

WATER PERMIT NO. 6735-3

Name of Applicant: City of Eureka

Address: PO box 655, Eureka SD 57437-0655

Phone: 605 284-2441

Amount of Water Claimed: 0.724 cfs (325 gpm)

Total Acres: NA

Source of Water Supply: groundwater (one existing well)

Water to be used for: municipal, recreation

County: McPherson

Type of Waste Disposal System:

Location: Near Eureka Lake in Eureka

PRIORITY Date Received: 6-14-96

Application/License Fee: \$300

Corrected Application Received:

Period of Annual Use: January 1 – December 31

Remarks: Increases the diversion rate from the well authorized by Water Permit No. 6537-3

Diversion Point: SW ¼ SW ¼ Sec 35-T127N-
R73W

Land to be Irrigated: NA

Depth of Well: 2100 feet deep

Well Driller:

Remarks:

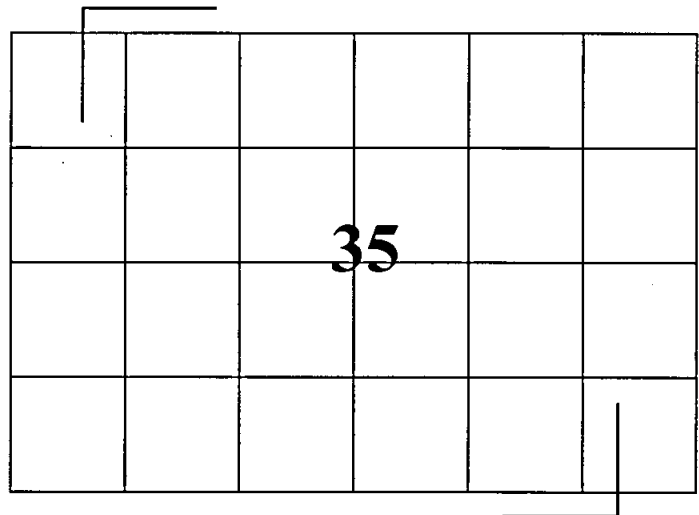
Type of Map: aerial

Prepared by: Terry D. Helms, PE

Reviewed and the Number Assigned on: 6-14-06

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>6735-3</u> (office use only) Hydrologic Unit <u>10130106</u>
	Basin <u>Missouri River</u>
	Newspaper <u>Northwest Blade, Eureka</u>

RECEIVED
JUN 14 2006
WATER RIGHTS
PROGRAM

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

Check use(s) of water:

- | | | | |
|--|---|--|--|
| ☒ Municipal | ☐ Suburban Housing | ☒ Recreational | ☐ Institutional |
| ☐ Rural Water System | ☐ Commercial | ☐ Fish & Wildlife | ☐ Geothermal Heat |
| ☒ 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.)
Increases div. rate authorized by Water Permit No. 6537-3

- Name of Applicant CITY OF EUREKA Phone (605) 284-2441
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address PO BOX 655 EUREKA State SD 57437-0655
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed 0.724 *CFS or 325 **GPM ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply INYAN CARA
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County McPherson
SEE ATTACHED MAP NW1/4 SW1/4 Sec 35-T127N-R73W
- County or counties where water will be used McPherson
- Annual period during which water is to be used 365 DAYS PER YEAR
- 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)

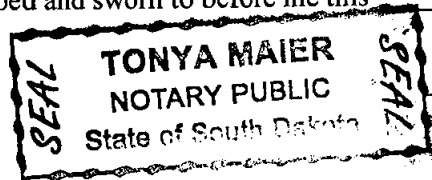
STATE OF SOUTH DAKOTA)
County of McPherson SS

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach map and any other technical information. (see instructions)

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

Applicant's signature Mark W. Opp

Subscribed and sworn to before me this 9 day of June 20 06



Tonya Maier
Notary Public signature

**SOUTH DAKOTA
WATER PERMIT NO. 6735-3**

Date of first receipt of application June 14, 2006.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 6735-3 to the City of Eureka, PO Box 655, Eureka SD 57437-0655 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. 6735-3 appropriates an additional 0.724 cubic feet of water per second (cfs) from one well authorized by Water Permit No. 6537-3. Water Permit No. 6537-3 appropriates 0.76 cfs from one well completed into the Inyan Kara Aquifer (2100 feet deep) located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 35-T127N-R73W. This permit increases the diversion rate from the existing well by an additional 0.724 cfs. Also, the correct location of the well is the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 35-T127N-R73W. Discharge from the well will be used to maintain the water level of East and West Eureka Lake.
2. The water appropriated shall be used for the purpose of municipal, recreational and fire protection 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 of approval of Permit No. 6735-3 is September 5, 2006.
5. The date from which applicant may claim right is June 14, 2006.
6. One-fifth of the construction is to be completed on or before March 5, 2009.
7. All construction is to be completed on or before September 5, 2011.
8. Water is to be put to beneficial use on or before September 5, 2015.
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 this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well approved by the Permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used. The well shall be controlled in a manner that no water is discharged to the lake if West Eureka Lake is full and spilling.
3. If this well is abandoned or the Permit cancelled, the well must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.

WATER MANAGEMENT BOARD

By: Garland Erbele

Garland Erbele, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

NOV 03 2006

date



(type or print in ink)

1. Well Information - Proposed Construction

- a) Drill Hole Diameter 12" / 8" Depth 580'/2100'
- b) Casing Type STEEL Diameter 8" / 5" Thickness .3222, .258"
- c) Screen Type PERFORATED Diameter Thickness
- d) Gravel Pack Length of Gravel Pack
- e) Depth to Top of Water Bearing Material 2022'
- f) Depth to Water (ground surface to water level) **FLOWING**
- g) Distance to nearest existing domestic well:
- On applicants property On 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

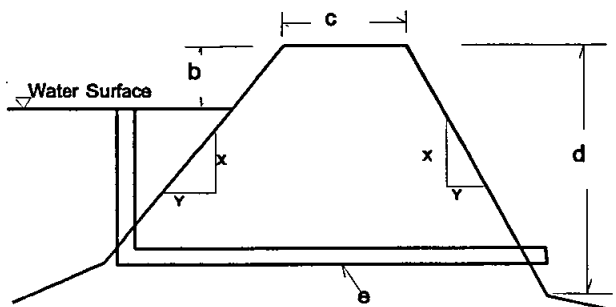
3. Dugout Information

- 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
Upstream
Downstream
- h) Surface Area of Impoundment
- i) Storage Acre Feet
- j) Drainage Area Above Dam Acres

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date JUNE 14, 20 06

RECEIVED OF City of Fureka, PO Box 655, Fureka SD 57437

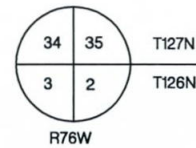
The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>6735-3</u> to Appropriate Water, to construct and to put water to beneficial use	300 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 _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	300.00

No. 02490

By Darlene Eibek

Chief Engineer gm



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 2647
TERRY J. HELMS
SOUTH DAKOTA

6-1-06

EUREKA WELL

EUREKA WELL
EUREKA, SOUTH DAKOTA

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. Registration No.		No.		Revisions		By		App.		Date	
HELMS and ASSOCIATES CONSULTING ENGINEERS AND LAND SURVEYORS 221 BROWN COUNTY HIGHWAY #19 — P.O. BOX 111 ABERDEEN, SOUTH DAKOTA 57401 — PHONE: (605)225-1212 — FAX: (605)225-3189											
Drawn By: CDH		Chk' by:		PROJ. #:		DWG.:		DATE:			
				A-3923		3923-01		6/06			
1 OF 1											



Scott Heimer

6300 Hitt Blvd. · P.O. Box. 368 · Gillette, WY 82717-0368

Phone: (307) 686-1747 · Fax: (307) 687-0408

City of Eureka
Eureka Municipal Well
June 2006

Cuttings Log

0	-	2	Black top soil
2	-	77	Blue Clay w/ sand layers
77	-	95	Sandy Clay
95	-	125	Blue Clay w/gravel layer
125	-	205	Blue Clay
205	-	264	Clay w/shale layers
264	-	314	Shale w/clay & sand layer Pierre Formation
314	-	425	Shale firm
425	-	452	Shale
452	-	675	Gray Shale
675	-	795	Shale
795	-	868	Black shale
868	-	943	Shale w/lime
943	-	960	Lime
960	-	1342	Shale w/Lime layers
1342	-	1353	Greenhorn Formation
1353	-	1620	Shale
1620	-	1630	Sand
1630	-	1696	Shale
1696	-	1730	Sand Stone w/shale Dakota Top
1730	-	1840	Shale w/sand
1840	-	1968	Shale
1968	-	2020	Sandy shale Lakota Formation
2020	-	2085	Sand
2085	-	2132	Black Shale w/sand layers

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location Sul 1/4 NE 1/4 Sec 34/35 Twp 127 Rg 73 W

County

McPherson

North

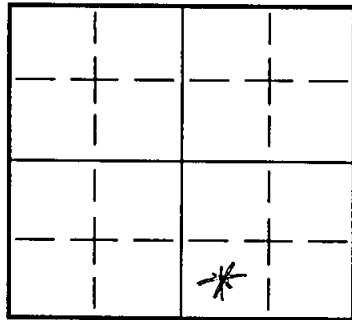
Please mark well location with an "X"

LOCATION AS PER
HELMS & ASSOC.

W

E

Well Completion Date

MAY 2006

1 Mile

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? _____ ft. from _____ (identify source).

PROPOSED USE:

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

METHOD OF DRILLING:

MUD ROTARYCASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>32</u> LB/FT	<u>8 5/8</u> IN	<u>0</u> FT	<u>580</u> FT	<u>12 1/4</u> IN
<u>15.50</u> LB/FT	<u>5 1/2</u> IN	<u>+1</u> FT	<u>2128</u> FT	<u>7 3/8</u> IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Premium Type 6</u>	<u>300</u>	<u>17</u> lb./gal	<u>0</u> ft.	<u>580</u> ft.
<u>Premium LTO</u>	<u>305</u>	<u>12.5</u> lb./gal	<u>0</u> ft.	<u>2128</u> ft.
<u>Type 6</u>		<u>15.8</u> lb./gal	<u>0</u> ft.	<u>2128</u> ft.

Describe grouting procedure POSTING DISPLACEMENT
WITH A 300' PREMIUM TAILSCREEN: ☒ Perforated pipe ☐ Manufactured N/A

Diameter _____ IN Length _____ FEET

Material 23 GRAM SHOTS 2 PER FOOT, 120 SLATSSlot Size 3/16 Set From 2022 Feet to 2062 Feet

Other information _____

WAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material? _____

Describe packer(s) and location? _____

DISINFECTION: Was well disinfected upon completion?

_____, YES, How: _____

Laboratory sent to for water quality analysis

X NO, Why Not? ARTESIAN FLOW
DIRECTLY INTO LAKEWell Owner: CITY OF EUREKABusiness Name: CITY OF EUREKAAddress: P.O. BOX 665EUREKA SD 57437-0655

WELL LOG:

DEPTH

FORMATION	FROM	TO
<u>SANDHILL</u>	<u>0</u>	<u>314</u>
<u>PIERRE SHALE</u>	<u>314</u>	<u>960</u>
<u>NIAGARA</u>	<u>960</u>	<u>1340</u>
<u>GREENHORN</u>	<u>1340</u>	<u>1353</u>
<u>MURRY</u>	<u>1353</u>	<u>1696</u>
<u>LAKOTA TOP</u>	<u>1696</u>	<u>1968</u>
<u>LAKOTA TOP</u>	<u>1968</u>	<u>2132</u>

STATIC WATER LEVEL Flowing FeetIf flowing: closed in pressure 83 PSIGPM flow 650 through 6" PIPE inch pipeControlled by ☒ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? YESWELL TEST DATA: N/A☐ Pumped Describe: _____☐ Bailed _____☐ Other _____

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS

This well was drilled under license # 698

And this report is true and accurate.

Drilling firm WATER SYSTEM DRILLING INC

Signature of License Representative:

Scott Adkins

Signature of Well Owner or Equitable Property Holder:

Mayor Mark W. QuinnDate: 6-15-06

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WATER RIGHTS PROGRAM

City of Eureka
"an equal opportunity employer"
PO Box 655
Eureka, SD 57437-0655

June 12, 2006

Water Rights Program, DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181

RECEIVED

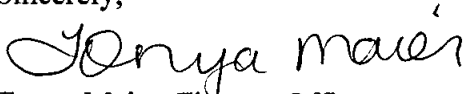
JUN 14 2006

WATER RIGHTS
PROGRAM

To Whom It May Concern:

Enclosed is a water right application and \$300.00 fee for the City of Eureka's Artesian Well. The engineer instructed me to pay \$300.00 for the application. If you need additional funds, please let me know. This water right is requesting flow in addition to the last water right we received, so we did not know if we needed to pay for 2 inspection fees, since it is the same project-just a request to have a larger flow. Please contact me if you have any questions! Our engineer prepared the application-Terry Helms at 605-225-1212.

Sincerely,


Tonya Maier, Finance Officer

REPORT ON APPLICATION NO. 6735-3

City of Eureka

August 2, 2006

Water Permit Application No. 6735-3 proposes to appropriate an additional 0.724 cubic feet of water per second (cfs) from one well authorized by Water Permit No. 6537-3. Water Permit No. 6537-3 appropriates 0.76 cfs from one well completed into the Inyan Kara aquifer (approximately 2,100 feet deep) located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 35, T127N-R73W. This application proposes to increase the diversion rate from the existing well by an additional 0.724 cfs for a total of 1.484 cfs appropriation. This notice also serves to correct the location of the well to the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 35, T127N-R73W. Discharge from the well will be used to maintain the water level of East and West Eureka Lake and will be for municipal, recreational and fire protection use.

AQUIFER – INYAN KARA (INKR)

The Inyan Kara (locally referred to as the “Sundance”) aquifer consists of sandstone and siltstone found stratigraphically below the Dakota aquifer and with higher artesian pressure. The Inyan Kara underlies 1,157 square miles and contains an estimated 6.1 million acre feet of recoverable water in storage in McPherson County (Hedges, 1982). The Inyan Kara aquifer is confined (under artesian conditions) in this area and a well drilled at this site is expected to flow. A well log that was filed with this application indicated that the well was in fact flowing at a rate of 650 gallons per minute (gpm).

Water level information is not available for this area. Although, the City of Eureka has had three wells completed into the Inyan Kara aquifer in this area; all of which have been plugged. The best information available is from the 1960 well log. This well was completed to a depth of 2,085 feet and was capable of flowing at 345 gpm when drilled.

The nearest observation well completed into the Inyan Kara aquifer is located about 50 miles southeast of this application. This water level record at that site indicates that the Inyan Kara does not change much but that at this distance the water levels are probably not representative of the area around this application (Water Rights, 2006).

REVIEW OF EXISTING WATER RIGHTS

The nearest water right/permit completed into the Inyan Kara aquifer is located approximately 22 miles to the west of this application. This well is for Water Right No. 1198-3 (0.17 cfs for municipal use). Interference is not expected to be a concern.

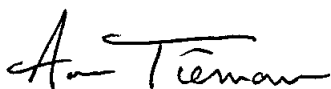
LAKE CONDITION DISCUSSION

Allowing this well to flow into a lake simply to maintain the lake level is not a wise use of ground water. The City of Eureka already has storage water right No. 6049-3 (885 acre-feet) and No. 6068-3 (224 acre-feet) for the West and East Eureka Lakes. The conditions on those permits require that no water can discharge from the well into the lake if West Eureka Lake

is spilling (lakes are connected by a channel). That condition would have to be maintained for this application.

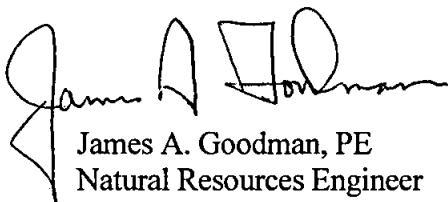
CONCLUSIONS

1. The Inyan Kara aquifer is a viable aquifer in this area.
2. The aquifer is confined and under artesian conditions at this site. In fact, the well log supplied with the application indicated a flowing well at 650 gpm. This well must be controlled and capable of being "shut in" in order to prevent the waste of water.
3. This is an existing well and appears to be constructed in accordance with SD Well Construction Standards.
4. Allowing this well to flow into a lake is not a wise or conservation minded use of ground water. Allowing the well to flow at 1.484 cfs would yield about 1,075 af/yr or more than the storage of the lakes.



Aaron Tieman
Natural Resources Engineer

Approved by



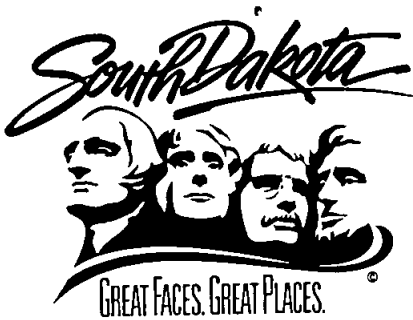
James A. Goodman, PE
Natural Resources Engineer

REFERENCES

Hedges, L.S., 1982, Evaluation of Ground-Water Resources Eastern SD and Upper Big Sioux River, SD and Iowa, for US Army Corps of Engineers, SD DWNr, SDGS, Vermillion, SD, 57069.

Kume, J., L. Howells, 1987, Water Resources of Walworth County, South Dakota, Water Resources Investigations Report 85-4015, USGS, Huron, SD, 57350.

Water Right, 2006, Dakota Formation Observation Well Data, SD DENR, DES, Water Rights Program, Pierre, SD, 57501.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 6735-3, City of Eureka**

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. 6735-3, City of Eureka, c/o Mayor Mark Opp, PO Box 655, Eureka SD 57437-0655.

The Chief Engineer is recommending APPROVAL of Application No. 6735-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The well approved by the Permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used. The well shall be controlled in a manner that no water is discharged to the lake if West Eureka Lake is full and spilling.
3. If this well is abandoned or the Permit cancelled, the well must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.

See report on application for additional information.

Garland Erbele, Chief Engineer
August 7, 2006

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
) SS
 County of McPherson)

I, Arlo C. Mehlhaff

certify that the attached printed Notice was taken

from the Northwest Blade
Eureka, S.D.

printed and published in Aug. 16, 2006

County of McPherson and

state of South Dakota. The notice was published

in the newspaper on the following two dates:

Aug. 16, 2006

Aug. 23, 2006

Cost of Printing \$51.05

Arlo C. Mehlhaff
 (Signature)

President
 (Title)

Aug. 16, 2006
 (Date Signed)

**NOTICE OF APPLICATION
 NO. 6735-3 TO
 APPROPRIATE WATER**

Notice is given that the City of Eureka, c/o Mark W. Opp, Mayor, P. O. Box 655, Eureka, SD 57437-0655 has filed an application for a water permit to appropriate an additional 0.724 cubic feet of water per second (cfs) from one well authorized by Water Permit No. 6537-3. Water Permit No. 6537-3 appropriates 0.76 cfs from one well completed into the Inyan Kara Aquifer (2,100 feet deep) located in the SW1/4 SW1/4 Section 35-T127N-R73W. This application proposes to increase the diversion rate from the existing well by an additional 0.724 cfs. This notice also serves to correct the location of the well to the NW1/4 SW1/4 Section 35, T127N, R73W. Discharge from the well will be used to maintain the water level of East and West Eureka Lake and will be for municipal, recreational and fire protection use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 6735-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recom-

mendation. 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 5, 2006.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pinner, Secretary, Department of Environment and Natural Resources.

8 -- 16 - 23 -- 2006

RECEIVED

AUG 17 2006

WATER RIGHTS
 PROGRAM

Instruction to Newspaper - Publish first Notice on August 16, 2006 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 6735-3 to Appropriate Water

Notice is given that the City of Eureka, c/o Mark W Opp, Mayor, PO Box 655, Eureka SD 57437-0655 has filed an application for a water permit to appropriate an additional 0.724 cubic feet of water per second (cfs) from one well authorized by Water Permit No. 6537-3. Water Permit No. 6537-3 appropriates 0.76 cfs from one well completed into the Inyan Kara Aquifer (2100 feet deep) located in the SW ¼ SW ¼ Section 35-T127N-R73W. This application proposes to increase the diversion rate from the existing well by an additional 0.724 cfs. This notice also serves to correct the location of the well to the NW ¼ SW ¼ Section 35, T127N, R73W. Discharge from the well will be used to maintain the water level of East and West Eureka Lake and will be for municipal, recreational and fire protection use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 6735-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by September 5, 2006.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

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

August 8, 2006

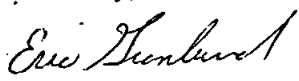
City of Eureka
% Mark W Opp Mayor
PO Box 655
Eureka SD 57437-0655

Dear Mr. Opp:

Water Permit Application No. 6735-3 for municipal use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Publisher of the Northwest Blade printed at Eureka, SD (Ph # 605-284-2631). 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 a 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, the publisher has been instructed to publish your notice once each week for two consecutive weeks. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,


Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

August 8, 2006

Northwest Blade
PO Box 797
Eureka SD 57437-0797

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 6735-3 to Appropriate Water to be published twice. Please publish the first notice on August 16, 2006 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

Please BILL the APPLICANT for the cost of publication. The APPLICANT is City of Eureka, % Mark W Opp, Mayor, PO Box 655, Eureka SD (Ph # 605-284-2441).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

-----CUT HERE-----

No. 6735-3

TO: Eric Gronlund
Water Rights Program
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of August 8, 2006 enclosing Notice to Appropriate Water by Application No. 6735-3 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

NOV 03 2003

6537-3
6735-3

City of Eureka
Mark Opp, Mayor
PO Box 655
Eureka SD 57437-0655

Dear Mayor Opp:

Enclosed is Water Permit No. 6735-3 authorizing an increase in the diversion rate from the city's existing well, not exceeding the limits as specified in the Water Permit. Also, enclosed is Reissued Water Permit No. 6537-3 which corrects the location of the existing well.

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 included. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

6735-3

NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE

Date 11-27-06

TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

RECEIVED
NOV 29 2006
WATER RIGHTS
PROGRAM

FROM: City of Eureka

(name)

PO Box 655

(address)

Eureka, SD 57437-0655

(city, state, zip)

605-284-2441

(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 6735-3 states that the water use system is to be constructed by

September 5, 2011, and water is to be put to beneficial use by September 5, 2015.

(date)

(date)

The water use system was completed on May 15, 2006.

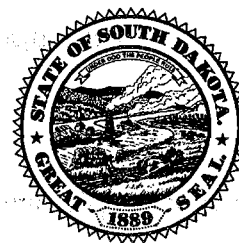
(date)

Applying the water to beneficial use was completed on May 15, 2006.

(date)

You may schedule an investigation so that the water license may be issued.

Donna Maier
(signature)



Permit No. 6537-3 and 6735-3**Missouri River - Water District****Report of Examination of Works and/or Application of Water to Beneficial Use**

TO: Chief Engineer, Water Rights Program, DENR, Foss Bldg., Pierre, SD 57501

I have this day, **September 17, 2007**, made a thorough examination of the water use system constructed by the **City of Eureka** of **PO Box 655, Eureka, SD 57437** holder of Permit No. **6537-3**, bearing the priority of **July 20, 2004** and Permit No. **6735-3**, bearing the priority date of **June 14, 2006** authorizing the diversion of **0.32** cu. ft. per second (cfs) and **0.724** cfs of the waters of the **Inyan Kara Aquifer** for **Municipal** purposes, in **McPherson** County.

Inspection contact & relationship **Ron Emmingson**
to permit holder, if applicable:

A. Works used to divert the water:**Well Information:**

- 1) Well Drilling Firm: **Water System Drilling, Inc**
- 2) No. of Wells **1**
- 3) Depth(s) **2132** feet
- 4) Well log is available **Y**
- 5) Comment:

Casing:

- 1) Diameter **8 & 5** inches
- 2) Length **2128** feet
- 3) Type **Steel**

Screen:

- 1) Type **Perforated Pipe, 23 gm. Shot, 2 per foot, 120 slots**
- 2) Length **60** feet
- 3) Static water level **Free Flowing**

B. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by **Y**
- 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period **NA**
- 3) Exceptions to compliance are: **None**

Report of Examination of Works

Permit No. 6537-3 and 6735-3

The system is in **Good** condition with the point(s) of diversion located as follows:

Approximately 1570 feet north and 1115 feet east of the SW corner of Section 35-T127N-R73W

(N 45.77155, W -99.63070) (NW ¼ SW ¼)

The works are capable of diverting and conveying to the place of use **1.48** cu. ft. per second of water which is to be used for **Municipal and Recreational Use**. Water has been put to beneficial use to the maximum extent as follows:

Water from the well is used to maintain the lake level of both East and West Eureka Lake.

The license should be issued for **1.48** cfs.

All structures, wells and lands on map **Y**

Comments or other permit(s) associated with the project:

Water Permit No. 6537-3 authorizes a change in the location of the well to the NW ¼ SW ¼ Section 35-T127N-R73W and appropriates an additional 0.32 cfs of water from one well authorized by Water Right No. 723A-3. Water Right No. 723A-3 authorizes 0.44 cfs from a well completed into the Inyan Kara aquifer located in the SW ¼ SE ¼ Section 35-T127N-R73W. This permit increases the diversion rate from 0.44 cfs to 0.76 cfs. The well located in the SW ¼ SE ¼ Section 35 has been plugged and only the well located in the NW ¼ SW ¼ Section 35 is used to maintain the water level of East and West Eureka Lake.

Water Permit No. 6735-3 appropriates an additional 0.724 cfs of water from one well authorized by Water Permit No. 6537-3. The combined total appropriation for Water Permit No. 6537-3 and Water Permit No. 6735-3 from the well is 1.48 cfs.

Water Right No. 723A-3, Water Permit Nos. 6537-3 and 6735-3 should be incorporated to reflect the system as developed while each maintaining their priority dates of July 12, 1960, July 20, 2004 and June 14, 2006.



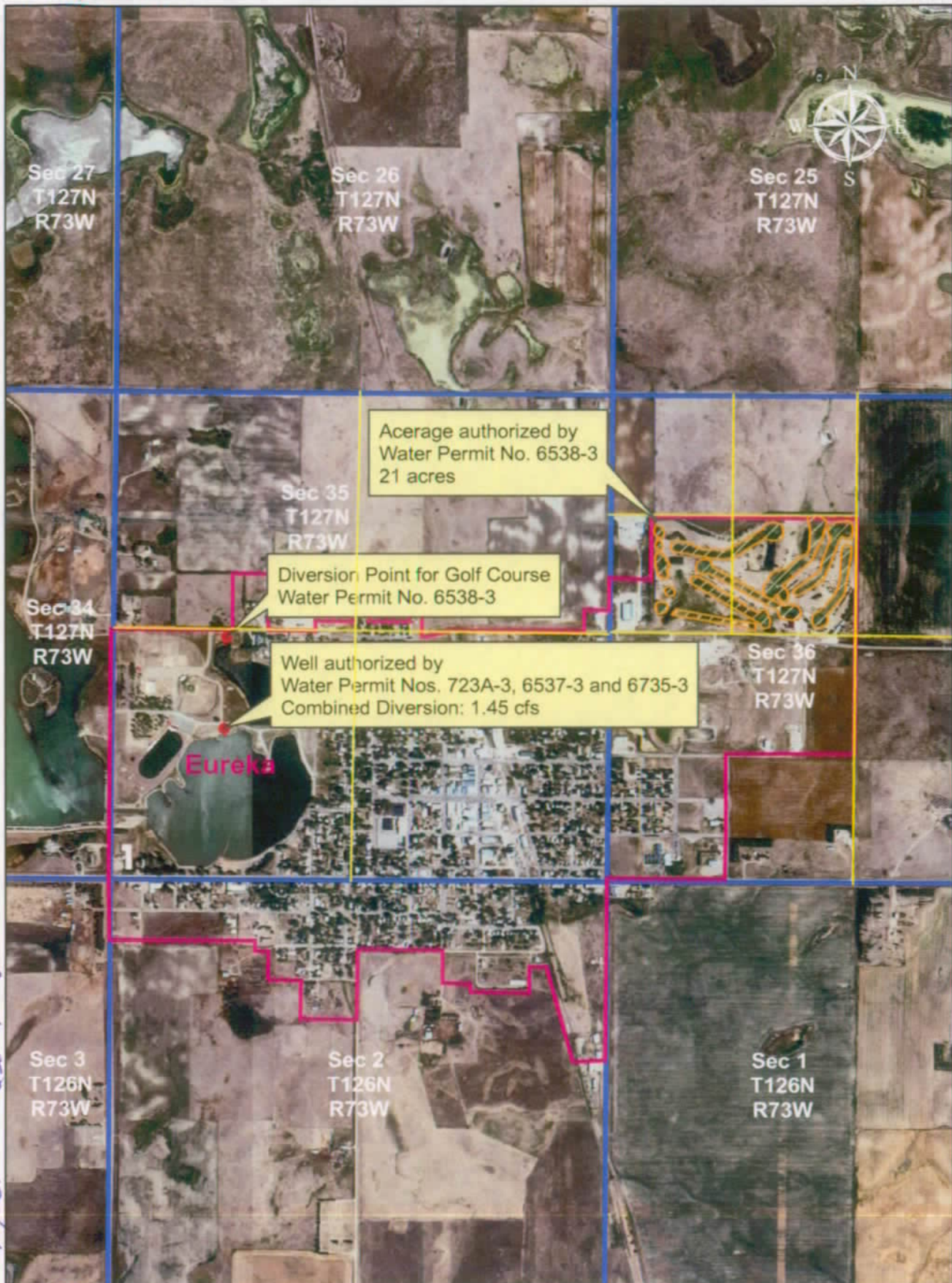
Mike DeFea

Natural Resources Project Engineer
DENR, Water Rights Program

Date report completed: **January 2, 2008**

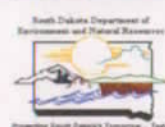
City of Eureka
PO Box 655
Eureka, SD 57437

Water Permit Nos. 6537-3, 6538-3 and 6753-3



Mike DeFea

Mike DeFea
Natural Resources Engineer
DENR, Water Rights Program
January 2, 2008



0 500 1,000 2,000 3,000 4,000 Feet



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

AUG 24 2009

723A-3
6538-3
6735-3

City of Eureka
Mark Opp, Mayor
PO Box 655
Eureka SD 57437

Dear Mayor Opp:

Enclosed are Water License Nos. 6538-3 and 6735-3. These are the final water right documents completing city's process of obtaining a Water Right. Also, included with the licenses is a map prepared by the staff engineer who conducted the investigation.

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. 6735-3, 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 Licenses, the State Water Laws provide that the city has a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

Note: The applicable portions of Water Right No. 723A-3 are incorporated into Water License No. ~~6537-3~~ ⁶⁷³⁵⁻³.

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 6735-3

(1) City of Eureka, PO Box 655, Eureka SD 57437 made Application No. 6735-3, June 14, 2006 for a water permit to divert an additional 0.724 cubic feet of water per second (cfs) from groundwater (one well), McPherson County, South Dakota for municipal, recreational and fire protection purposes. Permit No. 6735-3, with a priority date of June 14, 2006 was approved September 5, 2006 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before September 5, 2011 and for the application to beneficial use of water on or before September 5, 2015.

Water Right No. 723A-3, with a priority date of July 12, 1960 authorizes 0.44 cfs from one well. Water Permit No. 6537-3, with a priority date of July 20, 2004 authorizes 0.32 cfs and changed the location of the well with the original well being plugged.

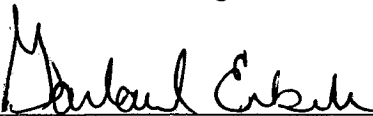
The applicable portions of Water Right No. 723A-3 and Water Permit No. 6537-3 are incorporated into Water License No. 6735-3.

(2) The water supply system has been completed and water applied to beneficial use in accordance with South Dakota State Law. Pursuant to South Dakota Codified Law 46-5-30.1, the holder and/or owner of Incorporated Water Right No. 6735-3 is issued a license, bearing priority dates of July 12, 1960 (0.44 cfs), July 20, 2004 (0.32 cfs) and June 14, 2006 (0.72 cfs) to divert 1.48 cfs from groundwater (one well) for municipal, recreational and fire protection purposes. Discharge from the well is used to maintain the water level of East and West Eureka Lake.

The diversion point is located: approximately 1,570 feet north and 1,115 feet east of the southwest corner of Section 35-T127N-R73W (NW ¼ SW ¼).

(3) This license is subject to South Dakota Water Law, any limitations or conditions listed in Incorporated Water Permit No. 6735-3 including the following now applicable 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 water rights.
- The well approved by the Permit shall be valved and the flow reduced to the amount needed or to a minimum when not being used. The well shall be controlled in a manner that no water is discharged to the lake if West Eureka Lake is full and spilling.
- If this well is abandoned or the Permit cancelled, the well must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.


Garland Erbe, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

AUG 24 2009

date



December 2, 2016

Mr. Eric Gronlund
Water Rights Program
South Dakota DENR
Joe Foss Building
523 E Capitol Ave
Pierre SD, 57501

RECEIVED

DEC - 6 2016

WATER RIGHTS
PROGRAM

RE: City of Eureka, Request to Drill a Replacement Well to Supply Water Rights 723A-3 and 6537-3.

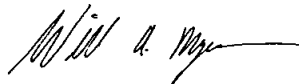
Dear Mr. Gronlund:

On behalf of the City of Eureka (City) and for your approval, this is a written request to construct a replacement flowing well to supply the City's two subject water rights 723A-3 and 6537-3, both of which supply Eureka Lake with groundwater from the Inyan Kara aquifer. The City proposes to construct the replacement well within 50 feet of the current well location, (NWSW Sec 35, T127N, R73W). The replacement well will be drilled and completed at approximately the same depth as the current well, but with some changes to the well design. These changes mainly consist of installing a PVC production well casing within a steel casing. The attached well construction diagram depicts the proposed well design.

The replacement well is proposed since the current well is failing as indicated by a significant decline in the well yield. We suspect that the perforated well casing in the aquifer zone has issues that cannot be remediated such as scoured/enlarged or encrusted perforations. That said, the design concept behind the proposed PVC production casing is that the PVC casing can be replaced at a fraction of the cost to drill and cement in new steel casing in the event there are future complications with the well.

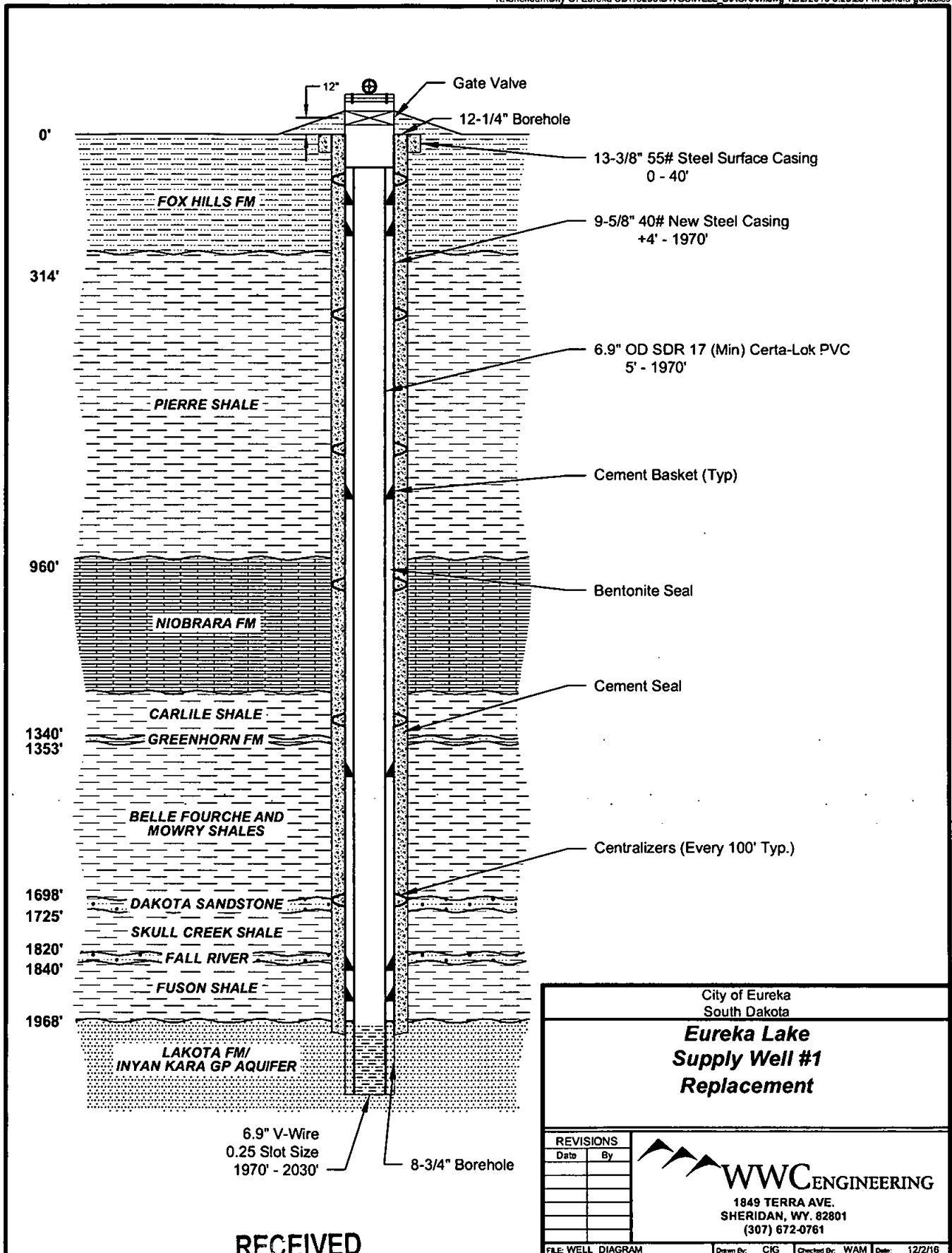
Please let us know if you have any questions or wish to discuss further.

Regards,



Will A. Myers, P.E.
Project Manager

Enclosures: as noted
cc: Nicole Frerk, City of Eureka
File: 2016236



RECEIVED

DEC - 6 2016

WATER RIGHTS
PROGRAM

Gronlund, Eric

From: Will Myers <wmyers@wwcengineering.com>
Sent: Wednesday, December 21, 2016 5:02 PM
To: Gronlund, Eric
Subject: RE: Please forward to Will Myers

Thanks, Eric.

We will include specifications to abandoned the existing well once the replacement well is online.

From: Chad Reed
Sent: Wednesday, December 21, 2016 8:49 AM
To: Will Myers <wmyers@wwcengineering.com>
Subject: Fwd: Please forward to Will Myers

Sent from my Verizon 4G LTE smartphone

----- Original message -----

From: "Gronlund, Eric" <Eric.Gronlund@state.sd.us>
Date: 12/21/16 8:23 AM (GMT-07:00)
To: Chad Reed <creed@wwcengineering.com>
Subject: Please forward to Will Myers

My initial email to Mr. Myers came back as undeliverable. Please forward. Thank you.

From: Gronlund, Eric
Sent: Wednesday, December 21, 2016 9:13 AM
To: wmyers@wwcengineering.com
Subject: Eureka

Will

Attached is Water Right No. 6735-3 for the well that is to be replaced. As you can see, Nos. 723A-3 and 6537-3 are incorporated into this water license to reflect the entire water use from the well.

A qualification to the water right is if the well is abandoned, it must be plugged in accordance with SD well construction standards. What are the city of Eureka's plans for the existing well that is failing?

Water Right No. 6538-3 (attached) appropriates water from Eureka Lake to irrigate the golf course. I do not believe this water right is directly involved in the request for the replacement well.

Eric Gronlund
Water Rights Program, DENR

605 773-3352

Eric.gronlund@state.sd.us

Request for Change of Diversion Point

NAME: City of Eureka.

ADDRESS: PO Box 655, Eureka SD 57437

DATE: December 27, 2016 **COUNTY:** McPherson **TELEPHONE:**

BACKGROUND:

WWC Engineering on behalf of the city of Eureka filed a request to construct a replacement flowing well to the current well authorized by Water Right No. 6735-3. The actual request cites Water Right Nos. 723A-3 and 6537-3. However, the licensing of Water Right No. 6735-3 incorporated Water Right No. 723A-3 and Water Permit No. 6537-3.

Water Right No. 6735-3 appropriates 1.48 cfs (0.44 cfs/ July 12, 1960; 0.32 cfs/July 20, 2004 and 0.72 cfs/ June 14, 2006) from one well completed into the Inyan Kara aquifer that is located in the NW ¼ SW ¼ Section 35, T127N, R73W. The well is approximately 2,100 feet deep. The use is listed as municipal, recreational and fire protection purposes. Also included in the water license is that discharge from the well is used to maintain the water level of East and West Eureka Lake.

The city of Eureka has requested a replacement well to the current well authorized by Water Right No. 6735-3 due to diminished flow from the existing well. The replacement well will be in the within 50 feet of the existing well. The request states the well will be drilled and completed at approximately the same depth as the current well. No increase in the authorized diversion rate from the well is requested.

The water right has a qualification that the well be valved and flow reduced to the amount needed which is further quantified as no well water is to discharge to the lake if West Eureka Lake is full and spilling. That qualification still applies.

There is also a qualification that if the well is abandoned or the Permit cancelled the well must be plugged in accordance with the Water Management Board rules commonly known as the well construction standards. This will require the current well to be plugged.

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 authorized by Water Right No. 6735-3 is the Inyan Kara aquifer. The new well is to be completed to the approximate same depth which will be the same aquifer.

No additional appropriation of water is requested. This request is to replace the existing well which has had a significant decline in the well yield. The water right authorizes 1.48 cfs (664 gpm).

- **Existing Diversions**

The well completion report and water rights databases were reviewed for the nearest domestic wells and water rights/permit on file. The nearest domestic well on file completed into this aquifer is approximately 2.9 miles west of the Eureka well site. The next closest well on file is 6.6 miles to the east. The nearest water rights completed into this aquifer are located over 20 miles away from the Eureka well. Based on the distances involved, interference is not expected to be a concern.

• Observation Well Data

The Water Rights Program monitors observation wells completed into the Inyan Kara aquifer. The nearest observation well completed into this aquifer is ED-85B located approximately 49 miles southeast of the Eureka well. The hydrograph is shown in Figures 1. The head pressure in the observation well has decreased approximately 80 feet since being constructed. Interesting to note is the fluctuation in head pressure that occurred from 2007 to 2011. This can be attributed to nearby diversion that took place under Water Permit No. 6953-3 held by Aberdeen Energy LLC. The permit holder connected to rural water in 2012 and the permit cancelled in 2012 and the large yearly fluctuations in head pressure ceased. Reports on Application No. 6537-3 (Goodman, 2004) and No. 6735-3 (Tieman) for the city of Eureka state that at this distance the water levels from the observation well are probably not representative of the area around the applications.

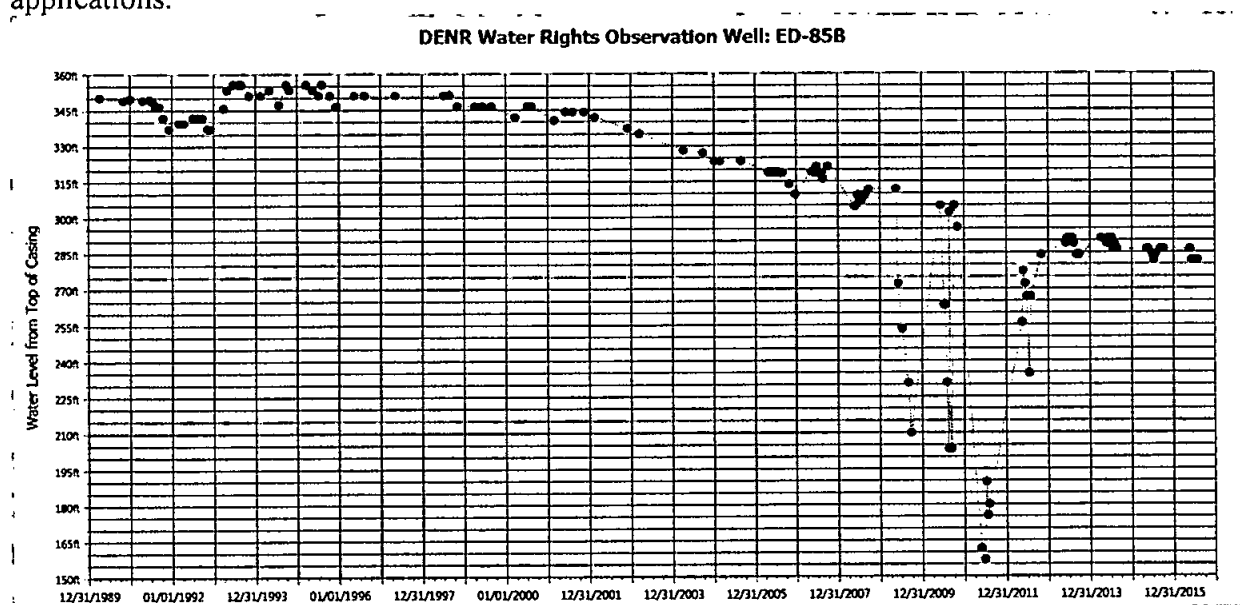


Figure 1 Hydrograph for Observation Well No. ED-85B located approximately 49 miles southeast of Eureka well

Given the observation well water levels and the distance between the new well location and existing known diversions, unlawful impairment is not expected to occur.

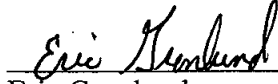
CONCLUSION

- The change in well location does not appropriate additional water.
- The water source continues to be Inyan Kara aquifer.
- Interference resulting in unlawful impairment is not expected to occur.

- The old well located in the NW ¼ SW ¼ Section 35, T127N, R73W shall be plugged in accordance with well construction standards.

RECOMMENDED ACTION

Based on the above criteria, it is recommended that the change in well location under Water Right No. 6735-3 should be authorized.



Eric Gronlund

Water Rights Program

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

This change in diversion point location does not increase the potential for adverse effects to existing diversions.



Jeanne Goodman, Chief Engineer

Water Rights Program



6735-3

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

denr.sd.gov

December 28, 2016

Nicole Frerk, Finance Officer
City of Eureka
PO Box 635
Eureka SD 57437-0655

Will Myers
WWC Engineering
1849, Terra Avenue
Sheridan WY 82801

Dear Ms. Frerk and Mr. Myers:

I am writing in regard to the city of Eureka's request to drill a replacement well for Water Right No. 6735-3.

Water Right No. 6735-3 appropriates 1.48 cfs from one well completed into the Inyan Kara aquifer that is location in the NW ¼ SW ¼ Section 35, T127N, R73W. The well is approximately 2,100 feet deep.

According to the request, the replacement well is necessary since the current well is failing as indicated by a significant decline in the well's yield. The replacement well will be located within 50 feet of the current well and to the approximate same depth. No increase in the authorized diversion rate from the well is requested.

Upon review of the request and pursuant to SDCL 46-5-13.1, the replacement well located in the NW ¼ SW ¼ Section 35, T127N, R73W 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 1.48 cfs from the well is authorized. If the total diversion rate increases, a new water right permit will need to be obtained. The replacement well shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.

The city must be mindful of the qualifications on Water Right No. 6735-3.

1. The well approved by the Permit shall be valved and the flow reduced to the amount needed or to the minimum when not being used. The well shall be controlled in a manner that no water is discharged to the lake if West Eureka Lake is full and spilling.
2. If the well is abandoned or the Permit cancelled, the well must be plugged in accordance with Water Management Board Rules, Chapter 74:02:04.

This requires that the old well that is failing be plugged in accordance with well construction standards.

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

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program

