

4430-3

OTHER
INFORMATION
FILED
WITH
WATER RIGHT

REVIEWED

This application was reviewed within 30 days of receipt, accepted as complete, number assigned, and written up for advertisement before the Board on

Sept. 27, 1979

Betty Westlund

(Signed)

This application was unable to be completed - Reason

PUBLICATION

Received

Dates published - 1st

8/30/79

2nd

Date

Affidavit received

9-11-79

remarks

Leader Courier, Elk Point

PROTESTS

Letters/Petitions in File yes

no

remarks

Opale Hoffman called Sept 29th - No Court Report just would like have more info. can tell them what is going on before he reads it in the press they are going down his land.

STAFF REC-
COMMENDATIONS

BOARD ACTION

Date Approved

9-28-79

Qualifications

Deferred - date

reason

Denied - date

reason

REMARKS

F.F. & C. OF
LAW, FINAL
DECISIONS,
ETC.

3460-3 No. 4430-3
 Map No. 1158-3 Water Division No. 3 Big Sioux River District
 (Blank to be Filled by the Engineer for the W. R. C.)



APPLICATION FOR PERMIT TO ADD AN ADDITIONAL DIVERSION POINT

PERMIT No. 1606-3

To Appropriate Water within the State of South Dakota

(NOTE - Draw a line through items not applicable)

1. Name of Applicant McCook Lake Recreation Assoc. Inc. - 343 McCook Lake
 Postoffice address Jefferson, State South Dakota 57233
 If a corporation show date and place of incorporation 1963 - McCook Lake
2. Method of accomplishing work (contract, employment of others, or by direct labor) _____
3. Name of diversion work McCook Lake River Diversion
4. Amount of water claimed (cubic feet per second) 1.27 C.F.S. ~~no add'l~~ (924.8 AC.FT. ANNUALLY)
5. Source of water supply Missouri River
- X 6. Location of point of diversion See attached map NW⁴SW⁴ SEC 21-T89N-R48W
Lot 1, Sec. 16, Township 29, Range 48, (Reid, survey)
Clyde Hoffman property County Union
7. Annual period or periods during which water is to be used when Lake is Low - summer months
8. Use to be made of water: (irrigation, industrial, municipal, commercial, recreation, etc.) Public Recreation
STABILIZING LAKE LEVEL
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

- X 10. Time required to complete construction of water supply system 1 yr. years. Additional time required to complete application of water to the proposed beneficial use _____ years.
11. Choice of newspaper for Notice of Intent to Appropriately Water publication Leader Courier, Elk Point
12. Principal Features of the Proposed Water Supply System. 110 feet 1 1/2 inch pipe; 1 1/2 mile ditch
5,000 gal. per min. (20% retained, 80% returns to river.) By Geo.
 A. Works proposed to divert water from its natural source: survey.
- X Install Pump at river, (Portable) 2 diesel pumps: Carver Deisel
 K-62010 110CL. U.S. Motor Holo
 Shaft 20 HI. 117' irrigation
 turbine pump unit SNR 1776-01-168
- B. Works proposed to transport water to place of use.
- X Canal is in place leading to the lake.
- C. Work proposed to apply water to beneficial use.
- X Maintain Lake level for recreation & minimize fish kill.
- Estimated Total Cost \$ _____

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map. 150.00 check attached.
 (See instructions concerning preparation.)

STATE OF SOUTH DAKOTA

- X County of Union)
 I, Donald J. Gable (Director of McCook Lake Recreation Association)
Sanctuary, S.D., President. 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 Sanctuary, S.D.Subscribed and sworn to before me this 25 day of April, 1977
Merle Bremer
 Notary Public (or other qualified officer)

WATER RIGHT APPLICATION APPROVAL

The Water Rights Commission hereby approves Water Right Application No. 4430-3
McCook Lake Recreation Assn % DOROTHY GILL - JEFFERSON
 (Applicant) (Post Office Address)
SOUTH DAKOTA 57038 With the following modifications.
 (State)

Date of first receipt of application APRIL 27, 19 79
 Date of return to applicant for correction, amendments or changes required APRIL 30 & JULY 30, 19 79
 Date of receipt of corrected application MAP AUGUST 17, 19 79
 Approved SEPTEMBER 28, 19 79, Recorded in Book 21 Page 61

WATER RIGHT PERMIT NO. 4430-3

The Water Rights Commission hereby grants and issues this Water Right Permit No. 4430-3 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 limitations and conditions:

1. The date from which applicant may claim right is AUGUST 17, 19 79
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before MARCH 28, 19 80
3. The whole of said work is to be completed on or before SEPTEMBER 28, 19 80
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is SEPTEMBER 28, 19 80
5. The water appropriated shall be used for the purpose of LAKE STABILIZATION

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 1.27 cfs (224.8 AC. FT. ANNUALLY) ~~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 if for the irrigation purpose said appropriation must be limited to not more than 2 acre feet per acre per year and be limited to not more than 1/70 of one cubic foot of water per second of time for each acre of land to which water is~~
USED FOR LAKE STABILIZATION
 actually and beneficially applied for irrigation on or before SEPTEMBER 28, 19 80; said water to be used during the following described annual period: JUNE - SEPTEMBER

Witness my hand this 9th day of OCTOBER, 19 79

WATER RIGHTS COMMISSION

By:

John Hatch
 Chief Engineer, Executive Officer

Certificate of Construction Issued _____, 19 ____

Water License Issued _____, 19 ____

At the December 2 & 3, 1981 Water Management Board Meeting, 1090.3 feet msl was established as Ordinary High Water Level and maximum elevation that McCook Lake can be maintained by artificial means.

Water Rights Nos. 1606-3, 4430-3 and 4565-3 were amended to allow pumping only when McCook Lake's water elevation is below 1090.3 feet msl.

No. 4430-3

Publish first publication, on or before August 30, 1979

NOTICE OF HEARING ON
APPLICATION TO APPROPRIATE WATER

Pierre, South Dakota 57501

August 17, 1979

Notice is hereby given McCook Lake Recreation Assn. whose post office

address is Jefferson, South Dakota, has made an application in accordance with the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-14; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-41, and Board Rules ARSD 52:01:01:01 thru 52:01:01:13, for a permit to appropriate for beneficial use 1.27 cubic feet of

water per second of time from the Missouri River through the McCook Lake River Diversion to add a new point of diversion, of which is (are) to be located on an existing permit in the NW 1/4 SW 1/4

of Section 21, Twp. 89 N, Range 48 W. Said water to be used for the purpose of providing irrigation on portions of the following described land:

stabilizing the lake level for public recreation

This Application No. 4430-3 will be considered by the Water Management Board at Community Room, City Hall 222 East Dakota, Pierre, South Dakota upon the 27th day of September 1979

at 10 A.M. The Board is authorized to make a determination on this application at the hearing. All interested persons may appear and be heard. Any person who may be affected by a Board decision who desires to present evidence or cross-examine witnesses according to SDCL 1-26 may notify the Board in writing prior to the hearing or orally at the hearing.

This hearing is an adversary proceeding. Any person has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing. Decisions of the Board may be appealed to the Courts as provided by law.

WATER MANAGEMENT BOARD

DETTY WESTLUND
Water Rights Specialist

cc: McCook Lake Recreation Assn.
c/o Dorothy Gill
343 McCook Lane
Jefferson, SD 57038

FORM 6 - Notice of Intent to Appropriate Water
SURFACE WATER

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Union) ss.

I, Lester E. Emerson hereby

certify that the annexed printed copy of Notice of Intent to Appropriate
Water was taken from the Leader-Courier

A newspaper which during the whole time of publication of said notice
herein after stated, has been and is printed and published in the

city of Elk Point, South Dakota

County of Union and State of South Dakota;
that the said notice was published in said newspaper on the following
two dates:

August 30, 1979

September 6, 1979

Lester E. Emerson
(Signature)

Publisher, Editor
(Title)

September 6, 1979

(Date Signed)



NOTICE OF HEARING
ON APPLICATION TO
APPROPRIATE WATER
Pierre, South Dakota 57501
August 17, 1979

Notice is hereby given McCook Lake Recreations Assn. whose post office address is Jefferson, South Dakota, has made an application in accordance with the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-14; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-41, and Board Rules ARSD 52:01:01:01 thru 52:01:01:13, for a permit to appropriate for beneficial use 1.27 cubic feet of water per second of time from the Missouri River through the McCook Lake River Diversion to add a point of diversion on an existing permit of which is to be located in the NW 1/4 SW 1/4 of Section 21, Twp. 89N, Range 48W. Said water to be used for the purpose of providing irrigation on portions of the following described land: stabilizing the lake level for public recreation.

The Application No. 4430-3 will be considered by the Water Management Board at Community Room, City Hall, 222 East Dakota, Pierre, South Dakota upon the 27th day of September 1979 at 10 A.M. The Board is authorized to make a determination on this application at the hearing. All interested persons may appear and be heard. Any person who may be affected by a Board decision who desires to present evidence or cross-examine witnesses according to SDCL 1-28 may notify the Board in writing prior to the hearing or orally at the hearing.

This hearing is an adversary proceeding. Any person has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing. Decisions of the Board may be appealed to the Courts as provided by law.

Water Management Board
Betty Westlund
Water Rights Specialist
Pub. Aug. 30, Sept. 6.

RECEIPT

WATER RIGHTS COMMISSION

State of South Dakota

No 4 7001

PIERRE, August 20, 1922

RECEIVED OF McCook Lake Recreation Assn., Jefferson, SD 57039

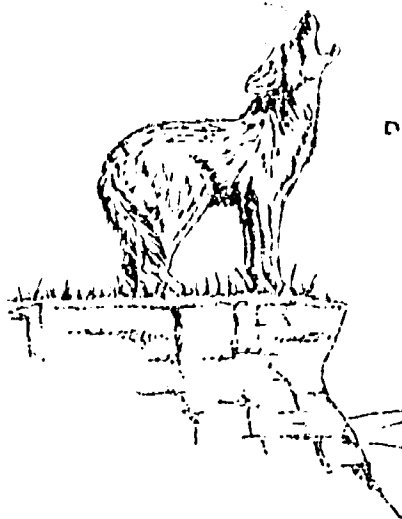
the following amount in fees for services rendered as provided for by law:

FUND 290

Fee for Application for Permit to Appropriate Water No. 4430-3 (examination, processing, recording and filing)	375	00
Fee for inspecting Construction, and Issuing Cert. of Construction No.		
Fee for inspecting Beneficial Use, and Issuing Water License No.		
Fee for Issuing Location Certificate-Dry Draw, No.		
Fee for filling		
Fee for certified copy of		
Fee for Print copy of map		
Fee for Certifying		
Fee for (any other work as provided by law)		
TOTAL	375	00

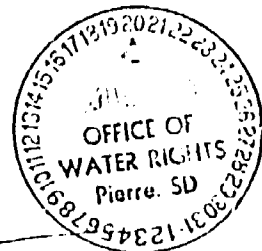
WATER RIGHTS COMMISSION

By John Hatch
Chief Engineer, Executive Officer
JOHN HATCH gy



DEPARTMENT OF NATURAL RESOURCE DEVELOPMENT
SOUTH DAKOTA GEOLOGICAL SURVEY

SCIENCE CENTER, UNIVERSITY
VERMILLION, SOUTH DAKOTA 57069
16051 624-4471



June 27, 1979

Ms. Dorothy Gill
343 McCook Lake
Jefferson, SD 57038

Dear Ms. Gill:

At your request I am sending the following calculations made for seepage from the McCook Lake during May 16, 1978, to August 14, 1978. These calculations were made for the report on the hydrology of McCook Lake and will be published later.

Between May 16, 1978, and August 14, 1978, 1671.53 acre feet of water was pumped into McCook Lake in an attempt to raise the water level. During that period of time, there was 0.80 feet of precipitation and 1.57 feet of evaporation resulting in a deficit of 0.77 feet. On May 16 the elevation of the water in the lake was 1089.32 feet and on August 14 it was 1090.36 feet. If no water had been pumped into the lake and no recharge from the ground-water system had occurred, the lake level would have dropped 0.77 feet to an elevation of 1088.55 feet. In reality if there had been no pumping, the lake level would not have dropped this far because there would have been recharge from the ground-water system.

The exact size, in acres, of McCook Lake is not known at the time of this report. The size when it was at its largest in the past was approximately 323 acres. The approximate size of the lake at present is 183 acres. Assuming a lake size of 323 acres, no discharge of lake water into the ground-water system, no recharge of ground water into the lake, and taking into account the precipitation, evaporation, and pumping of water into the lake, the water level should have risen 4.41 feet to an elevation of 1093.73 feet between May 16, 1978, and August 14, 1978. Instead the observed rise was only 1.04 feet. This means that 1082.51 acre feet of water was lost through the bottom of the lake into the ground-water system or, in other words, only 34.88 percent of the water

583 02 AC.FT LAKE 323 acres

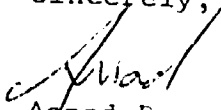
Ms. Dorothy Gill
June 27, 1979
Page 2

331.97 ac.ft lake size 183 acres

pumped into the lake was retained. Assuming a lake size of 183 acres, the lake level should have risen 8.36 feet to an elevation of 1097.63 feet. Again, the observed rise was only 1.04 feet. In this case it means that 1339.56 acre feet of water was lost through the bottom of the lake or, in other words, only 19.86 percent of the water pumped into the lake was retained. The water after seeping out from the lake recharges the ground water which is hydraulically connected with the Missouri River.

If you have any questions, do not hesitate to call us.

Sincerely,


Assad Barari
Geologist

For the State Geologist

AB:co

using 19.86 % as the amount of
water to be retained

pumping @ 4656.7 acft per yr.

$4656.7 \times 19.86\% = 924.8 \text{ acft per year}$

375



Department of Water & Natural Resources

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

4565-3
1606-3
4430-3

November 23, 1981

McCook Lake Recreational Assoc. Inc.
c/o Dorothy Gill
Box 343
McCook Lake
Jefferson, SD 57039

Dear Ms. Gill:

Enclosed find a copy of the notice of the establishment of the Ordinary High Water Mark and the Ordinary High Water Mark Report on McCook Lake.

The Water Rights Staff is requesting that the Board amend McCook Lake Recreational Assoc., Inc. Water Rights No. 4565-3, 4430-3 and 1606-3 to limit the pumping of water into McCook Lake. The request that will be made is that Water Rights Nos. 4565-3, 4430-3 and 1106-3 be amended to allow pumping only when McCook Lake's water elevation is below 1090.3 feet mean sea level.

If you have any questions, please contact our office.

Sincerely,

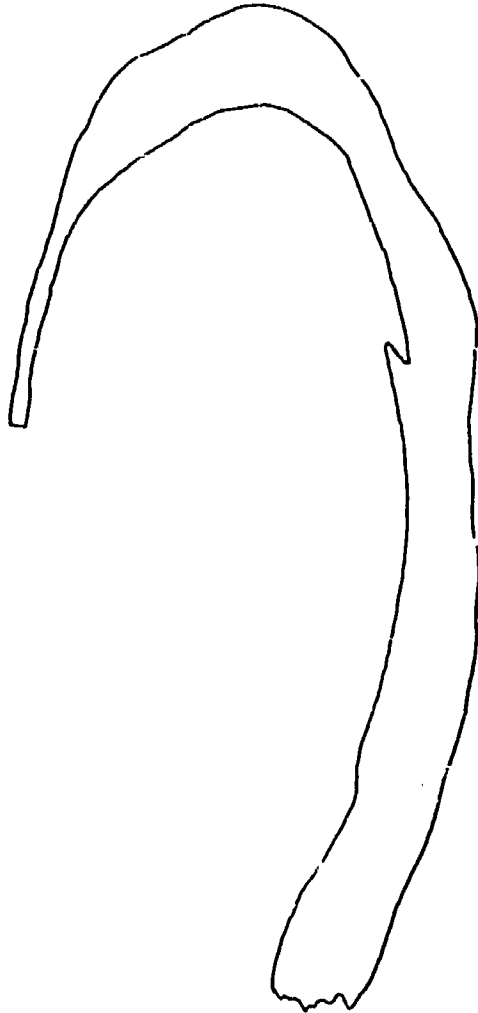
JERRY E STEFFEN
Natural Resources Engineer

JES/gy

encl

ORDINARY HIGH WATER MARK
INVESTIGATION FOR

Mc COOK LAKE



UNION
COUNTY

ORDINARY HIGH WATER MARK INVESTIGATION
FOR MCCOOK LAKE
NOVEMBER, 1981

The Water Management Board pursuant to SDCL 43-17-21 is mandated to establish the Ordinary High Water mark (OHWM) on public lakes in South Dakota. This report contains the results of the investigation conducted by the Water Rights Division to determine the elevation of the OHWM and ordinary high water level (OHWL) for McCook Lake.

The ordinary high water mark is coordinated with the upper level of a lake. The determination of the OHWM is derived from the examination of the bed and banks of the lake to ascertain where the continuous presence and action of the water has left a distinct mark either by erosion, destruction of terrestrial vegetation, or some other easily recognized characteristic. In examining a lake for the determination of this level, it is necessary to consider the size, watershed, topography, soils, and general characteristics of the lake.

The ordinary high water level is the ordinary high, calm water level, which with the addition of wave action produces an OHWM. The OHWL is generally equal to the outlet structure elevation and one half foot below the OHWM.

The principal field investigation for this report was conducted in November, 1981. At this time, the examination of the shoreline, banks and vegetation of McCook Lake was conducted. The shoreline areas selected for study were those least affected by man. Public access areas and gradually sloping beaches provide the best OHWM indicators.

Elevations in this report are referenced to Coast and Geodetic Survey Bench Marks, BM1; Q324, set vertically in the northeast face of the north corner of McCook School and BM2; R324, set 32 feet west of the center line of the north-south road, 11.0 feet north of the center line of a private drive, set in the top of a concrete post level with the ground (see page 4).

McCook Lake has a surface area of 273 acres and a watershed area of 6927 acres (see page 5). * The average depth of McCook Lake is four feet with a maximum depth of six and one half feet. * The lake is extensively connected to the ground water table.

McCook Lake is a disconnected oxbow of the Missouri River located in Union County. This oxbow has gone through many hydrological changes in the past 125 years. Some of these changes have occurred naturally, others have been the result of manmade controls on the Missouri River.

*South Dakota Lakes Classification and Inventory Final Report.

The natural changes occurred between 1860 and 1950, during which time the river changed course and cut the oxbow off from the main river channel. This left a landlocked body of water, McCook Lake. After the river changed course, McCook Lake received its water from runoff of its watershed, extensive connection with ground water, and annual spring flooding of the Missouri River.

The manmade influences that have changed the hydrology of McCook Lake are damming and channelization of the Missouri River. These things have stopped spring flooding and have caused degradation of the bed of the Missouri River in the McCook Lake area. The absence of spring floods has eliminated one source of recharge of water to McCook Lake. The degradation of the bed of the Missouri River has caused a lowering of the surface of the river and a relative lowering of the ground water in the area. The lowering of the ground water caused a decrease in the elevation of the water in McCook Lake.

To maintain a suitable water level in McCook Lake, the practice of pumping water from the Missouri River and ground water into the lake has occurred. There have been three permits issued for this purpose: Water Rights No. 1605-3, 4430-3 and 4565-3. This has helped in stabilizing the water level, but studies show it is very inefficient means of lake level stabilization.

In determining the OHWM on McCook Lake, water surface elevations for the past fifteen years (see page 6) were used along with physical indicators of recent OHWMs on the shore (see photos 1 through 7). From this data the OHWM has been determined to be 1090.7 feet mean sea level (msl) and the OHWL has been determined to be 1090.3 feet msl.

Conclusions:

From the examination of the bed and banks, water surface elevations, and hydrological changes of McCook Lake, it has been found that OHWL has been at an elevation of 1090.3 ft. msl thus establishing an OHWM at an elevation of 1090.7 ft. msl.

Recommendations:

- 1.) That 1090.7 ft. msl be established as the Ordinary High Water Mark for McCook Lake.
- 2.) That 1090.3 be established as Ordinary High Water Level and maximum elevation that McCook Lake can be maintained by artificial means.

- 3.) That Water Rights 1606-3, 4430-3 and 4565-3 be amended to allow pumping only when McCook Lake's water elevation is below 1090.3 ft. msl.

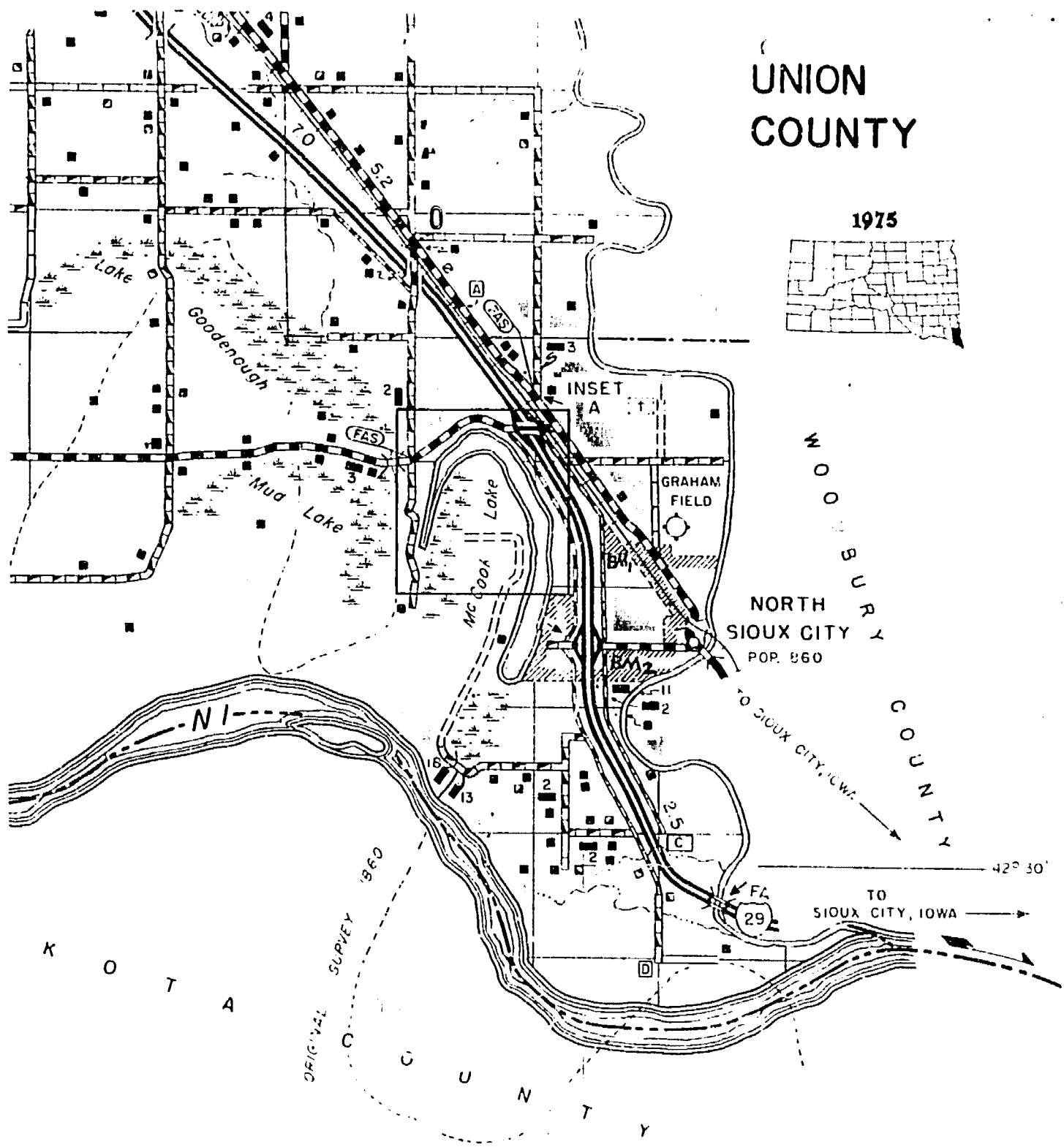
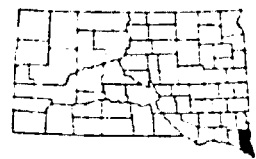
Jerry Steffen, Natural Resources Engineer
Water Rights Division
Department of Water and Natural Resources

For information regarding OHWM bench marks established around McCook Lake, contact the Department of Water and Natural Resources, Water Rights Division, Pierre, South Dakota.

BN2001JS.wr

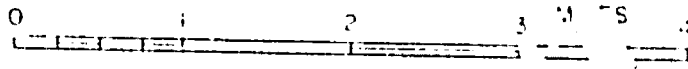
UNION COUNTY

1975



R 48 W

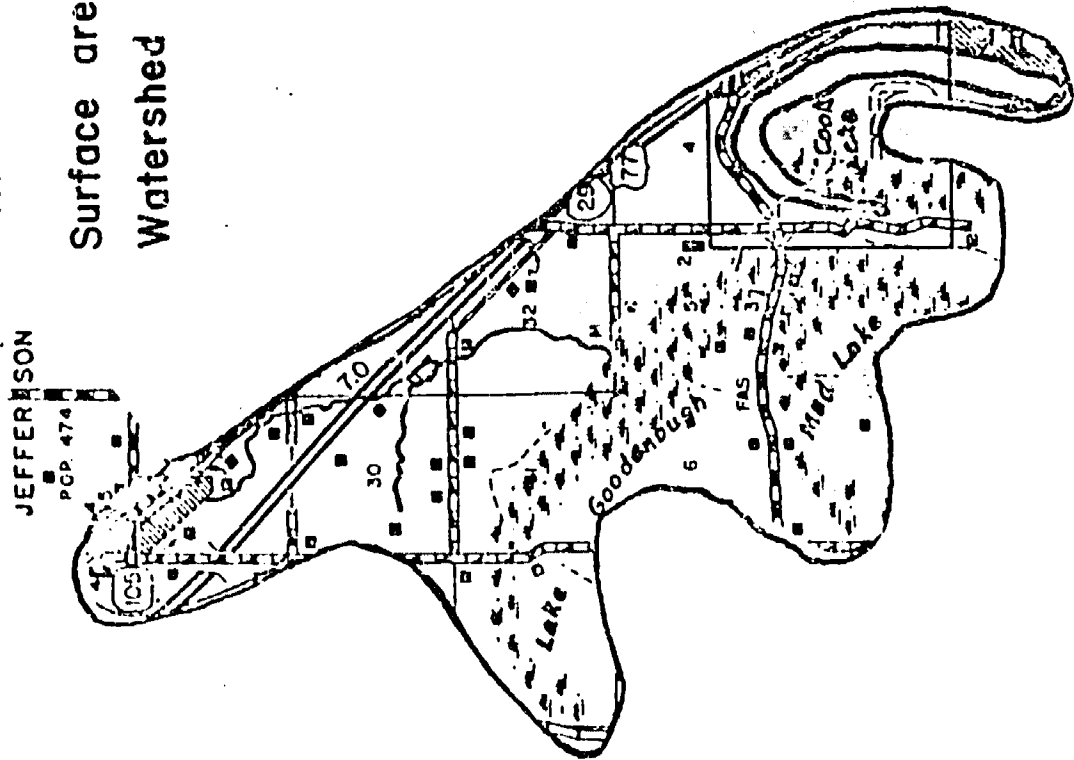
SCALE



McCook Lake

Surface area 273 acres

Watershed 6927 acres



McCOOK LAKE WATER LEVEL

<u>Date</u>	<u>Water Level</u>	
July 20, 1965	1090.5	
August 18, 1973	1090.6	
February 11, 1974	1090.0	
March 7, 1974	1090.0	
May 25, 1974	1089.6	- May 25, 1974 5000 gpm from river & 1350 gpm from well into lake
July 16, 1974	1089.5	
October 29, 1974	1090.2	- October 29, 1974 4800 gpm from river & 1350 gpm from well into lake
November 16, 1974	1090.3	
December 23, 1974	1090.0	- December 1, 1974 No water pumped from river into McCook Lake
April 1, 1975	1089.9	
April 28, 1975	1089.9	
May 21, 1975	1089.5	
July 8, 1975	1089.3	
August 5, 1976	1089.4	
February 8, 1977	1089.0	
July 19, 1977	1089.2	
June 16, 1978	1088.7	
July 31, 1978	1089.3	
October 26, 1978	1090.6	
April 14, 1980	1089.1	
November 13, 1980	1088.2	

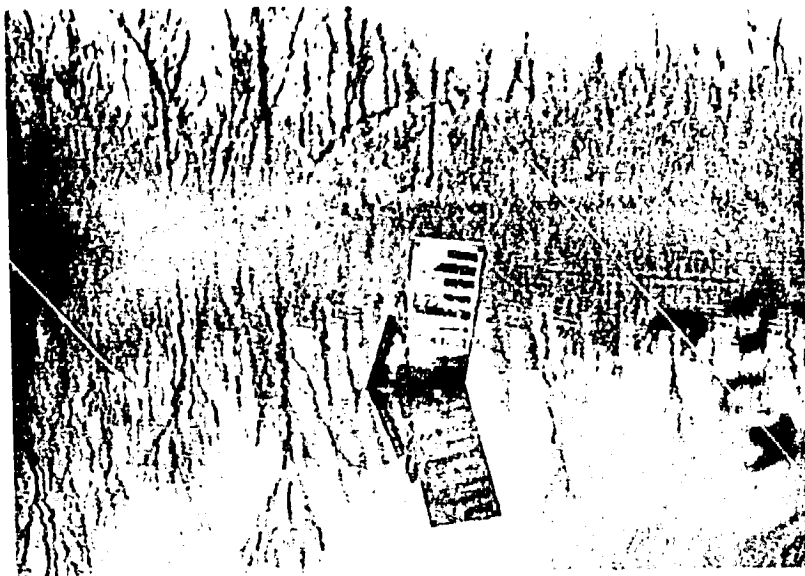


Photo No. 1 - Water Mark 1090.3



Photo No. 2 - Water marks on dock 1090.4



Photo No. 3 - Base of riprap 1090.1



Photo No. 4 - Erosion line 1091.4

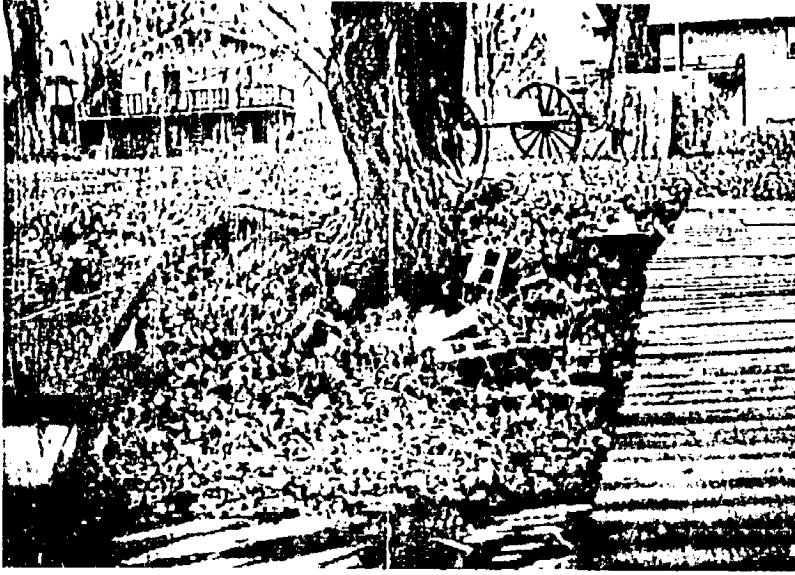


Photo No. 5 - Base of tree lakeside 1090.2

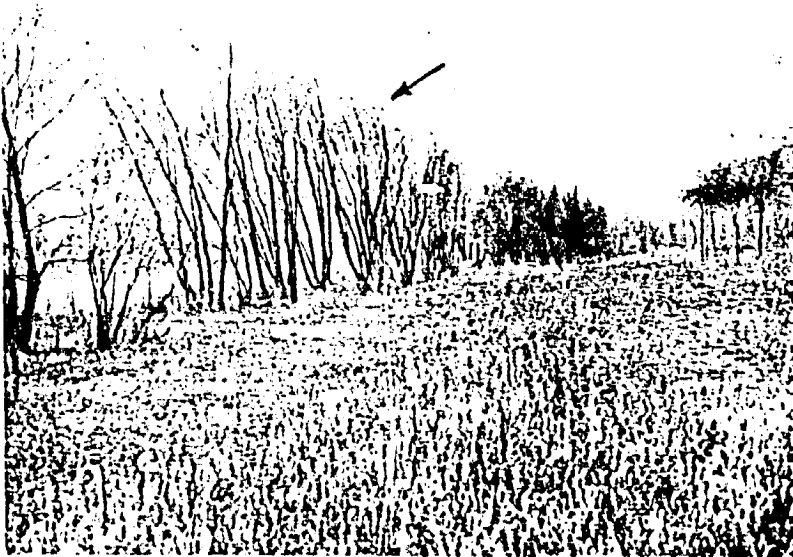


Photo No. 6 - Row of willow trees 10-15 yrs. old
Average base elevation 1090.1



Photo No. 7 - Base of tree lakeside 1091.3

Water Rights Division - DWR
Conversation or File Documentation

File No. 1606-3

4430-3
4565-3

NAME OF PERSON OR FILE: McCook Lake Recreation Assoc.

ADDRESS: _____ COUNTY _____

DATE: _____ TELEPHONE _____

RE: _____

COMMENTS:

December 2, 1981 - Water Management Board Minutes

Mrs. Gunderson MOVED, SECONDED by Mr. Decker 1) that 1090.7 ft. msl be established as the Ordinary High Water Mark for McCook Lake. 2) that 1090.3 msl be established as the Ordinary High Water Level and maximum elevation that McCook Lake can be maintained by artificial means. 3) that Water Right Nos. 1606-3, 4430-3 and 4565-3 be amended to allow pumping only when McCook Lake's water elevation is below 1090.3 ft. msl. MOTION CARRIED.

File in Permit or other file as necessary. Use to document conversations and what the other party was told; why action or decision was made.

4/82

NAME: _____



NOV 14 1994

4430-3

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

5781-3

Ray Ferrari
McCook Lake Recreation Association
343 Lakeshore Drive
McCook Lake, SD 57049

Dear Mr. Ferrari:

Enclosed is Water License No. 5781-3. This is the final water right document completing your process of obtaining a Water Right. Enclosed is Receipt No. 413941 in the amount of \$50.00 which you paid for the inspection and issuance of the Water License.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 5781-3, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

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

Very truly yours,

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

rd
enclosures

NOTE: The applicable portions of Water Permit No. 4430-3 have been incorporated into this Water License No. 5781-3.

NOT TO SCALE

