

WATER PERMIT NO. 8511-3

Name of Applicant: Bowes Construction Inc

Address: 2915 22nd Ave S, Brookings SD 57006

Phone: 605 693-3557

Amount of Water Claimed: 1.67 cfs (405 AF)

Total Acres: NA

Source of Water Supply: groundwater

Water to be used for: industrial

County: Brookings

Type of Waste Disposal System:

Location: southeast edge of Brookings

PRIORITY Date Received: 4-26-21

Application/License Fee: \$ 1150.00

Corrected Application Received:

Period of Annual Use: April 1 – October 31

Remarks: dewatering project

Diversion Point: SW 1/4 Sec 6-T109N-R49W

Land to be Irrigated: NA

Depth of Well: NA

Well Driller:

Remarks:

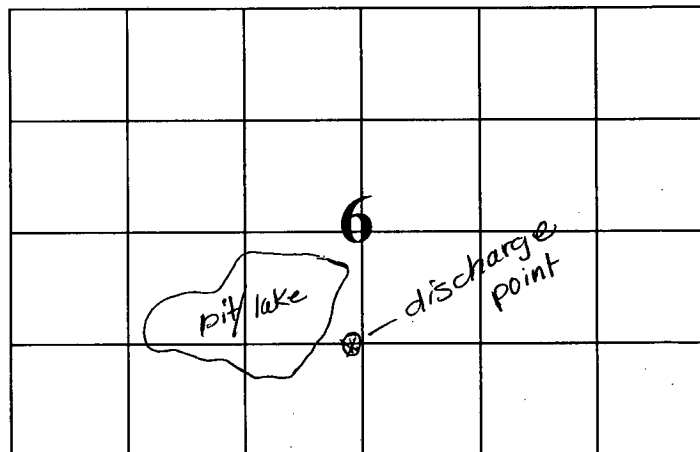
Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 4-26-21

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



SOUTH DAKOTA
WATER PERMIT NO. 8511-3

Date of first receipt of application April 26, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8511-3 to Bowes Construction Inc., c/o Jason Bowes, 2915 22nd Ave S, Brookings SD 57006 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. 8511-3 appropriates 405 acre-feet of water annually at a maximum pump rate of 1.67 cubic feet of water per second from an existing pit/lake into the Big Sioux:Aurora Aquifer located in the SW 1/4 Section 6-T109N-R49W. The water is for industrial use to dewater the area when water in the pit rises and floods the surrounding area and workspace. Water will be discharged to a natural drainage way located in the E 1/2 SW 1/4 Section 6-T109N-R49W. This site is located on the southeast edge of Brookings SD.
2. The water appropriated shall be used for the purpose of industrial use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: April 1 – October 31.
4. The date from which applicant may claim right is April 26, 2021.
5. The date of approval of Permit No. 8511-3 is July 12, 2021.
6. One-fifth of the construction is to be completed on or before January 12, 2024.
7. All construction is to be completed on or before July 12, 2026.
8. Water is to be put to beneficial use on or before July 12, 2030.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

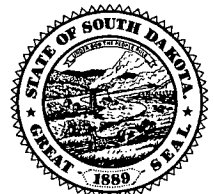
QUALIFICATIONS

1. Dewatering approved under Permit No. 8511-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The owner under this Permit shall control withdrawals from the excavation so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Big Sioux Aurora aquifer.
3. Water Permit No. 8511-3 authorizes a total annual diversion not exceeding 405 acre-feet of water annually from the Big Sioux Aurora aquifer.
4. Diversions may only occur to prevent flooding of the surrounding area and the work-space by the pit.
5. No diversion may violate county or state ordinances or permits.

WATER MANAGEMENT BOARD

By: Eric Gronlund
Eric Gronlund, Chief Engineer
Water Rights Program
Department of Agriculture and Natural Resources

JUL 21 2021
date



APR 26 2021

WATER RIGHTS
PROGRAM

PAID

APR 26 2021

Ck# 091554

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8511-3</u>	(office use only) Hydrologic Unit <u>10170202</u>
	Basin <u>Sioux River</u>	
	Newspaper <u>Brookings Register</u>	

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use(s) of water:

☐ Municipal	☐ Water Distribution System	☐ Recreational	☐ Institutional
☐ Rural Water System	☐ Commercial	☐ Fish & Wildlife	☐ Geothermal
☐ Domestic (over 18 gpm)	☒ Industrial	☐ Other _____	

Type of Application:
(check one)

☒ New	☐ Vested Right (Use predates Mar 2, 1955)	☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____		
☐ Amendment/Correction to Permit No. _____		

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

_____1. Name to Appear on Water Permit Bowes Construction, Inc.

Mailing Address 2915 22nd Avenue South Brookings SD 57006
 (Address) (City) (State) (Zip Code)

Phone 605-693-3557 Mobile _____ Email j_bowes@bowesconstruction.com

2. Amount of water claimed 1.67 *CFS or 750 **GPM and 405 ***AF or _____ Gallons
 Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use)

3. Source of water supply water from the pit/lake on site--storm water/aquifer4. Location of point of diversion east side of the SW 1/4 of Section 6-T109-49W County Brookings

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

If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☐ Yes ☒ No

If "Yes," where will water be used? _____

(example - NW1/4 section 12-T104N-R53W)

5. County or counties where water will be used Brookings6. Annual period during which water is to be used April-October

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

This permit request is to discharge/dewater the existing pit/lake located within a preexisting aggregate mining operation in the SW 1/4 of Section 6-T109-49W. The pit/lake is connected to the aquifer. After large rain events, water in the pit rises and floods the surrounding area and work space. Bowes Construction wishes to pump the excess waters, as necessary, out of the pit/lake and onto the natural drainage way to alleviate flooding/risk of flooding. (See attached map.)

I, Jason Bowes, President, the applicant, certify under
 Name of Person Title (if applicable)

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

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 ____

For either Existing or Proposed Wells:

- c) Well Depth (required) ____ Depth to Top of Water Bearing Material ____ Depth to Water from Surface ____
- d) Distance to nearest domestic well on applicant's property ____ Property owned by others ____

2. Wastewater Disposal System Information

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

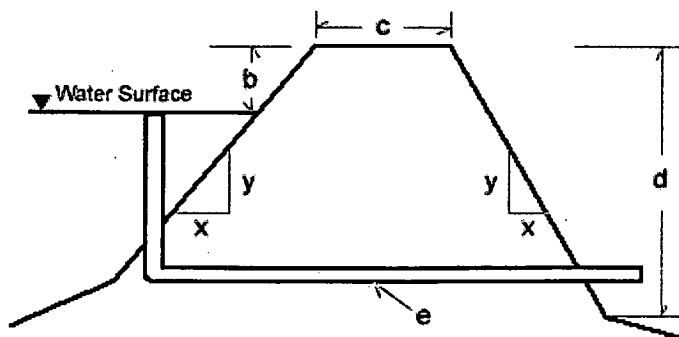
3. Dugout Information

- a) Surface Dimensions approximately 40 acres Depth ____
- b) Depth to water (ground surface to water level) 5' (depending on water table)

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:



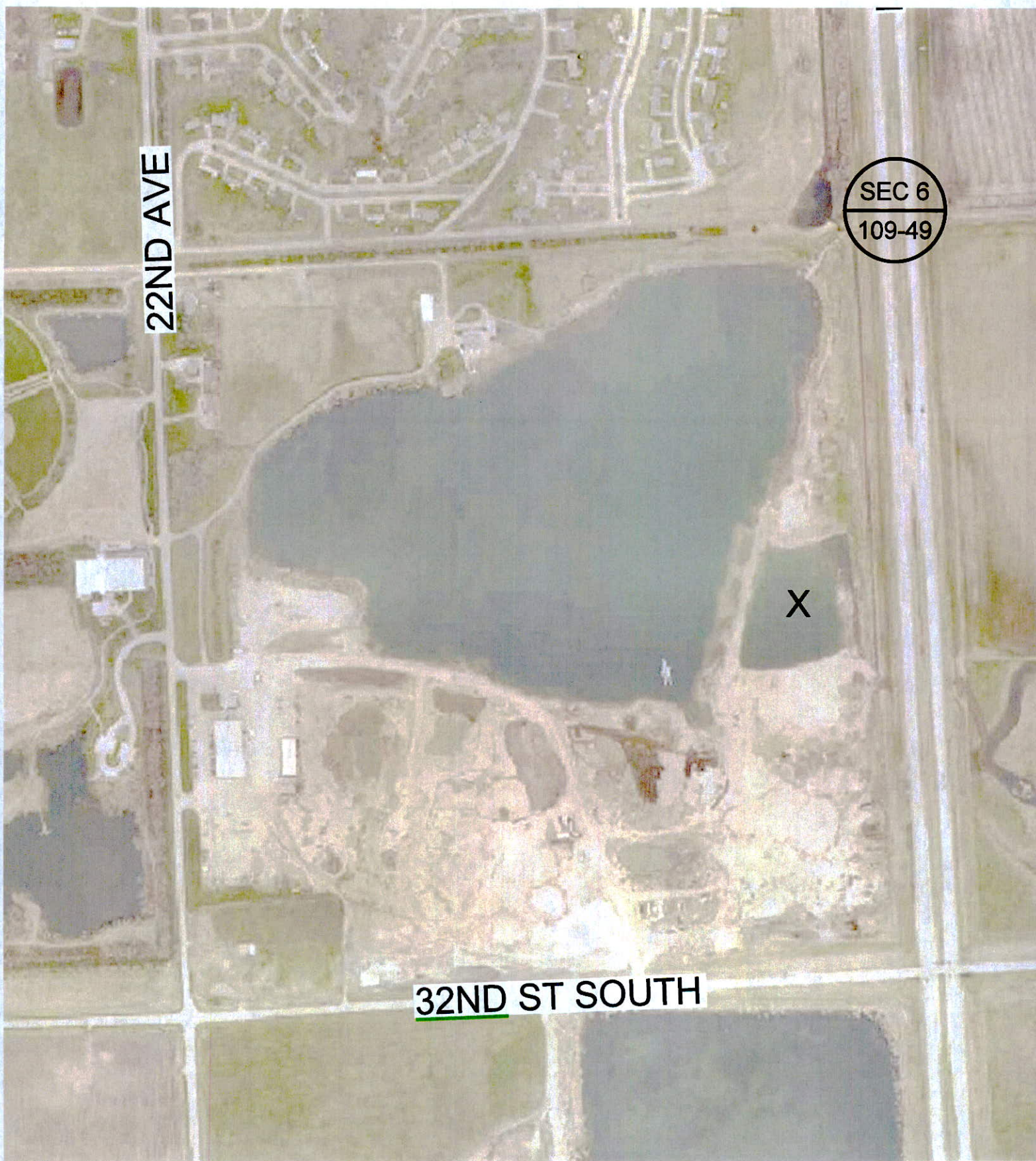
- b) Freeboard ____
- c) Crest Width ____
Crest Length ____
- d) Height ____
- e) Primary Outlet Capacity ____
If pipe, diameter ____
- f) Secondary Spillway Capacity ____
Spillway Width ____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream ____
Downstream ____
- h) Surface Area of Impoundment ____
- i) Storage ____ Acre Feet
- j) Drainage Area Above Dam ____ Acres

22ND AVE

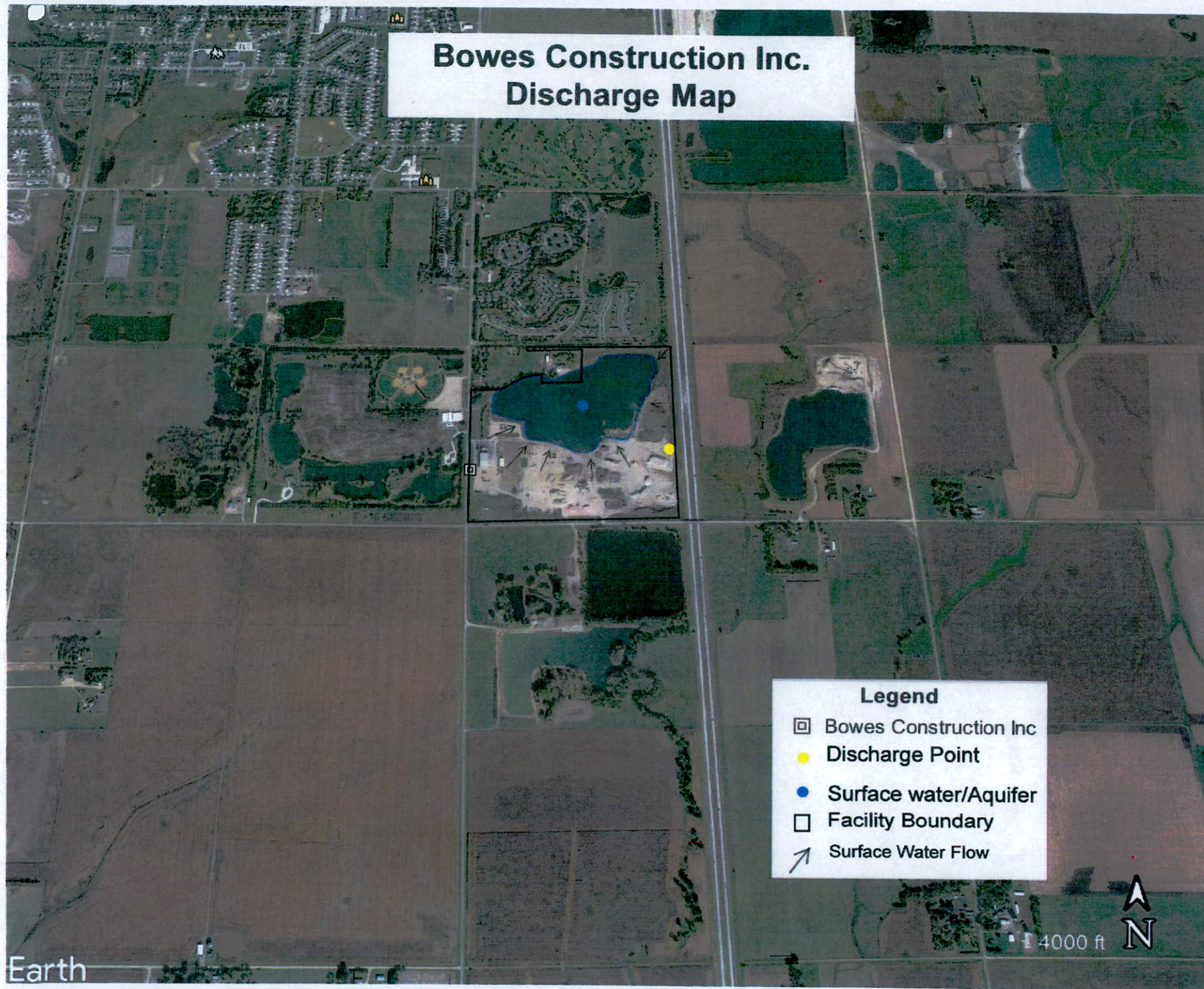
SEC 6
109-49

X

32ND ST SOUTH



Bowes Construction Inc. Discharge Map





110N 50W
Section: 36

110N 49W
Section: 31

110N 49W
Section: 32

109N 50W
Section: 01

109N 49W
Section: 06

109N 49W
Section: 05

109N 50W
Section: 12

109N 49W
Section: 07

109N 49W
Section: 08

EVANS HAIGH & HINTON LLP
LAWYERS

101 N. MAIN AVENUE, SUITE 213
P.O. Box 2790
SIOUX FALLS, SOUTH DAKOTA 57101-2790

TELEPHONE (605) 275-9599
FAX (605) 275-9602
WWW.EHHLAWYERS.COM

April 23, 2021

RECEIVED

APR 26 2021

WATER RIGHTS
PROGRAM

RYAN W.W. REDD
Direct Dial: 605-906-8912
E-mail: rredd@ehhlawyers.com

SD Department of Environment and Natural Resources
Water Rights
523 East Capitol Avenue
Pierre, South Dakota 57501

Re: Bowes Construction, Inc. Water Permit Applications

Dear Sir or Madam:

Please find enclosed the following applications as well as the necessary attachments, which are being submitted on behalf of Bowes Construction, Inc.:

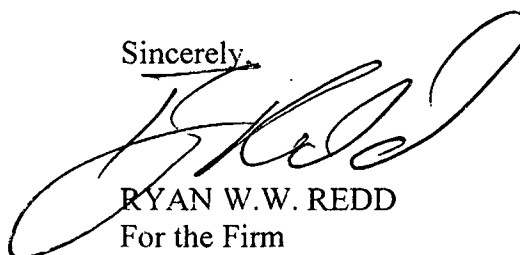
1. Application to Obtain Coverage Under the SWD General Permit for Temporary Discharge Activities and Temporary Water Rights Use Permit;
2. Application to Obtain Coverage Under the SWD General Permit for Storm Water Discharges Associated with Industrial Activities;
3. Application for Permit to Discharge Wastewater; and
4. Application for Water Permit for Nonirrigated Uses.

Also enclosed is a check for \$1,150 (Check No. 91554) made payable to the SD Department of Environment and Natural Resources, as required for the Application for Water Permit for Nonirrigated Uses.

If you have any questions or need any additional information, please do not hesitate to contact me. Thank you.

Best regards.

Sincerely,



RYAN W.W. REDD
For the Firm

RWWR: Enclosure

April 23, 2021

Page 2

cc via email: Katie Adair (SD DENR)
Ron Duvall (SD DENR)
Jason Bowes (Bowes Construction, Inc.)
Miranda Peterson (Bowes Construction, Inc.)

cc via U.S. Mail: SD DENR Water Quality Program



531217461

ANNUAL REPORT

Secretary of State
500 E. Capitol Ave
Pierre, SD 57501-5070
(605) 773-4845

Domestic Business Corporation
SDCL 59-11-24, 24.1

Filing Fee: \$50

2021
FILING YEAR

Please Type or Print Clearly in Ink
Please submit one Original
Make payable to the SECRETARY OF STATE

Total Fee: \$50

1. Business ID and Name:

DB021570
BUSINESS ID

BOWES CONSTRUCTION, INC.
BUSINESS NAME

2. The jurisdiction under whose law it is formed **SOUTH DAKOTA**

3. The address of the principal executive office (business address):

Actual Street Address

2915 22ND AVE SO
BROOKINGS, SD 57006-4521

Mailing Address

2915 22ND AVE SO
BROOKINGS, SD 57006-4521

4. The South Dakota Registered Agent's Name:

South Dakota law permits the registered agent to be either (a) a noncommercial registered agent, (b) a commercial registered agent, or (c) an office holder.

(a) The South Dakota Noncommercial Registered Agent's name

Name **MIRANDA BOWES PETERSON**

Actual Street Address in this State

2915 22ND AVE S
BROOKINGS, SD 57006

Mailing Address in this State

5. The names and business addresses of its principal officers.

Title	Name	Address
Secretary	Eric R Peterson	2915 22nd Ave S
Treasurer	Eric R Peterson	2915 22nd Ave S
President	JASON BOWES	2915 22ND AVE SO, BROOKINGS, SD, 57006
Vice President	MIRANDA BOWES PETERSON	2915 22ND AVE SO, BROOKINGS, SD, 57006

6. The names and business addresses of its directors (governors).

Name	Address
------	---------

7. Beneficial Owners (optional): A beneficial owner is a person who has or in some manner controls an equity security. Please consult an attorney for legal advice if you have any questions concerning this entry. Any question under this heading is considered a request for legal advice and the secretary of state's office is, by statute, not permitted, to provide legal advice.

No person may execute this report knowing it is false in any material respect. Any violation may be subject to a civil and/or criminal penalty (SDCL 47-1A-129; 22-39-36).

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date April 26, 2021

RECEIVED OF Bowes Construction, Inc. 2915 22nd Avenue South Brookings SD 57006

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

Fee for Application for Permit No. <u>8511-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$950.00
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>8511-3</u>	\$200.00
Fee for Filing Transfer Form _____	
Fee for _____	\$
Fee for Issuing New Well Driller's License No. _____	\$
Fee for Renewal of Well Driller's License No. _____	\$
Fee for Issuing Well Pump Installer's License No. _____	\$
Fee for Renewal of Well Pump Installer's License No. _____	\$
(Any Other Work Provided by Law) TOTAL	\$1150.00

By Eric Gronlund
Chief Engineer

EG

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, June 21, 2021 9:28 AM
To: j_bowes@bowesconstruction.com
Subject: Water Permit Application No. 8511-3
Attachments: 1366.pdf

Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your water permit application. As stated in the letter, please contact the paper as soon as possible to authorize publication and arrange for payment. This information is being mailed to you today.

Karen Schlaak
DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8511-3, Bowes Construction Inc.**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning Water Permit Application No. 8511-3, Bowes Construction Inc., 2915 22nd Ave S, Brookings SD 57006.

The Chief Engineer is recommending APPROVAL of Application No. 8511-3 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. Dewatering approved under Permit No. 8511-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The owner under this Permit shall control withdrawals from the excavation so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Big Sioux Aurora aquifer.
3. Water Permit No. 8511-3 authorizes a total annual diversion not exceeding 405 acre-feet of water annually from the Big Sioux Aurora aquifer.
4. Diversions may only occur to prevent flooding of the surrounding area and the work-space by the pit.
5. No diversion may violate county or state ordinances or permits.

See report on application for additional information.

Eric Gronlund, Chief Engineer
June 18, 2021

**REPORT TO THE CHIEF ENGINEER
WATER PERMIT APPLICATION NO. 8511-3
BOWES CONSTRUCTION, INC
JUNE 14, 2021**

Water Permit Application No. 8511-3 proposes to appropriate up to 405 acre-feet of water annually (ac-ft/yr), at a maximum instantaneous diversion rate of 1.67 cubic feet per second (cfs), from the Big Sioux: Aurora aquifer and surface runoff. The water is for industrial use to dewater an existing pit/lake located in the SW ¼ Section 6-T109N-R49W in an existing aggregate mining operation. The pit/lake is connected to the aquifer and the applicant proposes to discharge excess flood water into a natural drainage located in the E ½ SW ¼ Section 6-T109N-R49W which is a tributary to the Big Sioux River. The site is located on the southeast edge of the City of Brookings, SD.

AQUIFER: Big Sioux: Aurora (BS:A)

Aquifer Characteristics

The Big Sioux aquifer is a glacial outwash deposit composed of medium to very coarse sand and very fine to medium gravel (Hamilton, 1989). It underlies the Big Sioux River valley and many of its tributaries (Koch, 1980) throughout the counties that comprise the eastern boundary of South Dakota. Near the Big Sioux River and its tributaries, the aquifer is under unconfined conditions however, it can be under locally confined conditions where it is overlain by glacial till (Hamilton, 1989). The Big Sioux aquifer is composed of twelve management units (Hedges et al., 1982) with this application located in the Aurora unit. As shown in Figure 1, the Big Sioux: Aurora unit underlies portions of Brookings and Moody counties, in South Dakota, and parts of Lincoln and Pipestone counties in Minnesota. In the southeast corner of Brookings county, near the City of Elkton, the potentiometric map by Hamilton (1989) indicates that the direction of groundwater flow diverges with groundwater flow to the north of this area moving toward the northwest and groundwater flow south of this area moving toward the southwest. This essentially subdivides the Aurora management unit into a northern portion and a southern portion as discussed by Buhler (2012). Farmer (2017) estimates the area of the north subunit to be at least 54,245 acres. Since the proposed diversion point for this application is in the northern portion of the aquifer, the remainder of this report will focus on the north portion of the aquifer.

The existing pit/lake for Application No. 8511-3 was created by the extraction of material in an aggregate mining operation. While no depth of the pit is given in the application, examining the available lithologic and water level information, indicates that the Big Sioux: Aurora aquifer is present at the land surface or a shallow depth (Schulz, 2004, Water Rights, 2021a and 2021b). As a result, the existing mining operation has incised the aquifer and allows for water to enter the excavation. The aquifer is under unconfined conditions in the area of the pit/lake (Schulz, 2004, Water Rights, 2021a and 2021b). Water from the pit/lake will be discharged to a natural drainage to the east of the site that is a tributary to the Big Sioux River. Because drainage jurisdiction, as per SDCL Chapter 46A-10A, is held with individual counties and not with DANR-Water Rights, this report will not discuss the hydrologic impacts of the water once it enters the drainage channel to the Big Sioux River.

SOUTH DAKOTA CODIFIED LAW (SDCL) 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may only be issued if there is reasonable probability that unappropriated water is available for the applicant's proposed use, the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, the proposed use is a beneficial use, and the permit is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board. This report will address water availability and potential for unlawful impairment of existing water rights within the northern portion of the Big Sioux: Aurora aquifer.

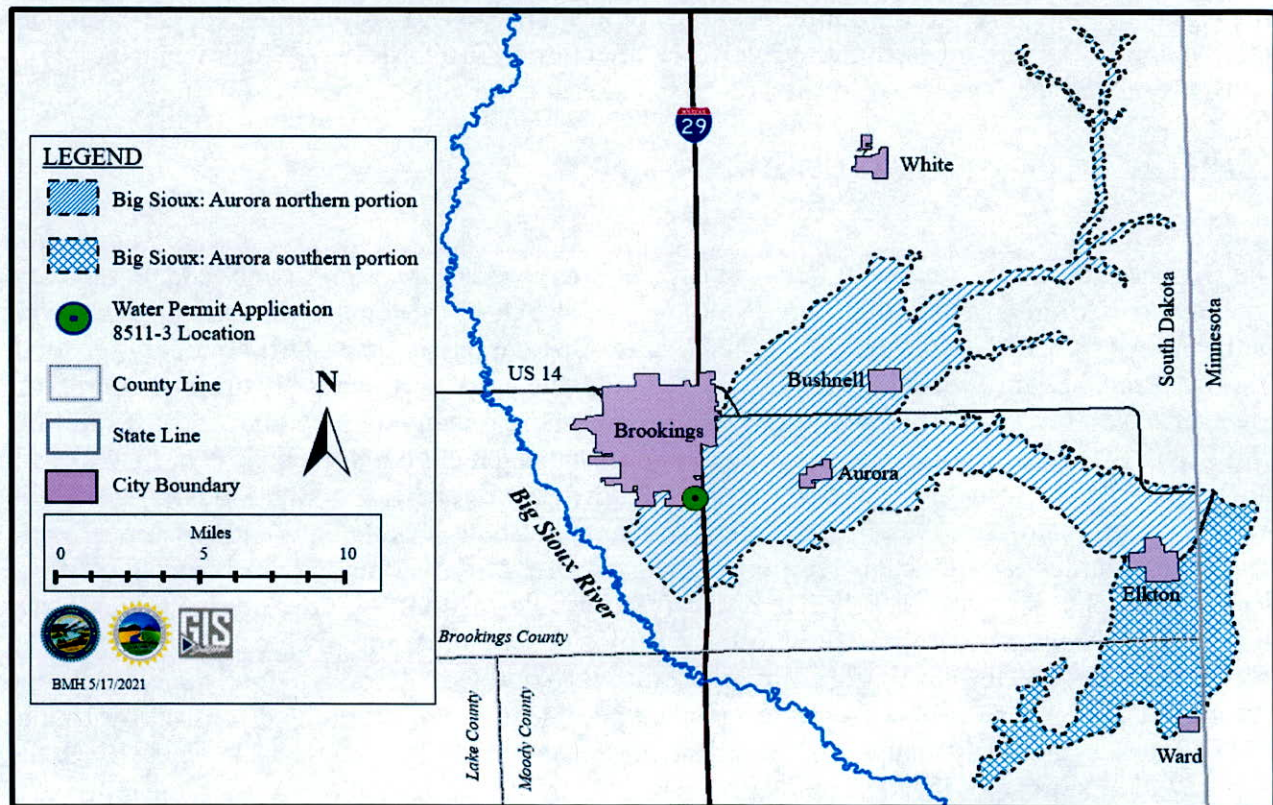


Figure 1. Water Permit Application No. 8511-3 shown within the northern portion of the Big Sioux: Aurora aquifer boundary (modified from Farmer, 2017).

WATER AVAILABILITY

Water Permit Application No. 8511-3 proposes to appropriate water from the northern portion of the Big Sioux: Aurora aquifer. The probability of unappropriated water being 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..." If the source of the water is older or lower than the Greenhorn Formation and a water distribution system as defined by SDCL 46-1-6(17) has applied for a permit, the Board need not consider the balance of recharge to and withdrawal from the aquifer. For this application, a water distribution system is not involved and the aquifer is not older or lower than the Greenhorn Formation; therefore, the balance of recharge and withdrawal must be considered.

Hydrologic Budget

Recharge:

The Big Sioux: Aurora aquifer is recharged by infiltration from precipitation and seepage from surface water and adjacent aquifers (Hamilton, 1989). Using observation well analysis, Hedges, et al., (1985) estimated a recharge rate of 5.0 inches per year to the Big Sioux: Aurora aquifer. Utilizing the estimated areal extent from Farmer (2017) of approximately 54,245 acres, the average annual recharge rate to the northern sub-unit of the Big Sioux: Aurora aquifer is estimated at approximately 22,602 ac-ft/yr.

Discharge:

Discharge from the aquifer is from pumping, evapotranspiration, and leakage to streams and lakes (Hamilton, 1989). Currently, there are 82 water rights/permits authorized to appropriate or reserve water from the Big Sioux: Aurora aquifer with 59 water rights/permits contained in the northern portion (Water Rights, 2021a). There are sixteen active, non-irrigation permits in the northern portion shown in Table 1 with their respective estimated annual use volumes. The total estimated volume of water to be withdrawn can be determined by assuming that water rights/permits limited by an annual volume will pump the entire volume appropriated annually or that water rights/permits limited by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time. Excluded from the estimate is Water Right No. 1952-3 for the City of Aurora and Water Right No. 4038-3 for the City of Elkton. These cities purchase their water from other water systems and likely maintain their water permits for standby purposes (Drinking Water, 2021; Water Rights, 2021a). The average annual water use for non-irrigation water rights/permits in the northern portion of the Big Sioux: Aurora aquifer is 10,765.4 acre-feet per year.

Table 1. Non-irrigation water rights/permits from the northern portion of the Big Sioux: Aurora aquifer (Water Rights, 2021a).

Permit Number	Name	Status ^a	Use ^a	CFS	Estimated Volume (acre-feet/year)
4038-3	City of Elkton	LC	MUN	0.72	0.0 ^b
1952-3	City of Aurora	LC	MUN	0.2	0.0 ^b
3979-3	City of Brookings	LC	MUN	6.69	2,906.0 ^c
4980-3	Brookings-Deuel RWS	LC	RWS	0.89	368.6 ^c
5433-3	Brookings-Deuel RWS	LC	RWS	0.44	191.1 ^c
6437-3	Crosswind Jersey's Inc	LC	COM	0.056	24.3 ^c
7167-3	Basin Electric Power Cooperative	LC	IND	0.22	95.6 ^c
7887-3	Novita Aurora LLC	PE	IND	1.11	482.2 ^c
6048-3	City of Brookings	LC	MUN	2.9	2,100.0 ^d
6325-3	Valero Renewable Fuels Company LLC	LC	IND	2.67	1935.0 ^d
7182-3	Agfirst Farmers Cooperative	LC	COM	0.35	10.0 ^d
8146-3	Brookings Economic Dev Ag Tech Center	PE	IND	0.19	48.4 ^d
8285-3	Norm's Greenhouse & Nursery LLC	PE	COM	0.1	9.2 ^d
8379-3	Bobcat Farms RE LLC	PE	COM	0.1	62.0 ^d
8401-3	LG Everist Inc	PE	IND	13.37	2210.0 ^d
8443-3	Linde Dairy LLC	PE	COM	0.67	323.0 ^d
Total:					10,765.4
a - LC: Licensed Water Right; PE: Water Permit; MUN: Municipal; RWS: Rural Water System; COM: Commercial; IND: Industrial					
b - Purchase water from other systems (Drinking Water Program, 2021)					
c - These permits are all assumed to pump at 60% of their volume					
d - These permits are limited by an annual volume					

Table 2- Historic irrigation pumpage from the northern portion of the Big Sioux: Aurora aquifer (Water Rights, 1979-2020).

Year	Number of Permits Reporting	Appropriation (acre-feet/year)	Pumpage (acre-feet/year)
1979	34	16,729.0	1,034.7
1980	34	17,341.0	1,231.3
1981	43	17,410.0	2,607.0
1982	41	17,791.8	1,405.2
1983	40	17,602.8	1,937.8
1984	41	18,099.0	2,393.0
1985	44	19,626.0	2,642.0
1986	46	17,316.8	1,476.0
1987	47	20,501.8	2,579.7
1988	46	19,999.8	3,959.5
1989	48	20,503.0	3,108.7
1990	39	15,642.0	2,408.5
1991	40	15,719.0	1,299.4
1992	40	15,719.0	660.2
1993	40	15,719.0	208.1
1994	38	15,200.5	1,557.6
1995	35	14,635.0	250.1
1996	35	14,635.0	1,840.1
1997	35	14,635.0	2,863.0
1998	36	14,922.0	3,318.6
1999	36	14,922.0	2,319.5
2000	36	14,922.0	2,698.1
2001	37	15,226.0	2,812.1
2002	38	15,330.0	2,799.5
2003	37	14,856.0	3,176.0
2004	35	14,364.0	2,695.6
2005	35	14,364.0	2,312.5
2006	35	14,364.5	2,829.7
2007	35	14,364.5	3,221.4
2008	38	15,062.5	3,732.3
2009	38	15,086.0	3,431.3
2010	39	15,366.0	537.0
2011	39	15,974.6	2,673.9
2012	39	15,730.0	4,464.9
2013	44	17,220.0	3,972.4
2014	44	17,174.0	2,246.5
2015	44	17,165.1	1,474.8
2016	44	16,016.1	1,264.2
2017	44	16,016.1	1,392.3
2018	44	16,016.1	835.2
2019	43	15,786.1	118.0
2020	43	15,306.0	1,071.4
Maximum:	48	20,503.0	4,464.9
Minimum:	34	14,364.0	118.0
Average:	40	16,199.5	2,163.4

The well withdrawals from the northern portion of the Big Sioux: Aurora aquifer are primarily for irrigation use. Table 2 shows the historic irrigation water use from the aquifer as reported to the DNR-Water Rights Program through annual irrigation questionnaires from 1979 to 2020. The average annual reported pumpage for this period is approximately 2,164 acre-feet.

There is one future use permit (Future Use Permit No. 1598-3) held by the City of Brookings for municipal use. This permit was initially issued, in 1968, for 18 cfs however, it has been utilized to provide water for 2 subsequent permits. The first was Water Right No. 3979-3 which took 6.69 cfs and left Future Use Permit No. 1598-3 with 11.31 cfs. In 1990, Administrative Rule 74:02:01:24.01 was utilized to limit Future Use Permit No. 1598-3 to 4,526 acre-feet per year, which was two times the amount of water that the City of Brookings had actually put to beneficial use at the time of the decision, and the 11.31 cfs was removed from this permit. Secondly, in 1998, Water Right No. 6048-3 was licensed for 2,100 ac-ft/yr, which leaves 2,426 ac-ft/yr of water reserved under Future Use Permit No. 1598-3 (Water Rights, 2021a).

There are numerous domestic wells on file with the Water Rights Program within the Big Sioux: Aurora aquifer (Water Rights 2021b). Domestic users are not required to report their annual water usage and their low diversion rates are not considered a significant portion of the hydrologic budget. Additionally, some domestic wells may no longer be in use after development of rural water systems in the area.

Water Balance:

The Big Sioux: Aurora aquifer estimated average annual withdrawal rate is 15,355 ac-ft/yr (non-irrigation: 10,765; irrigation: 2,164; future use: 2,426). If approved, the expected use of 405 acre-feet of water annually by this application results in a total of 15,760 ac-ft/yr of water. With an estimated average annual recharge of 22,602 ac-ft/yr, this application does not result in an exceedance of the average annual recharge for this aquifer. Therefore, there is reasonable probability unappropriated water is available for this application.

Observation Well Data

Administrative Rule of South Dakota Section 74:02:05:07 requires that the Water Management Board rely upon the record of observation well measurements in addition to other data 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 15 observation wells completed into the Big Sioux: Aurora aquifer, with 14 completed into the northern portion of the aquifer (Water Rights, 2021c). The hydrographs shown in Figures 2 through 4 are representative of hydrographs for other observation wells completed into the Big Sioux: Aurora aquifer near the application site. They show the water level of the aquifer is relatively stable over the period of record and that the aquifer responds well to climatic conditions with rising water levels during wet periods and declining water levels during drier periods. They also demonstrate that drawdown from pumping is temporary because water levels typically recover to pre-pumping levels after the irrigation season and during the primary recharge season of the late winter through spring. This recovery indicates that climatic conditions (the natural effects of recharge to and discharge from the aquifer) generally govern the long-term fluctuations in water level of the aquifer rather than the impacts of pumping from the Big Sioux: Aurora aquifer. Recognizing that recharge to and natural discharge from the aquifer can be captured for pumping, the observation well data shows there is a reasonable probability there is unappropriated water available for this proposed appropriation.

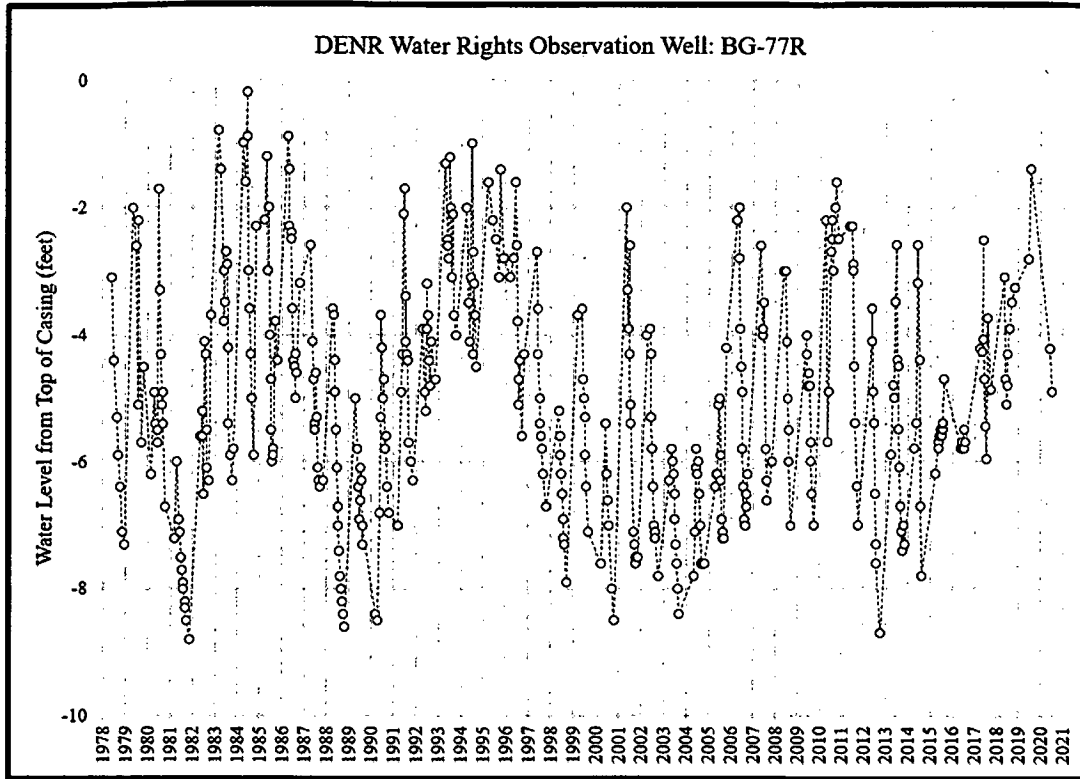


Figure 2. Hydrograph for observation well BG-77R located approximately 1.9 miles northeast of the proposed well location for Water Permit Application No. 8511-3 (Water Rights, 2021c).

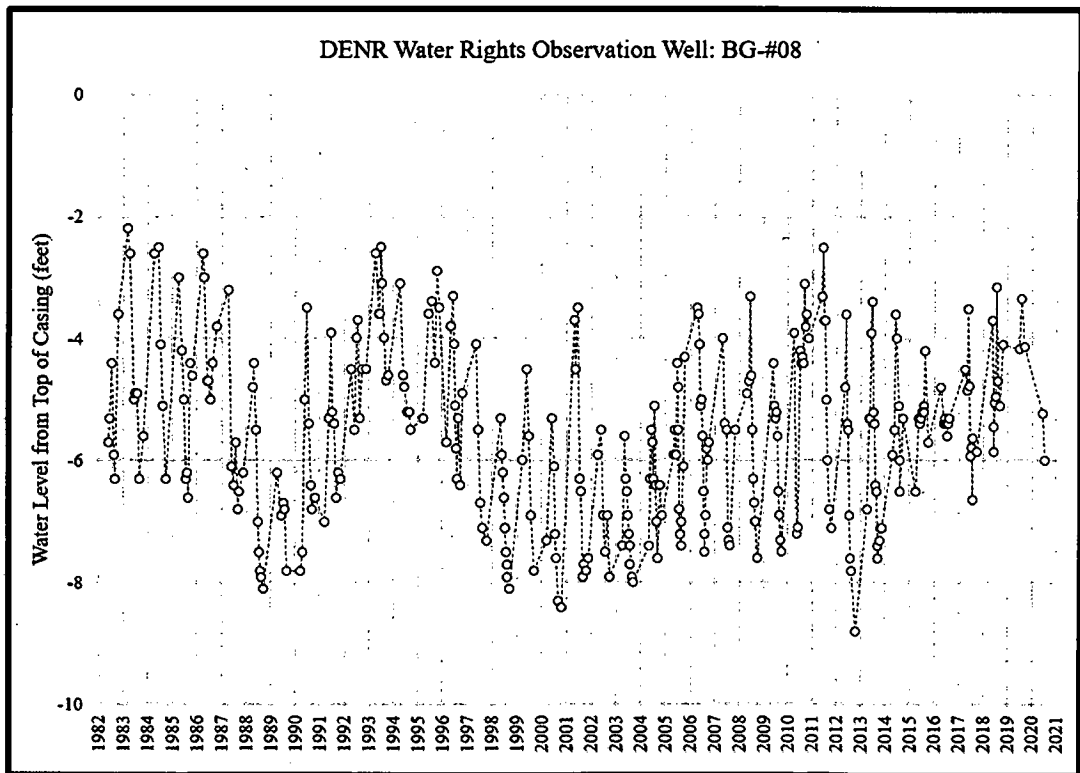


Figure 3. Hydrograph for observation well BG-#08 located approximately 1.5 miles southeast of the proposed well location for Water Permit Application No. 8511-3 (Water Rights, 2021c).

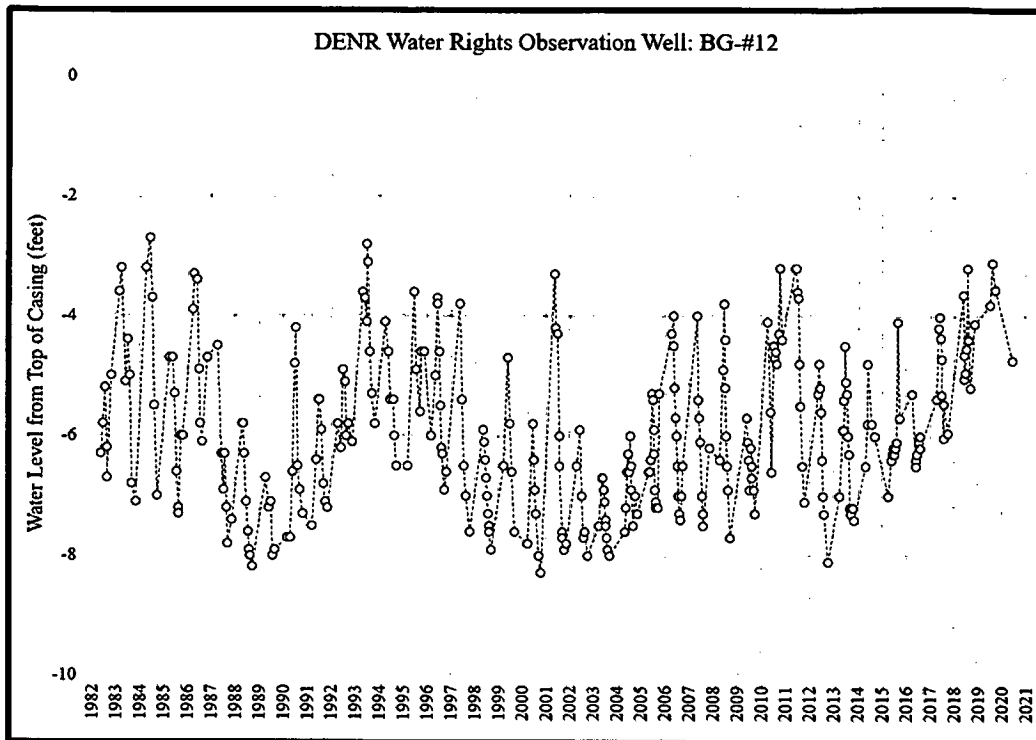


Figure 4. Hydrograph for observation well BG-#12 located approximately 2.3 miles southeast of the proposed well location for Water Permit Application No. 8511-3 (Water Rights, 2021c).

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS

Currently, there are 82 water rights/permits (16 non-irrigation, 65 irrigation, and 1 future use) authorized to appropriate water from the Big Sioux: Aurora aquifer with 59 water rights/permits contained in the northern portion (Water Rights, 2021a). There are six water rights/permits within 1.0 mile of this application, with the closest being Water Right No. 4773-3 located approximately 0.4 miles to the west and is for irrigation use by the City of Brookings. Table 3 lists the Big Sioux: Aurora aquifer water rights/permits shown in Figure 5 near the proposed well location for Application No. 8511-3.

There are numerous domestic wells on file with the Water Rights Program within the vicinity of the proposed well site (Water Rights 2021b). To protect a domestic user with an adequate well, the Water Management Board defined an “adversely impacted domestic well” in ARSD 74:02:04:20(7) as:

“a well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as near to the bottom of the aquifer as is practical and the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner’s needs.”

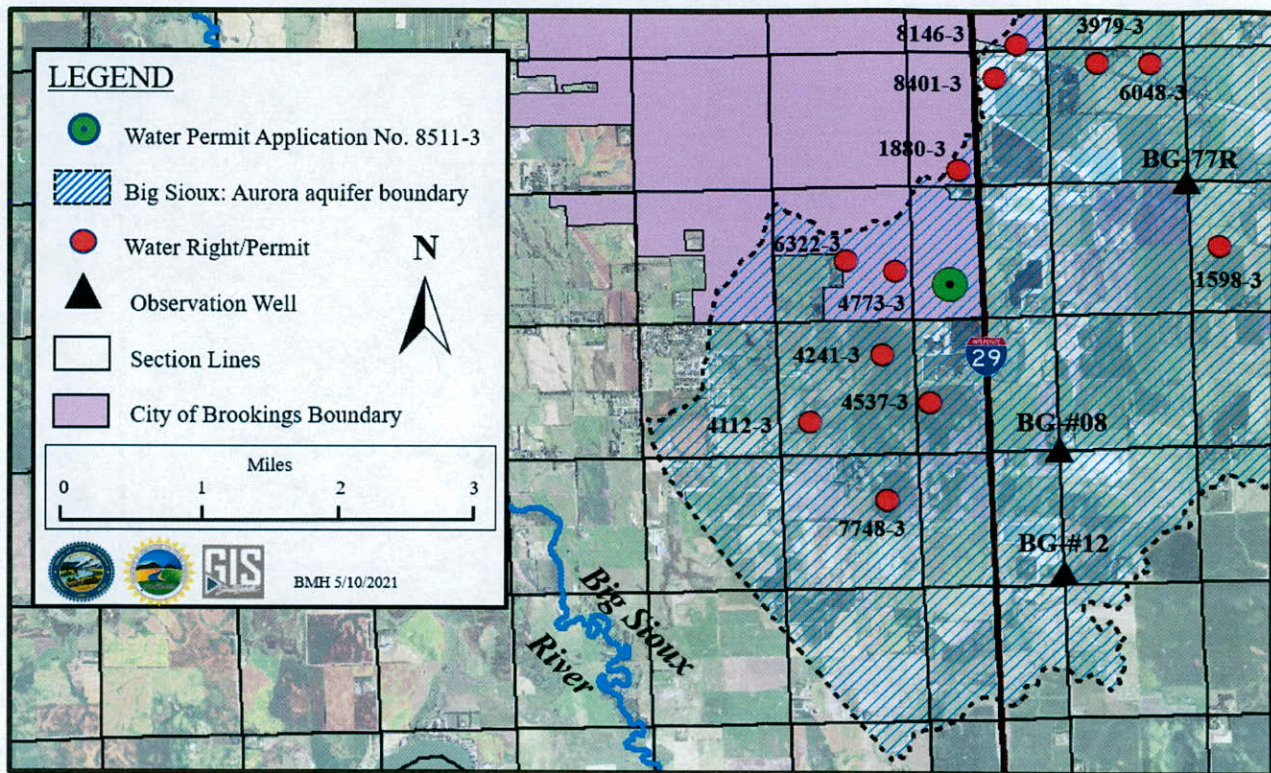


Figure 5. Existing Big Sioux: Aurora aquifer water rights/permits and observation well in the vicinity of Water Permit Application No. 8511-3 (modified from Farmer, 2017; Water Rights 2021a & 2021c).

Table 3. Water rights/permits shown in Figure 5 (Water Rights, 2021a).

Permit Number	Name	Status ^a	Use ^a	Rate (cfs)	Acres
1598-3	CITY OF BROOKINGS	FU	MUN	0.00	0
1880-3	CITY OF BROOKINGS	LC	IRR	1.76	149
3979-3	CITY OF BROOKINGS	LC	MUN	6.69	0
4773-3	CITY OF BROOKINGS	LC	IRR	0.23	25
6048-3	CITY OF BROOKINGS	LC	MUN	2.90	0
6322-3	CITY OF BROOKINGS	LC	IRR	1.66	43
4112-3	WESTERN TRUST COMPANY	LC	IRR	3.47	243
4241-3	WESTERN TRUST COMPANY	LC	IRR	3.35	235
4537-3	DOUGLAS VOCKRODT	LC	IRR	1.67	120
7748-3	DOUGLAS VOCKRODT	LC	IRR	1.11	73
8146-3	BROOKINGS ECONOMIC DEV TECHNOLOGY CENTER	PE	IND	0.19	0
8401-3	LG EVERIST INC	PE	IND	13.37	0

a – FU: Future Use; LC: Licensed Water Right; PE: Permitted Water Right; MUN: Municipal; IRR: Irrigation; IND: Industrial

There is a well-documented history of water complaints on file with the DANR-Water Rights Program for Brookings County. The majority of complaints concern flooding from improper or excessive drainage during periods of increased precipitation. This includes the most recent complaint, filed in 2017 against this applicant, which alleged that pumping from the gravel pit was flooding downstream property owners. It was determined that the flooding was actually a drainage issue and, in accordance with SDCL Chapter 46A-10A, drainage falls under the jurisdiction of individual counties. There are several high capacity appropriative users in the area of this

application and there is no history of well interference complaints, on file with the DANR-Water Rights Program, due to pumping in Brookings County involving the Big Sioux: Aurora aquifer (Water Rights, 2021d). Water shortages, initially thought to be the result of pumping, were found to have other causes such as over pumping of the complainant's well or an inadequate placement depth of the pump within the well. This may be attributed to the depositional thickness of the Big Sioux: Aurora aquifer being thin in some locations. Because this will limit the amount of water in storage, short term conditions may occur when the saturated thickness of the aquifer is reduced when withdrawals exceed recharge. It may be considered an adverse impact if the saturated thickness is reduced to the extent that existing water rights/permits can no longer pump at their developed or "historically established" rates. Therefore, if this water permit is approved, it should include a qualification that the owner shall control their withdrawals so there is not a reduction of needed water supplies for adequate domestic wells or for adequate wells having prior water rights.

The hydrographs of nearby observation wells do not show detrimental impact caused by pumping and there is no history of well interference complaints due to pumping from this aquifer. Therefore, nearby adequate wells are not expected to be adversely impacted as defined in ARSD 74:02:04:20(7) and there is reasonable probability that the proposed diversion can be developed without unlawfully impairing existing appropriative or domestic water users with adequate wells.

CONCLUSIONS:

1. Water Permit Application No. 8511-3 proposes to appropriate up to 405 acre-feet of water annually (ac-ft/yr), at a maximum instantaneous diversion rate of 1.67 cubic feet per second (cfs), from the Big Sioux: Aurora aquifer and surface runoff. The water is for industrial use to dewater an existing pit/lake located in the SW $\frac{1}{4}$ Section 6-T109N-R49W in an existing aggregate mining operation. The pit/lake is connected to the aquifer and the applicant proposes to discharge excess flood water into a natural drainage located in the E $\frac{1}{2}$ SW $\frac{1}{4}$ Section 6-T109N-R49W which is a tributary to the Big Sioux River.
2. Based on the hydrologic budget and the observation well data, there is a reasonable probability unappropriated water is available for this proposed application.
3. There is a reasonable probability the diversions proposed by this application can be made without unlawfully impairing existing appropriative or domestic users with adequate wells.



Blaise Hansen
SD DANR – Water Rights Program

Reviewed By:



Adam Mathiowetz, PE
SD DANR-Water Rights Program

REFERENCES:

- Buhler, K. 2012. *Report to the Chief Engineer on Water Permit No. 7392-3 and Future Use Permit Application No. 7393-3 Lincoln Pipestone Rural Water*. SD DENR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.
- Drinking Water Program. 2021. *Drinking Water System Information*. SD DENR-Drinking Water Program Online Database. Accessed June 2, 2021.
<<http://denr.sd.gov/des/dw/sysinfomap.aspx>>.
- Farmer, J. 2017. *Report to the Chief Engineer on Water Permit No. 8285-3: Norm's Greenhouse*. SD DENR-Water Rights Program, Joe Foss Building., Pierre, South Dakota.
- Hamilton, L. 1989. *Water Resources of Brookings and Kingsbury Counties, South Dakota*. Water-Resources Investigations Report 88-4185. USGS, Huron, SD.
- Hansen, D. S. 1986. *Water Resources of Lake and Moody Counties, South Dakota*. Water-Resources Investigations Report 84-4209. USGS, Huron, SD.
- Hedges, L.S., S.L. Burch, D.L. Iles, R.A. Barari, and R.A. Schoon. 1982. *Evaluation of Ground-water Resources in Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa. Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report*. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Hedges, L.S., Allen, J., Holly D.E., 1985, *Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge*. U.S. Army Corps of Engineers Contract DACW 45-80-C-0185.
- Koch, N. C. 1980. *Appraisal of the Water Resources of the Big Sioux Aquifer, Brookings, Deuel and Hamlin Counties, South Dakota*. USGS, Huron, SD. South Dakota Geological Survey.
- Schulz, L.D., 2004. *First Occurrence of Aquifer Materials Map in Brookings County, South Dakota*. Aquifer Materials Map 19. South Dakota Geological Survey, Vermillion, SD.
- Water Rights. 1979-2020. *"1979-2020 Irrigation Questionnaires"*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.

Water Rights. 2021a. *Water Right/Permit Files*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.

Water Rights. 2021b. *Well Completion Reports*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.

Water Rights. 2021c. *Observation Well Files*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.

Water Rights. 2021d. *Brookings County Files*. SD DANR-Water Rights Program, Joe Foss Building, Pierre, South Dakota.

RECEIVED

JUL 06 2021

WATER RIGHTS
PROGRAM

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. 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. Published 1X at the total approximate cost of \$30.32.

Affidavit of Publication

State of South Dakota

ss

County of Brookings

Katherine Foiles of said county, first duly sworn, on oath, says: That she is the office clerk of THE BROOKINGS REGISTER, a daily newspaper, printed and published in the City of Brookings, in said County of Brookings, and State of South Dakota; that she has full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper and has a bona fide circulation of at least two hundred copies of each issue daily; that said newspaper has been published within the said County of Brookings and State of South Dakota, for more than one year prior to the first publication of Exhibit "A," hereto attached and herein mentioned, and was and is printed that the

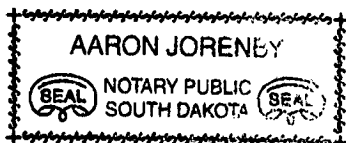
LEG# 15693 Application 8511-3- Water Appropriation

same was published, is hereto attached marked Exhibit said newspaper for _____ 1 times, to-wit:

June 30, 2021

said Exhibit "A" inures to the sole benefit for the publishers of 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 person whomsoever; that the fees charged for the publication thereof are:

Thirty Dollars and Thirty-Two Cents \$30.32



[Signature]

30 day of

June

[Signature] 2021

Notary Public in and for the County of Brookings, South Dakota.
My Commission expires February 22, 2026

APPLICATION
NO. 8511-3 TO
APPROPRIATE WATER

Notice is given that Bowes Construction Inc., c/o Jason Bowes, 2915 22nd Ave South, Brookings SD 57006 has filed an application for a water permit to appropriate 405 acre-feet of water annually at a maximum pump rate of 1.67 cubic feet of water per second from an existing pit/lake into the Big Sioux/Aurora Aquifer located in the SW 1/4 Section 6-T109N-R49W. The water is for industrial use to dewater the area when water in the pit rises and floods the surrounding area and workspace. Water will be discharged to a natural drainage way located in the E 1/2 SW 1/4 Section 6-T109N-R49W. This site is located on the southeast edge of Brookings SD. Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8511-3 with qualifications 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. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below. 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 12, 2021. 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.

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, June 21, 2021 9:25 AM
To: registerclassifieds@brookingsregister.com
Subject: 8511-3, Bowes Construction Inc
Attachments: 8511-3public.short.docx; FORM8.FRM.doc

Attached is a notice to be published on June 30, 2021.

Bowes Construction Inc., c/o Jason Bowes, 2915 22nd Ave South, Brookings SD 57006 (605 693-3557) has been notified to contact you to authorize publication and arrange for payment.

Please send the affidavit or return the attached Proof of Publication form ASAP to the Water Rights Program, 523 E Capitol, Pierre SD 57501.

Let me know if you have questions. Please acknowledge receipt of this email.

Karen Schlaak
DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

June 21, 2021

Bowes Construction Inc.
c/o Jason Bowes
2915 22nd Ave South
Brookings SD 57006

Dear Mr. Bowes:

Water Permit Application No. 8511-3 for industrial use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Brookings Register printed at Brookings SD (Ph # 605 692-6271). You will need to contact the newspaper 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 to authorize publication of your Notice and to arrange for payment. Early contact with the paper 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,

Karen Schlaak

Karen Schlaak
Water Rights Program
(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.

NOTICE OF APPLICATION NO. 8511-3 to Appropriate Water

Notice is given that Bowes Construction Inc., c/o Jason Bowes, 2915 22nd Ave South, Brookings SD 57006 has filed an application for a water permit to appropriate 405 acre-feet of water annually at a maximum pump rate of 1.67 cubic feet of water per second from an existing pit/lake into the Big Sioux:Aurora Aquifer located in the SW 1/4 Section 6-T109N-R49W. The water is for industrial use to dewater the area when water in the pit rises and floods the surrounding area and workspace. Water will be discharged to a natural drainage way located in the E 1/2 SW 1/4 Section 6-T109N-R49W. This site is located on the southeast edge of Brookings SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8511-3 with qualifications 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. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

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 12, 2021.

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.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. 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.

Published once at the total approximate cost of_



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

JUL 21 2021

Bowes Construction
c/o Jason Bowes
2915 22nd Ave S
Brookings SD 57006

Dear Mr. Bowes:

Enclosed is Water Permit No. 8511-3 authorizing construction of the 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,

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

enclosures