

WATER PERMIT NO. 2008-1

Name of Applicant: City of Lead

Address: 801 W Main St, Lead SD 57754

Phone: 605 641-5769

Amount of Water Claimed: 0.022 cfs

Total Acres: NA

Source of Water Supply: groundwater (one well)

Water to be used for: industrial

County: Lawrence

Type of Waste Disposal System:

Location: 3 miles southeast of Lead

PRIORITY Date Received: 6-30-21

Application/License Fee: \$ 300

Corrected Application Received: 7-6-21

Period of Annual Use: Jan 1 – Dec 31

Remarks: for use at Tri-City Rubble site

Diversion Point: SW 1/4 NW 1/4 Sec 14-T4N-R3E

Land to be Irrigated: NA

Depth of Well: 220 feet

Well Driller:

Remarks:

Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 7-6-21

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

	⊗				
			14		

**SOUTH DAKOTA
WATER PERMIT NO. 2008-1**

Date of first receipt of application June 30, 2021.

Date of return to applicant for corrections, amendments or changes June 30, 2021.

Date of receipt of corrected application July 6, 2021.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2008-1 to City of Lead, c/o Mike Stahl, City Administrator, 801 W Main St, Lead SD 57754 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. 2008-1 appropriates an amount not exceeding 1.0 acre-feet of water annually at a maximum pump rate of 0.022 cubic feet of water per second from one well completed into the Deadwood Aquifer (220 feet deep) located in the SW 1/4 NW 1/4 Section 14-T4N-R3E for industrial use at the Tri-City Rubble site to provide water for dust control, fire protection and maintenance. This site is located approximately 3 miles southeast of Lead 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: January 1 – December 31.
4. The date from which applicant may claim right is June 30, 2021.
5. The date of approval of Permit No. 2008-1 is September 20, 2021.
6. One-fifth of the construction is to be completed on or before March 20, 2024.
7. All construction is to be completed on or before September 20, 2026.
8. Water is to be put to beneficial use on or before September 20, 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. The well approved under Water Permit No. 2008-1 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals under this Permit shall be controlled 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 Deadwood aquifer.
3. Water Permit No. 2008-1 authorizes a total annual diversion of up to 1.0 acre-feet of water.

WATER MANAGEMENT BOARD

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

SEP 27 2021
date



JUN 30 2021

WATER RIGHTS
PROGRAM

PAID

JUN 30 2021

Ck# 1926

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>2008-1</u>	(office use only) Hydrologic Unit <u>10120202</u>
	Basin <u>Belle Fourche</u>	
	Newspaper <u>Black Hills Pioneer</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.)

- Name to Appear on Water Permit CITY OF LEAD
Mailing Address 801 W. MAIN ST. LEAD SD 57754
(Address) (City) (State) (Zip Code)
Phone 605-584-4401 Mobile 605-641-5769 Email mikes@cityoflead.com
- Amount of water claimed 0.022 *CFS or 10 **GPM and ***AF or 20,000 Gallons/year
Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use)
- Source of water supply DENWOOD FORMATION
- Location of point of diversion SW 1/4 NW 1/4 SEC 14 T4N R3E County LAWRENCE
(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)
- County or counties where water will be used LAWRENCE
- Annual period during which water is to be used JAN - DEC
- 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)

Water well @ Tri-City Rubble site to provide water for dust control, fire protection, maintenance.

I, Mike Stahl Mike Stahl CITY ADMINISTRATOR, 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 1 Have test holes been drilled ☒ Yes ☐ No Drilled by DBJ Drilling, LLC
(if yes, please provide copies of logs)

b) If existing wells, how many Provide copy of log(s), if available. Drilled by DBJ Drilling, LLC

For either Existing or Proposed Wells:

c) Well Depth (required) 220 Depth to Top of Water Bearing Material 120 Depth to Water from Surface 120

d) Distance to nearest domestic well on applicant's property N/A 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 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)

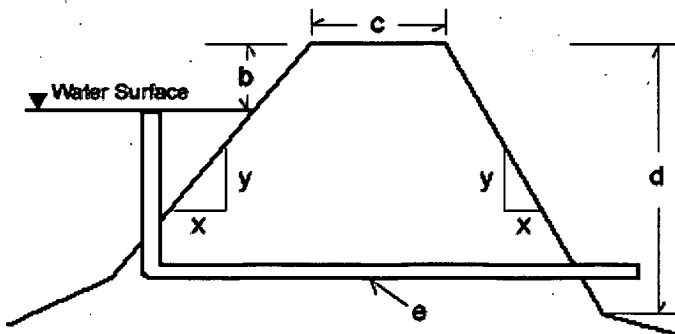
Upstream

Downstream

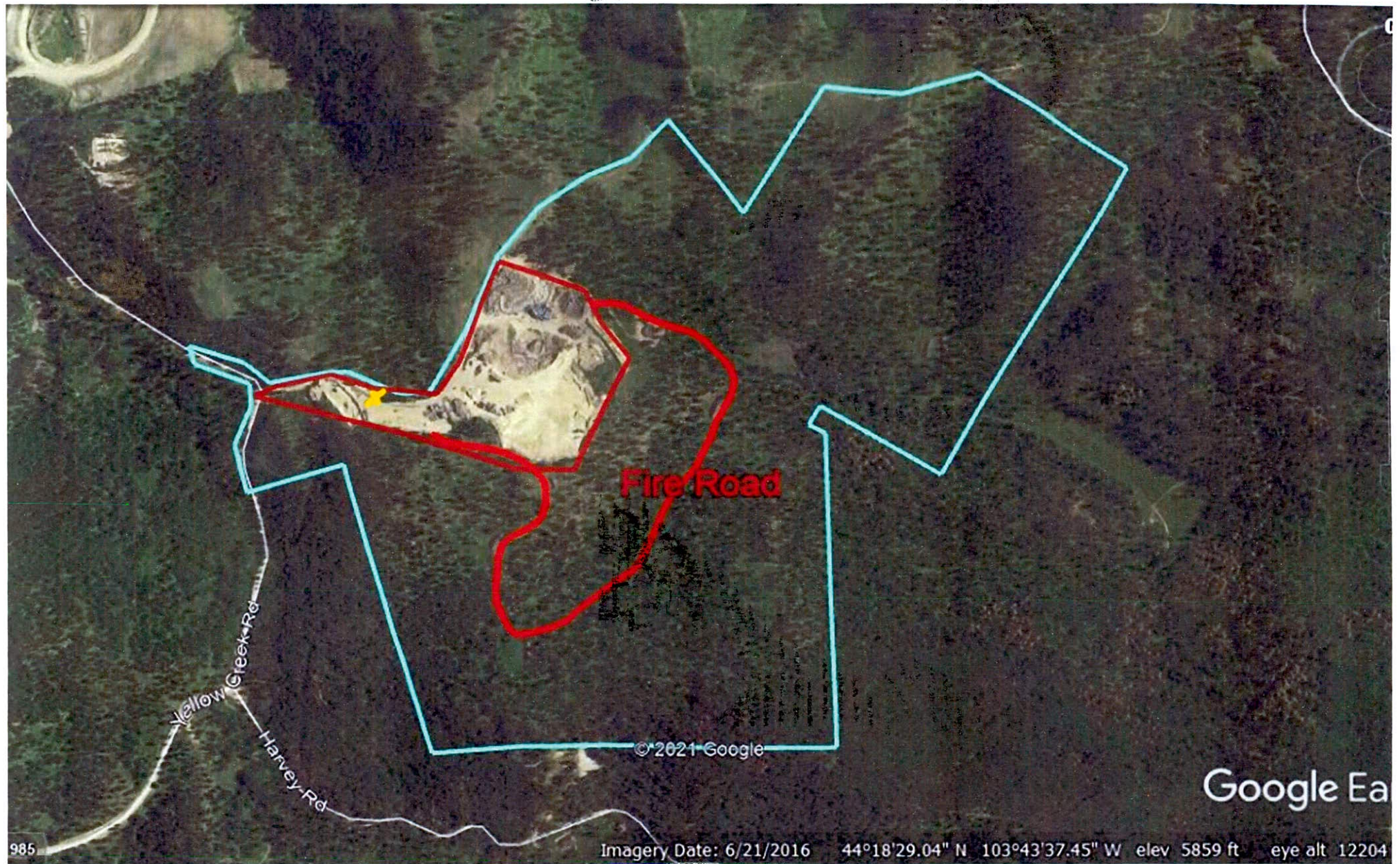
h) Surface Area of Impoundment

i) Storage Acre Feet

j) Drainage Area Above Dam Acres



Well Location - Yellow X
Property - Cyan



4N 3E
Section: 10

4N 3E
Section: 11

4N 3E
Section: 12

4N 3E
Section: 15

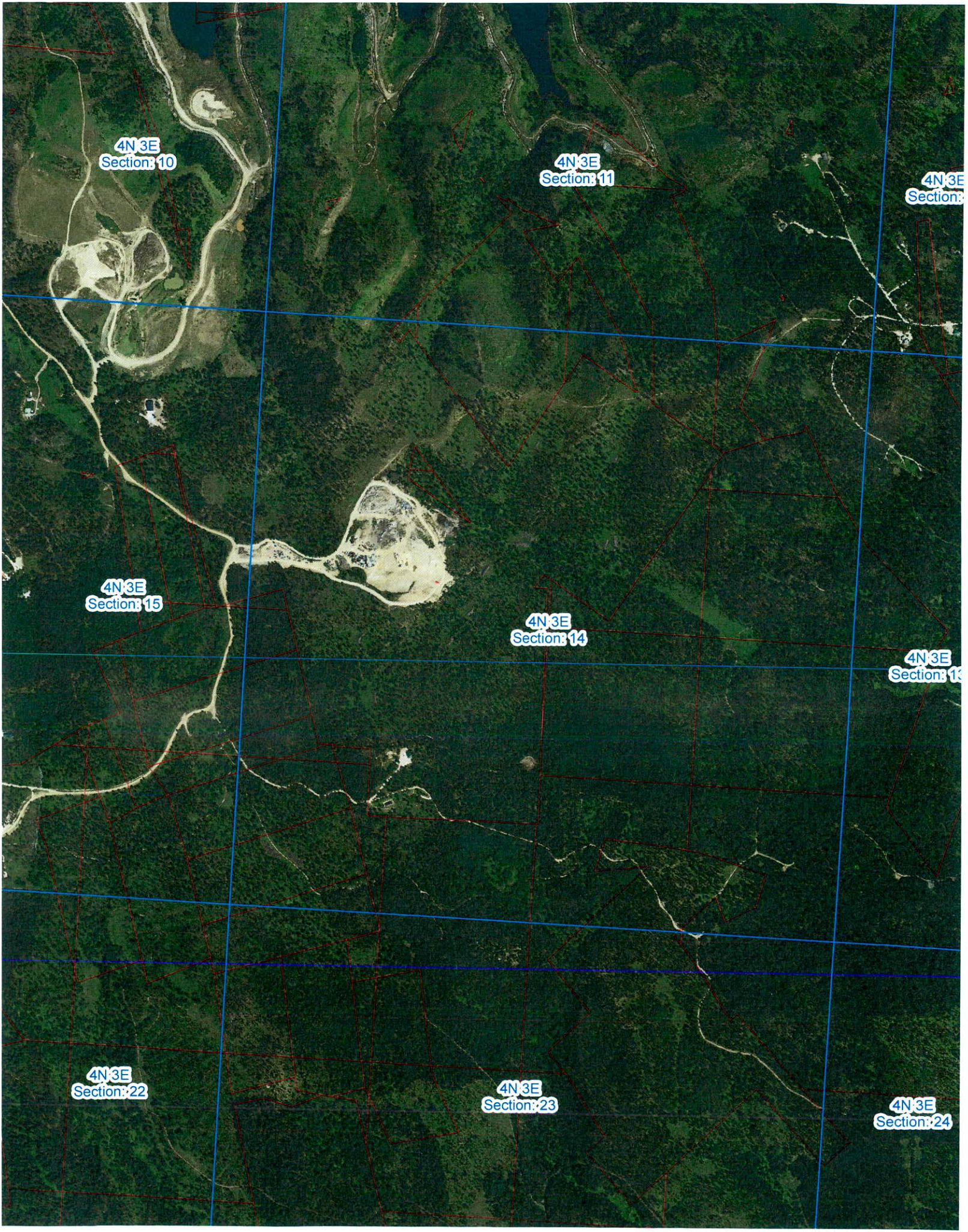
4N 3E
Section: 14

4N 3E
Section: 13

4N 3E
Section: 22

4N 3E
Section: 23

4N 3E
Section: 24



• **Date:**

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date June 30, 2021

RECEIVED OF City of Lead (Adams Salvage Recycling & Recovery) 801 W. Main St. Lead SD 57754

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

Fee for Application for Permit No. <u>2008-1</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>100.00</u>
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>2008-1</u>	\$ <u>200.00</u>
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	\$ <u>300.00</u>

By *Eric Gronlund*
Chief Engineer
EGM



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

April 23, 2021

Heather Anderson
Adams Salvage
11299 Nevada Gulch Road
Lead, SD 57754

Dear Ms. Anderson:

As requested by email on April 23, 2021, pursuant to South Dakota Well Construction Standard 74:02:04:21, you are authorized to have DBJ Drilling LLC. or another SD licensed well driller construct a test well prior to approval of a water permit. The test well will be located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 14-T04N-R03E in Lawrence County. All test wells must be constructed in accordance with the SD Well Construction Standards. Any test holes or test wells that are abandoned must be plugged pursuant to the SD Well Construction Standards.

Authorization must be obtained before water from the well can be used in excess of domestic use as defined by South Dakota Codified Law 46-1-6(7) or for uses other than domestic use. Approval of this test well does not assure issuance of a water permit. Following review of a Water Permit Application and assessing the availability of water, the potential impacts to existing users, the beneficial use, and the public interest of a permit, the Chief Engineer will make a recommendation to the Water Management Board regarding the application. The recommendation to approve, deny, or defer the application will be publicly noticed and an opportunity afforded for the public to intervene. A public hearing may be required to consider the water permit. If you have questions regarding permitting, please call Ron Duvall at (605) 773-3352.

Sincerely,


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

CC: DBJ Drilling LLC

Schlaak, Karen

From: Duvall, Ron
Sent: Friday, April 23, 2021 9:56 AM
To: adamssalvage@hotmail.com
Cc: Mathiowetz, Adam (DENR); Schlaak, Karen
Subject: RE: Application for Water Right Permit
Attachments: D1585LDV5-NONIRRIG.pdf

Heather,

Use this application, it is a newer version.

Thank you,

Ron

From: Duvall, Ron
Sent: Friday, April 23, 2021 9:51 AM
To: adamssalvage@hotmail.com
Cc: Mathiowetz, Adam (DENR) <Adam.Mathiowetz@state.sd.us>; Schlaak, Karen <Karen.Schlaak@state.sd.us>
Subject: Application for Water Right Permit

Heather,

Attached is the application form and I have copied Adam this email so you have his email address in the event you want to request permission to construct a test well.

If you have any questions about the application process, please let me know.

Thank you,

Ron Duvall
Water Rights Program
605.773.3352
danr.sd.gov



DANR
SOUTH DAKOTA

Schlaak, Karen

From: Duvall, Ron
Sent: Tuesday, July 6, 2021 4:02 PM
To: MikeS@cityoflead.com
Cc: Cherney, Matt; McIntire, Mark; Schlaak, Karen
Subject: FW: [EXT] Water Permit Application for rubble site

Mike,

To answer your first bullet below. The inspection is only going to be the wellhead to ensure the location matches the issued permit. Also, the installed pump size and pump rate will also likely be asked. We should have a copy of the well completion report because the well driller is supposed to file that document with us.

Regarding your second bullet I am copying Matt Cherney, and Mark McIntire concerning your third bullet, about any water testing that may be required from your well. Both Matt and Mark work in the same department as myself.

Thank you for answering Karen's question regarding the annual water usage.

Please let me know if you have any further questions.

Thank you,

Ron Duvall
DANR, Water Rights Program
605.773.3352

From: Mike Stahl <MikeS@cityoflead.com>
Sent: Tuesday, July 6, 2021 10:41 AM
To: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Cc: Dan Blakeman <DanB@cityoflead.com>; 'bobjr@cityofdeadwood.com' <bobjr@cityofdeadwood.com>; Donovan Renner (dmrenner@hotmail.com) <dmrenner@hotmail.com>; heather anderson <handerson37@hotmail.com>
Subject: RE: [EXT] Water Permit Application for rubble site

Hi Karen, the plan will be to use 20,000 gallons per year at the Tri-City Rubble Site from the well.

A few questions:

- When the DANR inspects the well, is it just the well head or the entire well configuration after construction?
- Would the DANR regulate a septic system if one was installed? Or is that just the county, as the site is outside city limits?
- What water tests would be required? How many? How often?

Thank You,

Mike Stahl
City Administrator
801 West Main Street

Lead, South Dakota 57754
605.584.1401 (Ph)
605.641.5769 (CI)
605.584.1407 (Fx)
mikes@cityoflead.com



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From: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Sent: Wednesday, June 30, 2021 12:18 PM
To: Mike Stahl <MikeS@cityoflead.com>
Subject: Water Permit Application for rubble site

Mike,
We have received the water permit application for the Tri-City Rubble site.

The application requests an appropriation of 10 gallons per minute (gpm). In addition to the pump rate, the application needs to include the annual volume in either gallons/year or acre feet/year. In calculating the annual volume, be reasonable but also plan for the maximum annual volume of use from the well at full development. It is unrealistic that 10 gpm will be pumped continuously during an entire year. Therefore, DANR requests identification of an annual volume to be used at the site.

If you have any questions, let me know.

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. 2008-1, City of Lead**

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. 2008-1, City of Lead, 801 W. Main St., Lead SD 57754.

The Chief Engineer is recommending APPROVAL of Application No. 2008-1 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 Water Permit No. 2008-1 is located near domestic wells and other wells which may obtain water from the same aquifer. Water withdrawals under this Permit shall be controlled 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 Deadwood aquifer.
3. Water Permit No. 2008-1 authorizes a total annual diversion of up to 1.0 acre-feet of water.

See report on application for additional information.

Eric Gronlund
Eric Gronlund, Chief Engineer
August 27, 2021

**Report to the Chief Engineer on
Water Permit Application No. 2008-1**

City of Lead
9 August 2021

Water Permit Application No. 2008-1 seeks to withdraw up to 20,000 gallons per year, or less than 1 acre-foot per year (ac-ft/yr), at a maximum instantaneous diversion rate of 0.022 cubic feet of water per second (cfs), or 10 gallons per minute (gpm), from one well completed into an erosional remnant of the Deadwood Aquifer (220 feet deep) located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 14-T4N-R3E Black Hills Meridian for industrial use at the Tri-City Rubble site to provide water for dust control, fire protection, and maintenance. This site is located approximately 3 miles southeast of Lead, South Dakota.

Aquifer: Deadwood (DDWD)

Hydrogeologic Characteristics

The Deadwood Formation is a “greenish- to reddish-brown glauconitic sandstone, shale, limestone, intraformational conglomerate, and local basal conglomerate” deposited during the Lower Ordovician to Upper Cambrian geologic periods [1]. The Deadwood Aquifer consists of the permeable and saturated portions of the Deadwood Formation that are capable of providing useful quantities of water. The Deadwood Aquifer is a regional scale aquifer that underlies most of western South Dakota and extends into Montana, North Dakota, Wyoming, and Canada [2], but in the area of this application, the Deadwood Aquifer is an erosional remnant that is mostly disconnected from the main body of the aquifer [1] [3]. In the area of this application, the Deadwood Formation is overlain by crystalline rocks and alluvium [1] [3] which are likely to be connected to the Deadwood Aquifer and be sources of recharge to it in the area of this application [4]. The effective porosity of the Deadwood Aquifer is approximately 5% [5]. Figure 1 shows the area near this application, including the Deadwood Aquifer remnant and crystalline rocks overlying it.

The applicant submitted a well completion report for the well for this application, completed on April 28, 2021. The driller reported “Fill cobbles” from ground surface to 10 feet below grade, Deadwood Formation producing 7-10 gpm from 10 to 120 feet, and more Deadwood Formation from 120 to 220 feet below grade. The water level at the time the well was completed was 110 feet below grade. Based on this well completion report, the aquifer is under unconfined (water table) conditions near this application.

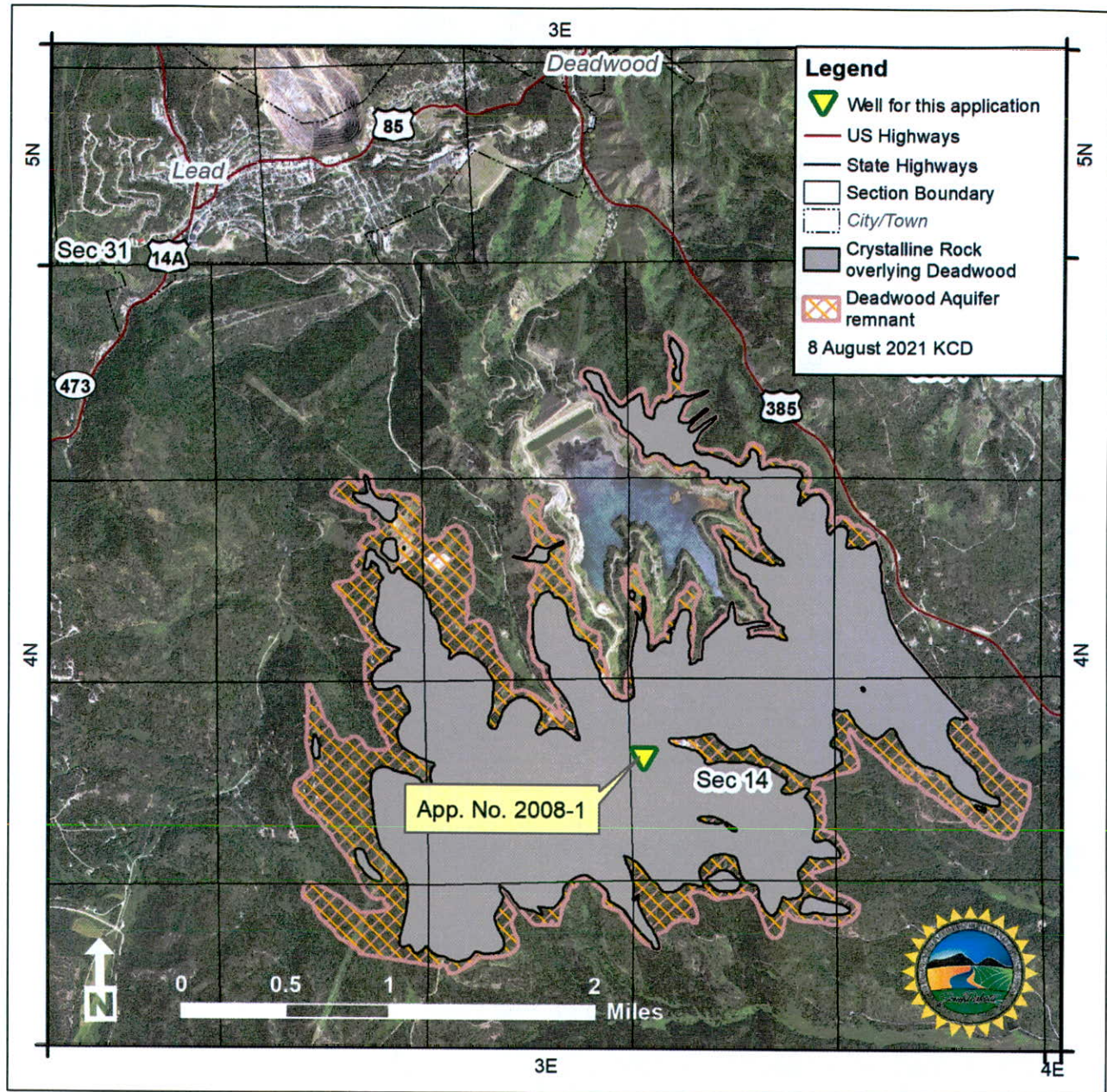


Figure 1: Area near this application, including the area of the Deadwood Aquifer remnant and crystalline rock overlying it [1] [3].

Applicable South Dakota Codified Law (SDCL)

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

Pursuant to SDCL 46-6-3.1, 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 the water to the groundwater source. An exception allows water distribution systems to withdraw from groundwater sources older or stratigraphically lower than the Greenhorn Formation regardless of the results of a hydrologic budget. Since this application is for industrial use, the applicant is not a water distribution system as defined in SDCL 46-1-6(17), and the Deadwood Aquifer is older and stratigraphically lower than the Greenhorn Formation. Therefore, it is necessary to find that recharge exceeds withdrawals to approve this application.

Availability of Water

Hydrologic Budget

Recharge

Recharge to the Deadwood aquifer in the area of this application is likely by infiltration from precipitation and inflow from the overlying igneous rocks, which are a part of the Crystalline Rock Aquifer. A boundary of the erosional remnant of the Deadwood aquifer near this application was delineated to minimize flow between the edges of the remnant and the main body of Deadwood Formation. The area of the remnant is approximately 3,300 acres [1] [3]. Driscoll and Carter [6] used a yield-efficiency algorithm to estimate total yield to aquifers in the Black Hills. The total yield is an estimate of the precipitation that does not get lost to evapotranspiration [6]. To estimate recharge to an aquifer, the total yield was multiplied by a recharge factor [6]. Average precipitation over the entire Deadwood aquifer was 23.24 inches per year and the total yield estimated was 3.2 inches per year [6]. The recharge factor for the Deadwood aquifer was 0.8 [6]. Average precipitation over the entire Crystalline Core area was 21.10 inches and the average total yield estimated was 2.34 inches per year. Driscoll and Carter [6] did not specify a recharge factor, but they did estimate precipitation recharge in the Crystalline Core outcrop area to be 0.07 inches per year so a recharge factor of 0.03 can be calculated by dividing the recharge estimate by the estimated total yield. It should be noted the fractures in the Crystalline Rock that comprise the core area of the Black Hills is highly variable. Thus, any recharge factor for the crystalline core would also be highly variable and site dependent. However, the estimate of 0.03, which is calculated by dividing the estimated withdrawals from the Crystalline Rock aquifer across the entire area of the Crystalline Core and is not necessarily site specific, will be used in this report to present a sense of scale to the estimated recharge that could percolate through the igneous rocks that overlie the Deadwood aquifer in this area. Average annual precipitation in the area of this application is approximately 27.5 inches per year [7]. Approximately 2,300 acres of the Deadwood Formation remnant underlying this application is covered in Crystalline Rock Aquifer rocks [1] [3].

Assuming the total yield in this area is proportional to the total yield in the entire Black Hills, the total yield estimated for the Crystalline Rock Aquifer is approximately 3.04 inches per year. Applying the calculated recharge factor of 0.03, recharge to the Crystalline Rock Aquifer above the Deadwood Aquifer remnant is 0.09 inches per year, or 18 acre-feet per year (ac-ft/yr). For the Deadwood Aquifer remnant, using the same assumptions, recharge to the outcrop is 2.44 inches per year, or 203 ac-ft/yr applied over the 1,000 acres of exposed Deadwood Aquifer. Some recharge to the Deadwood Aquifer is likely to come from the Crystalline Rock Aquifer above it

[4], but that amount is unknown, so the total estimated recharge to the Deadwood aquifer ranges from 203 ac-ft/yr to 221 ac-ft/yr.

Discharge

Discharge from this Deadwood aquifer remnant is likely by outflow to springs [1], evapotranspiration, and domestic well withdrawals from the 33 domestic wells that are likely to be completed into the Deadwood Aquifer within this remnant [8]. Average domestic self-supply use of water in Lawrence County is approximately 69 gallons per person per day [9]. The total population of Lawrence County is estimated to be 25,478 and the total number of housing units is 14,016, for an average household size of 1.82 persons per household [10]. By multiplying the average household size by the 33 domestic wells and the average domestic self-supply use in Lawrence County, estimated withdrawals from the Deadwood aquifer remnant are 4,139 gallons per day, or 4.6 ac-ft/yr. That estimate does not include wells that may be completed into the Deadwood aquifer remnant that are not on file with the Water Rights Program. It is also possible that homes which self-supply their water have an above average household size. Based on aerial imagery, there are approximately 58 buildings that may be dwellings within or on the boundaries of the Deadwood formation remnant in which this application lies [11]. Assuming all those buildings are dwellings, 2.5 people live in each dwelling on average [12], and all those dwellings withdraw water from the Deadwood aquifer remnant, a high estimate of average withdrawal for self-supply domestic use in the aquifer remnant is 10,005 gallons per day, or 11.2 ac-ft/yr.

Balance of Hydrologic Budget

Estimated recharge to this Deadwood aquifer remnant is from 203 to 221 ac-ft/yr. Estimated withdrawals from the aquifer are approximately 4.6 ac-ft/yr, up to at most 11.2 ac-ft/yr. The applicant is requesting less than 1 ac-ft/yr. Therefore, based on the hydrologic budget, there is reasonable probability unappropriated water is available for this application.

Observation Wells

Administrative Rule of South Dakota (ARSD) 74:02:05:07 requires the Water Management Board to rely upon the record of observation wells, in addition to other information, to determine that average withdrawals do not exceed average recharge to the aquifer. There are no observation wells completed into the remnant of the Deadwood Aquifer in which this application is completed. The nearest observation well maintained by the Water Rights Program that is in the Deadwood Aquifer is LA-96A, located approximately 9 miles west of this application [13]. At that well, the Deadwood Aquifer is below 588 feet of other formations [13] but the water level is below the top of the Deadwood Formation, so it is under unconfined conditions. Figure 2 shows the water levels in Observation Well LA-96A over the period of record (1997 through 2021). Water levels in the aquifer ranged from 614.4 to 602.56 feet below the top of casing. Water levels in Observation Well LA-96A are not likely to be representative of the Deadwood Aquifer remnant underlying this application, but water levels near the application may fluctuate as much as or more than the water levels in Observation Well LA-96A, due to the unconfined nature of the aquifer near this application. Drawdown for the well for this application is unlikely to be noticeable compared to the natural fluctuations in the aquifer due to variation in precipitation and the small annual use proposed by this application. Therefore, based on the record of observation wells, there is reasonable probability unappropriated water is available for this application.

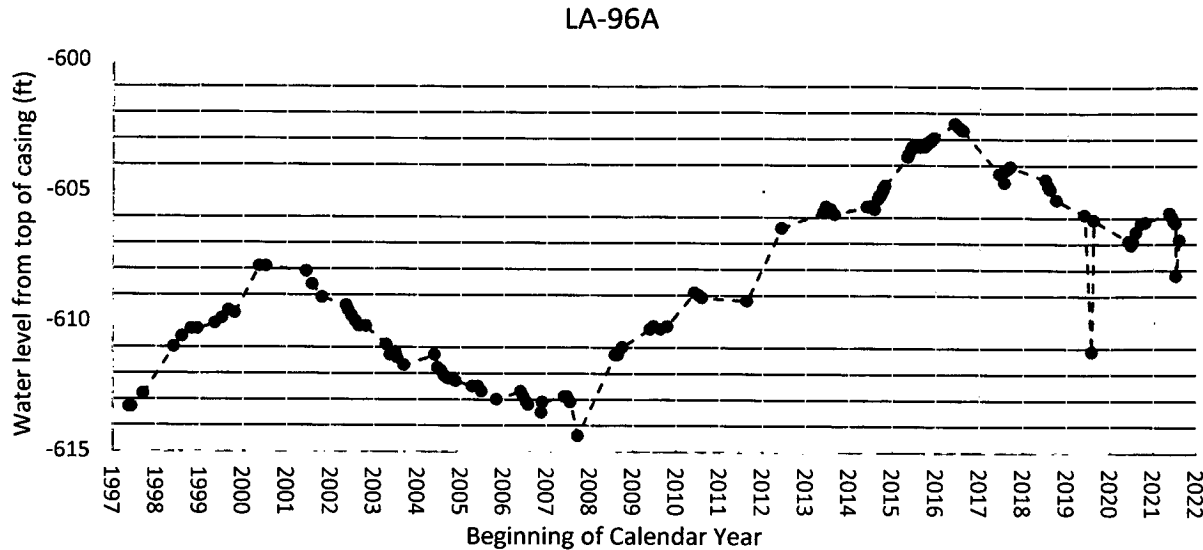


Figure 2: Observation Well LA-96A [13]

Possibility of Unlawful Impairment of Existing Water Rights/Permits

There are no other water rights/permits completed into the Deadwood Aquifer remnant in which this application is located [14]. The nearest domestic well likely to be completed into the Deadwood Aquifer is located approximately 0.4 miles southeast of the well for this application [8]. The Water Rights Program has historically interpreted an unlawful impairment of existing water rights to occur if a junior water right/permit causes a nearby adequate well with a senior water right/permit to become unable to withdraw at the rate it is entitled to or, if a domestic well is impacted, the water right/permit causes the adequate domestic well to be unable to withdraw at the rate needed to supply reasonable domestic use of water. Administrative Rule of South Dakota (ARSD) 74:02:04:20(6) defines an adequate well as:

...a well constructed or rehabilitated to allow various withdrawal methods to be used, to allow the inlet to the pump to be placed not less than 20 feet into the saturated aquifer or formation material when the well is constructed, or to allow the pump to be placed as near to the bottom of the aquifer as is practical if the aquifer thickness is less than 20 feet

Due to the low pump rate (10 gpm) of this application and unconfined nature of the aquifer in the area of this application, it is unlikely for the well for this application to cause interference with the nearest domestic well on file, since unconfined wells tend to have a smaller drawdown cone than confined wells. Precise drawdown effects in the area of this application cannot be known without an aquifer performance test. There are no complaints on file with the Water Rights Program regarding Deadwood Aquifer wells in Lawrence County [15]. Therefore, based on the low pump rate of this application and the lack of complaints in the aquifer in this county, there is reasonable probability this application can be developed without unlawful impairment of existing water rights.

Conclusions

1. Water Permit Application No. 2008-1 seeks to appropriate up to 0.06 ac-ft/yr (20,000 gallons per year) at a maximum instantaneous diversion rate of 0.022 cfs (10 gpm) from one well completed into an erosional remnant of the Deadwood Aquifer located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 14-T4N-R3E.
2. Based on the hydrologic budget and record of observation wells, there is reasonable probability unappropriated water is available for this application.
3. There is reasonable probability this application can be developed without unlawful impairment of existing water rights/permits or domestic users with adequate wells.



Kimberly C. Drennon, E.I.

Natural Resources Engineer II – DANR Water Rights Program

References

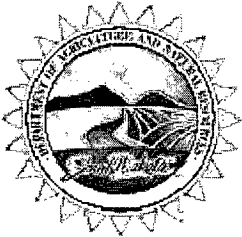
- [1] J. A. Redden, A. L. Lisenbee and M. D. Fahrenbach, "Geologic Map of the Deadwood South Quadrangle, South Dakota," SD DANR Geological Survey Program, Rapid City, South Dakota, 2013. Geologic Quadrangle Map 18.
- [2] J. S. Downey, "Geohydrology of bedrock aquifers in the Northern Great Plains in parts of Montana, North Dakota, South Dakota, and Wyoming," United States Geological Survey, Denver, Colorado, 1986. Professional Paper 1402-E.
- [3] J. A. Redden, A. L. Lisenbee and M. D. Fahrenbach, "Geologic Map of the Lead Quadrangle, South Dakota," SD DANR Geological Survey Program, Rapid City, South Dakota, 2013. Geologic Quadrangle Map 19.
- [4] M. D. Fahrenbach, Interviewee, *Environmental Scientist III - SD DANR Geological Survey Program*. [Interview]. 20 July 2021.
- [5] P. H. Rahn, "Ground water resources of western South Dakota," U.S. Army Corps of Engineers, Omaha, Nebraska, 1979. SDSM&T Project #2533.
- [6] D. G. Driscoll and J. M. Carter, "Hydrologic Conditions and Budgets for the Black Hills of South Dakota, through Water Year 1998," United States Geological Survey, Rapid City, South Dakota, 2001. Water-Resources Investigation 01-4226.
- [7] D. G. Driscoll, G. R. Hamade and S. J. Kenner, "Summary of Precipitation Data for the Black Hills Area of South Dakota, Water Years 1931-98," United States Geological Survey, Rapid City, South Dakota, 2000. Open-File Report 00-329.
- [8] SD DANR Water Rights Program, "Well completion reports," Pierre, South Dakota, 2021.
- [9] J. M. Carter and K. M. Nietzert, "Estimated Use of Water in South Dakota, 2005," United States Geological Survey, Rapid City, South Dakota, 2008. Scientific Investigations Report 2008-5216.
- [10] U.S. Census Bureau, "ACS demographic and housing estimates for Lawrence County, South Dakota," U.S. Census Bureau, 2019. [Online]. Available: <https://data.census.gov/cedsci/table?q=lawrence%20county,%20south%20dakota&tid=ACSDP5Y2019.DP05>. [Accessed 11 August 2021].
- [11] FSA, "Lawrence County photomosaic," USDA FSA, Salt Lake City, Utah, 2019.
- [12] A. Mathiowetz, Interviewee, *Natural Resources Engineer IV - SD DANR Water Rights Program*. [Interview]. 25 August 2021.
- [13] SD DANR Water Rights Program, "Observation wells," Pierre, South Dakota, 2021.
- [14] SD DANR Water Rights Program, "Water right permit file database," SD DANR Water Rights Program, Pierre, South Dakota, 2021.
- [15] SD DANR Water Rights Program, "County Files," SD DANR Water Rights Program, Joe Foss Bldg., Pierre, South Dakota, 2021.

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, August 31, 2021 9:31 AM
To: mikes@cityoflead.com
Subject: Water Permit Application No. 2008-1
Attachments: 1795.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>



RECEIVED

SEP 20 2021

WATER RIGHTS
PROGRAM

Affidavit of Publication

STATE OF SOUTH DAKOTA:

COUNTY OF LAWRENCE:

Letitia Lister of said County and State being first duly sworn, on her oath says: That the BLACK HILLS PIONEER is a legal daily newspaper of general circulation, printed and published in the City of Spearfish, in said County and State by Letitia Lister, and has been such a newspaper during the times hereinafter mentioned; and that said newspaper has a bonafide circulation of at least 200 copies weekly, and has been published within said County in the English language for at least one year prior to the first publication of the notice herein mentioned, and is printed in whole or in part in an office maintained at the place of publication; and that I, Letitia Lister, the undersigned, am the Publisher of said newspaper and have personal knowledge of all the facts stated in this affidavit; and that the advertisement headed:

Notice OF Application
No. 2008-1

a printed copy of which is hereto attached, was printed and published in said newspaper for 1 successive and consecutive weeks, the first publication being made on the 9th day of Sept., 2021, and the last publication on the _____ day of _____, that the full amount of fees charged for publishing same, to-wit: The sum of \$25.87, insures solely to the benefit of the publisher of the BLACK HILLS PIONEER, that no agreement or understanding for a division thereof has been made with any person and that no part thereof has been agreed to be paid to any other person whomsoever.

[Signature]
Subscribed and sworn to before me this 13th day of Sept., 2021

[Signature]

Notary Public, Lawrence County, South Dakota

My commission expires: 7-18-2025

**NOTICE OF
APPLICATION
NO. 2008-1 to
Appropriate Water**

Notice is given that the City of Lead, c/o Mike Stahl, City Administrator, 801 N Main St, Lead SD 57754 has filed an application for a water permit to appropriate an amount not exceeding 1.0 acre-feet of water annually at a maximum pump rate of 0.022 cubic feet of water per second from one well completed into the Deadwood Aquifer (220 feet deep) located in the SW 1/4 NW 1/4 Section 14-T4N-R3E for industrial use at the Tri-City Rubble site

to provide water for dust control, fire protection and maintenance. This site is located approximately 3 miles southeast of Lead SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2008-1 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 <https://danr.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

Thursday, September

applicant must be filed by September 20, 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 \$26.33.

#132
Sep 9

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, August 31, 2021 9:28 AM
To: Black Hills Pioneer Spearfish (legals@bhpioneer.com)
Subject: 2008-1, City of Lead
Attachments: 2008-1public.short.docx; FORM8.FRM.doc

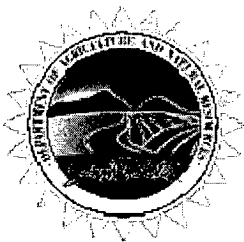
Attached is a notice to be published on September 9, 2021.

City of Lead, c/o Mike Stahl, City Administrator, 801 W Main, Lead SD 57754 (605 584-1401) 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.**

Aguust 31, 2021

City of Lead
c/o Mike Stahl, City Administrator
801 N Main St
Lead SD 57754

Dear Mr. Stahl:

Water Permit Application No. 2008-1 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 Black Hills Pioneer printed at Spearfish SD (Ph # 605 642-2761). 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. 2008-1 to Appropriate Water

Notice is given that the City of Lead, c/o Mike Stahl, City Administrator, 801 N Main St, Lead SD 57754 has filed an application for a water permit to appropriate an amount not exceeding 1.0 acre-feet of water annually at a maximum pump rate of 0.022 cubic feet of water per second from one well completed into the Deadwood Aquifer (220 feet deep) located in the SW 1/4 NW 1/4 Section 14-T4N-R3E for industrial use at the Tri-City Rubble site to provide water for dust control, fire protection and maintenance. This site is located approximately 3 miles southeast of Lead SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2008-1 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 <https://danr.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 September 20, 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

SEP 27 2021

City of Lead
c/o Mike Stahl, City Administrator
801 W Main St
Lead SD 57754

Dear Mr. Stahl:

Enclosed is Water Permit No. 2008-1 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

