

WATER PERMIT NO. 7557-3

Name of Applicant: Jeff Massey

Address: PO Box 64, Elk Point SD 57025 Phone: 605 356-3157

Amount of Water Claimed: 1.78 cfs Total Acres: 112

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation County: Union

Type of Waste Disposal System:

Location: 5 miles southeast of Elk Point

PRIORITY Date Received: 12-13-2012 Application/License Fee: \$ 950

Corrected Application Received: Period of Annual Use: April 1 – September 30

Remarks: Requesting diversion rate greater than statutory limit

Diversion Point: approximate center of SE 1/4 Sec
10-T90N-R49W

Land to be Irrigated: SE 1/4 Sec 10-T90N-R49W

Depth of Well: 160 feet

Well Driller: Dakota Drilling & Backhole

Remarks:

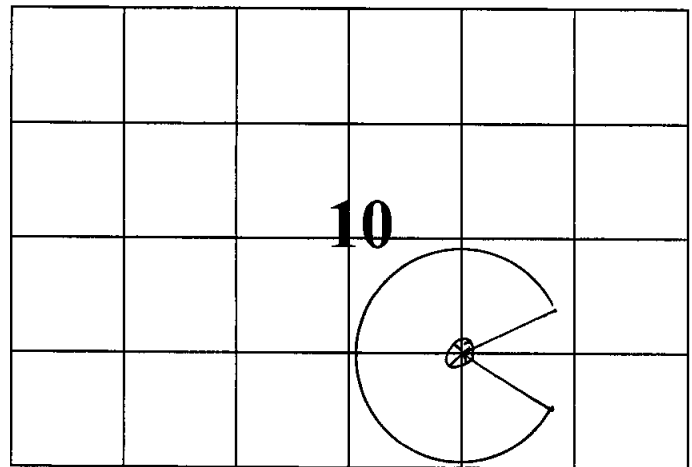
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 12-13-12

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>7557-3</u> (office use only)	Hydrologic Unit <u>10170181</u>
	Basin <u>Missouri River</u>	<u>605-356-2632</u>
	Newspaper <u>Leader - Courier Box 310 Elk Point SD 57025</u>	
	<u>Press & Dakotan 319 Walnut Yankton SD 57078</u>	<u>605-665-7811</u>

RECEIVED
DEC 13 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 Jeff Massey

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

(name and complete address if different than above name)

Mailing Address 208 S. Grant St. PO Box 64 Elk Point SD 57025
(Address) (City) (State) (Zip Code)

Home Phone 605 356 3157 Cell 712 253 5061 Email masseyja@iw.net

2. Amount of water claimed 1.78 *CFS or 800 **GPM ***AF Total Acreage 112
(*Cubic Feet per Second) (**Gallons per Minute) (***) Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply well

4. Location of point of diversion 1 well in NE 1/4 SE 1/4 Sec 10 90N-49W
(example - 3 wells in SW 1/4 NE 1/4 section 12-T104N-R53W)

(approximate center SE 1/4)

County Union

5. County or counties where water will be used Union County

6. Annual period during which water is to be used Spring - Summer April 1 - Sept 30

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

Land Description	Acres	Land Description	Acres
Sec 10 T90N-R49W, NW 1/4 SE 1/4	33		
Sec 10 T90N-R49W, SW 1/4 SE 1/4	33		
Sec 10 T90N-R49W, NE 1/4 SE 1/4	26		
Sec 10 T90N-R49W, SE 1/4 SE 1/4	20		

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

Center Pivot constructed on SE 1/4 Sec 10 90W-49W

Pivot will make only parcel rotation on quarter. Due to full length of pivot and time factor to get over acres I am asking for a 800 gpm Permit

I, Jeff Massey, 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. 7557-3**

Date of first receipt of application December 13, 2012.

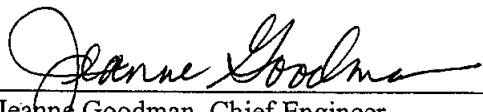
The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7557-3 to Jeff Massey, PO Box 64, Elk Point SD 57025 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 7557-3 appropriates 1.78 cubic feet of water per second (cfs) from one well to be completed into the Missouri:Elk Point Aquifer (160 feet deep) located in the approximate center of the SE 1/4 Section 10 for irrigation of 112 acres located in the SE 1/4 Section 10; all in T90N-R49W.
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: April 1 – September 30.
3. The date from which applicant may claim right is December 13, 2012.
4. The date of approval of Permit No. 7557-3 is March 11, 2013.
5. One-fifth of the construction is to be completed on or before September 11, 2015.
6. All construction is to be completed on or before March 11, 2018.
7. Water is to be put to beneficial use on or before March 11, 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. 7557-3 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, Permit No. 7557-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 112 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: 
Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

APR 26 2013

date



Supplemental Information

(type or print)

Drillers Log on file

1. Well Information

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

- a) If new wells, how many ____ 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 ____ Depth to Top of Water Bearing Material ____ Depth to Water from Surface ____
- d) Distance to nearest existing domestic well:

On applicant's property 1100 ft

On property owned by others 2200 ft

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

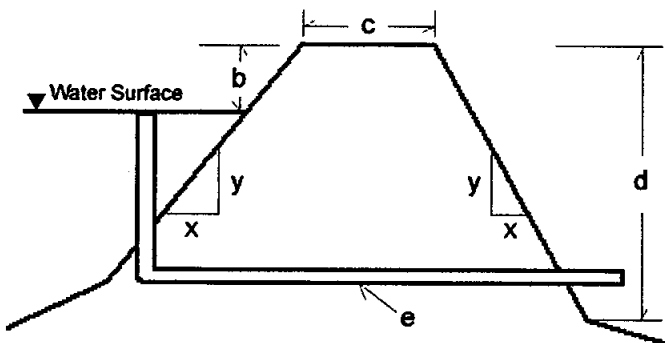
3. Dugout Information

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

4. Water Storage Dams

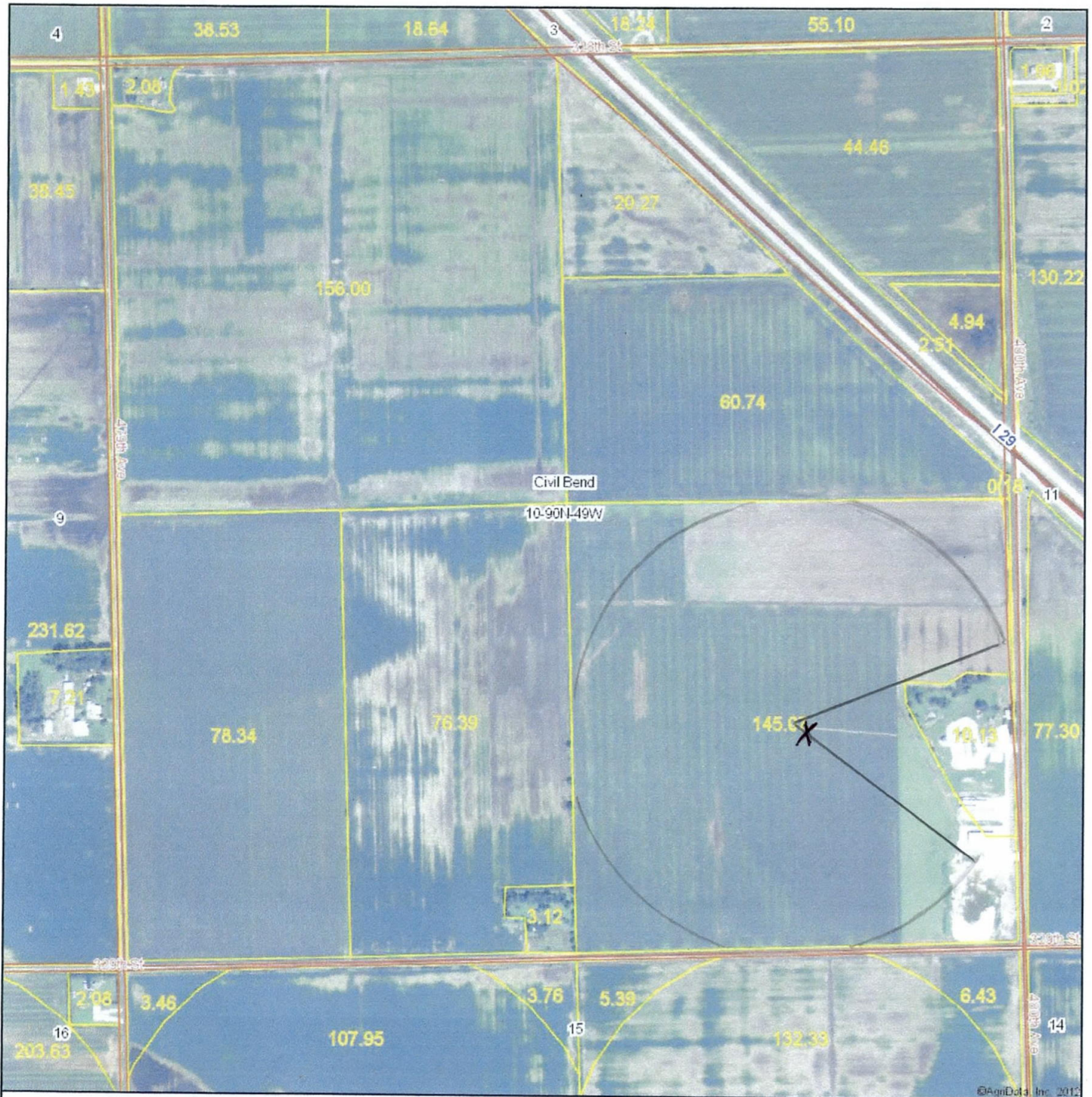
If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

- 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

Aerial Map



Crop Production Services 

Maps provided by:

 **surety**
CUSTOMIZED ONLINE MAPPING

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www.AgridataInc.com

10-90N-49W
Union County
South Dakota

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map center: 42° 37' 34.36, 96° 36' 58.9

scale: 9586



12/11/2012

Field borders provided by Farm Service Agency as of 5/21/2008. Aerial photography provided by Aerial Photography Field Office.

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE 1/4 SE 1/4 Sec 10 Twp 90 N Rg 49W
County Union

Please mark well location with an "X"

W

X

E

1 Mile

Well Completion Date 8-30-07

Well Owner: Jeff Massey

Business Name: _____

Address: 208 Grant St. / P.O. Box 64
Elk Point, SD 57025

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Heavy dark clay</u>	<u>0</u>	<u>8</u>
<u>Fine sugar sand</u>	<u>8</u>	<u>27</u>
<u>Heavy clay</u>	<u>27</u>	<u>41</u>
<u>Silt</u>	<u>41</u>	<u>66</u>
<u>Med. sand</u>	<u>66</u>	<u>87</u>
<u>Med. gravel</u>	<u>87</u>	<u>165</u>

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? _____ ft. from None (identify source).

PROPOSED USE:

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

METHOD OF DRILLING:

Mud Rotary

CASING DATA:

- ☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>41 40 LB/FT</u>	<u>12 IN</u>	<u>0 FT</u>	<u>160 FT</u>	<u>18 IN</u>
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Bentonite</u>	_____	_____ lb./gal	<u>30 ft.</u>	<u>10 ft.</u>
_____	_____	_____ lb./gal	_____ ft.	_____ ft.

Describe grouting procedure Pumped in with grout pump

SCREEN: ☒ Perforated pipe ☐ Manufactured

Diameter 12 IN Length 60 FEET

Material PVC

Slot Size 50 Set From 160 Feet to 160 Feet

Other information _____

WAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material? _____

Describe packer(s) and location? _____

STATIC WATER LEVEL 19 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

- ☐ Pumped
☐ Bailed
☐ Other

Describe: Not test pumped - no electricity available

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate 820 GPM

REMARKS

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This well was drilled under license # 667

And this report is true and accurate.

Drilling firm Dakota Drilling + Backhoe, Inc.

Signature of License Representative: / /

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 12/13, 20 12

RECEIVED OF R Jeffrey Massey

PO Box 64

Elk Point SD 57025

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

Fee for Application for Permit No. <u>7557-3</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>7557-3</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. 05766

By

Harold Erskine
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. 7557-3, Jeff Massey**

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. 7557-3, Jeff Massey, PO Box 64, Elk Point SD 57025.

The Chief Engineer is recommending APPROVAL of Application No. 7557-3 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. 7557-3 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, Permit No. 7557-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 112 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 on application for additional information.

Garland Erbele, Chief Engineer
February 14, 2013

REPORT ON WATER PERMIT APPLICATION NO.7557-3

Jeff Massey

February 19, 2013

Water Permit Application No. 7557-3, Jeff Massey, proposes to appropriate 224 acre-feet of water at a maximum diversion rate of 1.78 cubic feet of water per second from one well to be completed into the Missouri: Elk Point aquifer (160 feet deep) located in the approximate center of the SE 1/4 Section 10 for irrigation of 112 acres located in the SE 1/4 Section 10; all in T90N-R49W. The applicant is requesting a diversion rate greater than the statutory limit of one cfs per 70 acres. The project is located approximately 5 miles southeast of the town of Elk Point in Union County.

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

GEOLOGY AND AQUIFER CHARACTERISTICS:

The proposed well site is located in southern Union County between the Missouri and Big Sioux Rivers. The Missouri: Elk Point is an alluvium mantled outwash consisting of clay and silt with sand and gravel that could be under artesian conditions in the area of the proposed well sites (Jenson, 2000; Water Rights, 2013c). The Missouri: Elk Point aquifer extends from the Missouri River to the Big Sioux River over the southern third of Union County and extends into Clay and Yankton counties. The outwash is overlain by alluvium over much of Union County and in general overlies the Dakota aquifer. Hedges and others, (1982) estimated the Missouri: Elk Point aquifer underlies 99,600 acres of Union County and contains 1,494,600 acre-feet of recoverable water in storage in the county. Niehus, (1994) estimated the aquifer underlies 180 square miles (115,200 acres) of Union County and contained 1.5 million acre-feet of water in storage in the county. The maximum thickness of the aquifer in Union County is estimated to be 146 feet and the average thickness is estimated to be 84 feet (Niehus, 1994). A test hole drilled by the DENR-Geological Survey located approximately one-half mile northwest of the well site proposed by this application identifies the aquifer from 64-144 feet below land surface ("Lithologic Logs Database"). The Missouri: Elk Point aquifer is under confined conditions in this area and the static water level of a well at the proposed site is expected to be 14-21 feet below ground surface.

A well completion report was not submitted with this application; however, sufficient information is available from area water rights/permits and well completion reports to evaluate the aquifer at the proposed well sites. In this area, aquifer materials range from 50 to 120 feet below ground surface, and the static water level ranges from 14 to 21 feet below ground surface (Water Rights, 2013b; Water Rights, 2013c).

SDCL 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is a reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest. This report will address the availability of unappropriated water and existing rights from the aquifer that are pertinent to this application.

WATER AVAILABILITY:

This application proposes to appropriate 224 ac-ft/yr from the Missouri: Elk Point aquifer. If this application is approved, the actual water use will likely be less than the appropriation. The probability of unappropriated water available from an aquifer can be evaluated by considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source.”

HYDROLOGIC BUDGET:

Recharge:

Recharge to the Missouri: Elk Point aquifer in Union County is through infiltration of precipitation in areas where the aquifer is at or near land surface and from groundwater inflow from the adjacent Lower Vermillion-Missouri and Big Sioux aquifers and ground water flow from Clay County. Chemical analyses indicate that there is a hydraulic connection between the Dakota aquifer and the Missouri: Elk Point aquifer (Niehus, 1994) and the Dakota aquifer is also a source of recharge. Some recharge to the aquifer occurs from the Missouri River when the stage of the river is higher than the groundwater level. Based on an analysis of observation well data, average annual recharge to the Missouri: Elk Point aquifer is estimated to be 3.8 inches per year (Hedges and others, 1985). Average annual recharge for Union County would be approximately 36,480 acre-feet/yr.

Discharge:

Discharge from the Missouri: Elk Point aquifer occurs due to evapotranspiration in areas where the aquifer is near land surface, outflow to the Missouri and Big Sioux Rivers during periods of low flow, and well withdrawals from domestic use, commercial use, industrial use, fish and wildlife propagation, municipal use, recreational use, rural water systems, suburban housing development, and irrigation. Currently there are a total of 295 water rights/permits appropriating water from the Missouri: Elk Point aquifer in Union County (Water Rights, 2013b).

From the Missouri: Elk Point aquifer in Union County, water rights/permits for non-irrigation use that are limited only by the authorized diversion rate of the water rights/permits which currently total of 12.90 cfs. The amount of water that can be expected to be withdrawn by the non-irrigation use water rights/permits at the current appropriation amount can be estimated by assuming the water rights/permits limited by an annual volume will pump the entire volume appropriated and water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate at 60 percent of the time. At the current appropriation amount, the total annual withdrawal from the Missouri: Elk Point aquifer in Union County by non-irrigation use is expected to total less than 5,605 ac-ft/yr (Water Rights, 2013b).

Figure 1 shows the Missouri: Elk Point aquifer’s historic irrigation data for Union County. The development of this aquifer has been increasing over the last decade. The annual withdrawal due to irrigation use fluctuates greatly, which seems to be more dependent on yearly climatic conditions than on the increase in amount of appropriation. The average pumpage reported equals 10,801 ac-ft/yr. The maximum pumpage reported was in 1988 for 22,195 ac-ft/yr (Water Rights, 1979-2012).

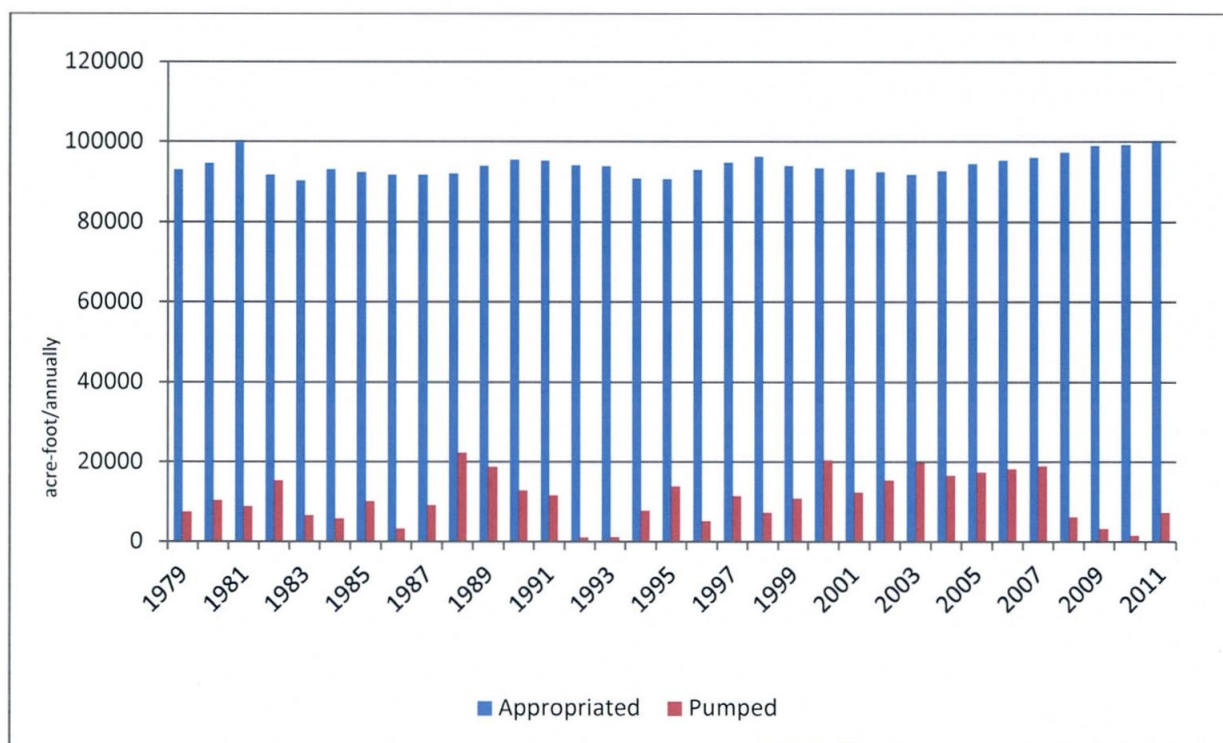


Figure 1: Historic irrigation water appropriation and reported use from the Missouri: Elk Point aquifer in Union County (Water Rights, 1979-2012)

In addition, there are many completion reports on file with the SD DENR-Water Rights Program in Union County for domestic wells that appear to be completed into the Missouri: Elk Point aquifer (Water Rights, 2013c). The annual withdrawal due to domestic use is not significant to the hydrologic budget of the aquifer.

OBSERVATION WELL DATA:

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

The DENR-Water Rights Program monitors five observation wells completed into the Missouri: Elk Point aquifer in Clay County. The nearest of these wells, UN-77O, UN-87D and UN-87E, are located approximately a 1.75 miles west, 1.75 miles northeast and 2.3 miles east of the proposed well site, respectively. All three of these observation wells are under artesian conditions (Water Rights, 2013a). The area of the proposed well sites will likely be under artesian conditions (Water Rights, 2013b; Water Rights, 2013c). Hydrographs for these observation wells and linear trend lines are shown in Figures 2 through 4.

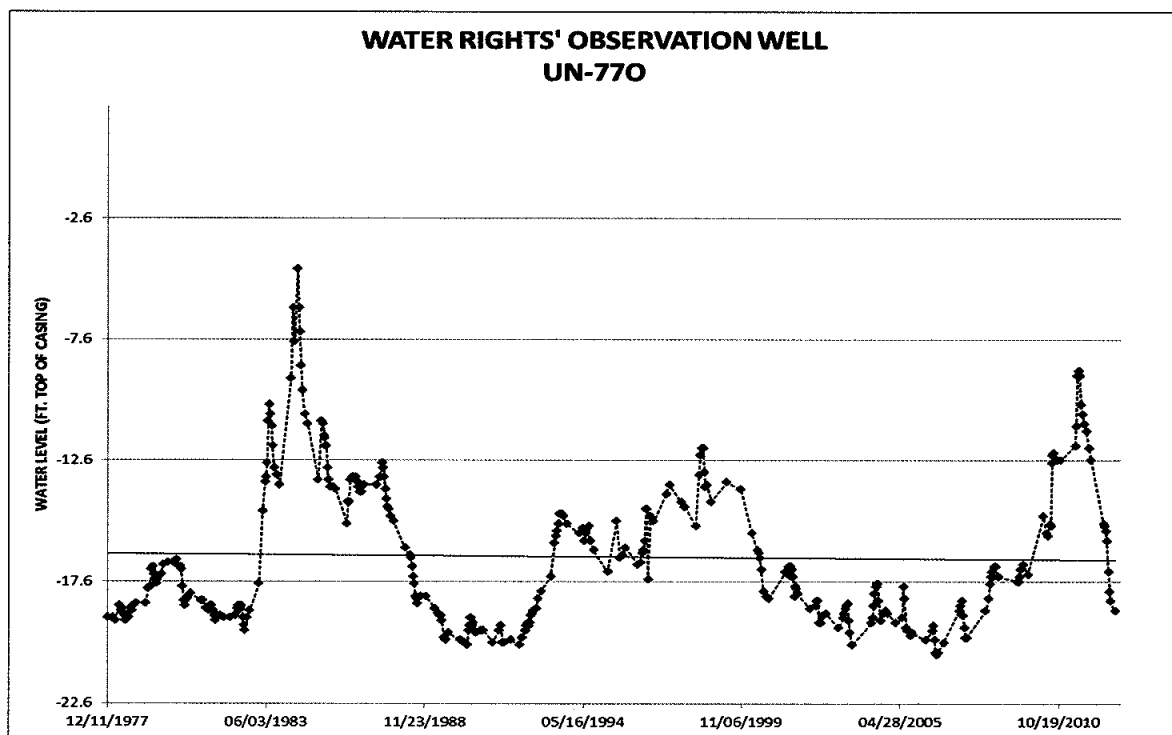


Figure 2: Hydrograph with trend line for DENR-Water Rights' observation well UN-77O (Water Rights, 2013a)

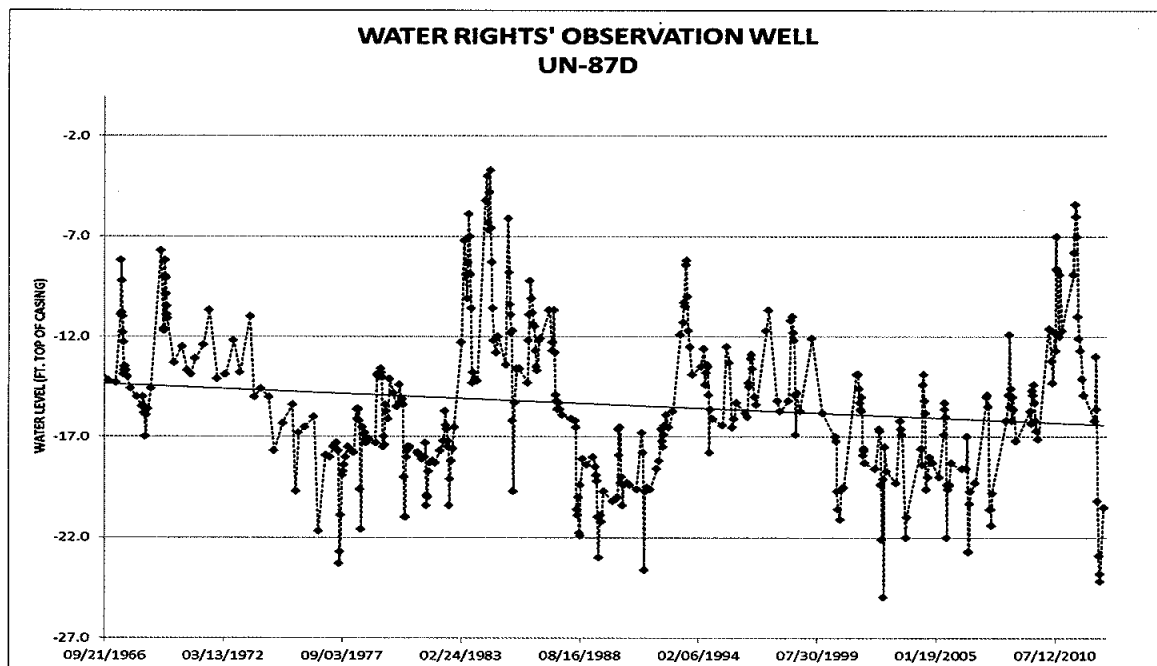


Figure 3: Hydrograph with trend line for DENR-Water Rights' observation well UN-87D (Water Rights, 2013a)

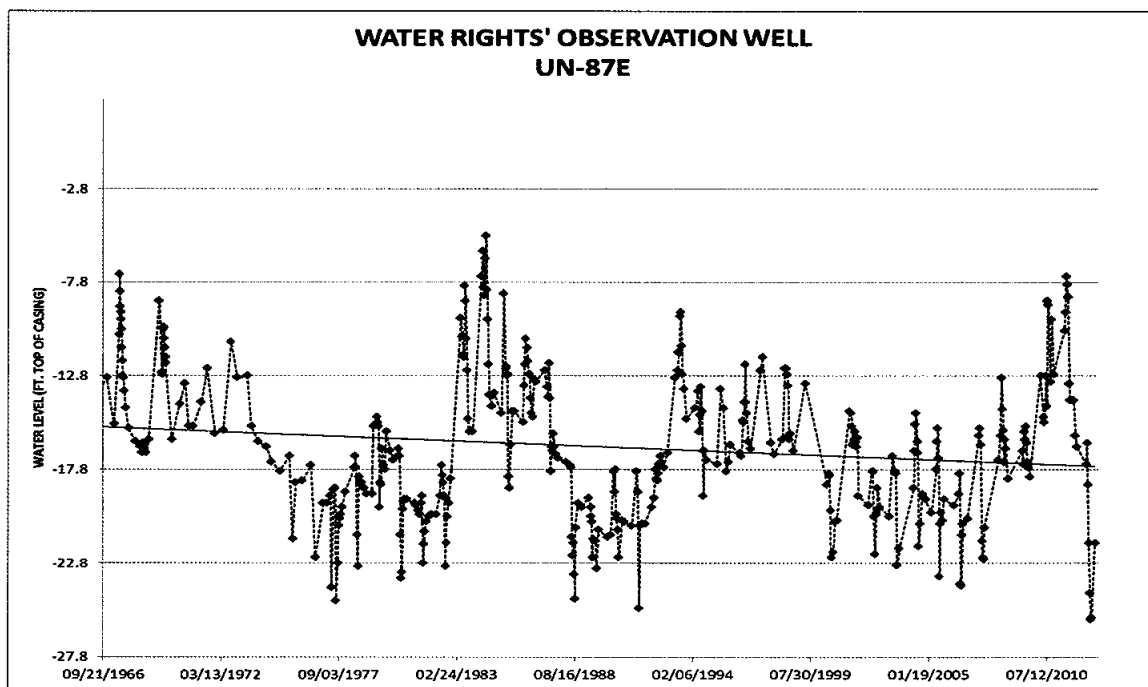


Figure 4: Hydrograph with trend line for DENR-Water Rights' observation well UN-87E (Water Rights, 2013a)

The observation well data documents cyclic conditions of water levels, recharging during wet years and declining during dry years. Water levels may also be influenced by the aquifer's connection to the Missouri River. For example, high flows in the Missouri River during the summer of 2011 and the current drought conditions are evident in the hydrograph of observation well UN-770, which is located approximately two miles from the Missouri River. The hydrographs also show the effects of nearby pumping on the aquifer. Observation well data indicates that temporal well withdrawal is masked by climatic conditions.

The hydrographs of the observation wells UN-770, UN-87D and UN-87E show a slight decline of the Missouri: Elk Point aquifer's water table, as indicated by the trend lines. This gradual decline has been attributed to entrenching of the Missouri River (Goodman, 2007) or controlling the flow of the Missouri River by the Gavins Point Dam, which no longer allows inundating of the floodplain (Stephens, 1967). Regardless of cause, the declining water table levels demonstrate the hydraulic connection between the aquifer and the Missouri River. Pumping from the aquifer will induce recharge supplied by the Missouri River or capture discharge before outflowing to the river (Stephens, 1967).

EXISTING WATER RIGHTS:

There are 295 water rights/permits appropriating water from the Missouri: Elk Point aquifer in Union County. There are eight water rights/permits and two domestic wells within one mile of the proposed well site, with the active water rights/permits shown in Table 1. (Water Rights, 2013b).

Table 1: Water rights/permits with wells completed into the Missouri: Elk Point aquifer within one mile of the proposed well site (Water Rights, 2013b)

PERMIT_NO	NAME	STATUS	USE	CFS
3127-3	HONOMICHL	LC	IRR	2.580
3644-3	ROZELL	LC	IRR	0.900
3869-3	KNEEBONE	LC	IRR	2.000
5184-3	BOSSE	LC	IRR	1.110
6975-3	DONNELLY	PE	IRR	1.780
7218-3	CHICOINE	PE	IRR	2.010

Well interference has not been a problem with the Missouri: Elk Point aquifer. The assurance of reasonable domestic use provided by SDCL 46-6-6.1 and ARSD 74:02:04:20(7) ensures not only that interference will not be adverse to domestic well users but also in existing appropriative rights. Depending on the characteristics of the Missouri: Elk Point aquifer at the well site, some of the existing well owners may need to lower their pumps to accommodate for lower water levels. When considering SDCL 46-6-6.1 and ARSD 74:02:04:20(7), well interference from this proposed increase in diversion rate is not likely to be significant and there is a reasonable probability that any interference will not be adverse. At the distances involved between the proposed well sites and wells of existing water rights/permits and domestic users; interference is not expected to be a concern.

The proposed diversion rate would exceed the statutory limit of 1 cfs per 70 irrigated acres.

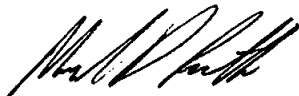
SDCL 46-5-6

Pursuant to SDCL 46-5-6, the amount allowed may not be in excess of the rate of one cubic foot of water per second for each seventy acres. The Water Management Board may allow a greater diversion, in volume or rate or both, if the method of irrigation, any time constraints on diversion of water, or the type of soil so requires.

The applicant proposes to utilize a center pivot irrigation system; however the system will only make a partial turn yet still require the larger diversion rate to operate efficiently. If approved the total acreage for this project would be 112 acres at a diversion rate of 1.78 cfs.

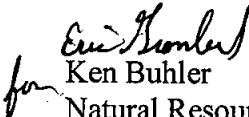
CONCLUSIONS:

1. The application proposes to appropriate 224 ac-ft/yr for to irrigate 112 acres in Union county.
2. The method of irrigation warrants a deviation from the 1 cfs per 70 irrigated acres requirement and the request for a larger diversion rate should be allowed.
3. There is a reasonable probability that unappropriated water is available from the Missouri: Elk Point aquifer to supply the proposed appropriation.
4. There is a reasonable probability that this proposed well will not cause interference in existing nearby wells.



Mark D. Rath
Natural Resources Engineer
SD DENR-Water Rights Program

Approved by


for Ken Buhler
Natural Resources Engineer
SD DENR-Water Rights Program

REFERENCES:

- Goodman, J.A. 2007. Report on Water Permit Application No. 6869-3 for Lewis and Clark RWS: SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., and 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., and 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. South Dakota DENR-Geological Survey, Vermillion, SD.
- Jensen, A.R. 2000. Aquifer Materials Map 1. South Dakota DENR-Geological Survey, Vermillion, SD.
- “Lithologic Logs Database.” South Dakota Department of Environment & Natural Resources Geological Survey. February, 2013.
- Niehus, C.A. 1994. Water Resources of Lincoln and Union Counties, South Dakota. U.S. Geological Survey. Water-Resources Investigations Report 93-4195. Rapid City, South Dakota.
- Stephens, J.C. 1967. Geology and Hydrology of Clay County South Dakota. Part II: Water Resources, SD DENR- Geological Survey Bulletin 19,62p.
- Water Rights. 1979-2012. “Annual Irrigation Summary by Aquifer”: SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights. 2013a. Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights. 2013b. Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights. 2013c. Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.

AFFIDAVIT OF PUBLICATION

RECEIVED

State of South Dakota)

MAR - 4 2013

:ss

WATER RIGHTS
PROGRAM

County of Union)

Kelly Kruihoff,

an employee of the Leader-Courier, deposes and says that

The Leader-Courier

is a legal weekly newspaper of a general circulation, printed and published in Elk Point, County of Union, State of South Dakota, and has been such legal newspaper during the time hereinafter mentioned, and that affiant is and was during all the time hereinafter mentioned in charge of the advertising department thereof, and has personal knowledge of all the facts stated in this affidavit: and that the notice and advertisement headed:

Notice of Application

No. 7557-3

a printed copy of which is hereunto attached and made a part hereof, was printed and published in the said newspaper at least once in

each week for 1 successive weeks; that said newspaper at the time of the first publication of said notice hereinafter stated, had, and still has, a bona fide circulation of over two hundred paid copies weekly, and had been published in the said County of Union for more than one year immediately prior to the date of the said publication of said notice, and that said newspaper during said times, was, and is, printed in part in an office maintained at said city of Elk Point, the said place of publication; that the first publication of said notice in said newspaper was

on Thursday, the 28 day of February, 2013

and that the succeeding publications were

on Thursday, the _____ day of _____,

on Thursday, the _____ day of _____,

on Thursday, the _____ day of _____,

that the fees for the printing and publishing of said notice and advertisement in said newspaper as aforesaid were

\$ 26.78, that the full amount of the fee charged insures to the benefit of the publisher of the said newspaper, that no agreement or understanding for the division thereof has been made with any other person and that no part thereof has been agreed to be paid to any other person whomsoever.

Kelly Kruihoff

Subscribed and sworn to before me

this 28 day of February, 2013

My commission expires 6-21-17

SUSAN ODSON
NOTARY PUBLIC
SOUTH DAKOTA

Notary Public

NOTICE OF APPLICATION NO. 7557-3

TO APPROPRIATE WATER

Notice is given that Jeff Massey, PO Box 64, Elk Point SD 57025 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (160 feet deep) located in the approximate center of the SE 1/4 Section 10 for irrigation of 112 acres located in the SE 1/4 Section 10; all in T90N-R49W. The applicant is requesting a diversion rate greater than the statutory limit.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7557-3 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 March 11, 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 February 28, 2013

Published once at the total approximate cost of \$26.78

9-7-72

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MAR - 6 2013

WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

2+28

NOTICE OF APPLICATION
NO. 7557-3 to Appropriate Water

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. 7557-3

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 28th DAY OF February 2013
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$26.48 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: 2/28/2013

FILED ON: 2/28/2013

SUBSCRIBED AND SWORN TO BEFORE ME THIS 28th DAY OF February

2013

NOTARY PUBLIC, SOUTH DAKOTA

MY COMMISSION EXPIRES

8/19/2015

Notice is given that Jeff Massey, PO Box 64, Elk Point SD 57025 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second from one well to be completed into the Missouri/Elk Point Aquifer (160 feet deep) located in the approximate center of the SE 1/4 Section 10 for irrigation of 112 acres located in the SE 1/4 Section 10; all in T90N-R49W. The applicant is requesting a diversion rate greater than the statutory limit.

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Published once at the total approximate cost of \$26.48.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

February 20, 2013

Leader Courier
PO Box 310
Elk Point SD 57025

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7557-3 to Appropriate Water. Please publish the notice once on February 28, 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 Jeff Massey, Po Box 64, Elk Point SD 57025 (Ph # 605-356-3157).

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

February 20, 2013

Press & Dakotan
319 Walnut
Yankton SD 57078

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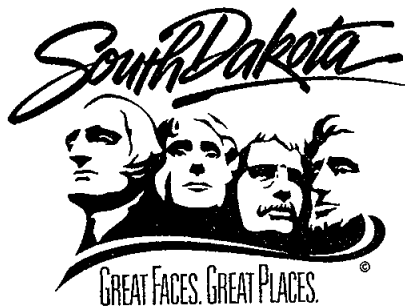
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Sincerely,

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.

February 20, 2013

Jeff Massey
PO Box 64
Elk Point SD 57025

Dear Mr. Massey:

Water Permit Application No. 7557-3 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 Leader Courier printed at Elk Point SD (Ph # 605-356-2632) 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 February 28, 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. 7557-3 to Appropriate Water

Notice is given that Jeff Massey, PO Box 64, Elk Point SD 57025 has filed an application for a water permit to appropriate 1.78 cubic feet of water per second from one well to be completed into the Missouri:Elk Point Aquifer (160 feet deep) located in the approximate center of the SE 1/4 Section 10 for irrigation of 112 acres located in the SE 1/4 Section 10; all in T90N-R49W. The applicant is requesting a diversion rate greater than the statutory limit.

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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

APR 23 2013

Jeff Massey
PO Box 64
Elk Point SD 57025

Dear Mr. Massey:

Enclosed is Water Permit No. 7557-3 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

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

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

Sincerely,

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

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