

**WATER PERMIT NO. 7782-3**

Name of Applicant: Huber Farm

Address: PO Box 277, Herried SD 57632 Phone: 605 848-1563

Amount of Water Claimed: 1.94 cfs Total Acres: 270

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation County: Campbell

Type of Waste Disposal System:

Location: 5 miles west of Herried

PRIORITY Date Received: 2-19-13

Application/License Fee: \$ 1250

Corrected Application Received: 3-4-13

Period of Annual Use: March 1 – November 30

Remarks:

Diversion Point: center NE 1/4 Sec 4-T127N-  
R77W

Land to be Irrigated: NE 1/4 Sec 4 and NW 1/4  
Sec 3; all in T127N-R77W

Depth of Well: 300 feet deep

Well Driller:

Remarks:

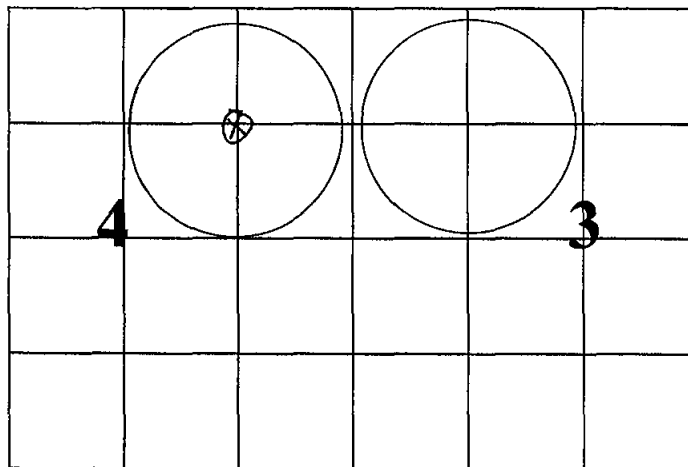
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 3-5-13

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

(office use only)  
No. 7782-3 Hydrologic Unit 10130102  
Basin Missouri River 605-889-2320  
Newspaper Prairie Pioneer Box 28 Pella 57648  
605-225-4100  
American News Box 4430 Aberdeen 57402

RECEIVED  
FEB 19 2013  
WATER RIGHTS  
PROGRAM

## 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 Huber Farm

(check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent Robert A. Huber  
(name and complete address if different than above name)

Mailing Address PO Box 277 Herreid SD 57632  
(Address) (City) (State) (Zip Code)

Home Phone 605-437-2998 Cell 605-848-1563 Email hubernson@valleytel.net

2. Amount of water claimed 1.94 \*CFS or            \*\*GPM            \*\*\*AF Total Acreage 270  
(\*Cubic Feet per Second) (\*\*Gallons per Minute) (\*\*Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply ground water

4. Location of point of diversion Center of the NE 1/4, Section 4, T127N, R77W  
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

County Campbell

5. County or counties where water will be used Campbell

6. Annual period during which water is to be used March 1 - November 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 4-127-77 | 135   |                  |       |
| NW 1/4 of 3-127N77 | 135   |                  |       |
|                    |       |                  |       |
|                    |       |                  |       |

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

drill an irrigation well, and possible pipe water over to the other 1/4

I, Robert A. Huber Robert A. Huber, 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. 7782-3**

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Date of first receipt of application February 19, 2013.

Date of return to applicant for corrections, amendments or changes February 25, 2013.

Date of receipt of corrected application March 4, 2013.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7782-3 to Huber Farm, c/o Robert A. Huber, PO Box 277, Herreid SD 57632 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. 7782-3 appropriates 1.94 cubic feet of water per second from one well to be completed into the Grand Aquifer (300 feet deep) located in the center of the NE 1/4 Section 4 for irrigation of 270 acres located in the NE 1/4 Section 4 and the NW 1/4 Section 3; all in T127N-R77W.
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: March 1 – November 30.
3. The date from which applicant may claim right is February 19, 2013.
4. The date of approval of Permit No. 7782-3 is May 28, 2013.
5. One-fifth of the construction is to be completed on or before November 28, 2015.
6. All construction is to be completed on or before May 28, 2018.
7. Water is to be put to beneficial use on or before May 28, 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. 7782-3 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 20 2013

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 1 Have test holes been drilled ☐ Yes ☒ No Drilled by \_\_\_\_\_  
(if yes, please provide copies of logs)
- b) If existing wells, how many \_\_\_\_\_ Provide copy of log(s), if available. Drilled by \_\_\_\_\_
- c) Well Depth 300 Depth to Top of Water Bearing Material 230 Depth to Water from Surface \_\_\_\_\_
- d) Distance to nearest existing domestic well:

On applicant's property \_\_\_\_\_ On property owned by others 1/2 mile

### 2. Wastewater Disposal System Information

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

### 3. Dugout Information

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

### 4. Water Storage Dams

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

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

b) Freeboard \_\_\_\_\_

c) Crest Width \_\_\_\_\_

Crest Length \_\_\_\_\_

d) Height \_\_\_\_\_

e) Primary Outlet Capacity \_\_\_\_\_

If pipe, diameter \_\_\_\_\_

f) Secondary Spillway Capacity \_\_\_\_\_

Spillway Width \_\_\_\_\_

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

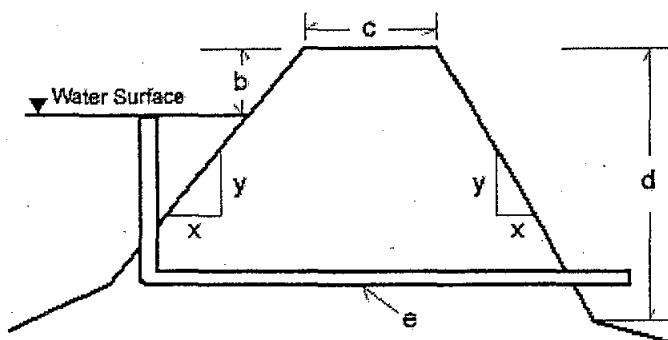
Upstream \_\_\_\_\_

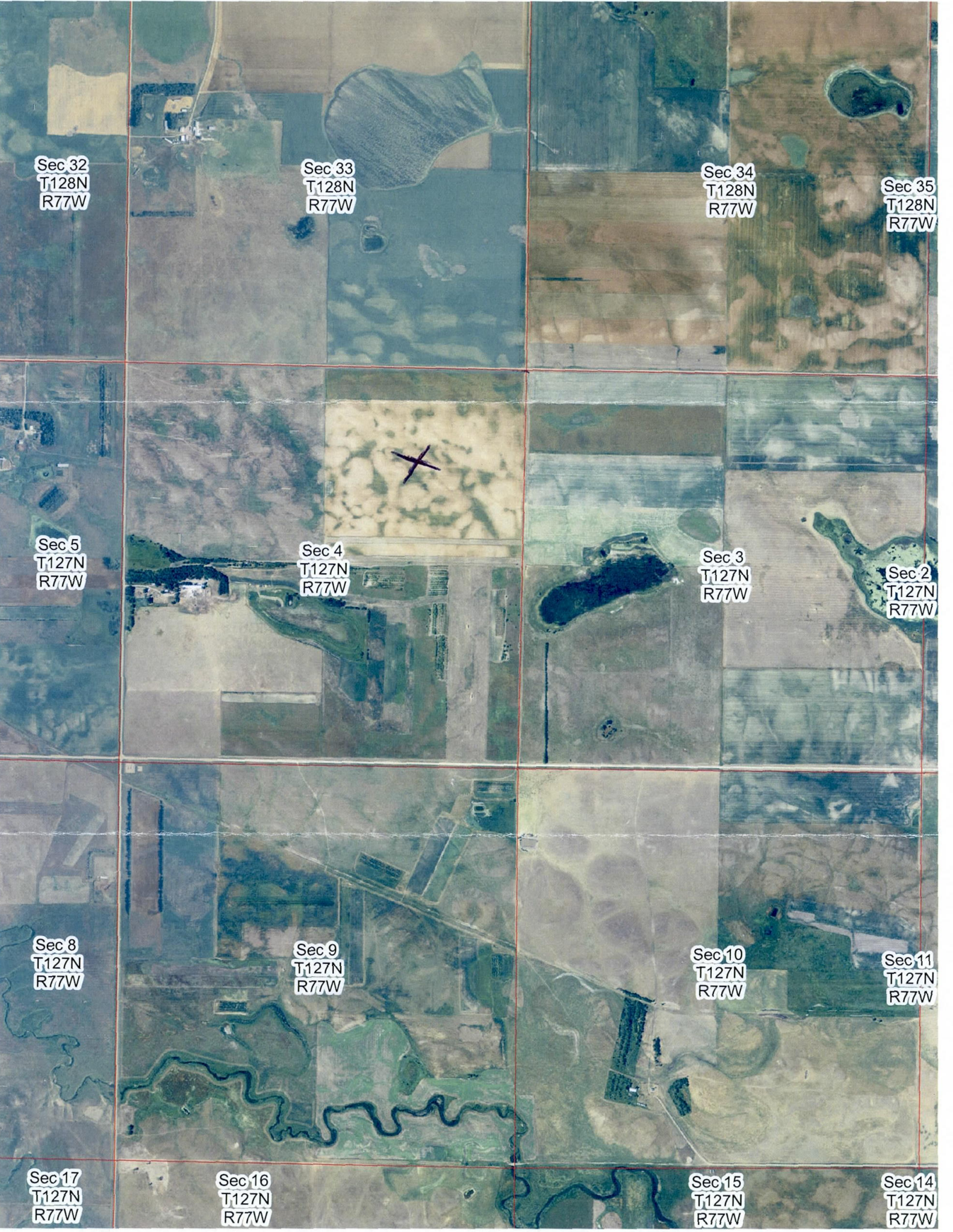
Downstream \_\_\_\_\_

h) Surface Area of Impoundment \_\_\_\_\_

i) Storage \_\_\_\_\_ Acre Feet

j) Drainage Area Above Dam \_\_\_\_\_ Acres





Sec 32  
T128N  
R77W

Sec 33  
T128N  
R77W

Sec 34  
T128N  
R77W

Sec 35  
T128N  
R77W

Sec 5  
T127N  
R77W

Sec 4  
T127N  
R77W

Sec 3  
T127N  
R77W

Sec 2  
T127N  
R77W

Sec 8  
T127N  
R77W

Sec 9  
T127N  
R77W

Sec 10  
T127N  
R77W

Sec 11  
T127N  
R77W

Sec 17  
T127N  
R77W

Sec 16  
T127N  
R77W

Sec 15  
T127N  
R77W

Sec 14  
T127N  
R77W

HURON DRILLING INC.  
**WELL LOCATION MAP**

RECEIVED

FEB 19 2013

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NAME Dennis Mittleider

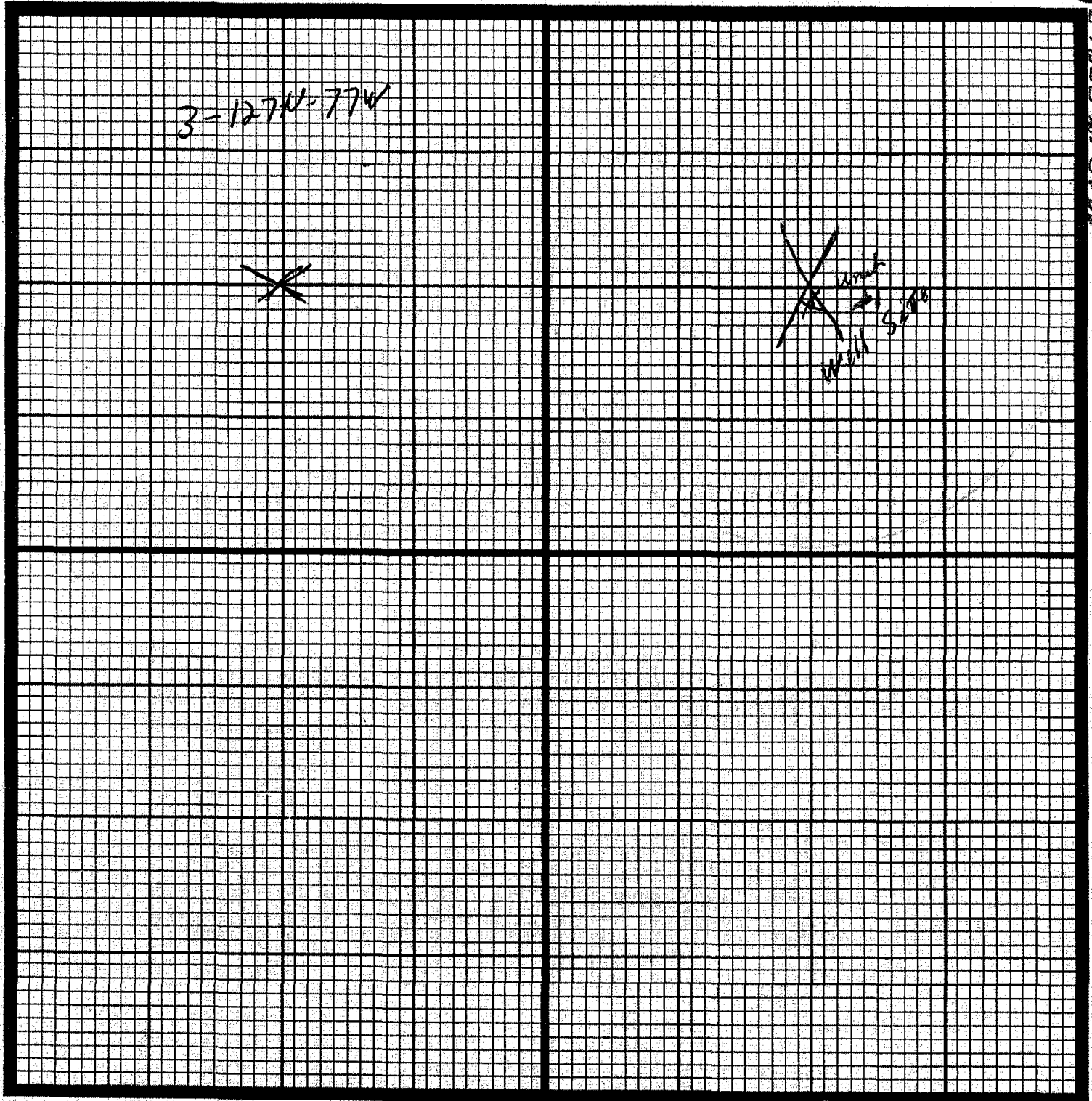
DATE August 9 19 76

WELL NO. 1

NE QUARTER, SECTION 4

TWP. 127 RANGE 77 IN Campbell

COUNTY



Prepared By

Dick Fodgen

Dick Fodgen

Readle County Extension Agent

X — PROPOSED LOCATION

APPL NO 2949-3  
MAP NO 2281-3

PAGE NO.

| DI<br>No. | DEPTH   | TIME | Test Hole #1                                     | REMARKS | DESCRIPTION |
|-----------|---------|------|--------------------------------------------------|---------|-------------|
| 1         | 0-20    |      | 0-3 Topsoil, 3-13 Yellow Sand, 13-20 Yellow Clay |         |             |
| 2         | 20-35   |      | Yellow Clay & Fine Sand                          |         |             |
| 3         | 35-50   |      | Fine Sand                                        |         |             |
| 4         | 50-65   |      | Fine Sand                                        |         |             |
| 5         | 65-80   |      | Fine Sand                                        |         |             |
| 6         | 80-95   |      | Fine Sand                                        |         |             |
| 7         | 95-110  |      | Fine Sand                                        |         |             |
| 8         | 110-125 |      | 110-119 Fine Sand, 119-125 Blue Clay             |         |             |
| 9         | 125-140 |      | Blue Clay                                        |         |             |
| 10        | 140-155 |      | Blue Clay                                        |         |             |
| 11        | 155-170 |      | Blue Clay                                        |         |             |
| 12        | 170-185 |      | Blue Clay & Fine Sand                            |         |             |
| 13        | 185-200 |      | Blue Clay & Sand                                 |         |             |
| 14        | 200-215 |      | Blue Clay & Sand                                 |         |             |
| 15        | 215-230 |      | 215-228 Blue Clay, 228-230 Good Gravel           |         |             |
| 16        | 230-250 |      | Good Gravel & Coal                               |         |             |
| 17        | 250-270 |      | Good Gravel                                      |         |             |
| 18        | 270-290 |      | Good Gravel                                      |         |             |
| 19        | 290-300 |      | 290-292 Good Gravel, 292-300 Gravel & Shale      |         |             |
|           |         |      | Cased - 265                                      |         |             |
|           |         |      | Slotted - 60                                     |         |             |
|           |         |      | Waterhead - 62                                   |         |             |
|           |         |      | GPM - 150                                        |         |             |
|           |         |      | Sand - 2,000                                     |         |             |

# RECEIPT

## WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 2/22, 20 13

RECEIVED OF Huber Farm R A Huber PO Box 343 Herreid SD 57632

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

|                                                                                                                         |       |         |
|-------------------------------------------------------------------------------------------------------------------------|-------|---------|
| Fee for Application for Permit No. <u>7782-33</u> to Appropriate Water, to construct and to put water to beneficial use | 1050  | 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>7782-3</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 | 1250 00 |

No. 06161

By

  
Chief Engineer



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

[denr.sd.gov](http://denr.sd.gov)

February 25, 2013

Huber Farms  
Robert A Huber  
PO Box 277  
Herreid SD 57632

Dear Mr. Huber:

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

- Enclosed is the map submitted with the application. It is unclear from the map what acreage you are proposing to irrigate in Section 3 and Section 4. For your use, I have enclosed an aerial photo map of the area. Please outline the 270 acres to be irrigated and mark the proposed well location with an "X".

If you have any questions, please contact me.

Sincerely,

*Karen Schlaak*

Karen Schlaak  
Water Rights Program  
605 773-3352  
[karen.schlaak@state.sd.us](mailto:karen.schlaak@state.sd.us)

enclosures

## **Water Rights Program - File Documentation**

---

**NAME:** Robert Huber

**ADDRESS:** Herried SD

**DATE:** 3-5-13      **COUNTY:** CA      **TELEPHONE:** 605 848-1563

**RE:** Pending application

**COMMENTS:**

We received the aerial photo map from Mr. Huber. He marked the location of the well in the NE 1/4 Section 4 but he did not outline the acres to be irrigated.

**I called to Mr. Huber to verify that he was proposing to irrigate the NE 1/4 Section and the NW 1/4 Section 3; all in T127N-R77W.** Mr. Huber stated he intended to develop the irrigation in the NE 1/4 Section 4 first. After that, he would pipe water from the well in NE 1/4 Section 4 to the NW 1/4 Section 3. I explained he had five years to construct his project.

  
Karen Schlaak  
Water Rights Program



**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. 7782-3, Huber Farm**

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. 7782-3, Huber Farm, c/o Rober A Huber, PO Box 277, Herreid SD 57632.

The Chief Engineer is recommending APPROVAL of Application No. 7782-3 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. 7782-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Jeanne Goodman, Chief Engineer  
May 7, 2013

NOTE: In most locations the Grand Aquifer has medium sodium hazard and high salinity hazard. DENR encourages you to have a soil water compatibility analysis performed to insure the water is suitable for irrigation. The Water Resources Institute at SDSU or other qualified soil scientist can assist you in making a soil water compatibility determination and recommend if there are water management techniques to implement to optimize crop production and protect the soil structure.

# **REPORT TO THE CHIEF ENGINEER**

## **WATER PERMIT APPLICATION NO. 7782-3**

**Huber Farm**

**April 5, 2013**

Water Permit Application No. 7782-3 proposes to withdraw groundwater at a maximum diversion rate of 1.94 cubic feet of water per second (cfs) from one well completed into the Grand aquifer. The well is expected to be 300 feet deep and located in the approximate center of the NE¼ of Section 4, T127N-R77W. Water will be used to irrigate 270 acres located in NE¼ of Section 4 and NW¼ of Section 3, T127N-R77W, in Campbell County.

### **AQUIFER: Grand aquifer (G)**

#### **GEOLOGY AND AQUIFER CHARACTERISTICS:**

The Grand aquifer consists of glacial outwash and alluvium from the ancient Grand River and is under confined conditions in the area of the application (Koch, 1970). The Grand aquifer underlies portions of six counties with an approximate area of 45,100 acres and contains an estimated 3,637,000 ac-ft of water in storage (Hedges and others, 1982). The Grand aquifer is hydraulically connected to Lake Oahe, causing the aquifer to fluctuate with reservoir levels. In most locations, the Grand aquifer has a high salinity hazard and a medium sodium hazard, so special management practices could be necessary for irrigation (Koch, 1970).

As currently delineated, there appears to be a groundwater divide in Edmunds County, flowing southeastward or northwestward, as shown in Figure 1. In the majority of Edmunds County, groundwater flow appears to be to the southeast. In northern parts, the aquifer groundwater flow is to the northwest. In Campbell County, groundwater flow is generally westward. Water flows out of Campbell County into the Missouri River at a rate of 1,100 acre-feet per year (ac-ft/yr) and into Walworth County at a rate of 3,900 ac-ft/yr. Water also flows out of Faulk County at a rate of 2,200 acre-feet per year (ac-ft/yr) and out of Edmunds County at a rate of 5,600 ac-ft/yr (Hamilton, 1982; Koch, 1970). The SD DENR-Geological Survey is currently investigating the Grand aquifer.

The top of the aquifer ranges from 150 to 300 feet below ground surface and has an average thickness of 100 feet (Koch, 1970). A test hole log submitted with this application, which was submitted prior for Water Right No. 2949-3, documents the Grand aquifer from 228 to 300 feet below ground surface, which is overlain by blue clay and underlain by shale. The shallower sand layer identified in the test hole log is likely the Selby aquifer.

#### **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 from the aquifer and the potential for impairment of existing rights.

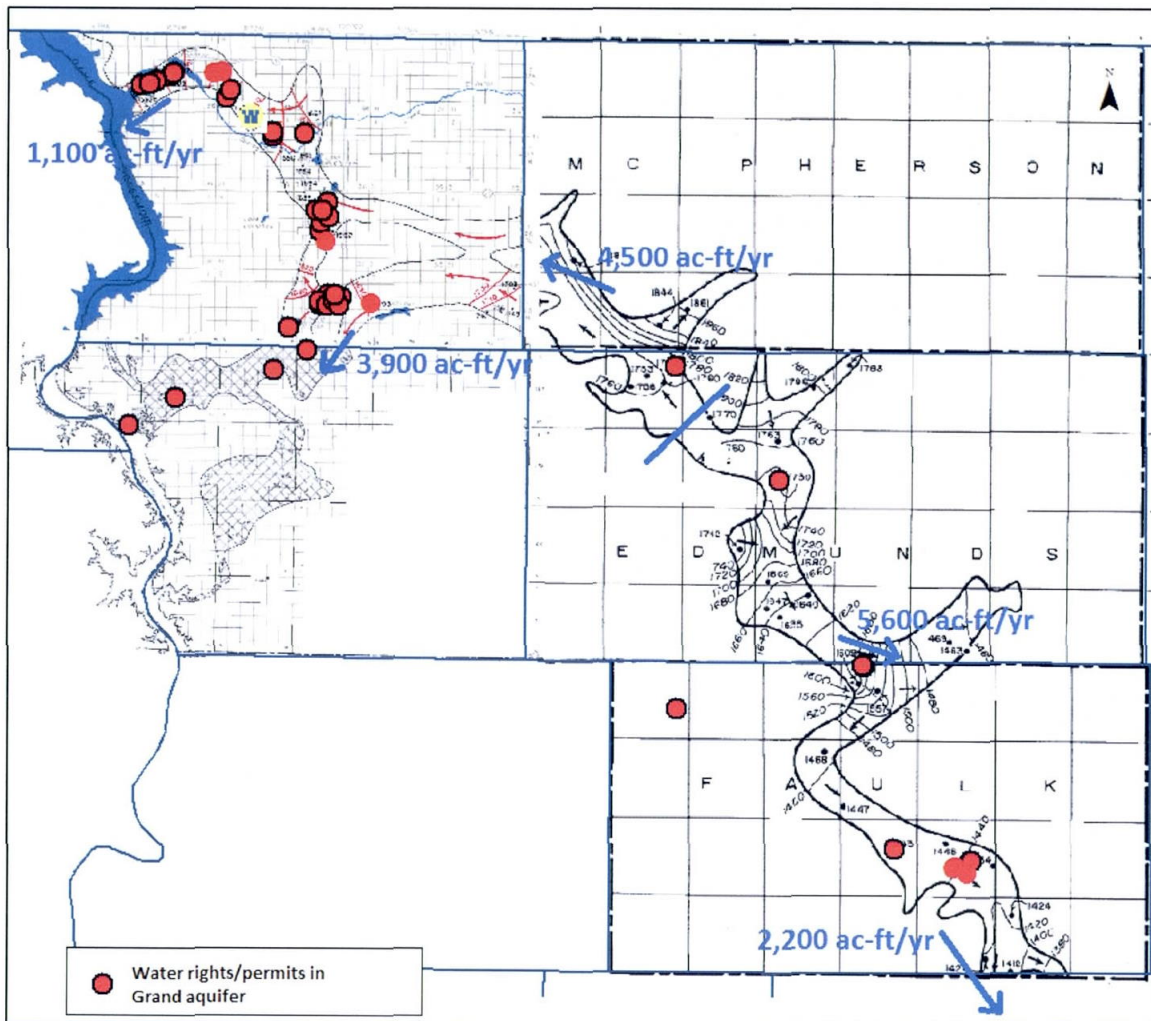


Figure 1: Grand aquifer areal extents, flow patterns, water rights/permits, and proposed well site (modified from Hamilton (1982), Koch (1970), Kume (1979), and Water Rights (2013b))

#### **WATER AVAILABILITY:**

If this application is approved, the actual water use will likely be less than 540 ac-ft/yr. The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source.” If the source of the water is older or lower than the greenhorn formation and a public water system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, a public water system is not involved and the aquifer is not older or lower than the greenhorn formation therefore withdrawal/recharge issue must be considered.

#### **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 of the aquifer.”

The SD DENR-Water Rights Program monitors 37 observation wells completed into the Grand aquifer. The nearest observation well, CA-65A, is located approximately 0.8 miles south of the proposed well site (Water Rights, 2013a). The hydrograph for this well is shown in Figure 2.

The observation well data documents cyclic conditions of water levels, recharging during wet years and declining during dry years. Temporal well withdrawal of the aquifer is masked by climatic conditions, indicating that recharge to and natural discharge from the aquifer greatly exceeds well withdrawal. Over the period of record, water levels have remained fairly steady or increased. Therefore, unappropriated water is available the Grand aquifer to support the proposed appropriation.

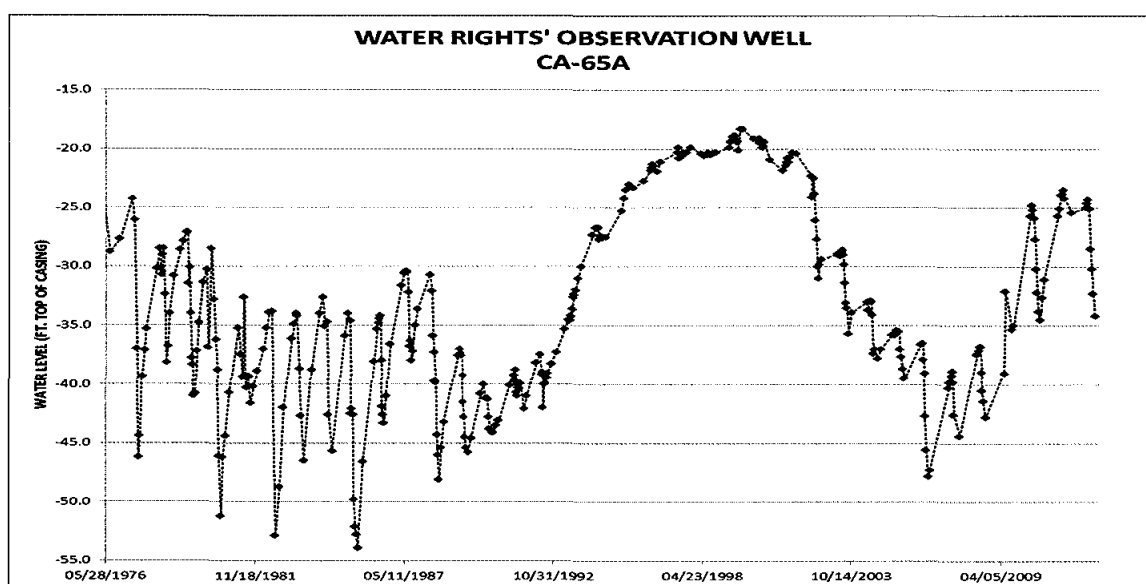


Figure 2: Hydrograph of observation well CA-65A (Water Rights, 2013a)

### Hydrologic Budget:

#### *Discharge:*

Discharge from the Grand aquifer occurs through outflow to adjacent subsurface areas and well withdrawals. Koch (1970) and Hamilton (1982) quantified subsurface discharge of the Grand aquifer at several boundaries, as shown in Figure 1.

There are a total of 42 water rights/permits appropriating water from the Grand aquifer. There are no future use permits (Water Rights, 2013b). In addition, there are many well completion reports on file with the SD DENR-Water Rights Program for domestic wells that appear to be completed into the Grand aquifer (Water Rights, 2013c). The annual withdrawal due to domestic use is not significant to the hydrologic budget of the aquifer.

The amount of water that can be expected to be withdrawn by the non-irrigation water rights/permits at the current appropriation amount can be estimated by assuming water rights/permits limited by an annual volume will pump the entire volume appropriated annually,

and water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate at 60 percent of the time. Several water rights are authorized to municipalities that are now on a rural water system, and the water rights are maintained for stand-by purposes. Therefore, withdrawal due to municipal use is not expected to be significant to the hydrologic budget. At the current appropriation amount, the total annual withdrawal from the Grand aquifer by non-irrigation use is expected to total less than 695 ac-ft/yr (Water Rights, 2013b).

The annual withdrawal from the aquifer by irrigation use water rights/permits fluctuates, which is probably mostly dependent on annual growing season climatic conditions. The average pumpage reported from the Grand aquifer over the period of record equals 2,085 ac-ft/yr (Water Rights, 1980-2012). Since 2011, six water permits have been authorized, so average irrigation pumpage could increase (Water Rights, 2013b).

#### *Recharge:*

Recharge to the Grand aquifer occurs by infiltration of water through overlying and adjacent subsurface areas. The Grand aquifer may also receive recharge from the Missouri River during times of high flow and stage. Recharge rate to the Grand aquifer has not been quantified. Observation wells in this aquifer have all maintained steady water levels over the period of record, indicating that recharge has equaled discharge (Water Rights, 2013a). Therefore, recharge equals at least to the total discharge out of the study area, which was estimated to be 12,800 ac-ft/yr (Hamilton, 1982; Koch, 1970).

Hedges and others (1985) suggested for management and development programs, the recharge rate to confined aquifers can be estimated to range from 0.15 to 0.60 inches per year (in/yr). Applying the estimated area of the Grand aquifer, recharge ranges from 4,900 to 19,800 ac-ft/yr (Hamilton, 1982; Hedges and others, 1982; Koch, 1970; Kume, 1979).

#### *Hydrologic Budget:*

Discharge from the Grand aquifer due to well withdrawal is estimated to be no more than 2,800 ac-ft/yr, which is less than the recharge estimates. Therefore, there is a reasonable probability that unappropriated water is available from the Grand aquifer for the proposed appropriation.

### **Localized Hydrologic Budget – Campbell County**

#### *Discharge:*

Discharge from the Grand aquifer occurs through outflow to adjacent subsurface areas and well withdrawals. Koch (1970) quantified subsurface discharge of the Grand aquifer out of Campbell County, as shown in Figure 1.

There are a total of 28 water rights/permits appropriating water from the Grand aquifer in Campbell County. There are no future use permits (Water Rights, 2013b). In addition, there are many completion reports for domestic wells that appear to be completed into the Grand aquifer in Campbell County (Water Rights, 2013c). The annual withdrawal due to domestic use is not significant to the hydrologic budget of the aquifer.

At the current appropriation amount, the total annual withdrawal from the Grand aquifer in Campbell County by non-irrigation use is expected to total less than 36 ac-ft/yr (Water Rights,

2013b). The average irrigation use pumpage reported from the Grand aquifer in Campbell County over the period of record equals 2,033 ac-ft/yr (Water Rights, 1980-2012). Since 2011, three water permits have been authorized, so average irrigation pumpage could increase (Water Rights, 2013b).

*Recharge:*

As previously noted, recharge rate to the Grand aquifer has not been quantified; however, subsurface discharge has been estimated at several boundaries. Observation wells in the county have maintained fairly steady water levels over the period of record, indicating that recharge has equaled discharge (Water Rights, 2013a). Therefore, recharge to the Grand aquifer in Campbell County equals at least the discharge from McPherson County, which was estimated to be 4,500 ac-ft/yr (Hamilton, 1982). Koch (1970) estimated that discharge from the Grand aquifer out of Campbell County is 5,000 ac-ft/yr. Therefore, recharge by infiltration from overlying and adjacent till in the county is approximately 500 ac-ft/yr.

The suggested recharge rate range provided by Hedges and others (1985) is 0.15 to 0.60 in/yr. Applying the estimated area of the Grand aquifer in Campbell County, recharge ranges from 1,200 to 4,900 ac-ft/yr (Hedges and others, 1982).

*Hydrologic Budget:*

Discharge from the Grand aquifer in Campbell County due to well withdrawal is estimated to be no more than 2,100 ac-ft/yr, which is within the range of the recharge estimates. Therefore, there is a reasonable probability that unappropriated water is available from the Grand aquifer in Campbell County for the proposed appropriation.

**EXISTING WATER RIGHTS:**

If approved, this well will be located near other wells that obtain water from the same aquifer. There are two domestic wells on file with the SD DENR-Water Rights Program that appear to be completed into the Grand aquifer within one mile of the proposed well site, both from Dennis Mittleider (Water Rights, 2013c). The nearest water right/permit, No. 7481-3 Jensen Rock & Sand Inc., is located approximately two miles southeast of the proposed well site.

Because the Grand aquifer is under artesian conditions, drawdown due to pumping is likely. However, precise drawdown cannot be quantified without aquifer testing. The Water Management Board has consistently recognized that to place water to maximum beneficial use a certain amount of drawdown may occur. SDCL 46-6-6.1 does not require protection of artesian head pressure as a means of groundwater delivery. However, reasonable domestic use must be assured before irrigation use is allowed. Therefore, when considering irrigation projects, the Water Management Board must give consideration to maintaining artesian head pressure as a method of delivery for domestic wells. To balance interests between irrigation use and delivery of groundwater by artesian pressure, ARSD 74:02:04:20(7) defines an adversely impacted domestic well as:

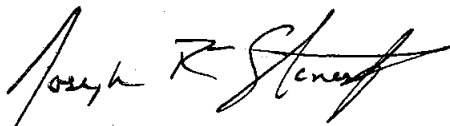
“a well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as near to the bottom of the aquifer as is practical and the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner’s needs.”

Depending on the specific characteristics of the Grand aquifer at the proposed well sites, some existing well owners may need to lower their pumps to accommodate possible reduction of head pressure. Therefore, there is a reasonable probability that any well interference from the proposed appropriation will not adversely or unlawfully impair existing nearby wells.

Consider also, that Water Right No. 2949-3, which was cancelled in 1995 due to nonuse, is in the exact same location as this water permit application. The prior water right had no history of controversy or record of impairment to existing nearby wells (Water Rights, 2013b).

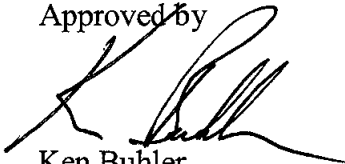
**CONCLUSIONS:**

1. Water Permit Application No. 7782-3 proposes to withdraw groundwater at a maximum diversion rate of 1.94 cfs from one well to be completed into the Grand aquifer in Campbell County for the irrigation of 270 acres.
2. There is a reasonable probability that unappropriated water is available from the Grand aquifer to supply the proposed appropriation.
3. There is a reasonable probability that any possible well inference due to the proposed appropriation will not adversely or unlawfully impair existing users.



Joseph R Stonesifer  
SD DENR-Water Rights Program

Approved by



Ken Buhler  
SD DENR-Water Rights Program

## REFERENCES:

- Hamilton, L.J. 1982. Geology and Water Resources of McPherson, Edmunds, and Faulk Counties, South Dakota; Part II: Water Resources. SD DENR-Geological Survey Bulletin 26. Vermillion, South Dakota.
- Hedges, L.S. J. Allen, and D.E. Holly. 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge. South Dakota DENR-Geological Survey, Vermillion, South Dakota.
- 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
- Koch, N.C. 1970. Geology and Water Resources of Campbell County, South Dakota; Part II: Water Resources: South Dakota Geological Survey Bulletin B-20(2), 38 p. SD DENR-Geological Survey, Vermillion, South Dakota.
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- Water Rights, 1980-2012. "Irrigation Report Summaries." SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2013a. Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2013b. Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2013c. Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

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MAY 23 2013

Form 8

WATER RIGHTS  
PROGRAM

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA )

County of Campbell ) SS

I, Leah Burke

certify that the attached printed Notice was taken

from the Prairie Pioneer

printed and published in Herreid

County of Campbell and

state of South Dakota. The notice was published

in the newspaper on the following date:

5/16/13

Cost of Printing \$21.25

[Signature]

(Signature)

publisher

(Title)

5/21/13

(Date Signed)

NOTICE OF  
APPLICATION  
NO. 7782-3 to  
Appropriate Water

Notice is given that Huber Farm, c/o Robert A Huber, PO Box 277, Herreid SD 57632 has filed an application for a water permit to appropriate 1.94 cubic feet of water per second from one well to be completed into the Grand Aquifer (300 feet deep) located in the center of the NE 1/4 Section 4 for irrigation of 270 acres located in the NE 1/4 Section 4 and the NW 1/4 Section 3; all in T127N-R77W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7782-3 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 28, 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 \$21.25

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MAY 20 2013

WATER RIGHTS  
PROGRAM

## PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA )  
County of Brown ) SSI, May Baskcertify that the attached printed Notice was  
takenfrom the Aberdeen American Newsprinted and published in AberdeenCounty of Brown andstate of South Dakota. The notice was  
published

in the newspaper on the following date:

May 16, 2013Cost of Printing \$3.75May Bask  
(Signature)Advertising Betty Ad  
(Title)May 16, 2013  
(Date Signed)(No. 1574638)  
(May 16, 2013 - 1T)NOTICE OF APPLICATION  
NO. 7782-3 to Appropriate Water

Notice is given that Huber Farm, c/o Robert A Huber, PO Box 277, Herreid SD 57632 has filed an application for a water permit to appropriate 1.94 cubic feet of water per second from one well to be completed into the Grand Aquifer (300 feet deep) located in the center of the NE 1/4 Section 4 for irrigation of 270 acres located in the NE 1/4 Section 4 and the NW 1/4 Section 3; all in T127N-R77W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7782-3 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.

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**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

[denr.sd.gov](http://denr.sd.gov)

May 7, 2013

Prairie Pioneer  
PO Box 28  
Pollock SD 57648

ATTENTION: Legal Public Notice

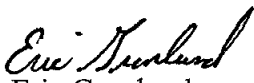
Enclosed is a Notice on Application No. 7782-3 to Appropriate Water. Please publish the notice once on May 16, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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 Huber Farm, c/o Robert A Huber, PO Box 277, Herreid SD 57632 (Ph # 605-437-2998).

**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

May 7, 2013

American News  
PO Box 4430  
Aberdeen SD 57402

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7782-3 to Appropriate Water. Please publish the notice once on May 16, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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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.

May 7, 2013

Huber Farm  
Robert A Huber  
PO Box 277  
Herreid SD 57632

Dear Mr. Huber:

Water Permit Application No. 7782-3 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 Prairie Pioneer printed at Pollock SD (Ph # 605-889-2320) and the American News printed at Aberdeen SD (Ph # 605-225-4100). 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

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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 16, 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.

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Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7782-3 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.

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Published once at the total approximate cost of\_\_\_\_\_.



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

denr.sd.gov

**JUN 20 2013**

Huber Farm  
Robert A Huber  
PO Box 277  
Herreid SD 57632

Dear Mr. Huber:

Enclosed is Water Permit No. 7782-3 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

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