

WATER PERMIT NO. 2828-2

Name of Applicant: Arrowhead

Address: 3675 Sheridan Lake Rd, Rapid City SD 57702

Phone: 605 484-0491

Amount of Water Claimed: 2.79 cfs

Total Acres: 167 acres

Source of Water Supply: Rapid Creek

Water to be used for: irrigation

County: Pennington

Type of Waste Disposal System:

Location:

PRIORITY

Date Received: 9-28-21

Application/License Fee: \$ 300

Corrected Application Received:

Period of Annual Use: April 1 – October 31

Remarks: Change diversion point from Hawthorne Ditch to Arrowhead

Diversion Point:

Land to be Irrigated: NW 1/4 Sec 15 and W 1/2
SW 1/4, SE 1/4 SW 1/4 Sec 10; all in T1N-R7E

Depth of Well: NA

Well Driller:

Remarks:

Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 9-29-21

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 2828-2**

Date of first receipt of application September 28, 2021.

The Water Management Board approved Water Permit No. 2828-2 on December 8, 2021 for Arrowhead, 3675 Sheridan Lake Rd, Rapid City SD 57702 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. 2828-2 changes the Rapid Creek diversion point and diversion authority for 2.79 cubic feet of water per second (cfs) with an annual volume limitation of 115.93 acre-feet from Hawthorne Ditch to the Arrowhead golf course. The diversion point location for the golf course in the SE 1/4 NE 1/4 Section 9 and the 167 irrigated acres are located in the NW 1/4 Section 15 and the W 1/2 SW 1/4, SE 1/4 SW 1/4 Section 10; all in T1N-R7E. The Arrowhead golf course is located in the city of Rapid City.
2. The water is to be used during the following described annual period: April 1 – October 31.
3. This permit does not authorize any new water appropriation from Rapid Creek. A July 12, 1886 priority date is retained for 2.49 cfs and a July 2, 1973 priority date is retained for 0.3 cfs as established by Hawthorne Ditch partial Vested Water Right No. 2039-2.
4. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. Permit No. 2828-2 is limited to a diversion rate of 2.79 cubic feet of water per second for a total annual volume of 115.93 acre feet of natural flow water from Rapid Creek. Arrowhead shall measure diversions at their pump site. The total monthly diversion shall not exceed the amount listed in the following table.

Transferable volume (acre-feet) if taken at the Arrowhead intake

Priority	April	May	June	July	Aug	Sept	Oct	Total
H1 - July 12, 1886	0.84	14.75	16.80	25.91	22.69	17.34	2.85	101.18
H2 - July 8, 1890	--	--	--	--	--	--	--	--
H3 - May 21, 1896	--	--	--	--	--	--	--	--
H4 - Oct 1, 1907	--	--	--	--	--	--	--	--
H5 - July 2, 1973	0.13	2.15	2.45	3.76	3.31	2.53	0.42	14.75
H6 - July 12, 1973	--	--	--	--	--	--	--	--
Totals	0.97	16.90	19.25	29.67	26.00	19.87	3.27	115.93

2. The amount of water appropriated under partial Vested Water Right No. 2039-2 being transferred by this permit is 2.79 cfs with the following associated priority dates:

July 12, 1886 = 2.49 cfs

July 2, 1973 = 0.30 cfs

(continued)

Water Permit No. 2828-2

Arrowhead

Page 2

3. Permit No. 2828-2 authorizes diversion of only natural flow water by Arrowhead and does not include any right to stored irrigation water available under contract with the Bureau of Reclamation.
4. The Water Management Board retains jurisdiction over Permit No. 2828-2 in the event that changes occur in the system that require adjustments to be made in the monthly or total annual volumes authorized by Permit No. 2828-2.
5. Diversions under Permit No. 2828-2 may not interfere with existing water rights in effect prior to approval of No. 2828-2 or any domestic water use.
6. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

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

1/21/2022
date



RECEIVED

SEP 28 2021

PAID

SEP 28 2021

Ck# 38634

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>2828-2</u>	(office use only) Hydrologic Unit <u>0120110</u>	WATER RIGHTS PROGRAM
	Basin <u>Upper Cheyenne</u>		
	Newspaper <u>Rapid City Journal</u>		

Application For Permit To Appropriate Water For Irrigation

Type of Application: ☐ New ☐ Vested Right ☒ Amendment/Correction to Permit No. #2039-2
(Use predates Mar 2, 1955)

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

Amendment changes the point of diversion on Rapid Creek for a portion of 2039-2 right from Hawthorne Ditch upstream to existing withdrawal point for Arrowhead Golf Course. Domestic use remains irrigation

1. Name to Appear on Irrigation Permit Arrowhead

Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.

Mailing Address 3675 Sheridan Lake Rd Rapid City SD 57702
(Address) (City) (State) (Zip Code)

Phone 605.342.6477 Mobile 605.484.0491 Email EricS@arrowheadrc.com

2. Amount of water claimed 2.79 *CFS or 115.93 **GPM 231.86 ***AF Total Acreage 167
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Rapid Creek

4. Location of point of diversion 44.06372 -103.27300 (SE 1/4 NE 1/4) Sec 9-T1N-R7E
(example - 3 wells in SW1/4 NE1/4 section T2-T104N-R53W)

change from Hawthorne Diversion 44.07539 -103.19353 County Pennington

5. County or counties where water will be used Pennington6. Annual period during which water is to be used April 1 to October 31

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
T1N, R7E Sec. 15 NW1/4NW1/4	40	T1N, R7E Sec 10, NW1/4SW1/4	8
NE1/4NW1/4, -	29	SW1/4SW1/4	33
SW1/4NW1/4,	36	SE1/4SW1/4	16
SE1/4NW1/4,	5	Total Acres under irrigation	167

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

The action to be taken is to acquire and reassign a portion of the water rights under permit #2039-2 to Arrowhead and to change the point of diversion to Arrowhead's existing Rapid Creek gallery and pump system. The irrigation use will remain the same. Additional information and rationale is provided in Exhibits and Report. It is understood that 231.86 acre-feet represents the maximum transferable amount under this water right and that Arrowhead may only divert 50% of that volume annually, or 115.93 acre feet, until such time that Arrowhead may be able to demonstrate return flows to Rapid Creek and amend the conditions of this water right.

I, (Eric Sharpe) Eric Sharpe General Manager, Arrowhead, the applicant, certify under
Name of Person Title (if applicable)

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

Exhibit 1--Water Rights Transfer from Hawthorne Ditch

A portion of water rights held by Hawthorne Ditch Company under water right 2039-2 will be transferred to Arrowhead, a non-profit corporation in South Dakota. Arrowhead owns 7 of 50 shares of the Hawthorne Ditch Company. These 7 shares were formerly owned by B.H. Capital, LLC. This action transfers the attendant water rights based on the acreage historically irrigated by Charles Johnson and later B.H. Capital to Arrowhead. Arrowhead is a golf course and recreation center in Rapid City established in 1954. Further details on the transfer are provided as follows:

1. Arrowhead, formerly Arrowhead Country Club, has irrigated 167 acres with water from Rapid Creek since 1960 under permit #611-2, which is a right to use storage from Pactola Reservoir. The construction of water works was completed and certified in 1970. The amount of water used, and the operation of water works has proceeded without adverse effect to Rapid Creek or prior water rights holders for the last 60+ years.
2. To secure an assured water supply, Arrowhead plans to acquire a natural flow right to Rapid Creek—a portion of #2039-2 from Hawthorne Ditch and change the point of diversion upstream to Arrowhead's existing pumphouse and water works. (See Map 1, Map 2 and Photo 1 attached). The transfer includes two water rights within vested water right #2039-2 to Arrowhead. There are 3.22 cubic feet per second (cfs) of the oldest rights (July 12, 1886) on the Ditch of which 2.49 (cfs) will be transferred to Arrowhead. In addition, 0.3 cfs within #2039-2 with a priority date of July 2, 1973. This right was originally established under water right #1152-2. The beneficial use of the water remains irrigation. Title to the land remains unchanged. The total of the two rights (1886 and 1973) is 2.79 cfs. The remainder of the shares and water rights on Hawthorne Ditch will be transferred to the City of Rapid City.
3. The transfer will irrigate the same acreage on the golf course as in the 1960s. No new acreage will be added or brought under irrigation by this transfer.
4. As proposed, this newly acquired right to natural flows of Rapid Creek (2.79 cfs) will be used in most years and most months of the irrigation season but augmented by storage from Pactola under #611-2 when natural flows are unavailable. Water withdrawn from Rapid Creek under these natural flow rights will be used in lieu of water from Pactola storage. This transfer will not result in a change in Rapid Creek flows as no additional water will be withdrawn from the Creek during the irrigation season than under present conditions.
5. In the reach of Rapid Creek between Arrowhead's point of diversion and the Hawthorne Ditch Diversion, the City of Rapid City is the sole holder of water rights, some of which by transfer from downstream users, have older priority dates than July 12, 1886. The City has flexibility to choose which point of diversion to use these transferred rights among its various

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water works including placing the water in storage in Pactola. Therefore, not all the optional points of diversion are in the Arrowhead to Hawthorne reach.

6. Under South Dakota Statute 46-2A-12, the change in the point of diversion must not unlawfully impair existing water rights. The proposed amendment to 2039-2 will satisfy the statute because:

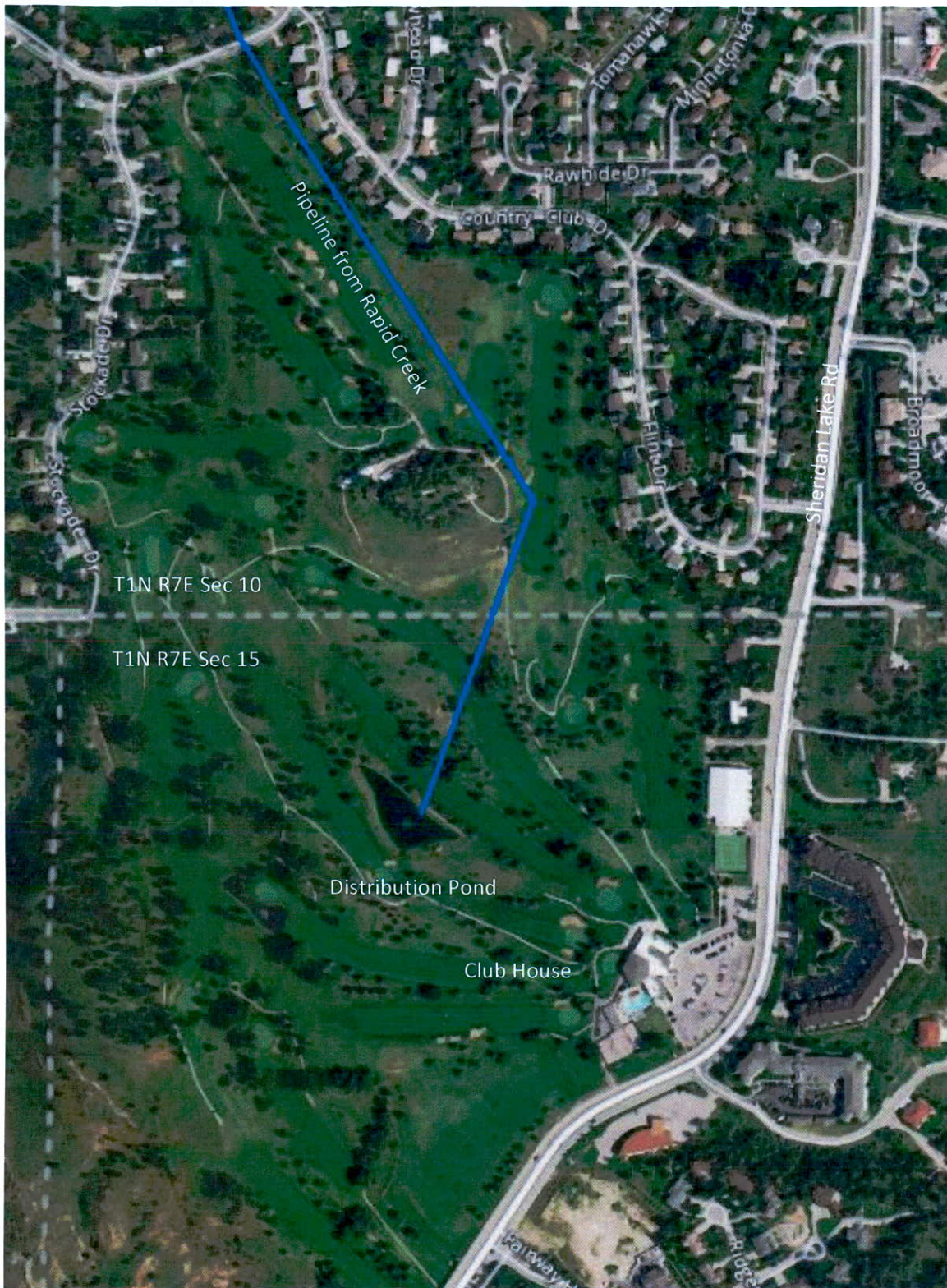
- a. A report written by Peter Rausch of RESPEC entitled "Hawthorne Ditch Company Water Volume for Water Rights Transfer" RSI-4001 dated March 2021, addresses this statute. The report takes the approach by using the least amount of historical diversions thus reducing the allowable amount of water available for transfer to a minimum.

- b. An extensive history and precedent is set for water right transfers from downstream right holders to upstream points of diversion in West Rapid City. The City has acquired and transferred many rights upstream without adverse effect to downstream right holders.

- c. Further precedent has been set by two water rights transferred from Hawthorne Ditch under water right 2039-2. The Morris property (2317-2) acquired by the City of Rapid City and the Synder (2537-2) transfer acquired by Rapid Valley Water Company without infringement of older downstream rights.

7. The precedent is set and under SD law, Arrowhead proposes to acquire by consent of Hawthorne Ditch Company water to the new diversion point. In this amendment, Arrowhead bases the amount to be transferred on the Report prepared by Peter Rausch of RESPEC entitled "Hawthorne Ditch Company Water Volume for Water Rights Transfer", RSI-4001 dated March 2021. Available for transfer is 1937.5 acre-feet/year after reduction for estimated actual acreage irrigated, ditch losses and consumptive use.

8. The volume of water determined by Mr. Rausch's analysis for transfer out of Hawthorne Ditch equals 3.22 cfs (also from water right 2039.2 documentation) or 261.3 acre-ft of the rights of the 1886 priority date. Based on acreage irrigated, the land irrigated by B. H. Capital LLC (formerly Charles Johnson), the portion to transfer to Arrowhead is 2.49 cfs and 202.4 ac-ft per year. In addition, the 1973 right includes 0.3 cfs and 29.5 ac-ft. For a total of 2.79 cfs and 231.9 ac-ft. Without the benefit of a return flow credit, the amount of water Arrowhead can apply to the course would be 50% of this total or 116.0 ac-ft/year.



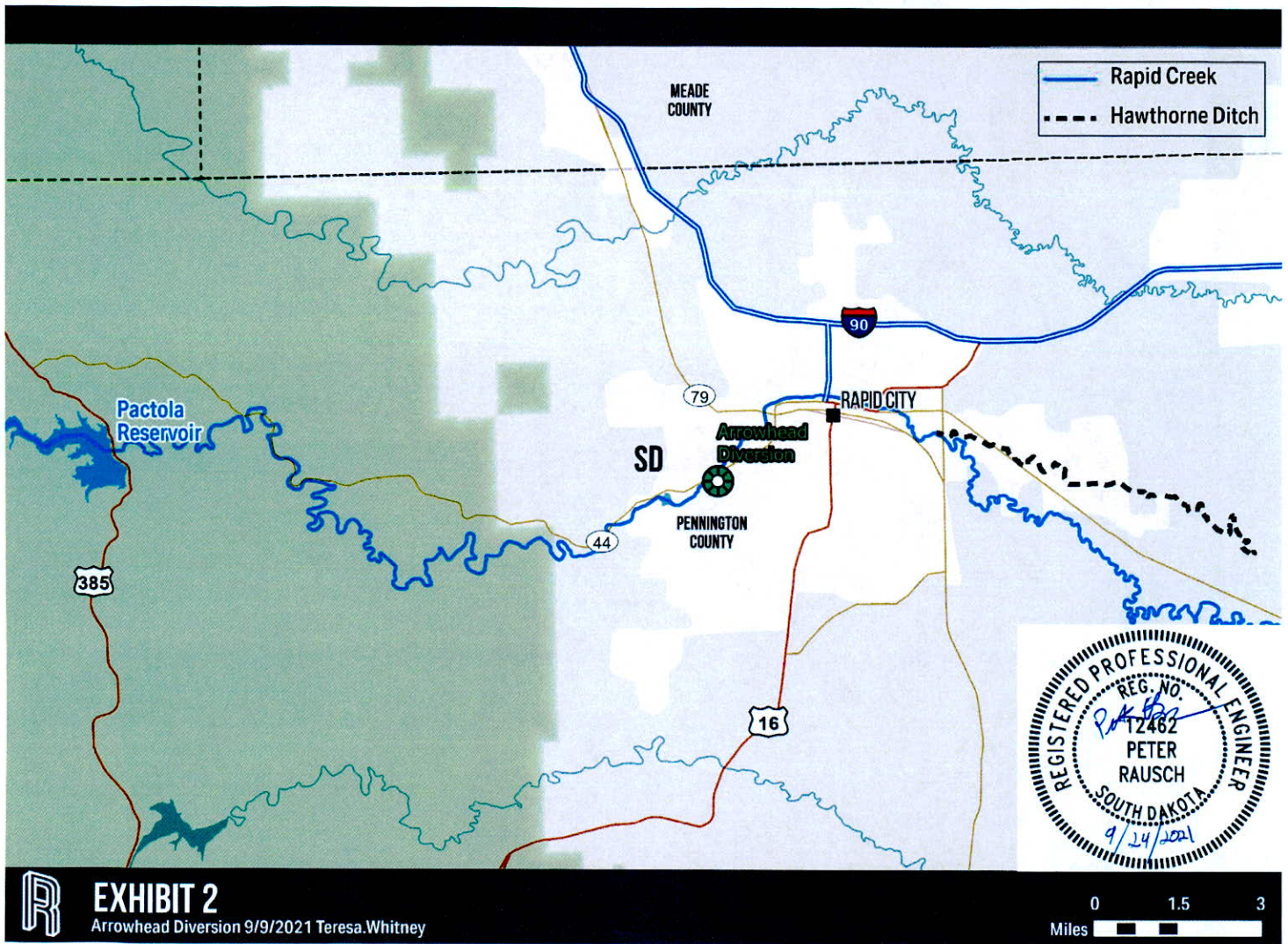
Map 1--Map of Arrowhead Golf Course where 167 acres is under seasonal irrigation. Water is pumped from Rapid Creek via a pipeline about 5000 feet in length into a distribution pond from which the turf is irrigated. Pipeline alignment is approximate. [Drawing Scale ~1" = 500 feet.]

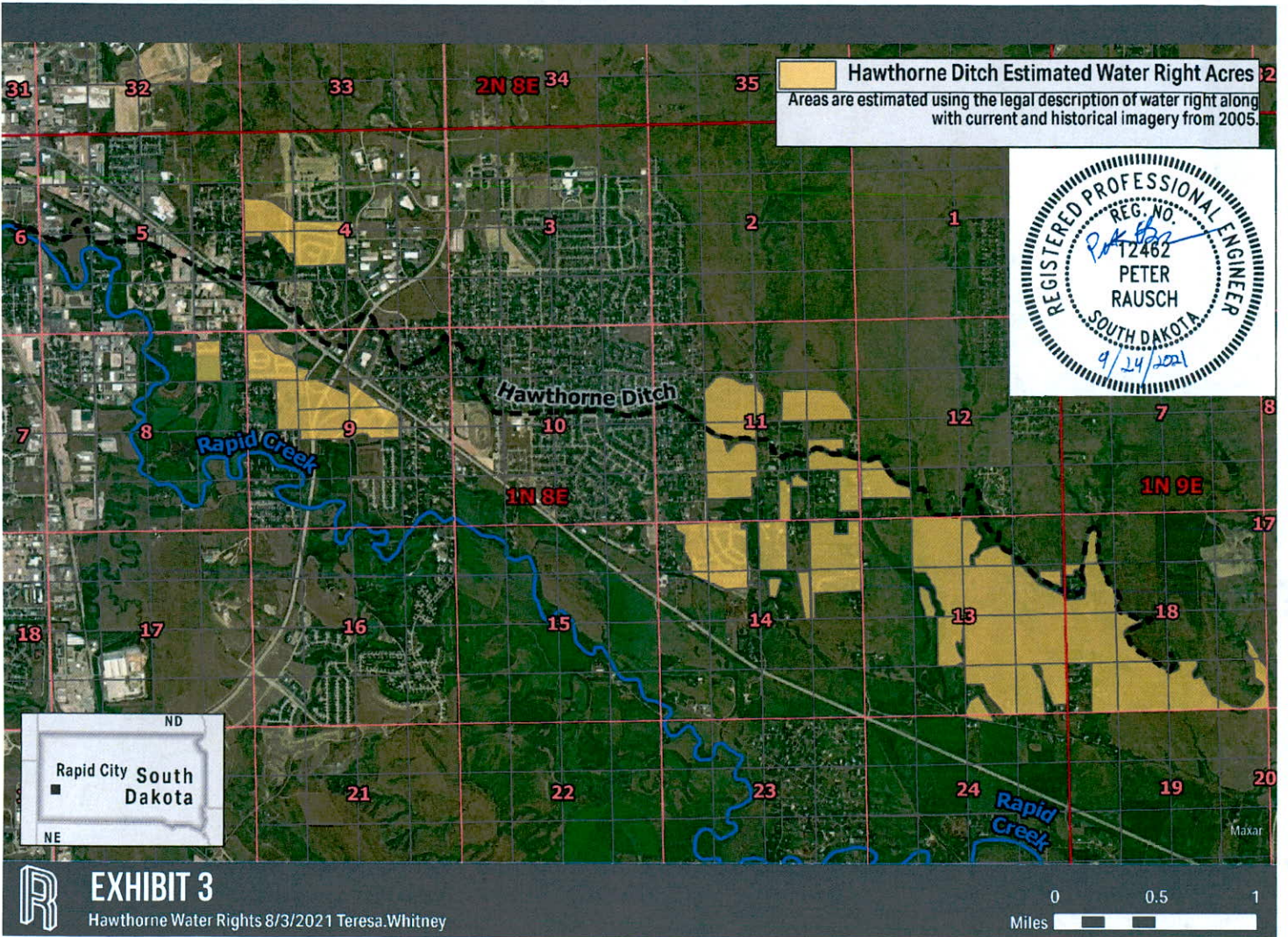


Map 2—Location of Arrowhead Point of Diversion on Rapid Creek.



Photo 1--Image of Arrowhead's subterranean pump house adjacent to Rapid Creek with Meadowbrook School in the background.





RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date September 28, 2021

RECEIVED OF Arrowhead Inc. 3675 Sheridan Lake Rd Rapid City SD 57702

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

Fee for Application for Permit No. <u>2828-2</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>100.00</u>
Fee for Application for Permit No. _____ to Appropriate Water for Future use	\$ _____
Fee to retain Future Use Permit No. _____ after period of seven years.	\$ _____
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>2828-2</u>	\$ <u>200.00</u>
Fee for Filing Transfer Form _____	\$ _____
Fee for _____	\$ _____
Fee for Issuing New Well Driller's License No. _____	\$ _____
Fee for Renewal of Well Driller's License No. _____	\$ _____
Fee for Issuing Well Pump Installer's License No. _____	\$ _____
Fee for Renewal of Well Pump Installer's License No. _____	\$ _____
(Any Other Work Provided by Law)	
TOTAL	\$ <u>300.00</u>

By Eric Gronlund
Chief Engineer
VM

HAWTHORNE DITCH COMPANY WATER RIGHTS TRANSFER TO ARROWHEAD

TOPICAL REPORT RSI-3163

PREPARED FOR

Hawthorne Ditch Company
6500 Higgins Lane
Rapid City, South Dakota 57703

SEPTEMBER 2021



HAWTHORNE DITCH COMPANY WATER RIGHTS TRANSFER TO ARROWHEAD

TOPICAL REPORT RSI-3163

PREPARED BY

Peter P. Rausch

RESPEC

3824 Jet Drive

Rapid City, South Dakota 57703

PREPARED FOR

Hawthorne Ditch Company

6500 Higgins Lane

Rapid City, South Dakota 57703

SEPTEMBER 2021

Project Number 2897



FOREWORD

The Hawthorne Ditch is served irrigation water from Rapid Creek under the State of South Dakota Vested Water Right License No. 2039-2. Vested Water Right License No. 2039-2 for irrigation has different priority dates established under Water Right Nos. 2039-2, 1152-2, 1153-2, 35-2, and 1190-2. Hawthorne Ditch serves a total of 986 acres with a diversion rate of 19.98 cubic feet per second (cfs). These acres are located within Sections 4, 8, 9, 11, 12, 13, 14, and 24, Township 1 North, Range 8 East and Section 18, Township 1 North, Range 9 East, Black Hills Meridian, Pennington County, South Dakota.

In March 2021, an engineering analysis [Rausch, 2021]¹ was conducted to determine the amount of water the Hawthorne Ditch Company may transfer to another entity. That report, which is included in Appendix A, provides much of the engineering analysis done for this water rights transfer from Hawthorne Ditch Company to Arrowhead (formerly Arrowhead Country Club), located in Rapid City, South Dakota.

The March 2021 analysis determined that the Hawthorne Ditch has historically used 1,937.50 acre-feet of water annually for irrigation, but 50 percent of the applied irrigation volume is assumed to be returned to Rapid Creek through losses based on the efficiency of gravity flow irrigation methods used throughout Hawthorne Ditch. Thus, 968.75 acre-feet of water per year would be available for transfer and consumptive use. The total water available for transfer will depend on the new use and location of the receiving entity but may not exceed 1,937.50 acre-feet per year and a diversion rate of 19.98 cfs.

This transfer includes all of the Hawthorne Ditch water rights associated with shares owned by Arrowhead (formerly owned by BH Capital), for a total of 118 acres. The transferrable water volumes and diversion rate were determined by acreage prorating (118 acres/986 acres).

This transfer accordingly includes a diversion rate of 2.79 cfs, water volume of 115.93 acre-feet for consumptive use, and up to 231.86 acre-feet in total. Transfer values by priority are shown in Table ES-1.

Table ES-1. Hawthorne Ditch Company to Arrowhead Transfer Values by Priority

Priority	Priority Date	Acres	Diversion Rate (cfs)	Transfer Volume (acre-feet)	
				Consumptive Use	Maximum
H1	July 12, 1886	103	2.49	101.18	202.36
H2	July 8, 1890	—	—	—	—
H3	May 21, 1896	—	—	—	—
H4	October 1, 1907	—	—	—	—
H5	July 2, 1973	15	0.30	14.75	29.50
H6	July 12, 1973	—	—	—	—
Totals		118	2.79	115.93	231.86

¹ Rausch, P. P., 2021. *Hawthorne Ditch Company Water Volume for Water Rights Transfer*, RSI-4001, Revision 1, prepared by RESPEC, Rapid City, SD, for Hawthorne Ditch Company, Rapid City, SD.

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1.0 INTRODUCTION

The Hawthorne Ditch comprises 986 acres located within Sections 4, 8, 9, 11, 12, 13, 14, and 24, Township 1 North, Range 8 East and Section 18, Township 1 North, Range 9 East, Black Hills Meridian, Pennington County, South Dakota. The Hawthorne Ditch acres are served irrigation water through the State of South Dakota Vested Water Right License No. 2039-2. Vested Water Right License No. 2039-2 for irrigation has different priority dates established under Water Right Nos. 2039-2, 1152-2, 1153-2, 35-2, and 1190-2, which allow for 19.98 cubic feet per second (cfs) to be diverted from Rapid Creek into Hawthorne Ditch.

In March 2021, an engineering analysis [Rausch, 2021]¹ was completed for the 986 acres of irrigated land on Hawthorne Ditch to determine the amount of water that the Hawthorne Ditch Company has available for transfer. The March 2021 engineering analysis for Hawthorne Ditch is provided in Appendix A and is divided into three report sections: Historical Crop-Water Use, Historical Diversions, and Delivery System Losses. The historical irrigation requirements (i.e., demand) and diversions (i.e., supply) were compared on a monthly basis to determine whether the supply or the demand was the limiting amount. The delivery system losses were subtracted from diversions to determine the monthly acre-feet of water available for transfer. The March 2021 engineering analysis of Hawthorne Ditch, as a whole, provides an identical representation of what would be required of an engineering analysis of property owned by landowners served by Hawthorne Ditch in the transfer of water rights.

The March 2021 engineering analysis is being used as the basis for the transfer of water rights associated with 118 acres served by the Hawthorne Ditch Company to Arrowhead (formerly Arrowhead Country Club). Additional information and explanations were provided by Arrowhead and are included in Appendix B of this report.

¹ Rausch, P. P., 2021. *Hawthorne Ditch Company Water Volume for Water Rights Transfer*, RSI-4001, Revision 1, prepared by RESPEC, Rapid City, SD, for Hawthorne Ditch Company, Rapid City, SD.

2.0 OWNERSHIP

Appendix C shows Vested Water Right License No. 2039-2 for irrigation and states that the applicant, Hawthorne Ditch, is entitled to divert 21.00 cfs for beneficial use. Vested Water Right License No. 2039-2 documents the location of the Hawthorne Ditch diversion point and lists the six priority dates for the 21.00 cfs water right. Vested Water Right License No. 2039-2 also documents the location of the Hawthorne Ditch irrigated acreage with legal descriptions.

After Vested Water Right License No. 2039-2 in Appendix C, the permits are provided for Water Right No. 2317-2 (Morris Transfer) and Water Right No. 2537-2 (Snyder Transfer), which transferred a total of 1.02 cfs and 56 acres from the Hawthorne Ditch Vested Water Right License No. 2039-2. The permits transferring water and acreage of Water Right Nos. 2317-2 and 2537-2 adjust the diversion rate and acreage for Water Right No. 2039-2 to 19.98 cfs and 986 acres, respectively. The diversion rate and acreage are under Water Right No. 2039-2, which is currently held by the Hawthorne Ditch Company.

The legal descriptions of the property currently irrigated under Water Right No. 2039-2 are included in Appendix C.

3.0 TRANSFER AMOUNTS

Table 3-1 represents an adjustment of Table 2-1 from Rausch [2021] to indicate values associated with the 118 acres under this transfer. Values were adjusted by acreage prorating (118 acres/986 acres) to compute the irrigation right to be transferred from Hawthorne Ditch Company to Arrowhead.

Table 3-1. Irrigation Amounts to Be Transferred From the Hawthorne Ditch Company to Arrowhead

Row	Description	April	May	June	July	August	September	October	Total
A ^(a)	Historical Diversions to Hawthorne Ditch (acre-feet)	19.00	331.00	377.00	581.00	509.00	389.00	64.00	2,270.00
B ^(b)	Adjusted Historical Diversions to Ditch (acre-feet)	2.15	37.48	42.69	65.80	57.64	44.05	7.25	257.06
C ^(c)	Adjusted Historical Diversions Minus Ditch Loss (acre-feet)	1.94	33.81	38.51	59.35	51.99	39.73	6.54	231.87
D ^(d)	Crop Demand Minus Delivery Loss (acre-feet)	9.25	87.11	71.27	108.51	108.58	48.21	38.39	471.32
E ^(e)	Irrigation Right to Be Transferred From Hawthorne Ditch to Arrowhead (acre-feet)	1.94	33.80	38.51	59.35	51.99	39.73	6.54	231.86
F ^(f)	Adjusted Irrigation Right to Be Transferred From Hawthorne Ditch to Arrowhead (Allowable Consumptive Use) (acre-feet)	0.97	16.90	19.25	29.67	26.00	19.87	3.27	115.93

(a) Historical diversions as outlined in Rausch [2021], Section 1.2. Calculated for 1,042 acres.

(b) Historical diversions reduced by 5.37 percent to account for previously transferred acres (986 acres/1,042 acres = 0.9463). Historical diversions further reduced by 88.03 percent to account for acreage transfer from Hawthorne Ditch Company to Arrowhead (118 acres/986 acres = 0.1197).

(c) Calculated by subtracting delivery losses (9.8 percent) from the adjusted historical diversions.

(d) Calculated using an irrigation scheduling tool outlined in Rausch [2021], Section 1.1, and reduced by 88.03 percent to account for acreage transfer from Hawthorne Ditch Company to Arrowhead.

(e) The lesser of Rows C and D is used.

(f) Row E minus the required return flows to Rapid Creek based on gravity flow type irrigation efficiency of 50 percent for Hawthorne Ditch. This requirement meets the State of South Dakota statutes to protect existing water rights downstream of Hawthorne Ditch.

Table 3-2 and Table 3-3 represent monthly prorated maximum and consumptive use volumes, respectively, by priority date for transfer to Arrowhead.

Table 3-2. Maximum Monthly Amounts to Be Transferred From the Hawthorne Ditch Company to Arrowhead, by Priority Date

Priority	Priority Date	Maximum Transfer Volumes (acre-feet)							Totals
		April	May	June	July	August	September	October	
H1	July 12, 1886	1.68	29.50	33.61	51.81	45.38	34.68	5.70	202.36
H2	July 8, 1890	—	—	—	—	—	—	—	—
H3	May 21, 1896	—	—	—	—	—	—	—	—
H4	October 1, 1907	—	—	—	—	—	—	—	—
H5	July 2, 1973	0.26	4.30	4.90	7.54	6.61	5.05	0.84	29.50
H6	July 12, 1973	—	—	—	—	—	—	—	—
Totals		1.94	33.8	38.51	59.35	51.99	39.73	6.54	231.86

Table 3-3. Consumptive Use Amounts to Be Transferred From the Hawthorne Ditch Company to Arrowhead, by Priority Date

Priority	Priority Date	Consumptive Use Transfer Volumes (acre-feet)							Totals
		April	May	June	July	August	September	October	
H1	July 12, 1886	0.84	14.75	16.80	25.91	22.69	17.34	2.85	101.18
H2	July 8, 1890	—	—	—	—	—	—	—	—
H3	May 21, 1896	—	—	—	—	—	—	—	—
H4	October 1, 1907	—	—	—	—	—	—	—	—
H5	July 2, 1973	0.13	2.15	2.45	3.76	3.31	2.53	0.42	14.75
H6	July 12, 1973	—	—	—	—	—	—	—	—
Totals		0.97	16.90	19.25	29.67	26.00	19.87	3.27	115.93

The number of acres, water volumes for transfer, and legal descriptions of irrigated acres associated with this transfer are given below by priority date. Note that all of the sections listed are in Township 1 North, Range 8 East.

- / Priority Date July 12, 1886 (H1):
 - » Total of 103 acres, diversion rate of 2.49 cfs, and water volume transfer of 101.18 acre-feet for consumptive use and up to 202.36 acre-feet in total
 - » Section 4: NE ¼, SW ¼, 21 acres; NW ¼, SW ¼, 7 acres; SW ¼, NW ¼, 23 acres
 - » Section 9: SW ¼, NW ¼, 17 acres; NW ¼, NW ¼, 26 acres; NE ¼, NW ¼, 2 acres; SW ¼, NE ¼, 7 acres.
- / Priority Date July 2, 1973 (H5):
 - » Total of 15 acres, diversion rate of 0.30 cfs, and water volume transfer of 14.75 acre-feet for consumptive use and up to 29.50 acre-feet in total.
 - » Section 4: NE ¼, SW ¼, 7 acres; SE ¼, NW ¼, 8 acres.
- / Priority Nos. H2, H3, H4, and H6 are not included in this transfer.

In the event of a transfer of the water right and change of use or point of diversion, the South Dakota Water Management Board is charged with making final determinations regarding quantities.

4.0 BENEFICIAL USE OF WATER

Beneficial use is a requirement for the transfer of a water right as codified in South Dakota Codified Law (SDCL) Statute 46-5-37:

46-5-37. Failure to use beneficially appropriated water—Forfeiture for nonuse—Reversion to public.

If any person entitled to the use of appropriated water fails to use beneficially any part of the water for the purpose for which it was appropriated, for a period of three years, the unused water shall revert to the public and shall be regarded as unappropriated public water. Source: SDC 1939, § 61.0139; SL 1955, ch 430, § 1; SDC Supp 1960, § 61.0125; SL 2011, ch 165, § 269.

The Hawthorne Ditch Company Vested Water Right License No. 2039-2 has six different priority dates, as shown per the water license signed by Mr. John Hatch, Chief Engineer on December 1, 1988, in Appendix C, and in the foreword of the March 2021 report [Rausch, 2021] in Appendix A. As discussed on Pages 10 and 11 of the March 2021 report under Section 2.2, *Governing Statutes*, "Any transfer of water rights from Hawthorne Ditch Company is subject to the South Dakota statutory requirements as described in SDCL Statutes 46-2A-12, 46-5-30.4, and 46-5-34.1." These statutes are provided in that report, and the three statutes prohibit the impairment of existing water rights by a water rights transfer. Statutes 46-2A-12 and 46-5-30.4 are used for pre-1907 water rights. The pre-1907 water rights associated with the Hawthorne Ditch Vested Water Right License No. 2039-2 are Priority Nos. H1, H2, and H3 with respective priority dates of July 12, 1886; July 8, 1890; and May 21, 1896. These three pre-1907 water rights do not require a beneficial use review.

Statute 46-5-34.1 is used for water rights with priority dates after 1907. The post-1907 water rights for Hawthorne Ditch Vested Water Right License No. 2039-2 are Priority Nos. H4, H5, and H6 with respective priority dates of October 1, 1907; July 2, 1973; and July 12, 1973. These three post-1907 water rights require a beneficial use review.

On September 9, 2021, Mr. Curt Anderson of RESPEC met with Mr. Howard Rice of Hawthorne Ditch Company to discuss beneficial use being met by the acres served under Priority Nos. H4, H5, and H6. Mr. Rice explained that all of the acres served under Priority Nos. H4, H5, and H6 have been irrigated within the last 3 years and meet beneficial use requirements.

5.0 WATER PERMIT NO. 2317-2 AND INTERFERENCE

Appendix E contains Water Permit No. 2317-2, signed by Mr. John Hatch, Chief Engineer on June 10, 1997. This water permit includes a transfer from Hawthorne Ditch to the City of Rapid City and has several qualifications. Qualification 1 lists diversion points used by the City of Rapid City and has a table with monthly acre-foot limits at Pactola Reservoir and monthly acre-foot limits at the diversion points within Rapid City. The column for monthly acre-foot limits at Pactola Reservoir would represent consumptive use and the column for monthly acre-foot limits at diversion points within Rapid City would represent the maximum monthly diversions that can occur at said diversion points within Rapid City respective to Water Permit No. 2317-2.

Qualification 2 states, "The City shall only divert the amount associated with crop consumptive use when Water Right/Permits Nos. 653-2, 971-2 1461-2, 1461A-2 or 2040-2 are ordering stored water." This is an interference issue, and the City of Rapid City can only divert consumptive use associated with Water Permit No. 2317-2 when water orders are being placed beneath these water right/permits numbers.

Appendix F of this report contains a portion of *The Report on Water Permit Application No. 2317-2, City of Rapid City, May 9, 1995* [Rath, 1995]². The report explains the interference issue on Page 2, as follows:

A condition can occur which is unique to the transfer proposed by application No. 2317-2 that did not need to be considered in any of the preceding Rapid City water rights transfers. Water which has been returned to Rapid Creek through irrigation would also be returned to Rapid Creek by Rapid City through their waste water treatment system (Wright, 1994). Rapid City has been allowed to divert this water, under previous water right transfers, because the return point for the City's treatment plant was in close proximity to the historical return point and there were no other diversion points that would be affected. Under this proposal there are five water rights/permits, Nos. 653-2, 971-2, 1461-2, 1461A-2, and 2040-2, with diversion points located downstream from Hawthorne Ditch historical return point but upstream from the treatment plant return point which may be affected. Because of this, whenever any of these water rights are required to purchase water, the City will only be able to take the amount of water associated with crop consumptive use. If in the future the City of Rapid City stops returning effluent to Rapid Creek, then the diversion proposed by this application will need to be recalculated to reflect that condition.

All of the water rights under this transfer request, located in Section 4 and Section 9, have historical return points upstream from the five referenced water rights/permits and would be subject to the consumptive use restriction when the referenced water rights are required to purchase water.

² Hatch, J., 1995. *Revised Recommendation of Chief Engineer for Water Permit Application No. 2317-2, City of Rapid City*, prepared by the South Dakota Department of Environment and Natural Resources, Pierre, SD, July 18. Available online at <https://denr.sd.gov/des/wr/dbwrsearch.aspx#textsearch>

APPENDIX A

HAWTHORNE DITCH COMPANY WATER VOLUME FOR WATER RIGHTS TRANSFER, REVISION 1



HAWTHORNE DITCH COMPANY WATER VOLUME FOR WATER RIGHTS TRANSFER

REVISION 1 TOPICAL REPORT RSI-4001

PREPARED FOR

Hawthorne Ditch Company
6500 Higgins Lane
Rapid City, South Dakota 57703

MARCH 2021



HAWTHORNE DITCH COMPANY WATER VOLUME FOR WATER RIGHTS TRANSFER

REVISION 1 TOPICAL REPORT RSI-4001

PREPARED BY

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Rapid City, South Dakota 57703

MARCH 2021

Project Number 4269



FOREWORD

An engineering analysis was conducted to determine the amount of water that Hawthorne Ditch Company may transfer to another entity. The acres served by Hawthorne Ditch total 986 acres with a diversion rate of 19.98 cubic feet per second (cfs). These acres are located within Sections 4, 8, 9, 11, 12, 13, 14, 18, and 24, Township 1 North, Range 8 East and Section 18, Township 1 North, Range 9 East, Black Hills Meridian, Pennington County, South Dakota. The Hawthorne Ditch acres are served irrigation water through the State of South Dakota's Vested Water Right License No. 2039-2. Vested Right Water License No. 2039-2 for irrigation has different priority dates established under Water Right Nos. 2039-2, 1152-2, 1153-2, 35-2, and 1190-2, which allow 19.98 cfs to be diverted from Rapid Creek into Hawthorne Ditch.

The analysis determined that Hawthorne Ditch has historically used 1,937.5 acre-feet of water annually for irrigation; however, 50 percent of the applied irrigation volume is assumed to return to Rapid Creek through losses based on the efficiency of the gravity-flow irrigation methods used throughout Hawthorne Ditch. Therefore, 968.75 acre-feet of water per year would be available for transfer and consumptive use. The total water available for transfer will depend on the new use and location of the receiving entity but may not exceed 1,937.5 acre-feet per year and a diversion rate of 19.98 cfs.

In the event of a transfer of the water right and change of use or point of diversion, the South Dakota Water Management Board is charged with making the final determination on the quantity of water associated with the water right.

The volume of water for the priority dates as they pertain to the 21.00 cfs diversion rate, less the transfer of Water Right License Nos. 2317-2, City of Rapid City (Morris Property 0.84 cfs) and 2537-2, David Snyder (0.18 cfs), are as follows:

1. 3.22 cfs—July 12, 1886 (established under Water Right No. 2039-2), with a total of 133 acres, which allows for a water volume transfer of 130.7 acre-feet (consumptive use) and up to 261.3 acre-feet in total.
2. 12.71 cfs—July 8, 1890 (established under Water Right No. 2039-2), with a total of 576 acres, which allows for a water volume transfer of 565.9 acre-feet (consumptive use) and up to 1,131.8 acre-feet in total.
3. 0.55 cfs—May 21, 1896 (established under Water Right Nos. 1152-2 and 1190-2), with a total of 38 acres, which allows for a water volume transfer of 37.3 acre-feet (consumptive use) and up to 74.7 acre-feet in total.
4. 2.70 cfs—October 1, 1907 (established under Water Right No. 35-2), with a total of 189 acres, which allows for a water volume transfer of 185.7 acre-feet (consumptive use) and up to 371.4 acre-feet in total.
5. 0.30 cfs—July 2, 1973 (established under Water Right No. 1152-2), with a total of 15 acres, which allows for a water volume transfer of 14.8 acre-feet (consumptive use) and up to 29.5 acre-feet in total.



6. 0.50 cfs—July 12, 1973 (established under Water Right No. 1153-2), with a total of 35 acres, which allows for a water volume transfer of 34.4 acre-feet (consumptive use) and up to 68.8 acre-feet in total.

In summary, the total annual water volume available for transfer from Hawthorne Ditch is 968.75 acre-feet for consumptive use and up to 1,937.5 acre-feet in total, depending on the new use and location.

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1.0 INTRODUCTION

An engineering analysis was completed for the property owned by the landowners of Hawthorne Ditch to determine the amount of water that Hawthorne Ditch Company has the right to transfer to another water supply system. The water right for Hawthorne Ditch is Vested Water Right License No. 2039-2, which is detailed in the Foreword of this report. The irrigated acres of Hawthorne Ditch are located within Sections 4, 8, 9, 11, 12, 13, 14, 18, and 24, Township 1 North, Range 8 East and Section 18, Township 1, North, Range 9 East, Black Hills Meridian, Pennington County, South Dakota. The engineering analysis is divided into three report sections (Historical Crop-Water Use, Historical Diversions, and Delivery System Losses) to comprehensively assess the volume and flow rate available for transfer to new diversion points. The historical irrigation requirements (i.e., demand) and diversions (i.e., supply) were compared on a monthly basis to determine whether supply or demand was the limiting amount. The delivery system losses were subtracted from diversions to determine the monthly acre-feet of water available for transfer.

1.1 HISTORICAL CROP-WATER USE

An assessment was conducted to determine the historical crop-water use and irrigation requirements of Hawthorne Ditch, as shown in Figure 1-1. An online irrigation scheduling consultant tool developed for individual landowners within the Belle Fourche Irrigation District (BFID) in western South Dakota tracks the daily water balance in a field and provides a recommendation of irrigation timing and depth. Because of the proximity of the BFID to Hawthorne Ditch, the methods used to develop the tool were deemed appropriate to assess historical crop-water use.

The analysis was run daily from April 15 to October 31, annually for the years 1970 to 2020. The inputs required to track a daily water balance are local weather and rainfall estimates, crop type, and soil water-holding capacity. Weather and rainfall data were collected from the Rapid City Regional Airport, which is located approximately 3 miles northeast of Hawthorne Ditch and was, therefore, deemed representative.

The weather data were input into the American Society of Civil Engineers (ASCE) Penman-Monteith (PM) equation (Equation 1-1) to calculate daily evapotranspiration (ET). This equation requires daily average values of dew point, maximum and minimum temperature, average wind speed, and solar radiation. All variables, except for solar radiation, were available from the Rapid City Regional Airport weather station. Solar radiation data were calculated based on the station's average daily cloud cover and an empirical curve of radiation as a function of the station's latitude [Hamon, 1954].¹ The output value from the ASCE PM equation were converted from millimeters per day (mm d⁻¹) to inches per day (in d⁻¹):

$$ET = \frac{0.408 \Delta (R_n - G) + \gamma \frac{C_n}{T + 273} u_2 (e_s - e_a)}{\Delta + \gamma (1 + C_d u_2)} \quad (1-1)$$

¹ Hamon, R. W., L. L. Weiss, and W. T. Wilson, 1954. "Insolation as an Empirical Function of Daily Sunshine Duration," *Monthly Weather Review*, Vol. 82, No. 6, pp. 141-146.

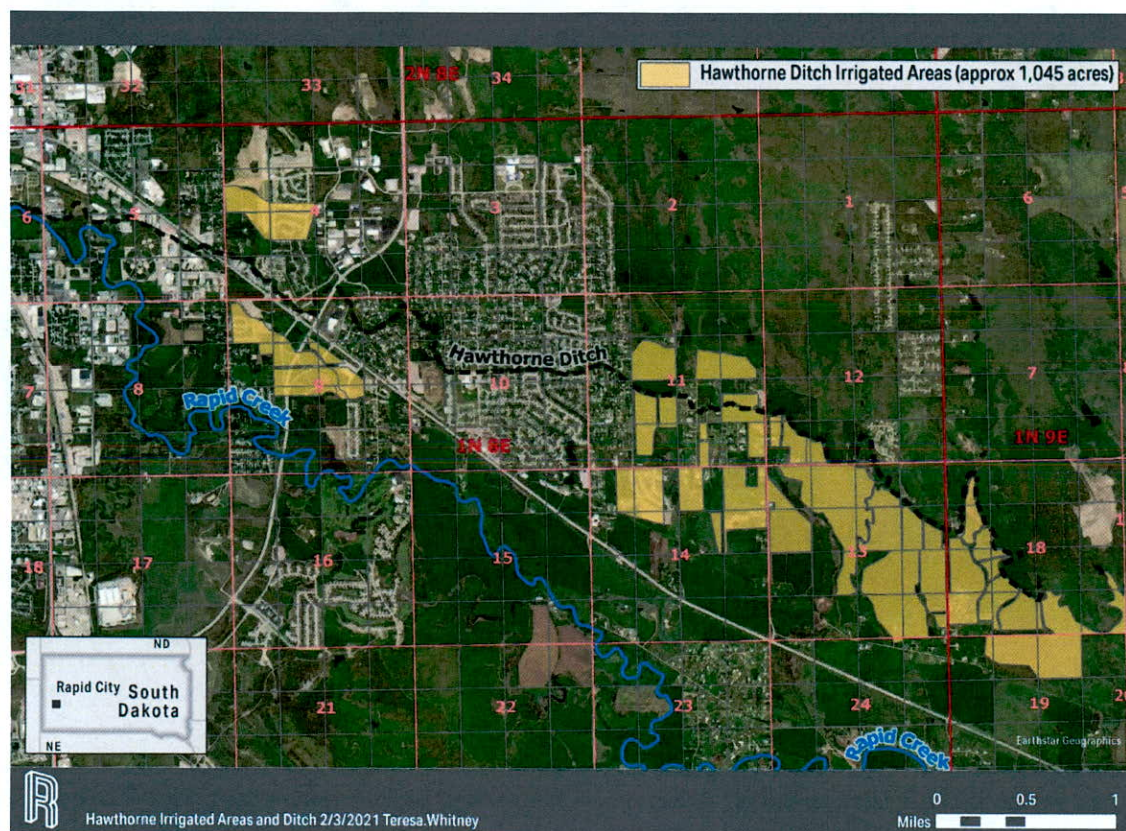


Figure 1-1. Estimated Location of the Hawthorne Ditch Irrigated Acres (Not Verified With Water Right Legal Description, Not Field Verified).

where:

ET = evapotranspiration (mm d^{-1})

Δ = slope of the saturation vapor pressure-temperature curve
(kilopascal [kPa] degrees Celsius $^{\circ}\text{C}^{-1}$)

R_n = calculated net radiation at the crop surface
(Mega Joule [MJ] meters per day $[\text{m}^{-2}\text{d}^{-1}]$)

G = soil heat flux density at the soil surface ($\text{MJ m}^{-2}\text{d}^{-1}$)

γ = psychrometric constant ($\text{kPa } ^{\circ}\text{C}^{-1}$)

C_n = numerator constant that changes with reference type and calculation
time step (Kelvin [K] millimeters per second $[\text{mm s}^{-1}]$ megagrams
per day $[\text{Mg}^{-1} \text{d}^{-1}]$), set as $1,600 \text{ K mm s}^{-1} \text{ Mg}^{-1} \text{d}^{-1}$

T = mean daily air temperature at 1.5- to 2.5-meter (m) height ($^{\circ}\text{C}$)

u_2 = mean daily wind speed at 2-m height (m s^{-1})

e_s = mean actual vapor pressure at 1.5- to 2.5-m height (kPa),
calculated using the maximum and minimum air temperature

e_a = mean actual vapor pressure at 1.5- to 2.5-m height (kPa),
calculated using the average dew point temperature

C_d = denominator constant that changes with reference type and calculation
time step (seconds per meter $[\text{s m}^{-1}]$), set as 0.38 s m^{-1} .

Note: Units for the 0.408 coefficient are $\text{m}^2 \text{ mm MJ}^{-1}$.

The Hawthorne Ditch Company shareholders indicated that the fields served by Hawthorne Ditch have been historically irrigated for alfalfa/grass hay. The ASCE PM equation estimates daily evapotranspiration and references a 0.5-meter-tall crop similar to full-cover alfalfa. The ASCE PM equation uses the weather parameters that are required to estimate the amount of water that would be lost from full-cover alfalfa on that day.

The reference ET (ET_r) estimate is multiplied by a crop coefficient (K_c) to adjust this value to any crop or crop stage other than full-cover alfalfa with a plant-available water coefficient (K_a) that adjusts for changes in soil moisture to calculate the actual ET estimate (ET_a) (Equation 1-2):

$$\text{ET}_a = \text{ET}_r \times K_c \times K_a \quad (1-2)$$

The values for K_c used in this analysis are shown in Figure 1-2. The start of the growing season is assumed to begin, on average, on April 15. For alfalfa, the plant is assumed to thrive when the first 5 days of average temperature exceed 41 degrees Fahrenheit ($^{\circ}\text{F}$), which usually occurs in April for the Hawthorne Ditch area. At this time, the K_c is estimated to be 0.5, or half of the water used for a full-cover alfalfa crop. After the start of the season, the value steadily increases until the crop is harvested and the K_c drops immediately to 0.3, and the cycle repeats itself. For this analysis, the alfalfa is assumed to be harvested, on average, on June 2, July 12, and August 21.

The ET_r estimate is also multiplied by a plant-available water coefficient (K_a) to determine the daily ET_a. The K_a value takes into account the current soil water balance. The form of the coefficient is depicted in Figure 1-3. In essence, the more saturated the soil profile the closer K_a gets to 1 and the more readily available the water is to be released.

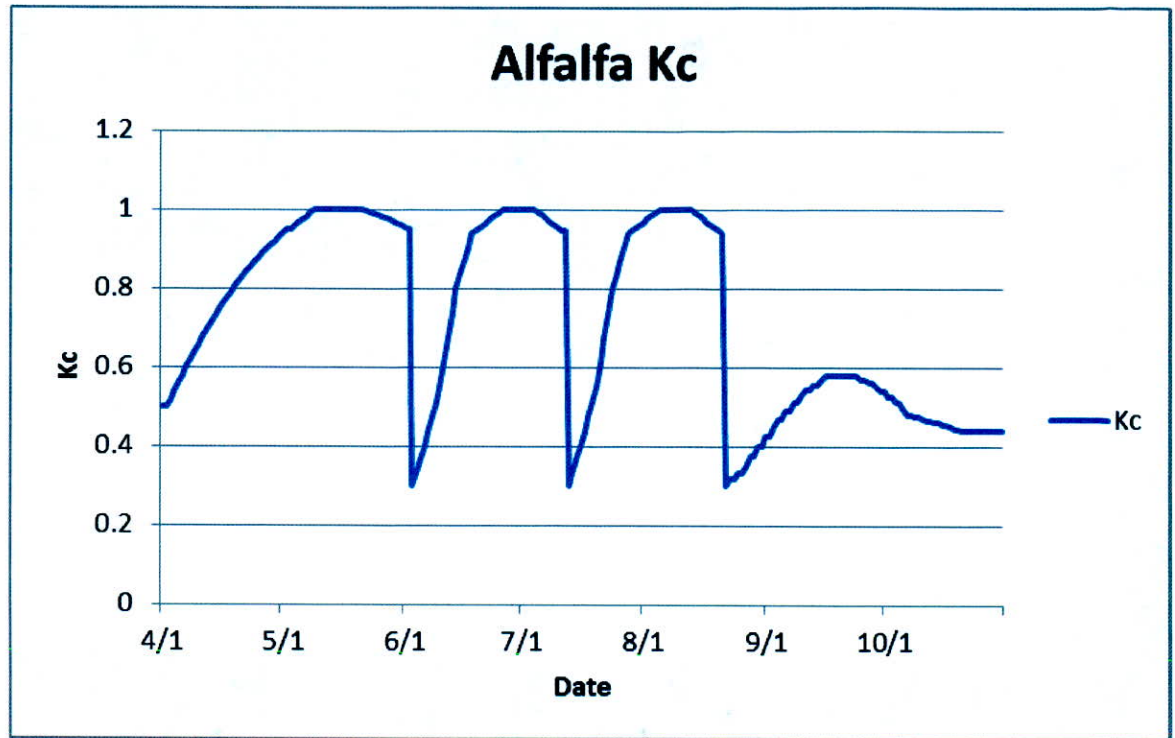


Figure 1-2. Crop Coefficient (Kc) Throughout the Growing Season for Alfalfa Representatively Growing in the Acres Irrigated by Hawthorne Ditch.

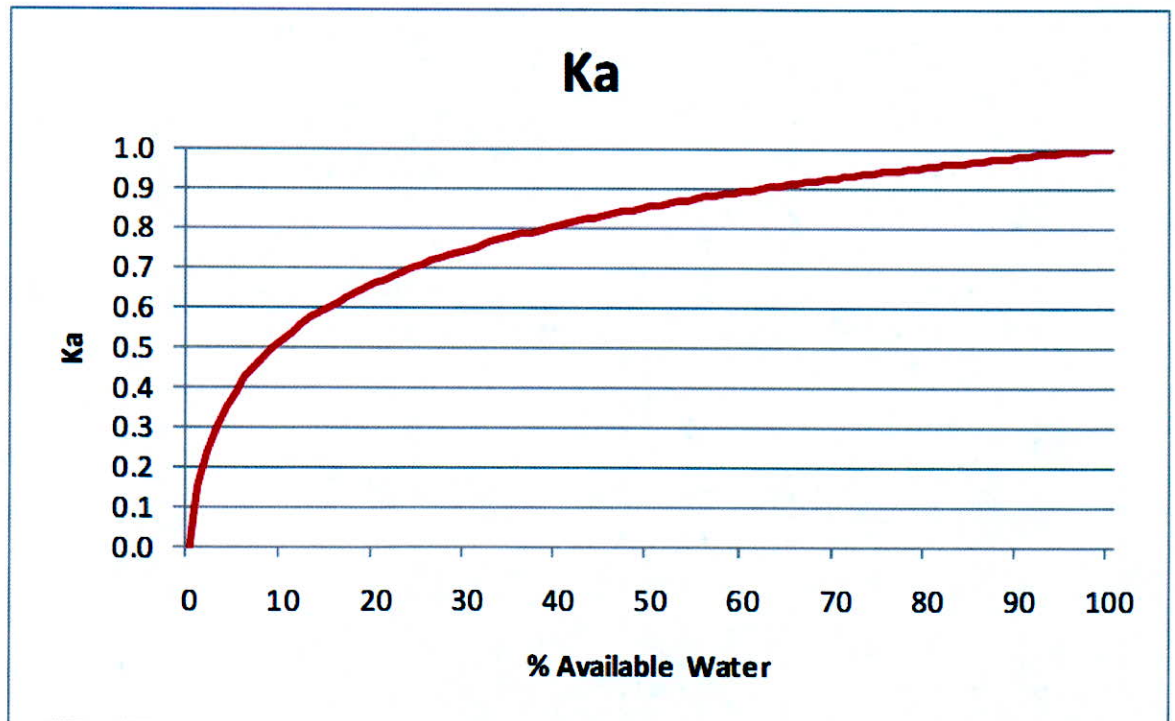


Figure 1-3. Plant-Available Coefficient (Ka) Response to Changes in the Percent of Available Water in the Soil Profile.

To assess the percent of available water in the soil, the soil water-holding capacity must be determined. A soils analysis for the estimated irrigated acres of Hawthorne Ditch was completed during the analysis. An aerial view of the estimated Hawthorne Ditch irrigated acres with soils overlaid is provided in Figure 1-4. The 986 acres being assessed consist of soils displayed in Figure 1-4.

The overall water-holding capacity of Hawthorne Ditch was determined by calculating an area-weighted value of the estimated irrigated acres shown in Figures 1-1 and 1-4. The area-weighted value was found by estimating the water-holding capacity in inches per foot (in/ft) of the top 4 feet (ft) for each soil type. The top 4 ft are considered the effective rooting depth for an established alfalfa crop, and the water-holding capacity based on the soils displayed in Figure 1-4 was used.

The estimated water-holding capacity of the individual soil types are then multiplied by the percentage of area that the soil types cover in Hawthorne Ditch to determine an area-weighted, water-holding capacity. The calculated area-weighted, water-holding capacity for Hawthorne Ditch is represented in Table 1-1. The daily water balance was found by adding the daily rainfall and simulated irrigation amounts and then subtracting the ETa calculated from Equation 1-3. Irrigation events were simulated and assumed to occur when the calculated balance reached 50 percent of the water-holding capacity (often referred to as field capacity). Irrigation amounts fully replenished any soil water deficit at the time.

$$\text{Available Water} = \text{Previous Day Available Water} - \text{ETa} + \text{Rainfall} + \text{Irrigation} \quad (1-3)$$

A graphical representation of the estimated water balance from 1970 using the described methods is provided in Figure 1-5. During the 1970 irrigation season (April 15 to October 31), the field received 11.4 inches of rainfall and 40.2 inches of ETa deficit, which induced 27.2 inches of irrigation. The graphs from 1970 to 2020 are displayed in Appendix A. The total yearly values for reference, rainfall, irrigation, ETr, and ETa throughout the analysis period are displayed in Figure 1-6. On average, 56.8 inches of ETr, 39.9 inches of ETa, 13.5 inches of rainfall, and 23.6 inches of irrigation were simulated. The greatest irrigation amount simulated, 38.8 inches, occurred in 1988 in response to receiving only 8.6 inches of rain and incurring 50.6 inches of ETa.

According to the Hawthorne Ditch Company shareholders, Hawthorne Ditch has been surface irrigated throughout the ditch's existence. Irrigation efficiency was assumed to be 50 percent. The water available for transfer from Hawthorne Ditch, based on analyzing the historical crop-water use, is shown in Table 1-2. According to this analysis, the crop demands an average of 3,983.3 acre-feet during the irrigation season (from 1970 to 2020) that varies from 2.6 cubic feet per second (cfs) in April to 14.75 cfs and 14.76 cfs in July and August, respectively.

1.2 HISTORICAL DIVERSIONS

Hawthorne Ditch has one diversion point off Rapid Creek that is located in the SE ¼, NW ¼ of Section 6, Township 1 North, Range 8 East.

Diversion records were collected by the water master for Rapid Creek on a monthly basis for the years of 1946 to 1953, 1970 to 1971, 1973 to 1979, 1980 to 1982, and 1984 to 1985. These historical diversion records were recorded in the U.S. Bureau of Reclamation (USBR) Rapid Valley Project history and the South Dakota Department of Environment and Natural Resources (SDDENR) database for Water Right License No. 2039-2.

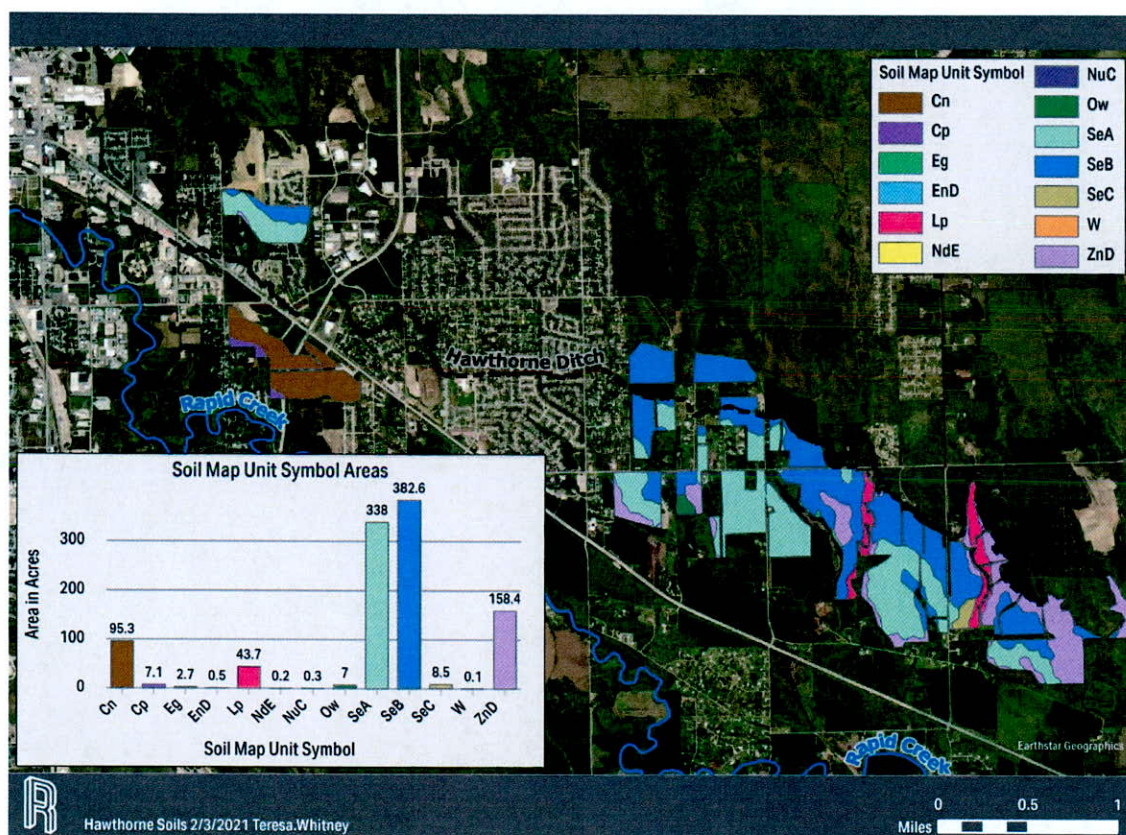


Figure 1-4. Estimated Hawthorne Ditch Irrigated Acres With Soils Overlaid (Not Verified With Water Right Legal Description, Not Field Verified).

Table 1-1. Calculated, Weighted Water-Holding Capacity for the Irrigated Acres of Hawthorne Ditch

Depth (ft)	Water-Holding Capacity (in/ft)
1	2.28
2	2.08
3	1.99
4	1.83
Total	8.18

The diversion data for 1946 to 1953 were divided by 2 because the estimated acreage irrigated from Hawthorne Ditch was 2,000 acres. The remaining diversion data were not adjusted because the acreage irrigated was close to 1,000 acres.

The diversion data for the period of record shown above were then decreased by the estimated delivery losses to determine the historical monthly delivery amount to the field (Equation 1-4). Water Right License No. 2039-2 identifies that Hawthorne Ditch was serving 1,042 acres when the vested water right was signed by Chief Engineer Mr. John Hatch in 1988. Table 1-3 shows the amount of water available for transfer using this analysis method with the Hawthorne Ditch Company's diversion data.

Historical Monthly Delivery Amount =

$$\text{Monthly Historical Diversion} \times \frac{986}{1,042} - \text{Delivery Losses (9.8 percent)} \quad (1-4)$$

The first term (Monthly Historical Diversion) of Equation 1-4 is presented in Table 1-3, Row A. The Monthly Historical Diversion is adjusted by the ratio of currently irrigated acres to historically irrigated acres (second term of Equation 1-4) to produce the results in Table 1-3, Row B. Table 1-3, Row C accounts for delivery losses and removes these losses (third term of Equation 1-4) from the adjusted monthly historical diversions presented in Table 1-3.

1.3 DELIVERY SYSTEM LOSSES

Delivery system losses were estimated in a 1989 USBR study as 9.8 percent. This number has been consistently referenced in previous transfers from Rapid Creek in Rapid Valley. Historical diversions were reduced by 9.8 percent for all months within the irrigation season when determining the amount available for transfer based on the historical diversion records (Table 1-3).

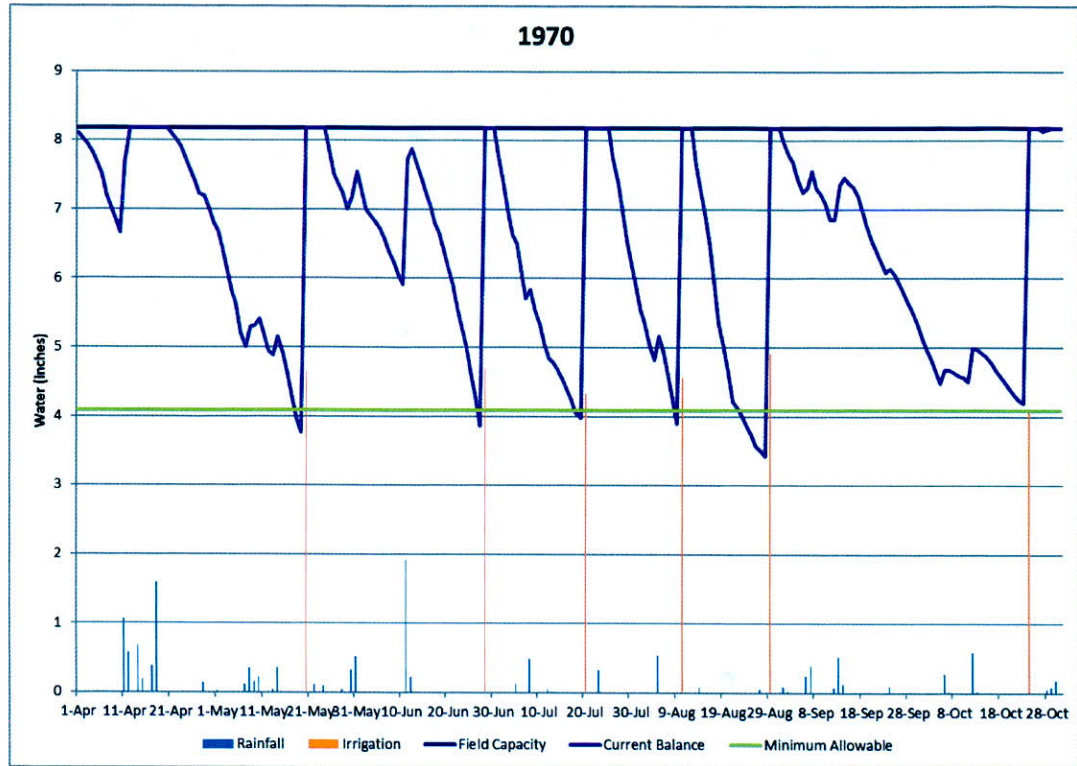


Figure 1-5. Water-Balance Tracking for the 1970 Irrigation Season.

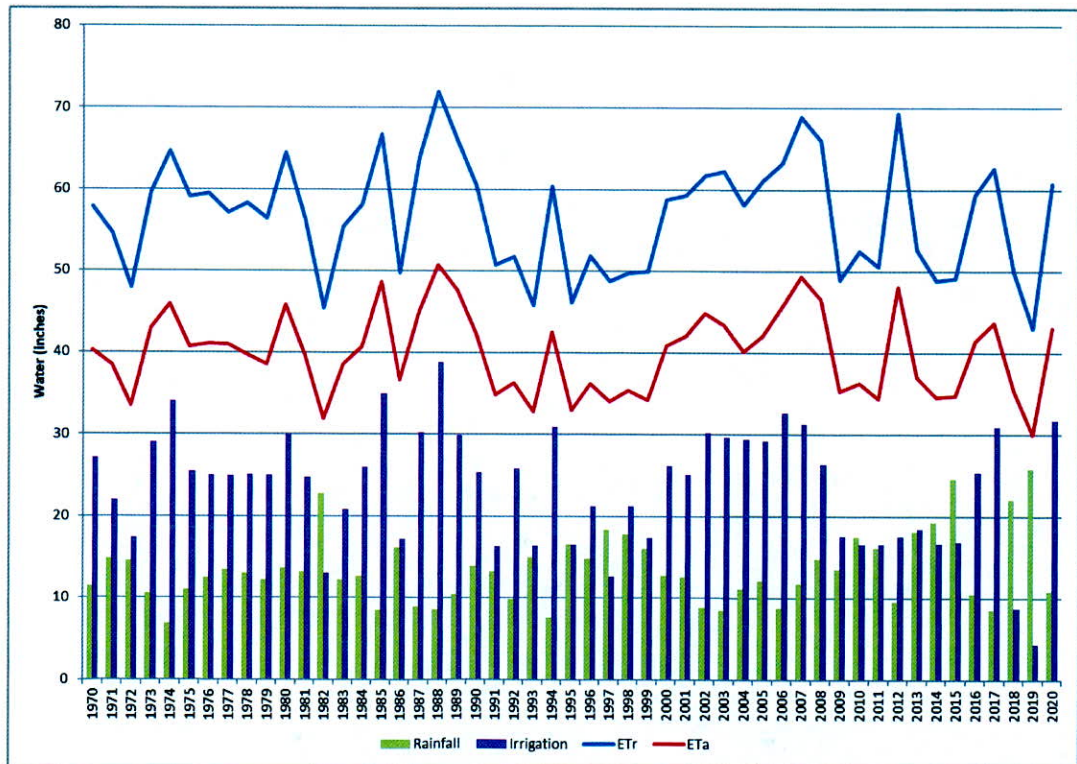


Figure 1-6. Total Values of Rainfall, Irrigation, Reference Evapotranspiration, and Actual Evapotranspiration During the Analysis Period of 1970 to 2020.

Table 1-2. Amount of Irrigation Demand Based on Historical Crop-Water Use Analysis

Description	April	May	June	July	August	September	October	Total
Crop Demand (inches)	0.5	4.4	3.6	5.5	5.5	2.5	2.0	24.0
Crop Demand at 50 Percent Application Efficiency (inches)	0.9	8.9	7.2	11.0	11.0	4.9	3.9	47.9
Acre-Feet/Acre Crop Demand	0.08	0.74	0.60	0.92	0.92	0.41	0.33	—
Number of Acres	986	986	986	986	986	986	986	—
Acre-Feet of Crop Demand	77.3	727.9	595.5	906.7	907.3	402.8	320.8	3,938.3
Days of Delivery	15	31	30	31	31	30	31	199
Equivalent (cfs)	2.60	11.84	10.01	14.75	14.76	6.77	5.22	—

Table 1-3. Historical Diversions Available for Transfer From Hawthorne Ditch Based on Historical Diversion Records

Row	Description	April	May	June	July	August	September	October	Total
A ^(a)	Historical Diversions to Ditch (acre-feet)	19	331	377	581	509	389	64	2,270.0
B ^(b)	Adjusted Historical Diversions to Ditch (acre-feet)	17.98	313.21	356.74	549.78	481.64	368.09	60.56	2,148.0
C ^(c)	Historical Diversions Minus Ditch Loss (acre-feet)	16.22	282.52	321.78	495.90	434.44	332.02	54.63	1,937.5

(a) Historical diversion as outlined in Section 1.2; calculated for 1,042 acres

(b) Historical diversions reduced by 5.37 percent to account for previously transferred acres (986 acres divided by 1,042 acres equals 0.9463)

(c) Calculated by subtracting delivery losses (9.8 percent) from the adjusted historical diversions.

2.0 WATER RIGHTS AVAILABLE FOR TRANSFER

An engineering analysis was completed to determine the water rights available for transfer from Hawthorne Ditch located within Sections 4, 8, 9, 11, 12, 13, 14, 18, and 24, Township 1 North, Range 8 East, and Section 18, Township 1, North, Range 9 East, Black Hills Meridian, Pennington County, South Dakota. To complete this analysis, the historical crop-water use for the 986-acres and historical diversion records for Hawthorne Ditch were assessed. Table 2-1 provides a monthly summary of the findings in acre-feet, minus the 9.8 percent delivery losses and presents the irrigation rights available for transfer in acre-feet and cfs. The irrigation rights to be transferred were found by taking the lesser of the two analyses (i.e., crop-water use or diversions).

2.1 HAWTHORNE DITCH WATER USE

As shown in Table 2-1, the historical diversions control the computation of the water volumes that can be transferred monthly during the irrigation season. Historical diversions are the least volume of water for each month and meet the state law requirement that a transfer can only be made if the transfer causes no detriment to existing water rights.

The analysis was completed using historical diversion data prior to the transfer of Water Right License No. 2317-2, City of Rapid City (Morris property, 46 acres) and 2537-2 (David Snyder, 10 acres). Adding these acres to the 986 acres under Water Right License No. 2039-2 gives 1,042 acres. Table 2-1, Row A shows the historical diversions based on 1,042 acres. These historical diversions are then adjusted to reflect diversions for 986 acres (Table 2-1, Row B). Delivery losses are applied to the adjusted historical diversions (Table 2-1, Row C) resulting in a yearly irrigation season total of 1,937.5 acre-feet.

2.2 GOVERNING STATUTES

Any transfer of water rights from Hawthorne Ditch Company is subject to the South Dakota statutory requirements as described in South Dakota Codified Law (SDCL) Statutes 46-2A-12, 46-30.4, and 46-5-34.1. Statutes 46-2A-12 and 46-5-30.4 are used for pre-1907 water rights, and Statute 46-5-34.1 is used for water rights after 1907. These three statutes prohibit the impairment of existing water rights by a water rights transfer and are as follows:

46-2A-12. Amendment of permit or license—When granted.

An amendment of an existing permit or license may be granted for a change in use, a change in point of diversion or other change only if the change does not unlawfully impair existing rights and is for a beneficial use and in the public interest. Source: SL 1983, ch 316, § 21.

46-5-30.4. Amendment of permits or rights.

Subject to the limitations in §§ 46-5-33 and 46-5-34 governing changes in irrigation rights from one parcel of land to another, any water permit or right holder may apply for a change of use of the water, a change of location of the use or other amendment to the permit or right. Permits or rights may be amended pursuant to the procedure contained in chapter 46-2A. Priority shall be retained upon

amendment. An amendment of a water permit or right may not increase the rate of diversion or increase the volume of water to be appropriated under the original water permit or right. The amendment may not impair existing rights. Source: SL 1983, ch 314, § 67.

46-5-34.1. Transfer of irrigation rights apart from land--Restricted purposes--Protection of other users. *The provisions of §§ 46-5-33 and 46-5-34 notwithstanding, irrigation rights may be transferred apart from the land to which they are appurtenant if they are transferred for domestic use or use within a water distribution system. Such irrigation rights may be transferred or leased in whole or in part and may be acquired only through the exercise of powers possessed independently of this section. No transfer, however, may be approved by the Water Management Board unless the transfer can be made without detriment to existing rights having a priority date before July 1, 1978, or to individual domestic users. No land which has had an irrigation right transferred from it pursuant to this section, may qualify for another irrigation right from any water source. Source: SL 1978, ch 320; SL 1983, ch 314, § 65; SL 1989, ch 383; SL 1992, ch 314; SL 1994, ch 345.*

2.3 TRANSFERRABLE WATER

For Hawthorne Ditch, historical irrigation practices have returned 50 percent of the applied irrigation water to Rapid Creek based on the gravity-flow irrigation efficiency on Hawthorne Ditch of an estimated 50 percent. Thus, the consumed water volume is only 50 percent of the values presented in Table 2-1, Row E and the result is tabulated in Table 2-1, Row F. This water volume equates to the adjusted historical diversions minus ditch loss then minus return flows. The total volume available for transfer and consumptive use is 968.75 acre-feet.

The total annual water volume available for transfer may be increased to a maximum of 1,937.5 acre-feet if the transferring entity can demonstrate that any volume exceeding 968.75 acre-feet will not be consumed but instead will be returned to Rapid Creek in the vicinity of the existing Hawthorne Ditch to continue to be available to other existing water rights. Any potential purchaser of the Hawthorne Ditch water right will only be afforded one half of the 1,937.5 acre-feet (968.75 acre-feet consumptive use) to meet the state law requirements unless the purchaser can demonstrate the flows attributed to the historical irrigation application inefficiency are returned to Rapid Creek in a similar location to Hawthorne Ditch.

In the event of a water rights transfer and use or point of diversion changes, the South Dakota Water Management Board is charged with making the final determination on the quantity of water associated with the water right.

Table 2-1. Irrigation Amounts Available for Transfer From Hawthorne Ditch

Row	Description	April	May	June	July	August	September	October	Total
A ^(a)	Historical Diversions to Ditch (acre-feet)	19	331	377	581	509	389	64	2270.0
B ^(b)	Adjusted Historical Diversions to Ditch (acre-feet)	17.98	313.21	356.74	549.78	481.64	368.09	60.56	2,148.0
C ^(c)	Adjusted Historical Diversions Minus Ditch Loss (acre-feet)	16.22	282.52	321.78	495.90	434.44	332.02	54.63	1,937.5
D ^(d)	Crop Demand Minus Delivery Loss (acre-feet)	77.26	727.90	595.53	906.69	907.25	402.84	320.81	3,938.3
E ^(e)	Irrigation Right to Be Transferred From Hawthorne Ditch (acre-feet)	16.22	282.52	321.78	495.90	434.44	332.02	54.63	1,937.5
F ^(f)	Adjusted Irrigation Right to Be Transferred From Hawthorne Ditch (Return Flows Subtracted per Statute Requirement) (acre-feet)	8.11	141.26	160.89	247.95	217.22	166.01	27.32	968.75

(a) Historical diversions as outlined in Section 1.2; calculated for 1,042 acres.

(b) Historical diversions reduced by 5.37 percent to account for previously transferred acres (986 acres divided by 1,042 acres equals 0.9463).

(c) Calculated by subtracting delivery losses (9.8 percent) from the adjusted historical diversions.

(d) Calculated using an online irrigation scheduling tool outlined in Section 1.1.

(e) The lesser of Rows C and D are used.

(f) Row E minus the required return flows to Rapid Creek based on gravity-flow type irrigation efficiency of 50 percent for Hawthorne Ditch. This requirement meets the state statutes to protect existing water rights downstream from Hawthorne Ditch.

APPENDIX B

HAWTHORNE DITCH IRRIGATED ACRES, INFORMATION PROVIDED
BY ARROWHEAD, AND ARROWHEAD DIVERSION LOCATION



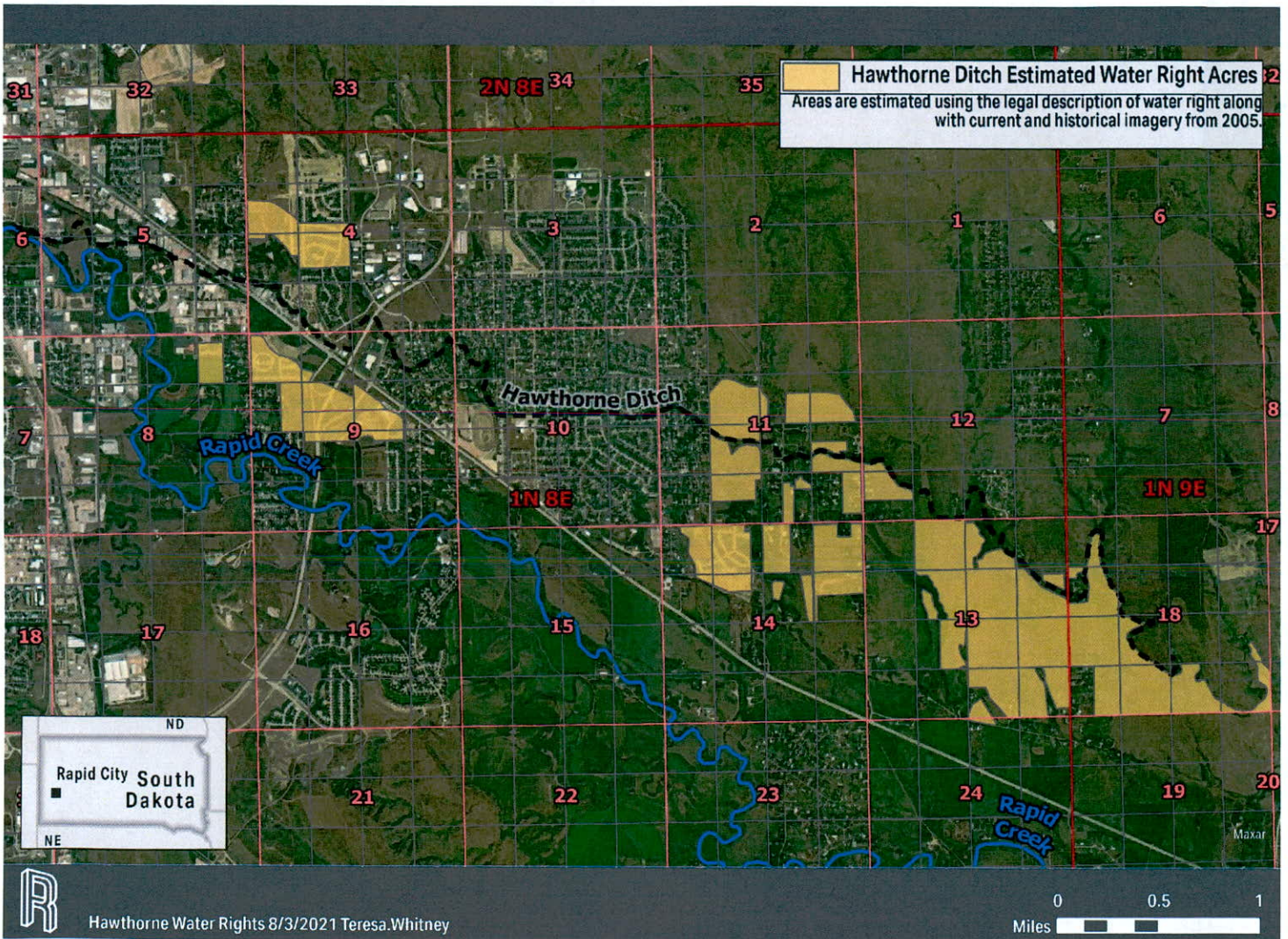


Exhibit 1--Water Rights Transfer from Hawthorne Ditch

A portion of water rights held by Hawthorne Ditch Company under water right 2039-2 will be transferred to Arrowhead, a non-profit corporation in South Dakota. Arrowhead owns 7 of 50 shares of the Hawthorne Ditch Company. These 7 shares were formerly owned by B.H. Capital, LLC. This action transfers the attendant water rights based on the acreage historically irrigated by Charles Johnson and later B.H. Capital to Arrowhead. Arrowhead is a golf course and recreation center in Rapid City established in 1954. Further details on the transfer are provided as follows:

1. Arrowhead, formerly Arrowhead Country Club, has irrigated 167 acres with water from Rapid Creek since 1960 under permit #611-2, which is a right to use storage from Pactola Reservoir. The construction of water works was completed and certified in 1970. The amount of water used, and the operation of water works has proceeded without adverse effect to Rapid Creek or prior water rights holders for the last 60+ years.
2. To secure an assured water supply, Arrowhead plans to acquire a natural flow right to Rapid Creek—a portion of #2039-2 from Hawthorne Ditch and change the point of diversion upstream to Arrowhead's existing pumphouse and water works. (See Map 1, Map 2 and Photo 1 attached). The transfer includes two water rights within vested water right #2039-2 to Arrowhead. There are 3.22 cubic feet per second (cfs) of the oldest rights (July 12, 1886) on the Ditch of which 2.49 (cfs) will be transferred to Arrowhead. In addition, 0.3 cfs within #2039-2 with a priority date of July 2, 1973. This right was originally established under water right #1152-2. The beneficial use of the water remains irrigation. Title to the land remains unchanged. The total of the two rights (1886 and 1973) is 2.79 cfs. The remainder of the shares and water rights on Hawthorne Ditch will be transferred to the City of Rapid City.
3. The transfer will irrigate the same acreage on the golf course as in the 1960s. No new acreage will be added or brought under irrigation by this transfer.
4. As proposed, this newly acquired right to natural flows of Rapid Creek (2.79 cfs) will be used in most years and most months of the irrigation season but augmented by storage from Pactola under #611-2 when natural flows are unavailable. Water withdrawn from Rapid Creek under these natural flow rights will be used in lieu of water from Pactola storage. This transfer will not result in a change in Rapid Creek flows as no additional water will be withdrawn from the Creek during the irrigation season than under present conditions.
5. In the reach of Rapid Creek between Arrowhead's point of diversion and the Hawthorne Ditch Diversion, the City of Rapid City is the sole holder of water rights, some of which by transfer from downstream users, have older priority dates than July 12, 1886. The City has flexibility to choose which point of diversion to use these transferred rights among its various

water works including placing the water in storage in Pactola. Therefore, not all the optional points of diversion are in the Arrowhead to Hawthorne reach.

6. Under South Dakota Statute 46-2A-12, the change in the point of diversion must not unlawfully impair existing water rights. The proposed amendment to 2039-2 will satisfy the statute because:

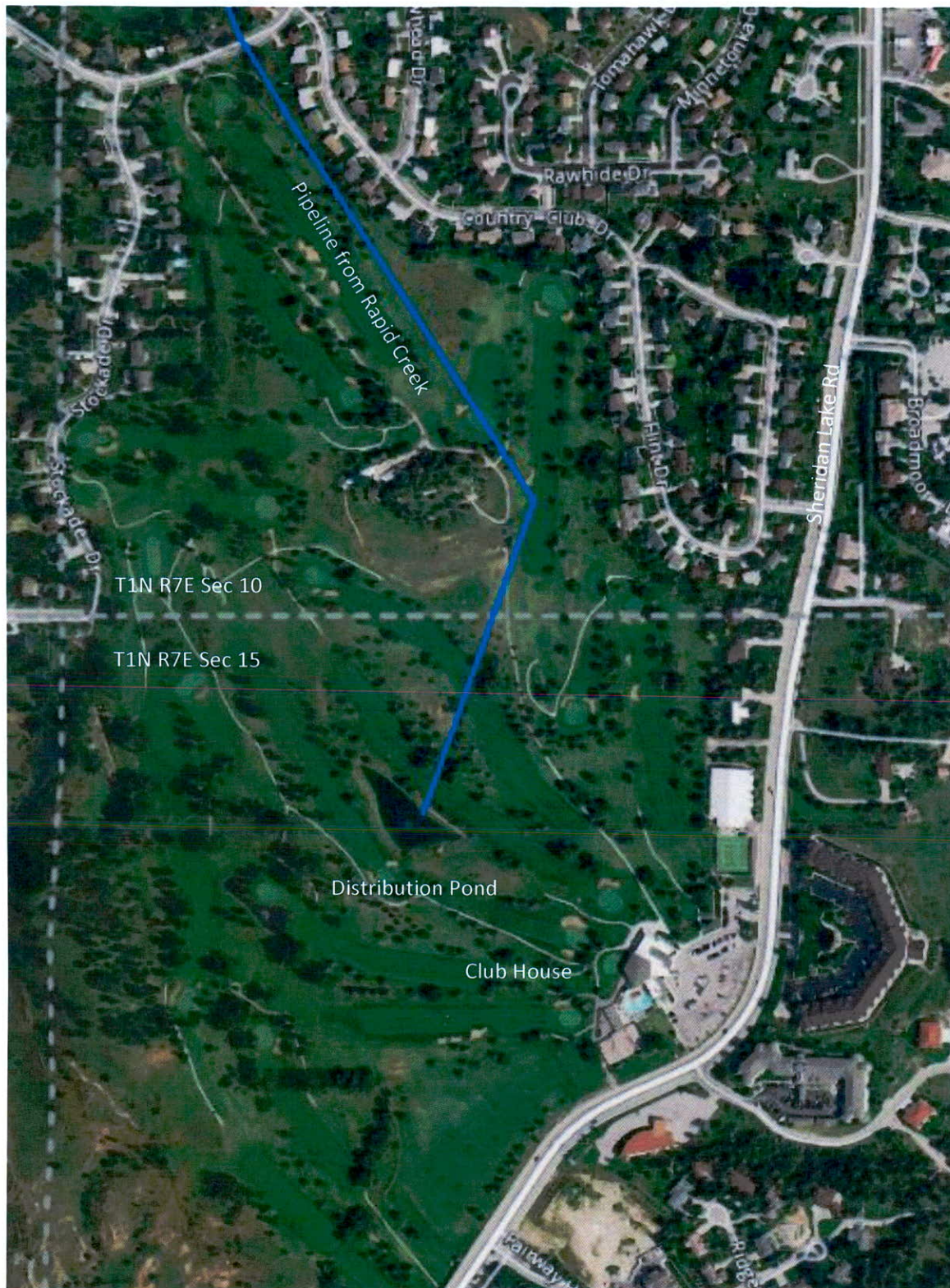
- a. A report written by Peter Rausch of RESPEC entitled "Hawthorne Ditch Company Water Volume for Water Rights Transfer" RSI-4001 dated March 2021, addresses this statute. The report takes the approach by using the least amount of historical diversions thus reducing the allowable amount of water available for transfer to a minimum.

- b. An extensive history and precedent is set for water right transfers from downstream right holders to upstream points of diversion in West Rapid City. The City has acquired and transferred many rights upstream without adverse effect to downstream right holders.

- c. Further precedent has been set by two water rights transferred from Hawthorne Ditch under water right 2039-2. The Morris property (2317-2) acquired by the City of Rapid City and the Synder (2537-2) transfer acquired by Rapid Valley Water Company without infringement of older downstream rights.

7. The precedent is set and under SD law, Arrowhead proposes to acquire by consent of Hawthorne Ditch Company water to the new diversion point. In this amendment, Arrowhead bases the amount to be transferred on the Report prepared by Peter Rausch of RESPEC entitled "Hawthorne Ditch Company Water Volume for Water Rights Transfer", RSI-4001 dated March 2021. Available for transfer is 1937.5 acre-feet/year after reduction for estimated actual acreage irrigated, ditch losses and consumptive use.

8. The volume of water determined by Mr. Rausch's analysis for transfer out of Hawthorne Ditch equals 3.22 cfs (also from water right 2039.2 documentation) or 261.3 acre-ft of the rights of the 1886 priority date. Based on acreage irrigated, the land irrigated by B. H. Capital LLC (formerly Charles Johnson), the portion to transfer to Arrowhead is 2.49 cfs and 202.4 ac-ft per year. In addition, the 1973 right includes 0.3 cfs and 29.5 ac-ft. For a total of 2.79 cfs and 231.9 ac-ft. Without the benefit of a return flow credit, the amount of water Arrowhead can apply to the course would be 50% of this total or 116.0 ac-ft/year.



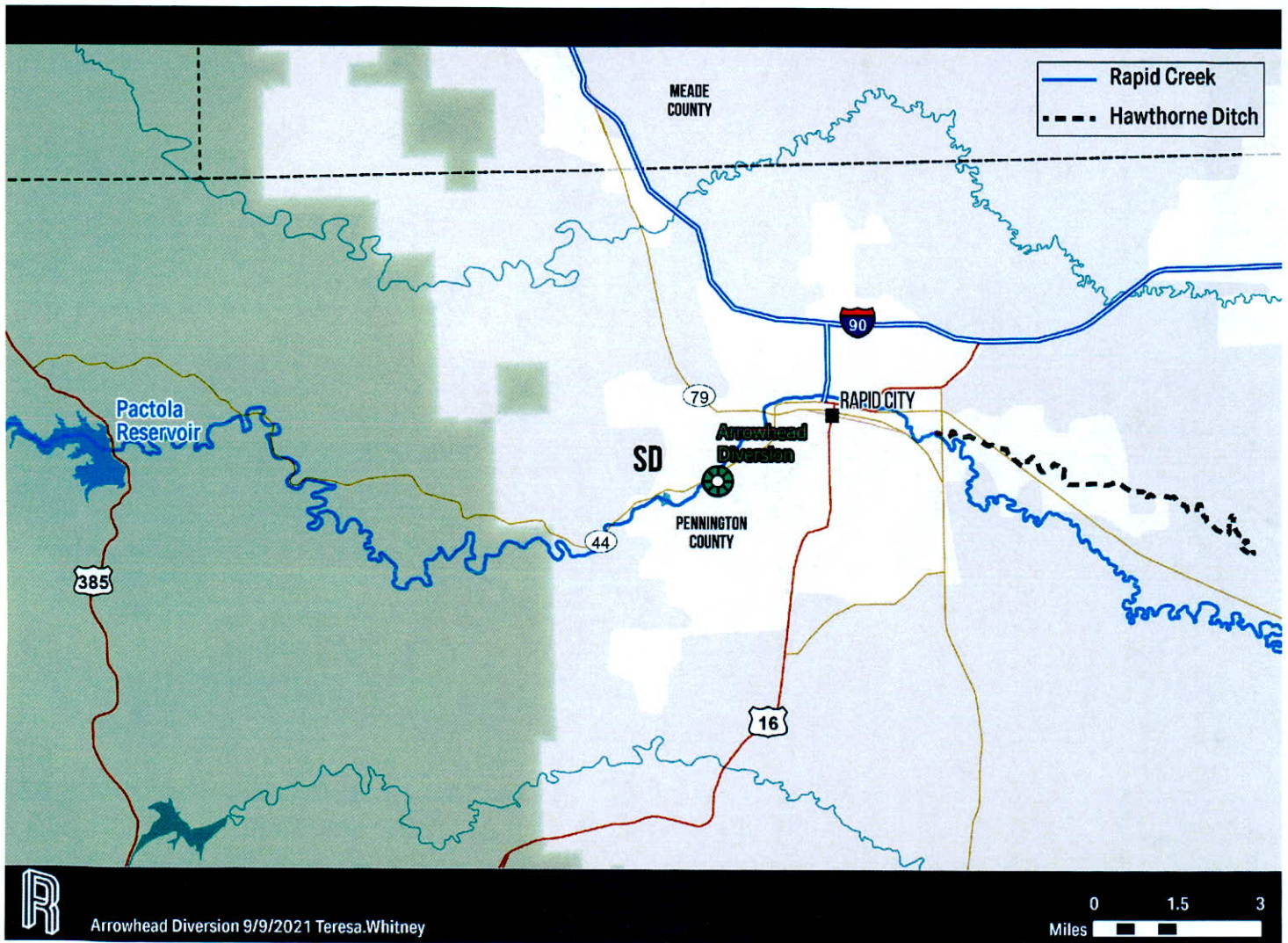
Map 1--Map of Arrowhead Golf Course where 167 acres is under seasonal irrigation. Water is pumped from Rapid Creek via a pipeline about 5000 feet in length into a distribution pond from which the turf is irrigated. Pipeline alignment is approximate. [Drawing Scale ~1" = 500 feet.]



Map 2—Location of Arrowhead Point of Diversion on Rapid Creek.



Photo 1--Image of Arrowhead's subterranean pump house adjacent to Rapid Creek with Meadowbrook School in the background.



APPENDIX C

VESTED WATER RIGHT LICENSE NO. 2039-2
MORRIS TRANSFER, SNYDER TRANSFER

C-1

RSI-3163



STATE OF SOUTH DAKOTA

VESTED RIGHT WATER LICENSE NO. 2039-2 FOR IRRIGATION

(1) Hawthorne Ditch & Charles Johnson, President of 1500 E 27th Street, Rapid City, South Dakota made Application No. 2039-2, October 19, 1987, for validation of a vested right claim to appropriate 16.95 cubic feet of water per second from Rapid Creek, Pennington County, South Dakota for irrigation purposes. Vested Water Right No. 2039-2 was validated March 3, 1988, with a priority date of (4.24 cfs) July 12, 1886 and (12.71 cfs) July 8, 1890. Construction of the described water supply system and application of water to beneficial use has been completed and complies with applicable provisions of South Dakota State Law.

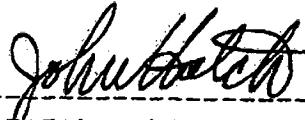
(2) The applicant is entitled to divert 21.00* cubic feet of water per second (cfs) for beneficial use. The location of the diversion point is:

2490 feet S12°W from the NE 1/4 Section 6, T1N, R8E
(SE 1/4 NE 1/4)

*The priority dates as they pertain to the 21.00 cfs diversion rate are as follows:

- 1) 4.24 cfs - July 12, 1886 (established under No. 2039-2)
- 2) 12.71 cfs - July 8, 1890 (established under No. 2039-2)
- 3) 0.55 cfs - May 21, 1896 (established under Water Right Nos. 1153-2 and 1190-2)
- 4) 2.70 cfs - October 1, 1907 (established under Water Right No. 35-2)
- 5) 0.30 cfs - July 2, 1973 (established under Water Right No. 1152-2)
- 6) 0.50 cfs - July 12, 1973 (established under Water Right No. 1153-2)

(3) Pursuant to Section 46-5-30.1 Hawthorne Ditch & Charles Johnson, President of 1500 E 27th Street, Rapid City, SD 57701 the holder(s) and/or owner(s) of Vested Water Right No. 2039-2 is issued a license to appropriate 21.00 cubic feet of water per second from Rapid Creek with priority dates of July 12, 1886, July 8, 1890, May 21, 1896, October 1, 1907, July 2, 1973 and July 12, 1973 from the location specified in (2) of this license. The water is to be used for the purpose of irrigation. This license is subject to any limitations, conditions or qualifications listed in Vested Water Right No. 2039-2 and subject to South Dakota State Law.



JOHN HATCH, Chief Engineer
Water Rights Division
Department of Water and Natural
Resources
DEC 1 1988

The location of the irrigated acreage is: all in T1N, R8E

Section 4

NE 1/4 SW 1/4 28 acres
NW 1/4 SW 1/4 7 "
SW 1/4 NW 1/4 23 "
SE 1/4 NW 1/4 8 "

Section 8

NE 1/4 NE 1/4 17 acres

Section 9

SW 1/4 NW 1/4 17 acres
NW 1/4 NW 1/4 26 "
NE 1/4 NW 1/4 2 "
SE 1/4 NW 1/4 37 "
SW 1/4 NE 1/4 24 "
NW 1/4 SE 1/4 7 "
NE 1/4 SW 1/4 8 "

Section 11

SE 1/4 SE 1/4 13 acres
SW 1/4 SE 1/4 10 "
NE 1/4 SE 1/4 17 "
SE 1/4 SW 1/4 20 "
NE 1/4 SW 1/4 30 "
SW 1/4 NE 1/4 16 "
SE 1/4 NE 1/4 19 "
SE 1/4 NW 1/4 33 "

Section 12

NW 1/4 SW 1/4 2 acres
SW 1/4 SW 1/4 17 "

Section 13

NE 1/4 SE 1/4 40 acres
SE 1/4 SE 1/4 34 "
SW 1/4 SE 1/4 32 "
NW 1/4 SE 1/4 40 "
SE 1/4 NE 1/4 31 "
NW 1/4 NE 1/4 19 "
SW 1/4 NE 1/4 40 "
NE 1/4 SW 1/4 19 "
SE 1/4 NW 1/4 29 "
NE 1/4 NW 1/4 40 "

Section 14

NE 1/4 NE 1/4 35 acres
NW 1/4 NE 1/4 22 "
SW 1/4 NE 1/4 9 "
SE 1/4 NE 1/4 20 "
NE 1/4 NW 1/4 30 "
NW 1/4 NW 1/4 18 "
SE 1/4 NW 1/4 10 "
SW 1/4 NW 1/4 2 "

Section 18

SW 1/4 SW 1/4 21 acres
NW 1/4 SW 1/4 40 "
SW 1/4 NW 1/4 27 "
NW 1/4 NW 1/4 6 "
SE 1/4 NW 1/4 1 "
SE 1/4 SW 1/4 39 "
NE 1/4 SW 1/4 14 "
SW 1/4 SE 1/4 29 "
NE 1/4 SE 1/4 2 "
SE 1/4 SE 1/4 10 "

Section 24

NW 1/4 NE 1/4 2 acres

TOTAL ACRES IRRIGATED: 1042

A description of the priority dates as they pertain to the lands irrigated is described in Attachments 1, 2 and 3.

PERMITS TRANSFERRING WATER AND ACREAGE

WATER RIGHT NO. 2039-2, HAWTHORNE DITCH

SEVERAL PRIORITY DATES LICENSED FOR: 21 CFS 1,042 AC

REDUCED BY:	REMAINING:	PERMIT APPROVED
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July 12, 1886

4.24 CFS 189 AC

2317-2 CITY OF RAPID CITY (MORRIS PROPERTY)	0.84 CFS	46 ACRES	3.40 CFS	143 AC	5-1-96
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2537-2 David Snyder	0.18 cfs	10 acres	3.22 cfs	133 ac	7-6-05
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APPENDIX D

**REPORT ON HAWTHORNE DITCH, RAPID VALLEY
VALIDATION OF VESTED WATER RIGHT LICENSE NO. 2039-2**



REPORT ON HAWTHORNE DITCH, RAPID VALLEY
February 7, 1989

During the Summer of 1988, the Division of Water Rights received several complaints regarding problems alleged to be due to seepage from Hawthorne Ditch in Rapid Valley. This report contains the results of an ongoing investigation regarding seepage from Hawthorne Ditch. The report contains an explanation of Hawthorne Ditch's Vested Water Rights, historic water usage by the ditch, an explanation of seepage problems that occurred during the Summer of 1988, area geology and hydrology, data on flow losses and ditch slope, and descriptions of observation wells installed to monitor ground water levels.

VESTED WATER RIGHT NO. 2039-2

Hawthorne Ditch Company has Vested Water Right No. 2039-2 which authorizes a total diversion of 21.0 cubic feet of water per second (cfs) from Rapid Creek to irrigate 1042 acres. The following is a breakdown of Vested Water Right License No. 2039-2 showing the appropriate priority dates and acreage which correspond to a particular diversion rate:

<u>AMOUNT (CFS)</u>	<u>PRIORITY DATE</u>	<u>ACREAGE</u>
4.24	July 12, 1886	189
12.71	July 8, 1890	576
(established under Vested Water Right No. 2039-2)		
0.55	May 21, 1896	38
(established under Water Right Nos. 1153-2 and 1190-2)		
2.70	October 1, 1907	189
(established under Water Right No. 35-2)		
0.30	July 2, 1973	15
(established under Water Right No. 1152-2)		
0.50	July 12, 1973	35
(established under Water Right No. 1153-2)		

The applicable portions of Water Right Nos. 35-2, 1152-2, 1153-3, and 1190-2 were incorporated into Vested Right No. 2039-2.

WATER USAGE

Hawthorne Ditch has been in existence since 1886, but records of the ditch's water usage since 1886 are incomplete. Diversion records of Hawthorne Ditch from 1946 through 1953 can be found in Surface Water Supply of the United States prepared by the U.S. Geological Survey for the years 1946 - 1953. These diversion rates are total diversion amounts and can be found in Appendix

RECOMMENDATION OF CHIEF ENGINEER FOR VALIDATION OF VESTED WATER
RIGHT APPLICATION NO. 2039-2, Hawthorne Ditch

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 Validation of Vested Water Right Application No. 2039-2, Hawthorne Ditch, c/o Charles Johnson, President, 1500 E 27th St, Rapid City SD.

The Chief Engineer is recommending VALIDATION of Application No. 2039-2 for 16.95 cfs and that the applicable portions of Water Right Nos. 35-2, 1152-2, 1153-2, 1190-2, and Location Certificate Nos. 11702 and 6527 have been incorporated into No. 2039-2 and the abandoned portions of Nos. 35-2, 1152-2, 1153-2 and 1190-2 and Certificate Nos. 11702 and 6527 have been cancelled, because 1) water has been appropriated as described for irrigation use with a priority dates of July 12, 1886 for 4.24 cfs and July 8, 1890 for 12.71 cfs, 2) the use has been developed without unlawful impairment of existing rights, 3) the use is a beneficial use and 4) it is in the public interest with the following qualifications.

1. That Vested Water Right No. 2039-2 is subject to domestic use rights. Diversion of natural flow water under Water Right No. 2039-2 is contingent upon supplies being available first to domestic users.
2. That the existing flow measuring device be maintained at or near the point of diversion for Hawthorne Ditch.

See the attached report for additional information.



JOHN HATCH, Chief Engineer
October 22, 1987

APPENDIX E

WATER RIGHT PERMIT NO. 2317-2 (MORRIS TRANSFER)



WATER PERMIT NO. 2317-2

Phone: 605 394-4165

Name of Applicant: City of Rapid City

Post Office Address: 300 6th St , Rapid City SD 57701

Amount of Water Claimed: 0.76 Total Acres: _____

Source of Water Supply: Rapid Creek (Murphy Ditch)

Water to be used for: municipal County: Pennington

Location: _____

PRIORITY Date Received: 8-11-94 Fee: \$50.00

Corrected Application Received: 8-18-94 Period of Annual Use: Jan 1 - Dec 31

Remarks: Transfer use of a portion of land irrigated by Murphy Ditch known as the Morris Property

Diversion Point: _____

Land to be Irrigated: _____

Well Log: Driller: _____ Licensed: YES _____ NO _____

Depth of Well: _____ REMARKS: _____

Type of Map: topo Prepared By: Dan Bjerke, PE Reviewed and the Number

FORM 2: Application for uses other than irrigation

(type or print)

Mail to:
Water Rights Division
Joe Foss Building
523 E Capitol
Pierre SD 57501-3181
605 773-3352

No. 2317-2 Hydrologic Unit 10/20/10
Basin Upper Cheyenne
Newspaper Rapid City Journal, Rapid City, SD
(Office use only)



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

Check use of water:

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

Type of Application: ☐ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
(check one) ☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____
☒ Amendment/Correction to Permit No. 2039-2

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

- Name of Applicant City of Rapid City Phone (605) 394-4165
Mailing Address 300 Sixth Street, Rapid City State SD 57701
(Street, RR, or Box) (City) (Zip Code)
- Amount of water claimed 0.76 *CFS or **GPM ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acres - storage capacity of dam/dugout or annual use if applicable)
0.76 CFS not to exceed 93.6 AF/Yr or 46.8 AF/Yr at Alternate Pactola Reservoir Diversion
- Source of water supply Rapid Creek (see attached Exhibit 1)
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) See attached Exhibit 2 for
Legal Descriptions of City of Rapid City Water Treatment Plant infiltration galleries and
Pactola Reservoir Diversion points County Pennington
- County or counties where water will be used Pennington County, South Dakota
- Annual period during which water is to be used April 15 through November 1 (January 1 through
December 31 for Pactola Diversion releases from storage)
- 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)

The project is described in detail in the accompanying Wright Water Engineers, Inc. report. (Morris property). The project will divert water from Rapid Creek to the City of Rapid City Water Treatment Plant through the existing infiltration structure on Rapid Creek, and to the existing infiltration galleries. The project will also, in the alternative but not simultaneously, divert water from Rapid Creek to storage in Pactola Reservoir.

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)

STATE OF SOUTH DAKOTA)

County of Pennington)^{ss}

I, Edward R. McLaughlin, 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.

Signed Ed McLaughlin, Mayor

Subscribed and sworn to before me this 12 day of August 19 94

Kay J. [Signature]
Notary Public

**SOUTH DAKOTA
WATER PERMIT NO. 2317-2**

Date of first receipt of application August 11, 1994.

The Water Management Board approved Water Permit Application No. 2317-2 on May 1, 1996 for the City of Rapid City, 300 6th St. Rapid City SD 57701 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. 2317-2 transfers the use of a portion of Rapid Creek natural flows historically used to irrigate 46 acres known as the Morris property from Hawthorne Ditch. The portion of Rapid Creek natural flows to be transferred to the city is 0.84 cubic feet of water per second (cfs) with an annual volume limitation of 93.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 46.8 acre-feet, if stored in Pactola Reservoir. Historically, the 0.84 cfs has been used to irrigate approximately 46 acres located in SW 1/4 NE 1/4, SE 1/4 NW 1/4, NE 1/4 SW 1/4, NW 1/4 SE 1/4 Section 9-T1N-R8E. The existing diversion point on Rapid Creek for Hawthorne Ditch is located in the SE 1/4 Section 6-T1N-R8E. This permit is to change the diversion point for 0.84 cfs to diversion points for use by the city to be located in the SE 1/4 NE 1/4 Section 3 (Rapid City Water Treatment Plant); SW 1/4 SW 1/4 Section 3 (Sioux Park Gallery); SE 1/4 NE 1/4 Section 9 (Meadowbrook Gallery); NW 1/4 SE 1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E or to allow storage in Pactola Reservoir. The location of the Pactola Reservoir diversion point is the NW 1/4 SW 1/4 Section 2-T1N-R5E and the reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. This permit does not authorize any new water appropriations from Rapid Creek.
2. The water appropriated shall be used for the purpose of meeting Rapid City's water needs and may not exceed the amount of water needed for beneficial use for municipal, industrial, commercial, common distribution system, rural water system, suburban housing and domestic purposes.
3. The water is to be used during the following described annual period: May 1 - September 30 for diversions from the Water Treatment Plant, Sioux Park Gallery, Meadowbrook Gallery and Jackson Springs Gallery and January 1 - December 31 for Pactola Reservoir diversion releases from storage.
4. The date from which applicant may claim right is July 12, 1886.
5. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. Permit No. 2317-2 is limited to a diversion rate of 0.84 cfs for a total annual volume of 46.8 acre-feet at Pactola Reservoir or a total annual volume of 93.6 acre-feet at Sioux Park Gallery (SW 1/4 SW 1/4 Section 3), Meadowbrook Gallery (SE 1/4 NE 1/4 Section 9), Jackson Springs Gallery (NW 1/4 SE 1/4 Section 8), and the Rapid City Water Treatment Plant (SE 1/4 NE 1/4 Section 3), all in T1N-R7E. Maximum monthly diversion volumes at Pactola or the diversion points within Rapid City are as follows:

(continued)

Water Permit No. 2317-2

<u>Monthly</u>	<u>Monthly acre-feet at Pactola</u>	<u>Monthly acre-feet at diversion points within Rapid City</u>
May	7.22	14.44
June	8.63	17.27
July	11.19	22.37
August	11.87	23.75
September	7.89	15.78
October	0.00	0.00

Diversions during a month may be made at either Pactola Reservoir or at the diversion points within Rapid City, but not simultaneously at both Pactola and the Rapid City diversion points.

2. The City shall only divert the amount associated with crop consumptive use when Water Right/Permit Nos. 653-2, 971-2, 1461-2, 1461A-2 or 2040-2 are ordering stored water.
3. Permit No. 2317-2 authorizes diversion of only natural flow water by the City of Rapid City and does not include any rights to stored irrigation water available under contract from Pactola Reservoir.
4. That the City of Rapid City report to the Chief Engineer annually the amount of water withdrawn each month at Pactola Reservoir or the diversion points within Rapid City.
5. That the Water Management Board is retaining jurisdiction of Permit No. 2317-2 in the event that additional information shows that changes need to be made in the monthly or total annual volumes authorized by Permit No. 2317-2.
6. Diversions under Permit No. 2317-2 may not interfere with existing water rights in effect prior to approval of No. 2317-2 or any domestic rights.
7. The amount of water with a July 12, 1886, priority date, which may be appropriated under Vested Water Right No. 2039-2 is reduced by 0.84 cfs.
8. Approval of Permit No. 2317-2 retires the 46 acres, known as the Morris property which has been historically irrigated from Hawthorne Ditch, located in the SW 1/4 NE 1/4, SE 1/4 NW 1/4, NE 1/4 SW 1/4, and NW 1/4 SE 1/4 Section 9-T1N-R8E from future irrigation.

WATER MANAGEMENT BOARD

By: _____

John Hatch, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

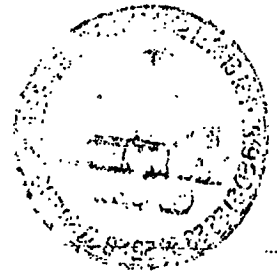
JUN 10 1997

date



Supplemental Information

(type or print in ink)



1. Well Information - Proposed Construction N/A

- a) Drill Hole Diameter _____ Depth _____
- b) Casing Type _____ Diameter _____ Thickness _____
- c) Screen Type _____ Diameter _____ Thickness _____
- d) Gravel Pack Thickness _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material _____
- f) Depth to Water (ground surface to water level) _____
- g) Distance to nearest existing domestic well:
On applicants property _____ On property owned by others _____

2. Dugout Information N/A

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

3. Water Storage Dams (EXISTING PACTOLA RESERVOIR)

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:

United States Bureau of Reclamation
Department of the Interior

b) Freeboard 3.3 FT.

c) Crest Width 40 FT.

Crest Length 5,200 FT.
(INCLUDING DIKES)

d) Height 245 FT.

e) Primary Outlet Capacity 1,150 CFS

If pipe, diameter TWO 2.75 FT. X
2.75 FT. GATES

f) Secondary Spillway Capacity 245,000 CFS

Spillway Width 425 FT.

g) X & Y Slope

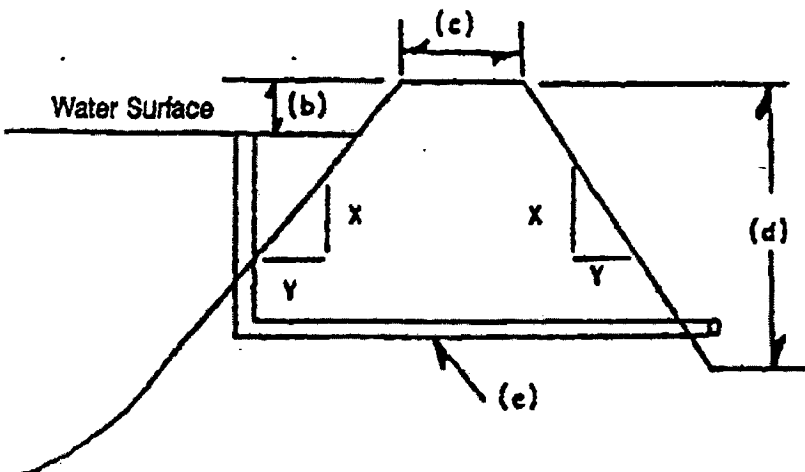
Upstream 2 - 1/2:1

Downstream 2:1

h) Surface Area of Impoundment 1,232 ACRES^{1/}

i) Storage 99,029 1/ Acre Feet

j) Drainage Area above Dam 319 SQ. MI Acres
1/ INCLUDES FLOOD POOL



7-92

Ed McLaughlin
Edward R. Mc Laughlin, Mayor
City of Rapid City, South Dakota

EXHIBIT 1

**LEGAL DESCRIPTION OF IRRIGATED LAND
AFFECTED BY APPLICATION**

South one-half of the SW1/4 of the NE1/4 except Lot H1 and the railroad right-of-way;
South one-half of the SE1/4 of the NW 1/4; a portion of the NE1/4 of the SW1/4 and a
portion of the NW1/4 of the SE1/4, all north of the Murphy Ditch, all in Section Nine (9),
Township One (1) North, Range Eight (8) East of the Black Hills Meridian, Pennington
County, South Dakota, consisting of 46 acres, more or less.



EXHIBIT 2

APPLICATION FOR PERMIT TO APPROPRIATE WATER WITHIN THE STATE OF SOUTH DAKOTA



4. Location of Points of Diversion

City of Rapid City Water Treatment Plant:

North 71 degrees 39 feet west, 1,205 feet from east 1/4 corner of Section Three (3), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Sioux Park "Girl Scout" Gallery:

1,270 feet north 54 degrees 05 feet east of southwest corner of Section Three (3), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Meadowbrook Gallery:

2,032 feet south 31 degrees 41 feet west of northeast corner of Section Nine (9), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Jackson Springs Gallery:

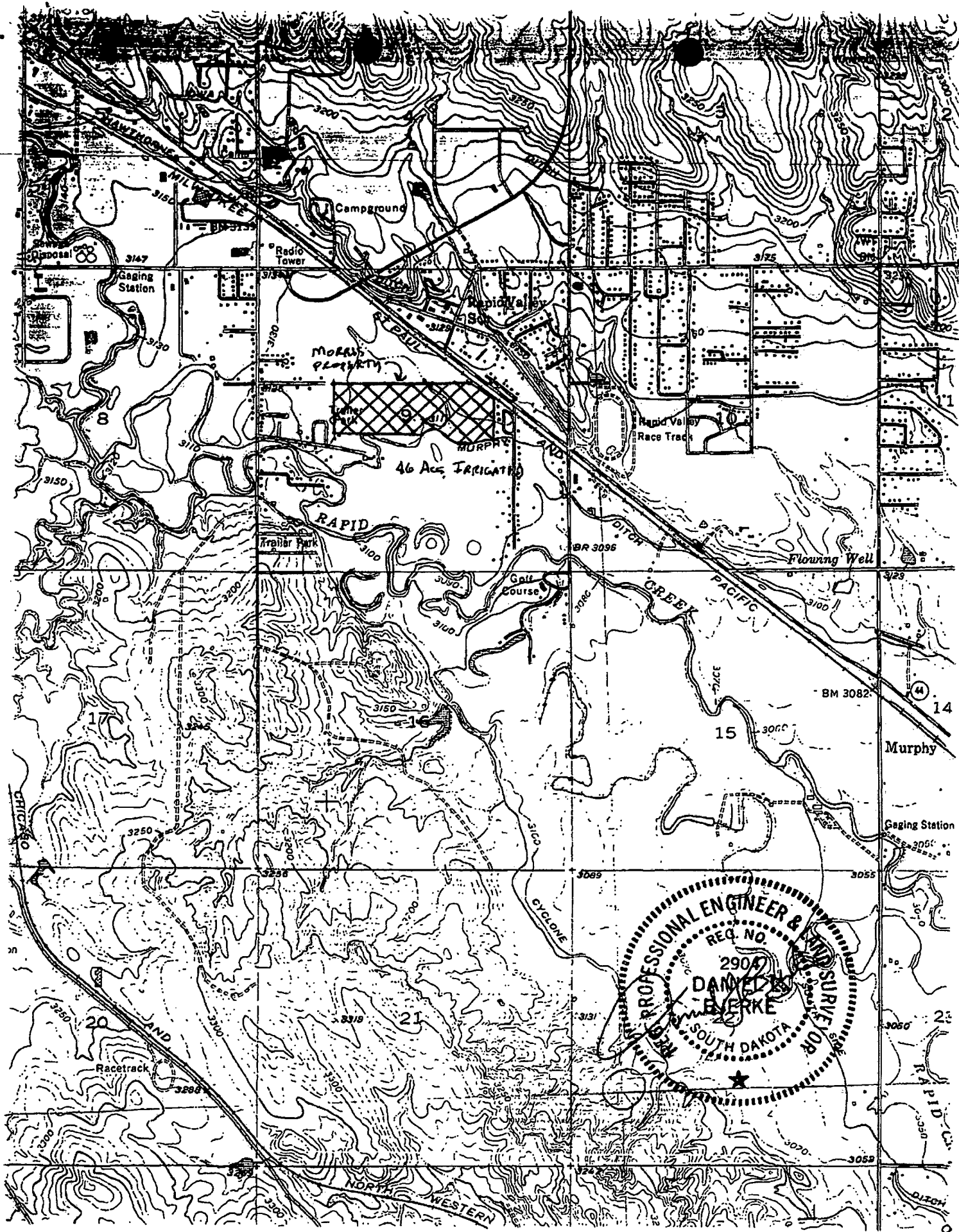
2,943 feet north 58 degrees 54 feet west of southeast corner of Section Eight (8), Township One (1) North, Range Seven (7) East of the Black Hills Meridian.

Alternate Pactola Reservoir Diversion (Inlet to Service Spillway):

South 19 degrees east, 3,740 feet of northwest corner of Section Two (2), Township One (1) North, Range Five (5) East of the Black Hills Meridian.

Reservoir generally located in portions of Sections Two (2), Three (3), Four (4), Five (5), Ten (10), and Eleven (11), Township One (1) North, Range Five (5) East of the Black Hills Meridian, and portions of Sections Thirty-one (31), Thirty-two (32), Thirty-three (33), and Thirty-four (34), Township One (1) North, Range Five (5) East of the Black Hills Meridian.

All of the above in Pennington County, South Dakota.



APPENDIX F

REPORT ON WATER PERMIT APPLICATION NO. 2317-2



Report on Water Permit Application No. 2317-2

City of Rapid City

May 9, 1995

Application No. 2317-2, City of Rapid City, proposes to transfer an annual volume of 93.6 acre-feet of water (ac-ft), if diverted at the city's water treatment plant or infiltration galleries, or 46.8 ac-ft, if stored in Pactola Reservoir. The maximum diversion rate proposed for this transfer is 0.84 cubic feet of water per second (cfs) from the natural flows of Rapid Creek. The transfer is from irrigation to municipal, industrial, commercial, common distribution system, rural water system, suburban housing, and domestic uses for the City of Rapid City. Application No. 2317-2 proposes to transfer Hawthorne Ditch stockholder/landowner's water which has been historically used to irrigate 46.0 acres located in SW1/4 NE1/4, SE1/4 NW1/4, NE1/4 SW1/4 and NW1/4 SE1/4 of Section 9 T1N-R8E also known as the Morris property.

The source of water for the proposed transfer is from the natural flow of Rapid Creek, when available, through Hawthorne ditch. Vested Water Right No. 2039-2, Hawthorne Ditch Company, was validated for 4.24 cfs with a priority date of July 12, 1886. The existing diversion point for Hawthorne ditch is located in the NE1/4 SE1/4 of Section 6 T1N-R8E. The locations of the diversion points for the proposed transfer are in the SE1/4 NE1/4 Section 3 (Rapid City Water Treatment Plant); SW1/4 SW1/4 Section 3 (Sioux Park Gallery); SE1/4 NE1/4 Section 9 (Meadowbrook Gallery); NW1/4 SE1/4 Section 8 (Jackson Springs Gallery); all in T1N-R7E and NW1/4 SW1/4 Section 2 T1N-R5E (Pactola Reservoir). Pactola Reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E. This application does not request any new water appropriation from Rapid Creek and the validated priority date of July 12, 1886 is to be retained by the city.

Review of Existing Water Rights

The water to be transferred has been appropriated under Vested Water Right No. 2039-2, Hawthorne ditch, with a priority date of July 12, 1886. The water right authorizes the irrigation of 46.0 acres of the Morris property. The 46.0 acres located in the SW1/4 NE1/4, SE1/4 NW1/4, NE1/4 SW1/4 and NW1/4 SE1/4 of Section 9 in T1N-R8E have been continually irrigated.

There are 76 existing water rights/permits appropriating 263.50 cfs from Rapid Creek between Pactola Reservoir and the confluence with the Cheyenne River. Of these, 25 water rights which appropriate approximately 77.08 cfs have priority dates which are senior to this proposed transfer.

Review of the Proposed Transfer

SDCL 46-5-34.1 states that no transfer can occur unless the transfer can be made without detriment to existing water rights, or to individual domestic use rights. SDCL 46-5-34.1 also states "No land which has had an irrigation right transferred from it pursuant to this section may qualify for another irrigation right from any water source." SDCL 46-2A-12 allows a change in use "only if the change does not unlawfully impair existing rights and is for a beneficial use and in

the public interest." Calculations using accepted scientific methods and available climatic and cropping data have been made to insure that adverse affects on existing water rights do not occur.

The volume of water which could be stored in Pactola Reservoir is 46.8 ac-ft annually. This volume of water is equal to the amount of water estimated to have been consumed annually by the crop. The amount of water which can be diverted at Rapid City water system intakes is 93.6 ac-ft annually. This volume of water includes the amount of water consumed by the crop plus the return water to Rapid Creek.

The volume of water estimated to have been consumed by the crop is calculated on a monthly basis. For each month the maximum amount of water the crop would use is calculated. This is compared to the amount of water that is available for the crop's use based on historical ditch diversions and the total acreage irrigated annually from the ditch. A determination is made, on a monthly basis, whether maximum crop water usage or available water supply is the limiting factor. The lesser of these is used as the volume of water consumed by the crop for that particular month.

A condition can occur which is unique to the transfer proposed by application No. 2317-2 that did not need to be considered in any of the preceding Rapid City water right transfers. Water which has been returned to Rapid Creek through irrigation would also be returned to Rapid Creek by Rapid City through their waste water treatment system (Wright, 1994). Rapid City has been allowed to divert this water, under previous water right transfers, because the return point for the City's treatment plant was in close proximity to the historical return point and there were no other diversion points that would be affected. Under this proposal there are five water rights/permits, Nos. 653-2, 971-2, 1461-2, 1461A-2, and 2040-2, with diversion points located downstream from the Hawthorne Ditch historical return point but upstream from the treatment plant return point which may be affected. Because of this, whenever any of these water rights are required to purchase water, the City will only be able to take the amount of water associated with crop consumptive use. If in the future the City of Rapid City stops returning effluent to Rapid Creek, then the diversion proposed by this application will need to be recalculated to reflect that condition.

Farm turnouts do not have measuring devices, so actual individual diversions from the ditch are unknown. Water in the ditch is shared by the users as needed. Based on actual past operations, the calculated diversion rate transfer is based on a pro rata share of the total ditch diversion. The proposed diversion rate transfer is based on water beneficially used as described under SDCL 46-1-8.

The transferable diversion rate is determined by acreage pro-rating the Hawthorne Ditch's July 12, 1886 priority diversion rate which is then decreased by the 18.0 percent carriage loss which is to remain in the ditch. This gives a transferable diversion rate of 0.84 cfs which has historically been used to irrigate the 46 acres.

If this transfer is approved, the diversion rate and acreage authorized by the July 12, 1886 priority date of Water Right No. 2039-2 should be decreased by 0.84 cfs and 46.0 acres due to the transfer.

The water available for transfer is only from the natural flow in Rapid Creek and does not include stored water or stored water releases from the Deerfield - Pactola Reservoirs.

To insure that the transfer of the water can be made without detriment to existing water rights, the Water Management Board should monitor the management and operation of the proposed transfer.

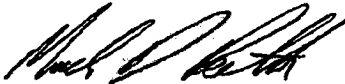
Conclusions

1. SDCL 46-5-34.1 allows for the transfer of irrigation water rights apart from the land to municipal use when the transfer can be made without causing detriment to existing rights. SDCL 46-2A-12 allows a change in use "only if the change does not unlawfully impair existing rights and is for a beneficial use and in the public interest."
2. The water has been historically used to irrigate 46.0 acres.
3. The priority date of July 12, 1886 should be retained.
4. The diversion rate to be transferred is 0.84 cfs, and is based on the pro-rated share of the total ditch diversion rate.
5. The amount of water requested to be transferred, 93.6 ac-ft and 46.8 ac-ft is reasonable. The following table lists the monthly diversion volume:

Month	Diversion at Pactola (ac-ft)	Diversion at Intakes (ac-ft)
May	7.22	14.44
June	8.63	17.27
July	11.19	22.37
Aug	11.87	23.75
Sept	7.89	15.78
Oct	0.0	0.00

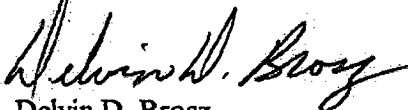
6. If application No. 2317-2 is approved, the authorized diversion rate and acreage for the Hawthorne Ditch Company Water Right No. 2039-2 under the July 12, 1886 priority date should be decreased by 0.84 cfs and 46.0 acres.

7. The Water Management Board should continue to monitor the management and operation of the transfer of the water right and of existing water rights.
8. Approval of Application No. 2317-2, only approves transfer of natural flow water and does not include any rights to stored irrigation water available under contract from Pactola Reservoir.
9. Because the diversion points for Water Right/Permit Nos. 653-2, 971-2, 1461-2, 1461A-2, and 2040-2 are located between the historic Hawthorne Ditch return point and Rapid City's effluent return point; Rapid City may only take water associated with crop consumptive use whenever these water rights/permits are ordering stored water.
10. Because natural flow water has not been available for Water Right No. 2039-2 during lower flow periods, approval of Water Permit Application No. 2317-2 does not guarantee that natural flow water will be available for No. 2317-2 for diversion or storage during low flow periods.
11. The effect of approval of Water Permit Application No. 2317-2 will be to retire the Morris property from irrigation. SDCL 46-5-34.1 states "No land which has had an irrigation right transferred from it pursuant to this section may qualify for another irrigation right from any water source."



Mark D. Rath
Natural Resources Engineer III

Approved by,



Delvin D. Brosz
Natural Resources Engineer IV

References

1. Wright Water Engineers, Inc. 1994. Engineering Report for Transfer of Morris Property Portion of Hawthorne Ditch Water Rights. Wright Water Engineers, Inc. Engineering Consultants, Denver, Colorado.
2. U.S. Bureau of Reclamation. 1990. Rapid Valley Water Management Study. U.S. Bureau of Reclamation, Belle Fourche Projects Office, Newell, South Dakota.
3. S.D. Department of Environment and Natural Resources. Division of Water Rights Records.

**REVISED RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2317-2, City of Rapid City**

Pursuant to SDCL 46-2A-2, the following is the revised recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 2317-2, City of Rapid City, c/o Daniel Bjerke, 300 Sixth Street, Rapid City, SD 57701.

The Chief Engineer is recommending APPROVAL of Application No. 2317-2 because 1) the proposed diversion can be developed without unlawful impairment of existing rights, 2) the proposed use is a beneficial use and 3) in the public interest with the following qualifications:

1. Permit No. 2317-2 is limited to a diversion rate of 0.84 cfs for a total annual volume of 46.8 acre feet at Pactola Reservoir or a total annual volume of 93.6 acre feet at Sioux Park Gallery (SW1/4 SW1/4 Section 3), Meadowbrook Gallery (SE1/4 NE1/4 Section 9), Jackson Springs Gallery (NW1/4 SE1/4 Section 8) and the Rapid City Water Treatment Plant (SE1/4 NE1/4 Section 3), all in T1N-R7E. Maximum monthly diversion volumes at Pactola or the diversion points within Rapid City area as follows:

<u>Month</u>	<u>Monthly acre feet at Pactola</u>	<u>Monthly acre feet at diversion points within Rapid City</u>
May	7.22	14.44
June	8.63	17.27
July	11.19	22.37
August	11.87	23.75
September	7.89	15.78
October	0.00	0.00

Diversions during a month may be made at either Pactola Reservoir or at the diversion points within Rapid City, but not simultaneously at both Pactola and the Rapid City Diversion points.

2. The City shall only divert the amount associated with crop consumptive use when Water Right/Permit Nos. 653-2, 971-2, 1461-2, 1461A-2 or 2040-2 are ordering stored water.
3. Permit No. 2317-2 authorizes diversions of only natural flow water by the City of Rapid City and does not include any rights to stored irrigation water available under contract from Pactola Reservoir.
4. That the City of Rapid City report to the chief engineer annually the amount of water withdrawn each month at Pactola Reservoir or the diversion points within Rapid City.

5. That the Water Management Board is retaining jurisdiction of Permit No. 2317-2 in the event that additional information shows that ~~changes need to be made in the monthly or total annual volumes authorized by Permit No. 2317-2.~~
6. Diversions under Permit No. 2317-2 may not interfere with existing water rights in effect prior to approval of No. 2317-2 or any domestic rights.
7. The amount of water with a July 12, 1886, priority date, which may be appropriated under Vested Water Right No. 2039-2 is reduced by 0.84 cfs
8. Approval of Water Permit No. 2317-2 retires the 46 acres, known as the Morris property which has been historically irrigated from Hawthorne Ditch, located in the SW1/4 NE1/4, SE1/4 NW1/4, NE1/4 SW1/4, and NW1/4 SE1/4 Section 9, T1N, R8E from future irrigation.

See report on application for additional information.


JOHN HATCH, Chief Engineer
July 18, 1995



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

JAN 15 1999

Daniel L Bjerke
City of Rapid City
300 6th St
Rapid City SD 57701-2724

Dear Mr. Bjerke:

Enclosed are the Water Licenses and receipts for the investigation and issuance of the water licenses. These water licenses are the final document which complete the process of obtaining a water right.

As long as the City of Rapid City uses the water beneficially, as stated in the water licenses, State Water Law provides that the City has a continuing right to use the water.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Program
605 773-3352

ks

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2317-2

- (1) The City of Rapid City, 300 6th St, Rapid City SD 57701 made Application No. 2317-2, August 11, 1994 for a water permit to divert 0.84 cubic feet of water per second (cfs) from Rapid Creek with an annual volume limitation of 93.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 46.8 acre-feet, if stored in Pactola Reservoir, Pennington County, South Dakota for municipal, industrial, commercial, common distribution system, rural water system, suburban housing and domestic purposes. Permit No. 2317-2, with a priority date of July 12, 1886 (established by Hawthorne Ditch) was approved May 1, 1996 and issued to the City of Rapid City for diversion of water with construction of the described water supply system and the application to beneficial use of said water completed.
- (2) It is certified that the City of Rapid City 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 0.84 cfs from Rapid Creek with an annual volume limitation of 93.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 46.8 acre-feet, if stored in Pactola Reservoir for beneficial use. The location of the diversion points are: SE ¼ NE ¼ Section 3 (Rapid City Water Treatment Plant); SW ¼ SW ¼ Section 3 (Sioux Park Gallery); SE ¼ NE ¼ Section 9 (Meadowbrook Gallery); NW ¼ SE ¼ Section 8 (Jackson Springs Gallery); all in T1N-R7E and NW ¼ SW ¼ Section 2-T1N-R5E (Pactola Reservoir). Pactola Reservoir impounds water in portions of Sections 2, 3, 4, 5, 10, 11 of T1N-R5E and Sections 31, 32, 33, 34 of T2N-R5E.
- (3) The City of Rapid City has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use.
- (4) Pursuant to South Dakota Water Law 46-5-30.1 the City of Rapid City, 300 6th St, Rapid City SD 57701 the holder and/or owner of Water Right No. 2317-2 is issued a license to appropriate water, the right to use 0.84 cfs from Rapid Creek with an annual volume limitation of 93.6 acre-feet, if diverted at the city's water treatment plant and infiltration galleries or 46.8 acre-feet, if stored in Pactola Reservoir with a priority date of July 12, 1886 (established by Hawthorne Ditch) from the locations specified in (2) of this license for municipal, industrial, commercial, common distribution system, rural water system, suburban housing and domestic purposes. This license is subject to any limitations or qualifications listed in Water Right No. 2317-2 and subject to South Dakota State Law.

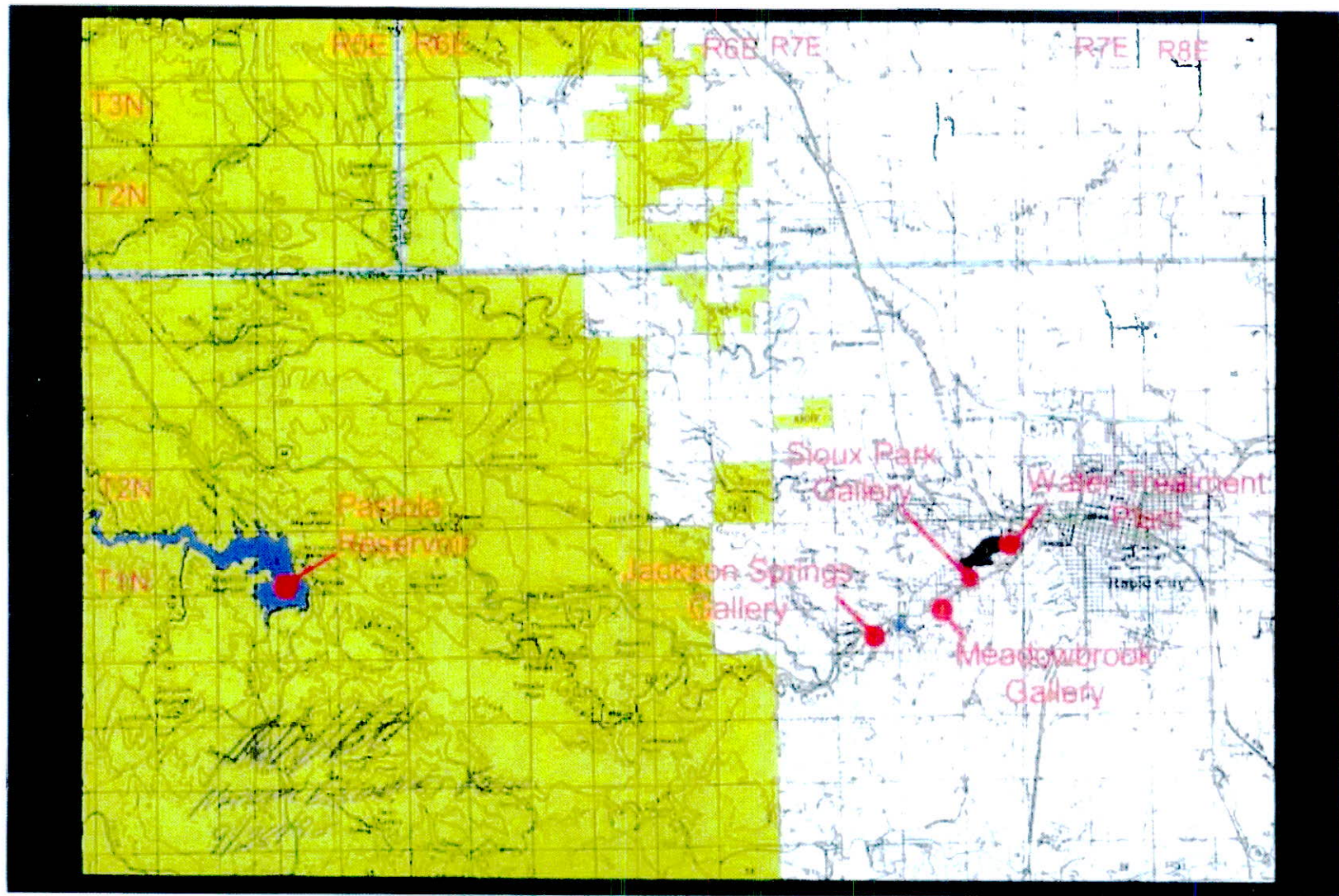

JOHN HATCH, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JAN 15 1999

date



Area Map for Pactola Reservoir to Rapid City



Rath, Mark

From: Rath, Mark
Sent: Wednesday, November 3, 2021 2:00 PM
To: 'Peter (Pete) Rausch'; Howard Rice
Cc: 'crandy@rushmore.com'; Nicholas (Nick) Marnach
Subject: Hawthorne Ditch Water Right Transfers to Arrowhead and Rapid City
Attachments: Application No. 2828-2, Arrowhead.pdf; Application No. 2829-2, City of Rapid City.pdf

Pete and Howard,

Attached are copies of the report, chief engineer recommendation and information regarding the public notice for each of the water permit applications. These are being mailed to Rapid City and Arrowhead today.

Mark D Rath
Department of Agriculture and Natural Resources
Water Rights Program
523 E. Capitol Ave. Pierre SD, 57501
605.773.3352
danr.sd.gov



Rath, Mark

From: Rath, Mark
Sent: Wednesday, November 3, 2021 1:53 PM
To: Eric Sharpe
Cc: Ron Conrad; Mark Anderson
Subject: Hawthorne Ditch Water Right Transfer to Arrowhead
Attachments: Application No. 2828-2, Arrowhead.pdf

Mr. Sharpe.

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

Mark D Rath
Department of Agriculture and Natural Resources
Water Rights Program
523 E. Capitol Ave. Pierre SD, 57501
605.773.3352
danr.sd.gov





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2828-2, Arrowhead**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning Water Permit Application No. 2828-2, Arrowhead, c/o Eric Sharpe, General Manager, 3675 Sheridan Lake Rd, Rapid City SD 57702.

The Chief Engineer is recommending APPROVAL of Application No. 2828-2 to transfer 2.79 cubic feet of water per second with an annual volume not to exceed 115.93 acre-feet until there is establishment of an instream flow credit because 1) the proposed diversion can be developed without unlawful impairment of existing rights, 2) the proposed use is a beneficial use, and 3) it is in the public interest with the following qualifications:

1. Permit No. 2828-2 is limited to a diversion rate of 2.79 cubic feet of water per second for a total annual volume of 115.93 acre feet of natural flow water from Rapid Creek. Arrowhead shall measure diversions at their pump site. The total monthly diversion shall not exceed the amount listed in the following table.

Transferable volume (acre-feet) if taken at the Arrowhead intake

Priority	April	May	June	July	Aug	Sept	Oct	Total
H1 - July 12, 1886	0.84	14.75	16.80	25.91	22.69	17.34	2.85	101.18
H2 - July 8, 1890	--	--	--	--	--	--	--	--
H3 - May 21, 1896	--	--	--	--	--	--	--	--
H4 - Oct 1, 1907	--	--	--	--	--	--	--	--
H5 - July 2, 1973	0.13	2.15	2.45	3.76	3.31	2.53	0.42	14.75
H6 - July 12, 1973	--	--	--	--	--	--	--	--
Totals	0.97	16.90	19.25	29.67	26.00	19.87	3.27	115.93

2. The amount of water appropriated under partial Vested Water Right No. 2039-2 being transferred by this permit is 2.79 cfs with the following associated priority dates:

July 12, 1886 = 2.49 cfs

July 2, 1973 = 0.30 cfs

(continued)

3. Permit No. 2828-2 authorizes diversion of only natural flow water by Arrowhead and does not include any right to stored irrigation water available under contract with the Bureau of Reclamation.
4. The Water Management Board retains jurisdiction over Permit No. 2828-2 in the event that changes occur in the system that require adjustments to be made in the monthly or total annual volumes authorized by Permit No. 2828-2.
5. Diversions under Permit No. 2828-2 may not interfere with existing water rights in effect prior to approval of No. 2828-2 or any domestic water use.
6. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

A handwritten signature in cursive script, reading "Eric Gronlund".

Eric Gronlund, Chief Engineer

November 2, 2021

REPORT ON WATER PERMIT APPLICATION NO. 2828-2

Arrowhead

October 26, 2021

Application No. 2828-2, proposing a change of ownership and a change of the diversion point and diversion authority for 2.79 cubic feet of water per second (cfs) with an annual volume limitation of 231.86 acre-feet (ac-ft) per year from Hawthorne Ditch to Arrowhead to irrigate 167 acres located in the NW 1/4 Section 15 and the W 1/2 SW 1/4, SE 1/4 SW 1/4 Section 10: all in T1N-R7E. The 167 acres have been historically irrigated from Rapid Creek and authorized by Water Right No. 611-2. This application does not authorize any new water appropriation from Rapid Creek and the priority dates established by Hawthorne Ditch water rights will be retained as follows for the specified amounts of water: July 12, 1886, for 2.49 cfs with an annual volume limitation of 101.18 acre-feet; July 2, 1973, for 0.30 cfs with an annual volume limitation of 14.75 acre-feet.

Discussion of the Scope of the Hawthorne Ditch Company Transfers

On August 17, 2020 Water Rights Program staff met with representatives of the Hawthorne Ditch Company to discuss the possibility of transferring all water rights held by Hawthorne Ditch to another entity. In the Fall of 2020, Hawthorne Ditch Company retained the services of the engineering consulting firm RESPEC of Rapid City to quantify the natural flow of water available for transfer under partial Vested Water Right No. 2039-2, held by the Hawthorne Ditch Company.

Two separate entities have approached the Hawthorne Ditch Company about purchasing and transferring their irrigation rights. The Hawthorne Ditch Company agreed to transfer a portion of their irrigation rights to Arrowhead for irrigation of a golf course. The Hawthorne Ditch Company also agreed to transfer the remainder of their irrigation water rights to the City of Rapid City to be used for municipal use. If both the Arrowhead, Water Permit Application No. 2828-2 and the City of Rapid City, Water Permit Application No. 2829-2 transfers are approved, this would effectively eliminate Hawthorne Ditch Company's authority to irrigate since all the water appropriated by No. 2039-2 will be transferred to Arrowhead and the City of Rapid City.

Review of Methodology and Applicable Statutes

SDCL 46-2A-12. Amendment of permit or license--When granted. An amendment of an existing permit or license may be granted for a change in use, a change in point of diversion or other change only if the change does not unlawfully impair existing rights and is for a beneficial use and in the public interest.

SDCL 46-5-30.4. Amendment of permits or rights. Subject to the limitations in §§ 46-5-33 and 46-5-34 governing changes in irrigation rights from one parcel of land to another, any water permit or right holder may apply for a change of use of the water, a change of location of the use or other amendment to the permit or right. Permits or rights may be amended pursuant to the procedure contained in chapter 46-2A. Priority shall be retained upon amendment. An amendment of a water permit or right may not increase the rate of diversion or increase the volume of water to be appropriated under the original water permit or right. The amendment may not impair existing rights.

Both SDCL 46-2A-12 and SDCL 46-5-30.4 allow existing rights to be amended but do not allow the amendment to impair existing rights. Calculations using accepted scientific methods and available climatic and cropping data have been made to ensure that adverse effects on existing water rights do not occur.

The applicant's proposed methodology in determining the transferable yield is to calculate the water delivered to the shareholders farm turnouts then determine the portion of the delivered water utilized by the crop. The volume of water estimated to have been consumed by the crop is calculated on a monthly basis. This is compared to the amount of water that is available for the crop's use based on historical ditch diversions and the total acreage irrigated annually from the ditch. A determination is made, on a monthly basis, whether maximum crop water usage or available water supply is the limiting factor. The lesser of these is used as the volume of water consumed by the crop for that month.

The applicant has requested an annual volume to be diverted at Arrowhead's irrigation intake to be 231.86 ac-ft. However, the water available for transfer to Arrowhead with a change in the diversion point is equal to a portion of the ditch company's total authorized diversion for the Hawthorne Ditch's July 12, 1886 and July 2, 1973, priority rights, less 9.8% ditch delivery loss, and the 50% irrigation return flow loss. Therefore, the volume of water which can be diverted at Arrowhead's irrigation intakes is 115.93 ac-ft annually with the monthly totals by priority date shown in Table 1. (RESPEC 2021).

Table 1. Hawthorne Ditch water right transferable volume (acre-feet) if taken at the Arrowhead intakes.

Priority	April	May	June	July	Aug	Sept	Oct	Total
H1 - July 12, 1886	0.84	14.75	16.80	25.91	22.69	17.34	2.85	101.18
H2 - July 8, 1890	--	--	--	--	--	--	--	--
H3 - May 21, 1896	--	--	--	--	--	--	--	--
H4 - Oct 1, 1907	--	--	--	--	--	--	--	--
H5 - July 2, 1973	0.13	2.15	2.45	3.76	3.31	2.53	0.42	14.75
H6 - July 12, 1973	--	--	--	--	--	--	--	--
Totals	0.97	16.90	19.25	29.67	26.00	19.87	3.27	115.93

The portion attributed to the inefficiency of flood irrigation and not used by the crop has historically been returned to Rapid Creek and would have been available for use by downstream water rights. This transfer from irrigation from Hawthorne Ditch to irrigation at Arrowhead golf course is without claiming a return flow credit (RESPEC. 2021). However, in the future Arrowhead may attempt to quantify return flows from irrigation of the golf course to Rapid Creek. If this occurs, Arrowhead may petition the Water Management Board to reconsider the amount of natural flow credit they are allowed under this permit.

Review of Existing Water Rights

There are a total of 101 existing water rights/permits appropriating 264.24 cfs from Rapid Creek from its headwaters in southern Lawrence County to its confluence with the Cheyenne River in eastern Pennington County (Water Rights. 2021). Existing rights may be amended under SDCL 46-2A-12 and SDCL 46-5-30.4, but the amendments do not allow for impairment to existing rights. The engineering analysis submitted with this application demonstrates the portion of the Hawthorne Ditch water right historically associated with irrigation can be transferred to the Arrowhead without unlawfully impairing existing rights (RESPEC. 2021).

The Arrowhead golf course is currently irrigated from Rapid Creek under Water Right No. 611-2, held by the City of Rapid City, bearing a priority date of September 22, 1956. Since Rapid City holds this water right, there is purchase water available through the City's Pactola and Deerfield contracts with the US Bureau of Reclamation when natural flow in the creek is not available. Arrowhead also holds Water Permit No. 2773-2, with a priority of July 27, 2017, for either a Minnelusa Aquifer or a Madison Aquifer well to be used for irrigation of the golf course. The construction period for this permit expires on November 6, 2022 (Water Rights. 2021).

Discussion

The applicant is proposing a transferable diversion rate of 2.79 cfs with an annual volume limitation of 115.93 acre-feet of the natural flow of Rapid Creek. If this application is approved, it would not be expected to unlawfully impair existing rights, including domestic use. To

protect existing rights from being unlawfully impaired, the transferable diversion rate is based on the pro rata share of the ditch diversion rate, decreased by a 9.8 percent delivery loss attributed to seepage lost from the irrigation ditch prior to delivery at the farm headgates, and the 50% irrigation return flow loss. This delivery and irrigation return flow losses are to remain as Rapid Creek natural flow (RESPEC. 2021). However, in the future, Arrowhead may attempt to quantify return flows from irrigation of the golf course to Rapid Creek. If this occurs, Arrowhead may petition the Water Management Board to reconsider the amount of natural flow credit they are allowed under this permit.

If this transfer is approved, the diversion rate authorized by the July 12, 1886 and July 2, 1973 priority dates on partial Vested Water Right No. 2039-2, Hawthorne Ditch, should be decreased by 2.79 cfs due to the transfer. The water available for transfer is only from the natural flow in Rapid Creek and does not include water stored in or stored water released from the Deerfield or Pactola reservoirs.

If approved, Water Permit No. 2828-2 should contain the following qualifications:

- The Water Management Board retains jurisdiction over Permit No. 2828-2 in the event additional information shows that changes need to be made in the monthly or total annual volumes authorized by Permit No. 2828-2.
- This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

Conclusions

1. This application proposes to transfer a portion of Hawthorne Ditch stockholder/landowner's use of Rapid Creek natural flows appropriated under partial Vested Water Right No. 2039-2, Hawthorne Ditch, to Arrowhead for irrigation use on a golf course.
2. Existing rights may be amended under SDCL 46-2A-12 and SDCL 46-5-30.4 but amendments may not unlawfully impair existing rights.
3. The portion of Rapid Creek natural flows to be transferred to Arrowhead is 2.79 cfs with an annual volume limitation of 115.93 acre-feet of water taken at the Arrowhead diversion point in accordance with the following Table 2:

Table 2. Hawthorne Ditch water right transferable volume (acre-feet) if taken at the Arrowhead intakes.

Priority	April	May	June	July	Aug	Sept	Oct	Total
H1 - July 12, 1886	0.84	14.75	16.80	25.91	22.69	17.34	2.85	101.18
H2 - July 8, 1890	--	--	--	--	--	--	--	--
H3 - May 21, 1896	--	--	--	--	--	--	--	--
H4 - Oct 1, 1907	--	--	--	--	--	--	--	--
H5 - July 2, 1973	0.13	2.15	2.45	3.76	3.31	2.53	0.42	14.75
H6 - July 12, 1973	--	--	--	--	--	--	--	--
Totals	0.97	16.90	19.25	29.67	26.00	19.87	3.27	115.93

4. The RESPEC analysis submitted with the application demonstrates this water right can be transferred to Arrowhead and the diversion point relocated without impairing existing rights. This author concurs.
5. If approved, the diversion rate authorized by Hawthorne Ditch's July 12, 1886 and the July 12, 1973 priority dates of partial Vested Water Right No. 2039-2, Hawthorne Ditch, should be decreased by 2.79 cfs due to the transfer to Arrowhead.
6. If approved, the Water Permit No. 2828-2 should contain the following qualifications:
 - The Water Management Board retains jurisdiction over Permit No. 2828-2 in the event that additional information shows that changes need to be made in the monthly or total annual volumes authorized by Permit No. 2828-2.
 - This Permit is approved subject to the irrigation water use questionnaire being submitted each year.



Mark D. Rath
Natural Resources Engineer III

References

1. Water Rights. 2021. Water Right/Permit Files. SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, South Dakota.
2. RESPEC. 2021. Engineering Report; Hawthorne Ditch Water Rights Transfer to Arrowhead. RESPEC Topical Report RSI-3163. RESPEC 3824 Jet Drive Rapid City SD 57703.

*** Proof of Publication ***

STATE OF SOUTH DAKOTA)

County of Pennington)

SS:

S.D. DEPT. OF AGRICULTURE
AGRICULTURAL SERVICES
523 E. CAPITOL AVE.
PIERRE SD 57501

ORDER NUMBER 38500

RECEIVED

NOV 15 2021

WATER RIGHTS
PROGRAM

The undersigned, being duly sworn, upon his/her oath says: That he/she is now and was at all time hereinafter mentioned, a clerk of the RAPID CITY JOURNAL, a corporation of Rapid City, South Dakota, a legal and daily newspaper printed and published in Rapid City, in said County of Pennington, and has full and personal knowledge of all the facts herein stated as follows: that said newspaper is and at all of the times herein mentioned has been a legal and daily newspaper with a bonafide paid circulation of at least Two Hundred copies daily, and has been printed and published for at least one year prior to the first date of the published notice.

This affidavit is a true and corrected copy of notice which appeared

in said newspaper once each day for 1
successive day, the first publication there of being on the
10 day of November, 20 21

Section: Legal

Category: 0072 Public Notices

PUBLISHED ON: 11/10/2021

TOTAL AD COST: 133.09

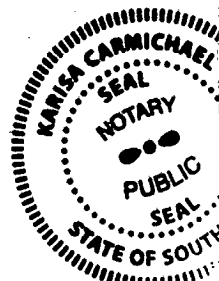
FILED ON: 11/10/2021

Subscribed and sworn to before me this

10 day of November, 20 21
Karisa Carmichael Notary Public

My commission expires

May 18, 20 27



Nov 10 L38500
NOTICE OF APPLICATION NO.
2828-2 to Transfer Use
Notice is given that Arrowhead, c/o Eric Sharpe, General Manager, 3675 Sheridan Lake Rd, Rapid City SD 57702 has filed an application proposing to change the Rapid Creek diversion point and diversion authority for 2.79 cubic feet of water per second (cfs) with an annual volume limitation of 231.86 acre-feet from Hawthorne Ditch to the Arrowhead golf course. The diversion point location for the golf course in the SE 1/4 NE 1/4 Section 9 and the 167 irrigated acres are located in the NW 1/4 Section 15 and the W 1/2 SW 1/4, SE 1/4 SW 1/4 Section 10; all in T1N-R7E. The Arrowhead golf course is located in the city of Rapid City.
This application does not authorize any new water appropriation from Rapid Creek and a July 12, 1886 priority date will be retained for 2.49 cfs and a priority date of July 2, 1973, for 0.3 cfs as established by Hawthorne Ditch partial Vested Water Right No. 2039-2.
South Dakota Codified Law (SDCL) 46-2A-4(10) provides that "if the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the Chief Engineer's recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board." In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board.
Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2828-2 to transfer 2.79 cubic feet of water per second with an annual volume not to exceed 115.93 acre-feet until there is establishment of an instream flow credit because 1) the proposed diversion can be devel-

oped without unlawful impairment of existing rights, 2) the proposed use is a beneficial use, and 3) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below. The Water Management Board will consider this application at 10:00 am (Central Time) on December 8, 2021 in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave., Pierre SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.
Any person who intends to participate in the hearing shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting

the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by November 22, 2021.

The petition shall be in writing and shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. The hearing is an adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The December 8, 2021 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose the application. The request for an automatic delay must be filed by November 22, 2021. If an automatic delay is requested, the hearing will be rescheduled for a future Board meeting and personal notice will be provided to the applicant and all petitioners regarding the time, date, and location.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by November 22, 2021.

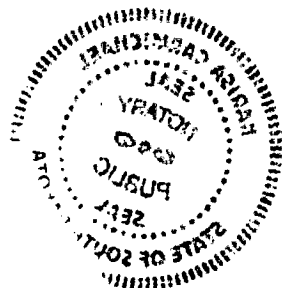
Notice is given to individuals with disabilities that this hearing is being held in a physically accessible place. Please notify the Department of Agriculture and Natural Resources at least 48 hours before the hearing if you have a disability for which special arrangements must be made at the hearing. The telephone number for making arrangements is (605) 773-3352.

Under SDCL 1-26-17(7) notices must state that "if the amount in controversy exceeds \$2,500.00 or if a property right may be terminated, any party to the contested case may require the agency to use the Office of Hearing Examiners by

giving notice of the request to the agency no later than ten days after service of a notice of hearing issued pursuant to SDCL 1-26-17." This is a Notice of Hearing, service is being provided by publication, and the applicable date to give notice to the Chief Engineer is November 22, 2021. However, since this particular matter is a water permit application and not a monetary controversy in excess of \$2,500.00 or termination of a property right the Chief Engineer disputes the applicability of this provision and maintains that the hearing must be conducted by the Board.

As applicable, the following provides the legal authority and jurisdiction under which the hearing will be held and the particular statutes and rules pertaining to this application: SDCL 1-26-16 thru 1-26-28; SDCL 46-1-1 thru 46-1-9, 46-1-13 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-17; 46-2A-1 thru 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21, 46-2A-23; 46-5-1.1, 46-5-2 thru 46-5-26, 46-5-30.2 thru 46-5-30.4, 46-5-31, 46-5-32 thru 46-5-34.1, 46-5-38 thru 46-5-39, 46-5-46, 46-5-47, 46-5-49; 46-6-1 thru 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-6-21, 46-6-26; and Board Rules ARSD 74:02:01:01 thru 74:02:01:25.02; 74:02:01:35.01.

(Published one time at the approximate cost of \$133.09)



Schlaak, Karen

From: Schlaak, Karen
Sent: Wednesday, November 3, 2021 12:54 PM
To: RCY Legals (legals@rapidcityjournal.com)
Subject: 2828-2, Arrowhead
Attachments: 2828-2public.wmb_final.docx; FORM8.FRM.doc

Attached is a notice to be published on November 10, 2021.

Arrowhead, c/o Eric Sharpe, General Mgr, 3675 Sheridan Lake Rd, Rapid City SD 57702 (605 484-0491) has been notified to contact you to authorize publication and arrange for payment.

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

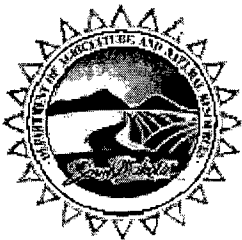
Let me know if you have questions. Please acknowledge receipt of this email.

Karen Schlaak

DANR - Water Rights Program

(605) 773-3352

Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

November 3, 2021

Arrowhead
c/o Eric Sharpe, General Manager
3675 Sheridan Lake Rd
Rapid City SD 57702

Dear Mr. Sharpe:

Water Permit Application No. 2828-2 to change the Rapid Creek diversion point and diversion authority has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Rapid City Journal (Ph # 605 394-8336). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program
(605) 773-3352

enclosures

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

Instruction to Newspaper – Publish the Notice on November 10, 2021. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 2828-2 to Transfer Use

Notice is given that Arrowhead, c/o Eric Sharpe, General Manager, 3675 Sheridan Lake Rd, Rapid City SD 57702 has filed an application proposing to change the Rapid Creek diversion point and diversion authority for 2.79 cubic feet of water per second (cfs) with an annual volume limitation of 231.86 acre-feet from Hawthorne Ditch to the Arrowhead golf course. The diversion point location for the golf course is in the SE 1/4 NE 1/4 Section 9 and the 167 irrigated acres are located in the NW 1/4 Section 15 and the W 1/2 SW 1/4, SE 1/4 SW 1/4 Section 10; all in T1N-R7E. The Arrowhead golf course is located in the city of Rapid City.

This application does not authorize any new water appropriation from Rapid Creek and a July 12, 1886 priority date will be retained for 2.49 cfs and a priority date of July 2, 1973, for 0.3 cfs as established by Hawthorne Ditch partial Vested Water Right No. 2039-2.

South Dakota Codified Law (SDCL) 46-2A-4(10) provides that “if the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the Chief Engineer’s recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board.” In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2828-2 to transfer 2.79 cubic feet of water per second with an annual volume not to exceed 115.93 acre-feet until there is establishment of an instream flow credit because 1) the proposed diversion can be developed without unlawful impairment of existing rights, 2) the proposed use is a beneficial use, and 3) it is in the public interest. The Chief Engineer’s recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

The Water Management Board will consider this application at 10:00 am (Central Time) on December 8, 2021 in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave., Pierre SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.

Any person who intends to participate in the hearing shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by November 22, 2021.

The petition shall be in writing and shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing

address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. The hearing is an adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The December 8, 2021 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose the application. The request for an automatic delay must be filed by November 22, 2021. If an automatic delay is requested, the hearing will be rescheduled for a future Board meeting and personal notice will be provided to the applicant and all petitioners regarding the time, date, and location.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by November 22, 2021.

Notice is given to individuals with disabilities that this hearing is being held in a physically accessible place. Please notify the Department of Agriculture and Natural Resources at least 48 hours before the hearing if you have a disability for which special arrangements must be made at the hearing. The telephone number for making arrangements is (605) 773-3352.

Under SDCL 1-26-17(7) notices must state that "if the amount in controversy exceeds \$2,500.00 or if a property right may be terminated, any party to the contested case may require the agency to use the Office of Hearing Examiners by giving notice of the request to the agency no later than ten days after service of a notice of hearing issued pursuant to SDCL 1-26-17." This is a Notice of Hearing, service is being provided by publication, and the applicable date to give notice to the Chief Engineer is November 22, 2021. However, since this particular matter is a water permit application and not a monetary controversy in excess of \$2,500.00 or termination of a property right the Chief Engineer disputes the applicability of this provision and maintains that the hearing must be conducted by the Board.

As applicable, the following provides the legal authority and jurisdiction under which the hearing will be held and the particular statutes and rules pertaining to this application: SDCL 1-26-16 thru 1-26-28; SDCL 46-1-1 thru 46-1-9, 46-1-13 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-17; 46-2A-1 thru 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21, 46-2A-23; 46-5-1.1, 46-5-2 thru 46-5-26, 46-5-30.2 thru 46-5-30.4, 46-5-31, 46-5-32 thru 46-5-34.1, 46-5-38 thru 46-5-39, 46-5-46, 46-5-47, 46-5-49; 46-6-1 thru 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-6-21, 46-6-26; and Board Rules ARSD 74:02:01:01 thru 74:02:01:25.02; 74:02:01:35.01.

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**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

January 21, 2022

Arrowhead
Eric Sharpe, General Manager
3675 Sheridan Lake Rd
Rapid City SD 57702

Dear Mr. Sharpe:

Enclosed is Water Permit No. 2828-2 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

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

enclosures