

Water Right Number 2281-3

1. Considered JULY 24, 19 75
2. Name of Applicant CITY OF MITCHELL
3. Post Office Address _____
4. Amount of Water claimed 16.5 - 8430 AC FT ANNUALLY
MAX REQMT IN 2020
5. Source of Water supply JAMES RIVER
6. Water to be used for MUNICIPAL

Acres to be irrigated _____

7. Water to be diverted and used in DAVISON County
about _____ miles of MITCHELL

8. Proof of Publication Received 7-9-75

Not Received _____

Approved _____

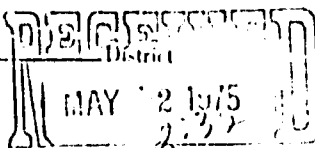
Subject to _____

Not Approved _____

Action Deferred _____

10. Remarks

*Incorporated
into
W/L 4354-3*

Map No. 1222-3Water Division No. 3 JAMES RIVER
(Blanks to be filled by the Engineer for the W. R. C.)No. 2281-3

APPLICATION FOR PERMIT TO APPROPRIATE WATER RIGHTS COM. PIERRE, SOUTH DAKOTA

To Appropriate Water within the State of South Dakota

(NOTE: Draw a line through items not applicable)

1. Name of Applicant City of Mitchell
 Postoffice address Mitchell State South Dakota
 If a corporation show date and place of incorporation _____
2. Method of accomplishing work (contract, employment of men, or by direct labor) Combination
3. Name of diversion work Mitchell James River Diversion Pumping Plant
4. Amount of water claimed (in cubic feet per second) 16.5
5. Source of water supply James River
6. Location of point of diversion SW 1/4, Section 1, T103N, R60W
- County Davison
7. Annual period or periods during which water is to be used Year around as available and needed
8. Use to be made of water (irrigation, industrial, municipal, commercial, recreation, etc.) Municipal
9. For irrigation use, Total number of acres to be irrigated --

List below each forty acre subdivision, or lot, or fraction thereof and show number of acres to be irrigated in each.

Land Description	No. Acres Irr.	Land Description	No. Acres Irr.

Attach sheet if more space is needed

10. Time required to complete construction of water supply system 5 years. Additional time required to complete application of water to the proposed beneficial use 4 years.
11. Choice of newspaper for Notice of Intent to Appropriate Water publication Daily Republic
12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source.

Pumping plant and surge tanks

B. Works proposed to transport water to place of use.

27 inch diversion pipeline plus storage of water in Lake Mitchell

C. Works proposed to apply water to beneficial use

City of Mitchell water distribution systemEstimated Total Cost \$ 1,000,000Attachment: Attach Form 2A if diversion from a well or dugout, or if storage of water is proposed. Attach map.
(See instructions concerning preparation.)

STATE OF SOUTH DAKOTA)

County of Davison) ss.I, R. B. Phillips the applicant, certify that I have read the foregoing application and have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.Signed R. B. PhillipsSubscribed and sworn to before me this 16 day of May 19 75Margaret Daniel
Notary Public (or other qualified officer)

WATER RIGHT APPLICATION APPROVAL

The Water Rights Commission hereby approves Water Right Application No. 2281-3

CITY OF MITCHELL

(Applicant)

(Post Office Address)

SOUTH DAKOTA 57301

(State)

With the following modifications:

THIS WATER PERMIT NO 2281-3 AUTHORIZES DIVERIONS ONLY WHEN 110 C.F.S. OR MORE OF WATER IS BY-PASSED, AFTER DIVERSION, DURING THE MAY THRU ~~SEPTEMBER~~ SEPTEMBER PERIOD, AND ONLY WHEN 20 C.F.S. OR MORE OF WATER IS BY-PASSED, AFTER DIVERSION, DURING THE OCTOBER THRU APRIL PERIOD.

TOTAL DIVERIONS OF WATER UNDER THIS PERMIT SHALL NOT EXCEED 8,430 ACRE FEET PER YEAR AS OUTLINED IN THE BUREAU OF RECLAMATION REPORT ON MITCHELL UNIT, SOUTH DAKOTA JAMES DIVISION, MISSOURI RIVER BASIN PROJECT, DATED OCTOBER, 1968.

Cancelled 7/7/80 Incorporated in W/L 4354-3

Date of first receipt of application MAY 12 19 75

Date of return to applicant for correction, amendments or changes required MAY 13 19 75

Date of receipt of correct application JUNE 10 19 75

Approved JULY 24 19 75 Recorded in book 13 Page 345

WATER RIGHT PERMIT NO. 2281-3

The Water Rights Commission hereby grants and issues this Water Right Permit No. 2281-3 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as modified in the Water Right Application approval, subject, however, to the following limitation and conditions:

1. The date from which applicant may claim right is MAY 12 19 75
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before JANUARY 24 19 78
3. The whole of said work is to be completed on or before JULY 24 19 80
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is JULY 24 19 84
5. The water appropriated shall be used for the purpose of MUNICIPAL USE

6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be injuriously affected by this appropriation.

7. The amount of the appropriation herein granted shall not exceed 16.5 cubic feet per second; neither shall it exceed the capacity of the above described water supply system, nor shall it exceed the amount of water needed for ~~beneficial use and for the irrigation purposes and appropriation is to be limited to a maximum of 200 cubic feet per second~~

USED FOR MUNICIPAL PURPOSES actually and beneficially used on or before JULY 24 19 84 said water to be used during the following described annual period: CONTINUOUSLY

Witness my hand this 30TH day of JULY 19 75

WATER RIGHTS COMMISSION

Allen W. Butler
Chief Engineer, Executive Officer

Certificate of Construction Issued _____ 19 _____

Water License Issued _____ 19 _____

No. 2251-3

Publish first publication, on or before

July 10, 1975

NOTICE OF INTENT TO APPROPRIATE WATER

Pierre, South Dakota 57501

June 24, 1975

Notice is hereby given that the City of Mitchell

~~whereas~~, South Dakota, has made an application in accordance with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use 16.5 cubic feet of water per second of time from the James River through the Mitchell James River Pumping Plant, the point of diversion of which is to be located in the _____.

 SW^1_4 SW^2_4

of Section 1, Twp. 103H, Range 60W. Said water to be used for the purpose of providing ~~xxxxxx~~ municipal supplies for the City of Mitchell

This application No. 2281-9 will be considered by the Water Rights Commission at the North Lounge, Surbeck Center, S.D. School of Mines, at Rapid City, S.D. upon the 24th day of July 1975 at 2:30 P. M. All interested persons may appear and be heard.

WATER RIGHTS COMMISSION

By:

BURTON F. JONES, Water Rights Specialist

BFJ/bw
cc.

R.G. Phillips, Mayor, City of Mitchell, Mitchell, S.D. 57301

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA,
County of Davison

Gerald H. Puttenter of said county being first duly sworn, on oath says that he is the General Manager of The Daily Republic, a daily newspaper printed and published in Mitchell, said County of Davison and has full and personal knowledge of all the facts herein stated; that said newspaper is a legal newspaper and has a bona-fide circulation of at least two hundred copies daily, and has been published within said County for fifty-two successive weeks next prior to the publication of the notice herein mentioned, and was and is printed wholly or in part in an office maintained at said place of publication; that the NOTICE OF INTENT TO APPROPRIATE WATER Appli.#2281-3 James River, City of Mitchell, a printed copy of which, taken from the

paper in which the same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said newspaper at least once in each week for 1 successive weeks, on the day of each week on which said newspaper was regularly published, to wit:

8 JULY 19 75; _____, 19 _____
_____, 19 _____; _____, 19 _____
_____, 19 _____; _____, 19 _____
_____, 19 _____; _____, 19 _____
_____, 19 _____; _____, 19 _____

that the full amount of the fees for the publication of the annexed notice is \$ \$8.07

Subscribed and sworn to before me this _____ 8th _____ day of

JULY 19 75

B. J. H. H. H.
Notary Public,
County of Davison, South Dakota

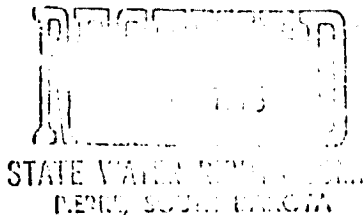
My commission expires: 4-3-83

**NOTICE OF INTENT
TO
APPROPRIATE WATER**
Pierre, South Dakota 57501
June 24, 1975

Notice is hereby given that the City of Mitchell, South Dakota, has made an application in accordance with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use 16.5 cubic feet of water per second of flow from the James River through the Mitchell James River Pumping Plant, the point of diversion of which is to be located in the SW 1/4 SW 1/4 of Section 1, Twp. 103N, Range 40W. Said water to be used for the purpose of providing municipal supplies for the City of Mitchell.

This application No. 2281-3 will be considered by the Water Rights Commission at the North Lounge, Surbeck Center, S.D. School of Mines, at Rapid City, S.D., upon the 24th day of July 1975, at 2:30 P.M. All interested persons may appear and be heard.

**WATER RIGHTS
COMMISSION**
By: Burton F. Jones,
Water Rights Specialist



Re: 2281-3

May 4, 1976

Robert G. Phillips, Mayor
City of Mitchell
Mitchell, SD 57301

Dear Mayor Phillips:

This letter is in reference to the City of Mitchell's Water Right Number 2281-3. Permit No. 2281-3 with a priority date of May 12, 1975 authorizes the City of Mitchell to pump up to 16.5 cubic feet per second (7400 gallons per minute) from the James River. News releases have indicated that the City is installing pumping equipment to divert water from the James River in accordance with Water Right Permit No. 2281-3.

The purpose of this letter is to point out the qualifications which the Water Rights Commission placed upon your permit. Your permit authorizes the City to pump water from the James River only when 20 cubic feet of water or more per second is being by-passed after diversion during the period of October through April. However, during the May through September period, the City may only pump when at least 110 cubic feet per second is by-passed after diversion. The 110 cfs by-pass requirement is necessary to satisfy prior downstream water rights. Because of the May 12, 1975 priority date, the City of Mitchell has rather a low priority on the use of water from the James River.

At this time, it is our understanding that more than 110 cfs is flowing in the James River at Mitchell. If James River flows do decrease to the point that the 110 cfs by-pass requirement is a problem and the City does not have enough water, please advise.

Very truly yours,

John Hatch, Chief Engineer
Water Rights Commission

JH:nlm

Lake Mitchell Elevations - Weekly Check
 0.0 Elevation is Spillway Elevation

3-22-76	-8.0'	Wind	S-SW	15 MPH
3-29-76	-8.04	"	NW	15 MPH
4-5-76	-8.12'	"	NW	0-5 MPH
4-26-76	-7.95	"	SE	0-5 MPH
5-3-76	-7.71	"		0 MPH
5-10-76	-7.51	"		0 MPH
5-17-76	-7.33	"		1-2 MPH
5-24-76	-7.74	"		0 MPH
6-1-76	-6.74	"	SE	0-4 MPH
6-8-76	-6.69	"	SW	5-10 MPH
6-14-76	-6.63	"	SE	10-15 MPH
6-21-76	-6.63	"	SE	15 MPH
6-29-76	-6.31	"	NW	10 MPH
7-7-76	-6.39	"		0 MPH
7-12-76	-6.59	"	SE	0-5 MPH
7-20-76	-6.86	"		0 MPH

LAKE MITCHELL

Capacity and Surface Area

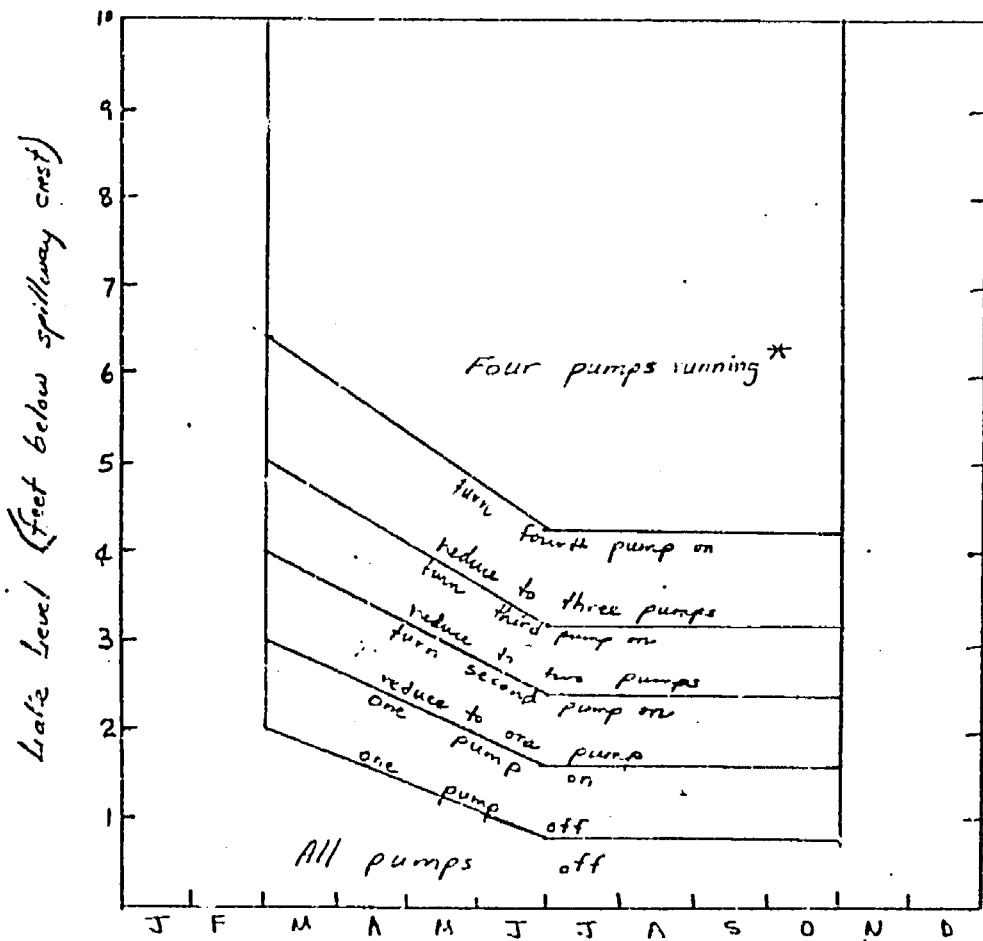
Gauge	Elev.	Surface Area Acres	Capacity above Intake, Gallons	Capacity in One Foot Below	% of Capacity Above Outlet
0	63	790	3,565,000,000	280,000,000	100.0
1	62	755	3,285,000,000	265,000,000	92.1
2	61	725	3,020,000,000	250,000,000	84.7
3	60	700	2,770,000,000	235,000,000	77.7
4	59	680	2,535,000,000	220,000,000	71.1
5	58	660	2,315,000,000	210,000,000	64.9
6	57	635	2,105,000,000	200,000,000	59.0
7	56	610	1,905,000,000	190,000,000	53.4
8	55	585	1,715,000,000	180,000,000	48.1
9	54	560	1,535,000,000	170,000,000	43.1
10	53	525	1,365,000,000	165,000,000	38.3
11	52	495	1,200,000,000	155,000,000	33.7
12	51	465	1,045,000,000	150,000,000	29.3
13	50	430	895,000,000	130,000,000	25.1
14	49	400	765,000,000	120,000,000	21.5
15	48	365	645,000,000	110,000,000	18.1
16	47	335	535,000,000	110,000,000	15.0
17	46	300	435,000,000	95,000,000	12.2
18	45	265	340,000,000	90,000,000	9.5
19	44	235	250,000,000	85,000,000	7.0
20	43	205	165,000,000	60,000,000	4.6
21	42	175	105,000,000	55,000,000	2.9
22	41	150	50,000,000	50,000,000	1.4
23	40	130	00	00	0.0

Approx. Discharge
Capacity of Spillway

Crest of Spillway at Elev. 63
Bottom of Intake Gate at " 40

Depth	Discharge
1 Ft.	1,100 Cfs.
2	3,100
3	5,700
4	8,800
5	12,300
6	16,100
7	20,300
8	24,800

TYPICAL OPERATION PLAN SCHEMATIC



* Subject to the streamflow in the James River and the limitations of the water right

PROPOSED OUTLINE FOR A OPERATION PLAN
FOR THE
JAMES RIVER TO LAKE MITCHELL DIVERSION SYSTEM

Proposed to City of Mitchell, South Dakota
By Leonard Neugebauer and John Madden
DeWild Grant Reckert & Associates Co.
March 9, 1978

I. Why do you need an operation plan?

- A. Conserve energy and reduce costs (not only the cost of energy but also cost of maintenance).
- B. To have a history-tested plan which will give pre-conceived results.
- C. To serve as guide to present and future city personnel in operating the system.
- D. To provide the city a basis and an argument for a given method of operating the system.

II. Study Objectives.

- A. To evaluate three alternate system operation plans using historical water resource data.
 - 1. High lake level maintenance, say 3"-6" below top of spillway.
 - 2. Medium lake level maintenance, say 1'-2' below top of spillway.
 - 3. Lower lake level maintenance, say 3'-4' below top of spillway.
- B. Compare results of alternate plans, review with the city and adopt one to be followed.
- C. Illustrate plans graphically.

III. Select Operation Variable.

- A. Critical independent variables
 - 1. Lake level.
 - 2. Current municipal demand.
 - 3. Time of year.
 - *4. Runoff forecast for Firesteel Creek and James River (by snow survey combined with historical streamflow records)

* This needs to be researched further before it is known whether enough data is available to include or exclude it.

B. Resulting dependent variables

1. Number of pumps running

Note: One pump (.24 MG/hr) = 380 kwh/MG
Two pumps (.46 MG/hr) = 400 kwh/MG (+5%)
Three pumps (.63 MG/hr) = 435 kwh/MG (+14%)
Four pumps (.73 MG/hr) = 500 kwh/MG (+32%)

IV. Computer Routing Model Formulation

A. Inflows

1. Firesteel Creek
2. James River diversion

B. Outflows

1. Municipal water
2. Net evaporation
3. Seepage
4. Over spillway

C. Compute time/variable information (monthly or bi-monthly)

1. Lake level
2. Pumps running
3. Water diverted
4. Municipal use
5. Net evaporation plus seepage
6. Over spillway
7. Power (kwh or dollars)
8. Plot lake level versus time

V. Input data needed

- A. Firesteel Creek records (1956-1977) at Mr. Vernon gage
- B. James River records (1956-1977) at Forestburg gage
- C. Monthly municipal demand
- D. Monthly net evaporation and seepage losses
- E. Spillway outflow curve
- F. Reservoir elevation - storage curve
- G. Any restraints on lake level
- H. Restraints on diversion by water rights
- I. Alternate system operation plans

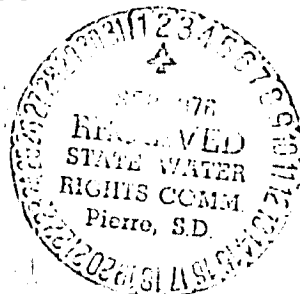
VI. Miscellaneous Notes

- A. We would limit the number of computer runs to that required to refine the three alternatives to meet the city's goals within practical limits.
- B. We would preserve the computer model for future use in evaluating operation plan revisions, if needed by the city.

VII. Topics for General Discussion but not to be included in the computer model.

- A. Firesteel Creek and James River runoff forecasting (snow surveys)
- B. Cost/benefits of lake dredging
- C. Cost/benefits of second dam and reservoir on Firesteel Creek above Lake Mitchell
- D. Possibilities of raising the spillway crest and installing gates to increase flood discharge capability over spillway while raising the operating level of the lake.

** END OF OUTLINE **



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

Post Office Mitchell, South DakotaDate August 31, 1976

TO: **WATER RIGHTS COMMISSION**
State Office Building No. 2
Pierre, South Dakota 57501

Dear Sirs:

This is to inform you that I have completed the construction of the water diversion system and/or that I have put the water to beneficial use to the maximum extent it is going to be used, not exceeding the amounts as specified in Water Right Permit No. 2281-3.

Water Right Permit No. 2281-3 states that the diversion system is to be constructed by July 24, 1980 and that the water is to be put to beneficial use by July 24, 1984.

The diversion system was completed on May 1, 1976. Applying the water to beneficial use was completed on April 26, 1976.

You may schedule an inspection so that the Certificate of Construction and/or the Water License may be issued, thus completing my acquisition of a water right.

R. B. Schieff Mayor
(Signature)

SOUTH DAKOTA
Department of
Water & Natural Resources

Joe Foss Building Water Rights, Water Management Division
Pierre, South Dakota 57501 (605) 773-3352

July 7, 1980

City of Mitchell
Box 278 -- Office of the Mayor
Mitchell SD 57301

Dear Sir:

Enclosed herewith are, Water License No. 4354-3 and Certificate of Construction.

Water License No. 4354-3 is the final water right document completing your process of obtaining a water right.

As long as you use the water beneficially, as stated in the Water License, the State Water Laws provide that you have a continuing right to use the water.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights, WMD

JH:kw

enclosures

NOTE: The applicable portions of Permit No. 2281-3 have been incorporated into this Water License, and Permit No. 2281-3 has been placed in a cancelled status.