

WATER PERMIT NO. 7749-3

Name of Applicant: **Kirk Sorensen**

Address: **46113 Timber Road, Vermillion SD 57069**

Phone: **605 677-7979**

Amount of Water Claimed: **2.28 cfs**

Total Acres: **160**

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

Water to be used for: **irrigation**

County: **Clay**

Type of Waste Disposal System:

Location: **12 miles northwest of Vermillion**

PRIORITY

Date Received: **2-27-13**

Application/License Fee: **\$ 1050**

Corrected Application Received:

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

Remarks:

Diversion Point: **N 1/2 NE 1/4 Sec 31-T93N-R53W**

Land to be Irrigated: **N 1/2 NE 1/4 Sec 31 and S
1/2 SE 1/4 Sec 30; all in T93N-R53W**

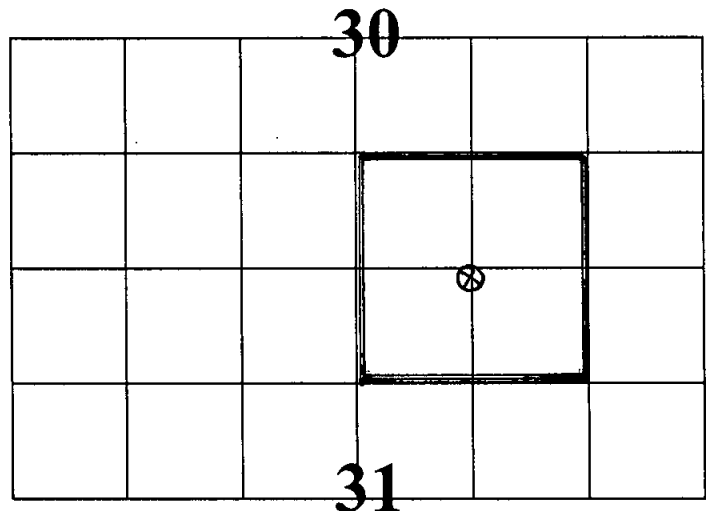
Depth of Well: **120 feet**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:



Reviewed and the Number Assigned on: **2-28-13**

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	No. <u>7749-3</u> (office use only)	Hydrologic Unit <u>10170102</u>
	Basin <u>Vermillion River</u>	<u>605-642-2695</u>
	Newspaper <u>Plain Talk 201 W Cherry St. Vermillion</u>	<u>605-665-7811</u>
	<u>Press & Dakotan 319 Walnut Yorkton 57078</u>	

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FEB 27 2013

57069 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 Kirk Sorensen

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

(name and complete address if different than above name)

Mailing Address 46113 Timber Road Vermillion SD 57069
(Address) (City) (State) (Zip Code)

Home Phone 605-624-4523 Cell 605-677-7979 Email threepairranch@yahoo.com

2. Amount of water claimed 2.28 *CFS or **GPM ***AF Total Acreage 160
(*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 one well in N 1/2 NE 1/4 Section 31 - T93N-R53W

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

County Clay

5. County or counties where water will be used Clay

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

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

(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
N 1/2 NE 1/4 Sec 31 <u>T93N-R53W</u>	80		
S 1/2 SE 1/4 Sec 30	80		

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

I, Kirk Sorensen, 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. 7749-3**

Date of first receipt of application February 27, 2013.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7749-3 to Kirk Sorensen, 46113 Timber Road, Vermillion SD 57069 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. 7749-3 appropriates 2.28 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (120 feet deep) located in the N 1/2 NE 1/4 Section 31 for irrigation of 160 acres located in the N 1/2 NE 1/4 Section 31 and S 1/2 SE 1/4 Section 30; all in T93N-R53W.
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, 2013.
4. The date of approval of Permit No. 7749-3 is May 20, 2013.
5. One-fifth of the construction is to be completed on or before November 20, 2015.
6. All construction is to be completed on or before May 20, 2018.
7. Water is to be put to beneficial use on or before May 20, 2022.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well authorized by Permit No. 7749-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

By: *Jeanne Goodman*

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

JUN 21 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 120 Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____

d) Distance to nearest existing domestic well:

On applicant's property 600 yards

On property owned by others 3/4 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

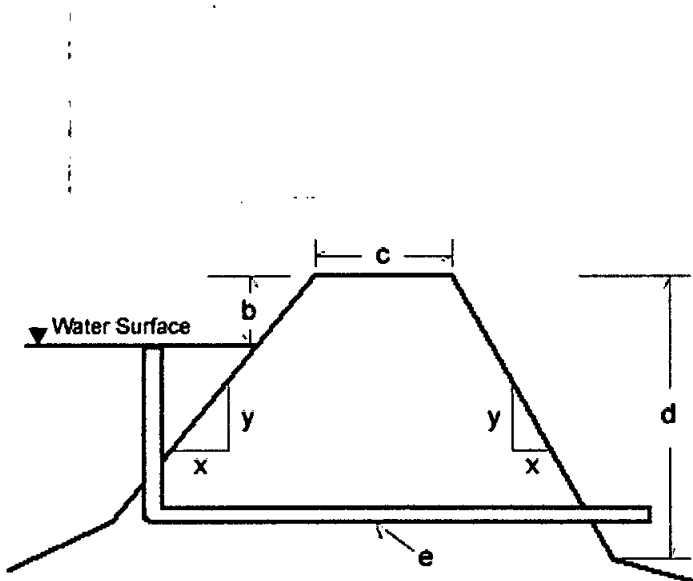
a) Surface Dimensions _____ Depth _____

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)

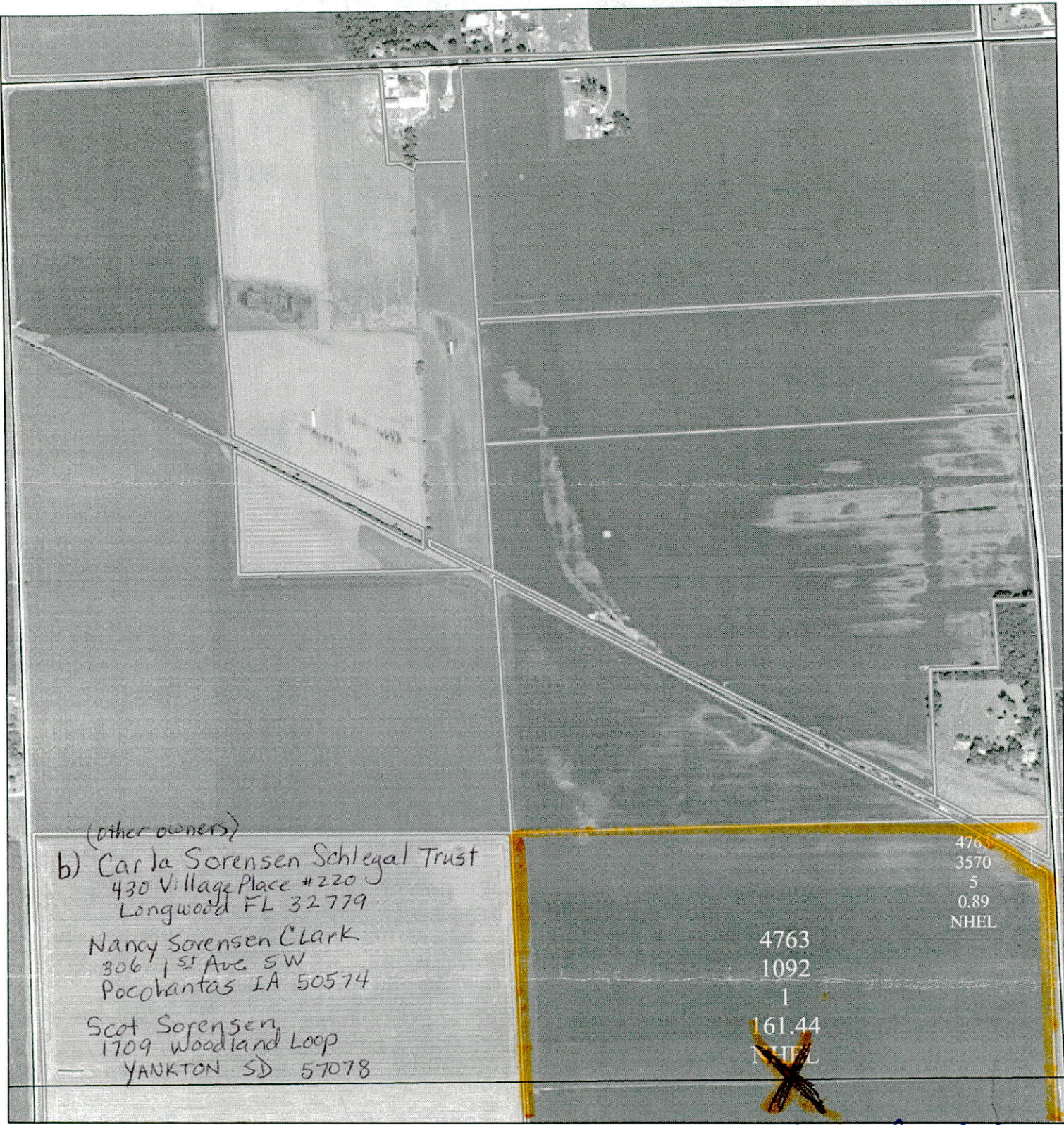
Upstream _____

Downstream _____

h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres



United States Department of Agriculture
Farm Service Agency

PLSS: 30_93N_53W
Farm: 4763

Clay County, SD

1:8,341

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WATER RIGHTS
PROGRAM



Sheree Christensen
December 17, 2010
Clay Co. PT.

Wetland Determination Identifiers

- Restricted Use
- ▼ Limited Restrictions
- Exempt from Conservation Compliance Provisions

Common Land Units

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

2008 Ortho-Photography - Not to Scale



United States Department of Agriculture
Farm Service Agency

PLSS: 31_93N_53W
Farm: 4763

Clay County, SD
1:8,349



Sheree Christensen
December 17, 2010
Clay Co. PT

Wetland Determination Identifiers

- Restricted Use
- ▽ Limited Restrictions
- Exempt from Conservation Compliance Provisions

Common Land Units

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

2008 Ortho-Photography - Not to Scale

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FEB 27 2013

**WATER RIGHTS
PROGRAM**

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 2/27, 2013

RECEIVED OF Kirk C Sorensen 46113 Timber Rd Vermillion SD 57089

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

Fee for Application for Permit No. <u>7749-3</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>7749-3</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. 06186

By David Erbe
Chief Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

denr.sd.gov

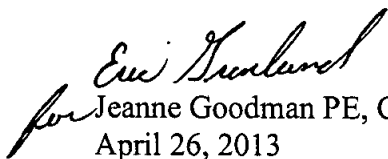
**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7749-3, Kirk Sorensen**

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. 7749-3, Kirk Sorensen, 46113 Timber Road, Vermillion SD 57069.

The Chief Engineer is recommending APPROVAL of Application No. 7749-3 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. 7749-3 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.


for Jeanne Goodman PE, Chief Engineer
April 26, 2013

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 7749-3
KIRK SORENSEN
MARCH 21, 2013

Water Permit Application No. 7749-3 proposes to appropriate water from one well to be completed into the Missouri: Elk Point aquifer at a maximum diversion rate of 2.28 cubic feet of water per second (cfs). The well will be located in the N ½ NE ¼ of Section 31, T93N-R53W and is expected to be approximately 120 feet deep. This application proposes to irrigate 160 acres located in the N ½ NE ¼ of Section 31 and the S ½ SE ¼ of Section 30, all in T93N-R53W in Clay County.

AQUIFER: Elk Point management unit of the Missouri aquifer (M:EP)

GEOLOGY AND AQUIFER CHARACTERISTICS:

Bugliosi (1986) refers to the Elk Point management unit of the Missouri aquifer as the southern portion of the Lower James-Missouri aquifer. For water management purposes, the Water Management Board and the SD DENR-Water Rights Program refer to this aquifer as the Missouri: Elk Point. The Missouri: Elk Point is a surficial aquifer composed of unconsolidated glacial outwash material ranging from fine sand to coarse gravel (Niehus, 1994). The aquifer generally lies below the flood plain of the Missouri River (Bugliosi, 1986), and also below the flood plain of the Big Sioux River in the southern part of Union County (Niehus, 1994). Bugliosi (1986) reported that the aquifer directly overlies and is hydraulically connected to the Dakota aquifer, and is hydraulically connected at its northern boundary to the Lower James-Missouri and the Lower Vermillion-Missouri aquifers as well as the Missouri and Vermillion Rivers. Niehus (1994) found the aquifer is also hydraulically connected to the Big Sioux aquifer in the northeast of Union County. The proposed well site is located in southwestern Clay County less than three quarter miles from the Clay and Yankton county line and approximately two and one half miles north of the Missouri River. The Elk Point management unit of the Missouri aquifer encompasses approximately 234,700 acres of Clay, Union, and Yankton Counties, as determined by Hedges and others (1982) and Niehus (1994). The aquifer contains an estimated 3,287,100 acre feet of recoverable water, of which an estimated 1,117,500 acre-feet of recoverable water is in storage in Clay County (Hedges and others, 1982). The maximum thickness of the aquifer is estimated to be 150 feet (Bugliosi, 1986). The transmissivity of the aquifer ranges from 20,700 to 24,700 square feet per day (ft²/d) (Bugliosi, 1986). The specific capacity of wells completed into the aquifer ranges from approximately 124 to 173 gallons per minute per foot ((gal/min)/ft) (Bugliosi, 1986). The aquifer can be under confined or unconfined (water-table) conditions, and is under water-table conditions in the area of this application. The average saturated thickness reported for nearby well sites is approximately 76 feet as shown in Table 1 (Water Rights, 2013a).

Well Log Identification	Saturated Thickness (ft)
Well Log for Water Permit No. 7075-3	72
Domestic Well for Troy Walraven	44
Observation Well CL-80B	75
Well Log for Water Permit No. 6610-3	93
Well Log for Water Permit No. 6767-3	97

Table 1. Reported saturated thickness for nearby wells (Water Rights, 2013a).

SDCL 46-2A-9

In accordance with SDCL 46-2A-9, a permit may be issued to appropriate water only if there is reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest. This report will review the availability of unappropriated water and existing rights within the Missouri: Elk Point aquifer.

WATER AVAILABILITY:

This application proposes to appropriate water from the Missouri: Elk Point aquifer. If this application is approved, it is likely that the actual water use will be less than 320 acre feet per year (ac-ft/yr). The probability of unappropriated water available from the aquifer can be evaluated using SDCL 46-6-3.1 which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source."

Recharge versus Discharge:

Recharge:

Recharge to the Missouri: Elk Point aquifer occurs through seepage from streams and by infiltration of precipitation (Bugliosi, 1986; Niehus, 1994). Recharge is also provided to the aquifer from the Big Sioux, Lower Vermillion-Missouri, and Dakota aquifers as well as during times of high flow from the Big Sioux and Missouri Rivers. The average annual recharge rate to the Missouri: Elk Point aquifer is estimated to be 3.8 in/yr based on observation well analysis (Hedges and others, 1985). Given the area of the management unit in Clay, Union, and Yankton Counties of 234,700 acres, average annual recharge to the aquifer is estimated to be 74,322 ac-ft/yr. Recharge in Clay County alone is estimated to be 23,592 ac-ft/yr based on the 74,500 acres that the aquifer underlies in the county (Hedges and others, 1982).

Discharge:

Discharge from the Missouri: Elk Point aquifer is by evapotranspiration, discharge to the Big Sioux and Missouri Rivers during low flow, to the underlying Dakota aquifer, and withdrawal from wells (Niehus, 1994). There are a number of completion reports on file with the SD DENR-Water Rights Program for domestic use wells completed into the Missouri: Elk Point aquifer (Water Rights, 2013b) and there are currently 518 water rights/permits appropriating water from the Missouri: Elk Point aquifer of which 130 are in Clay County (Water Rights, 2013c). In addition, there are five future use permits in Clay County reserving 14,900 ac-ft/yr of water from the aquifer. The distribution of these appropriations for the entire aquifer and their types are shown in Table 2.

Water Rights/Permits	Number
Commercial	7
Domestic	2
Fish and Wildlife Propagation	4
Industrial	5
Irrigation	485
Municipal	10
Recreational	1
Rural Water System	2
Suburban Housing Development	2
Future Use Permits	Number
Lewis & Clark Rural Water System	4
City of Vermillion	1

Table 2. Water rights/permits from the Missouri: Elk Point aquifer (Water Rights, 2013c).

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

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

The expected water use for non-irrigation purposes, including that reserved for future use, from the Missouri: Elk Point aquifer is less than 61,300 ac-ft/yr based on current water appropriations. Clay County accounts for approximately 50,503 ac-ft/yr of this based on current water appropriations.

The annual reported water use from the Missouri: Elk Point aquifer for irrigation purposes is displayed in Table 3. The average pumpage reported, for irrigation purposes, over the 1979 to 2011 period of record in Clay County is approximately 2,706 ac-ft/yr. The water usage from domestic wells is not significant to the hydrologic budget.

YEAR	NO. OF PERMITS	APPROPRIATION (AC-FT/YR)	PUMPAGE REPORTED (AC-FT/YR)
1979	259	122980	9859
1980	262	124404.9	14586
1981	297	134477.6	13096
1982	269	122297.8	18822.35
1983	273	121483.1	10834.04
1984	281	126221.6	9194.3
1985	282	124546.7	13718.5
1986	286	125320.7	6252.1
1987	281	123601.7	13163.7
1988	282	123601.5	28184.55
1989	292	126354.7	25651.9
1990	297	127965.7	19425
1991	300	126471.7	18798.6
1992	295	125256.7	1881.95
1993	298	125576.3	1475.2
1994	295	122975.1	10221.43
1995	292	121644.3	18320.24
1996	296	124606.2	9412.78
1997	305	126518.2	17182
1998	313	127862.6	11127.24
1999	308	125225.6	14748.02
2000	309	124852.2	26640.12
2001	313	125537.4	19071.88
2002	315	125555.8	23547.22
2003	314	125379.8	26734.67
2004	322	126955.8	23862.25
2005	335	130046.6	23964.5
2006	353	136491.6	27974.54
2007	366	139826.6	30482.84
2008	396	151130.4	16261.88
2009	410	155245.4	6120.97
2010	419	155905.4	2723.87
2011	431	159700.8	12107.55
MIN	259	121483.10	1475.20
MAX	431	159700.80	30482.84
AVE	313.52	129879.40	15922.64

Table 3. Irrigation from the Missouri: Elk Point aquifer (Water Rights, 1979-2011)

Lewis and Clark Rural Water System currently reserves 13,000 ac-ft/yr for future use and has permits appropriating 32,165 ac-ft/yr (Water Rights, 2013b). These account for a significant portion of the annual water usage in Clay County, and most of the water from these wells will be induced from the Missouri River. More recharge can be induced with more pumping in particular from the Missouri River because it is hydraulically connected to the aquifer.

There are a number of new permits and pending applications from the Missouri: Elk Point aquifer. Once they are developed, the average pumping for irrigation purposes is expected to increase significantly. Since January 1, 2012, there have been 45 permits issued from the Missouri: Elk Point aquifer authorizing irrigation for a total of 5,546.1 acres. The average annual withdrawal is still expected to be significantly less than the average annual recharge. As of March 21, 2013, an additional 61 permit applications have been submitted for appropriation of

water from the Missouri: Elk Point aquifer. The pending permits have a total diversion rate of 106.57 cfs, and 6,825.25 acres of coverage (Water Rights, 2013a). Recognizing that Lewis and Clark RWS withdraws water from the Missouri: Elk Point aquifer that is induced from the Missouri River, and considering the remaining hydrologic budget, there is reasonable probability that unappropriated water is available for this application.

Observation Well Data:

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

The SD DENR-Water Rights Program monitors 37 observation wells completed into the Missouri: Elk Point aquifer with two of these observation wells located within six miles of the well site proposed by this application (Water Rights, 2013a). Hydrographs for these wells are shown in Figures 1 and 2.

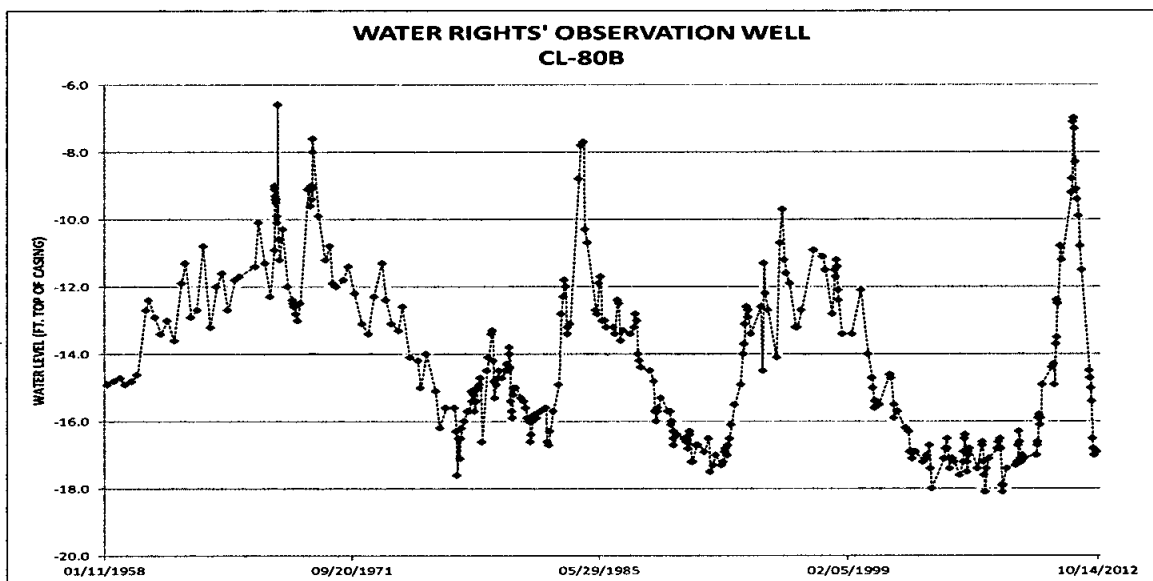


Figure 1. Hydrograph for SD DENR-Water Rights' Observation Well CL-80B completed into the Missouri: Elk Point aquifer approximately three and three quarter miles southeast of the well site proposed by Application No. 7749-3 (Water Rights, 2013b).

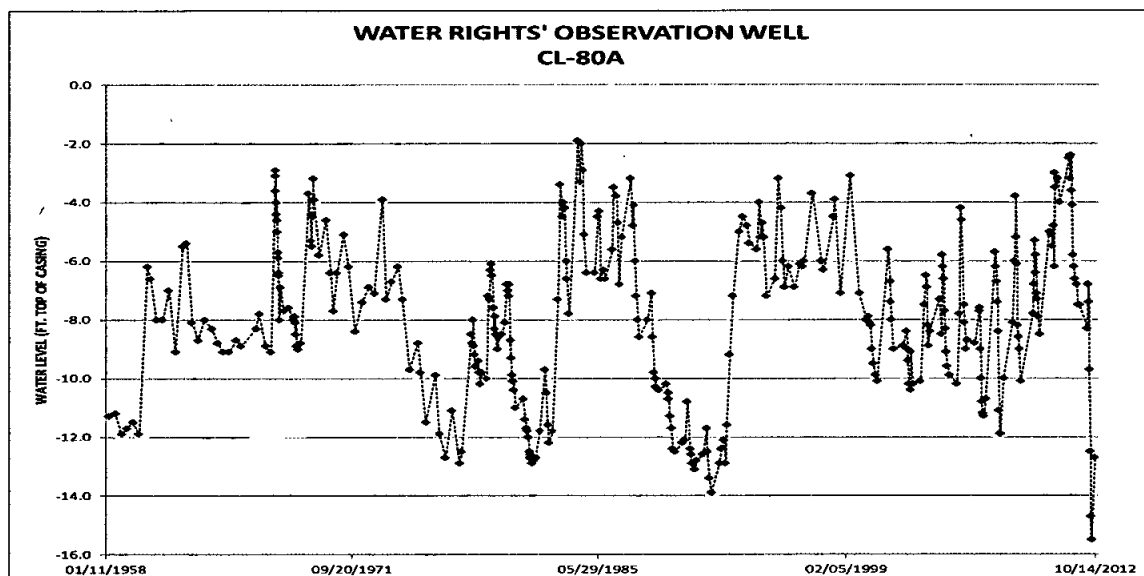


Figure 2. Hydrograph for SD DENR-Water Rights' Observation Well CL-80A completed into the Missouri: Elk Point aquifer approximately six miles northeast of the well site proposed by Application No. 7749-3 (Water Rights, 2013b).

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 observation well data shows that at the current level of development, climatic conditions mask the temporal effects of well withdrawals. The observation well data documents the hydraulic connection between the Missouri: Elk Point aquifer and the Missouri River (e.g. in particular, record high groundwater levels associated with flooding in 2011).

Because of this obvious hydraulic connection between Missouri: Elk Point aquifer and the Missouri River and the availability of water in the Missouri River, there is a reasonable probability that additional recharge to the Missouri: Elk Point will be induced with additional pumping. Additional pumping from the Missouri: Elk Point aquifer can also induce recharge from the underlying Dakota aquifer. Therefore, there is reasonable probability that unappropriated water is available from the aquifer to support this appropriation.

EXISTING WATER RIGHTS:

The proposed well site is located in southwestern Clay County less than three quarter miles from the Clay and Yankton county line and approximately two and one half miles north of the Missouri River. Figure 3 shows the nearby existing water rights located in the Missouri: Elk Point aquifer. The locations of the existing water rights/permits were determined using the best data reasonably available. The nearest water right/permit is Water Permit No. 7074-3, for Calvin Hanson, located more than 3,200 feet southwest and up-gradient of the proposed well site.

Observation Well CL-80B is located within 800 feet of Water Right No. 2158-3, for D A Olson & Sons, and the hydrograph, shown in Figure 1, reports minimal drawdown at this distance due to pumping. Water-table conditions dictate that drawdown will be minimal at these distances. Based on the observation well data and the distance between wells, drawdown is not expected to be significant nor likely to cause adverse impacts to existing water rights or domestic wells.



Figure 3. Existing water rights/permits located within close proximity to the well site proposed by Application No. 7749-3 (Water Rights, 2013c).

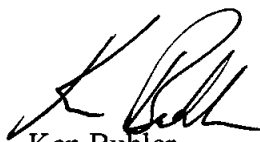
CONCLUSIONS:

1. This application proposes to appropriate water from the Missouri: Elk Point aquifer.
2. There is a reasonable probability that unappropriated water is available from the Missouri: Elk Point aquifer to supply this proposed appropriation based on observation well data and the amount of water reserved by Lewis and Clark RWS that will likely be induced from the Missouri River.
3. The Missouri: Elk Point 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.
4. There is a reasonable probability that the well proposed by this application will not adversely impact existing water rights or domestic wells.



Nicole Van Dyk
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Bugliosi, E.F., 1986, Water Resources of Yankton County, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 84-4241. 41 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
- Niehus, C.A., 1994, Water Resources of Lincoln and Union Counties, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 93-4195, 57p.

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MAY 17 2013
WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

PLAIN TALK

DENR
Division of Environmental Services
Water Rights Program
Joe Foss Building, 523 East Capitol
Pierre, SD 57501

STATE OF SOUTH DAKOTA
COUNTY OF CLAY

TERA SCHMIDT BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT SHE IS THE CLASSIFIED MANAGER OF YANKTON
MEDIA INC., A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
PLAIN TALK, A LEGAL WEEKLY NEWSPAPER PUBLISHED AND CIRCULATED
IN THE CITY OF VERMILLION, SAID COUNTY AND STATE, AND ONE OF THE
OFFICIAL NEWSPAPERS OF THE SAID COUNTY OF FACTS STATED IN THIS
AFFIDAVIT; THAT THE ANNEXED
NOTICE OF APPLICATION TO APPROPRIATE WATER

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 10 DAY OF May 2013
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$27.31 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 5/10/13

FILED ON: 5/10/13

NOTICE OF APPLICATION NO. 7749-3 to Appropriate Water

Notice is given that Kirk Sorensen, 46113 Timber Road, Vermillion SD 57069 has filed an application for a water permit to appropriate 2.28 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (120 feet deep) located in the N 1/2 NE 1/4 Section 31 for irrigation of 160 acres located in the N 1/2 NE 1/4 Section 31 and S 1/2 SE 1/4 Section 30; all in T93N-R53W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7749-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by May 20, 2013.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Published once at the total approximate cost of \$27.31.

Published: May 10, 2013

Tera O. Schmidt
SUBSCRIBED AND SWORN TO BEFORE ME THIS

13th DAY OF

May

Donna M. Schick
NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES

8/19/2015

RECEIVED

MAY 13 2013

WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

Department of Environment and Natural Resources
PMB 2020
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

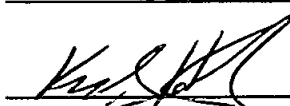
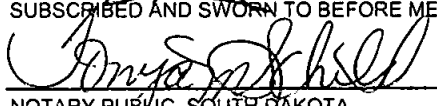
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

KELLY HERTZ BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT HE IS THE MANAGING EDITOR OF, YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
Notice of Application No. 7749-3

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 10th DAY OF May 2013
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$25.82 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 5/10/2013

FILED ON: 5/10/2013


SUBSCRIBED AND SWORN TO BEFORE ME THIS 10th DAY OF May 2013

NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 8/19/2015

5+10

NOTICE OF APPLICATION
NO. 7749-3 to Appropriate Water

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Published once at the total approximate cost of \$25.82.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

April 29, 2013

Plain Talk
201 W Cherry St
Vermillion SD 57069

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7749-3 to Appropriate Water. Please publish the notice once on May 10, 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 Kirk Sorensen, 46113 Timber Rd, Vermillion SD 57069 (Ph # 605-624-4523).

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

April 29, 2013

Press & Dakotan
319 Walnut
Yankton SD 57078

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Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

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

April 29, 2013

Kirk Sorensen
46113 Timber Rd
Vermillion SD 57069

Dear Mr. Sorensen:

Water Permit Application No. 7749-3 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 Plain Talk printed at Vermillion SD (Ph # 605-624-2695) and the Press & Dakotan printed at Yankton SD (Ph # 605-665-7811). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper - Publish the Notice on May 10, 2013. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NO. 7749-3 to Appropriate Water

Notice is given that Kirk Sorensen, 46113 Timber Road, Vermillion SD 57069 has filed an application for a water permit to appropriate 2.28 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (120 feet deep) located in the N 1/2 NE 1/4 Section 31 for irrigation of 160 acres located in the N 1/2 NE 1/4 Section 31 and S 1/2 SE 1/4 Section 30; all in T93N-R53W.

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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 21 2013

Kirk Sorensen
46113 Timber Road
Vermillion SD 57069

Dear Mr. Sorensen:

Enclosed is Water Permit No. 7749-3 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

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

enclosures

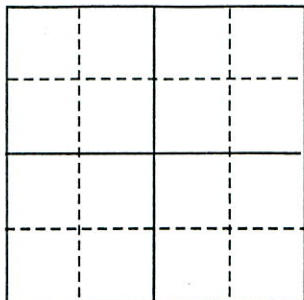
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location ~~NE 1/4~~ SE 1/4 Sec ~~48~~ 31 Twp 93N Rg 53WCounty Clay

North

Please mark well location with an "X"



10 yds S of middle point between SE 1/4 Sec 30 and NE 1/4 Sec 31. As per conversation w/ Kirk Sorenson

Well Completion Date KSJune 4, 201312-11-13

1 Mile

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

50.0 ft. from septic (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

PIPEWEIGHT DIAMETER FROM TO HOLE DIAMETER
 LB/FT 12.00 IN 0.0 FT 89.0 FT 16.00 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 10 Lb/gal 0.0 Ft 80.0 Ft
 Lb/gal Ft Ft

Describe grouting procedure
tremie piped

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 12.00 Inches Length 20.0 FeetMaterial stainless steelSlot Size .040 Set From 89.0 Feet to 109.0 Feet

Other information

WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? chlorinated

☐ No, Why Not?

Lab to which water quality sample sent for analysis
 n/a

Well Owner: Kirk Sorenson

Business Name:

Address: 46113 Timber RdCity, State, Zip: Vermillion SD 57069

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top soil	0	1
Yellow clay	1	8
Black lake bottom	8	12
Fine sandy blue clay	12	46
Blue clay	46	78
Sandy w/clay seam	78	83
Coarse sand	83	111
Hard blue clay	111	-

STATIC WATER LEVEL 15.0 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate _____ GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe:☐ Bailed☐ Other

Pumping Level Below Land Surface

23.0 Ft. After 2.3 Hrs. pumped 725.0 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

GPS: N 42 52.227

W 97 8.761

RECEIVED

NOV - 7 2013

WATER RIGHTS PROGRAM

This well was drilled under license # 475 and this report is true and accurate.

Drilling firm: Thein Well Co., Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:



7749-3
DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
PMB 2020
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

January 16, 2015

NOTICE

TO: KIRK SORENSEN, 46113 TIMBER ROAD, VERMILLION, SD 57069

FROM: Ron Duvall, Natural Resources Engineer
for Garland Erbele, Chief Engineer
Water Rights Program

SUBJECT: Reporting Requirement for 2014 Irrigation Questionnaire(s)

Our records indicate your 2014 Irrigation Questionnaire(s) has not been submitted for Permit No(s) 7749-3. The request for the Questionnaire was dated October 17, 2014. The Water Management Board has directed that owners of water permits who have not submitted the 2014 Irrigation Questionnaire(s) be given notice of permit violation and a hearing to be held by the Board. The hearing is to determine what action is to be taken for violation of Water Permit No(s) 7749-3 qualification:

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

The hearing will be held at **10:00 am, March 4, 2015** 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) 7749-3 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. 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 questionnaire(s) is (are) received in this office before the **March 4, 2015** hearing you will no longer be in violation of your permit and your name will be removed from the Board agenda. Enclosed are additional questionnaire(s) 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. If you prefer, you can complete the questionnaire online at the following link: <http://denr.sd.gov/iq.aspx>

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

denr.sd.gov

January 29, 2015

7749-3

Kirk Sorensen
46113 Timber Rd
Vermillion SD 57069

Dear Mr. Sorensen:

I am writing to acknowledge receipt of your 2014 irrigation questionnaire.

You may disregard the January 16, 2015, "Notice" concerning reporting requirements for Water Permit No. 7749-3. 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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7749-3

I have this day, April 12, 2016, made a thorough examination of the water use system constructed by Kirk Sorensen, 46113 Timber Road, Vermillion, SD 57069 of Permit No. 7749-3, bearing the priority of February 27, 2013 authorizing the diversion of 2.28 cu. ft. per second of the waters of Missouri:Elk Point Aquifer for irrigation purposes, in Clay County.

Inspection contact & relationship **Kirk Sorensen, permit holder**
to permit holder, if applicable:

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Thein Well Co., Inc.
- 2) No. of Wells 1
- 3) Depth(s) 109 feet
- 4) Well log is available Yes

Casing:

- 1) Diameter 12 inches
- 2) Length 89 feet
- 3) Type PVC

Screen:

- 1) Type Stainless Steel Manufactured
- 2) Length 20 feet
- 3) Static water level 15 feet

Pump:

- 1) Make Turbine
- 2) Model In-Line Shaft
- 3) Capacity 725 GPM

Motor:

- 1) Make GE
- 2) Model No. 5KE324DTT6013A
- 3) Horsepower rating 40 hp

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make T-L Irrigation Systems
- 2) Overall length 1320 feet
- 3) Number of towers 8
- 4) End gun Yes
- 5) Capacity 725 GPM

Comments: T-L Irrigation uses a hydraulic drive system.

Chemigation Equipment:

- 1) Does chemigate Yes
- 2) Main line check valve Yes
- 3) Inspection port/air relief Yes
- 4) Low pressure drain Yes
- 5) Discharge is 20' from source Yes
- 6) Interlock type electrical
- 7) Injection pump type piston
- 8) Injection check valve Yes
- 9) Injection line check valve or positive displacement pump Yes

Comments: Permit holder was not chemigating at time of inspection, but provided the above answers to questions asked. Permit holder indicated he uses chemigation primarily to apply liquid nitrogen to corn crop. A copy of the chemigation rules and Appendix A were reviewed and provided to the permit holder.

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period Yes, began irrigating in 2013.
- 3) List any extended period of nonuse: None
- 3) Exceptions to compliance are: None

E. Condition and Location:

Report of Examination of Works

Permit No. 7749-3

1. The system is in good condition with the point(s) of diversion located as follows: West 1390', South 20' from NE corner Sec 31-T93N-R53W; Lat 42.83710/Long -97.14596; NW 1/4 NE 1/4 Sec 31-T93N-R53W.
2. The works are capable of diverting and conveying to the place of use 1.61 cfs or 725 gpm of water which is to be used for irrigation. Water has been put to beneficial use to the maximum extent as follows:

Sec 30-T93N-R53W.

SW 1/4 SE 1/4 - 36 ac

Sec 31-T93N-R53W.

NW 1/4 NE 1/4 - 34 ac

SE 1/4 SE 1/4 - 36 ac

NE 1/4 NE 1/4 - 33 ac

comprising a total of 139 acres of land and the license should be issued for 1.61 cfs or 725 gpm.

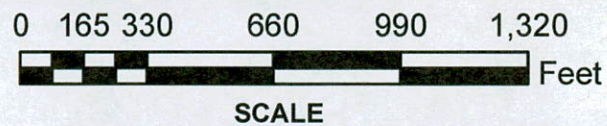
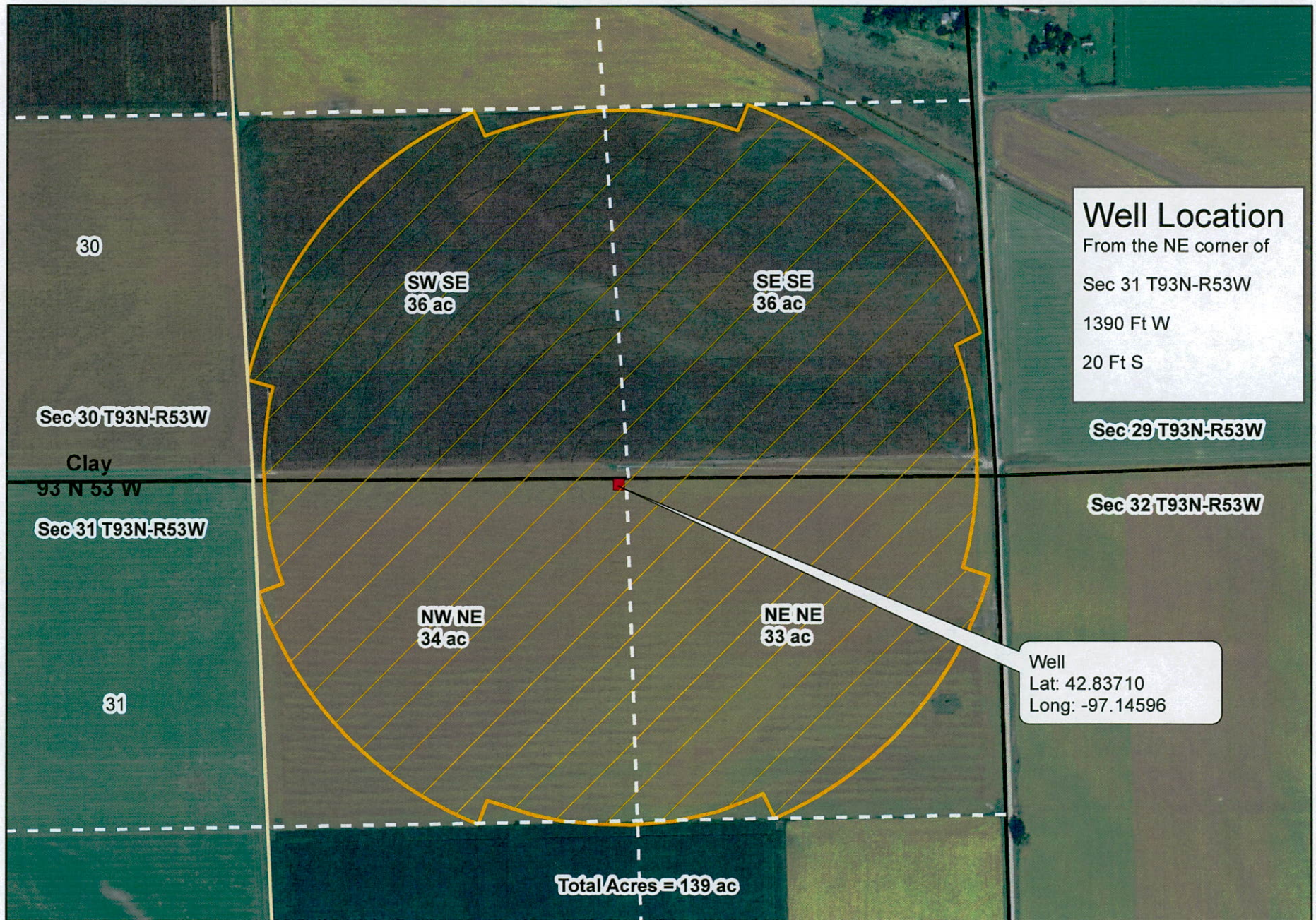
3. All structures, wells and lands on map Yes

Harold Holoch

Harold Holoch, PE
Engineer Water Rights Inspector
DENR, Water Rights Program

Date report completed: December 23, 2016

7749-3



Harold Holoch
Harold Holoch, PE
Water Rights Inspector
December 8, 2016

7749-3

**NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE**

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

Date April 12, 2016

FROM: Kirk K Sorensen
(name)
46113 Timber Rd.
(address)
Vermillion S.D. 57069 605-624-4523
(city) (state) (zip) (phone)

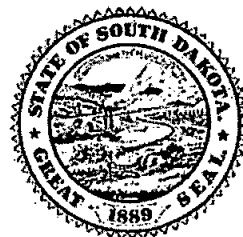
I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 7749-3 states that the water use system is to be constructed by
5-20-2018, and water is to be put to beneficial use by 5-20-2022
(date) (date)

The water use system was completed on June 13
(date)

Applying the water to beneficial use was completed on July '13
(date)

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





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

JAN 30 2017

7749-3

Kirk Sorensen
46113 Timber Rd
Vermillion SD 57069

Dear Mr. Sorensen:

Enclosed is Water License No. 7749-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 7749-3, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Sincerely,

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

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 7749-3**

(1) Kirk Sorensen, 46113 Timber Rd, Vermillion SD 57069 made Application No. 7749-3, February 27, 2013 for a water permit to divert 2.28 cubic feet of water per second from ground water, one well (Missouri Elk Point Aquifer), Clay County, South Dakota for irrigation purposes. Permit No. 7749-3, with a priority date of February 27, 2013 was approved May 20, 2013 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before May 20, 2018 and for the application to beneficial use of said water on or before May 20, 2022.

The Permit holder submitted a "*Notice of Completion of Works and Application of Water to Beneficial Use*" on April 12, 2016. The "*Notice*" stated the water use system was completed in June, 2013 and the water placed to beneficial use in July, 2013.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 1.61 cubic feet of water per second for beneficial use. The location of the diversion point is 1,390 feet W and 20 feet S of the NE corner of Section 31, T93N, R53W (NW ¼ NE ¼).

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

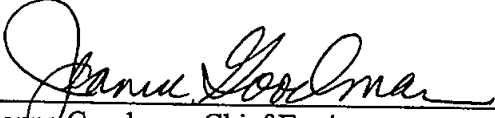
Section 30, T93N, R53W		Section 31, T93N, R53W	
SW ¼ SE ¼	36 acres	NW ¼ NE ¼	34 acres
SE ¼ SE ¼	36 acres	NE ¼ NE ¼	33 acres

Total 139 acres

(4) Pursuant to South Dakota Water Law 46-5-30.1 Kirk Sorensen, 46113 Timber Rd, Vermillion SD 57069 the holder and/or owner of Water Right No. 7749-3 is issued a license to appropriate water, the right to use 1.61 cubic feet of water per second from ground water, one well (Missouri Elk Point Aquifer) with a priority date of February 27, 2013 from the location specified in (2) of this license for irrigation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7749-3 and subject to the following qualifications:

- The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- The well authorized by Permit No. 7749-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with the Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *The well was drilled in June, 2013 by Thein Well Co., Inc. A copy of the log is on file with the Water Rights Program).*
- This Permit is approved subject to the irrigation water use questionnaire being submitted each year.


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

JAN 30 2017
date





DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

January 22, 2021

NOTICE

TO: KIRK SORENSEN, 46113 TIMBER ROAD, VERMILLION, SD 57069
FROM: Ron Duvall, Natural Resources Engineer
for Jeanne Goodman, Chief Engineer
Water Rights Program

SUBJECT: Reporting Requirement for 2020 Irrigation Questionnaire(s)

Our records indicate your 2020 Irrigation Questionnaire(s) has not been submitted for Permit No(s) 7749-3. The request for the Questionnaire was dated October 23, 2020. The Water Management Board has directed that owners of water permits who have not submitted the 2020 Irrigation Questionnaire(s) be given notice of permit violation and a hearing to be held by the Board. The hearing is to determine what action is to be taken for violation of Water Permit No(s) 7749-3 qualification:

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

The hearing will be held at **Wednesday, March 3, 2021 at 10:00 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) 7749-3 in accordance with applicable provisions of SDCL 46-1-12;
2. Postpone any action; or
3. 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 questionnaire(s) is (are) received in this office before the **March 3, 2021** hearing you will no longer be in violation of your permit and your name will be removed from the Board agenda. Enclosed are additional questionnaire(s) 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. **If you prefer, you can complete the questionnaire online at the following link: <https://denr.sd.gov/iq> using this password: BIWYIY**

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.

7749-3



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**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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denr.sd.gov

February 1, 2021

7749-3

Kirk Sorensen
46113 Timber Rd
Vermillion SD 57069

Dear Mr. Sorensen:

I am writing to acknowledge receipt of your 2020 irrigation questionnaire.

You may disregard the January 22, 2021, "Notice" concerning reporting requirements for Water Right No. 7749-3. 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,

A handwritten signature in blue ink that reads "Genny McMath". The signature is written in a cursive, flowing style.

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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7749-3

I have this day, July 22, 2024, made a thorough examination of the water use systems owned by Kirk Sorensen, 46113 Timber Road, Vermillion, SD 57069, holder of Permit No. 7749-3, bearing the priority date of ????????????????. This permit authorizes the diversion of 0.00 cu. ft. per second of the waters of groundwater (Missouri: Elk Point Aquifer) authorizing the irrigation of 64 acres located in Clay County.

Inspection contacts: Josh Anglin

A. Works used to divert the water:

Well Information (from Water Right No. 7749-3)

- 1) Well Drilling Firm: Thein Well Co., Inc.
- 2) No. of Wells: 1
- 3) Depth(s): 109 feet
- 4) Well log is available: Yes

Casing:

- 1) Diameter: 12 inches
- 2) Length: 89 feet
- 3) Type: PVC

Screen:

- 1) Diameter: 12 inches
- 2) Length: 20 feet
- 3) Type: Stainless Steel Manufactured
- 4) Static water level: 15 feet

Pump:

- 1) Make: Turbine
- 2) Model: In-Line Shaft
- 3) Capacity: 725 gpm

Motor:

- 1) Make: GE
- 2) Model No.: 5KE324DTT6013A
- 3) Horsepower rating: 40 hp

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

- 1) Type: PVC Size: 8 inches Length: 2,000 feet

C. Works used to apply water to beneficial use:

Center Pivot

- 1) Make: T & L
- 2) Overall length: 1,237 feet
- 3) Number of towers: 7
- 4) End gun: Yes Range: 95 feet
- 5) Capacity: 600 gpm

Chemigation Equipment:

- 1) Does chemigate: No

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by: Yes
 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period: Yes
 3) Exceptions to compliance are: None

E. Condition and Location:

- 1) The system is in good condition with the point(s) of diversion located as follows:
The well is 1,390 feet west and 20 feet south of the northeast corner of Section 31-T93N-R53W (Latitude 42.83710, Longitude -97.14596– NW1/4 of the NE1/4).
 2) The works are capable of diverting and conveying to the places of use 1.34 cu. ft. per second of water from the well which is to be used for irrigation purposes. Water has been put to beneficial use to the maximum extent as follows:

Section 32-T93N-R53WNW1/4NW1/4 32 acresSW1/4NW1/4 32 acresWR No. 7749-3 Section 30-T93N-R53WSW1/4SE1/4 36 acresSE1/4SE1/4 36 acresWR No. 7749-3 Section 31-T93N-R53WNW1/4NE1/4 34 acresNE1/4NE1/4 33 acres

comprising a total of 64 acres for Water Permit No. ???-3 and a total of 203 acres when combined with WR No. 7749-3 and the license should be issued for 1.61 cfs.

- 3) All structures, wells and lands on map: Yes

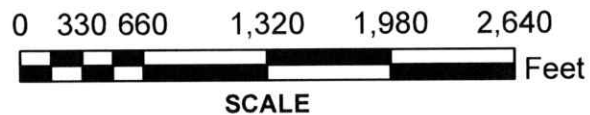
F. Comments or other permit(s) associated with the project: The pivot for this permit gets water from the well associated with Water Right No. 7749-3. Water Permit No. ???-3 and Water Right No. 7749-3 could be combined into one Water Right.



Keith DeJong, PE Ret.
 Water Rights Inspector
 DANR, Water Rights Program

Date report completed: July 29, 2024

Water Permit No. ????-3



Keith DeJong, PE Ret.
Staff Engineer
July 22, 2024



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

July 31, 2024

7749-3

Kirk Sorenson
46113 Timber Rd
Vermillion SD 57069

Dear Mr. Sorenson:

I am writing you today in regard to an unlicensed irrigation system developed in the W ½ NW ¼ Section 32, T93N-R53W, Clay County. (see enclosed map)

In July 2024, a Water Rights Program staff engineer discovered the system had been developed for irrigation of 64 acres, supplied by the well and diversion authority authorized by Water Right No. 7749-3.

For your convenience I have enclosed a permit application for you to review, complete, and return to our office with the associated fees.

The required fees would be \$750.00 for the permit application and \$200.00 for licensing/inspection, totaling \$950.00. Checks can be made payable to "SD Water Rights Program". You may also submit the necessary fees over the phone by calling our Fiscal Office (605)773-5559.

Obtaining a water permit is in the interest of the permit holder, as it provides protections against loss of water availability due to junior water users.

If you have any questions concerning the application process or need help completing the application, please don't hesitate to call. My direct line is (605) 910-5187.

Sincerely,

Amanda Dewell
Water Rights Program, Permitting Administrator
605 773-3352
Amanda.Dewell@state.sd.us

enclosures