

WATER PERMIT NO. 8010-3

Name of Applicant: Ryan Rusher

Address: 311 Lilly Lane, Yankton SD 57078 Phone: 605 484-1223

Amount of Water Claimed: 0.10 cfs Total Acres: 2.5 acres

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation County: Yankton

Type of Waste Disposal System:

Location: near Gavins Point Dam

PRIORITY Date Received: 4-28-14 Application/License Fee: \$ 300

Corrected Application Received: Period of Annual Use: April 15 – September 5

Remarks:

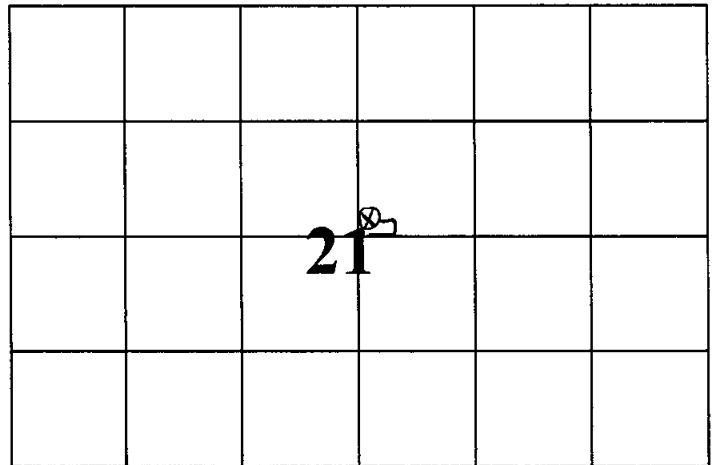
Diversion Point: Lot 64, Crestview Homes

Subdivision (SW 1/4 NE 1/4) Sec 21-T93N-R56W

Land to be Irrigated: Lots 64 & 63, Crestview

Homes Subdivision (SW 1/4 NE 1/4) Sec 21-

T93N-R56W



Depth of Well: 100 feet deep

Well Driller:

Remarks:

Type of Map: plat

Prepared by:

Reviewed and the Number Assigned on: 4-30-14

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>8010-3</u> (office use only) Hydrologic Unit <u>10170101</u>
	Basin <u>Missouri River</u>
	Newspaper <u>Press & Dakotan</u>
	<u>319 Walnut Yankton 57078-605-665 7811</u>

RECEIVED
APR 28 2014
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 Ryan Rusher

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

(name and complete address if different than above name)

Mailing Address 311 Lilly Ln Yankton SD 57078
(Address) (City) (State) (Zip Code)

Home Phone N/A Cell 605-484-1223 Email Ryan.Rusher@hotmail.com

2. Amount of water claimed 0.10 *CFS or 45 **GPM ***AF Total Acreage 2.5
(*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 1 well in lot 64, Crestview Homes Subdivision located in the NE1/4, section
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

21-T93N-R56W of the 5th PM (SW1/4 NE1/4) County Yankton

5. County or counties where water will be used Yankton

6. Annual period during which water is to be used 4/15/2014 to 9/5/2014

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
Lot 64 Crestview Homes Subd.	1.3		
Lot 63 Crestview homes Subd.	1.1		

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

Irrigate acreage to provide a weed free area for kids to play. Trying to eliminate Sandburs on property by providing water so a good grass base can grow.

I, Ryan Rusher, 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. 8010-3

Date of first receipt of application April 28, 2014.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8010-3 to Ryan Rusher, 311 Lilly Ln, Yankton SD 57078 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. 8010-3 appropriates 0.10 cubic feet of water per second (cfs) (45 gallons per minute) from one well to be completed into the Missouri:Elk Point Aquifer (100 feet deep) located in Lot 64, Crestview Homes Subdivision (SW 1/4 NE 1/4) Section 21 for irrigation of 2.5 acres located in the Lots 63 & 64, Crestview Homes Subdivision (SW 1/4 NE 1/4) Section 21; all in T93N-R56W.
2. The amount of the appropriation may not exceed 3 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 15 – September 5.
3. The date from which applicant may claim right is April 28, 2014.
4. The date of approval of Permit No. 8010-3 is July 14, 2014.
5. One-fifth of the construction is to be completed on or before January 14, 2017.
6. All construction is to be completed on or before July 14, 2019.
7. Water is to be put to beneficial use on or before July 14, 2023.
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. 8010-3 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. 8010-3 authorizes a maximum diversion rate of 0.10 cfs for the irrigation of 2.5 acres with an annual volume not to exceed 3 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*
Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

AUG 18 2014

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 ____ 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 100 Depth to Top of Water Bearing Material ____ Depth to Water from Surface ____

d) Distance to nearest existing domestic well:

On applicant's property ____ On property owned by others unknown

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) Septic System and drain field ~ 200' away

b) System Capacity (gallons) ____ Year Constructed 2008

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)

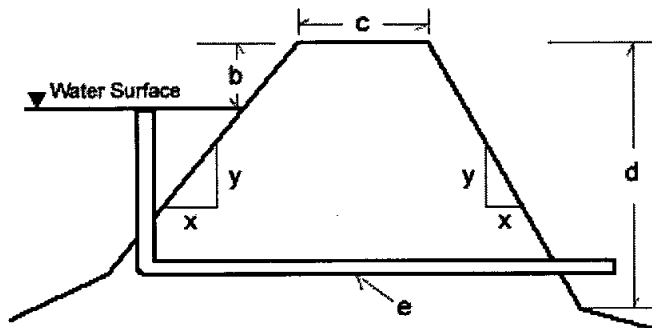
Upstream ____

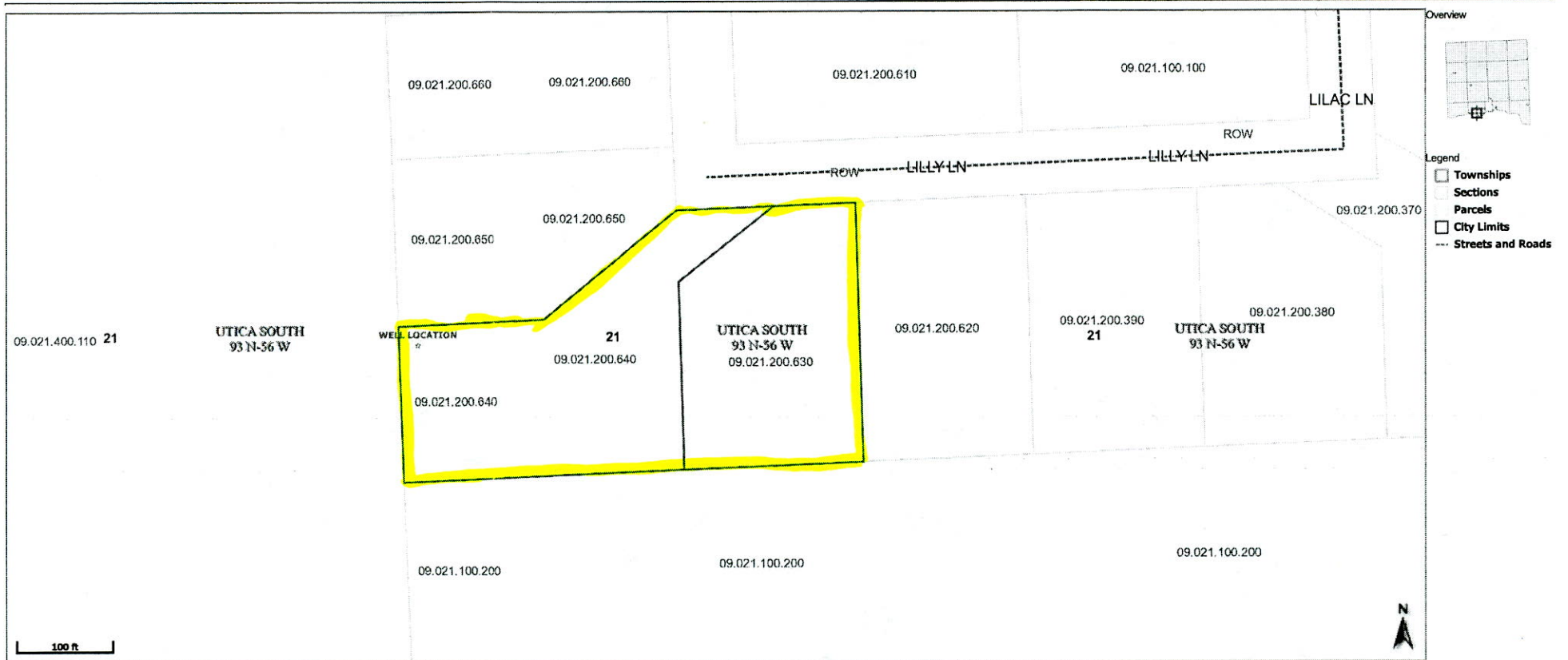
Downstream ____

h) Surface Area of Impoundment ____

i) Storage ____ Acre Feet

j) Drainage Area Above Dam ____ Acres



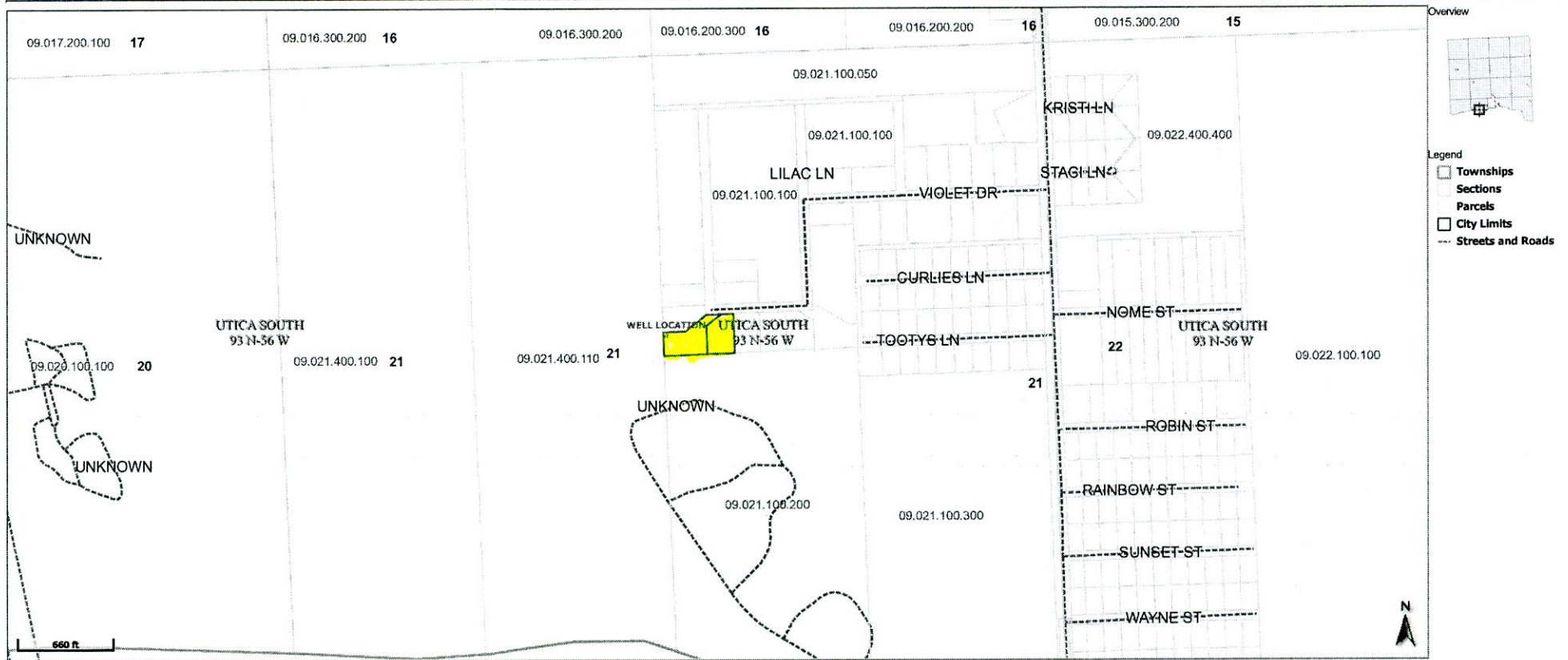


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Disclaimer: Yankton County digital cadastral data are a representation of recorded plats and surveys for use within the Geographic Information System for purposes of data access and analysis. These and other digital data do not replace or modify land surveys, deeds, and/or other legal instruments defining land ownership or use.

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Sec 16
T093N
R56W

Sec 15
T093N
R56W

Sec 17
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Sec 20
T093N
R56W

Sec 21
T093N
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Sec 22
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R56W

Sec 28
T093N
R56W

Sec 27
T093N
R56W

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 4/29, 20 14

RECEIVED OF Ryan Rusher 311 Lilly Lane Yankton SD 57078

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

Fee for Application for Permit No. <u>8010-3</u> to Appropriate Water, to construct and to put water to beneficial use	100	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>8010-3</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	300	00

No. **06844**

By James Goodman
Chief Engineer

**Water Rights Program
File Documentation**

NAME OF PERSON OR FILE: Ryan Rusher

ADDRESS: 311 Lilly Lane Yankton, SD

DATE: 6/10/14 TELEPHONE: 605-484-1223 (cell)

RE: Application in excess of statutory limit on diversion rate

COMMENTS:

Mr. Rusher's water permit application requested 0.10 cfs to irrigate 2.5 acres or the equivalent of 2.8 cfs per 70 acres. I called Mr. Rusher to ask him about his system design and if the diversion rate was required. He told they intended to use an in-ground sprinkler system and the diversion rate was required to decrease the number of zones from approximately 40 to approximately 20. He told me the irrigation installers said the reduction in the number of zones significantly reduces system complexity and cost, and increases overall system efficiency. Also by having the larger diversion rate, he can add more acreage to the system at a later date without having to drill a new well or purchase a larger pump. Furthermore, the soil is quite sandy in his area and having the higher diversion rate will allow him to put on water more quickly to compensate for the increased drainage rate.



Adam Mathiowetz

Natural Resources Engineer

DENR-Water Rights Program



**DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES**

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



**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8010-3, Ryan Rusher**

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. 8010-3, Ryan Rusher, 311 Lilly Lane, Yankton SD 57078.

The Chief Engineer is recommending APPROVAL of Application No. 8010-3 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. 8010-3 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. 8010-3 authorizes a maximum diversion rate of 0.10 cfs for the irrigation of 2.5 acres with an annual volume not to exceed 3 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.

Jeanne Goodman, Chief Engineer
June 25, 2014

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 8010-3
RYAN RUSHER
JUNE 25, 2014

Water Permit Application No. 8010-3 proposes to divert groundwater at a maximum rate of 0.10 cubic feet of water per second (cfs) (45 gallons per minute) from one well to be completed into the Elk Point management unit of the Missouri aquifer. The well is expected to be approximately 100 feet deep and located in Lot 64, Crestview Homes Subdivision (SW ¼ NE ¼) Section 21 for the irrigation of 2.5 acres located in Lots 63 and 64, Crestview Homes Subdivision (SW ¼ NE ¼) Section 21; all in T93N-R56W in Yankton County.

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

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Elk Point management unit of the Missouri aquifer is an alluvium mantled outwash consisting of fine sand to very coarse gravel (Niehus, 1994; Stephens, 1967). The Missouri: Elk Point aquifer is located in southeastern South Dakota, underlying large portions of Yankton, Clay, and Union Counties. In total, the Missouri: Elk Point aquifer is estimated to underlie 210,100 acres and contain 3,287,100 acre feet (ac-ft) of recoverable water in storage (Hedges et. al, 1982). The aquifer connects to the Lower Vermillion Missouri and Lower James Missouri aquifers to the north, overlies and is often hydrologically connected to the Dakota aquifer, and is hydraulically connected to the Vermillion, Big Sioux, and Missouri Rivers. Water in the aquifer generally moves from the northwest to the southeast and towards the Missouri River (Stephens, 1967). The Missouri: Elk Point aquifer is predominantly under water table conditions.

A test hole log was not submitted with this application. Nearby SD DENR-Geological Survey test hole logs (2014) and Water Well Completion reports on file with the DENR-Water Rights Program (2014c) indicate sand and gravel from near ground surface to approximately 130 feet below grade. The static water level of wells in the area ranges from 10 to 25 feet below ground surface (Water Rights, 2014c). The well site is approximately one-half mile away from the Missouri River.

South Dakota Codified Law (SDCL) 46-2A-9

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

WATER AVAILABILITY:

This application proposes to appropriate water from the Missouri: Elk Point aquifer. Actual water use, if this application is approved, will likely be less than 7.5 acre-feet annually (ac-ft/yr). The probability of unappropriated water available from an aquifer can be evaluated by

considering SDCL 46-6-3.1, which requires “No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source.” If the source of the water is older or lower than the Greenhorn Formation and a public water system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, a public water system is not involved and the aquifer is not older or lower than the Greenhorn Formation therefore withdrawal/recharge issue must be considered.

Hydrologic Budget:

The hydrologic budget of the Missouri: Elk Point aquifer was evaluated for groundwater appropriations as of June 10, 2013 (Stonesifer, 2013). Water rights/permits/future use permits are expected to use 81,108 ac-ft/yr, which includes expected use by newer irrigation water permits (permits authorized between 2006 and June 10, 2013). Recharge to the aquifer is estimated to be at least 91,964 ac-ft/yr, which considers recharge induced from the Missouri River by wells for Lewis and Clark Rural Water System. Therefore, approximately 10,856 ac-ft/yr of unappropriated water was available at that stage of development (Stonesifer, 2013).

Since June 10, 2013, 15 water permits have been approved. The 15 water permits are for irrigation use and are shown in Table 1. Historically, irrigation use water rights/permits withdrawing water from this aquifer pump on average 13.7% of the total appropriation (Stonesifer, 2013). Stonesifer’s (2013) percentage of pumping to appropriation takes in to account the continuing development of irrigation from the Missouri: Elk Point aquifer, especially during the period of 2006 to 2012. Stonesifer (2013) accomplished this by only considering the pumpage compared to appropriation of water rights/permits that were past the end of their respective construction period (five years after approval).

Applying that proportion to the new appropriations and the pending appropriation, estimated expected use is 447 ac-ft/yr. Consequently, there is approximately 10,409 ac-ft/yr of recharge in excess of average annual withdrawal. Therefore there is a reasonable probability that unappropriated water is available for this proposed appropriation.

Permit No.	Name	County	Priority Date	Permit CFS	Permit Acres	Permit Appropriation (ac-ft)
7848-3	Missouri Valley Farms Inc.	Union	05/31/2013	3.04	213	426
7856-3	Mike & Steve Allard	Union	07/01/2013	1.78	129.3	258.6
7895-3	Todd Hansen	Union	09/09/2013	1.89	180	360
7898-3	James Orr	Clay	09/12/2013	1.56	132	264
7899-3	Justin Orr	Clay	09/12/2013	1.56	97	194
7904-3	Craig S. McInerney	Union	09/23/2013	1.78	160	320
7933-3	Doug Bye	Clay	12/12/2013	0.89	80	160
7936-3	Donald Johnson	Yankton	12/17/2013	1.39	83	166
7938-3	Russell M. Hall	Union	01/02/2014	n/a	53	106
7941-3	Joseph F. Chicoine	Union	01/14/2014	1	37.69	75.8
7951-3	Allen Pace	Union	01/24/2014	1.78	150	300
7955-3	Karl M. Schenk	Yankton	02/03/2014	1.78	140	280
7971-3	Barry Van Osdel	Yankton	02/20/2014	1.11	68	136
7980-3	Francis Heine	Clay	02/24/2014	0	5	10
7987-3	Francis M. Armstrong Living Trust	Clay	03/17/2014	1.78	102	204

Table 1- Approved and pending water permits from the Missouri Elk: Point aquifer since June 10, 2013 (Water Rights, 2014b)

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 Water Rights Program monitors 37 observation wells completed into the Missouri: Elk Point aquifer (Water Rights, 2014a). The nearest of these wells, YA-57D and YA-79H, are located approximately 9.5 and 10 miles east-northeast of the proposed well site. A hydrograph showing the water level of the aquifer in these two wells is shown in Figure 1. The observation well data documents cyclic conditions of water levels, recharging during wet years and declining during dry years. The hydrograph also shows the effects or lack thereof of nearby pumping on the aquifer. Observation well data indicates that at the current level of development temporal well withdrawal is greatly masked by climatic conditions, indicating that recharge to and natural discharge from the aquifer greatly exceeds well withdrawal.

In general, hydrographs of observation wells completed into the Missouri: Elk Point aquifer show a slight decline in the water table. This has been attributed to entrenching of the Missouri River and a strong hydraulic connection between the river and the aquifer (Goodman, 2007; Stephens, 1967). The Missouri River stage near the City of Yankton has decreased approximately ten feet since the Gavin’s Point Dam was completed, as shown in Figure 2. Since the drought in 2012, water levels in many observation wells completed into the Missouri: Elk Point aquifer have not yet returned to previous elevations. Also shown in the hydrograph in Figure 1 is Missouri River water levels near the City of Yankton. The Missouri River gage site, YA-57D, YA-79H and the proposed well site are shown in Figure 3. The trends in water levels between groundwater and surface water are very similar. This indicates that a strong hydraulic connection exists, where groundwater levels are to some extent dependent on the Missouri River stage. Therefore, water levels in the aquifer are not decreasing due to well withdrawal, and unappropriated water is available.

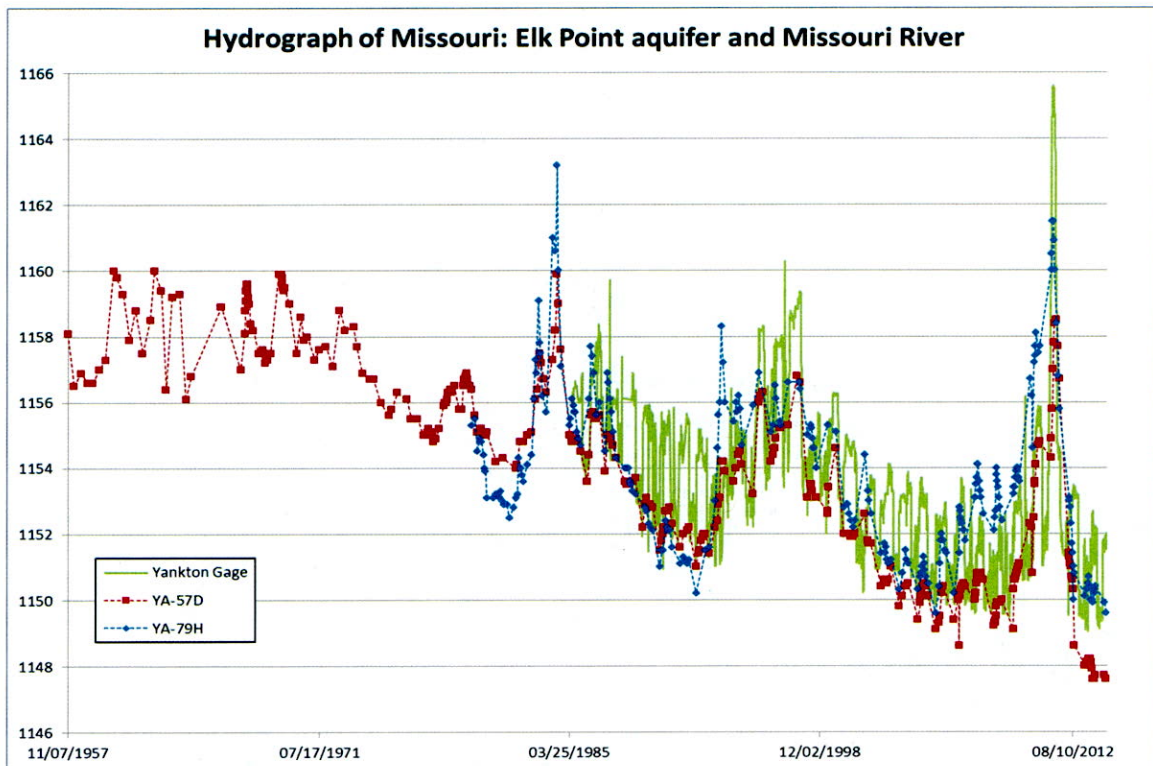


Figure 1- Hydrograph for observation wells YA-57D and YA-79H, and the Missouri River stream gage near the City of Yankton (USGS, 2014; Water Rights, 2014a)

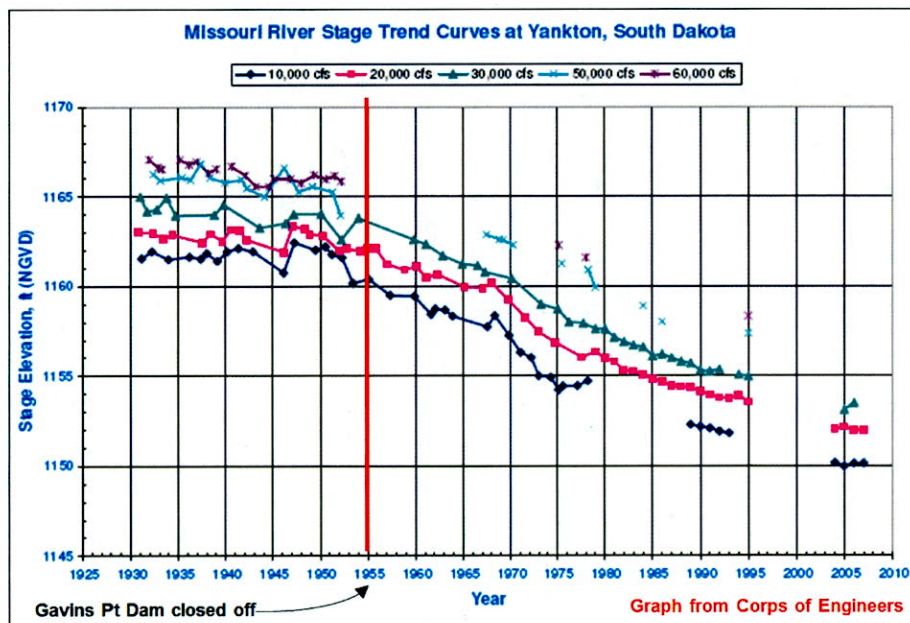


Figure 2- Missouri River Stage Trend Curves at Yankton, South Dakota (Cowman, 2014)

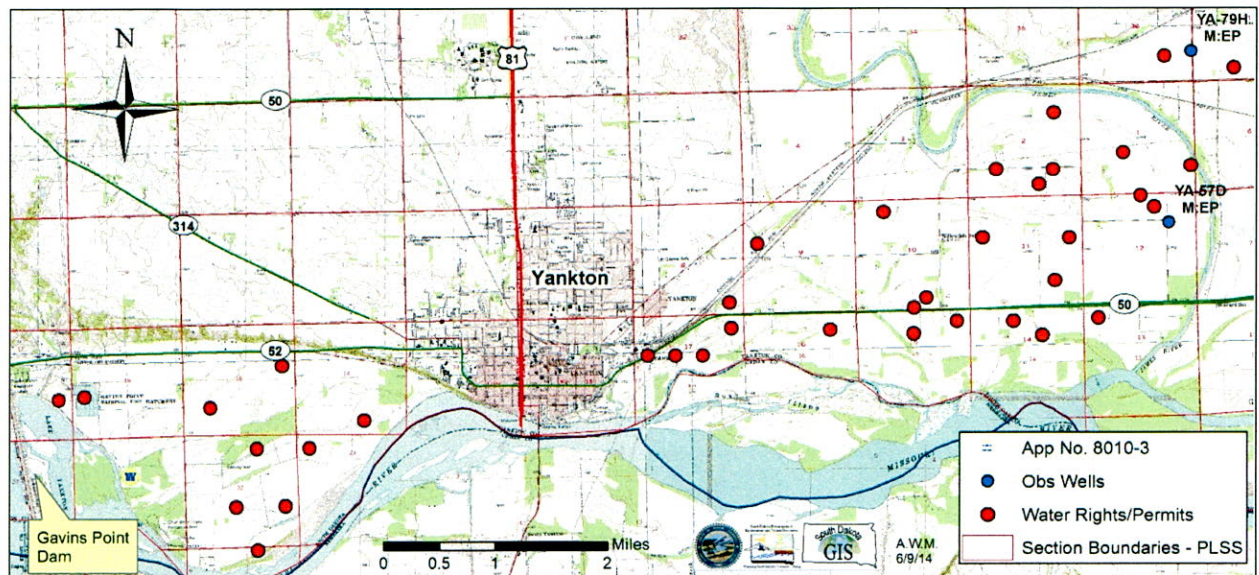


Figure 3- Map of the area of App No. 8010-3 (Water Rights, 2014a and 2014b)

EXISTING WATER RIGHTS:

There are no water rights/permits authorized to withdraw water within approximately one-half mile of the proposed well site (Water Rights, 2014b). There is one domestic well on file with the SD DENR-Water Right Program within approximately one-half mile of the proposed well site (Water Rights, 2014c). The domestic well is approximately one-quarter mile east of the proposed well site.

Using a specific capacity from an irrigation well approximately one mile east of the proposed well site (Water Rights, 2014c) and the Theis Equation, the drawdown at a well 1,320 feet away that would be created from pumping the proposed well at the variables shown in Table 2 is estimated to be 0.29 feet ("Transmissivity from Specific Capacity"; "Theis Equation Calculator"). There is generally 100 feet or more of saturated thickness in the area of the proposed well site.

Distance from pumped well (ft)	Storage Coefficient	³ Specific Capacity (gpm/ft)	¹ Transmissivity (gpd/ft)	Time (days)	Discharge (gpm)	² Drawdown (ft)
1,320	0.1	33.3	50,000	185	45	0.29
¹ = "Transmissivity from Specific Capacity", ² = "Theis Equation Calculator", ³ = Water Rights, 2014c						

Table 2- Theis Equation variables

The water table conditions of the Missouri: Elk Point aquifer, combined with the relatively large saturated thickness and high transmissivity, indicate the effects of drawdown due to pumpage would be minimal. This is illustrated by the proliferation of high capacity wells in the area with no history of well interference issues. However, precise drawdown cannot be quantified without aquifer testing. The Water Management Board has consistently recognized that to place water to maximum beneficial use a certain amount of drawdown may occur. Therefore, nearby adequate wells defined by ARSD 74:02:20(7) are not expected to be adversely or unlawfully impaired due to the proposed wells.

SDCL 46-5-6

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of one cfs for every 70 acres, or "the equivalent thereof." The statute does provide that the Water Management Board may allow a greater diversion rate if the method of irrigation so requires. Water Permit Application No. 8010-3 proposes to divert 0.10 cfs from the Missouri: Elk Point aquifer for the irrigation of 2.5 acres, or the equivalent of 2.8 cfs per 70 acres. The applicant requested the diversion rate greater than the statutory limit because having the larger diversion rate allows the in-ground sprinkler system he plans to use to have fewer zones. By having fewer zones, the system will be simpler and more efficient. Furthermore, by having the larger diversion rate now he can add more acreage to the system later without having to drill a new well or purchase a larger pump. Also, the soil is sandy and water needs to be applied more quickly to compensate for the higher drainage rate. Increasing system efficiency and applying water more quickly to compensate for higher soil drainage rate are acceptable reasons for the request of a diversion rate in excess of the statutory limit.

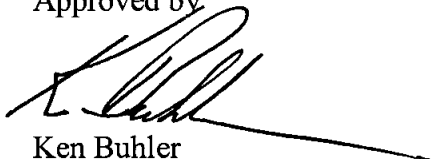
CONCLUSIONS:

1. The water permit application proposes to withdraw groundwater at a maximum diversion rate of 0.10 cfs (45 gpm) from one well to be completed into the Missouri: Elk Point aquifer for the irrigation of 2.5 acres in Yankton County.
2. Unappropriated water is available from the Missouri: Elk Point aquifer to supply the proposed appropriation.
3. This proposed diversion is not expected to adversely or unlawfully impair existing appropriative or domestic users.
4. The applicant is requesting a diversion rate greater than the statutory limit. The higher diversion rate allows for fewer sprinkler zones, increasing efficiency, and to apply water more quickly compensating for the higher drainage rates of the sandy soils in the area. These are valid reasons for the request in excess of the statutory limit.



Adam Mathiowetz
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Cowman, Tim. 2014. "Bed Degradation." Message to Ken Buhler. 20 February, 2014. E-mail.
- 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, South Dakota.
- 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.
- Niehus, C.A. 1994. Water Resources of Lincoln and Union Counties, South Dakota. U.S. Geological Survey Water-Resources Investigations Report 93-4195. U.S. Geological Survey. Rapid City, South Dakota.
- SDGS. Lithologic Logs Database Search. <<http://sddenr.net/lithdb/>>. Accessed: June 6, 2014. SD DENR-Geological Survey. Vermillion, South Dakota.
- Stephens, J.C. 1967. Geology and Hydrogeology of Clay County, South Dakota, Part II: Water Resources. South Dakota DENR-Geological Survey Bulletin 19, 62 p. Vermillion, South Dakota.
- Stonesifer, J.R. 2013. Water Availability of the Missouri: Elk Point Aquifer. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- "Theis Equation Calculator". <<http://www.icalcul8.com/theis.php>>. Accessed: June 9, 2014.
- "Transmissivity from Specific Capacity". <<http://www.aqtesolv.com/forum/transcap.asp>>. Accessed: June 9, 2014.
- USGS. 2014. Surface Water Data for South Dakota: USGS Surface-Water Annual Statistics: USGS 06467500 Missouri River at Yankton, South Dakota.
- Water Rights. 2014a. Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2014b. Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
- Water Rights. 2014c. Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.

RECEIVED

JUL 10 2014

WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

Department of Environment and Natural Resources
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. 8010-3

TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 3rd DAY OF July 2014
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$27.47 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: 7/3/2014

FILED ON: 7/3/2014

SUBSCRIBED AND SWORN TO BEFORE ME THIS 3rd DAY OF July

2014

NOTARY PUBLIC, SOUTH DAKOTA

MY COMMISSION EXPIRES

8/19/2015

Notice is given that Ryan Rusher, 311 Lilly Lane, Yankton SD 57078 has filed an application for a water permit to appropriate 0.10 cubic feet of water per second (45 gallons per minute) from one well to be completed into the Missouri:Elk Point Aquifer (100 feet deep) located in Lot 64, Crestview Homes Subdivision (SW 1/4 NE 1/4) Section 21 for irrigation of 2.5 acres located in the Lots 63 & 64, Crestview Homes Subdivision (SW 1/4 NE 1/4) Section 21; all in T93N-R56W. 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. 8010-3 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 July 14, 2014.

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 \$27.47.



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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



June 25, 2014

Press & Dakotan
319 Walnut
Yankton SD 57078

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 8010-3 to Appropriate Water. Please publish the notice once on July 3, 2014. 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 Ryan Rusher, 311 Lilly Lane, Yankton SD 57078 (Ph # 605-484-1223).

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

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



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

June 25, 2014

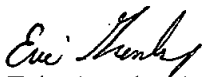
Ryan Rusher
311 Lilly Lane
Yankton SD 57078

Dear Mr. Rusher:

Water Permit Application No. 8010-3 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 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 July 3, 2014. 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. 8010-3 to Appropriate Water

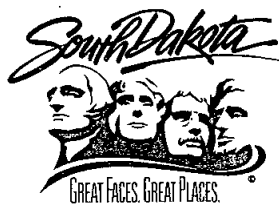
Notice is given that Ryan Rusher, 311 Lilly Lane, Yankton SD 57078 has filed an application for a water permit to appropriate 0.10 cubic feet of water per second (45 gallons per minute) from one well to be completed into the Missouri:Elk Point Aquifer (100 feet deep) located in Lot 64, Crestview Homes Subdivision (SW 1/4 NE 1/4) Section 21 for irrigation of 2.5 acres located in the Lots 63 & 64, Crestview Homes Subdivision (SW 1/4 NE 1/4) Section 21; all in T93N-R56W. 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. 8010-3 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 July 14, 2014.

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 _____.



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

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



AUG 18 2014

Ryan Rusher
311 Lilly Lane
Yankton SD 57078

Dear Mr. Rusher:

Enclosed is Water Permit No. 8010-3 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

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 8010-3

I have this day, July 15, 2020, made a thorough examination of the water use system constructed by Ryan Rusher, 311 Lilly Lane, Yankton, SD 57078, of Permit No. 8010-3, bearing the priority of April 28, 2014 authorizing the diversion of 0.1 cu. ft. per second of the waters of ground water (Missouri: Elk Point Aquifer) for the irrigation of 2.5 acres, in Yankton County.

Inspection contact: Ryan Rusher, Owner

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Quality Well Service LLC
- 2) No. of Wells: 1
- 3) Depth: 60 feet
- 4) Well log is available: Yes

Casing:

- 1) Diameter: 5 inches
- 2) Length: 35 feet
- 3) Type: PVC

Screen:

- 1) Type: Unknown
- 2) Length: 20 feet
- 3) Static water level: 15 feet

Pump:

- 1) Make: Franklin
- 2) Model: Unknown
- 3) Capacity: 20 gpm

Motor:

- 1) Make: Franklin
- 2) Model No.: Unknown
- 3) Horsepower rating: 1.5 hp

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

- 1) Type PVC
- 2) Size 1 inch
- 3) Length Unknown

C. Works used to apply water to beneficial use: Yard sprinkler system with 7 zones and 17 heads per zone.

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 NA
- 3) Exceptions to compliance are: None

E. Condition and Location:

1. The system is in good condition with the point of diversion located as follows: Well: 1,940 feet south and 2,600 feet west of the NE corner of Section 21-T93N-R56W (Latitude 42.86003, Longitude -97.46593).
2. The works are capable of diverting and conveying to the place of use 0.045 cu. ft. per second of water which is used for irrigation. Water has been put to beneficial use to the maximum extent in Lots 63 and 64 in Crestview Homes S/D in the SW1/4 of the NE1/4 of Sec 21, T93N, R56W, approximately 2.5 acres in size, and the license should be issued for 0.045 cfs.
3. All structures, wells and lands on map: Yes

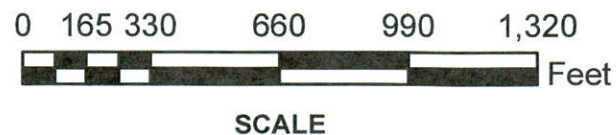
F. Comments or other permit(s) associated with the project: Pump and motor information from Quality Well Service, LLC.



Keith DeJong
Water Rights Inspector
DENR, Water Rights Program

Date report completed: July 29, 2020

Water Right No. 8010-3



Keith DeJong, PE
Staff Engineer
July 15, 2020



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

8010-3

AUG 04 2020

Ryan Rusher
311 Lilly Ln
Yankton SD 57078

Dear Mr. Rusher:

Enclosed is Water License No. 8010-3. This is the final water right document completing your process of obtaining a Water Right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

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

Sincerely,

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

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 8010-3**

(1) Ryan Rusher, 311 Lilly Lane, Yankton SD 57078 made Application No. 8010-3, April 28, 2014 for a water permit to divert 0.10 cubic feet of water per second from ground water, one well (Missouri Elk Point Aquifer), Yankton County, South Dakota for irrigation purposes. Permit No. 8010-3, with a priority date of April 28, 2014 was approved July 14, 2014 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before July 14, 2019 and for the application to beneficial use of water on or before July 14, 2023.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the water supply system and is entitled to divert 0.045 cubic feet of water per second for beneficial use. The diversion point is located:

- 1,940'S and 2,600'W of the NE corner of Section 21, T93N, R56W (SW ¼ NE ¼)
Latitude 42.86003, Longitude -97.46593

(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:

2.5 acres in Lots 63 and 64, Crestview Homes Subdivision in the SW ¼ NE ¼ Section 21, T93N, R56W

(4) Pursuant to South Dakota Water Law 46-5-30.1 Ryan Rusher, 311 Lilly Lane, Yankton SD 57078 the holder and/or owner of Water Right No. 8010-3 is issued a license to appropriate water, the right to use 0.045 cubic feet of water per second from ground water, one well (Missouri Elk Point Aquifer) with a priority date of April 28, 2014 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. 8010-3 and subject to the following qualifications:

- The well authorized under this Water Right 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. 8010-3 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, 2014 by Quality Well Service 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 types of soils so requires, No. 8010-3 authorizes a maximum diversion rate of **0.045 cfs** for the irrigation of 2.5 acres with an annual volume not to exceed 3 acre feet of water per acre per year. *The maximum diversion rate of 0.045 cfs (20 gpm) specified above is based on the system as it was developed.*

continued

Water License No. 8010-3
Page 2

- This Water Right is approved subject to the irrigation water use questionnaire being submitted each year.

Eric Gronlund

Eric Gronlund, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

AUG 04 2020

date





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

January 14, 2025

NOTICE

TO: RYAN RUSHER, 311 LILLY LN, YANKTON, SD 57078

FROM: Ron Duvall, Engineer III
for Eric Gronlund, Chief Engineer
Water Rights Program

SUBJECT: Reporting Requirement for 2024 Irrigation Questionnaire(s)

Our records indicate your 2024 Irrigation Questionnaire(s) has not been submitted for Permit No(s) 8010-3. The request for the Questionnaire was dated October 23, 2024. The Water Management Board has directed owners of water permits who have not submitted the 2024 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) 8010-3 qualification:

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

The hearing will be held on **Wednesday, March 5, 2025, at 9:30 am (Central Time)** in the Floyd Matthew Training Center, Joe Foss Building, 523 E Capitol Avenue, Pierre, SD and will be conducted pursuant to SDCL 46-1-12, 46-1-14, 46-2-9, 46-2-11 and 46-2-17. These are contested case hearings pursuant to Chapter 1-26. According to SDCL 46-1-12, the Board may suspend a permit for a period of up to one year for the first violation of a permit qualification or up to three years for a second violation or cancel a permit for a third violation. Following the hearing, the Water Management Board can:

1. Suspend or cancel Permit No(s) 8010-3 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 5, 2025**, 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 Amanda Dewell at (605) 773-3352 or email at amanda.dewell@state.sd.us. **If you prefer, you can complete the questionnaire online at the following link: <https://danr.sd.gov/iq> using this password: FYRVUV**

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 AGRICULTURE
and NATURAL RESOURCES**

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

January 24, 2025

8010-3

Ryan Rusher
311 Lilly Ln
Yankton SD 57078

Dear Mr. Rusher:

I am writing to acknowledge the receipt of your 2024 irrigation questionnaire(s).

You may disregard the January 14, 2025, "Notice" concerning the reporting requirements for Water Permit No(s). 8010-3. The information was received prior to the March 5, 2025, Water Management Board meeting and the above listed permit number(s) have been removed from the agenda.

If you have any questions or concerns, please contact me.

Sincerely,

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