

WATER PERMIT NO. 7477-3

Name of Applicant: **Chad Heckathorn**

Address: **47345 319th St, Elk Point SD 57025** Phone: **605 356-3706**

Amount of Water Claimed: **1.78 cfs** Total Acres: **118 acres**

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

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

Type of Waste Disposal System:

Location: **6 northeast of Vermillion**

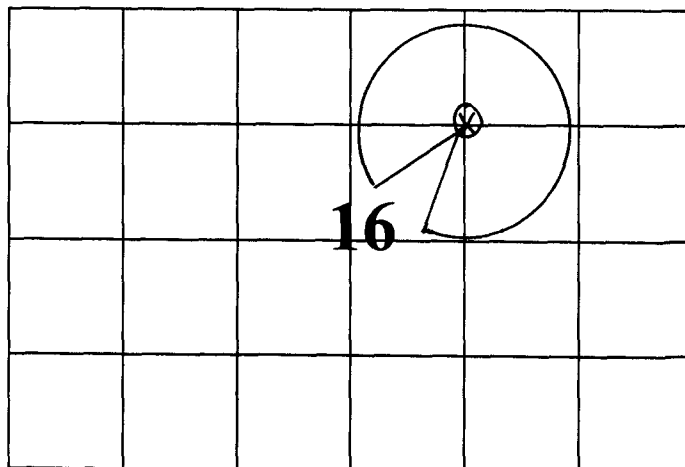
PRIORITY Date Received: **10-22-2012** Application/License Fee: **\$ 950**

Corrected Application Received: Period of Annual Use: **March 1 – October 31**

Remarks:

Diversion Point: **approximate center of NE 1/4 Sec**
16-T93N-R51W

Land to be Irrigated: **NE 1/4 Sec 16-T93N-R51W**



Depth of Well: **170 feet deep**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **10-24-2012**

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>7477-3</u> (office use only) Hydrologic Unit <u>10170102</u>
	Basin <u>Vermillion River</u> <u>605-624-2695</u>
	Newspaper <u>Plain Talk 201 W Cherry Vermillion 57069</u>
	<u>Daily Pressor Dakotan 319 Walnut Yonkers 57028 605-665-7811</u>

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OCT 22 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.)

1. Name to Appear on Irrigation Permit Chad Heckathorn

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

Mailing Address 47345 319th St Elk Point SD 57025
(Address) (City) (State) (Zip Code)

Home Phone 605.356.3706 Cell 605.675.0111 Email heckseeds@speednet.com

2. Amount of water claimed 1.28 *CFS or 800 **GPM ***AF Total Acreage 118
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Lower Vermillion / Missouri Aquifer

4. Location of point of diversion 1 well in section 16 T93N-R51W (approximate center)
(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 March-October

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
NW1/4 NE1/4 section 16 T93N-R51W	32.5		
NE1/4 NE1/4 section 16 T93N-R51W	31.5		
SW1/4 NE1/4 section 16 T93N-R51W	22.5		
SE1/4 NE1/4 section 16 T93N-R51W	31.5		

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

Center pivot irrigation of properties described above. - applicant is.
Requesting greater diversion rate than Statutory limit

I, Chad Heckathorn, 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. 7477-3**

Date of first receipt of application October 22, 2012.

Date of return to applicant for corrections, amendments or changes October 23, 2012.

Date of receipt of corrected application October 24, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7477-3 to Chad Heckathorn, 47345 319 St, Elk Point SD 57025 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. 7477-3 appropriates 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower Vermillion:Missouri Aquifer (170 feet deep) located in the approximate center of the NE 1/4 Section 16 for irrigation of 118 acres located in the NE 1/4 Section 16; all in T93N-R51W.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: March 1 – October 31.
3. The date from which applicant may claim right is October 22, 2012.
4. The date of approval of Permit No. 7477-3 is January 22, 2013.
5. One-fifth of the construction is to be completed on or before July 22, 2015.
6. All construction is to be completed on or before January 22, 2018.
7. Water is to be put to beneficial use on or before January 22, 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. 7477-3 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. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Water Permit No. 7477-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 118 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

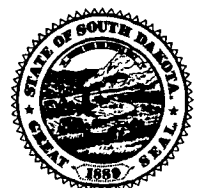
WATER MANAGEMENT BOARD

By: Garland Erbele

Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

FEB 08 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 NA Have test holes been drilled ☐ Yes ☒ No Drilled by NA
(if yes, please provide copies of logs)
- b) If existing wells, how many NA Provide copy of log(s), if available. Drilled by NA
- c) Well Depth 170' Depth to Top of Water Bearing Material 105' Depth to Water from Surface 90'
- d) Distance to nearest existing domestic well:
On applicant's property NA On property owned by others >2000

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

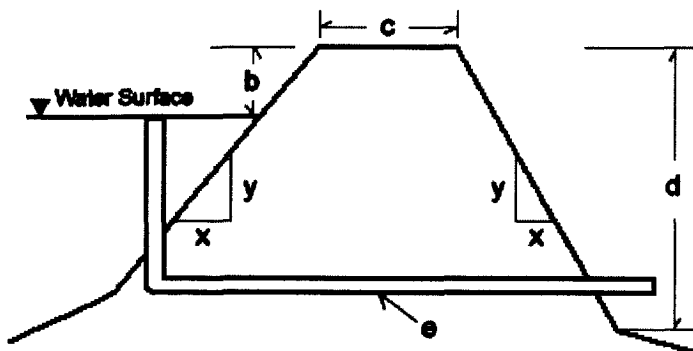
3. Dugout Information

- 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



**FARM
WORKS**
LAWYERS

IRRIGATION PERMIT PLAN MAP

Date: 10/17/2012

Customer(s): CHAD WAYNE HECKATHORN

District: CLAY COUNTY CONSERVATION DISTRICT

Approximate Acres: 137

Legal Description: NE1/4 16-93-51

Field Office: VERMILLION SERVICE CENTER

Agency: NRCS

Assisted By: KEVIN BEERMANN

State and County: SD, CLAY



Kevin Beermann
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WATER RIGHTS
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Legend



-  section(Polygon)
-  clay irrigation
-  well(Point)
-  Sections

260 0 260 520 780 1,040
Feet



IRRIGATION PERMIT PLAN MAP

Soils Map

Date: 10/17/2012

Customer(s): CHAD WAYNE HECKATHORN

District: CLAY COUNTY CONSERVATION DISTRICT

Approximate Acres: 137

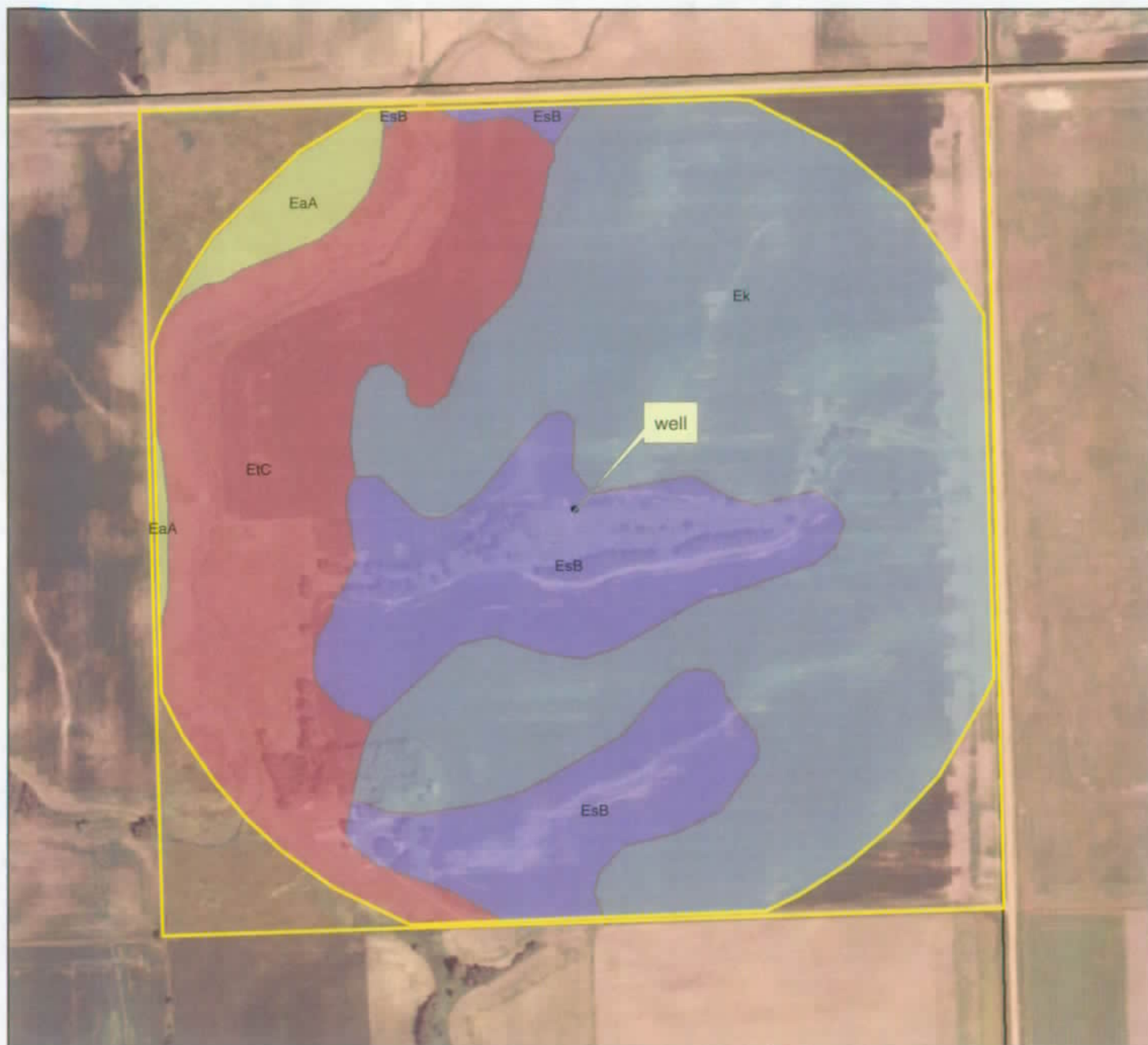
Legal Description: NE1/4 16-93-51

Field Office: VERMILLION SERVICE CENTER

Agency: NRCS

Assisted By: KEVIN BEERMANN

State and County: SD, CLAY



Legend

section(Polygon)

clay irrigation

• well(Point)

Soils Map

MuSym

EsB

EaA

EtC

Ek

Sections

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260 0 260 520 780 1,040
Feet



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South Dakota Department of Environment and Natural Resources

Date 10/24, 20 12

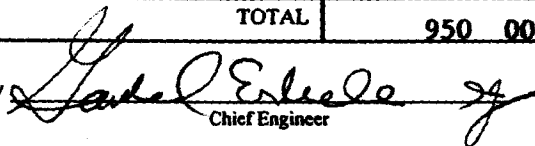
RECEIVED OF Chad Heckathorn 47345 319th St Elk Point SD 57025

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

Fee for Application for Permit No. <u>7477-3</u> to Appropriate Water, to construct and to put water to beneficial use	750	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>7477-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	950 00

No. **05634**

By


Chief Engineer

Soils Inventory Report

CHAD WAYNE HECKATHORN

Map Unit Symbol	Acres	Percent
EaA	3.7	3%
Ek	70.5	51%
EsB	28.5	21%
EtC	34.3	25%
Total:	137	100%

Schlaak, Karen

From: Chad Heckathorn <heckseeds@speednet.com>
Sent: Wednesday, October 24, 2012 12:03 PM
To: Schlaak, Karen
Subject: RE: Chad Heckathorn Pivot Application Map Clay Co

I really messed up on the acres per 40, but for the sake of the application I don't know if it matters much.

The actual acres shown in the for different $\frac{1}{4}$'s on the maps should look like this:

Section 16-T93N-R51W
32.5 acres NW $\frac{1}{4}$ NE $\frac{1}{4}$
31.5 acres NE $\frac{1}{4}$ NE $\frac{1}{4}$
31.5 acres SE $\frac{1}{4}$ NE $\frac{1}{4}$
22.5 acres SW $\frac{1}{4}$ NE $\frac{1}{4}$

Total of 118 Acres

Thank you.

From: Schlaak, Karen [<mailto:Karen.Schlaak@state.sd.us>]
Sent: Tuesday, October 23, 2012 4:42 PM
To: 'Chad Heckathorn'
Subject: RE: Chad Heckathorn Pivot Application Map Clay Co

The map clearly shows your proposed system. Based on the map, it appears you will be irrigating the following:

Section 16-T93N-R51W
31.5 acres NW $\frac{1}{4}$ NE $\frac{1}{4}$
32.5 acres NE $\frac{1}{4}$ NE $\frac{1}{4}$
32.5 acres SE $\frac{1}{4}$ NE $\frac{1}{4}$
22.5 acres SW $\frac{1}{4}$ NE $\frac{1}{4}$

Total of 119 acres

The proposed well will be located in the approximate center of the NE $\frac{1}{4}$ Sec 16-T93N-R51W.

Please let me know if you agree and I will change your application accordingly.

Karen Schlaak
Water Rights Program
Phone: 605 773-3352
Fax: 605 773-4068

From: Chad Heckathorn [<mailto:heckseeds@speednet.com>]

Sent: Tuesday, October 23, 2012 3:07 PM

To: Schlaak, Karen

Subject: Chad Heckathorn Pivot Application Map Clay Co

Karen,

Sorry for the mix up. Thank you for the call.

Chad Heckathorn

47345 319th St

Elk Point, SD 57025

heckseeds@speednet.com

605.675.0111



**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. 7477-3, Chad Heckathorn**

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. 7477-3, Chad Heckathorn, 47345 319th Street, Elk Point SD 57025.

The Chief Engineer is recommending APPROVAL of Application No. 7477-3 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. 7477-3 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. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Water Permit No. 7477-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 118 acres with an annual volume not to exceed 2 acre feet of water per acre per year.
4. 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
December 27, 2012

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO.7477-3
CHAD HECKATHORN
JANUARY 02, 2013

Water Permit Application No. 7477-3 proposes to appropriate 236 acre-feet annually at a maximum diversion rate of 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower Vermillion Missouri aquifer. The well is expected to be approximately 170 feet deep and is to be located in the approximate center of the NE ¼ Section 16-T93N-R51W. This permit application proposes to irrigate 118 acres located in the NE ¼ Section 16-T93N-R51W in Clay County. The applicant is requesting a diversion rate greater than the statutory limit of one cfs per 70 acres.

AQUIFER: Lower Vermillion Missouri (LVM)

GEOLOGY AND AQUIFER CHARACTERISTICS:

Test hole information was not submitted with this permit application. However, sufficient data is available through well completion reports (Water Rights, 2012c), water right/permit files (Water Rights, 2012b), and SD DENR-Geological Survey test hole logs (SDGS, 2012) to evaluate this application. The Lower Vermillion Missouri aquifer is a buried outwash (sand and gravel) aquifer that is under confined conditions in the area of this application, but also has portions under unconfined conditions (Stephens and Christensen, 1967). The aquifer underlies approximately 100,800 acres and contains an estimated 1.5 million acre-feet of recoverable water in storage in Clay County (Hedges et al., 1982). The aquifer blends into the Missouri: Elk Point aquifer to the south and into the Upper Vermillion Missouri aquifer to the north. This aquifer is also hydraulically connected to the Vermillion River and the Parker-Centerville aquifer.

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 the availability of unappropriated water and existing rights from the aquifer.

WATER AVAILABILITY:

This application proposes to appropriate 236 acre-feet annually from the Lower Vermillion Missouri aquifer. Although the actual water use if this application is approved will most likely be less than 236 acre-feet/year. The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1 which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source.

Observation Well Data:

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

The DENR-Water Rights Program monitors 12 observation wells completed into the Lower Vermillion Missouri aquifer (Water Rights, 2012a). The nearest observation wells are CL-80F and CL-80H. The observation wells are 2.1 and 2.6 miles away from the proposed well site, respectively. The water levels rise (recharge) during wet years and gradually decline during dry years. The effect of well withdrawals does not appear to be adverse over the period of record. The climatic effects on the water level greatly mask the temporal impacts of well withdrawal. The hydrographs show that over the period of record water levels have held fairly constant. Therefore, recharge to and natural discharge from the Lower Vermillion Missouri aquifer significantly exceeds pumping. Considering the observation well data, there is a reasonable probability that there is unappropriated water available from the Lower Vermillion Missouri aquifer. Figures 1 and 2 are the hydrographs for observation wells CL-80F and CL-80H, respectively.

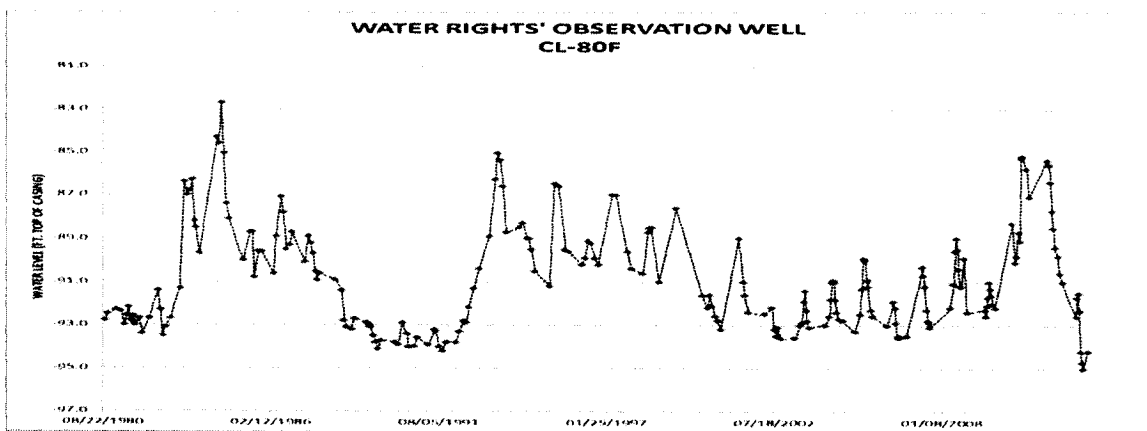


Figure 1- Hydrograph of DENR-Water Rights' observation well CL-80F, located approximately 2.1 miles southeast of the proposed well location (Water Rights, 2012a)

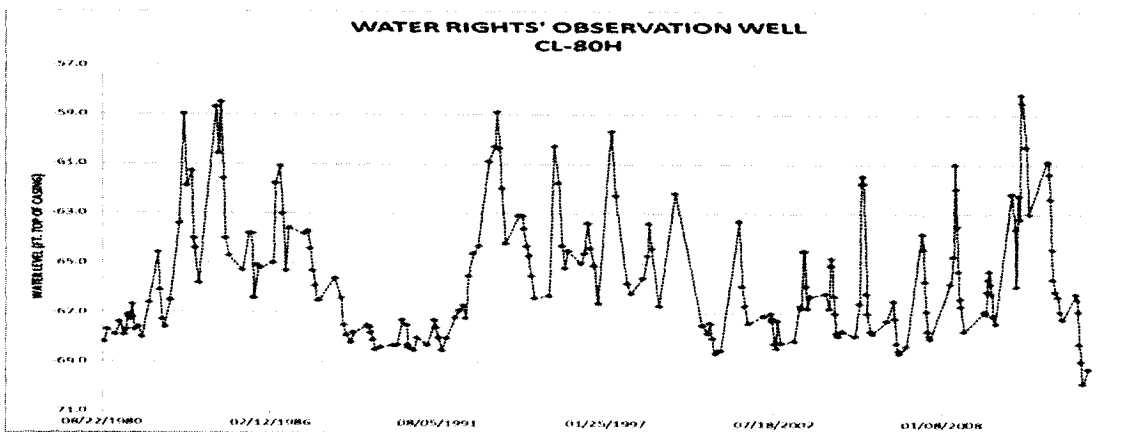


Figure 2- Hydrograph of DENR-Water Rights' observation well CL-80H, located approximately 2.6 miles northwest of the proposed well location (Water Rights, 2012a)

Recharge versus Withdrawals:

Recharge:

Recharge to the Lower Vermillion Missouri is from infiltration of precipitation, influent seepage from streams, and subsurface inflow from adjacent areas (Stephens and Christensen, 1967). The aquifer also receives recharge from the Vermillion River during periods of high flow (Stephens and Christensen, 1967), and from the Niobrara aquifer where the two aquifers come in contact with each other (Water Rights, 2012c). Hedges and others (1985) estimated the recharge rate to the unconfined portion of the aquifer to be 3.8 in/yr. Total recharge has not been estimated for the aquifer. However, Hedges and others (1985) stated, "for management and development programs the minimum recharge rate to confined aquifers is estimated to be 0.15 inches per year and the maximum rate is 0.60 inches per year."

Withdrawals:

There are 66 water rights/permits and one pending permit appropriating water from the Lower Vermillion Missouri aquifer on record with the SD-DENR Water Rights Program. The non-irrigation appropriations consist of two rural water system appropriations and two appropriations for institutional use. The estimated annual withdrawal by institutional appropriations is 27.4 acre-feet. This estimation assumes water is being withdrawn from the aquifer 60 percent of time at maximum diversion rate. The average annual withdrawal from the aquifer as reported to the SD DENR-Water Rights Program (1998-2011) by Clay Rural Water System Inc., the two rural water system appropriations, is 569.9 ac-ft. Water withdrawal from the Lower Vermillion Missouri aquifer for irrigation, as reported to the DENR- Water Rights Program through annual irrigation questionnaires, is shown in table 1.

YEAR	NO. OF PERMITS REPORTING	APPROPRIATION (AC-FT/YR)	PUMPAGE REPORTED (AC-FT/YR)
2011	62	19987.00	2195.06
2010	59	19561.70	144.56
2009	58	18961.70	482.64
2008	55	17587.45	4301.25
2007	50	16655.45	2909.12
2006	43	15254.45	2674.51
2005	45	15844.45	1410.24
2004	39	15013.45	1747.48
2003	40	15199.45	1800.56
2002	40	15199.45	1762.32
2001	38	14879.45	2036.96
2000	38	14879.45	2041.72
1999	38	14879.45	900.63
1998	36	14150.45	1032.91
1997	36	13656.14	1085.00
1996	36	14096.04	997.60
1995	37	14309.24	506.61
1994	39	14673.74	517.28
1993	39	15308.00	0.00
1992	39	15308.24	168.80
1991	39	15308.24	1670.10
1990	38	15657.34	2113.20
1989	38	15657.34	2301.20
1988	38	15657.34	2083.80
1987	37	15435.34	1115.40
1986	45	20477.34	1047.50
1985	46	20661.34	1328.20
1984	47	20754.30	691.00
1983	38	15480.34	716.30
1982	37	15862.84	870.04
1981	49	23003	1543
1980	47	22683	2417
1979	49	22683	1163
Min	36	13656.14	0
Max	62	23003	4301.25
Avg.	42.88	16809.86	1447.73

Table 1- Irrigation water use from the Lower Vermillion Missouri aquifer (Water Rights 1990-2011).

Total average annual withdrawal, including non-irrigation use, is 2,045.03 acre-feet per year from the Lower Vermillion Missouri aquifer. The observation well hydrograph shows that the water level in the aquifer has remained relatively constant despite changes in annual water use and appropriations. The recharge required to have annual recharge equal annual withdrawal is 0.24 inches per year. If this application is approved, the additional withdrawal will not significantly increase the recharge required to push it out of the range suggested by Hedges and others (1985). Therefore, there is a reasonable probability that unappropriated water is available from in the Upper Vermillion Missouri aquifer.

EXISTING WATER RIGHTS:

There are four water rights/permits authorizing wells and several domestic wells within three miles of the proposed well site on file with the SD DENR-Water Rights Program (Water Rights, 2012b). Table 2 shows the water rights/permits within three miles of the proposed well site. A domestic well is the only well on file with the DENR-Water Rights Program within one mile.

Permit No.	Name	Status	Type	CFS	Acres
3039-3	Virginia R. Johnson	LC	IRR	2	140
4664-3	William O'Connor	LC	IRR	1.7	120
4896-3	Margaret V. Manning	LC	IRR	1.56	111
6951-3	Verlyn Hybertson	PE	IRR	2.14	150
LC= Water Right, PE= Water Permit, IRR= Irrigation					

Table 2- Water rights/permits within three miles of proposed well site (Water Rights, 2012b)

Well interference may occur but it is not expected to be significant due to the distance between the wells. Water Management Board rules 74:02:04 and 74:02:05, which were promulgated pursuant to SDCL 46-6-6.1, provide protection for existing wells only to the degree necessary to maintain an adequate depth of water in wells that have the ability to produce water independent of artesian pressure. Hence, the pump placement in a prior appropriator's well is not necessarily protected. The Water Management Board, in the past, has concluded that if increased cost or decreased production is considered an adverse impact, it could be in conflict with SDCL 46-1-4. South Dakota Codified Law 46-1-4 requires South Dakota's water resources to be put to beneficial use to the fullest extent of which they are capable. Therefore, well interference is not likely to adversely impact existing appropriative or domestic users.

SDCL 46-5-6

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of one cfs per second for every 70 acres, or "the equivalent thereof." The statute does provide that the Water Management Board may allow a greater diversion if the method of irrigation so requires. Water Permit Application 7477-3 proposes to increase the total diversion rate to 1.78 cfs to irrigate 118 acres, or the equivalent of 1.06 cfs per 70 acres. The applicant did not provide justification for the request in excess of the statutory limit.

CONCLUSIONS:

1. This application proposes to appropriate 236 acre-feet annually for the irrigation of 118 acres, but the amount of water that actually will be used is expected to be less than 236 acre-feet annually.
2. There is a reasonable probability that unappropriated water is available from the Lower Vermillion Missouri aquifer to supply this proposed diversion.
3. There is a reasonable probability that the diversion rate requested by this application can be made without adversely affecting existing water rights.
4. The applicant is requesting a diversion rate that would be in excess of the statutory limit of one cfs per 70 acres. No justification for this request was provided with the application



Adam Mathiowetz
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Hedges, L.S., J. Allen, and D.E. Holly. 1985. Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge, Final Report. U.S. Army Corps of Engineers. Omaha, Nebraska. Contract DACW 45-80-C-0185.
- Hedges, L.S., S.L. Burch, D.L. Iles, R.A. Barari, and R.A. Schoon. 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.
- Stephens, J.C. and C.M. Christensen. 1967. Geology and Water Resources of Clay County, South Dakota Part II. Bulletin 19. SD-DENR Geological Survey. Vermillion, South Dakota
- SDGS. 2012. Lithologic Logs Database. < <http://sddenr.net/lithdb/>>. SD DENR-Geological Survey. Vermillion, SD.
- Water Rights. 1991-2011. "1990-2011 Irrigation Summaries by Aquifer": SD DENR-Water Rights Program, Joe Foss Building, Pierre, SD.
- Water Rights. 1998-2011. Non-irrigation Yearly Reports. SD DENR-Water Rights Program. Joe Foss Building, Pierre, SD.
- Water Rights. 2012a. Observation Well Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights. 2012b. Water Right/Permit Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights. 2012c. Water Well Completion Report. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

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AFFIDAVIT OF PUBLICATION

PLAIN TALK

DENR

Division of Environmental Services
Air Quality 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 FOR AIR QUALITY CONSTRUCTION PERMIT

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 11 DAY OF JANUARY 2013
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$28.31 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: 1/11/13

FILED ON: 1/11/13

**NOTICE OF APPLICATION
NO. 7477-3 to Appropriate
Water**

Notice is given that Chad Heckathorn, 47345 319th St, Elk Point SD 57025 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second (cfs) from one well to be completed into the Lower Vermillion:Missouri Aquifer (170 feet deep) located in the approximate center of the NE 1/4 Section 16 for irrigation of 118 acres located in the NE 1/4 Section 16; all in T93N-R51W. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7477-3 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 January 22, 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 \$28.31.

Published January 11, 2013

Tera A. Schmidt
SUBSCRIBED AND SWORN TO BEFORE ME THIS 11th DAY OF January

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

RECEIVED

JAN 14 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. 7477-3

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 11th DAY OF January 2013
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$26.81 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: 1/11/2013

FILED ON: 1/11/2013

SUBSCRIBED AND SWORN TO BEFORE ME THIS 11th DAY OF January

2013

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

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Published once at the total approximate cost of \$26.81.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

January 3, 2013

Plain Talk
201 W Cherry St
Vermillion SD 57069

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7477-3 to Appropriate Water. Please publish the notice once on January 11, 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 Chad Heckathorn, 47345 319th St., Elk Point SD 57025 (Ph # 605-356-3706).

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

January 3, 2013

Press & Dakotan
319 Walnut
Yankton SD 57078

ATTENTION: Legal Public Notice

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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.

January 3, 2013

Chad Heckathorn
47345 319th St
Elk Point SD 57025

Dear Mr. Heckathorn:

Water Permit Application No. 7477-3 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.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

FEB 08 2013

Chad Heckathorn
47345 319th St
Elk Point SD 57025

Dear Mr. Heckathorn:

Enclosed is Water Permit No. 7477-3 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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

April 26, 2013

7477-3

Chad Heckathorn
47345 319th St
Elk Point SD 57025

Dear Mr. Heckathorn:

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

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

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

Sincerely,

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

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

Form 10

7477-3

RECEIVED

APR 17 2013

WATER RIGHTS
PROGRAMNOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USEDate 4-17-2013TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

FROM:

Chad Heckathorn

(name)

47345 319th ST

(address)

EIK Point, SD 57025

(city, state, zip)

605.675.0111

(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. 7477-3 states that the water use system is to be constructed by1-22-2018

(date)

, and water is to be put to beneficial use by

~~1~~ 1-22-2022

(date)

The water use system was completed on ~~March~~ 3-29-2012

(date)

Applying the water to beneficial use was completed on 3-29-2012

(date)

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

Chad Heckathorn

(signature)



7477-3

SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

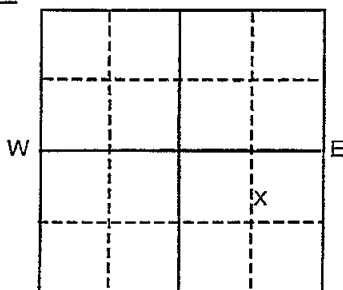
Location NW ¼ SE ¼ Sec 16 Twp 93N Rg 51W

Well Owner: CHAD HECKATHORNE

County CLAY

North

Please mark well location with an "X"



Business Name:

Address: 47345 319TH ST

City, State, Zip: ELK POINT SD 57025

WELL LOG:

DEPTH

FORMATION	DEPTH	
	FROM	TO
TOP SOIL	0	2
GLACIAL TILL TAN	2	28
GLACIAL TILL GRAY	28	73
FINE SAND DARK GRAY	73	93
SMALL PEBBLE GRAVEL	93	98
SAND & GRAVEL	98	126
COALY SAND	126	151
SMALL TO MED GRAVEL	151	158
CLAY MIX W/ SANDY DARK COLOR	158	180

Well Completion Date

January 15, 2013

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
1,500.0 ft. from SEPTIC TANK (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

DIRECT ROTARY.

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	16.00 IN	0.0 FT	100.0 FT	22.00 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	29	9.5 Lb/gal	0.0 Ft	100.0 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

TREMIE METHOD

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 16.00 Inches Length 60.0 Feet

Material PVC

Slot Size .060 Set From 100.0 Feet to 160.0 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? HTH TABLETS

☐ No, Why Not?

Lab to which water quality sample sent for analysis

STATIC WATER LEVEL 72.0 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

89.0 Ft. After 2.0 Hrs. pumped 800.0 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: 750.0 GPM

REMARKS

RECEIVED

JAN 27 2014

WATER RIGHTS PROGRAM

This well was drilled under license # 666 and this report is true and accurate.

Drilling firm: HAMMOND-WETMORE DRILLING, LLC

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: 1/23/14

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7477-3

I have this day, **October 31, 2016**, made a thorough examination of the water use system constructed by **Chad Heckathorn, 47345 319th St, Elk Point SD 57025** of Permit No. **7477-3**, bearing the priority of **October 22, 2012** authorizing the diversion of **1.78** cu. ft. per second of the waters of **Lower Vermillion:Missouri Aquifer** for **irrigation** purposes, of **118** acres, in **Clay** County.

Inspection contact & relationship to permit holder, if applicable: **Chad Heckathorn, permit holder**

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: **Hammond-Wetmore Drilling, LLC**
- 2) No. of Wells **1**
- 3) Depth(s) **160** feet
- 4) Well log is available **Yes**

Casing:

- 1) Diameter **16** inches
- 2) Length **100** feet
- 3) Type **PVC**

Screen:

- 1) Type **PVC Manufactured**
- 2) Length **60** feet
- 3) Static water level **72** feet

Pump:

- 1) Make **Grundfos Submersible**
- 2) Model **800s500-2**
- 3) Capacity **800** GPM

Motor:

- 1) Make **Grundfos**
- 2) Model No. **Submersible**
- 3) Horsepower rating **50** hp

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make Valley 8000
- 2) Overall length 1241 feet
- 3) Number of towers 6
- 4) End gun Yes
- 5) Capacity 800 GPM

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 with 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.

List any extended period of nonuse: None

- 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: West 1280', South 1280' from NE Corner of Sec 16-T93N-R51W; Lat 42.87735/Long -96.86987; approximate center of NE 1/4 Sec 16-T93N-R51W.
2. The works are capable of diverting and conveying to the place of use 1.78 cfs or 800 gpm of water which is to be used for irrigation. Water has been put to beneficial use to the maximum extent as follows:

All land is located in Sec 16-T93N-R51W.

NW 1/4 NE 1/4 - 31 ac

NE 1/4 NE 1/4 - 32 ac

SW 1/4 NE 1/4 - 21 ac

SE 1/4 NE 1/4 - 31 ac

comprising a total of 115 acres of land and the license should be issued for 1.78 cfs or 800 gpm.

3. All structures, wells and lands on map Yes

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

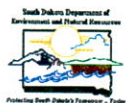
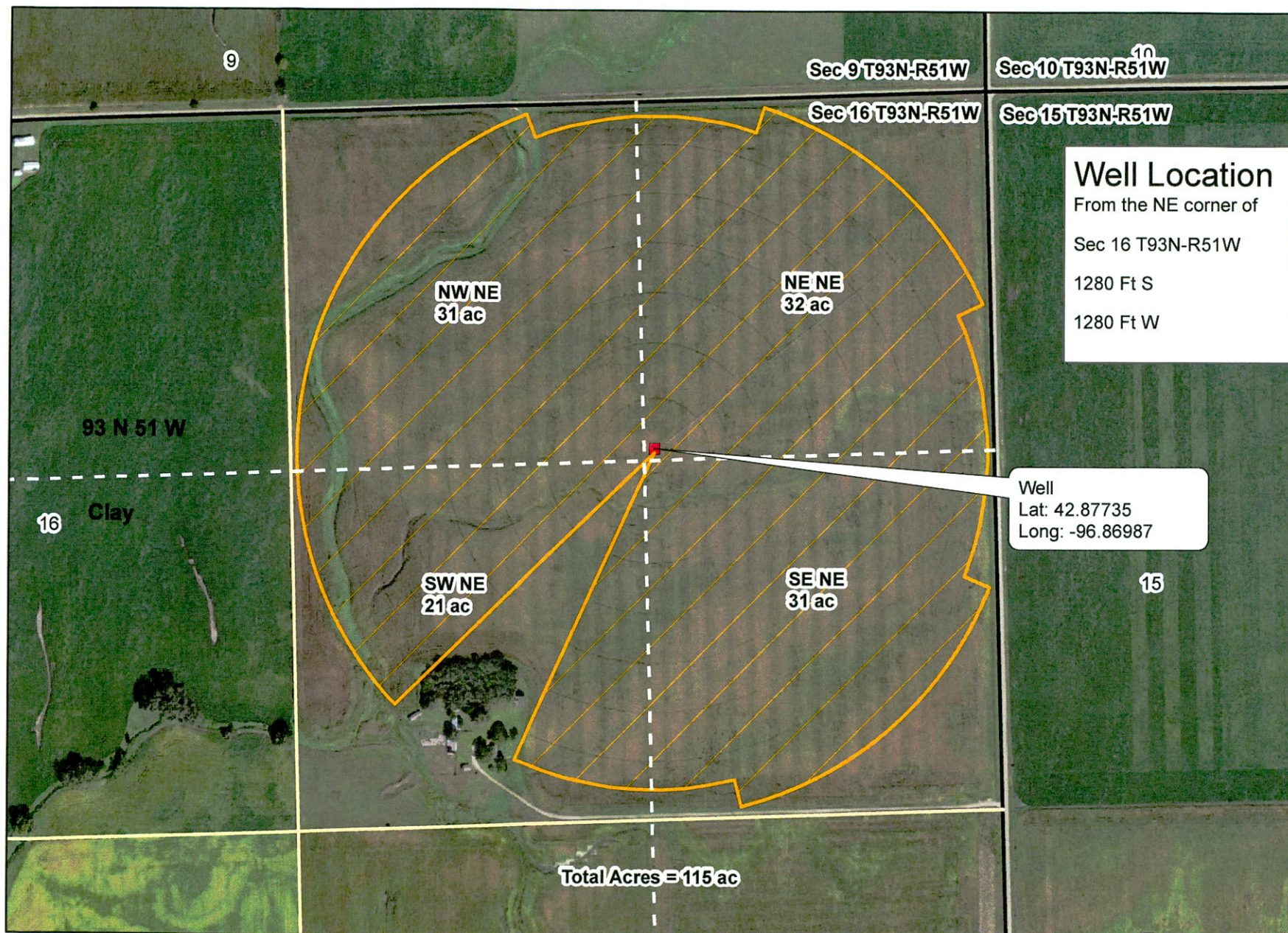
Water Permit No. 7477-3 appropriates a diversion rate greater than the statutory limit of 1 cfs per 70 acres irrigated.

Harold Holoch

Harold Holoch, PE
Staff Engineer
DENR, Water Rights Program

Date report completed: January 8, 2018

7477-3



Harold Holoch

Harold Holoch, PE

Staff Engineer

January 4, 2018



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

MAR 19 2018

7477-3

Chad Heckathorn
47345 319th St
Elk Point SD 57025

Dear Mr. Heckathorn:

Enclosed is Water License No. 7477-3. 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, 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. 7477-3**

(1) Chad Heckathorn, 47345 319th St, Elk Point SD 57025 made Application No. 7477-3, October 22, 2012 for a water permit to divert 1.78 cubic feet of water per second from ground water, one well (Lower Vermillion Missouri Aquifer), Clay County, South Dakota for irrigation purposes. Permit No. 7477-3, with a priority date of October 22, 2012 was approved January 22, 2013 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before January 22, 2018 and for the application to beneficial use of said water on or before January 22, 2022.

The Permit holder submitted a *"Notice of Completion of Works and Application of Water to Beneficial Use"* on April 17, 2013. The *"Notice"* stated the water use system was completed and the water placed to beneficial use in March, 2012.

(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 1.78 cubic feet of water per second for beneficial use. The location of the diversion point is:

- 1280'W and 1280'S of the NE Corner of Section 16, T93N, R51W (approximate center of NE ¼)
Latitude 42.87735 Longitude -96.86987;

(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:

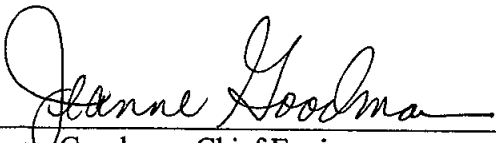
T93N, R51W Section 16	NW ¼ NE ¼	31 acres
	NE ¼ NE ¼	32 acres
	SW ¼ NE ¼	21 acres
	SE ¼ NE ¼	31 acres
Total		115 acres

(4) Pursuant to South Dakota Water Law 46-5-30.1 Chad Heckathorn, 47345 319th St, Elk Point SD 57025 the holder and/or owner of Water Right No. 7477-3 is issued a license to appropriate water, the right to use 1.78 cubic feet of water per second from ground water, one well (Lower Vermillion Missouri Aquifer) with a priority date of October 22, 2012 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. 7477-3 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. 7477-3 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. ***The well was drilled in January, 2013 by Hammond Wetmore Drilling LLC. A copy of the well completion report is on file with the Water Rights Program.***

- Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Water Permit No. 7477-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 115 acres with an annual volume not to exceed 2 acre feet of water per acre per year. *The number of acres was reduced from 118 to 115 based on the acreage actually developed.*
- 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

MAR 19 2018

date

