

WATER PERMIT NO. 7748-3

Name of Applicant: **Douglas Vockrodt**

Address: **2004 44th St S, Brookings SD 57006** Phone: **605 695-0206**

Amount of Water Claimed: **1.11 cfs** Total Acres: **90 acres**

Source of Water Supply: **groundwater (one well)**

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

Type of Waste Disposal System:

Location: **2 miles south of Brookings**

PRIORITY Date Received: **2-8-13**

Application/License Fee: **\$ 950**

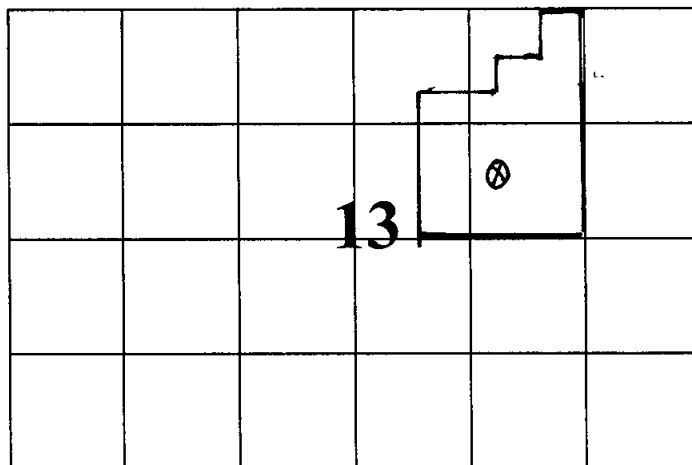
Corrected Application Received: **2-27-13**

Period of Annual Use: **May 1 – Sept 30**

Remarks:

Diversion Point: **SE 1/4 NE 1/4 Sec 13-T109N-R50W**

Land to be Irrigated: **NE 1/4 Sec 13-T109N-R50W**



Depth of Well: **45 feet deep**

Well Driller: **Lacey Well Drilling**

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **2-27-13**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

Mail to:
PMB 2020
DENR - Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182
ph. (605) 773-3352

No. 7748-3 (office use only)
Hydrologic Unit 101 70202
Basin Sioux River
Newspaper Brookings Register P.O. Box 177
Brookings 57006 - 605-692-6271

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FEB - 8 2013
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 Douglas Vockrodt
(check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent
(name and complete address if different than above name)

Mailing Address 2004 44th St S Brookings SD 57006
(Address) (City) (State) (Zip Code)

Home Phone 605 693-3680 Cell 605 695-0206 Email _____

2. Amount of water claimed 1.11 *CFS or 500 **GPM 90 ***AF Total Acreage 90
(*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

4. Location of point of diversion test log will be sent when I receive
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

SE 1/4 NE 1/4 Sec 13 - T109N - R50W County Brookings

5. County or counties where water will be used Brookings

6. Annual period during which water is to be used May 1 - Sept 30

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
NE 1/4 of the NE 1/4 of Sec 13 T109N R50W	25		
NW 1/4 of the NE 1/4 of Sec 13 T109N R50W	10		
SW 1/4 of the NE 1/4 of Sec 13 T109N R50W	17		
SE 1/4 of the NE 1/4 of Sec 13 T109N R50W	38		

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

Douglas Vockrodt Douglas Vockrodt, 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. 7748-3**

Date of first receipt of application February 8, 2013.

Date of return to applicant for corrections, amendments or changes February 21, 2013.

Date of receipt of corrected application February 27, 2013.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7748-3 to Douglas Vockrodt, 2004 44th St S, Brookings SD 57006 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. 7748-3 appropriates 1.11 cubic feet of water per second from one well to be completed into the Big Sioux:Aurora Aquifer (45 feet deep) located in the SE 1/4 NE 1/4 Section 13 for irrigation of 90 acres located in the NE 1/4 Section 13; all in T109N-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: May 1 – September 30.
3. The date from which applicant may claim right is February 8, 2013.
4. The date of approval of Permit No. 7748-3 is May 20, 2013.
5. One-fifth of the construction is to be completed on or before November 20, 2015.
6. All construction is to be completed on or before May 20, 2018.
7. Water is to be put to beneficial use on or before May 20, 2022.
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 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 well authorized by Permit No. 7748-3 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, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JUN 21 2013

date



FEB 27 2013

Form 2A
(Complete applicable portions only)

Supplemental Information

**WATER RIGHTS
PROGRAM**

(type or print)

(Complete applicable portions only) (type or print) PROGRAM

Well 920 west side 920 East side 1020 South side

1. Well Information

(check one or both as applicable) ☒ Drilling new well(s) ☐ Using existing well(s)

- a) If new wells, how many 1 Have test holes been drilled ☐ Yes ☒ No Drilled by will be drill by
(if yes, please provide copies of logs)
- b) If existing wells, how many Provide copy of log(s), if available. Drilled by Lacey Drilling
- c) Well Depth about 43ft Depth to Top of Water Bearing Material Depth to Water from Surface
- d) Distance to nearest existing domestic well:

On applicant's property None

On property owned by others 2000/1

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 _____

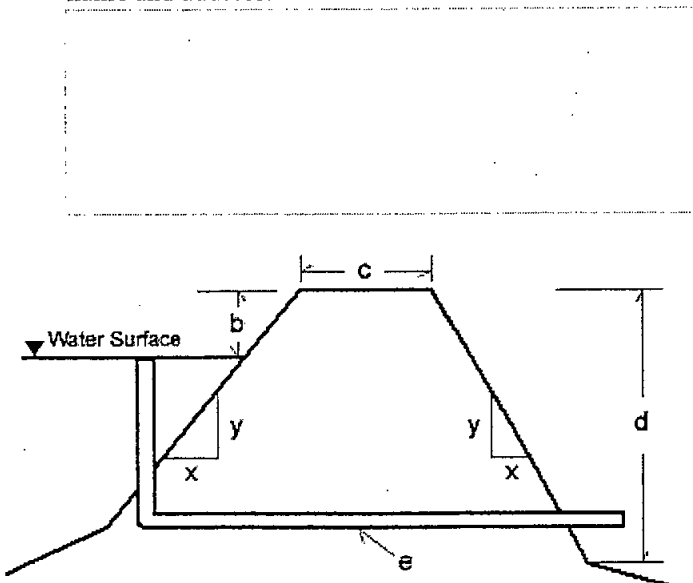
3. Dugout Information

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

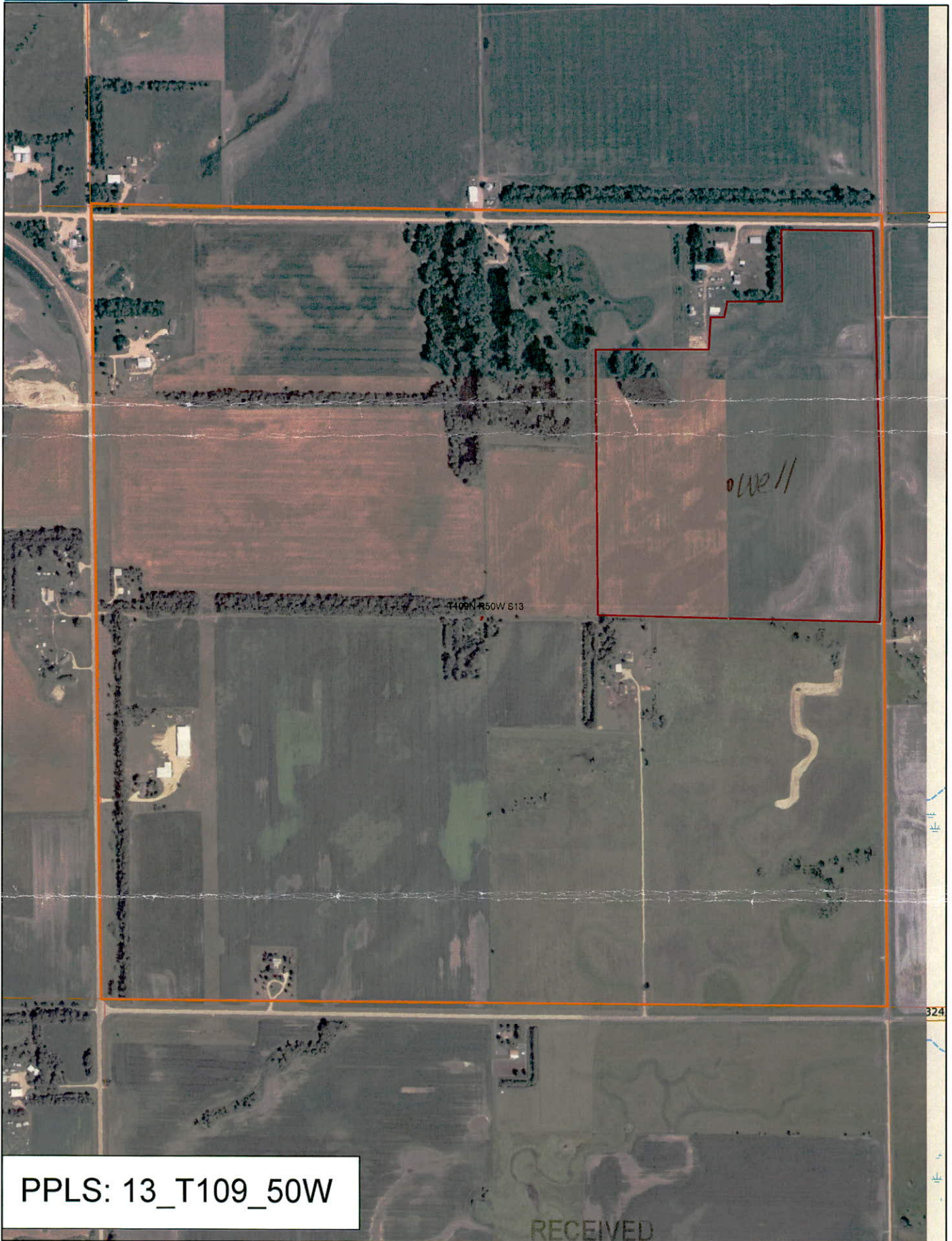
4. Water Storage Dams

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



PPLS: 13_T109_50W

Data use subject to license.

© DeLorme. XMap® 7.

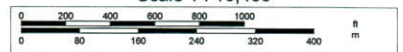
www.delorme.com



FEB - 8 2013

WATER RIGHTS
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Scale 1 : 10,400



1" = 866.7 ft

Data Zoom 14-3

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 2/8, 20 13

RECEIVED OF Douglas Vockrodt 2004 44th St Brookings SD 57006

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

Fee for Application for Permit No. <u>7748-3</u> to Appropriate Water, to construct and to put water to beneficial use	750	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>7748-3</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	950 00

No. 06119

By *James E. Gribble Jr.*
Chief Engineer



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

February 21, 2013

Douglas Vockrodt
2004 44th St S
Brookings SD 57006

Dear Mr. Vockrodt:

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 mark the proposed well location with an "X".
- Enclosed is a Form 2A, Supplemental Information. Under Item No. 1, please complete c) the proposed well depth. Your well driller should be able to give you an estimate depth for your proposed well location.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak

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

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7748-3, Douglas Vockrodt**

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. 7748-3, Douglas Vockrodt, 2004 44th Street South, Brookings SD 57006.

The Chief Engineer is recommending APPROVAL of Application No. 7748-3 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 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 well authorized by Permit No. 7748-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Eric Hundland
for Jeanne Goodman, Chief Engineer
April 26, 2013

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 7748-3
DOUGLAS VOCKRODT
March 22, 2013

Water Permit Application No. 7748-3 proposes to appropriate water from one well to be completed into the Aurora management unit of the Big Sioux aquifer at a maximum diversion rate of 1.11 cubic feet of water per second (cfs). The well will be located in the SE ¼ NE ¼ of Section 13, in T109N-R50W and is expected to be approximately 45 feet deep. This application proposes to irrigate 90 acres located in the NE ¼ of Section 13, in T109N-R50W in Brookings County.

AQUIFER: Aurora management unit of the Big Sioux aquifer (BS:A)

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Aurora management unit of the Big Sioux aquifer is composed of well-sorted, permeable glacial outwash sand and gravel (Hamilton, 1989). Big Sioux: Aurora aquifer is hydraulically connected to the Big Sioux River (Hamilton 1989). The aquifer is under both water-table and artesian conditions, and is under water-table conditions in the area of this application. The proposed well site is located in southern Brookings County less than three miles east of the Big Sioux River and approximately three and one half miles north of the Brookings and Moody county line. The Big Sioux: Aurora aquifer underlies Brookings and Moody Counties. The aquifer underlies approximately 39,300 acres of the counties and contains an estimated 165,060 acre-feet of recoverable water in storage (Hedges and others, 1982). Koch (1980) estimated the specific yield of the aquifer to range from approximately 10 to 17 percent. The average thickness of the aquifer is approximately 40 feet in this area (Hamilton, 1989). The hydraulic conductivity through the aquifer ranges from about 500 to 1,500 feet per day (ft/d) (Koch, 1980). The transmissivity of the aquifer ranges from 20,000 to 42,000 square feet per day (ft²/d) (Hamilton, 1989). There was not a test hole log submitted with this application, but nearby well logs report an average saturated thickness of approximately 54 feet (Water Rights, 2013a).

SDCL 46-2A-9

In accordance with SDCL 46-2A-9, a permit may be issued to appropriate water only if there is 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 review the availability of unappropriated water and existing rights within the Big Sioux: Aurora aquifer.

WATER AVAILABILITY:

This application proposes to appropriate water from the Big Sioux: Aurora aquifer. If this application is approved, it is likely that the actual water use will be less than 180 acre-feet per year (ac-ft/yr). The probability of unappropriated water available from the aquifer can be evaluated using 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."

Recharge versus Discharge:

Recharge:

Recharge to the Big Sioux: Aurora aquifer occurs through infiltration of precipitation and by slow seepage through till, from the Big Sioux River during times of high flow and stage, and from underlying aquifers (Hamilton, 1989). The average annual recharge rate to the Big Sioux aquifer is estimated to range from 2.7 to 6.9 in/yr if flow net analysis is ignored (Hedges and others, 1985). Given the area of the Big Sioux: Aurora aquifer of 39,300 acres, the average annual recharge to the aquifer is estimated to range from 8,842 to 22,598 ac-ft/yr.

Discharge:

Discharge from the Big Sioux: Aurora aquifer is by evapotranspiration, discharge to the Big Sioux River, and withdrawal from wells (Hamilton, 1989). There are a number of completion reports on file with the SD DENR-Water Rights Program for domestic use wells completed into the Big Sioux: Aurora aquifer (Water Rights, 2013b), and there are currently 67 water rights/permits appropriating water from the Big Sioux: Aurora aquifer (Water Rights, 2013c). In addition, there are two future use permits reserving water from the aquifer. The distribution of these appropriations and their types are shown in Table 1.

Water Rights/Permits	Number
Commercial	2
Industrial	2
Irrigation	56
Municipal	4
Rural Water System	3
Future Use Permits	Number
City of Brookings	1
Lincoln Pipestone Rural Water System	1

Table 1. Water rights/permits from the Big Sioux: Aurora aquifer (Water Rights, 2013c).

In southeastern Brookings County, groundwater north of the area flows to the west and groundwater south of the area flows to the southwest creating a groundwater divide (Buhler, 2012). The divide produces a sub-unit that is isolated from the main body of the Big Sioux: Aurora aquifer (Buhler, 2012). Nineteen irrigation and one municipal water right/permit and Lincoln Pipestone Rural Water System future use permit are all within this sub-unit. Therefore, it is not reasonable to include these water rights/permits in the hydrologic budget.

The amount of water that can be expected to be withdrawn through water rights/permits authorizing water use for non-irrigation purposes at the current appropriation level can be estimated by assuming:

1. Water rights/permits limited by an annual volume will pump the entire volume appropriated.
2. Water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time.
3. Future use permits can be fully developed.

The expected water use for non-irrigation purposes, including the 2,426 ac-ft/yr reserved for future use by the City of Brookings, from the Big Sioux: Aurora aquifer is less than 10,200 ac-ft/yr based on current water appropriations.

The annual reported water use from the Big Sioux: Aurora aquifer for irrigation purposes is displayed in Table 2. The average annual use due to irrigation over the period of record is 2,769 ac-ft/yr.

YEAR	NO. OF PERMITS	APPROPRIATION (AC-FT/YR)	PUMPAGE REPORTED (AC-FT/YR)
2011	51	19046.6	3057.12
2010	49	18438	695.18
2009	48	18158	3980.61
2008	48	18134.5	4772.6
2007	45	17436.5	4167.96
2006	45	17436.5	3665.06
2005	45	17436	2660.38
2004	46	18228	3568.24
2003	48	18720	4383.94
2002	49	19194	3927.47
2001	48	19090	4029.35
2000	47	18786	3543.93
1999	47	18786	2919.71
1998	48	18842	4749.92
1997	49	19255.07	3799
1996	49	19015.07	2293.23
1995	49	19375.07	413.17
1994	52	19940.57	2037.84
1993	53	20343.07	340
1992	54	20655.07	844.16
1991	53	20375.07	1957.44
1990	51	20026.07	3048.5
1989	56	23568	3756.03
1988	54	23034.8	4894.45
1987	48	21293.8	2612.7
1986	48	21503.8	1532
1985	48	22031.8	2786.64
1984	48	22240.8	2489.2
1983	41	18394.8	2011.5
1982	42	18583.8	1405.19
1981	58	27333	2607
1980	52	26454	1260
1979	53	27732	1172
MIN	41	17436	340
MAX	58	27732	4894.45
AVE	49.15	20269.33	2769.14

Table 2. Irrigation from the Big Sioux: Aurora aquifer (Water Rights, 1979-2011).

Comparison of the estimated average annual withdrawal from the Big Sioux: Aurora aquifer with the estimated average annual recharge for the aquifer indicates that the average annual withdrawals from the aquifer likely do not exceed the average annual recharge to the aquifer. Therefore, unappropriated water is available from the Big Sioux: Aurora aquifer. Specifically, unappropriated water is available for the appropriation proposed by this application.

Observation Well Data:

Administrative Rule of South Dakota Section 74:02:05:07 requires that “the Water Management Board shall rely upon the record of observation well measurements to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge to the aquifer”.

The SD DENR-Water Rights Program monitors 15 observation wells completed into the Big Sioux: Aurora aquifer with two of these wells located within one and one half miles of the proposed well site (Water Rights, 2013b). Hydrographs for these wells are shown in Figures 1 and 2.

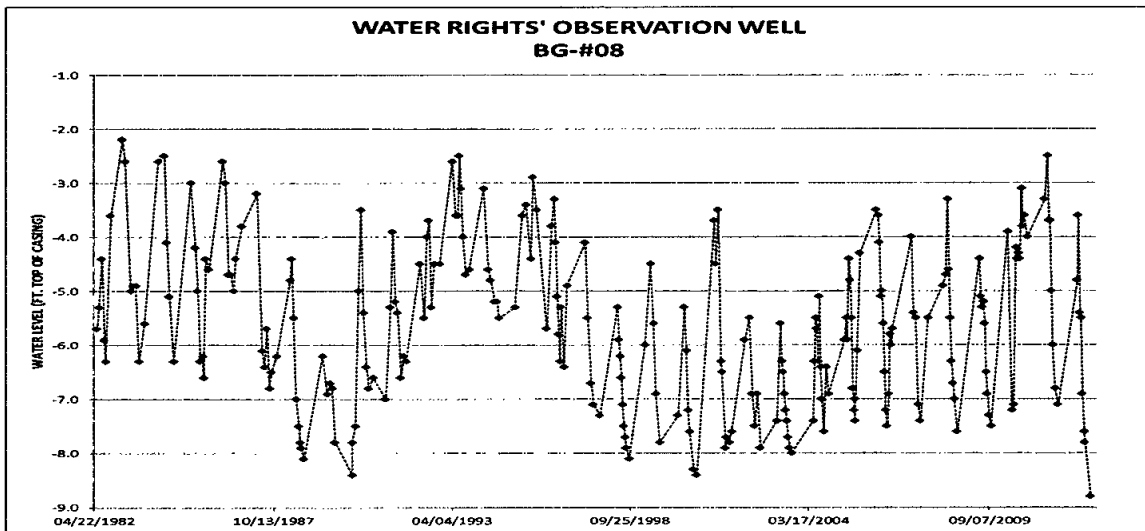


Figure 1. Hydrograph for SD DENR-Water Rights' Observation Well BG-#08 completed into the Big Sioux: Aurora aquifer less than one and one half miles northeast of the well site proposed by Application No. 7748-3 (Water Rights, 2013a).

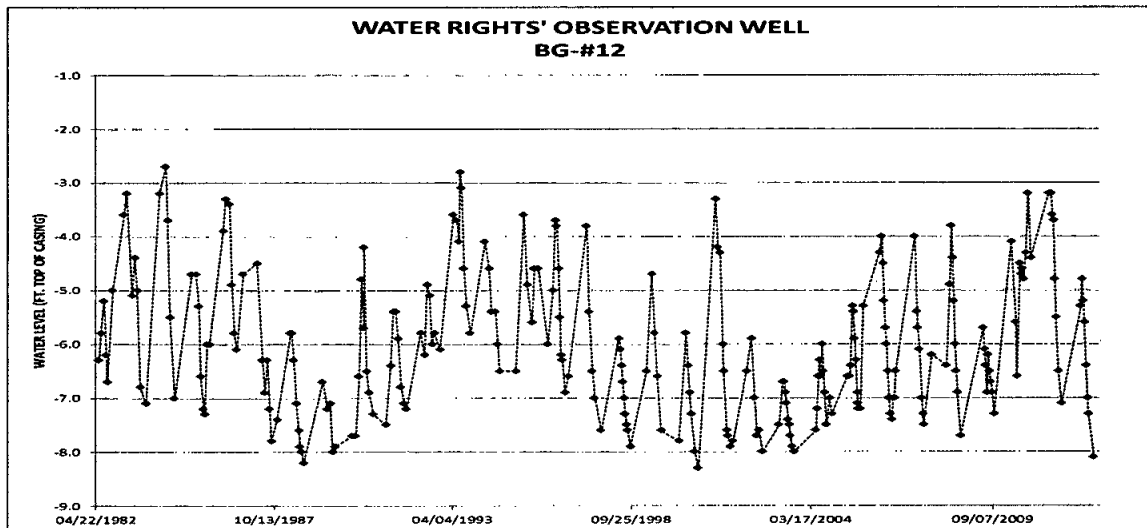


Figure 2. Hydrograph for SD DENR-Water Rights' Observation Well BG-#12 completed into the Big Sioux: Aurora aquifer less than one and one half miles southeast of the well site proposed by Application No. 7748-3 (Water Rights, 2013a).

The observation well data shows the aquifer responds well to climatic conditions with rising water levels during wet years and gradually declining water levels during dry years. The water level data shows that over the period of record, in general, discharge has not exceeded recharge. The observation well data shows that at the current level of development, climatic conditions mask the temporal effects of well withdrawals. Therefore, recharge to and natural discharge from the Big Sioux: Aurora aquifer significantly exceeds pumping. Recognizing that natural discharge from the aquifer can be captured for pumping. The hydrographs document that there is unappropriated water available from the aquifer to support this appropriation.

EXISTING WATER RIGHTS:

The proposed well site is located in southern Brookings County less than three miles east of the Big Sioux River and approximately three and one half miles north of the Brookings and Moody county line. The nearest water right/permit is Water Right No. 4112-3, for Western Trust Company, located more than 3,050 feet north and up-gradient from the proposed well site. Water-table conditions dictate that drawdown will be minimal at these distances. Based on the observation well data and the distance between wells, drawdown is not expected to be significant nor likely to cause adverse impacts to existing water rights or domestic wells.

There is history of contested applications in this area. Loren Vockrodt opposed Water Right No. 4241-3, for Western Trust Company, in 1979 when the applicant was David Longworth. The opponent was concerned about the new wells posing a problem with the current water supply. Mark W. Porter and Dennis and Janice Welbig filed two separate petitions against Water Right No. 4112-3, for Western Trust Company, in 1977 when the applicant was David Longworth. Porter was concerned that the water was being used for industrial rather than irrigation purposes. The Welbigs were concerned that the new wells would affect the drinking water supply to the domestic wells. The two permits were approved by the Water Management Board, and there have been no further complaints or contested applications in the area.

Observation Well BG-#08 is located within one mile of Water Right No. 4537-3, for the same applicant, Douglas Vockrodt, and the hydrograph, shown in Figure 1, reports minimal drawdown at this distance due to pumping. The hydrograph reports approximately five feet of drawdown, and with approximately 54 feet of saturated thickness available at this location, drawdown is not expected to be significant. Figure 3 shows the nearby existing water rights located in the Big Sioux: Aurora aquifer. The locations of the existing water rights/permits were determined using the best data reasonably available.

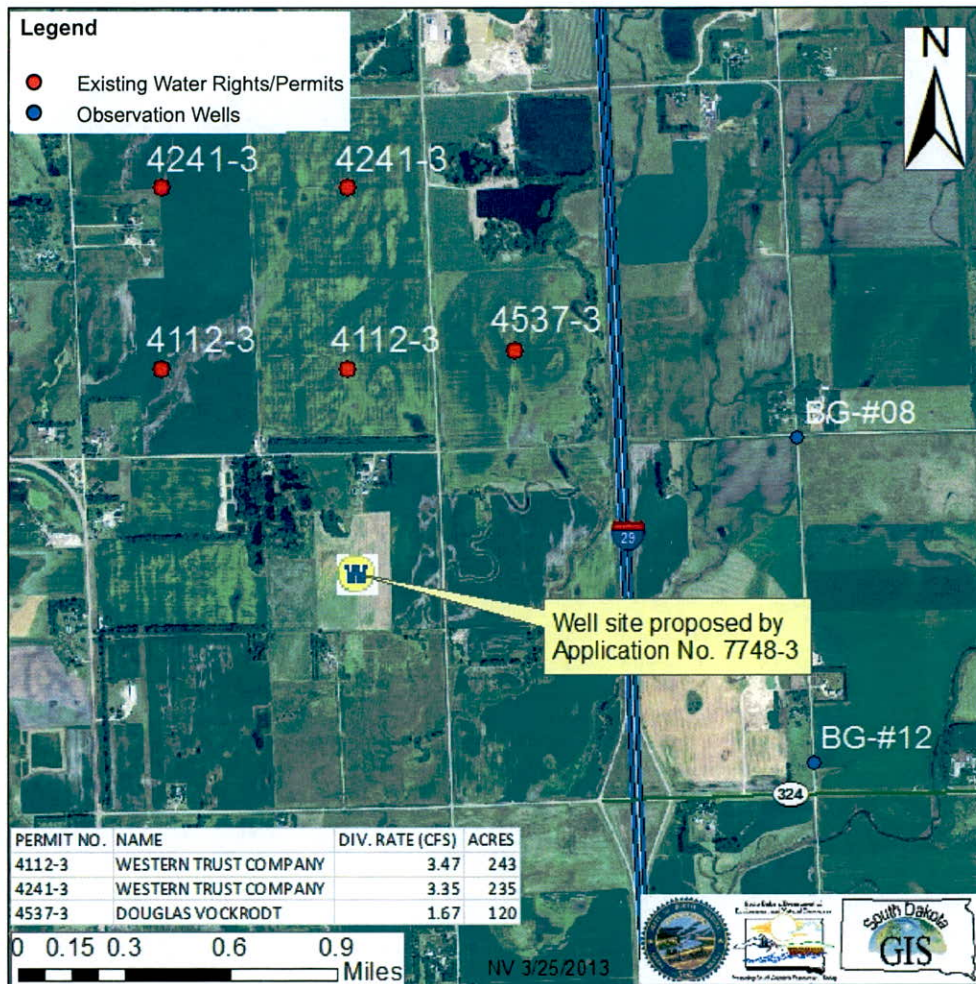


Figure 3. Existing water rights/permits located within close proximity to the well site proposed by Application No. 7748-3 (Water Rights, 2013c).

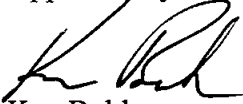
CONCLUSIONS:

1. This application proposes to appropriate water for irrigation from the Big Sioux: Aurora aquifer.
2. There is a reasonable probability that unappropriated water is available from the Big Sioux: Aurora aquifer to supply this proposed appropriation.
3. The Big Sioux: Aurora aquifer is under water-table conditions in this area, and drawdown from pumping is not expected to be significant very far from a production well.
4. There is a reasonable probability that the wells proposed by this application will not adversely impact existing water rights or domestic wells.



Nicole Van Dyk
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Buhler, K. 2012. "Water Permit Application No. 7393-3 Report." SD DENR-Water Rights Program. Joe Foss Bldg., Pierre, South Dakota.
- Hamilton, L.J., 1989, Water Resources of Brookings and Kingsbury Counties, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 88-4185, 82 p.
- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., Schoon, R.A., 1982, Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report; U.S. Army Corps of Engineers Contract DACW 45-80-C-0185
- Hedges, L.S., Allen, J., Holly D.E., 1985, Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: 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: U.S. Geological Survey Water-Resources Investigations Report 80-100, 46p.

Water Rights, 1979-2011, Irrigation Questionnaire Summaries 1979-2011, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2013a, Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2013b, Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2013c, Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

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MAY 13 2013

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10/

Affidavit of Publication

State of South Dakota

ss

County of Brookings

Jennifer Milligan 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

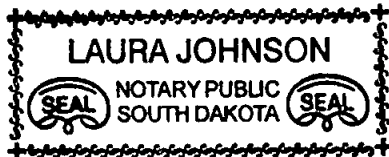
Leg#454 Notice #7748-3-Vockroot

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

May 8, 2013

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-two dollars and twenty-nine cents \$22.29



9th day of

2013

May

Laura Johnson

Notary Public in and for the County of Brookings, South Dakota.
My Commission expires August 3, 2017.

Legal 454, 1x, 5/8
NOTICE OF APPLICA-
TION NO. 7748-3 to
Appropriate Water

Notice is given that Douglas Vockrodt, 2004 44th St S, Brookings SD 57006 has filed an application for a water permit to appropriate 1.11 cubic feet of water per second from one well to be completed into the Big Sioux-Aurora Aquifer (45 feet deep) located in the SE 1/4 NE 1/4 Section 13 for irrigation of 90 acres located in the NE 1/4 Section 13; all in T109N-R50W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7748-3 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 May 20, 2013. 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 \$22.29.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

April 29, 2013

Brookings Register
PO Box 177
Brookings SD 57006

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7748-3 to Appropriate Water. Please publish the notice once on May 8, 2013. 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 Douglas Vockrodt, 2004 44th St S, Brookings SD 57006 (Ph # 605-693-3680).

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**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATE, CONTACT
THE NEWSPAPER(S) RIGHT AWAY.

April 29, 2013

Douglas Vockrodt
2004 44th St S
Brookings SD 57006

Dear Mr. Vockrodt:

Water Permit Application No. 7748-3 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 May 8, 2013. 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. 7748-3 to Appropriate Water

Notice is given that Douglas Vockrodt, 2004 44th St S, Brookings SD 57006 has filed an application for a water permit to appropriate 1.11 cubic feet of water per second from one well to be completed into the Big Sioux:Aurora Aquifer (45 feet deep) located in the SE 1/4 NE 1/4 Section 13 for irrigation of 90 acres located in the NE 1/4 Section 13; all in T109N-R50W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7748-3 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 May 20, 2013.

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**

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denr.sd.gov

JUN 21 2013

Douglas Vockrodt
2004 44th St S
Brookings SD 57006

Dear Mr. Vockrodt:

Enclosed is Water Permit No. 7748-3 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

RECEIVED

JUL 24 2013

WATER RIGHTS
PROGRAMNOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEDate July 19 2013TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181FROM: Douglas Vockrodt
(name)2004 74th St. S.
(address)Brookings SD 57006
(city, state, zip)605-693-3680
(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

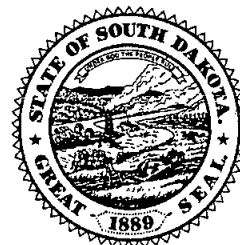
Water Permit No. 7748-3 states that the water use system is to be constructed by May 20 2018, and water is to be put to beneficial use by May 20, 2022.
(date) (date)

The water use system was completed on July 19 2013.
(date)

Applying the water to beneficial use was completed on July 19 2013.
(date)

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

Douglas Vockrodt
(signature)





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
PMB 2020
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

July 24, 2013

7748-3

Douglas Vockrodt
2004 44th St S
Brookings SD 57006

Dear Mr. Vockrodt:

I am writing to acknowledge receipt of the "Notice of Completion of Works" form that you sent in to let us know that you are completed with your irrigation system.

The system is now ready for inspection. Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of your project and the staff inspection has no bearing on your water permit.

Someone from our office will contact you prior to the inspection to set up a time that is convenient for you. If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink that reads "Genny McMath".

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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7748-3

I have this day, 29 October 2014, made a thorough examination of the water use system constructed by Douglas Vockrodt, 2004 44th St. S., Brookings, SD 57006 holder of Permit No. 7748-3, bearing the priority of 8 February 2013 authorizing the diversion of 1.11 cu. ft. per second of the waters of the Big Sioux: Aurora aquifer for irrigation purposes, in Brookings County.

Inspection contact & relationship to permit holder, if applicable: **Douglas Vockrodt, owner**

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Steffl Drilling & Pump Inc.
- 2) No. of Wells one
- 3) Depth(s) 82 feet
- 4) Well log is available yes

Casing:

- 1) Diameter 12 inches
- 2) Length 67 feet
- 3) Type PVC

Screen:

- 1) Type Stainless Steel
- 2) Length 15 feet
- 3) Static water level 8 feet

Pump:

- 1) Make Goulds
- 2) Model 9RCLC
- 3) Size 6-inch, 40 HP
- 4) Capacity 500 GPM

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

- 1) Type PIP
- 2) Size 8 inches
- 3) Length 220 feet

Comments: **Buried PIP from well to center pivot**

C. Works used to apply water to beneficial use:

Center pivot located: (Lat/Lon: 44.24908/-96.77158)

- 1) Make Valley
- 2) Overall length 1088 feet
- 3) Number of towers 5
- 4) End gun yes
- 5) Capacity 500 GPM

Chemigation Equipment:

Does not chemigate

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes

If no, describe: na

- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period na

List any extended period of nonuse: na

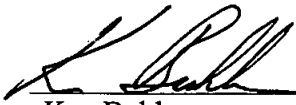
- 3) Exceptions to compliance are: na

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: 1780 feet south and 1250 feet west of the NE corner of Sec. 13, T109N-R50W, (Lat/Lon: 44.24855074/-96.77256624, SW¼NW¼SE¼NE¼ Sec.13, T109N-R50W) legal description (feet from section corner, lat/long, quarter quarter).
2. The works are capable of diverting and conveying to the place of use 1.11 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:
NE¼NE¼ Sec. 13, T109N-R50W: 17.5 acres
NW¼NE¼ Sec. 13, T109N-R50W: 6.5 acres
SW¼NE¼ Sec. 13, T109N-R50W: 14.5 acres
SE¼NE¼ Sec. 13, T109N-R50W: 34.5 acres

comprising a total of 73 acres of land and the license should be issued for 1.11 cfs.

3. All structures, wells and lands on map Yes



Ken Buhler
DENR, Water Rights Program

Report of Examination of Works
Permit No. 7748-3

Date report completed: **6 December 2014**





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
PMB 2020
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

MAR 19 2015

7748-3

Douglas Vockrodt
2004 44th St S
Brookings SD 57006

Dear Mr. Vockrodt:

Enclosed is Water License No. 7748-3. 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 the owner of an existing well, such as the well authorized by Water Right No. 7748-3, 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, the State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

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

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 7748-3**

(1) Douglas Vockrodt, 2004 44th St S, Brookings SD 57006 made Application No. 7748-3, February 8, 2013 for a water permit to divert 1.11 cubic feet of water per second (500 gallons per minute) from ground water (one well, Big Sioux Aurora Aquifer), Brookings County, South Dakota for irrigation purposes. Permit No. 7748-3, with a priority date of February 8, 2013 was approved May 20, 2013 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before May 20, 2018 and for the application to beneficial use of said water on or before May 20, 2022.

The Permit holder submitted a "*Notice of Completion of Works and Application of Water to Beneficial Use*" on July 24, 2013. The "*Notice*" stated the water use system was completed and the water placed to beneficial use on July 19, 2013.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.11 cubic feet of water per second for beneficial use.

The location of the diversion point is 1,780 feet S and 1,250 feet W of the NE corner of Section 13, T109N, R50W (SE ¼ NE ¼).

(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:

T109N, R50W Section 13	NE ¼ NE ¼	17.5 acres
	NW ¼ NE ¼	6.5 acres
	SW ¼ NE ¼	14.5 acres
	SE ¼ NE ¼	34.5 acres
	Total	73.0 acres

(4) Pursuant to South Dakota Water Law 46-5-30.1 Douglas Vockrodt, 2004 44th St S, Brookings SD 57006 the holder and/or owner of Water Right No. 7748-3 is issued a license to appropriate water, the right to use 1.11 cubic feet of water per second (500 gallons per minute) from ground water (one well, Big Sioux Aurora Aquifer) with a priority date of February 8, 2013 from the location specified in (2) of this license for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7748-3 and subject to the following qualifications:

- The well 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.
- The well authorized by Permit No. 7748-3 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 well was drilled by Steffl Drilling & Pump Inc. in June, 2013. A copy of the well log is on file with the Water Rights Program.**

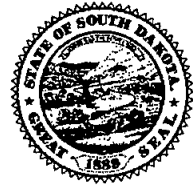
- This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

Jeanne Goodman

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

MAR 19 2015

date



7748-3

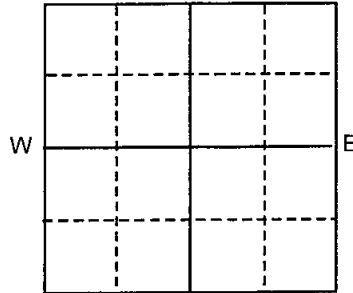
SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW 1/4 NE 1/4 Sec 13 Twp 109 Rg 50County Brookings

North

Please mark well
location with an "X"

Well Completion Date

June 14, 2013

1 Mile

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

PROPOSED USE:

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

METHOD OF DRILLING:

mud rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	12.00 IN	0.0 FT	67.0 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
HS Bentonite	35	Lb/gal	0.0 Ft	57.0 Ft
Red Flint		Lb/gal	57.0 Ft	82.0 Ft

Describe grouting procedure
Tremmy

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 12.00 Inches Length 15.0 FeetMaterial stainless steelSlot Size 80 Set From 67.0 Feet to 82.0 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? irrigation
Lab to which water
quality sample sent for analysisWell Owner: Doug Vockrodt

Business Name: _____

Address: 2004 44th StreetCity, State, Zip: Brookings SD 57006

WELL LOG:

			DEPTH	
FORMATION			FROM	TO
top soil	blk		0	1
sand/gravel	brwn/red	coarse	1	15
fine sand	brwn/red	fine	15	32
clay	blue		32	36
sand/gravel	blue	coarse	36	82

STATIC WATER LEVEL

 If flowing: closed in pressure _____ FEET
 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

31.6 Ft. After 6 Hrs. pumped 875 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Prod Well #1

RECEIVED

SEP 12 2013

WATER RIGHTS
PROGRAMThis well was drilled under license # 463 and this report is true and accurate.Drilling firm: Steffl Drilling & Pump Inc

Signature of License Representative: _____

* Signature of Well Owner or Equitable Property Holder: _____

Date: 7-1-2013