

**WATER PERMIT NO. 7328-3**

Name of Applicant: Marvin Amdahl

Address: 45138 150<sup>th</sup> St, Ortleby SD 57256

Phone: 605 398-6579

Amount of Water Claimed: 1.78 cfs

Total Acres: 162 acres

Source of Water Supply: groundwater

Water to be used for: irrigation

County: Grant

Type of Waste Disposal System:

Location: 25 miles west of Milbank

PRIORITY Date Received: 2-27-12

Application/License Fee: \$ 1,050.00

Corrected Application Received: 3-5-12

Period of Annual Use: May 1 – Sept 30

Remarks:

Diversion Point: N ½ NE ¼ Sec 4-T120N-R52W

Land to be Irrigated: N ½ Sec 4-T120N-R52W

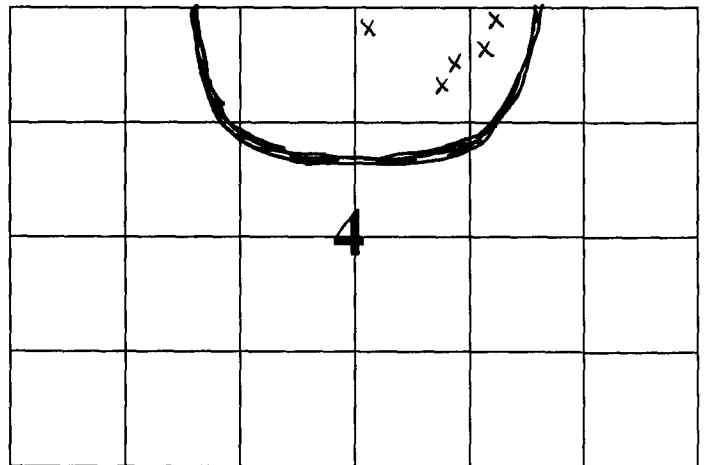
Depth of Well: 142 feet deep

Well Driller: Manikowski Well Drilling Inc.

Remarks:

Type of Map: aerial

Prepared by: ? Grant Co FSA



Reviewed and the Number Assigned on: 3-6-12

By: **Karen Schlaak**

Notice of Hearing - date to intervene: \_\_\_\_\_

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

|                                                                                                                    |                                     |                                 |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------|
| Mail to:<br>Water Rights Program<br>Joe Foss Building<br>523 E. Capitol<br>Pierre, SD 57501-3181<br>(605) 773-3352 | No. <u>7328-3</u> (office use only) | Hydrologic Unit <u>10170202</u> |
|                                                                                                                    | Basin <u>SiouX River</u>            |                                 |
|                                                                                                                    | Newspaper <u>Grant Co. Review</u>   | <u>P.O. Box 390</u>             |
|                                                                                                                    | <u>605-432-4516</u>                 | <u>Millbak 57252</u>            |

**RECEIVED**  
**FEB 27 2012**  
**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.) \_\_\_\_\_

- Name of Applicant Marvin Amdahl Phone 605-398-6579  
(check one) ☒ Owner ☐ Tenant/lessee  
Mailing Address 45138 180th Str. Ortle State SD 57256  
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed 1.78 \*CFS or 800 \*\*GPM \*\*\*AF Total Acreage 142  
(\*Cubic Feet per Second) (\*\*Gallons per Minute) (\*\*\*)Acre Feet - storage capacity of dam/dugout or annual use if applicable,
- Source of water supply well
- Location of point of diversion (example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W) 1 well NW 1/4 of NE 1/4 of  
section 4 T-120-N-R-52-W  
4 wells N 1/2 of NE 1/4 sec 4 County Grant
- County or counties where water will be used Grant
- Annual period during which water is to be used Summer May 1 - Sept. 30
- List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.  
(Attach sheet if more space is needed)

| Land Description       | Acres | Land Description       | Acres |
|------------------------|-------|------------------------|-------|
| NW 1/4 of NW 1/4 Sec 4 | 19.5  | NW 1/4 of NE 1/4 Sec 4 | 40    |
| NE 1/4 of NW 1/4 Sec 4 | 19.5  | NE 1/4 of NE 1/4 Sec 4 | 19.5  |
| SW 1/4 of NW 1/4 Sec 4 | 2.0   | SW 1/4 of NE 1/4 Sec 4 | 19.5  |
| SE 1/4 of NW 1/4 Sec 4 | 19.5  | SE 1/4 of NE 1/4 Sec 4 | 20    |

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

Proposed project is for a windshield wiper irrigation project on the North half of Section 4. See attached map

**STATE OF SOUTH DAKOTA)** SS  
County of Roberts

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach map and any other technical information. (see instructions)

I, Marvin Amdahl, the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

Applicant's signature Marvin Amdahl

Subscribed and sworn to before me this 24th day of February 20 12

Notary Public signature

Commission expires 1-9-13

**SOUTH DAKOTA  
WATER PERMIT NO. 7328-3**

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Date of first receipt of application February 27, 2012.

Date of return to applicant for corrections, amendments or changes February 27, 2012.

Date of receipt of corrected application March 5, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7328-3 to Marvin Amdahl, 45138 150<sup>th</sup> St, Ortleigh SD 57256 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. 7328-3 appropriates a total of 1.78 cubic feet of water per second (cfs) from five wells for irrigation of 162 acres located in the N ½ Section 4; all in T120N-R52W. One of the wells will be completed into the Prairie Coteau (142 feet deep) located in the NW ¼ NE ¼ of Section 4 appropriating 0.57 cfs. The remaining four wells will be completed into the Big Sioux:North Aquifer (45 feet deep) in the N ½ NE ¼ Section 4 for the remaining appropriation of 1.21 cfs. The wells and acreage are located within the former boundaries of the Sisseton Wahpeton Indian Reservation.
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 27, 2012.
4. The date of approval of Permit No. 7328-3 is April 23, 2012.
5. One-fifth of the construction is to be completed on or before October 23, 2014.
6. All construction is to be completed on or before April 23, 2017.
7. Water is to be put to beneficial use on or before April 23, 2021.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

**QUALIFICATIONS**

1. The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 7328-3 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: Garland Erbele

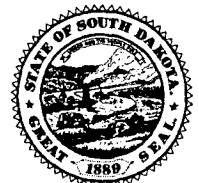
Garland Erbele, Chief Engineer

Water Rights Program

Department of Environment and Natural Resources

**MAY 08 2012**

date



## Supplemental Information

(type or print in ink)

### 1. Well Information - Proposed Construction

- a) Drill Hole Diameter 12" Depth 150'
- b) Casing Type 8" PVC Diameter 8" Thickness 1/2 wall
- c) Screen Type PVC Diameter 8" Thickness 1/2 wall
- d) Gravel Pack Red Flint Length of Gravel Pack 30'
- e) Depth to Top of Water Bearing Material 117'
- f) Depth to Water (ground surface to water level) 0 → 117'
- g) Distance to nearest existing domestic well: 350 yards
- On applicants property yes On property owned by others \_\_\_\_\_

### 2. Wastewater Disposal System Information

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

### 3. Dugout Information

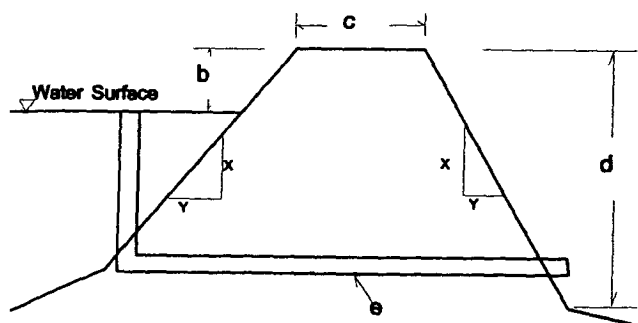
- a) Surface Dimensions \_\_\_\_\_ Depth \_\_\_\_\_
- b) Depth to water (ground surface to water level) \_\_\_\_\_

### 4. Water Storage Dams

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

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

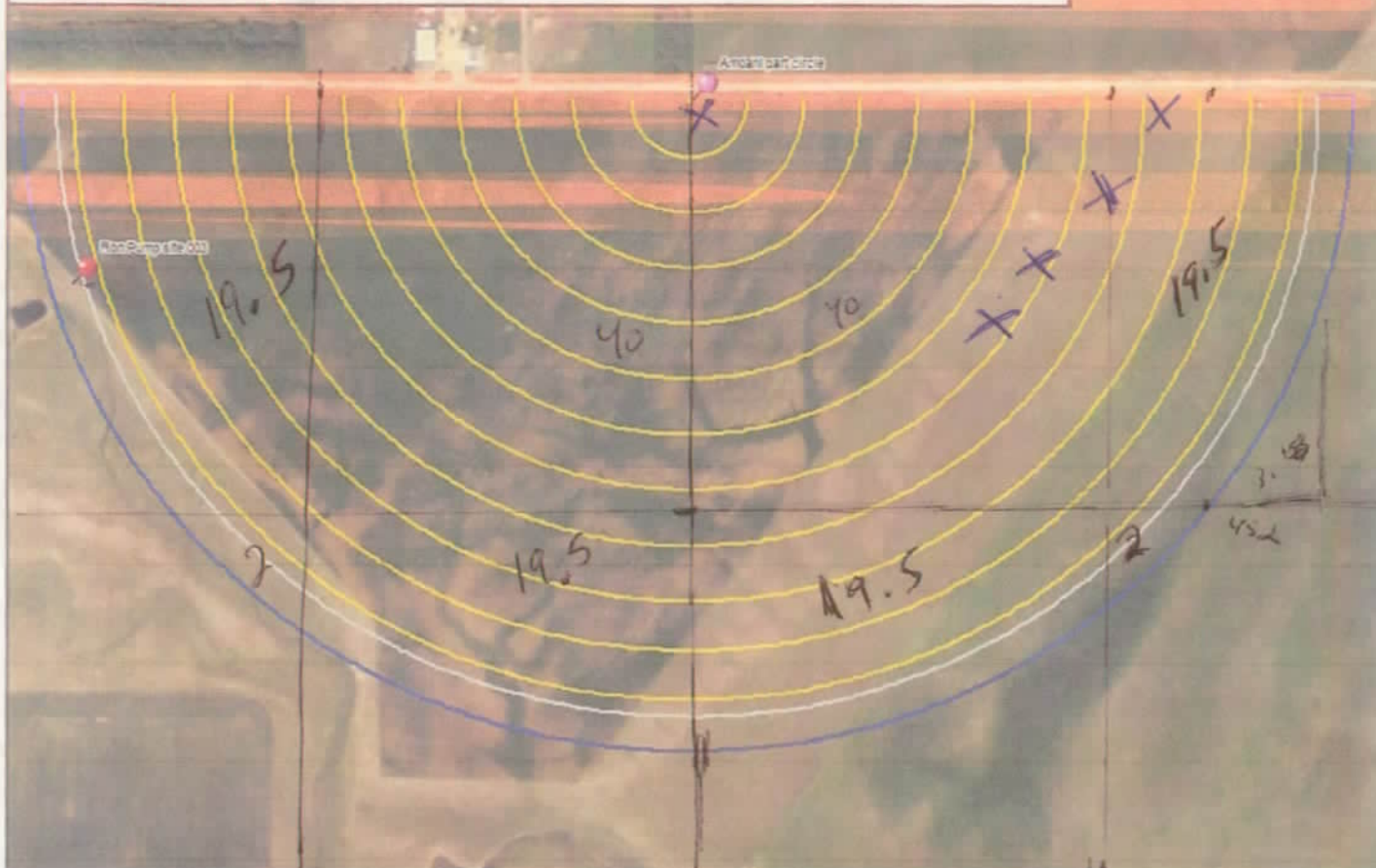
\_\_\_\_\_  
\_\_\_\_\_



- b) Freeboard \_\_\_\_\_
- c) Crest Width \_\_\_\_\_  
Crest Length \_\_\_\_\_
- d) Height \_\_\_\_\_
- e) Primary Outlet Capacity \_\_\_\_\_  
If pipe, diameter \_\_\_\_\_
- f) Secondary Spillway Capacity \_\_\_\_\_  
Spillway Width \_\_\_\_\_
- g) X & Y Slope \_\_\_\_\_  
Upstream \_\_\_\_\_  
Downstream \_\_\_\_\_
- h) Surface Area of Impoundment \_\_\_\_\_
- i) Storage \_\_\_\_\_ Acre Feet
- j) Drainage Area Above Dam \_\_\_\_\_ Acres



# INMAN IRRIGATION



## Design : PartCircle 1

Pivot + Flex Point  
9 spans at 180.0'  
2 spans at 160.0'  
54.8 | 7K-8K Overhang  
110 | SR100 EndGun

Pivot+Flex point : 2 ft  
Spans : 1940 ft  
Overhang : 54.8 ft  
Total : 1996.8 ft  
Endgun : 110 ft

Spans : 136.9 ac  
EndGun : 16.4 ac  
Overhang : 7.789 ac

Total irrigated Area : 161.1 ac

# VALLEY

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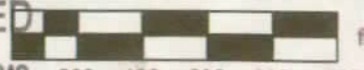


9.14

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MAR - 5 2012

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Date Zoom 14.7

Data use subject to license.

© DeLorme, XMap® 7.

www.delnorme.com



United States Department of Agriculture  
Farm Service Agency

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November 10, 2011

FEB 27 2012

**Grant County SD**

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**PLSS: 4\_120N\_52W**

**2012**

**Farm: 4624**

Grant County FSA CED

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

2010 Ortho-Photography - Not to Scale

*Handwritten signature*  
County Executive Director

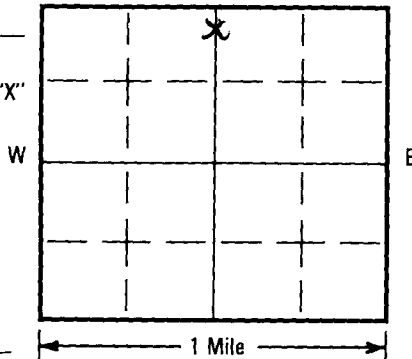


## SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  Sec 4 Twp 120 Rg 51-52 W  
 County Grant

Please mark well location with an "X"



Well Completion Date

2-14-12

## LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 1000 ft. from Abandoned well (identify source).

## PROPOSED USE:

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

## METHOD OF DRILLING:

Forward RotaryCASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe \_\_\_\_\_

PIPEWEIGHT DIAMETER FROM TO HOLE DIAMETER  
200 LB/FT 8 IN 1 FT 122 FT 12 3/4 IN  
 \_\_\_\_\_ LB/FT \_\_\_\_\_ IN \_\_\_\_\_ FT \_\_\_\_\_ FT \_\_\_\_\_ IN  
 \_\_\_\_\_ LB/FT \_\_\_\_\_ IN \_\_\_\_\_ FT \_\_\_\_\_ FT \_\_\_\_\_ IN

## GROUTING DATA

Grout Type No. of Sacks Grout Weight From To  
Portonite 16 9.5 lb./gal 0 ft 11.7 ft  
 \_\_\_\_\_ lb./gal \_\_\_\_\_ ft \_\_\_\_\_ ft

Describe grouting procedure Pumped Through Tremie  
line

SCREEN: ☐ Perforated pipe ☒ ManufacturedDiameter 8 IN Length 20 FEETMaterial PVCSlot Size 1030 Set From 122 Feet to 142 Feet

Other information \_\_\_\_\_

WAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material? \_\_\_\_\_

Describe packer(s) and location? \_\_\_\_\_

DISINFECTION: Was well disinfected upon completion?

☒ YES, How: Chlorine\_\_\_\_\_  
 NO, Why Not? Added

Laboratory sent to for water quality analysis

ADSCUWell Owner: Marvin Andah

Business Name: \_\_\_\_\_

Address: 45138 150<sup>th</sup>  
Ortley, SD 57256

## WELL LOG:

| FORMATION                  | DEPTH      |            |
|----------------------------|------------|------------|
|                            | FROM       | TO         |
| <u>Topsoil</u>             | <u>0</u>   | <u>1</u>   |
| <u>Sand &amp; Gravel</u>   | <u>1</u>   | <u>15</u>  |
| <u>Blue clay</u>           | <u>15</u>  | <u>40</u>  |
| <u>Yellow clay</u>         | <u>40</u>  | <u>80</u>  |
| <u>Hard Blue clay</u>      | <u>80</u>  | <u>121</u> |
| <u>Fine to Medium Sand</u> | <u>121</u> | <u>142</u> |
|                            |            |            |
|                            |            |            |
|                            |            |            |

STATIC WATER LEVEL 6' 4" Feet

If flowing: closed in pressure \_\_\_\_\_ PSI

GPM flow \_\_\_\_\_ through \_\_\_\_\_ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other \_\_\_\_\_

Reduced Flowrate \_\_\_\_\_ GPM

Can well be completely shut in? \_\_\_\_\_

## WELL TEST DATA:

☒ PumpedDescribe: Pumped with 25 HP☐ Bailed400 GPM submersible☐ Otherfor 50 hours

Pumping Level Below Land Surface

116 ft. After 50 Hrs. pumped 255 GPM

\_\_\_\_\_ ft. After \_\_\_\_\_ Hrs. pumped \_\_\_\_\_ GPM

If pump installed, pump rate \_\_\_\_\_ GPM

REMARKS well continued to Drawdown  
throughout the Pump testThis well was drilled under license # 285

And this report is true and accurate.

Drilling firm Manikowski Well Drilling IncSignature of License Representative: [Signature]

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Signature of Well Owner or Equitable Property Holder: \_\_\_\_\_

FEB 27 2012

WATER RIGHTS  
PROGRAMDate: 2-20-12

## SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW 1/4 NE 1/4 Sec 4 Twp 120 Rg 51-52

County

Grant

North

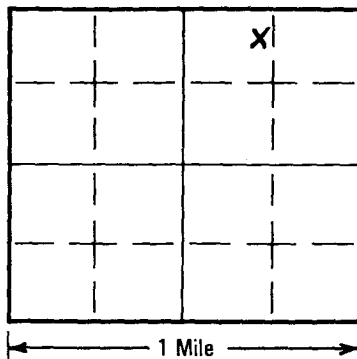
Please mark well location with an "X"

W

E

Well-Completion Date

2-17-12



## LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 2500 ft. from Abandoned well (identify source).

## PROPOSED USE:

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

## METHOD OF DRILLING:

Forward Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe \_\_\_\_\_

| PIPEWEIGHT  | DIAMETER | FROM     | TO       | HOLE DIAMETER |
|-------------|----------|----------|----------|---------------|
| 200 LB/FT   | 4 IN     | 1 FT     | 22 FT    | 6 3/4 IN      |
| _____ LB/FT | _____ IN | _____ FT | _____ FT | _____ IN      |
| _____ LB/FT | _____ IN | _____ FT | _____ FT | _____ IN      |

## GROUTING DATA

| Grout Type | No. of Sacks | Grout Weight  | From     | To       |
|------------|--------------|---------------|----------|----------|
| Bentonite  | 1            | 9.5 lb./gal   | 0 ft     | 15 ft    |
| _____      | _____        | _____ lb./gal | _____ ft | _____ ft |

Describe grouting procedure Pumped through tremie pipe

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 4 IN Length 20 FEET

Material PVC

Slot Size .020 Set From 22 Feet to 42 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?

X YES, How: Chlorine

Laboratory sent to for water quality analysis \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Well Owner: Marvin Andahl

Business Name: \_\_\_\_\_

Address: 45138 150th St  
Ortley, SD 57256

## WELL LOG:

## DEPTH

## FORMATION

## FROM

## TO

|               |    |    |
|---------------|----|----|
| Topsoil       | 0  | 1  |
| Yellow clay   | 1  | 6  |
| Sand & Gravel | 6  | 42 |
| Blue clay     | 42 | 45 |
|               |    |    |
|               |    |    |
|               |    |    |
|               |    |    |
|               |    |    |

STATIC WATER LEVEL 15 Feet

If flowing: closed in pressure \_\_\_\_\_ PSI

GPM flow \_\_\_\_\_ through \_\_\_\_\_ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other \_\_\_\_\_

Reduced Flowrate \_\_\_\_\_ GPM

Can well be completely shut in? \_\_\_\_\_

## WELL TEST DATA:

☒ Pumped

Describe: Pumped with centrifugal pump

☐ Bailed☐ Other

Pumping Level Below Land Surface

18.5 ft. After 1 Hrs. pumped 75 GPM

\_\_\_\_\_ ft. After \_\_\_\_\_ Hrs. pumped \_\_\_\_\_ GPM

If pump installed, pump rate \_\_\_\_\_ GPM

## REMARKS

This well was drilled under license # 235

And this report is true and accurate.

Drilling firm Meritours Well Drilling Inc

Signature of License Representative:

\_\_\_\_\_

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Signature of Well Owner or Equitable Property Holder: FEB 27 2012

WATER RIGHTS PROGRAM

Date: 1-21-12

# RECEIPT

## WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 2/27, 20 12

RECEIVED OF Marvin Amdahl 45138 150th St Ortley SD 57256

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

|                                                                                                                        |       |         |
|------------------------------------------------------------------------------------------------------------------------|-------|---------|
| Fee for Application for Permit No. <u>7328-3</u> to Appropriate Water, to construct and to put water to beneficial use | 850   | 00      |
| Fee for Application for Permit No. _____ to Appropriate Water for Future use                                           |       |         |
| Fee to retain Future Use Permit No. _____ after period of seven years.                                                 |       |         |
| Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>7328-3</u>            | 200   | 00      |
| Fee for Filing Transfer Form _____                                                                                     |       |         |
| Fee for _____                                                                                                          |       |         |
| Fee for Issuing New Well Driller's License No. _____ for C.Y. _____                                                    |       |         |
| Fee for Renewal of Well Driller's License No. _____ for C.Y. _____                                                     |       |         |
| Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____                                                 |       |         |
| Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____                                              |       |         |
| (Any Other Work Provided by Law)                                                                                       | TOTAL | 1050 00 |

No. 05363

By Garland Erbe  
Chief Engineer



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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)

February 27, 2012

Marvin Amdahl  
45138 150<sup>th</sup> St  
Ortley SD 57256

Dear Mr. Amdahl:

Thank you for submitting the *Application for a Permit to Appropriate Water* for irrigation of 161 acres in Grant 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 locations of the five wells with an "X".

If you have any questions, please contact me.

Sincerely,

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

enclosure

Water Rights Program - DENR  
Conversation File Documentation

NAME OF PERSON OR FILE: Water Permit Application No. 7338-3. Marvin Amdahl

ADDRESS: 45138 150<sup>th</sup> Street, Ortley SD 57256      COUNTY: Grant County

DATE: March 6, 2012      TELEPHONE:

RE: proposed water source

Upon receiving Mr. Amdahl's application I contacted him to discuss the water source. Primarily, two well completion reports were filed with one being 45 feet (BS:N Aquifer) and the other being 142 feet (PCO Aquifer). I asked what formation he intended to develop into. Mr. Amdahl stated that the primary well at the pivot center as shown on the map will be the deeper 142 foot well and the other four wells will be completed into the shallower BS:N Aquifer.

I asked about the diversion rate and he indicated that deeper well would be capable of 255 gpm with the remainder coming from the shallow wells.

NAME: Eric Hembler



**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. 7328-3, Marvin Amdahl**

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. 7328-3, Marvin Amdahl, 45138 150<sup>th</sup> Street, Ortle SD 57256.

The Chief Engineer is recommending APPROVAL of Application No. 7328-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 7328-3 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.

Garland Erbele, Chief Engineer  
March 28, 2012

NOTE: This application proposes to irrigate from two aquifers. If approved, it will be the permit holder's responsibility when submitting the annual water use questionnaire to report the amount diverted from each aquifer. The questionnaire is sent to permit holders at the conclusion of the irrigation season each fall.

REPORT TO THE CHIEF ENGINEER  
ON  
WATER PERMIT APPLICATION NO.7328-3  
MARVIN AMDAHL  
MARCH 16, 2012

Water Permit Application No. 7328-3 proposes to appropriate 0.57 cubic feet of water per second (cfs) from one well completed into the Prairie Coteau aquifer (approximately 142 feet deep) located in the NW¼ NE¼ of Section 4, T120N-R52W and 1.21 cfs from four wells completed into the North management unit of the Big Sioux aquifer (approximately 45 feet deep) located in the N ½ NE¼ of Section 4, T120N-R52W. The total diversion (1.78 cfs) will be used to irrigate 162 acres located in the N ½ of Section 4, T120N-R52W. The wells and the acreage proposed by this application are all located within the former boundaries of the Sisseton Wahpeton Indian Reservation.

**AQUIFERS: Prairie Coteau (PCO) and Big Sioux: North (BS:N)**

**SDCL 46-2A-9**

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued 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 address water availability and existing rights issues only.

**WATER AVAILABILITY:**

This application proposes to appropriate 0.57 cfs from the Prairie Coteau aquifer and 1.21 cfs from the Big Sioux North aquifer. Assuming the volume of water appropriated from each aquifer is proportional to the respective diversion rates, approval of this application would appropriate 103.75 acre-feet annually from the Prairie Coteau aquifer and 220.25 acre-feet annually from the Big Sioux:North aquifer. The actual water use if this application is approved will be less than the appropriation (324 acre-feet/year). The probability of unappropriated water available from each aquifer can be evaluated by considering SDCL 46-6-3.1 which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source."

**PRAIRIE COTEAU AQUIFER**

**General:**

Hedges and others, (1982) identified the intermediate (i.e. neither basal nor surficial) outwash in this area as the Prairie Coteau aquifer and estimated that it underlies over 50,100 acres of Codington and Grant Counties. More in-depth mapping of the area was done in 1991 and the Prairie Coteau aquifer was estimated to underlie 760 square miles of Codington and Grant Counties (Hansen, 1990). However, Thompson (2001) interpreted test-hole and water level data for the area and concluded that the Prairie Coteau is not a continuous aquifer, but "a group of discontinuous outwash deposits found in the 1,610- to 1,800-foot altitude interval." The outwash

consists of coarse sand and fine gravel. The Prairie Coteau is under confined conditions and there are flowing wells in this area. The depth and thickness of the outwash vary considerably, with the thickness ranging from 11-41 feet in the vicinity of this well site (Thompson, 2001). A completion report for the irrigation well that was submitted with this application identifies 21 feet of fine to medium sand beginning 121 feet below land surface. The completion report identifies a static water level of 6.3 feet below grade and indicates a pumping level of 116 feet below grade after 50 hours of pumping at a rate of 255 gallons per minute. The driller commented on the completion report that “well continued to Drawdown Throughout [sic] the Pump test”. Since the well was not capable of sustaining a rate of 255 gpm for the 50 hour pump test. Economics may dictate whether it is viable to irrigate from the Prairie Coteau aquifer at this location. The maximum specific capacity of the well is only 2.325 (gal/min)/ft and the Transmissivity calculated from the Specific Capacity would be 4,650 gal/day/ft (“Transmissivity From Specific Capacity”). Selected aquifer characteristics from nearby wells completed into the Prairie Coteau aquifer in this area are shown in table 1.

| Water Permit/Right No.                         | Specific Capacity            | Transmissivity (gal/day/ft)                                                              |
|------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------|
| 7036-3                                         | 8.33 (gal/min)/ft @800 gpm   | 16,600*                                                                                  |
| 5378-3                                         | 36.47 (gal/min)/ft @1200 gpm | 72,940*                                                                                  |
| 4184-3                                         | 20.83 (gal/min)/ft @1010 gpm | T= 39,000-49,200<br>S= $2.19 \times 10^{-5}$ to $3.87 \times 10^{-4}$<br>(Goodman, 1978) |
| 6100-3 (two wells)                             | 3.6 (gal/min)/ft @25 gpm     | 7,200*                                                                                   |
|                                                | 2.14 (gal/min)/ft @150 gpm   | 4,200*                                                                                   |
| * from “Transmissivity From Specific Capacity” |                              |                                                                                          |

Table 1. Selected aquifer characteristics from nearby wells completed into the Prairie Coteau aquifer in this area

### Recharge versus Withdrawals:

#### Recharge:

Recharge to the Prairie Coteau aquifer occurs through direct infiltration and subsequent percolation of rainfall and snowmelt in areas in western Codington County where the aquifer is near land surface. Recharge to the aquifer also may be by leakage from the Big Sioux aquifer, and/or leakage from the glacial till (Hansen, 1990). Average annual recharge using observation well analysis is estimated to be 4.9 inches per year for the unconfined portions of the aquifer (Hedges and others, 1985). The total average annual recharge to the Prairie Coteau outwash this application proposes to use has not been quantified.

#### Withdrawals:

Discharge from the Prairie Coteau aquifer is by: (1) Irrigation wells, (2) stock-watering and domestic wells, and (3) possibly to Long Lake in western Codington County (Hansen, 1990)

There are 65 Water Rights/Permits appropriating water from the Prairie Coteau aquifer. However, as mentioned earlier, the Prairie Coteau should probably not be considered a single continuous aquifer. The areal extent of the outwash deposit this application proposes to use has not been delineated therefore total withdrawal from the unit is unknown.

At this time it is not possible to quantify the total recharge to or the discharge from the aquifer this application proposes to utilize. Therefore, although it is likely that withdrawals do not

exceed recharge, a number cannot be assigned to the volume of water that remains available for appropriation from this aquifer.

**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 DENR-Water Rights Program monitors 59 observation wells completed into the Prairie Coteau aquifer. Thirteen of these observation wells are located within approximately seven miles of the well site proposed by this application and five of these wells are within 3.5 miles of this well site. Hydrographs for these observation wells are shown in figures 1-5.

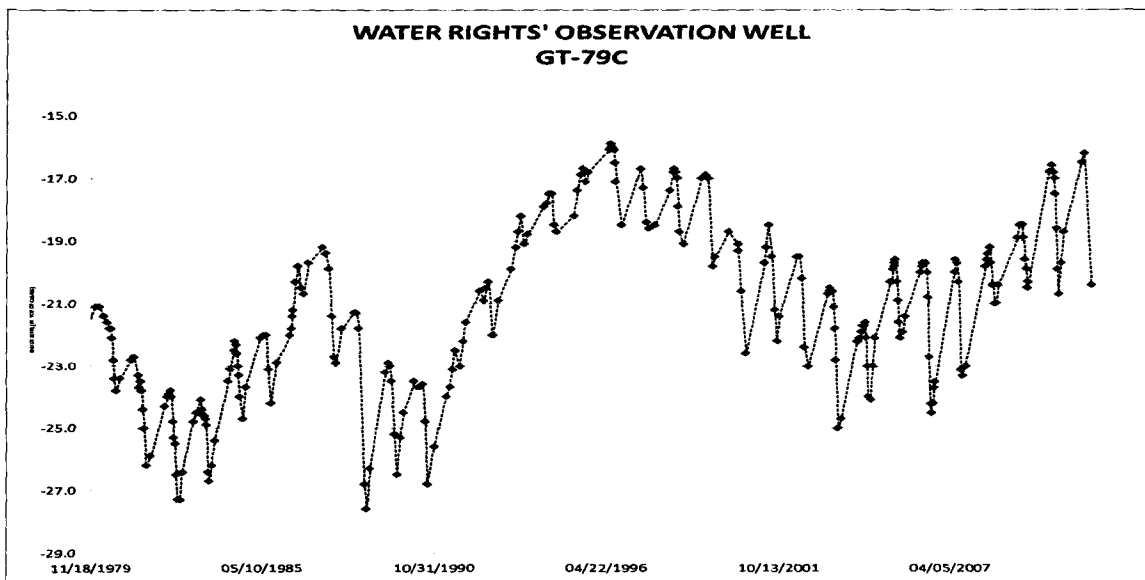


Figure 1. Hydrograph of DENR-Water Rights' observation well completed into the Prairie Coteau aquifer located approximately 1.15 miles south-southwest of the well site proposed by Application No. 7328-3

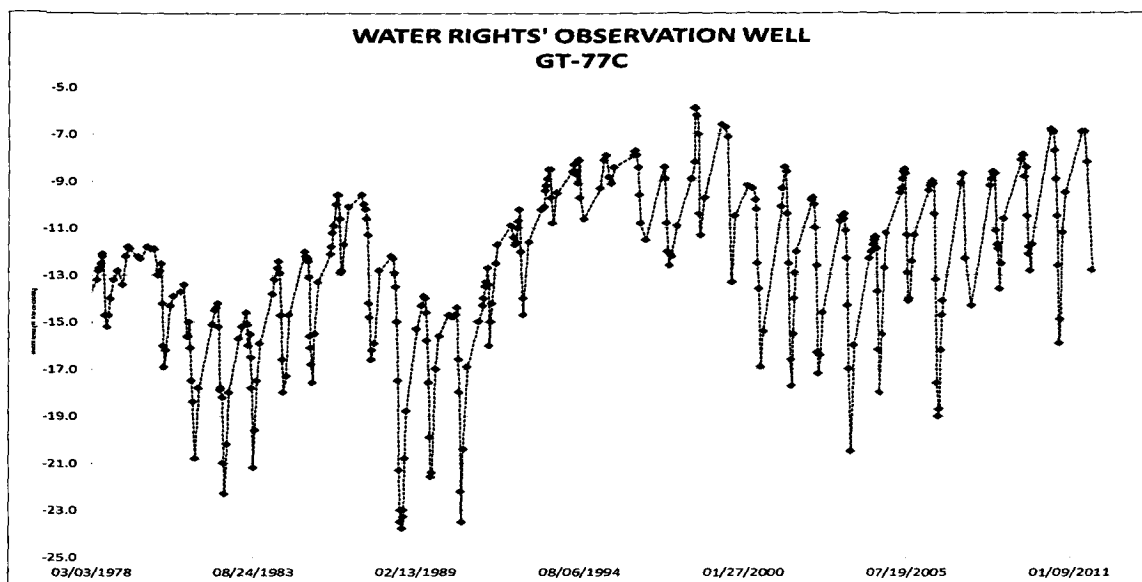


Figure 2. Hydrograph of DENR-Water Rights' observation well completed into the Prairie Coteau aquifer located approximately two miles north-northeast of the well site proposed by Application No. 7328-3

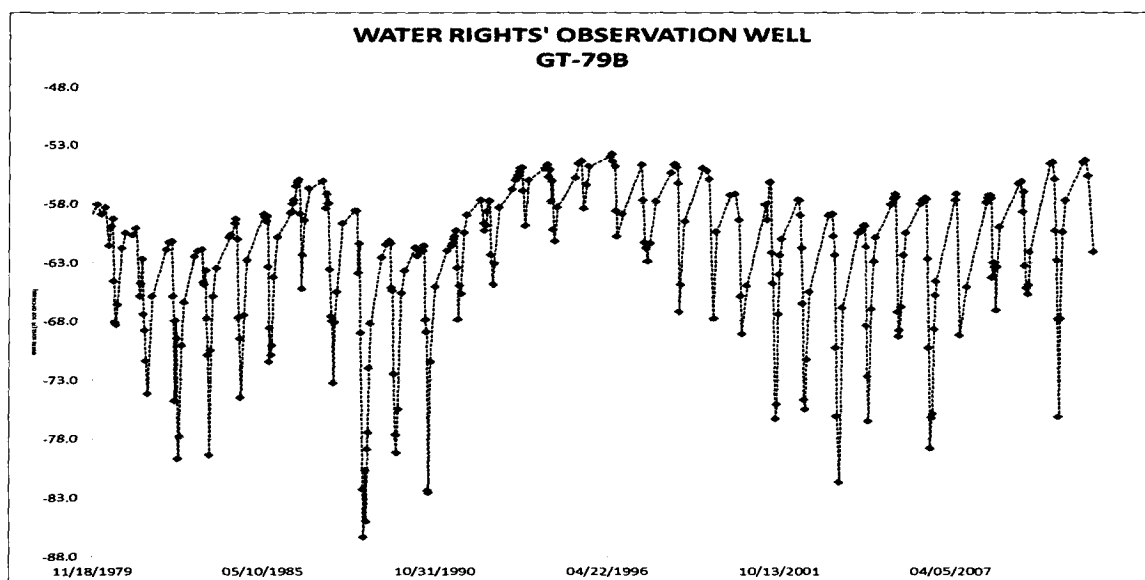


Figure 3. Hydrograph of DENR-Water Rights' observation well completed into the Prairie Coteau aquifer located approximately 2.7 miles east-northeast of the well site proposed by Application No. 7328-3

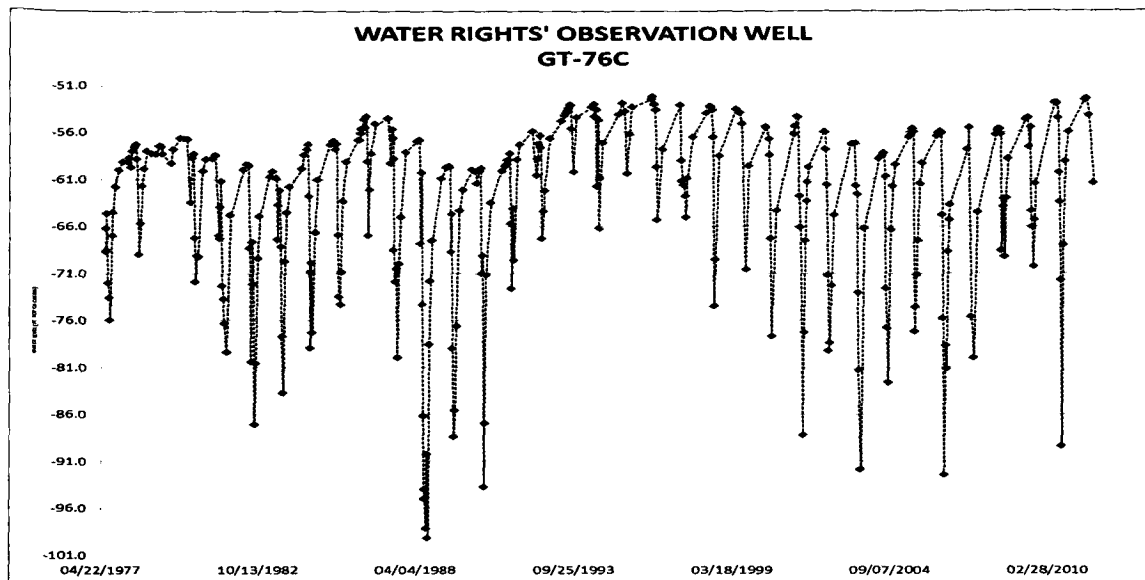


Figure 4. Hydrograph of DENR-Water Rights' observation well completed into the Prairie Coteau aquifer located approximately 3.5 miles east-southeast of the well site proposed by Application No. 7328-3

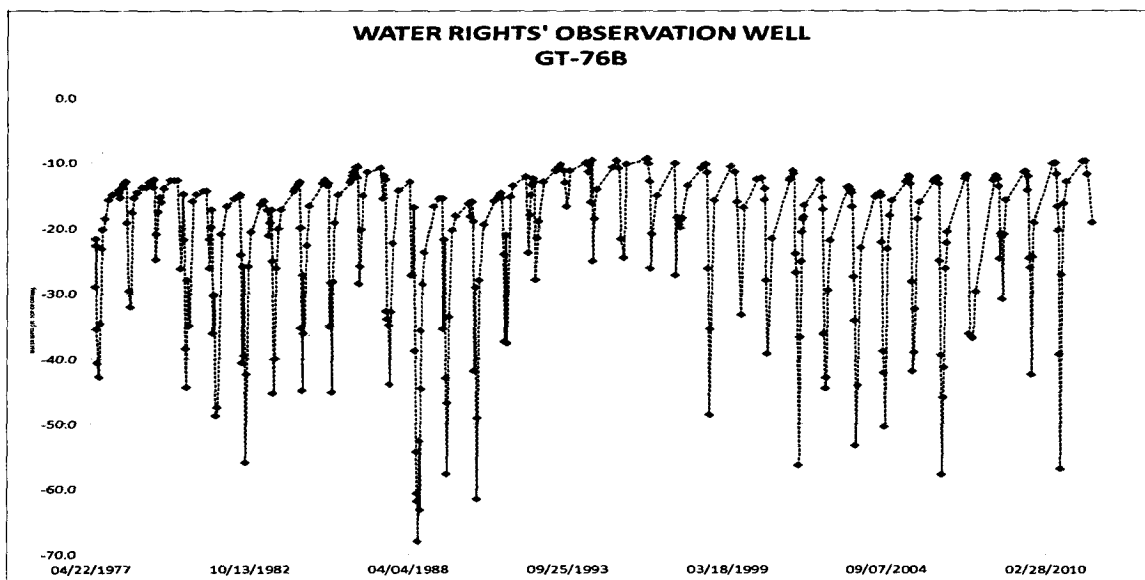


Figure 5. Hydrograph of DENR-Water Rights' observation well completed into the Prairie Coteau aquifer located approximately 3.5 miles southeast of the well site proposed by Application No. 7328-3

The thing most obvious upon examination of the hydrographs is the significant drawdown that occurs annually during the irrigation season. In portions of the aquifer, the annual water level fluctuations exceed 60 feet (see figure 5). The observation well records also show that the water levels recover readily. The hydrographs document that the aquifer shows good response to climatic conditions with wet and dry cycles clearly represented. Recharge to the aquifer is apparent. A linear trendline applied to any of the hydrographs shown in figures 1-5 shows upward trending water levels. In other words, there is more water in storage in this aquifer now

that for the entire period of record for each of the observation wells. The observation well data shows that water use from the aquifer does not exceed average annual recharge to the aquifer and there is a reasonable probability that unappropriated water is available for this proposed appropriation.

#### **EXISTING WATER RIGHTS:**

There are 65 Water Rights/Permits appropriating water from the Prairie Coteau aquifer from nine Counties. However, as noted above, it is unlikely that the Prairie Coteau is a single continuous aquifer. There are 10 Water Rights/Permits appropriating water from the Prairie Coteau aquifer within approximately four and one-half miles of the well site proposed by this application and more likely to be completed into the same outwash deposit. They are shown in table 1.

| <b>PERMIT NO</b> | <b>NAME</b>                   | <b>STATUS</b> | <b>USE</b> | <b>CFS</b> | <b>ACRES</b> |
|------------------|-------------------------------|---------------|------------|------------|--------------|
| 2733-3           | CHERYL BERGER                 | LC            | IRR        | 2.8        | 196          |
| 4184-3           | INA C KAHNKE                  | LC            | IRR        | 2.67       | 243          |
| 5378-3           | ENDRES FAMILY TRUST           | LC            | IRR        | 1          | 70           |
| 6100-3           | NORSWISS DAIRY                | LC            | COM        | 0.267      | NA           |
| 6533-3           | REDLIN FARMS                  | PE            | COM        | 0.033      | NA           |
| 7036-3           | JAMES AND JOHNNYLEE WOHLLEBER | PE            | IRR        | 2          | 130          |
| 7065-3           | JAMES AMDAHL                  | PE            | IRR        | 3.78       | 264          |
| 7242-3           | ROLLIN J MOREHOUSE            | PE            | IRR        | 4.29       | 300          |

Table 2. Water Rights/Permits appropriating water from the Prairie Coteau aquifer within approximately four and one-half miles of 7328-3.

Early development of the Prairie Coteau aquifer in this area was accompanied with controversy. Domestic wells completed into the Prairie Coteau aquifer were affected by irrigation pumping with the most noticeable affect being that flowing wells ceased flowing or had diminished flow during the irrigation season. One of the most controversial domestic wells in the area was located about three miles south of the well site proposed by this application (Goodman, 2008).

The water rights/permits shown in table 2 were all uncontested with the exception of Water Right No. 4184-3. In 1978, Water Right No. 4184-3 was opposed by 26 interveners based on their concerns that water levels in the aquifer would be lowered by irrigation pumping and domestic wells would be harmed. The Water Permit was approved with only the standard “domestic well interference” qualification. The only record of a complaint regarding the operation of this water right/permit was received in 1988. The complaint concerned overspray from the center pivots onto roads and general concerns about the aquifer water levels in Codington and Grant Counties. The only other complaint on file concerning the water rights/permits shown in table 1 involved overspray associated with Water Right No. 5378-3. In general, in spite of the drawdown that has accompanied irrigation in this area, development has not produced a lot of controversy.

In July 1995, the Water Management Board (WMB) denied Water Permit Application No. 5407-3 which proposed irrigation from the Prairie Coteau aquifer about seven miles east of the well site proposed by Application No. 7328-3, on account of public interest. Originally (May 1990) the WMB deferred consideration of the application for two years to “determine well interference

possibilities to domestic wells in the area.” The application was ultimately denied when “the applicant failed in his burden to show the application was in the public interest when he failed to appear to explain to the Board’s satisfaction why the objections to the permit, which appear on their face to be significant, were not valid.”

The nearest existing appropriation from the Prairie Coteau aquifer to the well site proposed by Application No. 7328-3 is Water Permit No. 7065-3, James Amdahl. Water Permit No. 7065-3 authorizes two wells within one-half mile northeast of the well proposed by this application. Observation well data shows that there will be measureable interference to the wells that supply Water Permit No. 7065-3 if application No. 7328-3 is approved and developed. A coordinated effort between the holders of Permit Nos. 7065-3 and 7328-3 could maximize the beneficial use of the Prairie Coteau aquifer for irrigation in this area and it is not unrealistic to think that the three wells for the two permits can be utilized without an adverse impact.

## **BIG SIOUX: NORTH**

### **General**

The North management unit of the Big Sioux aquifer is an alluvium mantled, poorly to well-sorted, surficial outwash deposit, consisting of medium sand to medium gravel, located primarily in the flood plain of the Big Sioux River. The Big Sioux:North is a surficial aquifer that is generally under unconfined conditions. Groundwater movement in the aquifer is generally to the south and toward the Big Sioux River. The North management unit is hydraulically connected to Lake Kampeska, Pelican Lake, Still Lake and the Big Sioux River. The management unit extends from near Ortleigh, SD at the north, to near Castlewood, SD at the southern limit; underlying approximately 83,500 acres of Codington, Grant, Hamlin and Roberts Counties (Hedges and others, 1982). The Big Sioux: North contains an estimated 187,880 acre-feet of recoverable water in storage (Hedges and others, 1982). The aquifer ranges from 2-54 feet thick (Putnam and Thompson, 1996). The completion report submitted with this application indicates the outwash extends from 6-42 feet below grade at this site. The static water level of the test well was reported to be 15 feet below grade and the pumping level was reported to be 18.5 feet at a pumping rate of 75 gallons per minute. The transmissivity of the aquifer based on the specific capacity of this test well (21.43(gpm)/ft) equates to 32,145 gal/day/ft (“Transmissivity From Specific Capacity”)

### **Recharge versus Withdrawals:**

#### **Recharge:**

Recharge to the Big Sioux: North occurs through infiltration and percolation of precipitation falling on the surface of the outwash. Since the aquifer is hydraulically connected to some area lakes and the Big Sioux River, recharge is provided to the aquifer during times of high runoff when surface water levels are higher than groundwater levels.

Several estimates have been made of the Big Sioux:North recharge rate. Hansen (1990) estimated recharge to the Big Sioux aquifer to be 4-10 inches per year (in/yr). Recharge rates calculated for the various management units of the Big Sioux aquifer range from 2.7 to 6.9 in/yr if flow-net analysis is ignored (Hedges and others, 1985). Putnam and Thompson (1996) estimated the average annual recharge to the Big Sioux: North to be in the approximate range of

2.9-5.8 in/yr. Average annual recharge to the Big Sioux: North was estimated to 5.53 in/yr for the purpose of computer modeling under steady state conditions (Putnam and Thompson, 1996). Given the area of management unit, average annual recharge to the aquifer is estimated to be 38,479 acre-feet per year.

This is not to suggest that the entire volume of annual recharge is available for use everywhere in the aquifer or that all of the recoverable water in storage in the aquifer is available for every diversion point. In fact the computer model for the aquifer suggests that during dry conditions, the ability of some high capacity wells to produce would be seriously impacted. The model suggests “The Big Sioux aquifer probably is unable to support extensive irrigation during dry periods such as those that occurred during 1980 and 1981 or in 1976” (Putnam and Thompson, 1996).

#### Withdrawals:

Natural discharge does occur from the Big Sioux:North aquifer to the lakes and rivers when groundwater levels are higher than surface water levels. However, in general, the aquifer discharges to the area surface waters.

There are a number of completion reports on file with the DENR-Water Rights Program for domestic use wells completed into the Big Sioux:North aquifer (Water Rights, 2012b) and there are currently 82 Water Rights/Permits appropriating water from the North management unit of the Big Sioux aquifer (Water Rights, 2012c). Appropriations are for irrigation use (47 appropriations), municipal use (16 appropriations), commercial use (11 appropriations), industrial use (5 appropriations), for suburban housing development use (1 appropriation), and rural water system use (2 appropriations), (Water Rights, 2012d). Note: one of the appropriations for rural system use, No. 5158-3, Sioux Rural Water System, has not been used since 1998. The well field has “basically been abandoned” because of water quality issues (i.e. high concentrations of nitrates) (Anderson). In addition there are three future use permits that reserve a total of 3,469 acre-feet of water annually for the City of Watertown. Reported water use from the Big Sioux: North for municipal, rural water system and irrigation use are shown in tables 3 and 4.

| <b>REPORTED PUMPAGE FROM THE BS:N FOR<br/>MUNICIPAL AND RWS USE (acre-feet/year)</b> |                              |                              |
|--------------------------------------------------------------------------------------|------------------------------|------------------------------|
|                                                                                      | <b>Watertown<sub>1</sub></b> | <b>Clark RWS<sub>2</sub></b> |
| 2011                                                                                 | 3,864.039                    | 143                          |
| 2010                                                                                 | 3,947.148                    | 143                          |
| 2009                                                                                 | 3,735.26                     | 164                          |
| 2008                                                                                 | 3,984.146                    | 127                          |
| 2007                                                                                 | 4,062.464                    | 44                           |
| 2006                                                                                 | 2,960.858                    | N/A                          |
| 2005                                                                                 | 2,391.826                    | N/A                          |
| 2004                                                                                 | 2,125.662                    | N/A                          |
| <i>Max</i>                                                                           | <i>4,062.464</i>             | <i>164</i>                   |
| <i>Ave</i>                                                                           | <i>3,383.925</i>             | <i>124.2</i>                 |
| <sub>1</sub> (Deville)                                                               |                              |                              |
| <sub>2</sub> (Water Rights, 2008-2012)                                               |                              |                              |

Table 3. Reported water use from the Big Sioux: North aquifer for municipal and rural water system use

| BS:N IRRIGATION |                                       |                                   |
|-----------------|---------------------------------------|-----------------------------------|
| YEAR            | APPROPRIATION<br>(ACRE-<br>FEET/YEAR) | PUMPAGE<br>REPORTED<br>(AC-FT/YR) |
| 2010            | 16208.5                               | 2421.27                           |
| 2009            | 15948.5                               | 1773.51                           |
| 2008            | 15498.5                               | 2743.94                           |
| 2007            | 14584.5                               | 3308.79                           |
| 2006            | 15134.5                               | 4285.97                           |
| 2005            | 15250.5                               | 2886.7                            |
| 2004            | 14673.5                               | 2448.79                           |
| 2003            | 14113.5                               | 3662.11                           |
| 2002            | 14129.5                               | 2835.49                           |
| 2001            | 14116                                 | 2558.91                           |
| 2000            | 14116                                 | 3013.88                           |
| 1999            | 14047.6                               | 2593.1                            |
| 1998            | 14117.8                               | 1702.52                           |
| 1997            | 13612.8                               | 1656                              |
| 1996            | 13472.8                               | 1497.96                           |
| 1995            | 14136.8                               | 1186.68                           |
| 1994            | 14151.8                               | 1192.95                           |
| 1993            | 14445.8                               | 865.5                             |
| 1992            | 14311.8                               | 1325.7                            |
| 1991            | 17,240                                | 1659                              |
| 1990            | 22492.8                               | 2520.1                            |
| 1989            | 21096.8                               | 2686.6                            |
| 1988            | 19,564.8                              | 2,740.40                          |
| 1987            | 19564.8                               | 1929.4                            |
| 1986            | 19564.8                               | 1079.1                            |
| 1985            | 19659                                 | 1419.7                            |
| 1984            | 21936.3                               | 1684.5                            |
| 1983            | 21141                                 | 1110.45                           |
| 1982            | 20187                                 | 1384.05                           |
| 1981            | 20814                                 | 1067                              |
| 1980            | 20598                                 | 888                               |
| 1979            | 20598                                 | 912                               |
| <i>Ave</i>      | 16493.5                               | 2032.502                          |
| <i>Max</i>      | 22492.8                               | 4285.97                           |
| <i>Min</i>      | 13472.8                               | 865.5                             |

Table 4. Irrigation from the Big Sioux: North (Water Rights, 1980-2011)

Withdrawals from the North management unit of the Big Sioux aquifer for domestic, commercial, industrial, and suburban housing development uses is expected to be less than 1,000 acre-feet per year, collectively.

There is a portion of the Big Sioux:North aquifer that has been determined to be fully appropriated (Goodman, 1995). Since 12,500 acres of the Big Sioux: North aquifer plus the drainage above the area reserved for future use by Future Use Permit No. 5862-3 was determined to be fully appropriated water permits approved for the area have been approved as temporary use permits pursuant to SDCL 46-5-39. The portion of the aquifer that is fully appropriated is located approximately 14 miles south of the well sites proposed by this application and should not be a factor in considering this application.

In general the average annual withdrawals to the aquifer do not exceed the average annual recharge to the aquifer unappropriated water is available from the BS:N aquifer and in particular, unappropriated water is available for 220.25 acre-feet of water 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 DENR-Water Rights Program monitors 27 observation wells completed into the North management unit of the Big Sioux aquifer. Seven of these observation wells are located within approximately seven miles of the well site proposed by this application and three of these wells are within four and one-half miles of this well site. Hydrographs for the three nearest observation wells are shown in figures 6-8.

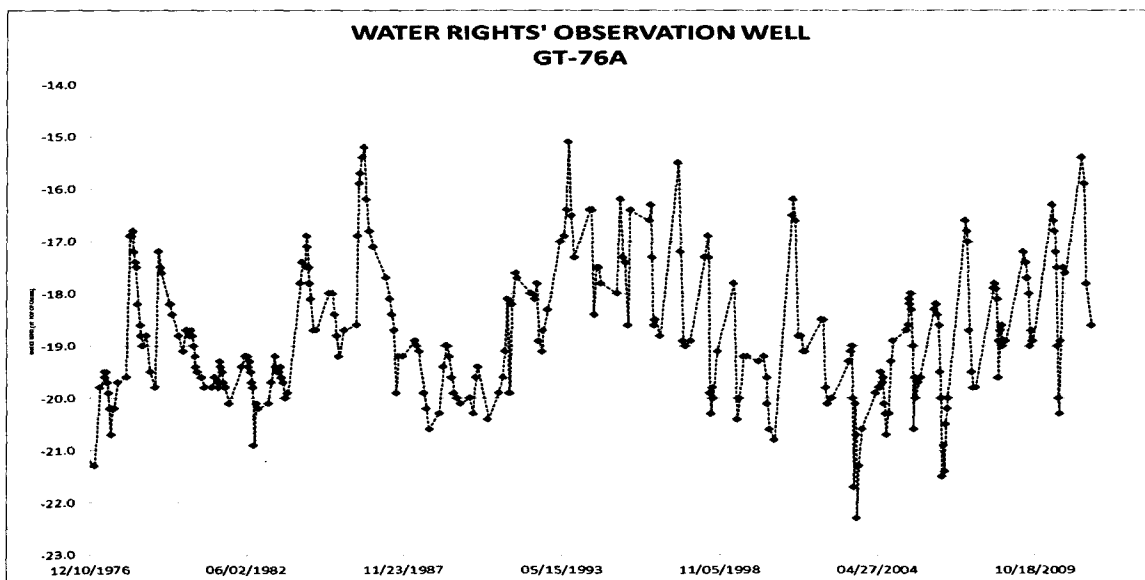


Figure 6. Hydrograph of DENR-Water Rights' observation well completed into the Big Sioux:North aquifer located approximately 4.3 miles north-northwest of the well sites proposed by Application No. 7328-3

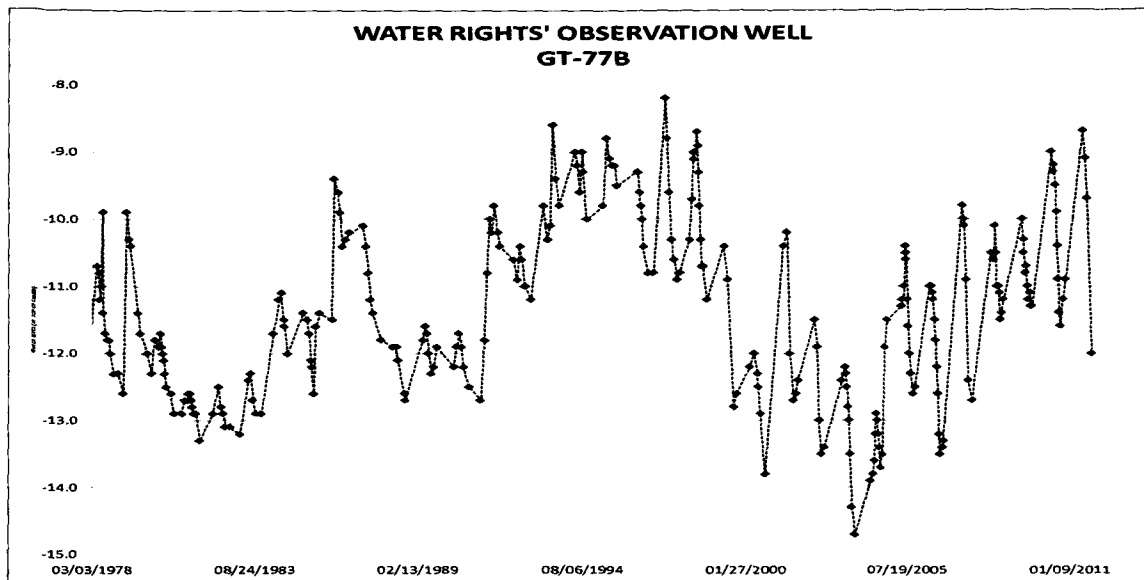


Figure 7. Hydrograph of DENR-Water Rights' observation well completed into the Big Sioux:North aquifer located approximately 2 miles northwest of the well sites proposed by Application No. 7328-3

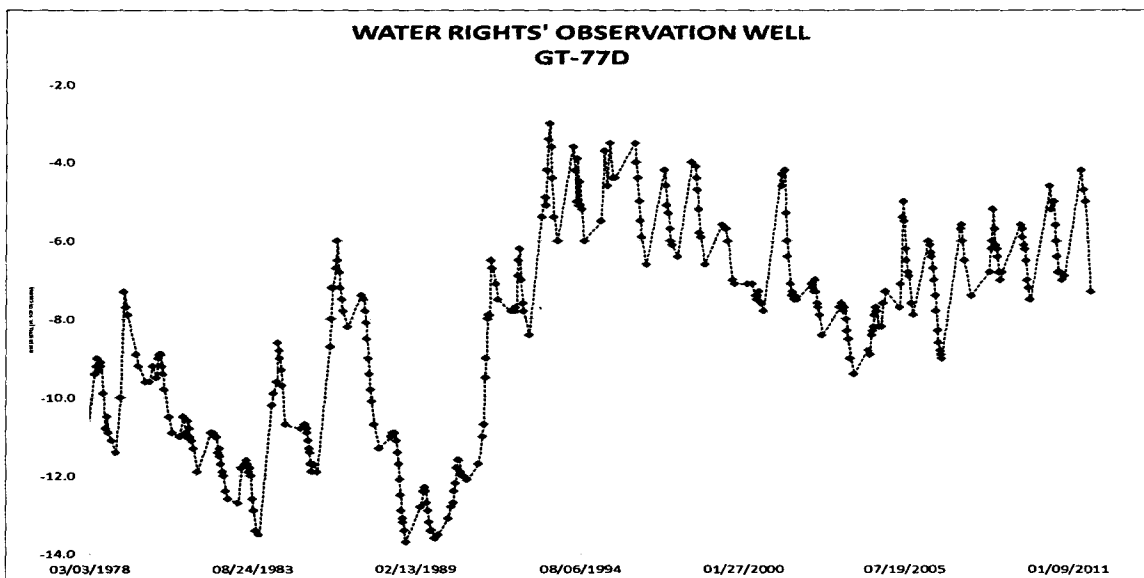


Figure 8. Hydrograph of DENR-Water Rights' observation well completed into the Big Sioux:North aquifer located approximately 2 miles south of the well sites proposed by Application No. 7328-3

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 record verifies that over the period of record, withdrawals have not exceeded recharge and unappropriated water is available for this appropriation.

**EXISTING WATER RIGHTS:**

There are eight water rights/permits appropriating water from the Big Sioux:North aquifer within approximately four and one-half miles from the well sites proposed by this application. They are shown in table 5.

| PERMIT NO | NAME                          | STATUS | USE | CFS  | ACRES |
|-----------|-------------------------------|--------|-----|------|-------|
| 2717-3A   | BRINK BROS INC                | LC     | IRR | 1.66 | 231   |
| 5377-3    | ENDRES FAMILY TRUST           | LC     | IRR | 2.49 | 174   |
| 5968-3    | DON ENDRES                    | LC     | IRR | 2.11 | 132   |
| 6030-3    | ENDRES FAMILY TRUST           | LC     | IRR | 2.12 | 132   |
| 6098-3    | CHERYL BERGER                 | LC     | IRR | 2    | 110   |
| 6099-3    | ENDRES FAMILY TRUST           | LC     | IRR | 2.11 | 132   |
| 6837-3    | JAMES AND JOHNNYLEE WOHLLEBER | PE     | IRR | 2.22 | 130   |
| 7257-3    | JAMES AMDAHL                  | PE     | IRR | 3    | 264   |

Table 5. Water rights/permits appropriating water from the Big Sioux:North aquifer within approximately four and one-half miles of the well sites proposed by this application.

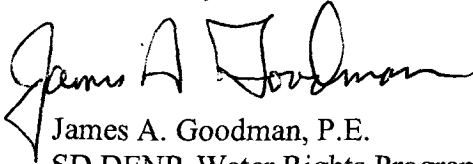
The nearest existing water permit to sites proposed by this application (No. 7257-3) is supplied by two wells, a well completed into the Prairie Coteau aquifer and a well completed into the Big Sioux: North. The well completed into the Big Sioux:North aquifer for Permit No. 7257-3 is located about 1,750 feet north of the northern site proposed for a Big Sioux:North well by this application. Since the Big Sioux:North aquifer is under unconfined conditions, drawdown is not expected to extend far from a production well and given the distance to nearby wells, adverse impacts are not likely.

**CONCLUSIONS:**

1. This application proposes to appropriate water from both the Prairie Coteau and the Big Sioux:North aquifers.
2. There is a reasonable probability that unappropriated water is available from both the Prairie Coteau and Big Sioux:North aquifers to satisfy this proposed appropriation.
3. The Prairie Coteau aquifer is relatively thin in this area and economics may dictate whether it is viable to irrigate from the aquifer at this location.
4. The Prairie Coteau aquifer is under confined conditions in this area flowing wells exist in this area.
5. Significant drawdown occurs in the Prairie Coteau aquifer due to pumping.
6. Well interference with a nearby existing irrigation well is likely if the Prairie Coteau well is used. The interference is not expected to adversely impair the existing water permit.
7. Early in the development of irrigation from the Prairie Coteau aquifer in this area involved contested case hearings but in general, development has not produced a lot of well interference complaints.
8. The Big Sioux:North aquifer is under unconfined (water table) conditions in this area and drawdown from pumping is not expected to be significant very far from a production well.
9. Withdrawals from the Big Sioux:North wells proposed by this application will not adversely impair existing water rights.



Ken Buhler  
SD DENR-Water Rights Program  
Approved by



James A. Goodman, P.E.  
SD DENR-Water Rights Program

**REFERENCES:**

Anderson, Doug. Manager of Sioux Rural Water System. Personal interview. 26 Mar. 2012

Deville, Jeff. "2004-2011 water used." E-mail to Ken Buhler. 26 Mar. 2012

Goodman, J.A., 1978, Technical [sic] Report on Aquifer Pump Test Southwest Grant County Using Falk Irrigation Well: Water Right No. 4184-3, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD

Goodman, J.A., 1995, Report on Water Permit Application No. 5862-3 for the City of Watertown Municipal Utilities Department, June 5, 1995, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Goodman, J.A., 2008, Report on Water Permit Application No. 7065-3 for James Amdahl, October 16, 2008, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Hansen, D.S., 1990, Water resources of Codington and Grant Counties, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 89-4147, 47 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

Putnam, L.D., and Thompson, R.C., 1996, Appraisal of the Water Resources of the Big Sioux Aquifer, Codington and Grant Counties, South Dakota: U.S. Geological Survey Water Resources Investigation No. 96-4275, 34 p.

Thompson, R.F., 2001, Water resources of the Lake Traverse Reservation, South and North Dakota, and Roberts County, South Dakota: U.S. Geological Survey Water-Resources investigations Report 2001-4219, 105 p.

“Transmissivity from Specific Capacity.” Aquifer Test Forum sponsored by HydroSOLVE, Inc.  
16 Mar.2011< <http://www.aqtesolv.com/forum/transcap.asp>

Water Rights, 1980-2011, Irrigation Questioner Summaries 1980-2011, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2008-2012, Non-irrigation Water User Reporting 1997-2012, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2012a, Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2012b, Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

Water Rights, 2012c, Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

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PROGRAM

Pauline Hicks

of said County and State, being first duly sworn, on oath says that the Grant County Review is a legal weekly newspaper of general circulation, printed and published in Milbank, in said County of Grant and State of South Dakota, by Phyllis Justice, and has been such newspaper during the times hereinafter mentioned; that said newspaper is a legal newspaper; and that it has a bona fide circulation of more than two hundred copies weekly, and has been published within said County of Grant in the English language and has been admitted to the United States mail under second class mailing privilege, for at least one year next prior to the publication of the Notice herein mentioned, and has been printed wholly in an office maintained at the said place of publica-

tion, that I, the undersigned, Bookkeeper of said newspaper, in charge of the advertising department thereof, have personal knowledge of all the facts stated in this affidavit; that the advertisement headed Notice of

Application No. 7328-3 to Appropriate Water

a printed copy of which, taken from the paper in which the same was published, is attached to this sheet and is made a part of this Affidavit, was published in said newspaper at least once each week for two successive weeks, on the day of each week on which the said newspaper was regularly published, to-wit:

|                      |           |
|----------------------|-----------|
| <u>April 4 2012</u>  | <u>20</u> |
| <u>April 11 2012</u> | <u>20</u> |
| <u>20</u>            | <u>20</u> |

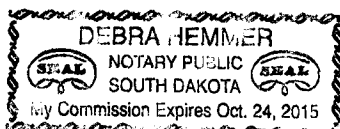
That \$ 48.60, being the full amount of the fee charged for the publication of said Notice, inures to the benefit of the publisher of the Grant County Review; that no agreement or understanding for the division thereof has been made with any person, and that no part has been agreed to be paid to any person whomsoever.

Pauline Hicks

Subscribed and sworn to before me this 11th day of April 20 12

Debra Hemmer

Notary Public, Grant County, South Dakota



Publication Fee \$ 48.60  
Notarial Fee \$             
Total \$ 48.60

## NOTICE OF APPLICATION NO. 7328-3 to Appropriate Water

Notice is given that Marvin Am-dahl, 45138 150th St., Ortley, SD, 57256, has filed an application for a water permit to appropriate a total of 1.78 cubic feet of water per second from five wells for irrigation of 162 acres located in the N1/2 Section 4; all in T120N-R52W. One of the wells will be completed into the Prairie Coteau (142 feet deep) located in the NW1/4NE1/4 of Section 4 appropriating 0.57 cfs. The remaining four wells will be completed into the Big Sioux-North Aquifer (45 feet deep) in the N1/2NE1/4 Section 4 for the remaining appropriation of 1.21 cfs. The well and acreage proposed by this application are located within the former boundaries of the Sisseton Wahpeton Indian Reservation.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7328-3 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 April 23, 2012.

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 twice at an approximate cost of \$48.60.  
April 4 April 11



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

PMB 2020  
JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
denr.sd.gov

March 29, 2012

Grant County Review  
PO Box 390  
Milbank SD 57252

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7328-3 to Appropriate Water to be published twice. Please publish the first notice on April 4, 2012 with the second publication 7 days later. 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, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Marvin Amdahl, 45138 150<sup>th</sup> St., Ortleigh SD 57256 (Ph # 605-398-6579).

**Please send the Water Rights Program the first publication immediately.** The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** 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

-----CUT HERE-----

No. 7328-3

TO: Eric Gronlund  
Water Rights Program  
Joe Foss Building  
Pierre SD 57501-3181

Date \_\_\_\_\_

We are in receipt of your letter of March 29, 2012 enclosing Notice to Appropriate Water by Application No. 7328-3 which was first published in our issue of \_\_\_\_\_. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Newspaper



**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 DATES, CONTACT  
THE NEWSPAPER RIGHT AWAY.

March 29, 2012

Marvin Amdahl  
45138 150<sup>th</sup> St  
Ortley SD 57256

Dear Mr. Amdahl:

Water Permit Application No. 7328-3 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 Publisher of the Grant Co. Review printed at Milbank SD (Ph # 605-432-4516). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendations of the Chief Engineer and reports on the applications 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 to authorize publication of your Notice; and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks. 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 applications.

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 first Notice on April 4, 2012 with the second publication 7 days later. 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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NOTICE OF APPLICATION NO. 7328-3 to Appropriate Water

Notice is given that Marvin Amdahl, 45138 150<sup>th</sup> St, Ortle SD 57256 has filed an application for a water permit to appropriate a total of 1.78 cubic feet of water per second from five wells for irrigation of 162 acres located in the N ½ Section 4; all in T120N-R52W. One of the wells will be completed into the Prairie Coteau (142 feet deep) located in the NW ¼ NE ¼ of Section 4 appropriating 0.57 cfs. The remaining four wells will be completed into the Big Sioux:North Aquifer (45 feet deep) in the N ½ NE ¼ Section 4 for the remaining appropriation of 1.21 cfs. The well and acreage proposed by this application are located within the former boundaries of the Sisseton Wahpeton Indian Reservation.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7328-3 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 April 23, 2012

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

**MAY 08 2012**

Marvin Amdahl  
45138 150<sup>th</sup> St  
Ortley SD 57256

Dear Mr. Amdahl:

Enclosed is Water Permit No. 7328-3 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,

Garland Erbele, Chief Engineer  
Water Rights Program  
(605) 773-3352

enclosures



7328-3  
DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
PMB 2020  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

January 23, 2020

NOTICE

TO: MARVIN AMDAHL, 45138 150TH ST, ORTLEY, SD 57256 5113

FROM: Ron Duvall, Natural Resources Engineer  
for Jeanne Goodman, Chief Engineer  
Water Rights Program

SUBJECT: Reporting Requirement for 2019 Irrigation Questionnaires

Our records indicate your 2019 Irrigation Questionnaires have not been submitted. The request for the Questionnaires was dated October 18, 2019. The Water Management Board has directed that owners of water permits who have not submitted the 2019 Irrigation Questionnaires be given notice of permit violation and a hearing to be held by the Board. The hearing is to determine if Permit No(s) 2715-3 should be amended to require the Questionnaire to be submitted each year and to determine action to be taken for violation of Water Permit No(s) 7328-3, 7783-3 & 7943-3 qualification:

"This permit is approved subject to the Irrigation Water Use Questionnaire being submitted each year."

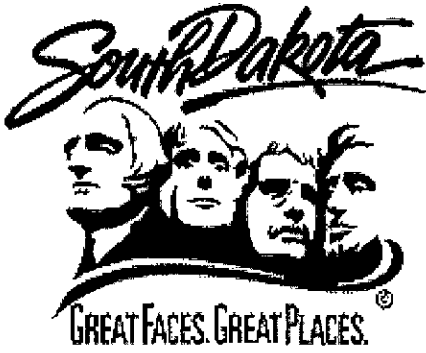
The hearing will be held at **Wednesday, February 26, 2020 at 8:30 am (Central Time)** in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Avenue, Pierre, SD, and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation, or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 7328-3, 7783-3 & 7943-3 in accordance with applicable provisions of SDCL 46-1-12;
2. Amend Permit No(s) 2715-3 to require the Irrigation Water Use Questionnaire to be submitted each year;
3. Postpone any action or take no action.

The hearing is an adversary proceeding. The permit owner has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

If the questionnaires are received in this office before the **February 26, 2020** hearing you will no longer be in violation of your permit and your name will be removed from the Board agenda. Enclosed are additional questionnaires for your use. If you have questions or need assistance, please contact Genny McMath at (605) 773-3352 or email at [genny.mcmath@state.sd.us](mailto:genny.mcmath@state.sd.us). **If you prefer, you can complete the questionnaire online at the following link: <https://denr.sd.gov/iq> using this password: GMLYLI**

**Note:** Please contact the Water Rights Program, Joe Foss Building, 523 E Capitol, Pierre, SD (605-773-3352) to assure access to the meeting room for the handicapped or to obtain an interpreter for the hearing impaired.



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE SOUTH DAKOTA 57501-3182  
[www.denr.sd.gov](http://www.denr.sd.gov)

January 30, 2020

Marvin Amdahl  
45138 150<sup>th</sup> St  
Ortley SD 57256-5113

RE: Water Right No. 2715-3 and Water Permit Nos. 7328-3, 7783-3 & 7943-3

Dear Mr. Amdahl:

I am writing to acknowledge receipt of your 2019 irrigation questionnaires.

You may disregard the January 23, 2020, "Notice" concerning reporting requirements for Water Right No. 2715-3 and Water Permit Nos. 7328-3, 7783-3 & 7943-3. The information was received in our office prior to the Water Management Board meeting and your name has been deleted from the agenda.

If you have any questions, please contact me.

Sincerely,

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



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

JUL 14 2023

Marvin Amdahl  
45138 150<sup>th</sup> St  
Ortley SD 57256

8734-3  
7943-3  
7783-3  
7328-3

Dear Mr. Amdahl:

Enclosed is Water License No. 8734-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Sincerely,

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

**NOTE:** The applicable portions of Water Permit Nos. 7328-3, 7783-3, and 7943-3 have been incorporated into Water Right No. 8734-3.

*enclosures*