hydrologic Unit <u>10170202</u>
	Basin <u>Sioux River</u>	
	Newspaper <u>Brookings Register P.O. Box 177</u>	
	<u>57006</u>	<u>605-692-6271</u>

RECEIVED

MAY 13 2015

WATER RIGHTS
PROGRAM

Application For Permit To Appropriate Water For Irrigation

Type of Application: ☐ New ☐ Vested Right ☒ Amendment/Correction to Permit No. 5404A3
(Use predates Mar 2, 1955)

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

1. Name to Appear on Irrigation Permit Marvin O. Rentsch

(check one) ☐ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address 20244 464th Ave Bruce SD 57220
(Address) (City) (State) (Zip Code)

Home Phone _____ Cell 605 695-3489 Email _____

2. Amount of water claimed *CFS or no add'l old permit ***AF Total Acreage 51A
(*Cubic feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable

3. Source of water supply well (existing well)

4. Location of point of diversion old permit no more water

(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

NW 1/4 SW 1/4 Sec 2 - T111N - R51W County Brookings

5. County or counties where water will be used Brookings

6. Annual period during which water is to be used Apr. 1 - Oct. 31

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.

(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
NW 1/4 of the SW 1/4 Sec 2 T111 S1W	9	NE 1/4 of the SE 1/4 Sec 2 T111 S1W	12
SW 1/4 of the SW 1/4 Sec 2 T111 S1W	8	SE 1/4 of the SE 1/4 Sec 2 T111 S1W	12
NW 1/4 of the SE 1/4 Sec 2 T111 S1W	5		
SW 1/4 of the SE 1/4 Sec 2 T111 S1W	5		

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

Marvin O. Rentsch Marvin O. Rentsch, 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. 8153-3

Date of first receipt of application May 13, 2015.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8153-3 to Marvin O Rentsch, 20244 464th Ave, Bruce SD 57220 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. 8153-3 authorizes irrigation of 51 new acres. Water Right No. 5404A-3 authorizes 2.0 cubic feet of water per second from one well completed into the Big Sioux:Brookings Aquifer (45 feet deep) located in the NW 1/4 SW 1/4 Section 2 for irrigation of 194 acres located in the S 1/2 Section 2; all in T111N-R51W. This permit authorizes irrigation of 51 new acres located in the S 1/2 Section 2-T111N-R51W from the existing well. This permit does not increase in the authorized diversion rate.
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 dates from which applicant may claim right are May 13, 2015 (additional 51 acres) and January 22, 1990 (2.0 cfs and 194 acres).
4. The date of approval of Permit No. 8153-3 is July 27, 2015.
5. One-fifth of the construction is to be completed on or before January 27, 2018.
6. All construction is to be completed on or before July 27, 2020.
7. Water is to be put to beneficial use on or before July 27, 2024.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under this Water Right No. 5404A-3 and Permit No. 8153-3 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. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.
3. Water Permit No. 8153-3 incorporates Water Right No. 5404A-3.

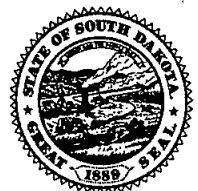
WATER MANAGEMENT BOARD

By: *Jeanne Goodman*

Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

AUG 11 2015

date



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 _____ Have test holes been drilled ☐ Yes ☐ No Drilled by _____
(if yes, please provide copies of logs)
- b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by old permit
- c) Well Depth _____ Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____
- d) Distance to nearest existing domestic well:
On applicant's property _____ On property owned by others _____

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) _____
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System

3. Dugout Information

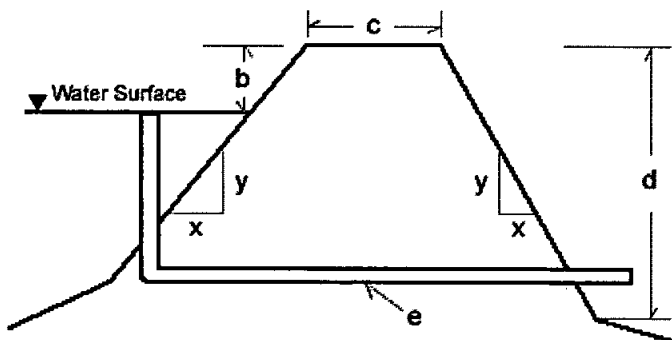
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

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

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

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



NOT TO SCALE

CRP
#72
60.0

87-96

99
T-200

I 4

5746

1300'

AMEL WEL

1 NH 2

2586

40 g.

35.00

13.8
256

19

19

40.

35.

390

Bac

19.9

1942

16.0

116.2

7262 S

Mark D Rath
Natural Resources Engineer
Division of Water Rights
Date 4/29/1997

T111N R51W

Sec 2

RECEIVED

MAY 13 2015

5404A

**WATER RIGHTS
PROGRAM**

5404

SOUTH DAKOTA WATER WELL COMPLETION REPORT

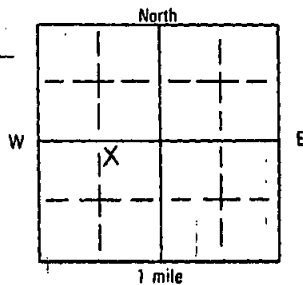
10-85

Location NE 1/4 SW 1/4 Sec 2 Twp 11N Rg 51W

County

Brookings

Please mark well location with an "X"

Well Completion Date 4-16-90

PROPOSED USE:

☐ Domestic ☐ Municipal ☐ Test Holes
☒ Irrigation ☐ Industrial ☐ Stock

Method of Drilling:

Reverse

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
____ LB/FT	<u>1 1/2</u> IN	<u>0</u> FT	<u>33</u> FT	<u>2 1/2</u> IN
____ LB/FT	____ IN	____ FT	____ FT	____ IN
____ LB/FT	____ IN	____ FT	____ FT	____ IN
____ LB/FT	____ IN	____ FT	____ FT	____ IN

GROUT:

Was the well grouted? ☒ YES ☐ NOTo what depth? 20 FEETWhat is grouting material? CementIf cement, number of sacks? 55

Describe grouting procedure

line

What was grout weight? _____ LB/GAL

SCREEN: ☐ Perforated pipe ☒ ManufacturedDiameter 1 1/2 IN Length 12 FEETMaterial StainlessSlot Size 0.057 Set From 33 Feet To 45 Feet

Slot Size _____ Set From _____ Feet To _____ Feet

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?

Gravel PackedWas well disinfected upon completion? ☒ YES ☐ NO

Explain _____

Bacteriological analysis ☐ YES ☐ NO

Laboratory sent to _____

Well Owner:

Name

Marvin Rentsch

Address

Bruce, SD 57220

Well Log:

Depth

Formation

From

To

<u>Top Soil</u>	<u>0</u>	<u>5</u>
<u>Medium Sand</u>	<u>5</u>	<u>20</u>
<u>Medium-Coarse Sand</u>	<u>20</u>	<u>40</u>
<u>Coarse Sand</u>	<u>40</u>	<u>45</u>

TD 45'STATIC WATER LEVEL 18 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

If other, specify _____

Can well be completely shut in? _____

WELL TEST DATA:

☒ Pumped900 gpm☐ Bailed

Describe: _____

☐ Other _____

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped _____ GPM

____ ft. After ____ Hrs. pumped _____ GPM

____ ft. After ____ Hrs. pumped _____ GPM

REMARKS:

This well was drilled under license # 440

And this report is true and accurate.

Drilling firm

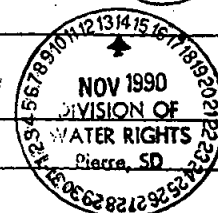
Pullman Well Drilling

Signature of License Representative:

R.E. Rentsch

Signature of Well Owner:

Date

11-12-90

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 5/13, 20 15

RECEIVED OF Marvin Rentsch 20244 464th Ave Bruce SD 57220

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

Fee for Application for Permit No. <u>8153-3</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>8153-3</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	700	00

No. 07399

By Jeanne Goodman
Chief Engineer



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. 8153-3, Marvin O Rentsch**

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. 8153-3, Marvin O Rentsch, 20244 464th Avenue, Bruce SD 57220.

The Chief Engineer is recommending APPROVAL of Application No. 8153-3 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 well approved under this Water Right No. 5404A-3 and Permit No. 8153-3 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. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.
3. Water Permit No. 8153-3 incorporates Water Right No. 5404A-3.

See report on application for additional information.

Jeanne Goodman, Chief Engineer
July 7, 2015

NOTE: The incorporation of Water Right No. 5404A-3 into Water Permit No. 8153-3 is intended to reflect that this is one water use system. By incorporating, the permit holder will receive one irrigation questionnaire each fall to report water use by this system. The priority date for 2.0 cfs to irrigate the original 194 acres established by Water Right No. 5404A-3 will be retained.

Report to the Chief Engineer

Application No. 8153-3

Marvin O. Rentsch

June 18, 2015

Water Permit Application No. 8153-3 proposes the irrigation of 51 acres in the S ½ of Section 2-T111N-R51W using an existing well authorized under Water Right No. 5404A-3. Water Right No. 5404A-3 appropriates water at a maximum diversion rate of 2.0 cubic feet per second (cfs) from one well (45 feet deep) completed into the Big Sioux: Brookings aquifer located in the NW ¼ SW ¼ Section 2-T111N-R51W for the irrigation of 194 acres located in S ½ of Section 2-T111N-R51W. This application, if approved, does not authorize any increase in the maximum diversion rate authorized by Water Permit No. 5404A-3.

Aquifer: Brookings management of the Big Sioux aquifer

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). Near the Big Sioux River and its major tributaries, the aquifer is under unconfined conditions; elsewhere it can underlie glacial till and be under confined conditions (Hamilton, 1989).

The Brookings management unit of the Big Sioux aquifer underlies portions of Brookings, Deuel, Hamlin, Kingsbury, and Moody counties. 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). A compilation of county water resource investigations (Hamilton, 1989; Hansen, 1988; and Kume, 1985) by Stonesifer (2013) indicates that the Big Sioux: Brookings has an aerial extent of about 323,000 acres.

The well completion report of the well utilized by Water Right No. 5404A-3 indicates that the aquifer is under unconfined conditions at the area of the well for this application. The report indicates aquifer materials from 5 to 45 feet below grade. At the time of completion (4/16/90) the well had a static water level of 18 feet below grade.

South Dakota Codified Law (SDCL) 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant's proposed use, that the 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 existing rights from the aquifer that are pertinent to this application.

Water Availability

Water Permit Application No. 8153-3 proposes to appropriate water from the Big Sioux: Brookings aquifer. 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 water distribution system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, a water distribution system is not involved and the Big Sioux: Brookings aquifer is not older or lower than the Greenhorn Formation, therefore the withdrawal/recharge issue must be considered.

Hydrologic Budget

Recharge

Big Sioux: Brookings aquifer is recharged by is infiltration from precipitation and seepage from surface water (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 (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 units in estimate) (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 (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 is more closely based on real world observation. The observation well estimate for recharge will also be utilized in this report as the estimate for average annual recharge, since it is more reflective of actual conditions when evaluating the hydraulic budget for the aquifer. This results in an estimated average annual recharge to the Big Sioux: Brookings of about 107,000 acre-feet per year.

Withdrawals

Withdrawals from the aquifer include evapotranspiration, seepage to surface water, and pumping (Hamilton, 1989). The amount of water withdrawn by domestic uses are not considered a significant portion of the hydraulic budget of the aquifer; additionally with the development of rural water systems in the area many domestic wells may no longer be in use. The remainder of withdrawals can be split into irrigation and non-irrigation uses.

For non-irrigation use, average annual use can be estimated by assuming that pumping will occur at the maximum diversion rate 60% of the time for water rights/permits limited by diversion rate only. For water rights/permits limited to an annual volume, full use of that volume is assumed for estimation of average annual withdrawal. Future use permits can be fully developed. There are ten future use permits in the aquifer reserving a total of 7,327 acre-feet. The municipalities of Bruce, Clear Lake, and Hayti currently utilize rural water as a primary water source and maintain their water rights for backup and emergency use purposes (Water Rights, 2015b). Water use by non-irrigation rights/permits limited by diversion rate can be estimated at about 7,198 acre-feet per year and those limited by an annual volume at 5,034 acre-feet per year. This yields an estimated annual non-irrigation use of about 19,600 acre-feet per year.

The Water Rights Program collects and maintains irrigation data from across the state. Irrigation appropriations and reported pumping from 1979 to 2014 is shown in Figure 1. The average reported pumpage for this time period is 8,835 acre-feet, with a minimum of 1,043 acre-feet in 1993 and a maximum of 19,483 acre-feet in 2012. Irrigation appropriations are fairly steady from 1991 to 2012 and notable increases in appropriations have occurred since the 2012 irrigation season. This increase corresponds with the addition of approximately 5,128 acres (Water Rights, 2015b). Although irrigation appropriations are for up to two feet per acre per year, irrigators in this area typically use less than one foot per acre per year. An irrigation application rate of one foot per acre per year for these recent appropriations can serve as a conservative estimate of water use for these recent appropriations. Utilizing the historical average combined with a conservative estimation for recent appropriations results in a very conservative estimation for irrigation use of 13,963 acre-feet per year.

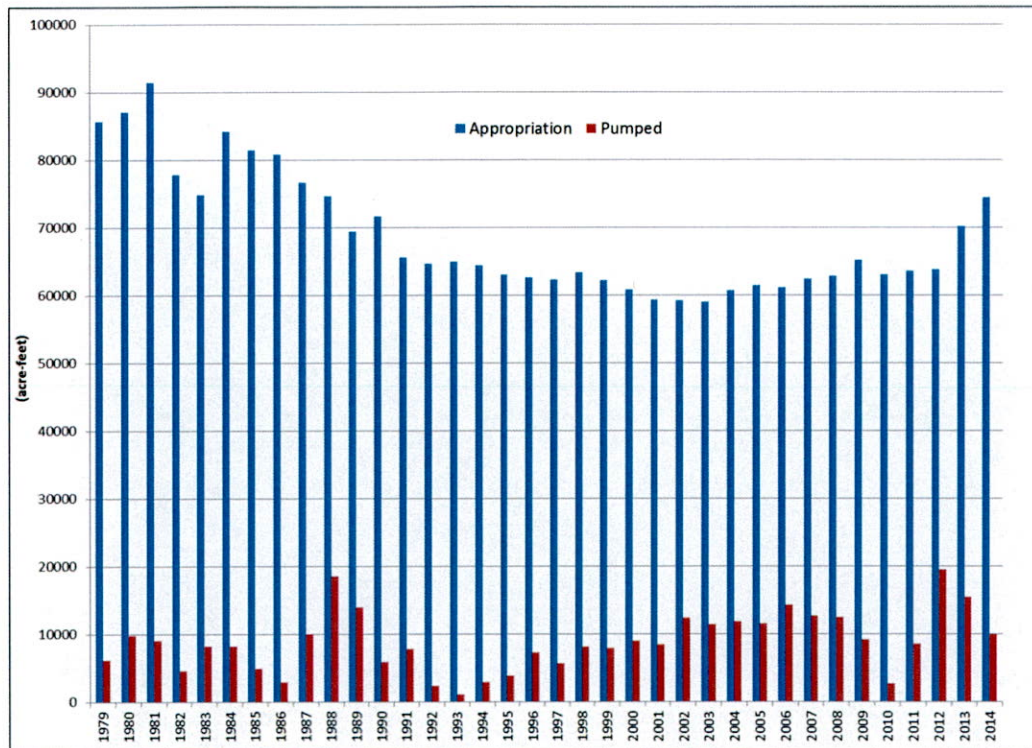


Figure 1: Irrigation pumping and appropriation from the Big Sioux: Brookings aquifer (Water Rights, 1980-2015)

The estimated total average annual withdrawal from the aquifer is 33,563 acre-feet per year. When compared to the estimated average annual recharge estimated from the recharge rate based on observation well data analysis by Hedges et al. (1985) of 107,000 acre-feet per year, estimated average annual recharge exceeds average annual withdrawals (even with a conservative estimation of irrigation withdrawals). Therefore there is a reasonable probability that water is available to meet the needs of this application.

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. Observation wells offer a picture of conditions in the aquifer over the period of record.

The SD-DENR Water Rights monitors 80 observation wells completed into the Big Sioux: Brookings aquifer. The nearest of which are BG-75E located approximately 0.9 miles to the northeast of the well location to this application, BG-75F located approximately 1.9 miles to the southeast, and BG-77D located approximately 2.0 miles to the southwest. The hydrographs for these wells are shown in Figures 2, 3 and 4. These wells show increased water levels since the start of their periods of record. Observation wells in the Big Sioux: Brookings demonstrate the aquifer reacts well to climatic conditions, with the response of the aquifer to climatic

conditions masking the temporal effects of well withdrawals. This indicates that natural conditions dominate the aquifer. Therefore, there is a reasonable probability that unappropriated water is available.

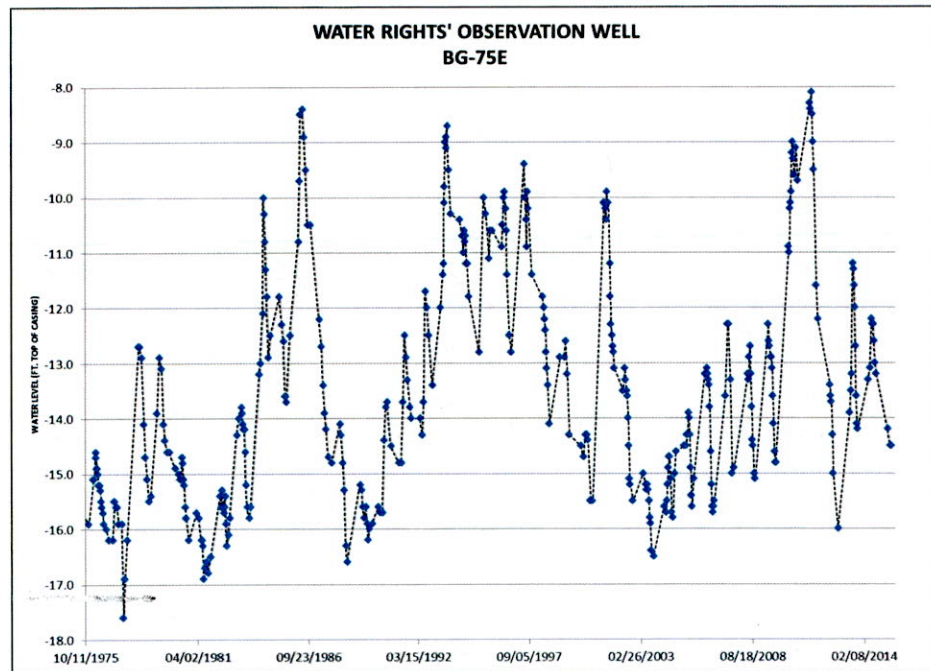


Figure 2: Observation Well BG-75E (Water Rights, 2015a)

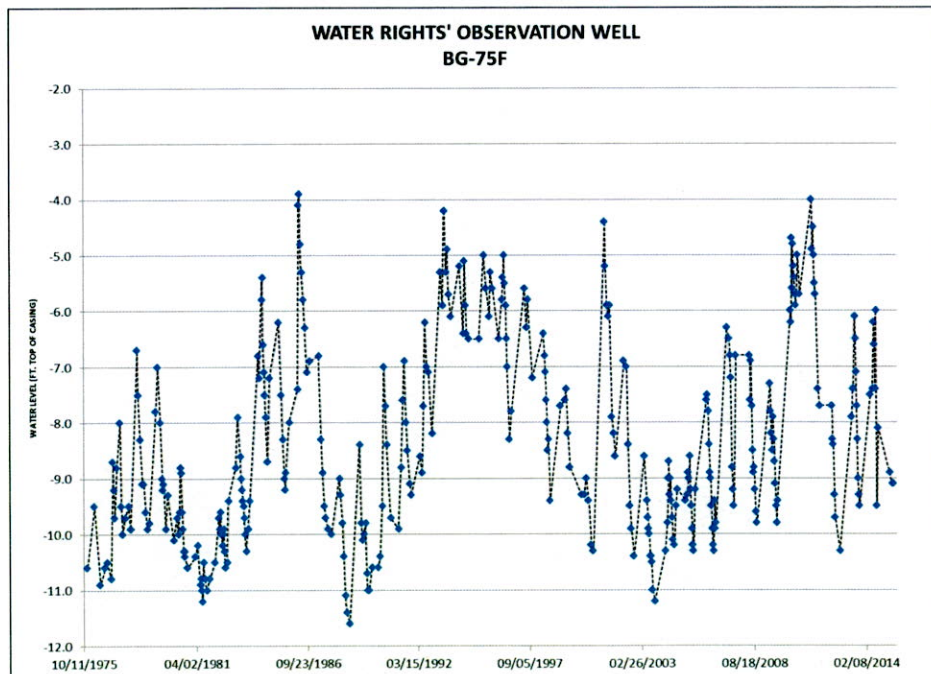


Figure 3: Observation Well BG-75F (Water Rights, 2015a)

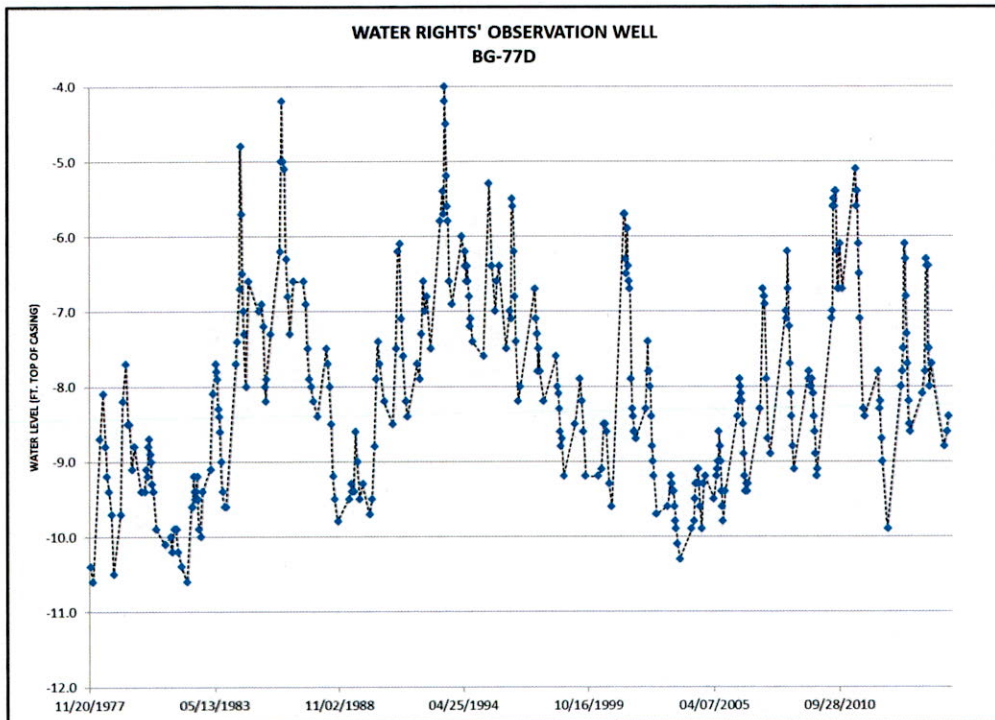


Figure 4: Observation Well BG-77D (Water Rights, 2015a)

Existing Water Rights/Permits

The approximate location of diversion points for water rights/permits completed into the Big Sioux: Brookings in the area of the location for this well are shown in Figure 5. The nearest water right/permit to the proposed location of the well for this application is Water Right No. 2701A-3 located approximately 0.73 miles to the southeast. There are domestic well completion reports on file with the SDDENR-Water Rights Program within one mile of the well location for this application, most of which appear to be completed into this aquifer.

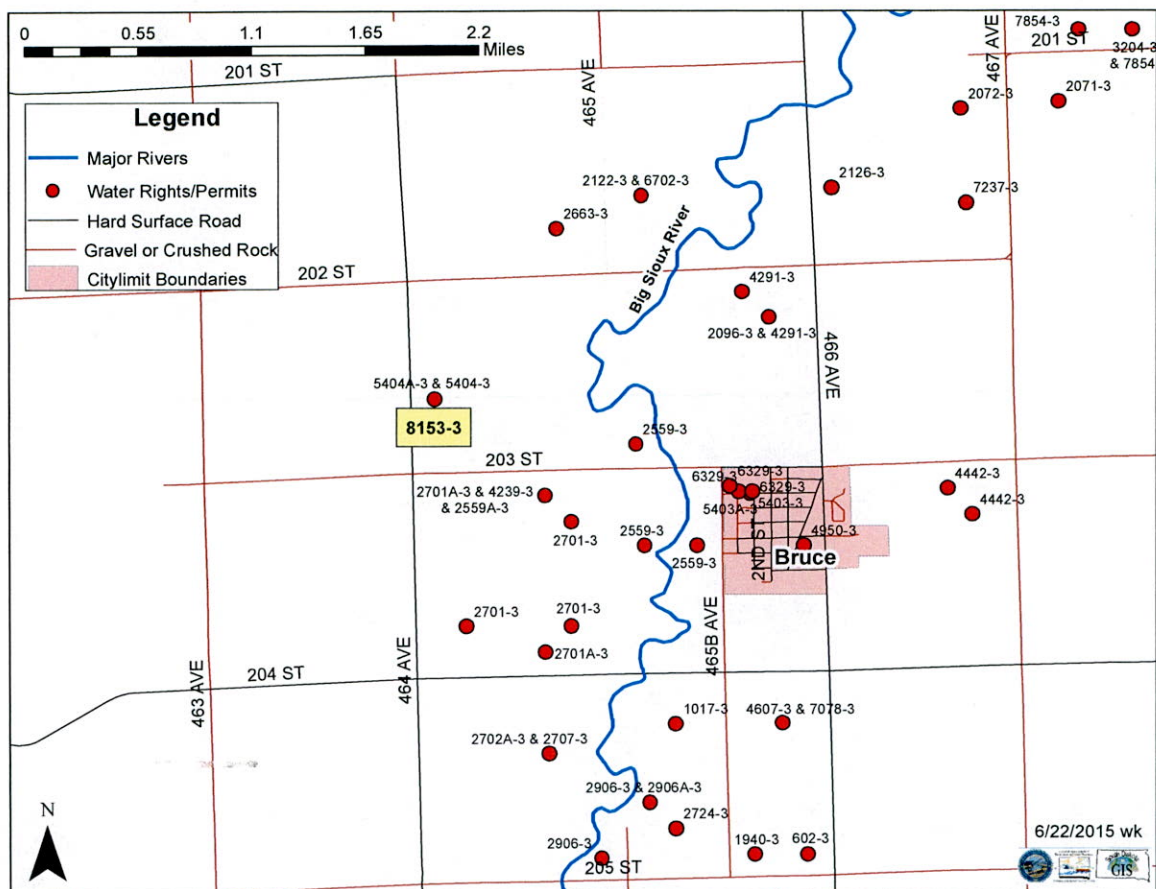


Figure 5: Approximate locations of diversion points for water rights/permits completed into the Big Sioux: Aurora aquifer in the area of the proposed well (cancelled Water Rights not shown) (Water Rights, 2015b)

Although if this application is approved it would not authorize any increase in the maximum diversion rate authorized by Water Permit No. 5404A-3, the irrigation of additional acres will result in an increase in the volume of water utilized by this permit. This increase in volume of water utilized will likely be less than 51 acre-feet per year or about 0.07 cfs. 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 typically be significant far from the well site. Additionally Hamilton (1989) notes that, "Effects of withdrawals from wells that tap the Big Sioux aquifer generally are small because of extensive recharge and unconfined conditions. Drawdown of water levels is temporary and a few feet at most at distances of about a mile from large-capacity wells." Additionally any increase in drawdown as a result of the increased volume of water used for the irrigation of additional acres is not expected to be significant. Therefore, nearby adequate wells are not expected to be adversely impacted by the irrigation of additional acreage.

The Big Sioux: Brookings aquifer is a relatively thin aquifer 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. 8153-3 proposes the irrigation of 51 acres in the S ½ of Section 2-T111N-R51W using an existing well authorized under Water Right No. 5404A-3.
2. Water Right No. 5404A-3 appropriates water at a maximum diversion rate of 2.0 cfs from one well located in the NW ¼ SW ¼ Section 2-T111N-R51W for the irrigation of 194 acres located in S ½ of Section 2-T111N-R51W. This application, if approved, does not authorize any increase in the maximum diversion rate authorized by Water Permit No. 5404A-3.
3. There is a reasonable probability that water is available to meet the needs of this application.
4. There is a reasonable probability that this appropriation will not adversely impact existing nearby adequate wells.

Whitney Kilts
Whitney Kilts

SDDENR-Water Rights Program

Approved by

Ken Buhler
Ken Buhler

SDDENR-Water Rights Program

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.
- 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. 2015. Lithological Logs Database, SD DENR-Geological Survey Program, Vermillion, SD.
- Stonesifer, J. 2013. Report to the Chief Engineer Water Permit Application 7854-3. SD DENR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.
- Water Rights. 1980-2015. "1979-2014 Irrigation Summaries by Aquifer": SD DENR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.
- Water Rights. 2015a Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights. 2015b. Water Right/Permit Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2015c. Well Completion Reports. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

Affidavit of Publication
State of South Dakota
County of Brookings

ss

RECEIVED
AUG - 4 2015
WATER RIGHTS
PROGRAM

10/

Katherine Foiles 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

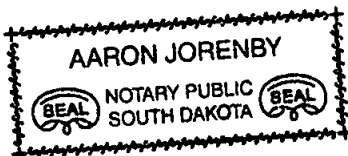
Leg#913 Application 8153-3

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

July 16, 2015

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-Five Dollars and Twelve Cents \$25.12



July

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

Legal 913, 1x, 7/16
NOTICE OF APPLICATION NO. 8153-3 to
Appropriate Water
Notice is given that Marvin O Rentsch, 20244 464th Ave, Bruce SD 57220 has filed an application for a water permit to irrigate 51 new acres. Water Right No. 5404A-3 authorizes 2.0 cubic feet of water per second from one well completed into the Big Sioux:Brookings Aquifer (45 feet deep) located in the NW 1/4 SW 1/4 Section 2 for irrigation of 194 acres located in the S 1/2 Section 2; all in T111N-R51W. This application proposes to irrigate 51 new acres located in the S 1/2 Section 2-T111N-R51W from the existing well. This application, if approved, does not increase in the authorized diversion rate. Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8153-3 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 July 27, 2015.

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. 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 \$25.12.

[Handwritten signature]

17 day of

2015

[Handwritten signature]

RECEIVED

AUG 03 2015

Division of Financial
Technical Assistance

Schlaak, Karen

From: Schlaak, Karen
Sent: Thursday, July 09, 2015 4:28 PM
To: registerclassifieds (registerclassifieds@brookingsregister.com)
Subject: 8153-3, Marvin O Rentsch
Attachments: 8153-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on July 16, 2015.

Marvin O Rentsch, 20244 464th Ave, Bruce SD 57220 (605 695-3489) 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.

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

Karen Schlaak
Water Rights Program
523 E Capitol Ave
Pierre SD 57501
Phone: 605 773-3352



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.**

July 9, 2015

Marvin O Rentsch
20244 464th Ave
Bruce SD 57220

Dear Mr. Rentsch:

Water Permit Application No. 8153-3 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.

NOTICE OF APPLICATION NO. 8153-3 to Appropriate Water

Notice is given that Marvin O Rentsch, 20244 464th Ave, Bruce SD 57220 has filed an application for a water permit to irrigate 51 new acres. Water Right No. 5404A-3 authorizes 2.0 cubic feet of water per second from one well completed into the Big Sioux:Brookings Aquifer (45 feet deep) located in the NW 1/4 SW 1/4 Section 2 for irrigation of 194 acres located in the S 1/2 Section 2; all in T111N-R51W. This application proposes to irrigate 51 new acres located in the S 1/2 Section 2-T111N-R51W from the existing well. This application, if approved, does not increase in the authorized diversion rate.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8153-3 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 July 27, 2015.

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. 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

AUG 11 2015

Marvin O Rentsch
20244 464th Ave
Bruce SD 57220

Dear Mr. Rentsch:

Enclosed is Water Permit No. 8153-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

The dates from which you may claim right are May 13, 2015 for the additional 51 acres and January 22, 1990 for the original 2.0 cfs and 194 acres established by Water Right No. 5404A-3.

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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8153-3

I have this day, May 26, 2021, made a thorough examination of the water use system constructed by Marvin O Rentsch, 20244 464th Ave, Bruce, SD 57220 of Permit No. 8153-3, bearing the priority of May 13, 2015 authorizing additional acreage with no additional water of from the Big Sioux: Brookings Aquifer for irrigation purposes, in Brookings County.

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Pullman Well Drilling
- 2) No. of Wells 1
- 3) Depth 45 feet
- 4) Well log is available Y

Casing:

- 1) Diameter 16 inches
- 2) Length 33 feet
- 3) Type Plastic

Screen:

- 1) Type Stainless steel
- 2) Length 12 feet
- 3) Static water level 18 feet

Pump:

- 1) Make NA
- 2) Model Submersible
- 3) Size NA
- 4) Capacity 900 GPM

Motor:

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

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

- 1) Type Plastic
- 2) Size 8 inches
- 3) Length 1480 feet

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make 2 - Valley
- 2) Overall length 1200 & 1450 feet
- 3) Number of towers 7 & 7 + corner leg
- 4) End gun Y
- 5) Capacity 900 GPM

Chemigation Equipment:

- 1) Chemigation: no

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 SW corner of Sec 2 T111N-R51W 2610 ft N & 1300 ft E Lat 44.4495085 Long -96.92184146 (NW 1/4 SW 1/4 Sec 2).
2. The works are capable of diverting and conveying to the place of use 2.0 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 2-T111N-R51W

NW1/4 SW 1/4 - 35 ac
NE 1/4 SW 1/4 - 40 ac
SE 1/4 SW 1/4 - 40 ac
SW 1/4 SW 1/4 - 27 ac

NW1/4 SE 1/4 - 37 ac
NE 1/4 SE 1/4 - 8 ac
SE 1/4 SE 1/4 - 6 ac
SW 1/4 SE 1/4 - 34 ac

comprising a total of 227 acres of land and the license should be issued for 2.0 cfs

3. All structures, wells and lands on map Y

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

This permit is affiliated with Water Right 5404A-3. The irrigated acres were determined by using FSA maps and ArcMAP software.



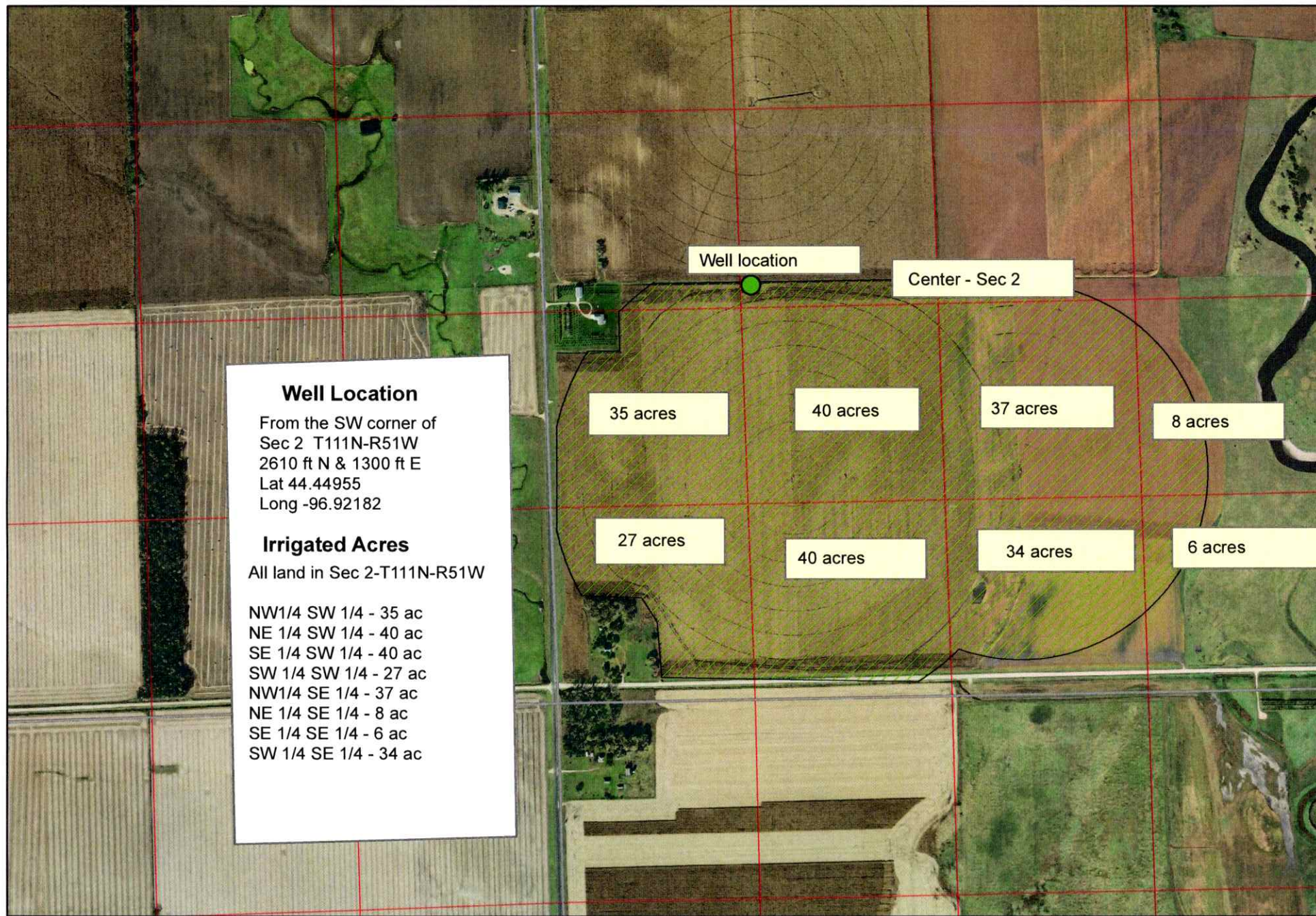
Darrell W DeBoer
Water Rights Inspector
DANR, Water Rights Program

Date report completed: **May 27, 2021**

Notes:

Water Right No. 5404A-3 authorizes one well to irrigate 194 acres in the S ½ Section 2, T111N, R51W. No. 8153-3 was obtained to add 51 acres with no additional water to the existing system. The applicable portions of Water Right No. 5404A-3 were incorporated into Water Permit No. 8153-3 during the permitting process.

The inspection found a total of 227 acres being irrigated. A priority date of January 22, 1990 (established under Permit No. 5404-3) will be retained for 194 acres with the remaining developed 33 acres retaining a priority date of May 13, 2015 (established under No. 8153-3)



0 0.1 0.2 0.4 0.6 0.8 Miles



Darrell DeBoer
 Water Right Inspector
 DANR-Water Rights Program



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JUN 04 2021

8153-3

Marvin O Rentsch
20244 464th Ave
Bruce SD 57220

Dear Mr. Rentsch:

Enclosed is Water License No. 8153-3. 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. 8153-3

(1) Marvin O Rentsch, 20244 464th Ave., Bruce SD 57220 made Application No. 8153-3, May 13, 2015 for a water permit to add 51 additional acres to an existing irrigation system. No additional diversion rate was authorized from the existing well into the Big Sioux Brookings Aquifer, located in Brookings County, South Dakota. Permit No. 8153-3, with a priority date of May 13, 2015 was approved July 27, 2015 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before July 27, 2020 and for the application to beneficial use of water on or before July 27, 2024.

At the time of permitting, Water Right No. 5404A-3 authorizing diversion of 2.0 cubic feet of water per second for irrigation of 194 acres in the S ½ Section 2, T111N, R51W was incorporated into Water Permit No. 8153-3. The incorporated permit retained a priority date of January 22, 1990 for 2.0 cfs and 194 acres and a priority date of May 13, 2015 for the additional 51 acres within the same legal description.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the water supply system and is entitled to divert 2.00 cubic feet of water per second for beneficial use. The location of the diversion point as follows:

- 2,610'N & 1,300 'E of the SW corner of Section 2 T111N-R51W (NW ¼ SW ¼ Sec 2)
Latitude 44.4495085 Longitude -96.92184146

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

Section 2, T111N, R51W			
NW ¼ SW ¼	35 acres	NW ¼ SE ¼	37 acres
NE ¼ SW ¼	40 acres	NE ¼ SE ¼	8 acres
SE ¼ SW ¼	40 acres	SE ¼ SE ¼	6 acres
SW ¼ SW ¼	27 acres	SW ¼ SE ¼	34 acres

Total 227 acres

- Priority dates: January 22, 1990 (194 acres)
May 13, 2015 (33 acres)

(4) Pursuant to South Dakota Water Law 46-5-30.1 Marvin O Rentsch, 20244 464th Ave., Bruce SD 57220 the holder and/or owner of Water Right No. 8153-3 is issued a license to appropriate water, the right to use 2.00 cubic feet of water per second from ground water, one well (Big Sioux Brookings Aquifer) with priority dates of January 22, 1990 (2.0 cfs & 194 acres) and May 13, 2015 (33 acres) from the location specified in (2) of this license for irrigation purposes.

continued

Water License No. 8153-3

Page 2

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 8153-3 and subject to the following qualifications:

- The well approved under Nos. 5404A-3 and 8153-3 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.
- This Water Right is approved subject to the irrigation water use questionnaire being submitted each year.
- Water Permit No. 8153-3 incorporates Water Right No. 5404A-3 (*this was done at the time of permitting*).



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

JUN 04 2021

date

