

Considered: _____

WATER PERMIT NO. 1365-1

MAP No. same

Name of Applicant Wharf Resources

Post Office Address P.O. Box 446 , Deadwood SD 57732

Amount of Water Claimed .25 cfs Total Acres NA

Source of Water Supply groundwater

Water to be used for industrial purposes & domestic use County Lawrence

About 3 miles W of Lead

PROOF OF PUBLICATION: Received ☒ Not Received ☐

APPLICATION: Approved ☐ Subject to ☐

F.F. & C.L. Adopted 3/4/87 Not Approved ☐ Deferred ☐

PRIORITY Date Received September 15, 1986 Fee \$225.00 Remarks _____

9/15/86 Annie Creek Mine Operation

Corrected Application Received ☐ Period of Annual Use _____

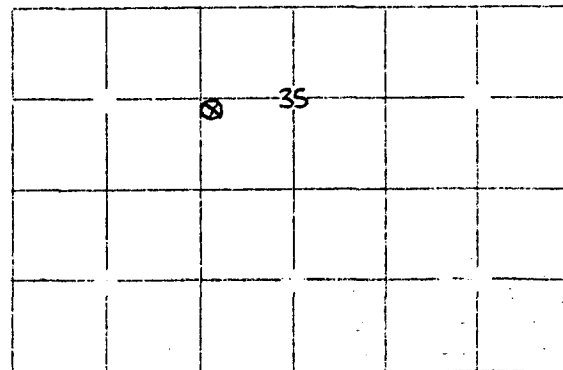
WATER QUALITY APPROVAL RECEIVED NA APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as Application YES ☐ NO ☐ REMARKS _____

Diversion Point well: NW1/4SW1/4 section 35 -

T5N-R2E

Land to be Irrigated NA



Well Log: Driller Alexander Drilling Licensed YES ☒ NO ☐

Depth of Well 650 feet REMARKS _____

Type of Map Topo PREPARED BY Luther J Russell Reviewed and the Number

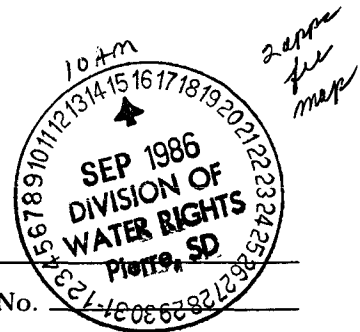
assigned on September 23, 1986 By Ron Russell

No. 1365-1 Hydrologic Unit 10120203
 Map No. same Basin Belle Fourche R
 Newspaper Lead Daily Call, PO Box 876

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

Check use of water: Industrial ☒ Commercial ☐ Municipal ☐ Other Common Distribution System ☐
 Rural Water System ☐ Suburban Housing ☐ Geothermal Heat ☐ Institutional ☐ Recreational ☐
 Domestic ☒ (above 18gpm) Other ☐

Type of Application: Check one or more of the following

New ☒ Vested Right ☐ Future Use ☐ Change Use ☐☐ Amend Permit No. _____ with old priority date retainedChange diversion point(s) ☐ Add diversion point(s) ☐ Other ☐☐ Application to: Change diversion point(s) ☐ Add diversion point(s) ☐ on Permit No. _____☐ Construction to use water reserved by Future Use Permit No. _____1. Name of Applicant Wharf Resources Phone No. (605) 584-1441Post Office Address PO Box 446, Deadwood State SD Zip Code 57732
(Street, RR or Box)2. Amount of water claimed (c.f.s) 0.25 ft.³/sec.3. Source of water supply Well4. Location of point of diversion Well (See attached map)NW $\frac{1}{4}$ of SW $\frac{1}{4}$ Section 35, T5N, R2ECounty Lawrence5. Counties where water will be used Lawrence6. Annual period during which water is to be used Year round January 1 - December 31

7. Give a brief description of proposed 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)

Possible water well for Wharf Resources Annie Creek Mine operation.

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map (see instruction)

STATE OF SOUTH DAKOTA)
County of Lawrence)^{ss}I, Luther J. Russell for Wharf Resources

the applicant, certify that I have read the foregoing application, have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.

Signed [Signature]Subscribed and sworn to before me this 12th day of September 19 86Leona K. Mathis

Notary Public (or other qualified officer)

MY COMMISSION EXPIRES JULY 16, 1990

1365-1

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES "Joseph" WATER RIGHT APPLICATION
7-12-86

LEAD QUADRANGLE
SOUTH DAKOTA—LAWRENCE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Maped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography by photogrammetric methods from aerial
photographs taken 1958. Field checked 1961.
Polyconic projection. 1927 North American datum
10,000-foot grid based on South Dakota coordinate system, north zone
1000-meter Universal Transverse Mercator grid ticks,
zone 13, shown in blue.
Red tint indicates area in which only landmark buildings are shown.
Revisions shown in purple compiled from aerial photographs
taken 1971. This information not field checked.



ROAD CLASSIFICATION
Medium-duty ——— Light-duty ———
Unimproved dirt ———
U.S. Route



LEAD, S. DAK.
N4415—W10345/7.5

1961
PHOTOREVISED 1971
AMS 5272 IV SE—SERIES V875

Appl. No. 1365-1

WATER PERMIT

The Water Management Board hereby approves Water Permit Application No. 1365-1
Wharf Resources (Applicant) P.O. Box 446, Deadwood (Post Office Address)
SD (State) 57732 (Zip Code) With the following qualifications.

The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior rights.

Date of first receipt of application September 15, 1986.
 Date of return to applicant for correction, amendments or changes required _____, 19____.
 Date of receipt of corrected application _____, 19____. Approved March 4, 1987.

The Water Management Board hereby approves this Water Permit No. 1365-1 authorizing the construction of the water use system and the placing of water to beneficial use as stated in the Application and as qualified in the Water Permit approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is September 15, 1986.
2. The equivalent of at least one-fifth of the specified work is to be completed on or before August 4, 1989.
3. The whole of said work is to be completed on or before March 4, 1992.
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is March 4, 1996.
5. The water appropriated shall be used for the purpose of industrial use and domestic use in the Annie Creek Mine Operation and for suburban housing development
6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be unlawfully impaired by this appropriation.
7. The amount of the appropriation herein granted shall not exceed 0.25 cubic feet per second; neither shall it exceed the capacity of the above described water supply system nor shall it exceed the amount of water needed for beneficial uses served and to which water is actually and beneficially applied for TND, DOM & SHD on or before March 4, 1996; said water to be used during the following described annual period: January 1 - December 31

WATER MANAGEMENT BOARD

By: John H. Galt Chief Engineer
 Division of Water Rights
 Dept. of Water and Natural Resources
APR 30 1987

Supplemental Information

(type or print in ink)

1. Well Information - Proposed construction

- a) Drill Hole Diameter 6-1/4" Depth 650 feet
- b) Casing Type 250 steel Diameter 6" I.D. Thickness ~~1/2"~~ .280"
- c) Screen Type unknown Diameter Thickness
- d) Gravel Pack Thickness unknown Length of Gravel Pack
- e) Depth to Top of Water Bearing Material 330 feet
- f) Depth of Water (ground surface to water level) 182 feet
- g) Distance to nearest existing domestic well:
- On applicants property 600 feet On property owned by others 1,000 feet

2. Dugout Information Estimates N/A

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

3. Water Storage Dams N/A

If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should 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) Outlet Dimensions:
Pipe diameter

Spillway width

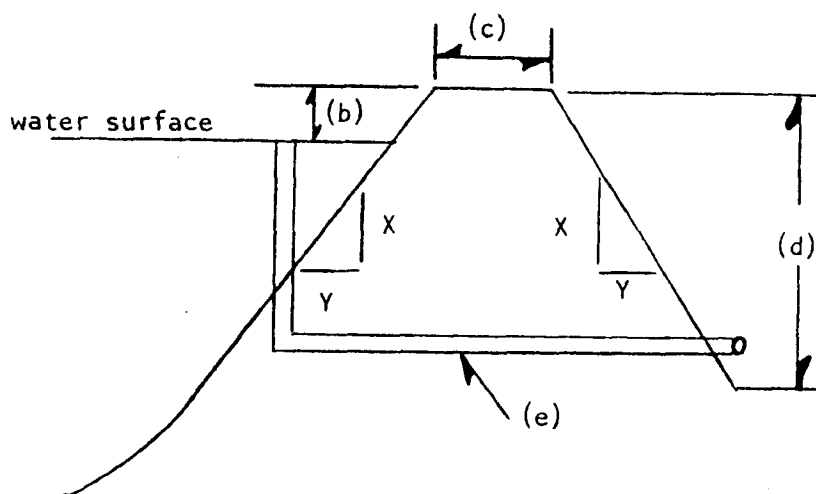
f) X & Y Slope
Upstream

Downstream

Surface Area of Impoundment

Storage acre feet

Drainage area above dam



RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

410560

Pierre, September 15, 19 86

RECEIVED OF Wharf Resources, PO Box 445, Deadwood, SD 57732

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

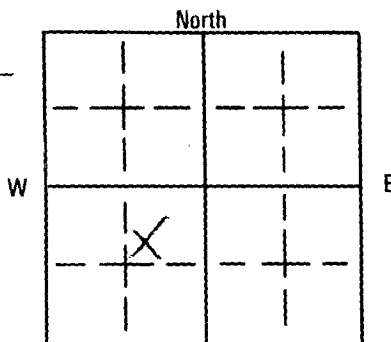
Fee for Application for Permit No. <u>1365-1</u> to Appropriate Water, to construct works and to put water to beneficial use _____	225	00
Fee for Application for Permit No. _____ to Appropriate Water for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____		
(Any Other Work Provided by Law)	Total	225 00

By John Hatch
Chief Engineer

JOHN HATCH

SOUTH DAKOTA WATER WELL COMPLETION REPORT

10-85

Location SW 1/4 Sec 35 Twp 5 Rg 2-ECounty
LawrencePlease mark well
location with
an "X"Well Completion Date 7-29-86 8-6-86

PROPOSED USE:

☐ Domestic ☐ Municipal ☒ Test Holes ☒ Monitor *
☐ Irrigation ☐ Industrial ☐ Stock

Method of Drilling:

Drill hole hammer

CASING DATA:

☒ Steel ☐ Plastic ☐ Other
 If other describe 45' of 6" 250 Steel

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUT:

Was the well grouted? ☒ YES ☐ NOTo what depth? 10' to 45' FEETWhat is grouting material? Type III cementIf cement, number of sacks? 6Describe grouting procedure to mix pipe

What was grout weight? _____ LB/GAL

SCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter _____ IN Length _____ FEET

Material _____

Slot Size _____ Set From _____ Feet To _____ Feet

Slot Size _____ Set From _____ Feet To _____ Feet

Slot Size _____ Set From _____ Feet To _____ Feet

Other information _____

Was a packer or seal used? ☐ YES ☒ NOIf so, what material? Casing set in hard rock

Describe packer(s) and location? _____

Was well disinfected upon completion? ☐ YES ☐ NO

Explain _____

Bacteriological analysis ☐ YES ☐ NO

Laboratory sent to _____

Well Owner:

Name Wharf ResourcesAddress P.O. Box 446, Deadwood, S.D.Well Log: _____ Depth 27732

Formation	From	To
DRIFT	0	17
Porphyry - 8" hole	17	12
Porphyry H.L. Brown - 6 1/4" hole	42	135
" " " " " "	135	140
S.S. Congl. Deadwood	140	210
Quartzite to Rhyolite	210	225
" " " " " "	225	235
S.S. Congl. purple to wh.	235	250
S.S. wh. to pink hd.	250	280
PreCambrian hd	280	310
Quartzite hd. gray	310	330
Quartzite - Fracture zone	330	332
Quartzite to Quartz	332	400
Quartz - Fracture zone	400	405

STATIC WATER LEVEL _____ Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

If other; specify _____

Can well be completely shut in? _____

WELL TEST DATA:

☒ Pumped W/ASP 7210 gpm ±☐ Bailed Describe: _____☐ Other _____

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

REMARKS

*Possibly use for water well.Reduced hole to 6 1/4" at 42 ft.Quartzite - Fracture zone 405 - 498FRactured zone H2O supply - 498 - 500Quartzite, gray to blk. - 500 - 550Quartz - Fractured - H2O supply 550 - 555Quartzite - H2O supply to blk. 555 - 611Quartzite - H2O supply to blk. 611 - 615Quartzite - H2O supply to blk. 615 - 619This well was drilled under license # 324And this report is true and accurate.Drilling firm Alexander Drilling Co

Signature of License Representative: _____

Signature of Well Owner: _____

Date _____



WHARF RESOURCES

(A Montana General Partnership)

Wharf Resources Ltd.

Wharf Resources (U.S.A.) Inc.

September 12, 1986

Mr. John Hatch, Chief Engineer
Water Rights Division
Department of Water and Natural Resources
Joe Foss Building, 4th Floor
523 East Capitol
Pierre, South Dakota 57501-3181



Dear Mr. Hatch:

Enclosed please find our Water Right Application to appropriate 0.25 ft³/sec from a well located on our Joseph mining claim. This well may possibly be utilized to supply water for our Annie Creek mining operation located in Lawrence County.

I have enclosed maps, application forms, drillers' log, and a check in the amount of Two Hundred Twenty-five Dollars (\$225.00) for the requested appropriation. I trust these submissions will cover all requirements for making a water right application. If additional information is required, please contact me at 584-1441.

As you are aware, we have previously received approval of a Water Right Permit Application (No. 1364-1) for appropriation of up to 0.25 CFS from another well (HDH-8) located elsewhere on our property. It is my understanding, pursuant to SDCL 46-5-31 and your letter of April 21, 1986, that changes in location for wells into the same aquifer can be made up to 660 feet without application. This letter will serve to advise you that due to operational conflicts, Well HDH-8 (Water Right Permit No. 1346-1) has been moved approximately 50 feet and a new well (HDH-8A) drilled into the same aquifer. The original well (HDH-8) has been abandoned and plugged following State Well Construction Plugging Standards (Chapter 74:02:04). It is my understanding that our Water Permit No. 1346-1 will apply to this new well. Your confirmation of this would be appreciated.

Sincerely,

Luther W. Russell, Director
Governmental Affairs

LJR/lkm
Enclosures

CC: H. A. Scholz
R. B. Barnes

November 25, 1986

Mr. John Hatch
South Dakota Dept. of Water & Natural Resources
Water Rights Division
Joe Foss Building
523 East Capitol
Pierre, SD 57501



Dear Mr. Hatch;

I am writing to oppose the granting of Wharf Resources Water Right Permit application, which is to be heard by your department December 10, 1986.

This well is located approximately 150 feet downstream from the proposed overburden dyke, which will straddle the Squaw Creek drainage (see attachment - Fig. 4.4). This well was drilled with the sole intent of monitoring the downstream effects that Wharf's mining operation may have on the groundwater quality. For this reason it is important that domestic water be obtained from a source remote from Wharf's operation.

Wharf should be allowed to appropriate water from this "monitor" well for industrial use only. The Foley Fidge State Permit application is based entirely on the development of the Two John's water source as a replacement of the Squaw Creek source and that plan should be implemented.

Thank you for your attention to this matter.

Sincerely,


Gary R. Fisher
Box 806 Star Route
Lead, SD 57754

1.1 INTRODUCTION

The northern Black Hills has two major watershed systems which drain the area: Spearfish Creek and Whitewood Creek. Both creek systems are perennial streams which form part of the Missouri River system.

The Foley Ridge project is located at the headwater of drainages that are tributaries to Spearfish Creek; namely, Annie Creek and Squaw Creek. Annie Creek and Squaw Creek are ephemeral or intermittent in the project area with most flows as a result of spring run-off and/or heavy thunder storms.

Currently, Warbonnet's domestic water supply is a well located in the project area. (This water source will be replaced.) Wharf's replacement water source (Two Johns' incline) has proven to be of the same quality or better quality than the Squaw Creek well. Further discussion regarding groundwater hydrology is in Section 11.3.

Both surface and groundwater quality monitoring programs have been conducted by Homestake and Wharf (see Appendix XI-C), according to DWR approved test methods and protocol. Along the same lines, surface and groundwater monitoring will be continued at Foley Ridge for the lifetime of the operation.

Located in Appendices XI-A & XI-B are two reports by J.P. Gries that further detail the hydrology of the area affected by the Foley Ridge project.

1.2 SURFACE WATER QUALITY

It is proposed to establish a baseline for surface water quality monitoring throughout the first year of operation. It is also proposed to continue monitoring on a 4-times-per-year basis throughout the lifetime of the operation. This will be done to ensure that any potential impacts that may result from the operation are detected so moderation measures can be taken. The following sources will be sampled quarterly:

- 1) Squaw Creek well
- 2) War Eagle
- 3) Drop Off
- 4) Standing Log

For thier locations see Figure 9.4

With regard to surface water baseline monitoring parameters, the first set of Foley Ridge water quality samples (see Appendix XI-C) were only sampled for the present Annie Creek parameters. This error was corrected in the second set of Foley Ridge water quality samples. Parameters added to the Foley Ridge water quality monitoring program are as follows:

Alkalinity, Bicarbonate, Carbonate, Chloride, Fluoride, Sulphate, Calcium, Magnesium, Potassium, Sodium, pH, Conductivity, Turbidity, Total CN, Dissolved Solids, Suspended Solids, Aluminum, Arsenic, Cadmium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Silver, Zinc, Ammonia, Nitrate, and Ortho Phosphorus. (Please note Appendix XI-C). In addition to the Foley Ridge baseline data, baseline data from the Ragged Top project has been included in the application. To reduce bulkiness of the application, further Homestake Ragged Top project data and a voluminous amount of Annie Creek baseline data is available in DWNR records (reference permit 356).

The Deadwood Formation traditionally is high in carbonate minerals and is equally so in the case of Foley Ridge and Annie Creek. The Foley Ridge drill logs were analyzed for the ratio of sulphide to carbonate for all rock types, and results indicated significantly higher ratios of carbonate over sulphide. The higher carbonate will buffer any acid generated from the sulphides and subsequently limit the mobilization of heavy metals. A copy of John Taylor's memos "Ratio of Sulfides to Calcite in the Overburden Rock of the proposed Foley Ridge Pit" and "Ratio of Oxidized to Unoxidized Rock in the Waste and Overburden of the proposed Foley Ridge Pit", can be found in Appendix XI-D.

Annie Creek and Foley Ridge rocks are geologically very similar, so it is felt that the acid-base potential tests conducted on Annie Creek rocks would apply and no acid leachate would be generated from the Foley Ridge waste rock. (Refer to Appendix XI-D).

Terry Mudder, PHD, indicates that, based upon sulphide-carbonate ratio and the acid base potential tests, he would expect that the rock would buffer acid generation and he would not expect problematic amounts of iron, copper, and manganese to be mobilized. Also, the metals in the EP toxicity test would not be expected to be mobilized. (Refer to Appendix XI-D).

11.3 GROUND WATER HYDROLOGY

Currently, Warbonnet's domestic water supply source is a well located in the project area of Squaw Creek. (This water source will be replaced). A log of this well, along with further discussion regarding groundwater hydrology, is included in the two reports by J.P. Gries found in Appendix XI-A & XI-B.

From Dr. Gries' report, it is evident that old underground mine workings in the project area probably have a significant controlling influence on the movement of groundwater. Since

the project area is generally upgradient of the Squaw Creek area where water has been identified, disruption of the old workings may have an impact on the quality and quantity of groundwater contained in these "aquifers".

The Squaw Creek wells tend to suggest the only real aquifer is in the deeper Deadwood Formation sandstones. The upper colluvium aquifer is seasonal (during high run-off periods) and even tight enough to be used as a cistern during most of the year.

The upper-contact workings are dry and generally above any permanent water table as evidenced by visual inspection and drill-hole logs. The upper-contact workings are deemed not to be an aquifer.

Figures 1, 2, 3, and 4 (refer to Appendix XI-E) show the extent of the Portland and Dakota mine workings beneath the proposed Foley Ridge mine and waste dump area. These 1 inch to 1000 foot scale maps can overlay Figure 1.1 of the permit application to show the portion beneath or adjacent to the proposed pit and dumps.

Field investigation by Bob Barnes and Paul Gries on August 9, 1985 are summarized as follows:

- Dakota Shaft - collar elevation 6420 ft. - no water was measured in the shaft. The shaft is apparently bulkheaded off at 6350 ft. elevation.
- Portland workings in the vicinity of the permit area - all surface exposures of the upper contact workings were investigated and no water levels were observed or measured.
- John White's wells - two hand-dug wells were observed approximately 50 feet apart. These wells were timbered and are reported to be about 80 feet deep. A hand level was used to measure water-level elevation which was 6325 in both wells. The collar of one well was 6333 feet and the other 6348 feet. The drill logs of the adjacent exploration drill hole indicated a colluvium depth of 80 feet. Reviewing the drill logs for the Foley project indicated:
 - a. No saturated mine workings have been drilled into;
 - b. No water table was found in the Foley Ridge open-pit area;
 - c. Waste dump condemnation drilling in the Squaw Creek area showed a thicker colluvium which was difficult to drill without the use of water. The colluvium appears to contain formational water and saturated clays but the amount is masked by the water injected for hole stabilization.

No substantial amount of water is anticipated in the pit, but if it occurs the water will be directed to settling areas.

The middle contact in the Foley pit area is below the pit bottom by approximately 100 feet. It is felt that these shales and porphyry will seal or limit the vertical migration of water from surface activities. Intermediate workings show poor lateral continuity and are not extensive.

The lower-contact workings are likely to be flooded, based upon conversations with Paul Miller of Warbonnet. Lower-contact workings accessed by the Clinton mine are at least 300 feet below the small area which is beneath the waste dump. Lower-contact workings beneath the SE corner of the Foley pit are 370 feet below the bottom of the pit and consist only of a single exploration drift heading northwest. As with the middle-contact workings it is felt that the shales and Tertiary porphyry sills will limit vertical migration of waters. The lower-contact workings of the Two Johns' mine are several thousand feet from activity in the Foley area.

Wharf plans to monitor the lower aquifer and upper-colluvium aquifer in the Squaw Creek wells by drilling two new wells downstream from the road fill dyke. For location see Figure 4.4. These wells will be monitored 4 times per year for all original Annie Creek water quality parameters, as well as Foley Ridge parameters. These tests will be conducted according to DWR approved test methods and protocol.

The recharge area for Squaw Creek is not expected to change. The only change expected is in the storage capability of the waste dump which will tend to store water and emit water on a more steady basis.

1.4 DOMESTIC WATER SUPPLY

In 1983 Wharf Resources made an agreement with Warbonnet Inc. which allowed Wharf to use the Ross Springs' water source in return for Wharf providing a new primary water source. Warbonnet requested that a new water source be developed in the Two Johns' mine working but Wharf opted to try a deep drill hole in Squaw Creek. This drill hole proved successful and a water source of 25 to 35 gallons per minute was developed by Wharf and provided to Warbonnet. The water quality of this well was as good as, or better than, the other Warbonnet water sources, Ross Springs and the Squaw Creek shaft. The Squaw Creek shaft only provides water during run-off periods (late spring or early summer) and dries up during the fall and winter. Since 1983 Warbonnet has used the Squaw Creek deep well as its primary water source and has used the Squaw Creek shaft and Ross Springs as its backup.

In Wharf's development plans for the Foley Ridge mine, Wharf

will remove the pipeline connecting Ross Springs to the Warbonnet water system as it passes through the middle of the proposed open pit. The Squaw Creek shaft and the Squaw Creek deep well will be covered by the proposed overburden dumps.

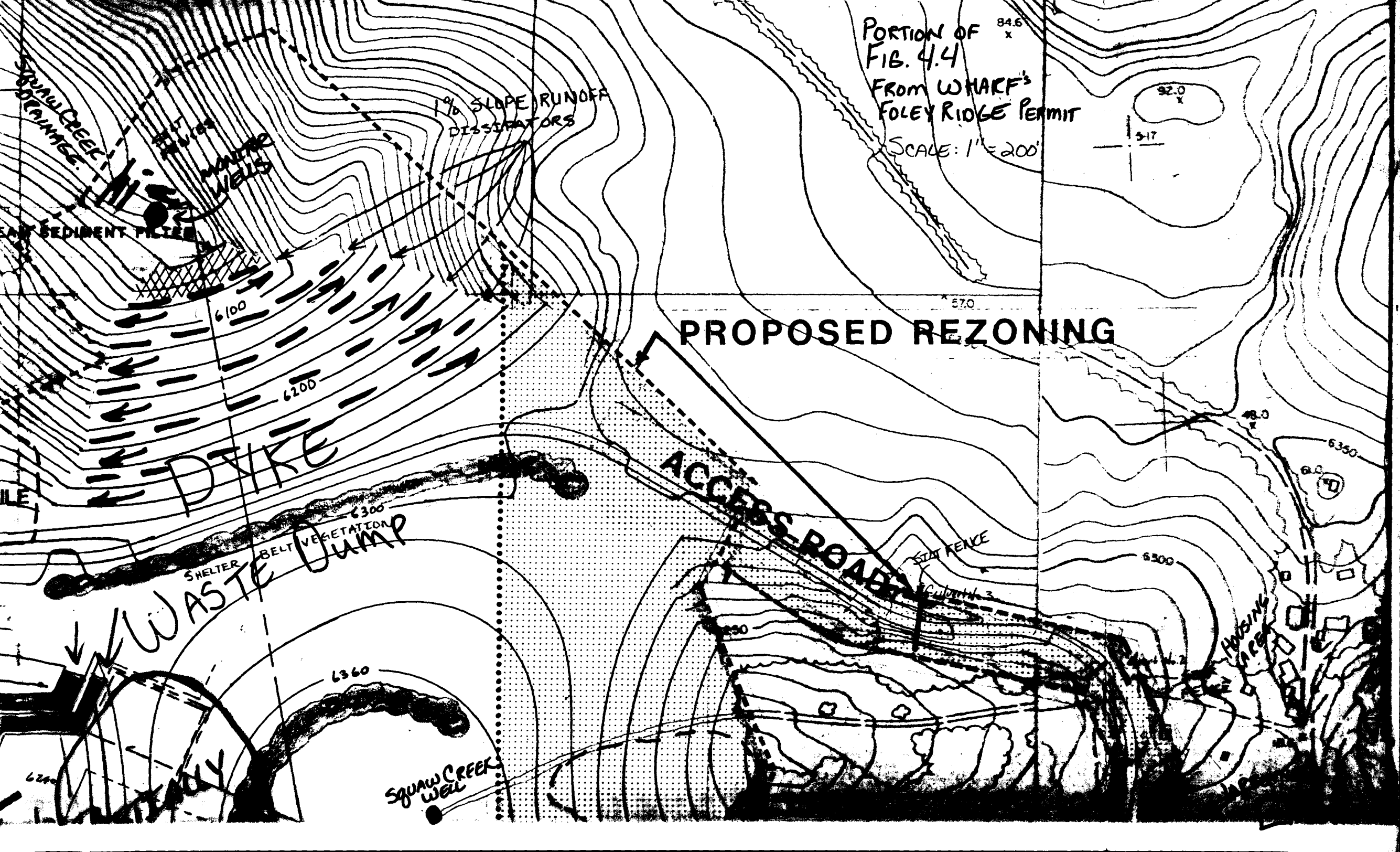
Wharf has proposed the following plan to replace these sources. It should be stressed that the aquifers of all three will not be destroyed and can be accessed in the future.

1. Develop a water source at the Two Johns' mine. Water quantity and quality tests indicate a source of over 100 gallons per minute with comparable water quality to the present sources.
2. The water line from the Two Johns' mine to a new storage tank will be upgraded to a 4-inch line.
3. Install a new 150,000-gallon storage tank which will provide a major increase in the storage capability of the water system.
4. Wharf has an agreement with Warbonnet to supply water with comparable quality at a rate of up to 50 gallons per minute at no cost to Warbonnet. Wharf will pay for installation, operation, and maintenance of a system which will supply water to the 150,000-gallon storage tank.
5. The Squaw Creek shaft and the Squaw Creek deep well will be covered up by overburden, but the aquifers will not be disturbed. The aquifers can be reaccessed by drilling a new well which will be done as soon as the overburden dump is filled over the wells.
6. The present deep Squaw Creek well can be modified so it can be covered up and remain operational for several years.

During the past few months Wharf has pursued developing the Two Johns' water source by the following: (refer to Appendix XI-F)

1. developed a conceptual design for the water-source development;
2. obtained an easement to construct an access to Two Johns;
3. constructed an access;
4. rebuilt trestle across Squaw Creek drainage;
5. reopened 360 feet of inclined mine shaft;
6. pumped over 2 million gallons of water from the workings;

7. conducted draw-down tests on the Two Johns' water source;
8. tested water quality before pumping and during pumping;
9. initiated a hydrological report on Two Johns' water source.



PORTION OF
FIG. 4.4
FROM WHARF'S
FOLEY RIDGE PERMIT
SCALE: 1" = 200'

PROPOSED REZONING

DYKE

ACCESS ROAD

WASTE DUMP

SQUAW CREEK
DRAINAGE

1% SLOPE RUNOFF
DISSIPATORS

SEDIMENT FILTER

WATER
WELLS

SHED BELT VEGETATION

STAY FENCE

Subunit 3

NEW HOUSING
LOTS

SQUAW CREEK
Well

REPORT ON APPLICATION NO. 1365-1
WHARF RESOURCES
October 6, 1986

Permit Application No. 1365-1 proposes to appropriate 0.25 cfs of water from one well 650 feet deep located in the NW 1/4 SW 1/4 Section 35, T5N, R2E. The water is for industrial use in the Annie Creek mine operation.

Aquifer: Pre-Cambrian rock

Geology and Hydrology

The Pre-cambrian rock of this area is predominantly a micaceous schist or phyllite with some localized amphibolite and chert quartzite (Redden, 1975). Groundwater is derived from bedding planes, joints, and fractures that occur within the Pre-cambrian rock. The total porosity of the Pre-cambrian rock is estimated to be 3% and the effective porosity is assumed to be 1% (Rahn, 1979). The hydrologic properties of the Pre-cambrian rock make the potential as a water source very difficult to assess and predict. The information supplied with this permit indicates the well was developed with air at 72 gpm which would indicate, that in this area, the rock may be a viable source of groundwater.

There are no recharge estimates available for the Pre-cambrian rock in this area. Recharge occurs through direct infiltration of precipitation via fractures and fissures, and possibly through streamflow from Squaw Creek.

The Division of Water Rights does not have any record of any domestic wells in the immediate area.

Review of Existing Permits

There are six existing permits for this area, they include:

Permit No.	Owner	Diversiion Point	Source	Diversiion Rate(cfs)
1174-1	Warbonnet, Inc.	SW SW Sec 35, T5N, R2E	Deadwood	0.67
1247-1	Warbonnet, Inc.	NW NW Sec 34, T5N, R2E	Pre-Cambrian	1.20
1278-1	Wharf Resources	SW SE Sec 33, T5N, R2E	Madison	0.25
1288-1	Wharf Resources	SE SW Sec 33, T5N, R2E	Madison	0.25
1346-1	Wharf Resources	NW NW Sec 3, T4N, R2E	Madison	0.25

Conclusions

1. Very little hydrologic data is available for the Pre-Cambrian rock in this area.
2. Recharge to the Pre-cambrian rock has not been quantified.

3. The well that is to be used supply this permit penetrates porous or fractured zones in the Pre-cambrian rock, and the static water level is reported to be 192 feet below land surface. The well was test pumped using airlift at approximately 72 gpm.
4. Because of the distance from existing water rights belonging to others, and the relatively low pumping rates, interference should not be a problem.
5. It is recommended that testing and permanent monitoring (water levels) be done in order to prevent possible controversy.



KEN BUHLER
Natural Resources Engineer

Reference

Redden, J.A., 1975, "Precambrian Geology of the Black Hills." Mineral and Water Resources of South Dakota, USGS, Washington DC.

Rahn, P.H., 1979, Ground Water Resources of Western South Dakota, US Army Corps of Engineers, SDSM & T Project #2533, Rapid City SD.

Division of Water Rights, 1986, "Domestic Well Log and Water Permit Files", DWNR, Water Rights Division, Foss Building, Pierre SD.

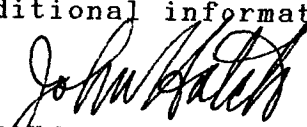
RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1365-1, Wharf Resources

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning Water Permit Application No. 1365-1, Wharf Resources, PO Box 446, Deadwood SD.

The Chief Engineer is recommending APPROVAL of Application No. 1365-1 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) in the public interest with the following qualifications:

The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate well having prior water rights.

See the attached report for additional information.


JOHN HATCH, Chief Engineer
October 9, 1986



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Water Rights Division
605 773-3352

October 15, 1986

NOTE:

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

Wharf Resources
PO Box 446
Deadwood, South Dakota 57732

Dear Sir:

Your Application No. 1365-1 for a permit to appropriate water for

Industrial use, has been examined and found to
comply with the South Dakota Water Laws and applicable rules. A notice of
your intent to appropriate water has been sent to the Publisher of the

Lead Daily Call printed at Lead

South Dakota. For your information, a copy of this notice, the recommendation
of the Chief Engineer and a report on the application are enclosed. Please
review this 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
of intent to appropriate water and to arrange for payment. Early contact with
the paper can eliminate delays. The publisher has been instructed to publish
your notice once each week for two consecutive weeks with the last publication
to occur at least thirty days before the board meeting. We must receive
Proof of Publication before the application can be considered by the Water
Management Board.

Sincerely,

RON DUVALL
Natural Resources Engineer

RD:ms
enclosures



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Water Rights Division
605 773-3352

October 15, 1986

Lead Daily Call
PO Box 876
Lead, South Dakota 57754

Dear Sir:

Enclosed is a Notice of Intent to Appropriate Water by Wharf Resources
Application No. 1365-1, in Lawrence County, South Dakota. Please
publish this notice once each week for two consecutive weeks in your paper. The
first publication should be on, or before October 24, 1986.

The APPLICANT MUST VERIFY TO YOU THAT THE NOTICE IS TO BE PUBLISHED, before you
make the first publication. The applicant is to pay the cost of publication and
should make the necessary arrangements with you to pay these costs.

A copy of BOTH publications must be sent to the Water Rights Division. IMMEDIATELY
after the FIRST publication, return a copy of the notice with the FIRST Publication
Transmittal form on the bottom of this page. The first copy is needed to check
the publication for errors so any corrections can be made before the second
notice is published.

Please be sure the SECOND publication is returned with the enclosed Proof of
Publication form. The permit application cannot be considered by the Water
Management Board until proof of publication has been received.

Thank you for your assistance.

Sincerely,

RON DUVALL
Natural Resources Engineer

cc: applicant

***** CUT HERE *****

FIRST
Publication
Transmittal

No. _____
TO: Water Rights Division
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter dated _____ and Notice of Hearing to
Appropriate Water by Application No. _____. The notice was first published
in our issue dated _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

NAME _____ NEWSPAPER _____

Equal Opportunity Employer

No. 1365-1

Instruction to Newspaper - Publish first publication of the following Notice on or before October 24, 1986 with 2nd publication 1 week later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 1365-1 to Appropriate Water
~~and/or to Amend Water Permit or Water Right No. _____~~

Notice is hereby given that Wharf Resources whose mailing address is P.O. Box 446, Deadwood, South Dakota has made an application for a permit

to appropriate .25 cubic feet of water per second from one well (Pre-Cambrian Rock) 650 feet deep located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 35-T5N-R2E. The water is for industrial use in the Annie Creek Mine Operation.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends APPROVAL of Application No. 1365-1 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) is beneficial use of water and 4) is in the public interest.

This application will be considered by the Water Management Board at Joe Foss Building, 523 E. Capitol, Room 216, Pierre, South Dakota, December 10 1986 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and the Chief Engineer by November 28, 1986. The petition may be informal, but it must include a statement describing the petitioners interest in the application, the reasons for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2 46-5-30.4, 46-5-31; ~~(ground)~~ 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14; ~~(future use)~~ 46-5-38 thru 46-5-40, ~~(transfer lands)~~ 46-5-30.4, 46-5-33 thru 46-5-35; ~~(10,000 AFA)~~ 46-5-20.1, 46-5-8.1; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15; ~~(future use)~~ 74:02:01:24 thru 74:02:01:25; ~~(10,000 AFA)~~ 74:02:01:15:02 thru 74:02:01:15:05.

This hearing is an adversary proceeding. The applicant or any person, after filing a petition, has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWNr, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by November 28, 1986.



**BOX 878
LEAD, SOUTH DAKOTA 57754**

NOVEMBER 1986

- WHARF RESOURCES
- PO BOX 446
- DEADWOOD, SD 57732

AMOUNT PAID

RETURN TOP PORTION WITH PAYMENT

[illegible]

WILSON, OLSON & NASH, P.C.

LAWYERS

CREEKSIDE PROFESSIONAL OFFICES

2640 JACKSON BOULEVARD

P. O. BOX 1552

RAPID CITY, SOUTH DAKOTA 57709

(605) 342-7090

ERNEST GUNDERSEN (1915-1972)

J. H. BOTTUM (1903-1984)

JAMES H. WILSON
JAMES W. OLSON
ROBERT M. NASH
STEVEN D. RICH
FRANCES R. BURNETT

December 1, 1986

Chief Engineer
Department of Water and
Natural Resources
Joe Foss Building, Room 216
523 E. Capitol
Pierre, SD 57501

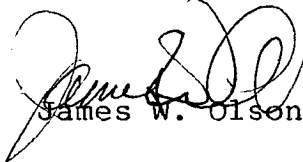
Re: Application No. 1365-1
Wharf Resources

Gentlemen:

Enclosed please find the Petition of Terry Valley-Trojan
Water District regarding the above-referenced application. This
Petition is being transmitted to you today due to the holiday
declared on November 28, 1986.

Very truly yours,

WILSON, OLSON & NASH, P.C.


James W. Olson

JWO/brk



PETITION

The Terry Valley-Trojan Water District Committee petitions to be heard upon the application of Wharf Resources on December 10, 1986, for water well located in the Northwest Quarter of the Southwest Quarter (NW 1/4 SW 1/4), Section Thirty-five (35), Township Five (5) North, Range Two (2).

This Committee was formed to establish a water district and to purchase and operate a domestic water system, the water source for which depends upon Wharf wells, which may or may not include this well.

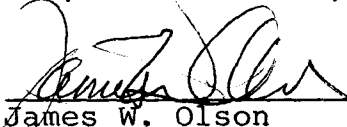
This Committee is concerned and will inquire into the proposed domestic use of this well which is believed to be a monitor well.

The Committee is opposed to the use of a monitor well to supply water to its domestic water supply system.

Respectfully submitted,

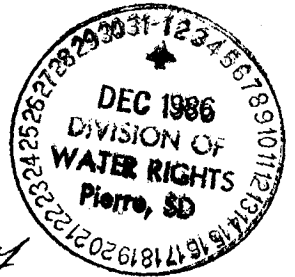
WILSON, OLSON & NASH, P.C.

By


James W. Olson
P.O. Box 1552
Rapid City, SD 57709
(605) 342-7090



November 25, 1986



Dear Mr. Hatch,

I am writing to you because of my concern with the new water source proposed by Wharf Mining Company for the Trojan area.

I am a resident of the Trojan area and the quality of water in the area is a critical issue to its residents.

Wharf spent money to study the Two Johns Mine for an alternative water supply because of a proposed waste dump on top of the present well. Now they're proposing to change the location of the well at the base of the dam to contain the waste. Wharf was planning to put a monitoring well at the base of this dam also. From my experience you don't locate a well for residential use near a well that is monitoring possible contamination from their waste dump.

I also know the rock will not be treated but as a geologist the rock in this area contains pyrite and when mix with water will form an acid.

Its my belief Wharf is more concerned about saving a buck than to provide the best possible water source for the Trojan residents.

Mining is important to this area and I have supported mining but I also know how important clean water is to people, livestock and crops. I'm asking the Water Rights Division to protect us from unnecessary contamination and assure us in Trojan of the best water supply possible. I hope at the upcoming hearing you will do everything possible to help the residents of the Trojan area. Thank you.

Sincerely, Kathleen Hart

P.O. Box 705
Lead SD 57754



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

December 15, 1986

NOTICE

TO: Persons Interested in Permit Application No. 1365-1,
Wharf Resources

FROM: John Hatch, Chief Engineer
Water Rights Division
605 773-3352

A handwritten signature in black ink, appearing to read "John Hatch", written over the typed name and title.

SUBJECT: Preparation of Findings of Fact, Conclusions of Law and
Final Decision

The Water Management Board has directed Mr. Guhin, the Board's attorney to prepare proposed Findings of Fact, Conclusions of Law and a Final Decision regarding approval of Permit Application No. 1365-1, Wharf Resources. The Board will consider the proposed Findings, Conclusions and Final Decision at 11:00 am, March 4, 1987, Room 216, Joe Foss Building, Pierre SD.

The Board has requested that a copy of the proposed Findings, Conclusions and Final Decision be mailed to the Board and other interested parties by February 11, 1987. Any comments pertaining to the proposed Findings, Conclusions and Decision are to be mailed to the Board and other interested parties by February 20, 1987.

The public hearing on Water Permit Application No. 1365-1 was completed December 10, 1986. No additional testimony will be received on March 4, 1987.

CERTIFICATION

I hereby certify that on December 16, 1986 I have personally deposited with the U.S. Mail postage prepaid envelopes containing a Notice pertaining to Findings of Fact, Conclusions of Law and a Final Decision on Application No. 1365-1 addressed as follows:

Wharf Resources, H.A.Scholz, Box 446, Deadwood SD 57732
James W Olson, Attorney, PO Box 1552, Rapid City SD 57701
Marv Truhe, Box 8110, Rapid City SD 57701
Kathleen Hart, PO Box 705, Lead SD 57754
Gary R Fisher, Box 806, St Rt, Lead SD 57754

Karen Schlaak
KAREN SCHLAACK
Senior Secretary

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 17th day of December, 1986.



John Hatch
Notary Public

February 17, 1987

Dear Sir:

I am writing to you about the memorandum from John Dahin pertaining to the Water Permit Application No. 1365-1 of Wharf Resources.

As a resident of the Trojan area and a water user it concerns me very much that Wharf wants to change the new water source for the area. Wharf went to great lengths to prove the Two Johns source was adequate. The Lawrence County Planning Commission granted a conditional use permit based on Wharf's study and specifically states in the permit the Two Johns source. Now Wharf wants to change the source.

The fact finding sheet states the new water supply will be beneficial for the area domestically. I question the quality of the water in the future as water leached through their waste pile and contaminating the aquifer through the present well. Also using a monitoring well is fine for industrial use. But a monitoring well is to give an early indication of any contamination, not for drinking water. If our water supply came from a monitoring well by the time any contaminate is found the people of the area will have already drank the water.

The memo stated that no issue was raised relating to the addition of "domestic use and suburban development use". There is an issue here and I stated my feeling in a letter to the Water Management Board.

I hope in your meeting on March 4th you reconsider the "domestic use" portion seriously, because its dealing with a community's water supply.

Sincerely,

Kathleen Hart





Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

March 13, 1987

NOTICE

TO: Persons Interested in Permit Application No. 1365-1,
Wharf Resources

FROM: John Hatch, Chief Engineer
Water Rights Division
605 773-3352

A handwritten signature in cursive script, appearing to read "John Hatch", written in dark ink.

SUBJECT: Findings of Fact, Conclusions of Law and Final Decision

This is to notify you that a final Decision including Findings of Fact and Conclusions of Law were adopted by the Water Management Board for approval of Water Permit Application No. 1365-1, Wharf Resources which was considered at the December 10, 1986 meeting.

Enclosed is a copy of the final Decision, Findings and Conclusions. South Dakota Statutes provide that the decisions of the Board may be appealed to the Courts.

CERTIFICATION

I hereby certify that on March 13, 1987 I have personally deposited with the U.S. Mail postage prepaid envelopes containing Notice and a copy of the Final Decision pertaining to Water Permit Application No. 1365-1 addressed as follows:

Wharf Resources, H.A.Scholz, Box 446, Deadwood SD 57732
James W Olson, Attorney, PO Box 1552, Rapid City SD 57701
Marv Truhe, Box 8110, Rapid City SD 57701
Kathleen Hart, PO Box 705, Lead SD 57754
Gary R Fisher, Box 806, St Rt, Lead SD 57754

Karen Schlaak
KAREN SCHLAACK
Senior Secretary

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 13th day of March, 1987.

John Hatch
Notary Public



STATE OF SOUTH DAKOTA

BEFORE THE WATER MANAGEMENT BOARD

IN THE MATTER OF THE APPLICATION	)	<u>FINDINGS OF FACT,</u>
FOR PERMIT NO. 1365-1	)	<u>CONCLUSIONS OF LAW</u>
	)	<u>AND FINAL DECISION</u>

FINDINGS OF FACT

1. Wharf Resources has applied for a water permit for industrial purposes and for domestic and suburban use. The amount of water requested is .25 c.f.s.

2. While the hydrologic properties of the formation are difficult to assess, there is a reasonable probability that water is available at least at the rate of .25 c.f.s.

3. Because of the distance from existing water rights and the low withdrawal rate, the possibility of interference with other water rights is minimal.

4. The mining proposed by Wharf Resources has the probability of being beneficial economically and socially to the inhabitants of the area and the use of water for such purposes is likewise beneficial. The supply of water for domestic and suburban use is a beneficial use.

5. Opposition to granting of this permit has been based upon an apprehension that the permit will be used by Wharf as a replacement well to supply domestic water to surrounding landowners.

6. Opponents of the permit have voiced a concern that the well approved under this permit will have a lower quality of water than the water they now receive.

7. The conditional use permit granted by Lawrence County Planning Commission and Lawrence County Board of Commissioners on February 12, 1986 contains, among other provisions, the following conditions.

"4. Applicant shall replenish the water supply of Warbonnet in an amount equal to in quantity and quality of Warbonnet's existing source or supply.

5. Applicant will, prior to encroachment of the overburden on the Squaw Creek well, install and maintain the necessary equipment at the Two Johns' well, including additional storage facilities, to hook up to the existing Warbonnet delivery system."

8. The obligations of Wharf under this conditional use permit are not intended to be in any way abrogated or affected by the grant of this permit.

9. The Chief Engineer formally recommended approval on October 9, 1986. At that time the use specified was "industrial." Subsequent to this approval but before the application was advertized, the applicant requested that the use designated be expanded to include "domestic" and "for suburban housing development." The application as advertized included these additions and has been treated by all parties as amended to include these provisions and no objections to this change were made by any parties to this proceeding. No unfairness or prejudice has resulted to any party from this change.

CONCLUSIONS OF LAW

1. This Board has jurisdiction over this matter.

2. All notices required by the Constitution and statute have been given.

3. There is a reasonable probability that there is unappropriated water available for the applicant's proposed use.

4. The proposed diversion can be developed without unlawful impairment of existing rights.

5. The Board has the duty to determine whether a proposed use is in the public interest. The issue of the quality of water to be available to surrounding landowners from Wharf presents a public interest question. The Board finds that the conditions on the Lawrence County Conditional Use Permit adequately protect the public interest in this case.

6. No issue has been raised relating to the addition of "domestic use and suburban development use" specification onto the application after formal recommendation of approval of the application by the Chief Engineer on October 9, 1986. This addition does not, in any event, raise jurisdictional or other impediments to the consideration of this application especially considering (a) that the permit as advertised included the domestic and suburban use specification; (b) the representative of the Chief Engineer appeared before the Board and recommended approval including those uses; and (c) there has been no unfairness or prejudice to any party.

7. Although it is unlikely that there will be interference with surrounding permits and rights, the permit should be conditioned to affirmatively prevent such interference.

FINAL DECISION

The application for water permit no. 1365-1 is approved with the following qualification.

The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawal so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.

Marian B. Henderson
BY THE BOARD

March 11, 1987



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501

Water Rights Division
605 773-3352

APR 30 1987

Wharf Resources
PO Box 446
Deadwood, South Dakota 57732

Dear Sir:

Enclosed herewith is your Water Permit No. 1365-1 as approved by the Water Management Board authorizing you to construct your water diversion system and the water to beneficial use, not exceeding the limits as specified in said Water Permit No. 1365-1.

Also enclosed is Form 10, Notice of Completion of Works and Application of Water to Beneficial Use, which you are to complete and submit to the Chief Engineer when you have completed the system and/or have put the water to beneficial use. An inspection can then be scheduled so that your Water License may be issued to you, thus completing your acquisition of a Water Right.

Very truly yours,

A handwritten signature in black ink, appearing to read "John Hatch".

JOHN HATCH, Chief Engineer
Water Rights Division

JH: ms

enclosure

PLEASE NOTE: Certain changes can be made in your permit within the five year construction period, usually without affecting the priority date provided an application to amend your permit is made within the five year period-i.e. changes in location or number of diversion points (wells) or location of land to be irrigated. Well locations for wells into the same aquifer can be moved up to 660 feet without application.

Applications to amend a permit after the five year construction period will be assigned a new priority date. Applications to change water sources, to add lands or increase original diversion rates, if approved will usually receive the date of the new application as a priority date regardless of the five year construction period.

WNR-809-5/83



RECEIVED

JAN 19

WHARF RESOURCES

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

January 15, 1993

Luther J. Russell
Wharf Resources
HC 37, Box 811
Lead, SD 57754



1365-1

Dear Mr. Russell:

The inspection of your water use system and the inspection of the extent of application of water to beneficial use, as developed under Water Permit No. 1365-1, has been completed. Your final water right document, the Water License, can now be issued.

Statutes require that we charge a \$50.00 fee for the inspection and issuance of the Water License. Upon receipt of the \$50.00 fee from you, we will begin processing your Water License.

South Dakota Water Law 46-5-30.1 requires that a permit holder may not divert water until the \$50.00 license fee has been paid. Please contact us if you have any questions.

Sincerely,

Cheryl F. Frost
Secretary
Water Rights Division
(605) 773-3352

NOTE: On check or money order, please specify your permit number.
This will insure proper handling of the fee.

The fee is attached.

*Lili Sjomeling
Wharf Resources*

RECEIPT

413630

Division of Water Rights

South Dakota Department of Environment and Natural Resources

Pierre, _____ February 9, 19 93

RECEIVED OF Wharf Resources, HC 37 Box 811, Lead, SD 57754

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use _____		
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>1365-1</u>	50	00
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for _____		

(Any Other Work Provided by Law)	Total	50 00

By John Hatch
Chief Engineer

REPORT ON INSPECTION OF PERMIT NUMBER 1365-1

DATE 9/2/92

Other permit(s) associated with the project None

DIVERSION POINT LEGAL LOCATION: NW1/4 SW1/4 Section 35, T5N-R2E

WELL INFORMATION: Well Drilling Firm Alexander Drilling

- a) Pump 1) make Grundfos-submersible No. of Wells 1 Depth(s) 650 feet
2) model c) Casing: 1) diameter 6 inches
3) size inches 2) length 250 feet
4) capacity 70 GPM 3) type Steel
5) turbine pump - No. of stages 26 d) Screen: 1) type None
6) operating pressure PSI 2) length feet
- b) Motor: 1) make Grundfos-submersible e) Static Water Level 307 feet
2) model No.
3) horsepower rating 25 HP

DISTRIBUTION LINES OR CANALS:

- a) type Polyvinyl Chloride b) size 2 inches c) length 1620 feet

PERMIT QUALIFICATIONS AND REGULATIONS:

- a) Soil and water permit lands agree with lands being irrigated and lands listed on permit NA (Y/N)
b) Special qualifications to permit being abided by Y (Y/N)
c) All structures, wells and lands on map Y (Y/N)
d) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period NA (Y/N)

Permit No. 1365-1

Water District: Belle Fourche

Report Of Examination Of Works And/Or Application of Water To Beneficial Use:

I have this day made a thorough examination of the water use system constructed by Wharf Resources of P.O. Box 446, Deadwood, SD 57732 holder of Permit No. 1365-1, bearing the priority of September 15, 1986 authorizing the diversion of 0.25 cu.ft. per second of groundwater for industrial and domestic purposes, in Lawrence County.

I have to report on the conditions of the same as follows:

A. Works used to divert the water:

A pump, 70 gallons per minute capacity.

A motor, 25 horse power.

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

1620 feet of 2 inch Polyvinyl Chloride (PVC) pipe.

C. Works used to apply water to beneficial use:

Water is used in the mining operation and for domestic use.

The system is in the following conditions: Good. The point of diversion is located: Approximately 2446 feet north, 400 feet east from the Southwest corner of Section 35, T5N-R2E (NW1/4 SW1/4)

The works are capable of diverting and conveying to the place of use 0.16 cu.ft. per second of groundwater which is used for industrial and domestic purposes.

The license should be issued for 0.16 cfs. Application permit qualifications have been complied with Y Yes No

Exceptions to compliance are: None

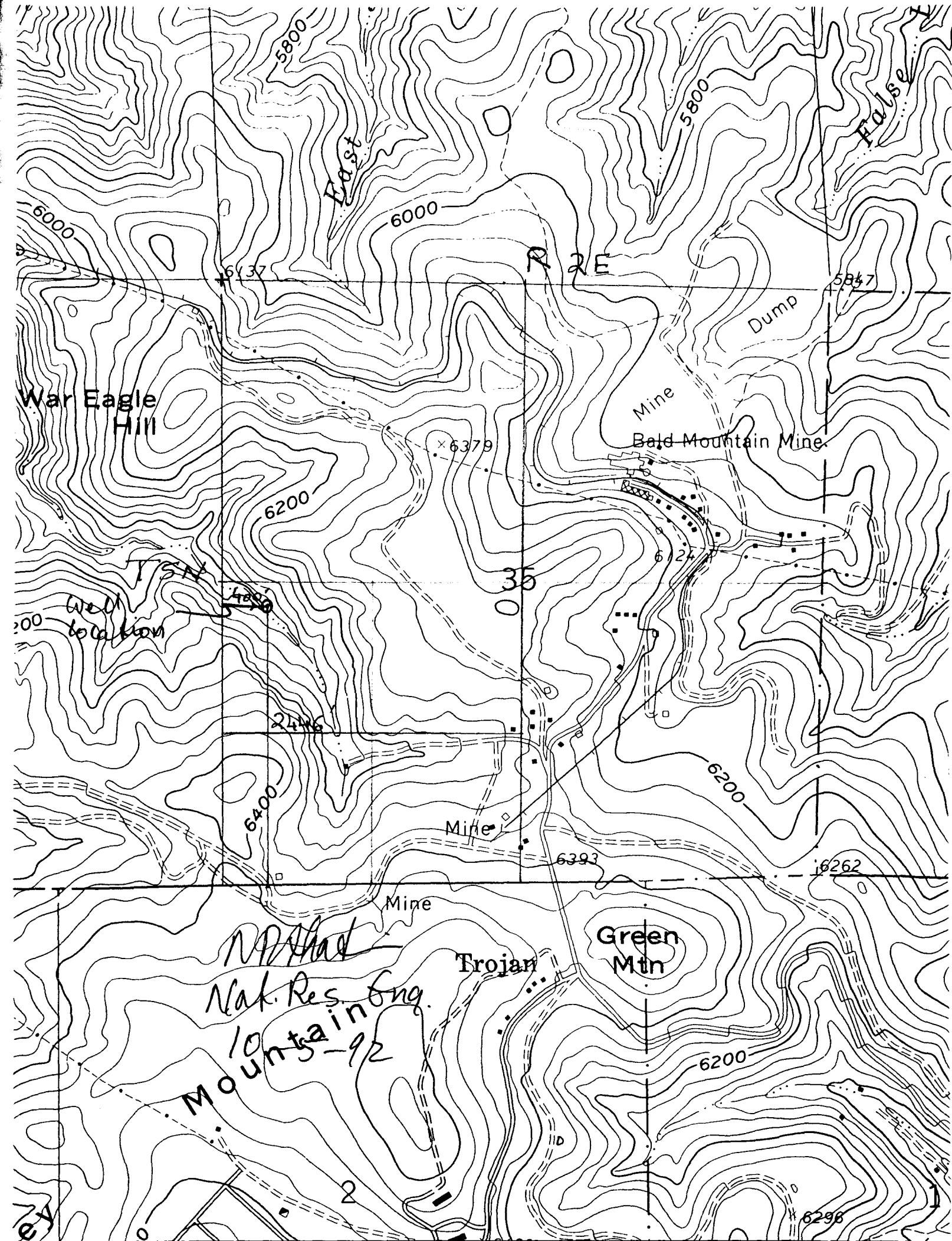
Date: 9/2/92

M. Rassool Ahadi

M. RASSOOL AHADI

Natural Resources Engineer III

DENR, Water Rights Division



STATE OF SOUTH DAKOTA

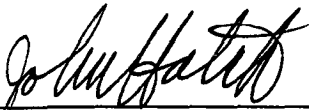
WATER LICENSE NO. 1365-1

(1) Wharf Resources, of HC 37 Box 811, Lead, SD 57754 made Application No. 1365-1, September 15, 1986 for a water permit to appropriate 0.25 cubic feet of water per second from groundwater (one well), Lawrence County, South Dakota for industrial, domestic and suburban housing development purposes. Permit No. 1365-1, with a priority date of September 15, 1986 was approved March 4, 1987 and issued to the applicant(s) for diversion of water with construction of the described water supply system to be completed on or before March 4, 1992 and for the application to beneficial use of said water on or before March 4, 1996.

(2) It is certified that the applicant has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 0.16 cubic feet of water per second for beneficial use. The location of the diversion point is approximately 2,446 feet north and 400 feet east of the SW corner of Section 35, T5N, R2E (NW 1/4 SW 1/4).

(3) The applicant has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use in the mining operation and for domestic use in the offices.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Wharf Resources of HC 37 Box 811, Lead, SD 57754 the holder(s) and/or owner(s) of Water Permit No. 1365-1 is issued a license to appropriate water, the right to use 0.16 cubic feet of water per second from groundwater (one well) with a priority date of September 15, 1986 from the location specified in (2) of this license. The water is to be used for the purpose of industrial and domestic use. This license is subject to any limitations or qualifications listed in Water Permit No. 1365-1 and subject to South Dakota State Law.



APR 1 1993

JOHN HATCH, Chief Engineer

Water Rights Division

Department of Environment and Natural Resources



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

APR 1 1993

1365-1

Luther J. Russell
Wharf Resources
HC 37, Box 811
Lead, SD 57754

Dear Mr. Russell:

Enclosed is Water License No. 1365-1. This is the final water right document completing your process of obtaining a Water Right. Enclosed is Receipt No. 413630 in the amount of \$50.00 which you paid for the inspection and issuance of the Water License.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 1365-1, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Division
(605) 773-3352

enclosures



WHARF RESOURCES (U.S.A.), Inc.

A wholly owned subsidiary of Goldcorp Inc.

1365-1



Wharf Resources (U.S.A.), Inc.
HC 37 Box 811
Lead SD 57754

SD DENR WATER RIGHTS PROGRAM
523 EAST CAPITOL
PIERRE SD 57501-3181

As a matter of corporate simplification, Wharf Resources will now be doing business as Wharf Resources (U.S.A.), Inc. Therefore, all contracts, statements, invoices, or other documents you may have with Wharf Resources, a Montana General Partnership, or simply in the name of Wharf Resources, should be changed to Wharf Resources (U.S.A.), Inc. All purchase orders or other correspondence to you in the future will be from Wharf Resources (U.S.A.), Inc. The management structure of the company remains the same.

If you have any questions, please do not hesitate to contact me.

Sincerely,

John A. Begeman
General Manager

CHRISTENSEN, MOORE, COCKRELL & CUMMINGS, P.C.

Dana L. Christensen
Mikel L. Moore*
Dale R. Cockrell**
Steven E. Cummings***
Tracy Axelberg

**Two Medicine Building
160 Heritage Way
P.O. Box 7370
Kalispell, MT 59904-0370**

Office: (406) 751-6000
Fax: (406) 756-6522
*Also Admitted in Arizona
**Also Admitted in South Dakota
***Also Admitted in Washington

April 16, 1999

John Hatch
Chief Engineer, Water Rights Program
Department of Environment and Natural Resources
Joe Foss Building, 523 East Capitol
Pierre, South Dakota 57501-3181



Re: Wharf Resources

Dear Mr. Hatch:

This letter is being written on behalf of Wharf Resources, a Montana general partnership, and Wharf Resources (U.S.A.), Inc. Pursuant to a corporate reorganization, Wharf Resources, a Montana general partnership, has transferred the following water right permit and license numbers to Wharf Resources (U.S.A.), Inc.:

1346-1	1514-1
1365-1	1173-1
1406A-1	1437-1
1460-1	1493-1
PW-1	1667-1

If you have any questions, please do not hesitate to contact me.

Sincerely,

**CHRISTENSEN, MOORE, COCKRELL
& CUMMINGS, P.C.**

Dale R. Cockrell
Direct Line No. (406) 751-6003

DRC/bls
cc: John Begeman
Carol Koerner



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

May 24, 1999

Dale R Cockrell
Christensen, Moore, Cockrell & Cummings, PC
PO Box 7370
Kalispell, MT 59904-0370

RE: Water Permits and Water Rights held by Wharf Resources

Dear Mr. Cockrell:

Thank you for your letter of April 16th regarding the transfer of water rights and permits held by Wharf Resources.

Enclosed are seven partially completed "Notice of Transfer of Ownership" forms for use in filing the transfers with Vested Water Right No. 1173-1, Water Right Nos. 1346-1, 1365-1, 1406A-1 and 1493-1 and Water Permit Nos. 1437-1 and 1667-1

Please review the enclosed forms and complete as needed. The forms should be signed in the presence of a notary public by a representative of Wharf Resources (U.S.A.), Inc. Please return the completed forms to our office with a required filing fee of \$2.50 each (total of \$17.50).

Thank you for your help and if I can answer any questions for you, please give me a call.

Sincerely,

Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352

enclosures

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

№ 416141

Pierre, _____

June 14, 1999

RECEIVED OF **Wharf Resources, Inc., HC 37, Box 811, Lead, SD 57754**

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct
and to put water to beneficial use _____

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. _____

Fee for Filing Transfer Form **Water Right No. 1365-1**

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

2 50

2 50

By

Chief Engineer

John Hatcher

NOTICE OF TRANSFER OF OWNERSHIP

To: Chief Engineer
Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181



No. 1365-1

Date: 6-7-99

I\We request that Water Right No. 1365-1

formerly owned by: Wharf Resources, a Montana general partnership

be transferred to: (name & address) Wharf Resources (U.S.A.) Inc., HC37, Box 811,

Lead, SD 57754

Telephone No. (605) 584-1441

Title to the following described land(s)/property has been transferred as described above:

diversion point location: NW ¼ SW ¼ Section 35, T5N, R2E

I\We understand that the validity of Water Right No. 1365-1 has not been determined by this transfer action. If I\We have any questions on validity, I\We understand that only the Water Management Board has the authority to determine if a water permit/right is valid (see note).

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Two Dollars and Fifty Cents (\$2.50) is required to cover the filing fees as required under SDCL 46-2-13. This form must be signed by the new owner.

STATE OF SOUTH DAKOTA)

County of Lawrence)

I/~~We~~ John A. Begeman being first duly sworn on my oath depose and say that my relation to the above described undertaking is that of **, that I have read the above foregoing statement, and that I know of my own personal knowledge that the information herein stated is true.

**** General Manager of Wharf Resources (U.S.A.) Inc.**

John A. Begeman
(Signed)

Subscribed and sworn to before me this 7th day of June, 1999.

Julian [Signature]
(Notary Public)

NOTE: Water permits may be cancelled for nonconstruction within the five year construction period. Once a water permit is developed and the water used, the permit becomes a right. A water right may be lost for three reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three year period without legal excuse.
3. For a third violation of a condition of a water permit/right.

1365-1



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3181
www.state.sd.us/denr

June 16, 1999

Dale R Cockrell
Christensen, Moore, Cockrell & Cummings, PC
PO Box 7370
Kalispell, MT 59904-0370

RE: Wharf Resources (U.S.A.) Inc.

Dear Mr. Cockrell:

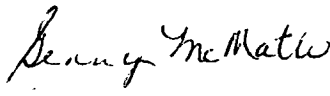
I am writing to acknowledge receipt of the transfer of ownership forms for Vested Water Right No. 1173-1, Water Right Nos. 1346-1, 1365-1, 1406A-1 and 1493-1 and Water Permit Nos. 1437-1 and 1667-1. The transfers have been completed and the above water rights and permits are now listed in the name of **Wharf Resources (U.S.A.) Inc.** Enclosed are the receipts for the filing fees.

I noticed when transferring the records that Wharf had an additional water right that I did not send a transfer form to you for. I am including a copy of Vested Right No. 1174-1 to give you an idea of which system the water right pertains to. I apologize for overlooking this in my first correspondence to you.

Enclosed is a partially completed "Notice of Transfer of Ownership" form for Vested Water Right No. 1174-1. The form will need to be signed in the presence of a notary by a representative of Wharf Resources (U.S.A.) Inc. Upon completion, please forward the form and a \$2.50 filing fee to our office.

Thanks again for your help and if I can answer any questions for you please give me a call.

Sincerely,


Genny McMath
Environmental Scientist
Water Rights Program
(605) 773-3352

enclosures

c: John Begeman, General Manager of Wharf Resources (U.S.A.) Inc

1365-1



July 28, 2020

Eric Gronlund, Chief Engineer
DENR Water Rights Program
Joe Foss Building, 523 East Capitol
Pierre, SD 57501

Re: Replacement Well

Dear Eric,

Per our discussion earlier today and in late 2019, Wharf is requesting approval to drill and construct a replacement for its existing Joseph Well which was originally permitted and constructed in the mid-1980's (vested water right 1365-1). As I noted, the construction of this well does not allow Wharf to monitor water levels nor is the well log clear as to its casing layout or length of screened interval. Given that Joseph Well serves as both a small volume water supply and a monitoring well for the mine, it is Wharf's desire to re-drill and construct it to modern standards to improve reliability and data quality.

Pursuant to requirements stated in SD Codified Law 46-5-13.1, this replacement well would be drilled to the same approximate depth and draw water from the same existing source, and no additional water is being appropriated. Additionally, the replacement well would be drilled very near the existing Joseph Well, and remain in the same $\frac{1}{4}$, $\frac{1}{4}$ section and on property owned by Wharf. Upon construction and testing of the replacement well, the existing Joseph Well would be abandoned per SD standards.

Wharf has been recently notified we have an opportunity with a licensed driller to drill and construct this replacement well in mid-August and believe this scenario meets all criteria for an administrative approval. We look forward to your review of the above information, and please contact me with any questions or additional needs.

Sincerely,

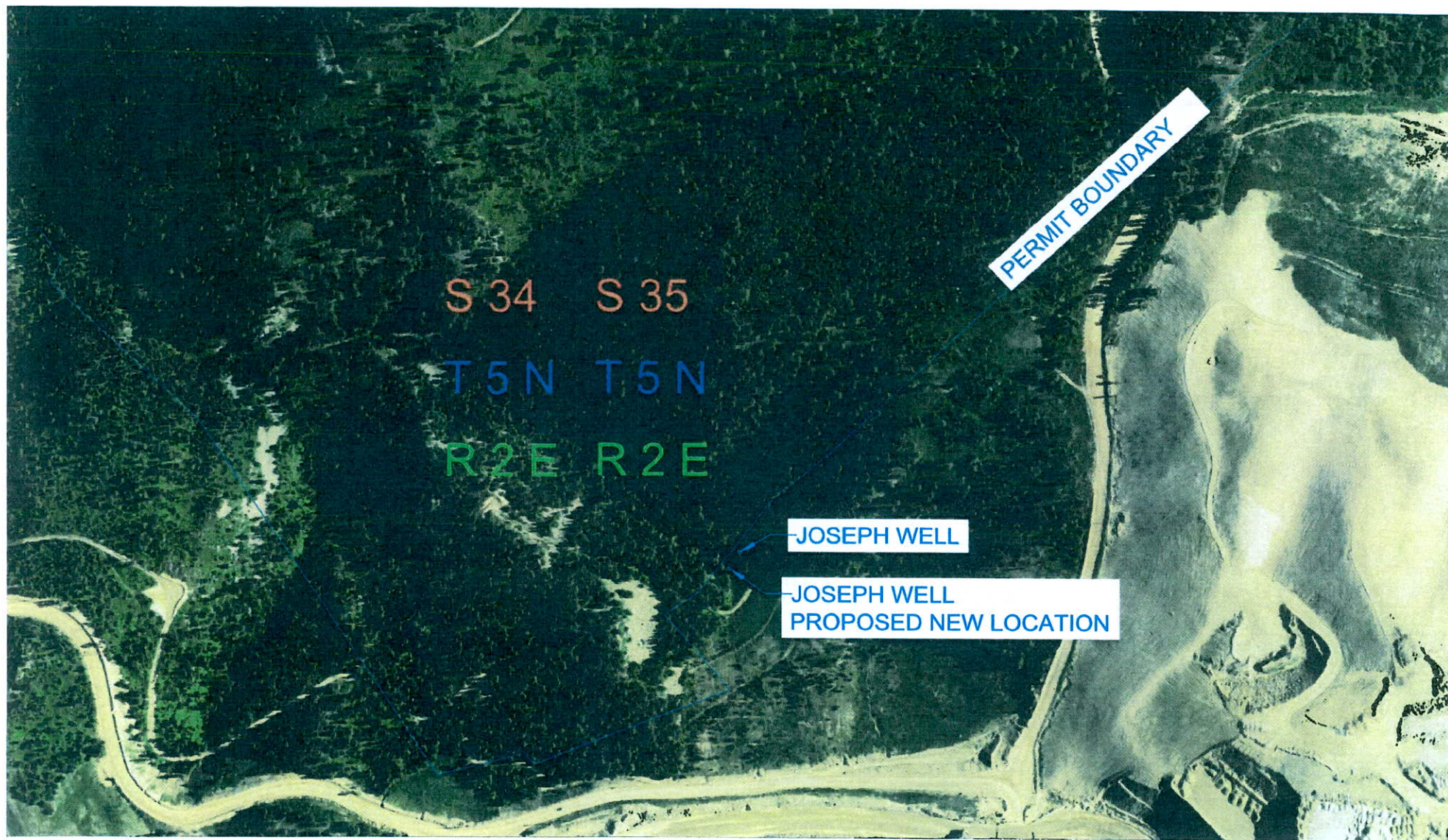
Matt Zietlow

Environmental Manager
Wharf Resources (USA), Inc.

Email: mzietlow@coeur.com

Phone: 605-584-4155

Attachment: map showing existing Joseph Well and approximate replacement location



Joseph Well Relocation



Drawn By: Garth Evers

Date: 7/29/2020

Garth Evers

1365-1



DENR
SOUTH DAKOTA

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

August 12, 2020

Matt Zietlow
10928 Wharf Road,
Lead, South Dakota, 57754-9710

Dear Mr. Zietlow:

I am writing in regard to Water License Number 1365-1 and the request to drill and construct a replacement well for the existing Joseph Well.

Water License Number 1365-1 appropriates 0.16 cubic feet of water per second (cfs) from a 650 foot deep well located in the NW 1/4 SW 1/4 Section 35-T5N-R2W. The water is from the Black Hills Crystalline Rock aquifer and is for industrial, domestic, and suburban housing development use. The new well is to be constructed near the existing well (approximately 100 feet) in order to possess the same general legal description and to be on the property owned by Wharf. In order to utilize the same water source, the proposed well must be drilled entirely through overlying sedimentary deposits, in particular the Deadwood Formation, and completed (cased and grouted) into Precambrian Crystalline bedrock. Upon construction and testing of the replacement well, the existing well will be abandoned and plugged as per Chapter 74:02:04, Well Construction Standards.

Upon review of the request and pursuant to SDCL 46-5-13.1, the drilling and construction of a new well are authorized without application or publication of a notice of hearing pursuant to SDCL 46-2A-4. If the peak rate diverted from the new well exceeds the authorized amount of 0.16 cfs (72 gpm), a new water right permit will need to be obtained.

If you have any questions, please contact Blaise Hansen at (605) 773-3786.

Sincerely,

Eric Gronlund
Eric Gronlund, Chief Engineer
Water Rights Program

Approval of Location Change of Diversion Point

NAME: Matt Zietlow

ADDRESS: 10928 Wharf Road, Lead, SD, 57754-9710

DATE: August 12, 2020

COUNTY: Lawrence

TELEPHONE: (605) 584-1441

BACKGROUND:

Water License Number 1365-1 appropriates 0.16 cubic feet of water per second (cfs) from a 650 foot deep well located in the NW 1/4 SW 1/4 Section 35-T5N-R2W. The water is from the Black Hills Crystalline Rock aquifer and is for industrial, domestic, and suburban housing development use. Mr. Zietlow submitted a request to change the diversion point to a new well that is to be constructed approximately 100 feet from the existing Joseph well.

Crystalline rock has a very low primary porosity so water movement in the aquifer is controlled by the secondary porosity developed along fractures, joints, and faults. The interconnected nature of secondary porosity is highly variable and unpredictable. Therefore, localized groundwater areas possess site specific aquifer characteristics. This implies that the formation thickness and production capabilities of the nearby, existing well may be different than that of the new well. To ensure that the same water source is being utilized, any overlying formations that are not Precambrian age crystalline rock, should be cased and grouted to isolate the aquifer from connection with other water bearing formations along the borehole. This applies particularly to the Deadwood Formation, which according to accompanying well log (dated 1986) and other well completion reports in the immediate area on file with the DENR-Water Rights Program, could be as deep as 280 feet or more from the ground surface.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional diversion points may be licensed provided the following conditions are met and the potential for interference with other existing diversions is not increased:

- **Developed water source same as permitted source and no additional water appropriated**

The water source remains the Black Hills Crystalline Rock aquifer if the proposed well is drilled completely through overlying sedimentary deposits and completed into Precambrian age bedrock. The licensing investigation found the diversion rate from the existing well to be 0.16 cfs. Therefore, no additional water is appropriated if the pump installed in the well is limited to 0.16 cfs.

- **If irrigation, no new land is irrigated**

Water License Number 1365-1 is not used for irrigation.

- **Review of Existing Diversions**

A review of domestic wells and existing water rights found numerous records in the surrounding area of the proposed diversion point. However, few were completed into the same geologic formation or at the same depth. Of the comparable records found, all were under water table conditions and belonged to Wharf Resources. There is no history of well interference complaints in this area. Even though the Water Rights Program does not maintain an observation well within reasonable proximity of the application site, pumping from a well completed into the crystalline bedrock will not increase the potential for adverse effects on neighboring adequate wells.

CONCLUSION

- The change in the diversion point does not appropriate additional water.
- The well, as proposed, will be completed into the Black Hills Crystalline Rock aquifer. The same aquifer as the existing well.
- Well interference is not expected to be a concern.
- Existing adequate domestic wells will not be unlawfully impaired by authorizing this change in diversion point location.

RECOMMENDED ACTION

Based on the above criteria, it is recommended that the change of diversion point be authorized under Water License Number 1365-1.



Blaise Hansen
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:
The change of diversion point does not increase the potential for adverse effects to existing diversions.



Eric Gronlund, Chief Engineer
Water Rights Program

1365-1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NW ¼ SW ¼ Sec 35 Twp 5N Rg 2E

Well Owner: Coeur Wharf

Business Name:

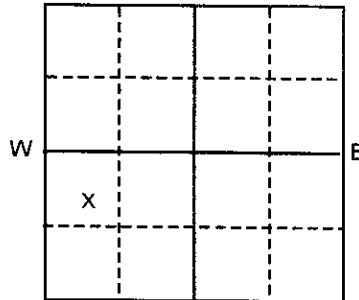
Address: 10928 Wharf Road

City, State, Zip: Lead SD 57754

County Lawrence

North

Please mark well location with an "X"



Well Completion Date

10/1/20

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
500.0 ft. from open pit mine (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Rotary downhole hammer

CASING DATA:

☒ Steel ☐ Plastic ☐ Other
 If other describe 662' of 7" OD steel

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	0.0 FT	658.0 FT	8.75 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
Portland II	200	Lb/gal	440.0 Ft	0.0 Ft
w/2% bent		Lb/gal	Ft	Ft

Describe grouting procedure through trimmie pipe

SCREEN:

☐ Perforated pipe ☐ Manufactured
 Diameter _____ Inches Length _____ Feet
 Material _____
 Slot Size _____ Set From _____ Feet to _____ Feet
 Other information _____

WAS A PACKER OR SEAL USED?

☒ Yes ☐ No

If so, what material? neoprene

Describe packer(s) and location
set at 440 ft

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? w/chlorine solution

☐ No, Why Not?
 Lab to which water quality sample sent for analysis

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Deadwood hard	0	140
Broken deadwood	140	160
Deadwood, hard	160	438
Schist	438	505
Schist/quartz fracture 100 gpm	505	508
Hard schist	508	583
Schist fracture 100+ gpm	583	585
Hard schist/quartz	585	658

STATIC WATER LEVEL 240.0 FEET

If flowing: closed in pressure _____ PSI

GPM flow 100.0 through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced flow rate _____ GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe: w/air
☐ Bailed
☐ Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Joseph well 2

This well was drilled under license # 324 and this report is true and accurate.

Drilling firm: Alexander Drilling Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

RECEIVED

JAN 25 2021

Date: 1/21/2021

WATER RIGHTS PROGRAM

WATER RIGHTS PROGRAM -- FILE DOCUMENTATION

NAME: Wharf Resources (U.S.A.) Inc.**ADDRESS:** 10928 Wharf Road, Lead SD 57754**DATE:** June 24, 2021**RE:** Proposed Well**COMMENTS:**

On April 29, 2021, Wharf Resources submitted an application for an additional well (named PW-3) with no increase in the amount of water appropriated under existing Water Right No. 1761-1. PW-3 was constructed in September 2020 and a copy of the well completion report was submitted with the application. The application also sought to "combine" No. 1365-1 into No. 1761-1 since Wharf Resources believed the aquifer identified on No. 1365-1 (Crystalline Rock aquifer) was actually completed into the Madison aquifer which is the source identified on No. 1761-1. On May 7, 2021, the application and license fees were received.

Matt Zietlow, Environmental Manager with Wharf Resources, was contacted via email on May 12, 2021, to determine whether the application was needed since no additional water was being appropriated. After discussion, it was decided to not pursue approval of the submitted application since no additional water is being appropriated in the near term. Mr. Zietlow did indicate that Wharf may pursue an application to increase the amount of water appropriated at some date in the future. In lieu of processing the application, Mr. Zietlow requested that the department undertake a review to add PW-3 as an additional diversion point with no increase in the amount of water appropriated under Water Right No. 1761-1. We also discussed that the Madison aquifer is not present at the location of the Crystalline Rock aquifer well covered by No. 1365-1 so there is no basis for seeking to change the aquifer designation.

RECOMMENDED ACTION:

It is recommended that a staff review be completed to determine whether the addition of another diversion point (well PW-3) can be completed without increasing the potential for interference with existing diversions as required by South Dakota Codified Law (SDCL) 46-5-13.1. To qualify under SDCL 46-5-13.1, PW-3 also needs to be in the same water source with no additional water appropriated being appropriated. If the Chief Engineer finds the well can be added to No. 1761-1 pursuant to SDCL 46-5-13.1, then the pending application does not need to be processed and the \$300.00 paid in fees by the applicant can be refunded to the applicant.



Ron Duvall
Water Rights Permitting Administrator
Water Rights Program



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

July 02, 2021

Mr. Matt Zietlow
Wharf Resources (U.S.A.) Inc.
10928 Wharf Road
Lead, SD 57754

Dear Mr. Zietlow,

I am writing in regard to the request submitted by Wharf Resources (U.S.A.) Inc. for an additional well to what is currently authorized by Water Right No. 1761-1, and to combine Water Right No. 1365-1 with No. 1761-1 by identifying the water source on No. 1365-1 as the Madison aquifer rather than the current designation, which is Crystalline Rock. A determination has been made that Water Right No. 1365-1 can not be combined with No. 1761-1 since they are different water sources. Therefore, this request is processed only as a request for an additional Madison aquifer well under Water Right No. 1761-1.

Water Right No. 1761-1 appropriates 0.67 cubic feet of water per second (cfs) from two wells (PW-1 and PW-2) completed into the Madison aquifer for industrial and groundwater quality monitoring purposes. PW-1 is in the SW ¼ SE ¼ of Section 33, and PW-2 is in the NE ¼ SE ¼ of Section 33; all in T5N-R2E.

Upon review of the request and pursuant to SDCL 46-5-13.1, the additional well (PW-3) located in the N ½ SE ¼ of Section 33-T5N-R2E and completed into the Madison aquifer, is authorized without application or publication of a notice of hearing pursuant to SDCL 46-2A-4. No increase in the authorized diversion rate of 0.67 cfs (276.2 acre-feet) from the three wells is authorized. If the total diversion rate or annual volume increases, a new water right permit will need to be obtained.

If you have any questions, please contact me at (605) 773-3352.

Sincerely,

Eric Gronlund, Chief Engineer
Water Rights Program

Approval of Additional Diversion Point

NAME: Wharf Resources (U.S.A.) Inc. c/o Matt Zietlow

ADDRESS: 10928 Wharf Road, Lead, SD 57754

DATE: July 1, 2021 **COUNTY:** Lawrence **TELEPHONE:** 605-584-4155

BACKGROUND:

Water Right No. 1761-1 appropriates 0.67 cubic feet of water per second (cfs) from two wells (PW-1 and PW-2) completed into the Madison aquifer for industrial and groundwater quality monitoring purposes. PW-1 is in the SW ¼ SE ¼ of Section 33, and PW-2 is in the NE ¼ SE ¼ of Section 33; all in T5N-R2E.

Wharf Resources (U.S.A.) Inc. submitted a water permit application which, in part, was to add an additional diversion point (PW-3) (approximately 420 feet deep) to wells (PW-1 and PW-2) authorized by Water Right No. 1761-1. The other purpose was to combine Water Right No. 1365-1 with No. 1761-1 by identifying the water source on No. 1365-1 as the Madison aquifer rather than the current designation, which is Crystalline Rock. As noted in the file documentation completed by Ron Duvall, dated June 24, 2021, the water source covered by No. 1365-1 cannot be changed to match No. 1761-1 since the Madison aquifer is not present at the location specified on No. 1365-1.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional diversion points may be licensed provided the following conditions are met and the potential for interference with other existing diversions is not increased:

- **Developed water source same as permitted source and no additional water appropriated**

The water source remains the Madison aquifer. Wharf Resources (U.S.A.) Inc. indicated on their application the intent was to add a well (PW-3) with no increase in the diversion rate or volume. Water Right No. 1761-1 appropriates 0.67 cfs (276.2 acre-feet) annually. The application also noted an application may be submitted in the future to increase the amount of water appropriated for the five wells (including PW-3) covered by Nos. 1761-1, 1346-1, and 1365-1. No additional water is to be appropriated by adding well PW-3.

- **If irrigation, no new land is irrigated**

The authorized use types are not for irrigation. Therefore, no new land is irrigated.

- **Review of Existing Diversions**

Wharf Resources (U.S.A.) Inc. indicated the new well is to be in the N ½ SE ¼ of Section 33-T5N-R2E. A review of domestic wells and existing water rights/permits found numerous records in the surrounding area of the proposed diversion point. However, few are completed into the same geologic formation or drilled to a similar depth. The closest water right (not held by Wharf Resources (U.S.A.) Inc.) with a diversion point completed into the Madison aquifer is Water Right No. 1956-1, held by Shirt Tail Gulch Homeowners Association, for suburban housing development use, which is located approximately 9.3 miles northeast of the proposed and existing diversion points. Given there is no history of well interference complaints, and no additional water is to be appropriated, there is a reasonable probability the additional well will not increase the potential for unlawful impairment of existing water rights/permits, or domestic users with adequate wells within the Madison aquifer.

CONCLUSIONS:

1. The maximum instantaneous diversion rate for wells PW-1 and PW-2, plus the additional well PW-3, is not to exceed 0.67 cfs (276.2 acre-feet), so no additional water is appropriated from the Madison aquifer.
2. The new well is completed into the same aquifer as the two permitted wells.
3. There is a reasonable probability the additional well will not increase the potential for unlawful impairment of existing water rights/permits, or domestic users.

RECOMMENDED ACTION

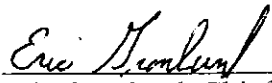
Based on the above criteria, it is recommended that the additional diversion point location be authorized under Water Right No. 1761-1.



Nakaila Steen
Natural Resources Engineer I
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:

This additional diversion point does not increase the potential for adverse effects to existing diversions.



Eric Gronlund, Chief Engineer
Water Rights Program