

No. 1465-3Water Division No. 3 BIG SIOUX RIVER District
(Blanks to be filled by the Engineer for the W. R. C.)

DEC 11 1967

**VESTED RIGHTS
APPLICATION FOR PERMIT**WATER RESOURCES COMMISSION
SOUTH DAKOTA**To appropriate Water within the State of South Dakota**

(NOTE—Draw a line through items not applicable.)

1. Name of applicant South Dakota Department of Game, Fish and Parks
 Postoffice address Pierre, County Hughes, State South Dakota

I. If a corporation

- (a) Name of same
 (b) Date and place of incorporation
 (c) Amount of capital stock
 (d) Amount paid in
 (e) Names and addresses of directors

(NOTE—A certified copy of articles of incorporation must accompany the application.)

II. Method of accomplishing the work and financial resources of the applicant:

- (a) Method of accomplishing work (Whether by contract, employment of others, or by direct labor)

(b) Cash on hand, \$

(c) Treasury stock, \$

(d) Bonds to be issued, \$

(e) Other resources, \$

2. Name of diversion work COTEAU LAKE - Deuel County
As required to fill lake to outlet level approximately 1410
 3. Amount of water claimed acre feet per year cubic feet per second
 4. Source of water supply dry draw
 5. Location of point of diversion One point in the watershed located in the NW 1/4 Sec. 20, T. 116, R 49. on bank DEUEL County.
 6. Annual period or periods during which water is to be used continuously
 7. To be used for:

I. Irrigation or domestic use: Gravity, overhead sprinkling or combination system?

(a) Number of acres to be irrigated acres.

(b) Legal subdivisions to be irrigated

(NOTE—A list of lands to be irrigated, giving each subdivision and fraction with acreage thereof, should be written here, or may be appended as a part of this application. Same must also be shown on accompanying map.)

(c) Statement as to domestic use (giving location, etc.) To the ordinary high water mark of the inundated portion of Sec. 20, 21, 28, 29, T. 116, R 49.

II. Stockwatering, mining, milling, power, fish culture, fire protection and public recreation:

(a) Nature of use public recreational purposes
 Name any of the above uses claimed(b) Amount of power to be generated horse power.

Amount claimed for engine cooling

(c) Location of plant

(d) Method of developing power

(e) Point where water will be returned to stream

1/R.

8. Estimated cost of work:

(a) Head Gates, \$..... (b) Pumping plant, \$.....
(c) Fluming, \$..... (d) Canal-earth, \$..... Rock, \$.....
(e) Other structures \$..... Total, \$.....

9. Description of diversion works:

I. Nature of works: (Reservoir, dam, ditch, flume, pumping plant, etc.)

II. Dimensions of works. Information requested not applicable. Coteau Lake is a
~~meandered lake~~ meandered lake. Maximum depth approximately 6 feet

(a) Dam: Height feet; length at bottom feet; length at top
..... feet; thickness at bottom feet; thickness at top
feet; slope at front water face; slope at back face
material used in construction

(b) Reservoir: Capacity when filled 1128 acre feet. Surface area at highwater
mark 470 acres.

DEPTH AT OUTLET-FEET	SURFACE AREA AT EACH DEPTH AT OUTLET-ACRES	FEET	ACRE-FEET CAPACITY

(c)* Head gate: Width feet; height feet;
Material

(d) Canal: Total length miles.

LOCATION BELOW HEADGATE	DEPTH	BOTTOM WIDTH	WIDTH AT WATER-LINE	GRADE PER MILE
At Mile	 feet	 feet	 feet	 feet
At Mile	 feet	 feet	 feet	 feet
At Mile	 feet	 feet	 feet	 feet
At Mile	 feet	 feet	 feet	 feet
At Mile	 feet	 feet	 feet	 feet
At Mile	 feet	 feet	 feet	 feet

(Give dimensions where reductions in size are made.)

10. Time required for completion of work years.

11. Time required for complete application of water to the proposed beneficial use years.

12. Choice of newspaper for publication of notice of intention to appropriate

STATE OF SOUTH DAKOTA

County of Hughes } ss.

I, R. A. Hodgins, being first duly sworn
on my oath depose and say: That my relation to the above described undertaking is that of owner, that I have
read the above foregoing statement, examined the map accompanying the same and that I know of my own
personal knowledge that the matters therein stated and shown are true.

Signed

R. A. Hodgins

Subscribed and sworn to before me this 8th day of December 19..... 67

H. E. Bowers
Notary Public (or other qualified officer.)

*Each diversion must have a headgate or measuring device.

H. E. Bowers, Notary Public

Coteau Lakes
Deuel Co.
20, 21, 28, 29-116-49

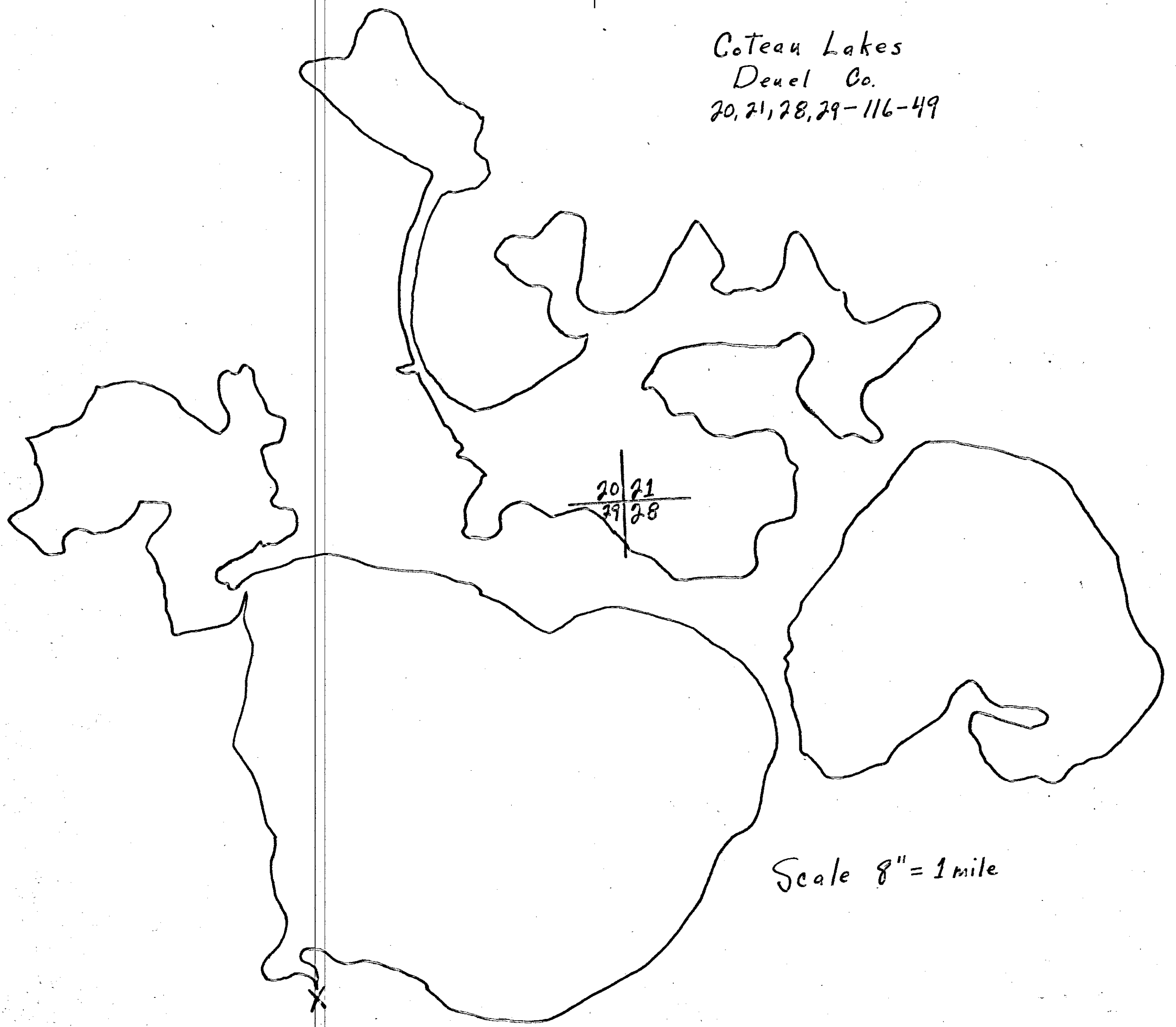
20 | 21

29 | 28

Scale 8" = 1 mile

John Popowski
Feb. 2, 1959

1465-3



Remarks by State Water Resources Commission:

"VESTED RIGHT" CLAIMED

STATE OF SOUTH DAKOTA
County of HUGHES }

Pierre, South Dakota, FEBRUARY 6, 1968

This is to certify that the foregoing application was received by the Commission at 9:00 o'clock
a m. upon the 11TH day of DECEMBER, 1967

State Water Resources Commission

By: Austin Jones

for Chief Engineer, Executive Officer

Number of permit 1465-3

Date of first receipt of application DECEMBER 11, 1967

Date of return to applicant for correction, amendments or changes required as follows: _____, 19____

Date of receipt of corrected application _____, 19____

Date from which applicant may claim right 1889

Approved JANUARY 10, 1968 Recorded in Book 10 Page 71

This is to certify that we have examined the foregoing application for a permit to appropriate water of the State of South Dakota, and we hereby grant the same as stated herein, subject, however, to the following limitations and conditions:

1st. The equivalent of at least one-fifth of the work above specified is ~~to be~~ completed on or before _____

2nd. The whole of said work is ~~to be~~ completed on or before _____

3rd. The limit of time for proof of beneficial use of water appropriated in accordance herewith is

COMPLETED

4th. The water appropriated shall be used for the purpose of PUBLIC RECREATION

5th. 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.

6th. The amount of the appropriation herein granted shall not exceed 1610 ACRE FEET ANNUALLY
~~nor shall it exceed the capacity of the above described system of diversion works, nor the least amount of water that experience may hereafter indicate as necessary for the production of crops on the lands of the best husbandry, and further, said appropriation must be limited to not more than one acre-foot (1,000,000 cubic feet) of water per second of time for each acre of land to which water is actually used for public recreation~~
was

and beneficially ~~used for~~ irrigation on or before JUNE 30, 1955, said water to be used during the following described annual period:

CONTINUOUSLY
Witness my hand this 6TH day of FEBRUARY, 1968

State Water Resources Commission

By: Austin Jones

Chief Engineer, Executive Officer

Certificate of Construction Issued FEBRUARY 6, 1968

Water License issued FEBRUARY 6, 1968

Permit No. 1465-1

Water Division No. 1 Big Sioux River Water District

Certificate of Completion of Works

TO ALL WHOM IT MAY CONCERN:

This is to Certify, That the Department of Game, Fish and Parks
of Pierre, County of Hughes, and State of South Dakota
Vested Right, the holder of Permit No. 1465-3, issued upon Application
No. 1465-1, bearing date or priority of 1889, authorizing the diversion of
1410 acre feet annually ~~one per second~~ of the waters of dry draws
County of Deuel State of South Dakota, at a point in the NW 1/4 SE 1/4
Section 20, Township 116N, Range 49W
for Public recreation
purposes, has fully complied with the provisions of the laws of the State of South Dakota relating to proof of
recognized
completion of the works of diversion set out and described in said Permit; that said works are ~~found to~~ satisfactory
condition for diverting and conveying to the place of intended use 1410 acre feet annually ~~one per~~
~~second~~ of water; and that the ~~lands proposed to be irrigated by the~~ use of said water are described as follows,
to-wit: to be used in place for public recreation

Witness my hand, this _____ day of _____ A. D. 19____

State Water Resources Commission

By:

J.W. CRINES
Chief Engineer, Executive Officer

STATE OF SOUTH DAKOTA

WATER LICENSE No. 1465-3

WHEREAS, On the 11th day of December A. D. 1967
 the Department of Game, Fish, and Parks

of Pierre County of Hughes and State of South Dakota
 duly made application (No. 1465-3) to us for a permit to use 1410 acre feet ann. all
~~cubic feet per second~~ of the waters of dry draw
 County of Deuel, State of South Dakota, for public recreation
 purposes; and

WHEREAS, On the 6th day of February A. D. 1968
Vested Right / Permit No. 1465-3 was issued to said applicant for the diversion of said water, **recognizing**
 the completion of the works of diversion therein described ~~as follows~~ and for the application to beneficial use of said
water ~~as follows~~ and
 and,

WHEREAS, On the 11th day of December A. D. 1967
 the holder of said permit duly made proof of the completion of adequate works for the diversion of 1410 acre feet
annually ~~cubic feet per second~~ of said waters, as evidenced by our Certificate No. 1465-3
 dated February 6, 1968 confirming the completion of works of sufficient capacity for
 diverting and conveying to the place of intended use 1410 acre ~~cubic feet per second~~ **feet annually** of water, with date of
 priority of 1889 ~~xxx~~ and,

WHEREAS, On the 11th day of December A. D. 1968
 proof was duly made of the application to beneficial use of 410 acre ~~cubic feet per second~~ **feet annually** of said water;
 to be used in place for public recreation purposes

NOW, THEREFORE, By the virtue of the authority vested in us by the laws of the State of South Dakota,
We hereby grant and confirm to the Department of Game, Fish, and Parks Vested Right
of Pierre the holder and owner of said permit No. 1665-A
a water right, dating from 1889 to the use of 1410 acre feet annually
~~of the waters of~~ of the waters of dry draw
in the County of Deuel and State of South Dakota, or so much thereof as may be
necessary for the purposes hereinbelow mentioned, to be diverted at a point in the NW 1/4, Section 20,
Township 110N, Range 49W
and
~~not elsewhere~~ stored in place

for the purpose of public recreation, subject to any limitations listed in the
Permit to appropriate Water, and

subject, however, to the laws of the State of South Dakota applicable to a license for the use of the waters of the
State, and subject, also to the local or community customs, rules and regulations which have been or may be
adopted from time to time by a majority of the users from a common source of supply, canal or lateral from
which such water may be taken, when such rules and regulations have for their object the economical use of such
water.

WITNESS, My hand and seal of our office at Pierre, South Dakota.
this 6th day of February A. D. Nineteen
Hundred and sixty-eight

State Water Resources Commission

By:

J.W.GRIMES
Chief Engineer, Executive Officer

Location No.

Water Division No. Water District

Proof of Application of Water to Beneficial Use**PETITION OF HOLDER**

Ques. 1. State your name, residence, occupation and postoffice address.

Ans. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota

Ques. 2. If acting in behalf of a corporation, state its name, principal place of business (if a foreign corporation, give name and postoffice of statutory agent,) your position with reference to same, and your authority for appearing in its behalf.

Ans.

Ques. 3. State date of posting and date of recording notice of appropriation.

Ans.

Ques. 4. State source of water supply and give exact location of point of diversion.

Ans. Dry draw - one point in the watershed located in the NW 1/4 Sec. 20
T 116, R 49.

Ques. 5. Describe your works of diversion giving length and height of each dam and state amount of water they are capable of conveying from point of diversion to place of use, and give name of canal or ditch or other works by which water is conducted to such place of use, and date of completion of same.

Ans. A meandered lake - depth 6 feet - 470 acres

Ques. 6. State for what purpose water is used and describe place of use. (If for irrigation, name each subdivision in which used, and number of acres in each subdivision that have ACTUALLY been irrigated with said water.)

Ans. Fish and wildlife propagation, conservation and recreation

Ques. 7. If for other than irrigation purpose, state how applied, amount of horse power generated, etc.

Ans. Used in place in lake or reservoir

Ques. 8. What is the minimum amount of water required for the use specified above?

Ans. As required to fill lake to outlet level approximately 1410 acre feet
per year

Ques. 9. If you are not the person or representative of the corporation to whom above mentioned permit was originally issued, please state how ownership was acquired by present holder.

Ans.

Ques. 10. State when, how, in what amount and to what extent, the water diverted under above mentioned permit has been used.

Ans. A meandered lake. Used by the public for uses specified except for
that amount lost by evaporation and seepage

(Sign) R. H. Higgins

I hereby certify that the foregoing testimony was read to the above subscriber before its signing and I believe him to be the person he represents himself to be, and that said testimony was subscribed and sworn to before me, at my office in Pierre, County of Hughe.

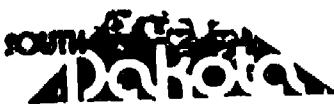
State of South Dakota, on this 8th day of December, A. D. 1967.

} Witnesses.

[Signature]

Notary Public

I, the undersigned, do hereby certify that I am a duly qualified elector in the immediate vicinity of the diversion works designated in the foregoing testimony, that I have no interest in the works, water or land above described, that I have read the foregoing testimony and that I know of my own personal knowledge that the matters therein stated are true.



Department of Water & Natural Resources

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

September 21, 1988

Richard Beringson, Secretary
Department of Game, Fish and Parks
Anderson Building
445 E Capitol
Pierre SD 57501

Dear Mr. Beringson:

I am writing to notify you that pursuant to the Notice of Intent to Validate Vested Water Right Claims dated June 20, 1988 that I intend to oppose validation of all Department of Game, Fish and Parks Vested Water Right Claims for lakes for the following reasons:

1. Until the outlet elevation for each lake is surveyed and the outlet elevation is set by the Water Management Board.
2. To allow the Vested Water Right Claim to be amended, if necessary, as follows:
 - a) Include the outlet elevation;
 - b) To correct the amount of water claimed;
 - c) To add the qualification that a vested claim is subject where necessary to installation of a concrete outlet structure to assure retention of the outlet as the established elevation; and
 - d) To add any amendments and qualifications necessary to clarify a Vested Right Claim.

Also, that I intend to oppose validation of all Department of Game, Fish and Parks Vested Water Right Claims for dams to allow the Vested Water Right Claim to be amended, if necessary, as follows:

1. To include the spillway elevation;
2. To correct the amount of water claimed; and
3. To add any amendments and qualifications necessary to clarify a Vested Right Claim.

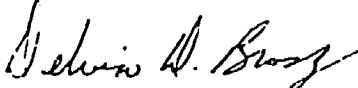


September 21, 1988
Richard Beringson, Secretary
Page 2

We will be working with your staff on these validations. We have already discussed setting outlet elevations before validating claims for lakes. Although the work necessary to complete the validation process will take several years to complete, the results should be of benefit to the public and to your Department. As the work is completed to validate each claim, the claim will be presented to the Water Management Board for validation.

Please advise if you have any questions.

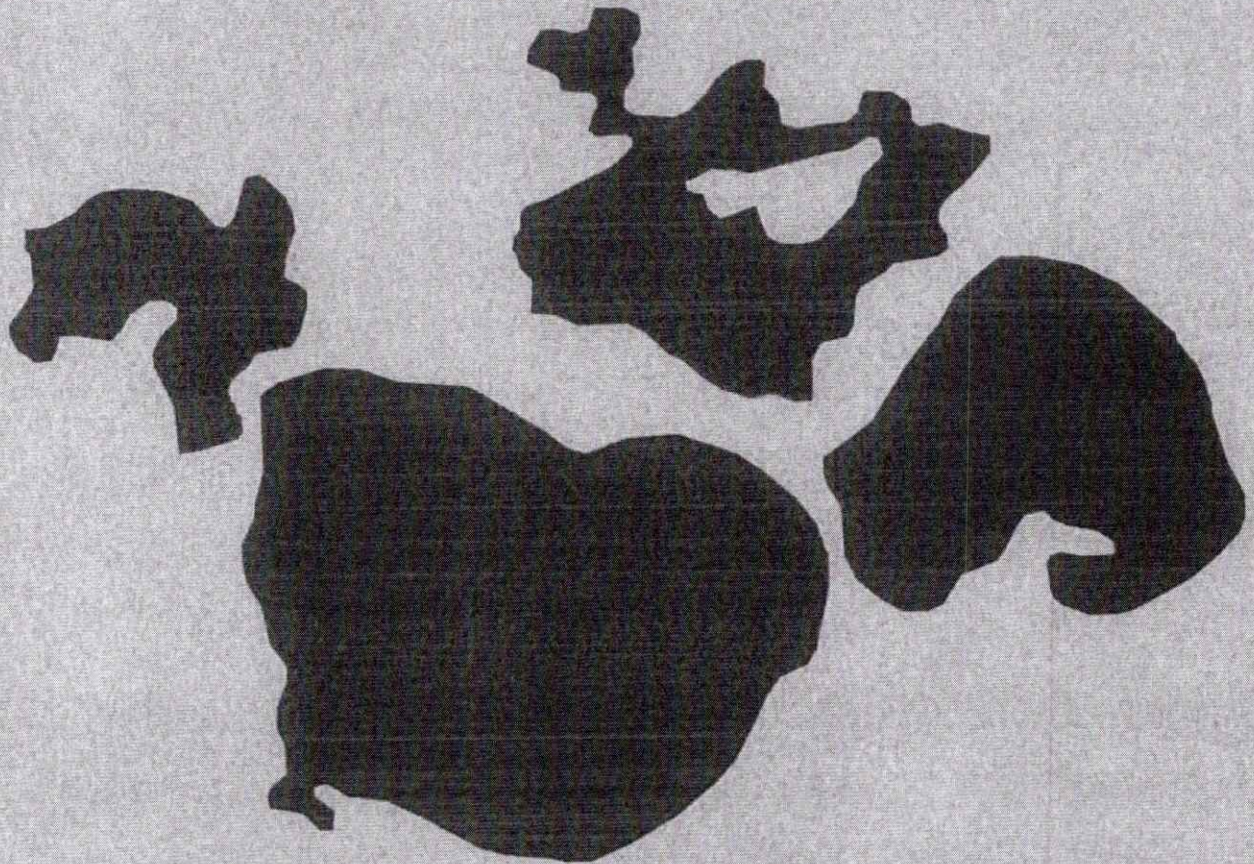
Very truly yours,


/s/ JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

cc: Ron Koth, Department of Game, Fish and Parks

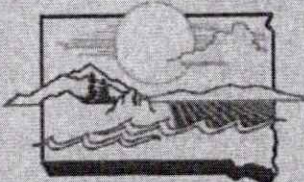
1465-3

REPORT ON COTEAU LAKES - DEUEL COUNTY ORDINARY HIGH WATER MARK INVESTIGATION



WATER RIGHTS PROGRAM
April 12, 2001

South Dakota Department of
Environment and Natural Resources



Protecting South Dakota's Tomorrow... Today

Department of Environment and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

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ABSTRACT

Dennis Evenson, 805 2nd Street West, Clear Lake, SD has requested the Water Management Board establish an Ordinary High Water Mark (OHWM), and outlet elevation for Coteau Lakes in Deuel County.

In response to the request and pursuant to SDCL 43-17-1, 43-17-21, 43-17-24 and 43-17-28, an investigation was conducted by the South Dakota Department of Environment and Natural Resources, Water Rights Program acting on behalf of the Water Management Board.

This report contains the results of the field investigation conducted October of 2000.

During the field investigation of Coteau Lakes, the following easily recognizable characteristics were used in recommending an elevation for the OHWM and outlet: erosion, changes in the character of the soil, boulder lines, changes in slope, and terrestrial vegetation.

Based on the finding in this report, the recommended elevations for the Coteau Lakes OHWM and outlet are 1829.5 and 1827.4 feet above mean sea level respectively.

INTRODUCTION

On June 21, 2000, the Water Rights Program received a written request for the establishment of an Ordinary High Water Mark and outlet elevation for Coteau Lakes from Denis Evenson, a riparian landowner. Based on the request, an investigation was conducted to determine elevations to be recommended for the Ordinary High Water Mark (OHWM) and outlet.

OHWM is defined by SDCL 43-17-20(2), which states:

“Ordinary high water mark,” the term as defined in decisions rendered by the courts of this state.

An OHWM is established by the processes of nature. The Water Management Board’s (Board) setting thereof is merely a formal recognition of the mark established by nature.

State law (SDCL 43-17-2) provides that all navigable rivers and lakes are public highways within 50 feet landward from the water’s edge, provided that the outer boundary of such public highway may not expand beyond the OHWM and may not contract within the OLWM. Thus, the public has the right to use a strip of land up to 50 feet wide, below the OHWM, beginning at the water’s edge or the OLWM for public purposes.

Further, while the public may use the 50 foot strip of land for only “public” purposes, the private adjoining landowner may use the land for any purpose not inconsistent with the rights of the public. Such purposes ordinarily would include, but not limited to, the right to graze and water livestock, to hay, or to build a boat dock.

South Dakota Codified Law (SDCL) 43-17-23 states that in determining the OHWM, natural factors take precedence. Man-made influences, either those that have been constructed to lower the mark or those constructed to raise the mark, shall be disregarded unless the influences have been lawfully constructed or have existed and been accepted for a period of time determined by the Board to be the equivalent of natural conditions.

When requested to do so, the Board is required by SDCL 43-17-21 and 43-17-28 to establish the OHWM for public lakes. SDCL 43-17-1 provides that the ownership of land below the OHWM, and of land below the water of a navigable lake or stream, is regulated by the laws of the United States or by such laws of the state as the Legislature may enact.

A lake is “navigable” if its waters constitute “public waters” (*Flisrand v. Madson* 35 S.D. 457, 152 N.W. 796, (1915)). A lake is also “navigable” when, if maintained at the high-water mark, it is suitable for rowing, fishing, fowling and bathing (*Anderson v. Ray* (1916) 37 S.D. 17, 156 N.W. 591).

"Ordinary" according to SDCL 43-17-20(2) is defined in decisions rendered by the courts of this state. In the case of Flisrand v. Madson, 35 S.D. 457, 152 N.W. 796, (1915) the court wrote:

Neither high or low water mark means the highest or lowest point reached by the waters of a lake during periods of extreme and continued freshets, or periods of extreme and continued drought, but does mean the high and low points of variation of such waters under ordinary conditions, unaffected by either extreme.

In the case of Anderson v. Ray, 37 S.D. 17, 156 N.W. 591 (1916) the South Dakota Supreme Court wrote:

In the case of freshwater rivers and lakes - in which there is no ebb and flow of the tide, but which are subject to irregular and occasional changes of height, without fixed quantity of time, except that they are periodical, recurring with the wet or dry seasons of the year - high water mark, as a line between the riparian owner and the public, is to be determined by examining the bed and banks, and ascertaining where the presence and action of the water are so common and usual, and so long-continued in all ordinary years, as to mark upon the soil of the bed a character distinct from that of the banks, in respect to vegetation, as well as respects the nature of the soil itself.

In the Waubay Lake decision, issued on January 17, 1986, the South Dakota Supreme Court stated the determination of these water marks is to be done on a case by case basis. The Court stated that:

"... under ordinary circumstances, the Ordinary High Water Mark will be set at a level where there is a distinct mark which evidences erosion, and changes in the character of the soil, and destruction of terrestrial vegetation, which have occurred under the ordinary and continuous conditions of the lake, disregarding periods of extreme and periodic freshets, and disregarding the highest water mark which does not evidence erosion and soil changes and destruction of vegetation occasioned under ordinary conditions. If a single distinct mark, occasioned under ordinary circumstances and evidencing all of the factors delineated above does not exist, i.e., there is conflicting evidence of the role of the Ordinary High Water Mark, it is the level where significant major, and substantial terrestrial vegetation ends, that the OHWM is to be set." (cites omitted)

MEANDER LINE

A meander line, as the name implies, is a line that meanders and is not at a constant topographic elevation. An OHWM is at a constant topographic elevation. Hence, a meander line is not and cannot be associated with an OHWM. A meander line survey is

established by man for surveying and mapping purposes and to establish the number of acres subject to sale. A meander line is not a property line. OHWM's are established by nature and defined by man.

In the case of *Flisrand v. Madson*, 1915, the South Dakota Supreme Court wrote:

"The fact alone that the lake in question was meandered by the government survey does not directly control this matter, as a meander line is not considered a boundary line, but merely serves to define the sinuosities of the bank of the lake and a means of ascertaining the amount of land in the fractional tract subject to sale, which is to be paid for by the purchaser. *St. Paul Ry. Co., Shurmeier* 7 Wall 272, 19 L. Ed. 74, and note page 972."

The meander line was surveyed around Coteau Lakes in 1873 (see Attachment No. 2).

GENERAL INFORMATION

Coteau Lakes are located in north central Deuel County 5 miles north and 2 miles west of the city of Clear Lake. Coteau Lakes are located in Sections 20, 21, 28, and 29 T116N, R49W. The outlet channel is located on the southwest side of South Coteau Lake in Section 29, T116N, R49W (see Attachment No.1). The Coteau Lakes have a watershed area of approximately 22 square miles and a surface area of approximately 535 acres at the current outlet level.

All elevations in this report are referenced to a United States Department of Commerce, Environmental Sciences Services Administration, Coast and Geodetic Survey benchmark with a 1929 sea-level datum described as follows:

The benchmark is located 4.75 miles north and 3.0 miles west of the junction of US Highway 77 and State Highway 22, T116N, R49W, near the 1/16 corner between Sections 31 and 32, 94 feet south and 47 feet west and 1.4 feet higher than the road at field entrance, 331 feet north of a drive to a farmhouse, 2 feet south of a witness sign, a standard disk, stamped "43 PJH 1968", and set in the top of a concrete post.

The Water Rights Program along the perimeter of the Coteau Lakes established temporary benchmarks. The locations and elevations of the temporary benchmarks are available from the Water Rights Program upon request.

WATER RIGHTS

Vested Water Right Claim No. 1465-3 held by the South Dakota Department of Game, Fish and Parks (GF&P) is for water stored in Coteau Lakes. (Water Right files, 2001) There are also domestic uses (i.e. livestock watering, dams, dugouts, etc.) present within the Coteau Lakes drainage basin.

Vested Water Right Claim No. 1465-3 claims an 1889 priority date, and approximately 1410 acre-feet of water per year to fill Coteau Lakes for public recreational purposes. The claim states that the location of the Coteau Lakes diversion is in the NW¼ SE¼ of Section 20, T116N, R49W. This claim indicates a surface area of 450 acres and storage capacity of 1128 acre-feet when full. The GF&P estimated the lake surface area and storage capacity at full water level on December 8, 1967. The storage and area of the lake are only estimates and may not be the actual lake storage or surface area at the OHWM.

A correction will need to be made to Vested Water Right Claim No. 1465-3 for Coteau lakes. The location of the diversion will need to be corrected from the NW¼ SE¼ Section 20 to the outlet location in the NE¼ SW¼ Section 29 .

GEOLOGY

Most of Deuel County lies in the Coteau des Prairies division of the Central Lowland providence. The extreme northeastern corner of Deuel County is in the Minnesota River-Red River Lowland division of the Central Lowland providence. The surface of the Coteau des Prairie is characterized by glacial moraine topography with an uneven rolling appearance. Moraine is till deposited by glaciers. The major topographic features trend northwest to southeast as does the Coteau Lakes. (Bissel and Gilbertson, 1987)

Underlying Coteau Lakes is the Big Sioux Aquifer composed of out wash near the surface. In the Clear Lake area the aquifer consists of collapsed out wash. Collapsed out wash is the result of layers of ice melting and the material in the ice falling out to form an uneven rolling surface.

HYDROLOGY

Coteau Lakes water levels appear to fluctuate with the water levels of the Big Sioux aquifer that occurs in the area. The Water Rights Program monitors many wells in the Big Sioux aquifer that encompasses Coteau Lakes. The two closest wells are well DU-71B which lies 2 miles south of Coteau Lakes and well DU-78A which lies 1 mile south of Coteau Lakes. The general fluctuations in the water levels in wells DU-71B and DU-78A follow measured lake levels for Coteau Lakes over the last 17 years, see Attachment No. 6 and 6a.

Water levels in Coteau Lakes are most influenced by yearly precipitation and evaporation. The hydrographs for the Coteau Lakes have the same shape for the period of lake level measurements. This also follows the yearly precipitation graph. See Attachment Nos. 5 and 9.

Coteau Lakes consists of four lakes, North, South, East, and West Coteau Lakes. Most of the discharge from the watershed enters North Coteau Lake and flows to East and South Coteau lakes through a culvert. Discharge from a small portion of the watershed enters West Coteau Lake, surface water flows to South Coteau lake over a sand ridge between

the two lakes. Water also moves through the sandy ridges that separate all the lakes. Water leaving the Coteau Lake's outlet flows southeast to Lake Sutton and then continues in the same direction to Clear Lake. Water leaves Clear Lake via Hidewood Creek. Hidewood Creek is a tributary to the Big Sioux River.

WATER LEVELS

Available water level measurements of Coteau Lakes are shown in Attachment No. 4. The Water Rights Program has taken water level measurements for Coteau Lakes since the fall of 1983.

East Coteau Lake was dry from the fall of 1990 to the spring of 1991. Measurements taken by the Water Rights Program show that the Coteau Lakes have been as much as 1.7 feet over the outlet.

Dennis Evenson, landowner on North Coteau Lake reports that he has never seen water flowing over the banks of North Coteau Lake, even during the high water years of 92-93 and 1997. During spring runoff water flows from a slough on Mr. Evenson's property into North Coteau Lake. In 92-93 water backed up into the slough from the lake. Water also floods the flat area just east of North Coteau Lake. Surveyed elevations 50 feet out onto the flood plain are 1828.4 and 1829.7 fmsl. Mr. Evenson stated that in 1976 the channel between his slough and North Coteau Lake was dry as was the flat area east of the lake.

Steve Hansen grew up on the lakes and his father still owns property on East and South Coteau Lakes. Mr. Hansen also has never seen water flow over the banks of the lakes. Mr. Hansen has frequented the road that separates North Coteau Lake from East and South Coteau lakes. He has observed water up onto the toe or embankment of the road, but never over the road, during spring runoff. Surveyed elevations in this area are 1828.4 and 1829.1 for toe of road and 1831.5 for edge of road. During spring runoff water has flooded the flat area just east of North Coteau Lake, as Mr. Evenson also stated. Mr. Hansen recalls East Coteau Lake dry in 1976 and again in the early 90's. The other lakes had water when East Coteau Lake was dry. During the dry years Mr. Hansen observed lots of small growth on the shores of the lakes.

CLIMATOLOGICAL DATA

Climatological data for Coteau Lakes is included in this report as Attachment No. 9. The climatological data is discussed in detail in the following section.

RUNOFF FACTORS

Soil moisture conditions refer to the degree that a soil is saturated with water. During a "dry" year(s), the soil moisture becomes depleted due to plant use, evaporation, and natural drainage. Runoff volume from a rainfall event during depleted soil moisture conditions would be reduced due to the rain soaking into the ground.

On the other hand, during a "wet" year(s), the soil becomes saturated with water and isn't capable of absorbing the rainfall event. Hence, the identical rainfall event during "wet" years will produce a much larger runoff volume than during "dry" years. The more saturated the soil becomes, the larger the runoff volumes generated during a particular rainfall event.

A single rainfall event whose duration is spread over a number of days or weeks can generate a relatively small runoff volume. Conversely, a single rainfall event whose duration is only a few minutes or hours could generate a relatively large runoff volume. Hence, the runoff volume generated by any given rainfall event is also dependent upon the amount and intensity.

The potential for the largest runoff volumes for any drainage basin (Coteau Lakes or any other lake) are generated when saturated soil moisture conditions are present going into the winter. The ground then freezes nearly solid and becomes impermeable due to winter temperatures below 32 degrees Fahrenheit. Snow accumulations coupled with cold winter temperatures set the scene for a major runoff event the following spring.

A rapid temperature rise in the spring quickly melts the previous winters snow accumulation. The still frozen/saturated soil is not able to soak up any of the snow melt-water, hence, nearly all snow melt-water arrives at terminal locations such as depressions, dams and lakes or discharge to streams.

As previously shown, yearly runoff entering Coteau Lakes is dictated by a complicated set of circumstances that include general climatic factors, soil moisture conditions, and snow melt.

MAN MADE INFLUENCES

Natural factors are given precedence in determining the ordinary high water mark. Man-made influences, either those that have been constructed to lower the mark or those constructed to raise the mark, shall be disregarded unless the influences have been lawfully constructed or have existed and been accepted for a period of time determined by the Board to be the equivalent of natural conditions (SDCL 43-17-23).

There appears to be manmade influences at Coteau Lakes and as on many other lakes the influences are in the inlet and outlet areas. Roads, culverts, and manmade outlets have replaced portions of the natural inlet and outlet channels for and between the Coteau Lakes.

The above man-made influences have apparently had an affect on the OHWM but have been in place for such a time they probably constitute natural conditions.

FIELD INVESTIGATION

BENCH MARK ESTABLISHMENT AND COLLECTION OF FIELD DATA

Temporary benchmarks were established around Coteau Lakes. The locations and elevations for the temporary bench marks are available from the Water Rights Program upon request.

Field data for Coteau Lakes was collected in the fall of 2000. The data collected can be found in Attachment Nos. 7 and 8.

ORDINARY HIGH WATER MARK EVIDENCE

Distinct physical evidence used in identifying the OHWM are: erosion, changes in the character of the soil, boulder lines, change in slope, growth and destruction of terrestrial vegetation (FLISRAND V. MADSON, 1915; ANDERSON v. RAY, 1916; S.D. WILDLIFE FEDERATION v. WATER MGT. BD., 1986; Red Lake, Brule County Ordinary High Water Mark and Ordinary Low Water Mark, and Outlet Elevation Investigation Report).

Erosion

Distinct erosional features around Coteau Lakes are summarized in Attachment No. 8. Also see photos in Attachment No. 10. Erosional features at Coteau Lakes consist of cutbanks, slope changes, and washed root systems. These features were found at a variety of elevations on the bank: 1827.5 to 1828.0, at 1828.6, 1829.0 to 1829.3, 1829.6 to 1829.9 and at 1830.5 fmsl for bottom of cutbank; at 1828.5, 1828.8 to 1829.2, 1830.0 to 1830.5, 1831.0 to 1831.1, and at 1831.4 for top of cutbank. There were several washed root systems along the shore, they will be dealt with under Terrestrial Vegetation. There are several slope changes, minor changes occurred on the beach at 1826.4 to 1827.9 fmsl. More significant changes in slope occurred from 1828.5 to 1828.8, 1829.4 to 1830.2, and 1831.8 to 1832.2 fmsl. The most obvious changes in slope are the toe and top of the lake bank and steep slopes. These elevation occurred at 1829.5 to 1829.7, 1830.2, and 1831.8 to 1832.2 fmsl for toe of steep bank and 1830.6 to 1830.8, at 1831.3, 1831.6 to 1832.2, at 1832.6 and at 1833.1 fmsl for top of bank.

Changes in the character of the soil

Soil stratification occurs around a lake when wave action washes the lake shore and leaves the larger parent materials (pebbles, cobbles, boulders) relatively stationary while the fine grained materials (sand, silts, clays, peats) are transported the greatest distance into the lake. An idealized lake shore progression would start with backshore boulder sized materials and terminate with clay and peat materials deposited in the deepest portions of the lake. Historical lake levels can be inferred by locating areas showing remnant soil stratification.

The soil characteristics observed were found at elevations of 1826.2 to 1826.6, 1826.8 to 1827.0, 1827.2 to 1827.7, 1828.0 to 1828.2, and 1828.5 to 1828.6 fmsl for washed

pebbles, washed cobble, top of sandy beach, and base of rocks and boulders and 1829.4 to 1829.6, 1829.9 to 1830.1, 1830.9 to 1831.2, and 1831.6 for top of boulders. Distinct surficial changes in the character of the soil at Coteau Lakes can be found in Attachment No. 8. Also see photos in Attachment No. 10.

Boulder Lines/Ice Pushed Ridges

In the spring lake shores can be acted upon by ice sheets and wind action which form ice pushed ridges. The lake ice melts first near the shores because of the relatively rapid heating of the earthy material of the shore and the shallow bottom. An open lane of water is formed which is further widened by a rise in lake level from the water added by the melting snow of the surrounding slopes. If strong winds develop before the ice becomes rotten, the ice is blown about from side to side by the winds and pushed on the shores with almost irresistible force. The direction of shove is related to that of the winds and may vary along any shore even during a jam, if the winds shift considerably. The force of the push depends on the firmness and momentum of the ice, the latter being determined by the velocity and duration of the wind, the weight of the ice and to some extent the distance through which the ice is free to move. (Dionne, 1979)

Ice pushed ridges/boulder lines can be composed of foreshore and backshore materials. There are boulder lines present around Coteau Lakes. The boulder lines present are related to ice action and wave erosion acting upon the lake bank. The boulder lines are found at the base and along the slopes of steeply sloping hillsides as residuum.

There appears to be an ice pushed ridge along the south shore of South Coteau Lake. The bank is steep from the base of the boulder lines to the top of the bank. There is a back slope on the other side of the bank that drops 1.5' to 3' from the top of the bank.

Boulder lines are summarized in Attachment No. 8. Base elevations of boulder lines range from 1826.6 to 1827.7 and 1828.0 to 1828.2 fmsl. The top of the boulder lines exists at or near 1829.4 to 1829.6, 1829.9 to 1830.1, 1830.9 to 1831.2, and 1831.6 fmsl. See photos in Attachment No. 10.

Terrestrial Vegetation

The tree population observations in this report are limited to easily recognizable characteristics such as species, diameter and elevation. The tree population around Coteau Lakes is predominately cottonwood, ash, and elm. Growth of terrestrial vegetation around Coteau Lakes is summarized in Attachment No. 8. Also see photos in Attachment No. 10.

Certain species of trees are able to survive periods of flooding better than others. Elm, cottonwood, and ash trees are the predominant trees on Coteau Lakes' shore. Elm trees are considered intermediately tolerant to flooding. This means an elm tree with good vigor can survive occasional inundation between 20 and 30 percent of the growing season. Cottonwood and ash trees are considered tolerant to flooding. This means a cottonwood or ash tree with good vigor is able to survive when flooded more than 30 percent but less than 40 percent of the growing season. (Hightshoe, 1988)

The ability for certain trees to survive occasional flooding may be due to the formation of lateral roots at or just above the waterline (Gill). Photo No. 14 shows lateral roots washed by wave action

Using trees on a lake without other OHWM evidence would suggest that the OHWM elevation lies close to the elevation of predominant destruction of terrestrial vegetation. There are only a few trees below Coteau Lakes outlet level of 1827.4. Most of the trees observed had washed root systems meaning water acted at or near the base of these trees. Many of the trees were on steep banks representing a large difference in the lakeside and landside elevations of the trees. The lakeside and landside elevations of trees on steep banks with washed root systems were averaged. Lakeside elevations were used for trees on gentle slopes without washed root systems and landside elevations for trees on gentle slopes with washed root systems, see Attachment No. 8.

Elm, cottonwood, and ash trees measured at Coteau Lakes range in diameter from six inches to 4.5 feet and have grown between the elevations of 1826.7 and 1832.1 fmsl. Large trees were found at all locations investigated around the lakes and at several different elevations except for West Coteau Lake. Trees on steep banks with washed root systems were found at elevations 1827.9, 1828.4 to 1829.2, 1829.5 to 1830.2 and 1830.9 fmsl. Trees on gentle slopes with washed root systems were found at elevations 1827.9, 1828.4 to 1829.2, and 1830 fmsl. Trees without exposed root systems were found at elevations 1828.5 to 1829.4, 1829.8, and 1830.1 to 1830.8 fmsl. The largest tree measured was a 4.5-foot diameter cottonwood stump found at elevation 1829.8 fmsl. The lowest terminal elevation observed for live trees at Coteau Lakes is 1826.7 fmsl, a 6" and an 8" elm.

OUTLET

The outlet for Coteau Lakes is located on the southwest side of South Coteau Lake in the NE SW Section 29, T116N, R49W (see Attachment No.1). The outlet consists of a metal sheet pile overflow weir placed in the outlet channel. It was constructed in 1959 by SD Department of Game Fish and Parks. See photo nos. 11 and 12. The overflow elevation occurs at 1827.42 fmsl.

In South Dakota most of the lakes with OHWM's have outlets that are six inches to one foot below the OHWM. The recommended OHWM for Coteau Lakes is 2.1 feet above the overflow elevation of the outlet. Water flows from North Coteau Lake to East and South Coteau lakes, water also flows from West Coteau Lake to South Coteau Lake. The outlet channel is congested with reeds and silt and has pooled on the downstream side of the outlet. These conditions may slow the evacuation of water from Coteau lakes thus water is held at a higher elevation for an extended period of time

CONCLUSIONS

1. The term "Ordinary" for any given lake, as defined by established OHWM's can be synonymous with average, normal and yearly. "Ordinary" can also take into consideration periodic fluctuating water levels based upon prevailing climatic conditions and watershed characteristics.
2. A meander line is not at a constant elevation and is not considered in determining the OHWM for any given lake.
3. Measured water levels since November 8, 1983, indicate that Coteau Lakes has experienced 5.6 feet of fluctuation.
4. Man made influences caused by road construction and culvert installation over and in the outlet and inlet channels may have affected the Coteau Lakes OHWM, but have been in existence long enough to constitute natural conditions.
5. Based upon the field data summarized in Attachment No.8, a potential OHWM elevation for Coteau Lakes is 1829.5 fmsl. Erosional features and terrestrial vegetation afforded strong evidence with supportive evidence from soil characteristics. OHWM's are not associated with the highest limits of a lake bank but are associated with the upper limits of a lake bank. The majority of the indicators show the OHWM exists at the elevation of 1829.5 fmsl; it is recommended that the OHWM be established at 1829.5 fmsl.
6. It is recommended that the outlet elevation for Coteau Lakes be established at 1827.4 fmsl.
7. Vested Water Right Claim No.1465-3 will need to be corrected prior to being validated.



Lynn Beck
Natural Resources Engineer Specialist
Water Rights Program



Gale N. Selken, P.E.
Natural Resources Engineer Director
Water Rights Program

**RECOMMENDATION OF THE CHIEF ENGINEER ON ESTABLISHMENT OF
AN ORDINARY HIGH WATER MARK and OUTLET ELEVATION and
VALIDATION OF RECOGNIZED VESTED WATER RIGHT CLAIM NO. 1465-3
FOR COTEAU LAKES, DEUEL COUNTY**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning establishment of an Ordinary High Water Mark, outlet elevation, and validation of Recognized Water Right Claim No. 1465-3 for Coteau Lakes in Deuel County.

The Chief Engineer of the Water Rights Program recommends:

1. That the OHWM for Coteau Lakes, Deuel County be established at elevation 1829.5 feet mean sea level (fmsl).
2. That the outlet for Coteau Lakes, Deuel County be established at elevation 1827.4 fmsl.
3. Validation of Recognized Vested Water Right Claim No. 1465-3 for sufficient water to maintain the water level to the outlet elevation of 1827.4 fmsl.

See report for additional information.



Garland Erbele, P.E. Chief Engineer
Water Rights Program
April, 13 2001

Bibliography

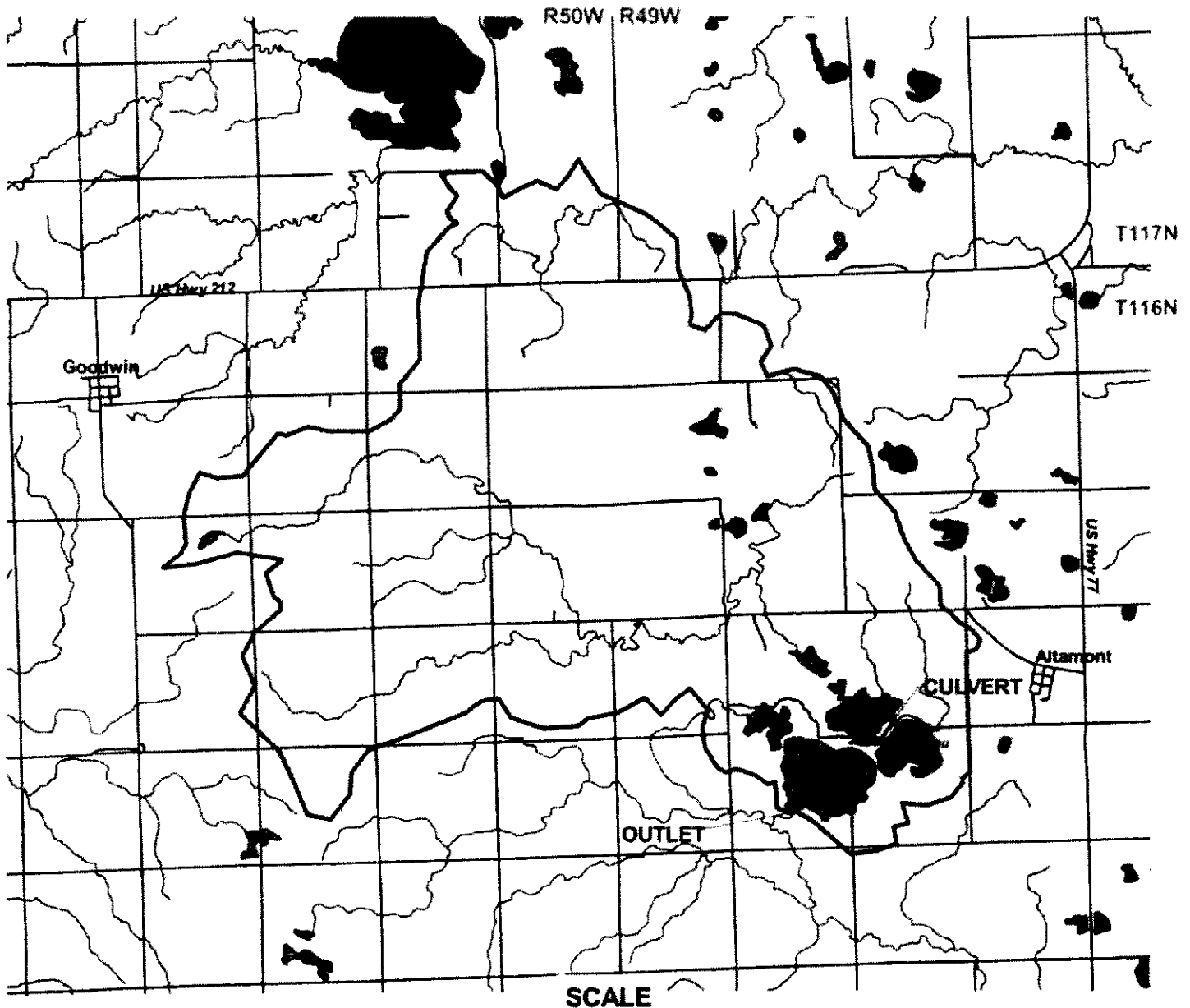
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- Water Rights Program Files, 2000, Department of Environment and Natural Resources, Joe Foss Building, 523 East Capitol, Pierre, SD 57501.

Persons and Agencies Referenced

- Archives, State Library Building, Pierre, SD 57501
- Deuel County Register of Deeds, County Courthouse, Clear Lake, SD 57226
- Dennis Evenson, P.O. Box 965, Clear Lake, SD 57226
- Steve Hansen, Clear Lake, SD 57226
- State Climatologist, South Dakota State University, Brookings, SD 57007

Attachment No. 1

COTEAU LAKES, DEUEL COUNTY ORDINARY HIGH WATER MARK



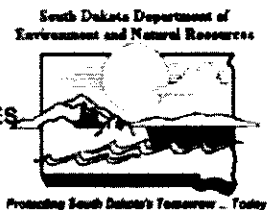
LEGEND

- Ohwm evidence
- ▭ Coteau Lakes Watershed 21.8 sq. mi.
- ▴ Roads
- ▴ Streams
- ▬ Lakes

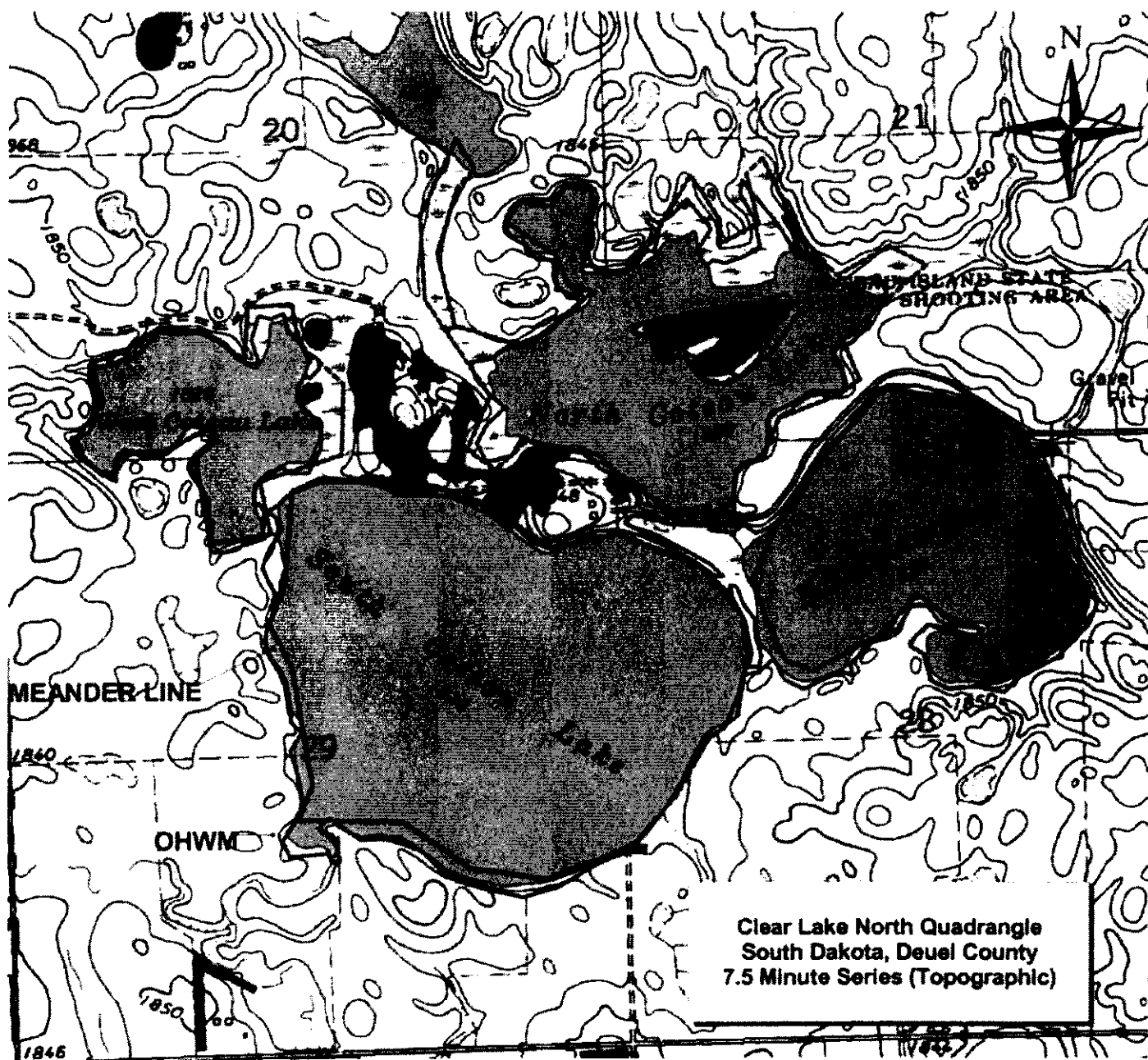
SCALE 1 0 1 2 Miles



SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
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OHWM and MEANDER LINE FOR COTEAU LAKES, DEUEL COUNTY

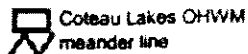


LEGEND:

0.5

SCALE 0

0.5 Miles



SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
lb

South Dakota Department of
Environment and Natural Resources



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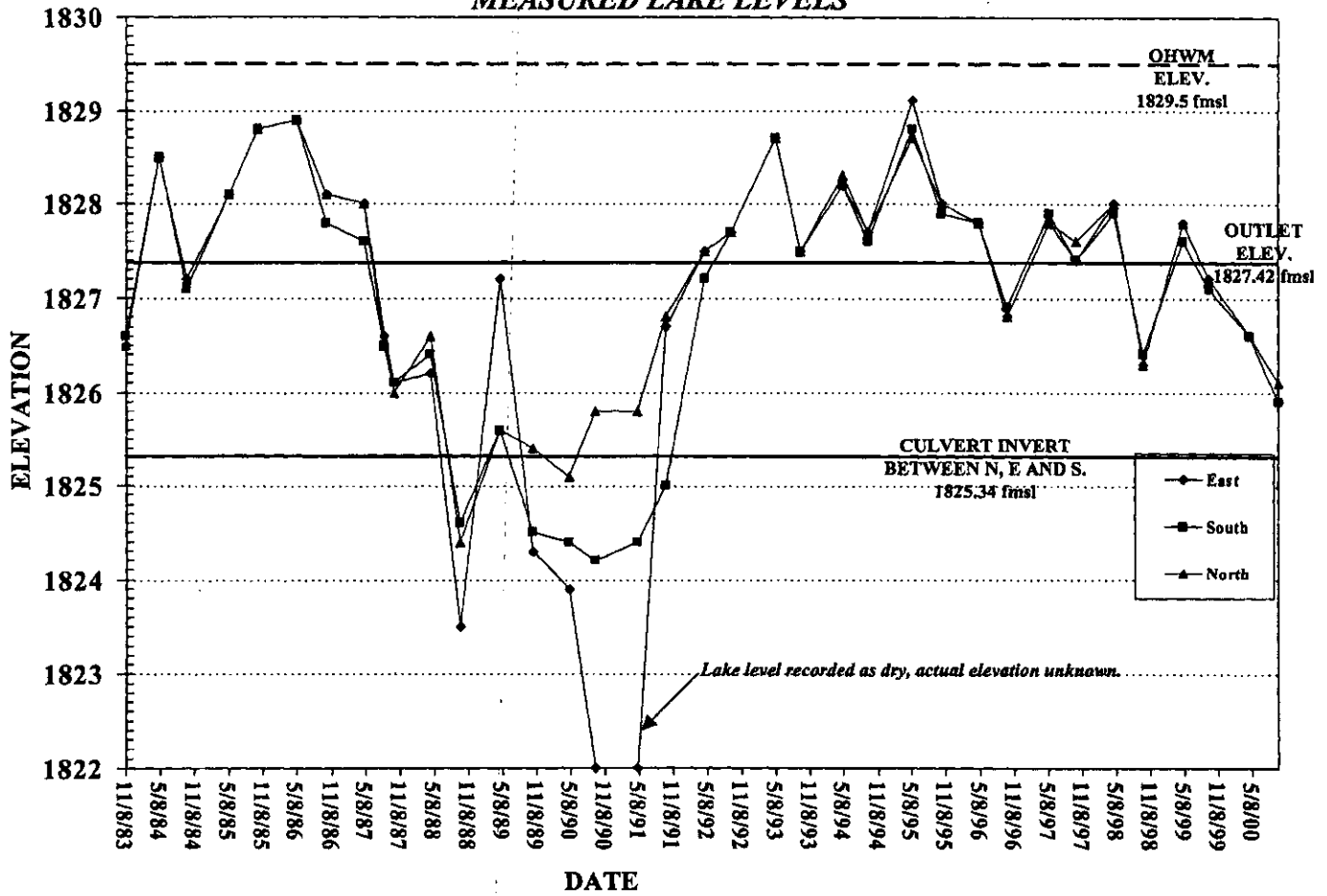
Figure 11.--Altitude of the water table in the Big Sioux aquifer.

Attachment No. 4
MEASURED WATER LEVELS
FOR
COTEAU LAKES, DEUEL COUNTY

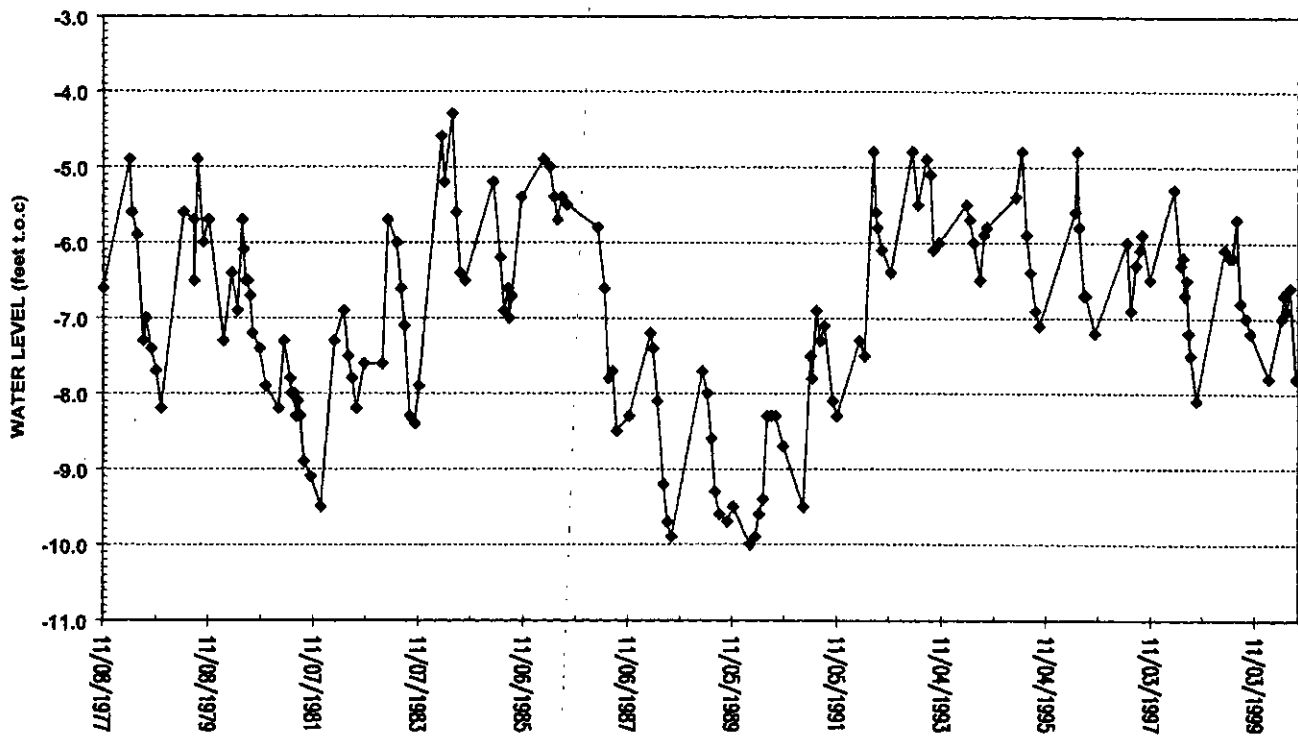
| | | | |
|----------|--------|--------|--------|
| 11-08-83 | 1826.5 | 1826.5 | 1826.6 |
| 05-01-84 | 1828.5 | 1828.5 | 1828.5 |
| 09-27-84 | 1827.2 | 1827.2 | 1827.1 |
| 05-08-85 | 1828.1 | 1828.1 | |
| 10-10-85 | 1828.8 | 1828.8 | 1828.8 |
| 05-08-86 | 1828.9 | 1828.9 | 1828.9 |
| 10-08-86 | 1828.1 | 1828.1 | 1827.8 |
| 04-26-87 | 1828.0 | 1828.0 | 1827.6 |
| 08-13-87 | 1826.6 | 1826.5 | 1826.5 |
| 10-08-87 | 1826.1 | 1826.0 | 1826.1 |
| 04-20-88 | 1826.2 | 1826.6 | 1826.4 |
| 09-22-88 | 1823.5 | 1824.4 | 1824.6 |
| 04-26-89 | 1827.2 | 1825.6 | 1825.6 |
| 10-18-89 | 1824.3 | 1825.4 | 1824.5 |
| 05-02-90 | 1823.9 | 1825.1 | 1824.4 |
| 09-19-90 | dry | 1825.8 | 1824.2 |
| 05-01-91 | dry | 1825.8 | 1824.4 |
| 10-02-91 | 1826.7 | 1826.8 | 1825.0 |
| 04-29-92 | 1827.5 | 1827.5 | 1827.2 |
| 09-16-92 | 1827.7 | 1827.7 | 1827.7 |
| 05-12-93 | 1828.7 | 1828.7 | 1828.7 |
| 09-22-93 | 1827.5 | 1827.5 | 1827.5 |
| 05-04-94 | 1828.2 | 1828.3 | 1828.2 |
| 09-14-94 | 1827.7 | 1827.7 | 1827.6 |
| 05-10-95 | 1829.1 | 1828.7 | 1828.8 |
| 10-17-95 | 1828.0 | 1828.0 | 1827.9 |
| 05-01-96 | 1827.8 | 1827.8 | 1827.8 |
| 10-02-96 | 1826.8 | 1826.8 | 1826.9 |
| 05-13-97 | 1828.8 | 1827.8 | 1827.9 |
| 10-08-97 | 1827.4 | 1827.6 | 1827.4 |
| 04-29-98 | 1828.0 | 1828.0 | 1827.9 |
| 09-30-98 | 1826.3 | 1826.3 | 1826.4 |
| 05-04-99 | 1827.8 | 1827.8 | 1827.6 |
| 09-27-99 | 1827.2 | 1827.2 | 1827.1 |
| 04-25-00 | 1826.6 | 1826.8 | 1826.6 |
| 09-26-00 | 1825.9 | 1826.1 | 1825.9 |
| | | | |
| | | | |
| | | | |
| | | | |

Measurements by Water Rights Program

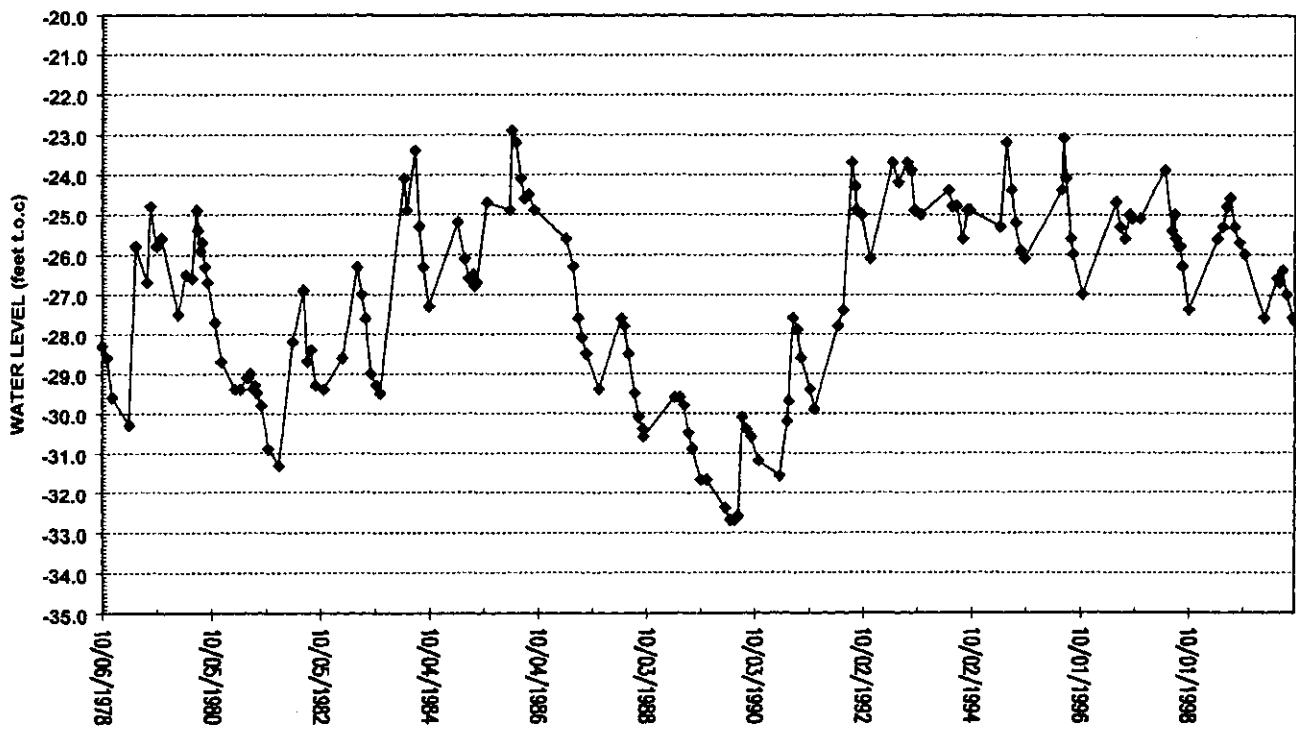
Attachment No. 5
COTEAU LAKES, DEUEL COUNTY
MEASURED LAKE LEVELS



Attachment No. 6
WATER RIGHTS' OBSERVATION WELL
DU-71B



Attachment No. 6a
WATER RIGHTS' OBSERVATION WELL
DU-78A



Attachment No. 7

OHWM EVIDENCE

EROSIONAL CHARACTERISTICS:

| | | |
|---------|--------------------------|--------------------------------|
| 1826.35 | NE SE Sec. 29-T116N-R49W | Change in slope |
| 1829.29 | | Toe of erosion |
| 1829.80 | | " |
| 1829.90 | | " |
| 1830.51 | | " |
| 1831.01 | | Top of erosion |
| 1831.36 | | " |
| 1831.41 | | " |
| 1831.07 | | " |
| 1831.33 | | Top of bank |
| 1831.78 | | " |
| 1830.85 | | " |
| 1832.63 | | " |
| 1833.10 | | " |
| 1832.22 | | " |
| 1831.16 | | Top of washed roots |
| 1829.24 | | " |
| 1829.83 | | Toe backslope ice pushed ridge |
| 1827.49 | NW SE Sec. 29-T116N-R49W | Change in slope |
| 1827.86 | | " |
| 1829.43 | | " |
| 1829.56 | | Toe of erosion |
| 1828.57 | | " |
| 1829.64 | | " |
| 1830.50 | | Top of erosion |
| 1830.47 | | " |
| 1830.19 | | " |
| 1831.77 | | Top of bank |
| 1830.36 | | Top of washed roots |
| 1828.49 | SE NW Sec. 29-T116N-R49W | Change in slope |
| 1829.11 | | Toe of erosion |
| 1828.98 | | " |
| 1829.95 | | Top of erosion |
| 1830.36 | | " |
| 1830.10 | | Top of washed root |
| 1830.61 | | Top of bank |
| 1828.78 | S½ SW Sec. 20-T116N-R49W | Change in slope |
| 1827.91 | | Toe of slope |
| 1827.90 | | " |
| 1829.07 | | " |

EROSIONAL CHARACTERISTICS continued:

| | | |
|---------|--------------------------|----------------------|
| 1828.63 | S½ SW Sec. 20-T116N-R49W | Top of slope |
| 1829.10 | | " |
| 1829.93 | | " |
| 1829.67 | | Toe of steep bank |
| 1830.21 | | " |
| 1832.25 | | " |
| 1831.77 | | " |
| 1827.61 | NW NW Sec. 28-T116N-R49W | Change in slope |
| 1827.49 | | " |
| 1826.52 | | " |
| 1826.83 | | " |
| 1827.50 | | Toe of slope |
| 1827.08 | | " |
| 1826.26 | | " |
| 1827.55 | | " |
| 1827.60 | | " |
| 1828.83 | | " |
| 1827.41 | | " |
| 1831.06 | | " |
| 1827.62 | | Top of slope |
| 1826.81 | | " |
| 1828.48 | | " |
| 1831.13 | | " |
| 1828.59 | | " |
| 1828.05 | | Toe of erosion |
| 1827.52 | | " |
| 1827.59 | | " |
| 1827.71 | | " |
| 1827.98 | | " |
| 1828.79 | | Top of erosion |
| 1828.93 | | " |
| 1828.81 | | " |
| 1829.15 | | " |
| 1828.54 | | " |
| 1828.71 | | Top of washed roots |
| 1828.90 | | " |
| 1828.62 | | " |
| 1828.39 | | Toe of slope at road |
| 1829.12 | | " |
| 1827.53 | | " |
| 1831.24 | | N edge of road |
| 1831.63 | | " |
| 1831.50 | | S edge of road |
| 1831.69 | | " |
| 1831.19 | | " |

EROSIONAL CHARACTERISTICS continued:

| | | |
|---------|-----------------------------|------------------------|
| 1831.30 | NW NW Sec. 28-T116N-R49W | S edge of road |
| 1831.17 | | " |
| 1831.43 | | " |
| 1831.50 | | " |
| 1826.83 | SW SE Sec. 21-T116N-R49W | Change in slope |
| 1830.07 | | " |
| 1826.69 | | Toe of slope |
| 1826.98 | | Top of slope |
| 1827.99 | | Toe of erosion |
| 1827.74 | | " |
| 1827.66 | | " |
| 1828.72 | | Top of erosion |
| 1829.09 | | " |
| 1827.25 | | Bottom of washed roots |
| 1830.04 | | Top of washed roots |
| 1829.19 | | " |
| 1934.37 | | Toe of slope at road |
| 1827.84 | NW SW 28 Sec. 28-T116N-R49W | Toe of erosion |
| 1831.60 | | Top of erosion |
| 1831.84 | | " |
| 1831.43 | | " |
| 1830.68 | | Top of washed roots |
| 1831.24 | | " |
| 1832.04 | | Top of bank |
| 1831.62 | | " |

SOIL CHARACTERISTICS:

| | | |
|---------|--------------------------|--------------------------------|
| 1826.19 | NE SE Sec. 29-T116N-R49W | Bottom of small washed pebbles |
| 1826.18 | | " |
| 1826.18 | | " |
| 1826.54 | | " |
| 1827.56 | | Top of small washed pebbles |
| 1827.56 | | " |
| 1826.52 | | " |
| 1826.57 | | " |
| 1826.46 | | " |
| 1827.55 | | Top of washed pebbles |
| 1827.55 | | " |
| 1827.74 | | " |

SOIL CHARACTERISTICS continued:

| | | |
|---------|--------------------------|--------------------------------|
| 1826.15 | NE SE Sec. 29-T116N-R49W | Top of large washed pebbles |
| 1826.13 | | " |
| 1826.18 | | " |
| 1826.00 | | Top of large washed cobble |
| 1826.86 | | " |
| 1826.04 | | " |
| 1826.49 | | " |
| 1826.44 | | Bottom of large washed cobble |
| 1826.24 | | " |
| 1827.67 | | Bottom of boulder line |
| 1827.55 | | " |
| 1826.57 | | " |
| 1826.58 | | " |
| 1826.58 | | " |
| 1826.86 | | " |
| 1827.17 | | " |
| 1829.55 | | Top of boulder line |
| 1830.08 | | " |
| 1831.23 | | " |
| 1830.88 | | " |
| 1826.25 | NW SE Sec. 29-T116N-R49W | Bottom of small washed pebbles |
| 1826.47 | | Top of small washed pebbles |
| 1826.31 | | Bottom of washed pebbles |
| 1826.44 | | Top of washed pebbles |
| 1826.60 | | Bottom of washed cobble |
| 1827.95 | | Bottom of large washed cobble |
| 1827.48 | | Bottom of boulder line |
| 1827.65 | | " |
| 1827.95 | | " |
| 1827.23 | | " |
| 1829.43 | | Top of boulder line |
| 1831.55 | | " |
| 1829.64 | | " |
| 1826.97 | | Bottom of rocks |
| 1828.57 | | Top of rocks |
| 1827.50 | SE NW Sec. 29-T116N-R49W | Bottom of washed pebbles |
| 1826.82 | | " |
| 1826.86 | | " |
| 1826.82 | | " |
| 1828.49 | | Top of washed pebbles |
| 1826.25 | | " |
| 1826.32 | | " |

SOIL CHARACTERISTICS continued:

| | | |
|---------|--------------------------|--------------------------|
| 1827.37 | SE NW Sec. 29-T116N-R49W | Top of washed pebbles |
| 1826.28 | | " |
| 1827.05 | | " |
| 1827.59 | | " |
| 1826.25 | | Bottom of band of sand |
| 1826.78 | | Top of band of sand |
| 1826.82 | | " |
| 1826.58 | | Bottom of rocks |
| 1831.29 | | Top of rocks |
| 1830.61 | | " |
| 1828.16 | | Bottom of boulder line |
| 1829.93 | | Top of boulder line |
| 1828.36 | | Top of sandy beach |
| 1826.83 | NW NW Sec. 28-T116N-R49W | Bottom of washed pebbles |
| 1827.71 | | Top of washed pebbles |
| 1828.59 | | Top of sandy beach |
| 1827.99 | | " |
| 1827.74 | | " |
| 1827.66 | | " |
| 1829.54 | | Toe of rocky slope |
| 1829.56 | | " |
| 1832.52 | | Top of rocky slope |
| 1833.07 | | " |
| 1826.22 | NW SW Sec. 28-T116N-R49W | Bottom of washed pebbles |
| 1826.27 | | " |
| 1826.22 | | " |
| 1827.26 | | Top of washed pebbles |
| 1827.41 | | " |
| 1827.34 | | " |
| 1827.26 | | Bottom of rocks |
| 1827.41 | | " |
| 1827.34 | | " |
| 1830.92 | | Top of rocks |
| 1831.43 | | " |

TERRESTRIAL VEGETATION:

| | | |
|---------|--------------------------|-----------------------------------|
| 1830.36 | NE SE Sec. 29-T116N-R49W | Lakeside 10" dia. live elm |
| 1831.42 | | Landside 10" dia. live elm |
| 1828.54 | | Lakeside 8" dia. live elm |
| 1829.28 | | Landside 8" dia. live elm |
| 1827.38 | | Lakeside 4' dia. live ctw |
| 1832.14 | | Landside 4' dia. live ctw |
| 1828.32 | | Lakeside 8" dia. live ash |
| 1830.90 | | Landside 8" dia. live ash |
| 1826.67 | | Lakeside twin 6"&8" dia. live elm |
| 1827.75 | NW SE Sec. 29-T116N-R49W | Lakeside 14" dia. live ctw tilted |
| 1831.21 | | Landside 14" dia. live ctw tilted |
| 1830.34 | | Lakeside twin 16" dia. live elm |
| 1831.66 | | Landside twin 16" dia. live elm |
| 1829.32 | | Lakeside 14" dia. live ctw |
| 1831.22 | | Landside 14" dia. live ctw |
| 1830.16 | | Lakeside 2.5' dia. live ctw |
| 1830.97 | | Landside 2.5' dia. live ctw |
| 1830.31 | | Lakeside 2.5' dia. live ctw |
| 1830.89 | | Landside 2.5' dia. live ctw |
| 1827.35 | | Lakeside 2.5' dia. live ctw |
| 1830.34 | | Landside 2.5' dia. live ctw |
| 1827.52 | | Lakeside multi trunk live elm |
| 1830.59 | | Landside multi trunk live elm |
| 1825.46 | | Lakeside reeds |
| 1827.48 | | Landside reeds |
| 1828.38 | SE NW Sec. 29-T116N-R49W | Lakeside 3.5' dia. live ctw |
| 1831.13 | | Landside 3.5' dia. live ctw |
| 1830.36 | | Lakeside 2' dia. live ctw |
| 1831.05 | | Landside 2' dia. live ctw |
| 1829.28 | | Lakeside 2' dia. live ctw |
| 1830.03 | | Landside 2' dia. live ctw |
| 1829.30 | | Lakeside 1.5' dia. live ctw |
| 1830.53 | | Landside 1.5' dia. live ctw |
| 1829.23 | | Lakeside 2.5' dia. live ctw |
| 1830.41 | | Landside 2.5' dia. live ctw |
| 1829.85 | | Lakeside 3.5' dia. live ctw |
| 1930.21 | | Landside 3.5' dia. live ctw |
| 1830.65 | S½ SW Sec. 20-T116N-R49W | Lakeside 6" dia. live elm |
| 1831.55 | | Landside 6" dia. live elm |
| 1828.74 | | Lakeside twin 4"&6" dia. live elm |
| 1829.10 | | Landside twin 4"&6" dia. live elm |
| 1825.88 | | Lakeside reeds |
| 1827.62 | | Landside reeds |

TERRESTRIAL VEGETATION continued:

| | | |
|---------|--------------------------|-------------------------------------|
| 1825.75 | S½ SW Sec. 20-T116N-R49W | Lakeside reeds |
| 1827.90 | | Landside reeds |
| 1825.76 | | Lakeside reeds |
| 1827.53 | | Landside reeds |
| 1827.09 | NW NW Sec. 28-T116N-R49W | Lakeside reeds |
| 1828.84 | | Landside reeds |
| 1826.16 | | Lakeside reeds |
| 1827.60 | | Landside reeds |
| 1828.13 | | Landside reeds |
| 1828.44 | | Landside reeds |
| 1828.21 | | Landside reeds |
| 1827.94 | | Landside reeds |
| 1828.30 | | Landside reeds |
| 1826.03 | | Lakeside reeds |
| 1827.55 | | Landside reeds |
| 1826.05 | | Lakeside reeds |
| 1828.39 | | Landside reeds |
| 1827.53 | | Landside reeds |
| 1828.04 | | Lakeside reeds |
| 1825.88 | | Lakeside reeds |
| 1827.50 | | Lakeside 3' dia. live elm |
| 1827.90 | | Landside 3' dia. live elm |
| 1829.17 | | Lakeside 1' dia. live elm |
| 1829.38 | | Landside 1' dia. live elm |
| 1830.82 | | Lakeside twin 2'&1.5' dia. live ctw |
| 1831.13 | | Landside twin 2'&1.5' dia. live ctw |
| 1829.0 | | Lakeside twin 6" & 10" dia. |
| 1829.46 | | Landside twin 6" & 10" dia. |
| 1827.71 | | Lakeside line of 10"-1' live elm |
| 1828.75 | | Landside line of 10"-1' live elm |
| 1828.75 | | Lakeside 10" live ctw |
| 1929.15 | | Landside 10" live ctw |
| 1830.26 | | Lakeside 1' dia. live elm |
| 1831.06 | | Landside 1' dia. live elm |
| 1827.70 | | Lakeside 10" dia. live elm |
| 1828.36 | | Landside 10" dia. live elm |
| 1828.76 | | Lakeside 1' dia. live elm |
| 1828.78 | | Landside 1' dia. live elm |
| 1827.15 | | Lakeside twin 10" dia. |
| 1828.90 | | Landside twin 10" dia. |
| 1827.72 | | Lakeside 6" dia. live elm |
| 1828.62 | | Landside 6" dia. live elm |

TERRESTRIAL VEGETATION continued:

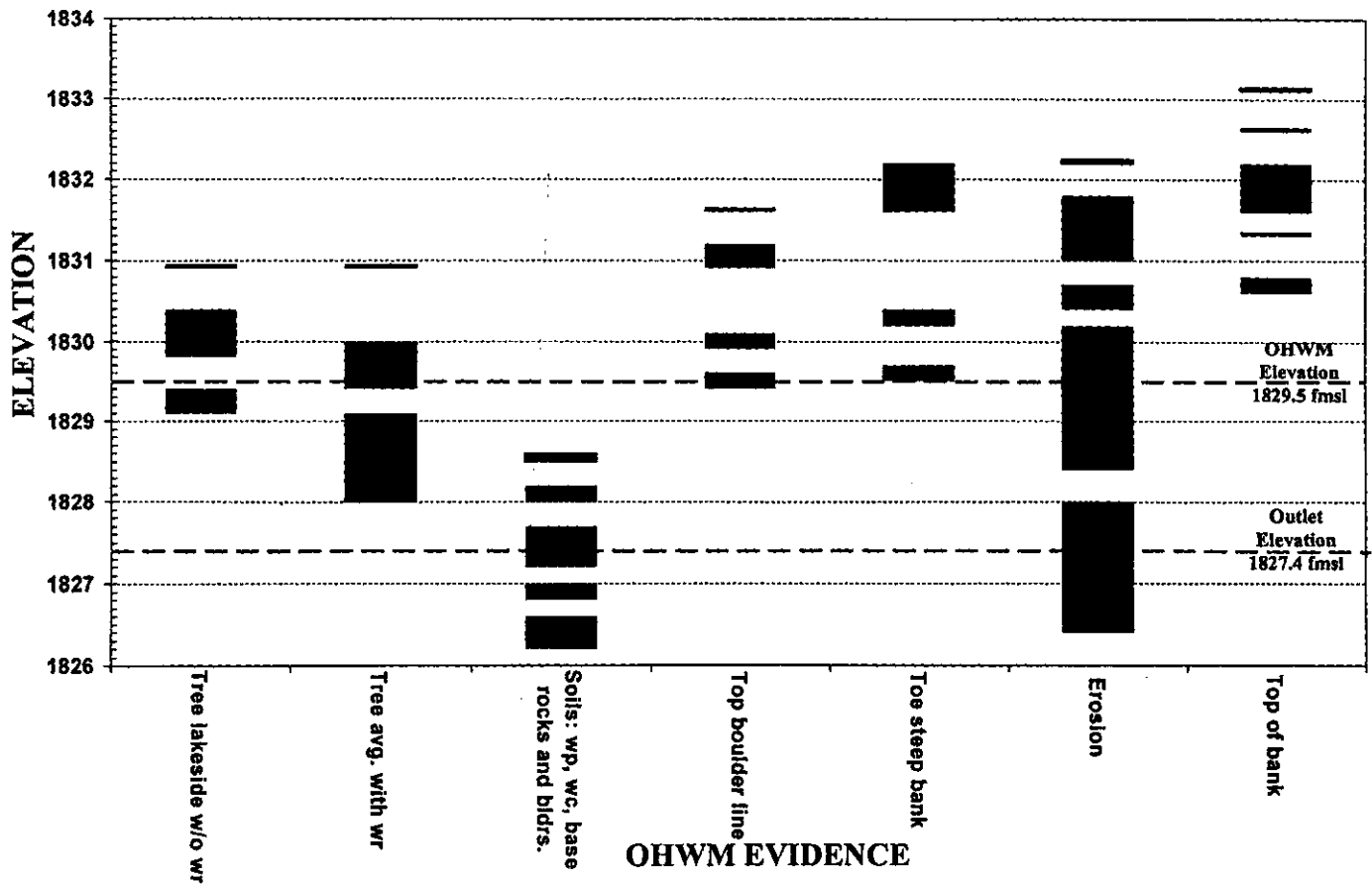
| | | |
|---------|--------------------------|----------------------------------|
| 1829.05 | NW NW Sec. 28-T116N-R49W | Lakeside 2' dia. live elm |
| 1829.56 | | Landside 2' dia. live elm |
| 1829.43 | | Lakeside 2' dia. live elm |
| 1830.36 | | Landside 2' dia. live elm |
| 1829.77 | | Lakeside 3' dia. dead |
| 1830.58 | | Landside 3' dia. dead |
| 1830.07 | | Lakeside twin 8"&10" dia. |
| 1830.31 | | Landside twin 8"&10" dia. |
| 1827.83 | SW SE Sec. 21-T116N-R49W | Lakeside multi 10"-1.5' live ash |
| 1829.54 | | Landside multi 10"-1.5' live ash |
| 1828.52 | | Lakeside multi live ash |
| 1829.08 | | Landside multi live ash |
| 1829.21 | | Landside multi live ash |
| 1828.37 | NW SW Sec. 28-T116N-R49W | Lakeside twin 16" dia. elm |
| 1831.60 | | Landside twin 16" dia. elm |
| 1827.84 | | Lakeside 3' dia. live ash |
| 1831.84 | | Landside 3' dia. live ash |
| 1828.04 | | Lakeside 4.5' dia. live elm |
| 1831.62 | | Landside 4.5' dia. live elm |
| | | |

WATER MARKS:

| | | |
|---------|--------------------------|-----------------------|
| 1828.40 | NW SE Sec. 29-T116N-R49W | On rocks |
| 1830.74 | | On 2.5' dia. live ctw |
| | | |
| | | |
| | | |

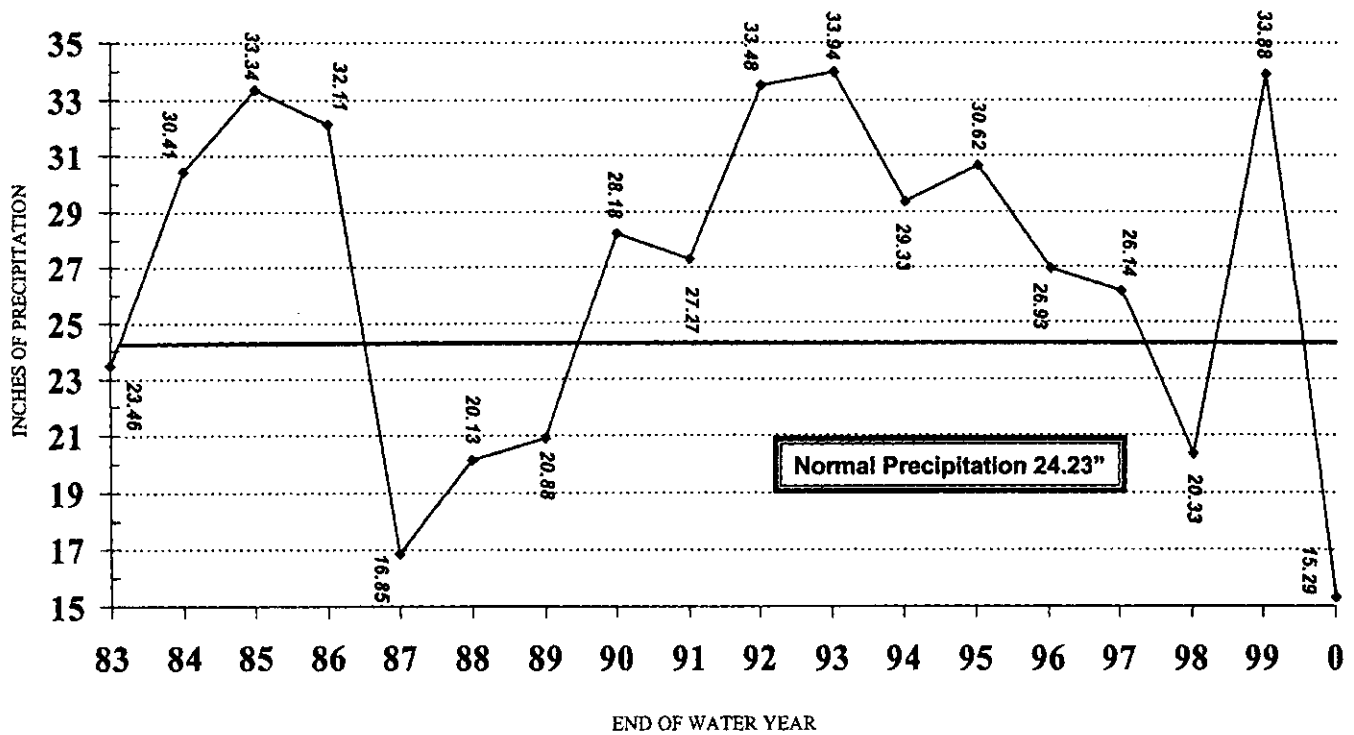
Attachment No. 8
OHWL EVIDENCE GRAPH

The blue bar segments represent bands of evidence along Coteau Lake's shore.
 Each segment is a group of a particular category of evidence found at or near the same elevation.



Attachment No. 9

**WATER YEAR PRECIPITATION TOTALS
FOR
CLEAR LAKE STATION, DEUEL CO.**

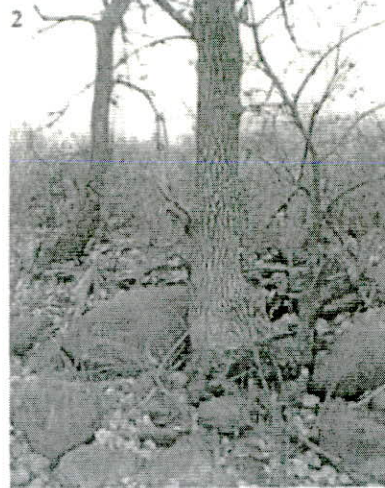


Attachment No. 10
COTEAU LAKES PHOTOS

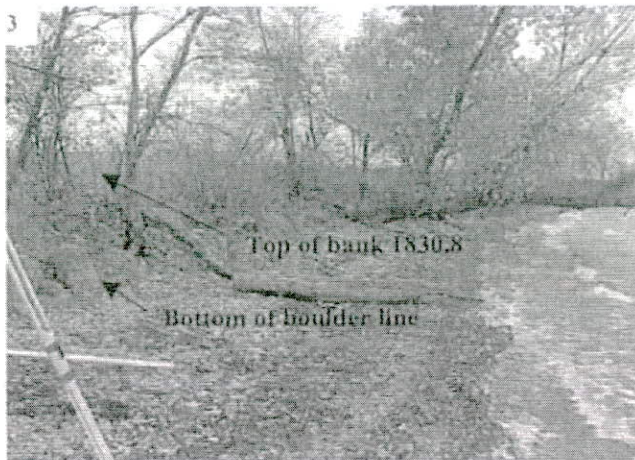
SOUTH COTEAU LAKE:



10-5-00 - 10" dia. elm with exposed roots on rocky bank. Lk side elev. 1830.4, ld side 1831.4, avg. 1830.9, top exp. Roots 1831.2 fmsl.



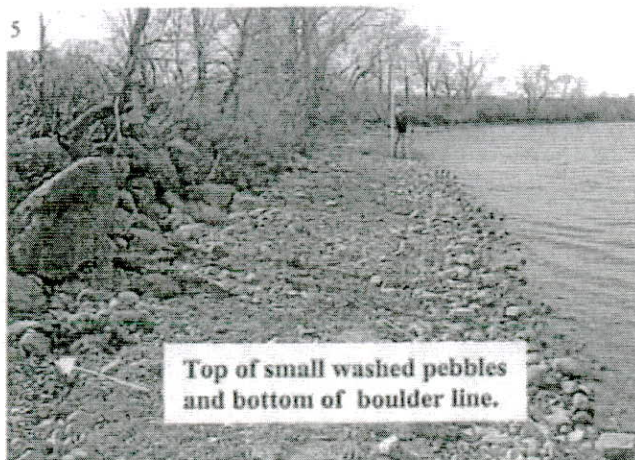
10-5-00 - 8" dia. elm no exposed roots on rocky bank. Lk side 1828.5, ld side 1829.3 fmsl.



10-5-00 - Shoreline looking W from boat ramp. Bottom of boulder line 1827.7, top of boulder line 1831.2 fmsl



10-17-00 - Bottom of boulder line and twin 6" and 8" dia. elm 1826.7 fmsl.



10-17-00 - Top of small washed pebbles and bottom of boulder line 1826.6 fmsl.



10-17-00 - Twin 16" dia. elm lk side 1830.3 ld side 1831.7, 14" dia. ctw lk side 1829.3 ld side 1831.0 fmsl.

12



10-17-00 - Sheet pile outlet low elevation 1827.4 fmsl.

13



10-17-00 - Back of line of trees near the top of the bank.

14



10-17-00 - 3.5' dia. ctw lk side 1828.4 and ld side 1831.1, top of washed roots 1830.1, bottom of erosion 1829.0, and top of erosion 1830.4 fmsl.

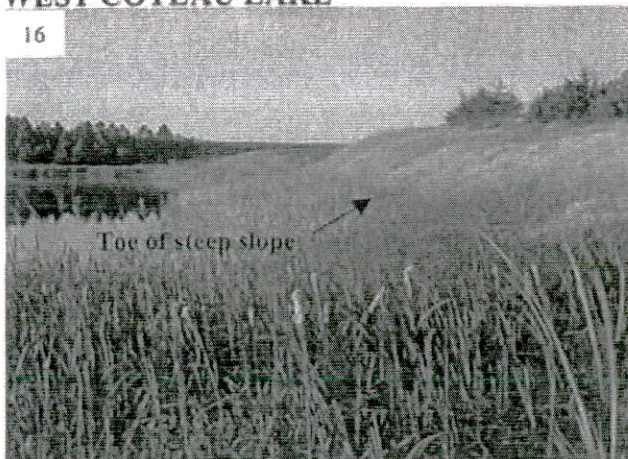
15



10-17-00 - Line of trees near top of bank. 1.5' to 2' dia. ctw lk side elev. 1829.2 to 1830.4 and ld side elev. 1830.4 to 1831.0 fmsl.

WEST COTEAU LAKE

16



10-18-00 - Landside reeds 1827.9 and toe of steep slope 1829.7 fmsl.

17



10-18-00 - Top of boulder line 1829.9 toe of steep bank 1831.8 fmsl.

24



10-18-00 - twin 10" dia. lk side 1827.2 and ld side 1828.9 fmsl; ld side reeds in background 1828.8 fmsl.

25



10-18-00 - Second line of trees on bank lk side 1829 to 1830 fmsl.

26



10-18-00 - 2' dia. elm lk side 1829.1 and ld side 1829.6 fmsl, no exposed roots.

27



10-18-00 - 3' dia. dead tree lk side 1829.8 and ld side 1830.6 fmsl, no exposed roots.

EAST COTEAU LAKE:

28



10-18-00 - Multi trunk ash with exposed roots lk side 1827.8 and ld side 1829.5 fmsl.

29



10-18-00 - Multi trunk ash lk side 1828.5 and ld side 1829.1 fmsl; top of erosion 1828.5 fmsl.

36



10-18-00 - 3' dia. ash bot of exposed roots 1827.8 and top of exposed roots 1830.7, ld tree 1831.8 fmsl.
Avg. 1829.8 fmsl.

37



10-18-00 - South shoreline of South Coteau lake.

38



10-18-00 - 4.5' dia. elm lk side 1828.0 and ld side 1831.6,
top of bank 1831.6 and toe of backslope of bank 1830.2 fmsl.
Avg. 1829.8 fmsl.

**AGENDA
WATER MANAGEMENT BOARD**

May 2 – 3, 2001

**Floyd Matthew Training Center
Joe Foss Building, 523 E. Capitol Ave.
Pierre SD 57501**

**Scheduled hearing times are Central Daylight
Savings Time and are estimates that may be
delayed due to prior agenda items.**

- 8:30 AM** Call to Order
Approve March 7, 2001 Board Minutes
Set July 11 - 12, 2001 meeting location (Pierre suggested)
Division Update – Tim Tollefsrud
Status and Review of Water Rights Litigation – John Guhin
Administer Oath to Department of Environment and Natural Resources Staff
- 8:45 AM** Well Driller's Association discussion on Continuing Education – Jim Hutmacher
- 9:00 AM** Consider Water Permit Application No. 1644-1, Gregg Dittman – Mark Rath & Ken Buhler
- 9:15 AM** Consider Water Permit Application No. 6231-3, Oscar Inc. – Tim Schaal
- 9:30 AM** Consider Water Permit Application No. 2367A-2, Baker Cattle PTO – Don Stroup
- 10:00 AM** Consider New Water Permit Applications
– Water Permit Application No. 6251-3, Grass Ranch Colony – Jim Goodman
– Water Permit Application No. 6252-3, Haverhals Feedlot – Jim Goodman
– Water Permit Application No. 6255-3, Turner County Dairy – Jim Goodman
– Water Permit Application No. 2452-2, Ken Wilson – Don Stroup
– Water Permit Application No. 6253-3, Ottertail Power Company – Don Stroup
- Consider Rescinding Suspension of Permit/Rights for Violation of Irrigation Questionnaire –
Genny McMath

Cancellation Considerations – Eric Gronlund

- 10:30 AM** Consider Establishment of an Ordinary High Water Mark and Outlet Elevation for Coteau Lakes
-- Lynn Beck

LUNCH

- 1:00 PM** Consider Findings of Fact, Conclusions of Law and Final Decision
– Water Permit No. 6227-3, Goodwin Heritage Cattle
– Establishment of Ordinary High Water Mark and Outlet Elevation for Lake Byron
- 1:30 PM** Consider Water Permit Application No. 6204-3, SD Dept. of Game, Fish and Parks – Mark Rath

Adjourn

NOTE: The hearing may continue on Thursday morning, May 3rd if necessary to complete testimony.

Vested Water Right No. 4302-3 filed by the city of Roscoe; abandonment/forfeiture
Water Right No. 4420-3 filed by Dirksen Water Service; abandonment/forfeiture
Water Permit No. 4619-3 filed by Kellen & Streit, Inc., now owned by Frank Vellek;
abandonment/forfeiture
Water Permit No. 5484-3 filed by Aberdeen Area Humane Society; abandonment/forfeiture
Water Permit No. 5670-3 filed by Wendell Falk; non-construction
Water Permit No. 5796-3 filed by Glendale Colony; abandonment

Mr. Duvall noted that the only comment the department received was from Enchanted Hills Water Association, which is a suburban housing development now hooked to the city of Rapid City water supply. The association was concerned as to whether or not the well could be used by the owner of the lot on which the well is located. The department informed the association that is a domestic use, so a water right is not needed.

Motion by Freeman, seconded by Rollag, to cancel the 23 water rights/permits for the reasons listed. Motion carried.

CONSIDER ESTABLISHMENT OF AN ORDINARY HIGH WATER MARK AND OUTLET ELEVATION FOR COTEAU LAKES: Lynn Beck presented her report (copy on file).

Ms. Beck reported that on June 21, 2000, Dennis Evenson, a riparian landowner, requested the Water Management Board establish an Ordinary High Water Mark (OHWM) and outlet elevation for Coteau Lakes. In response to the request, an investigation was conducted by the Water Rights Program in October 2000.

Coteau Lakes are located in north central Deuel County five miles north and two miles west of Clear Lake. Coteau Lakes have a watershed area of about 22 square miles and a surface area of about 535 acres at the current outlet level.

Vested Water Right Claim No. 1465-3, which is held by the SD Department of Game, Fish and Parks claims an 1889 priority date, and approximately 1,410 acre-feet of water per year to fill Coteau Lake for public recreational purposes. Ms. Beck noted that a correction will need to be made to Vested Water Right Claim No. 1465-3 for Coteau Lakes. The location of the diversion point will need to be corrected to the outlet location in the NE1/4 SW1/4 Section 29.

Coteau Lakes consists of four lakes, North, South, East and West Coteau Lakes. Most of the discharge from the watershed enters North Coteau Lake and flows to East and South Coteau Lakes through a five-foot culvert. Discharge from a small portion of the watershed enters West Coteau Lake, surface water flows to South Coteau Lake over a sand ridge between the two lakes. Water also moves through the sandy ridges that separate all the lakes.

The outlet is at the southwest tip of South Coteau Lake. Water flows from there to the southeast until it reaches Clear Lake. It flows from Clear Lake through Hidewood Creek, which is a tributary to the Big Sioux River.

Water Management Board
May 2, 2001, Meeting Minutes

The Water Rights Program has taken water level measurements for Coteau Lakes since the fall of 1983. Ms. Beck said the Coteau Lakes are influenced by precipitation and evaporation.

The East Coteau Lake was dry from the fall of 1990 to the spring of 1991. Measurements taken by the Water Rights Program show that the Coteau Lakes have been as much as 1.7 feet over the outlet.

Ms. Beck said she visited with area landowner, Dennis Evenson, who reported that he has never seen water flowing over the banks of North Coteau Lake. Mr. Evenson also indicated that in 1976 the channel between Mr. Evenson's slough and North Coteau Lake was dry as was the flat area east of the lake.

Ms. Beck also visited with Steve Hansen, who grew up on the lake. Mr. Hansen indicated that he has never seen water flow over the banks of the lake, but has seen the flat area east of North Coteau Lake flood during a typical spring runoff.

The surveyed elevations on the flood plain are 1828.4 and 1829.5. The elevations for the toe of the road between the lakes are 1828.4 and 1829.1, with the edge of the road at 1831.5. Mr. Hansen also indicated that East Coteau Lake was dry in 1976 and again in the early 1990's. The other lakes had water when East Coteau Lake was dry. During the dry years, Mr. Hansen observed small vegetation growth on the shores of the lakes.

Ms. Beck said he spoke with Doug Winters, who lives at the end of the road that separates the two lakes. He indicated that in the 1990's water was over the road.

Manmade influences around the lakes are in the inlet and outlet areas. Roads, culverts and manmade outlets have replaced portions of the natural inlet and outlet channels for and between the Coteau Lakes. These influences have apparently had an effect on the OHWM, but have been in place for so long, that they probably constitute natural conditions.

The investigation involved identifying evidence of the OHWM. This evidence includes erosion, changes in the character of the soil, boulder lines, changes in the slope, growth and destruction of the terrestrial vegetation. Ms. Beck showed photographs of trees, washed pebbles, the toe of the steep slope, boulder lines, and erosion lines for each of the four lakes. The photographs are included in Ms. Beck's report.

Ms. Best noted that in South Dakota, most of the lakes with OHWM's have outlets that are six inches to one foot below the OHWM. The recommended OHWM for Coteau Lakes is 2.1 feet above the overflow elevation of the outlet. Water flows from North Coteau Lake to East and South Coteau Lakes, water also flows from West Coteau Lake to South Coteau Lake. The outlet channel is congested with reeds and silt and has pooled on the downstream side of the outlet. These conditions may slow the evacuation of water from Coteau Lakes, thus water is held at a higher elevation for an extended period of time.

The chief engineer recommended that the Ordinary High Water Mark for Coteau Lakes, Deuel County, be established at elevation 1829.5 fmsl; that the outlet for Coteau Lakes be established

at elevation 1827.4; and validation of Recognized Vested Water Right Claim No. 1465-3 for sufficient water to maintain the water level to the outlet elevation of 1827.4 fmsl.

Ms. Beck noted that the department received a letter from Leslie Petersen, Department of Game, Fish and Parks, requesting party status in order to provide comment regarding public access issues, as necessary.

Motion by Freeman, seconded by Loucks, to establish the Ordinary High Water Mark for Coteau Lakes elevation at 1829.5 fmsl; to establish the outlet elevation for Coteau Lakes at 1827.4 fmsl; and to validate Recognized Vested Water Right Claim No. 1465-3 for sufficient water to maintain the water level to the outlet elevation of 1827.4 fmsl. Motion carried.

CONSIDER FINDINGS OF FACT, CONCLUSIONS OF LAW AND FINAL DECISION IN THE MATTER OF WATER PERMIT NO. 6227-3, GOODWIN HERITAGE CATTLE:

Motion by Freeman, seconded by Rollag, to adopt the Board's proposed Findings of Fact, Conclusions of Law and Final Decision for Water Permit No. 6227-3, Goodwin Heritage Cattle, with the following change to paragraph No. 3: change 24,000 to 2,400. Motion carried.

CONSIDER FINDINGS OF FACT, CONCLUSIONS OF LAW AND FINAL DECISION IN THE MATTER OF ESTABLISHMENT OF ORDINARY HIGH WATER MARK AND OUTLET ELEVATION FOR LAKE BYRON:

Mr. Guhin stated the department had four suggestions. The first two are editorial and Mr. Guhin agreed with the changes. Mr. Guhin recommended the board adopt the department's third suggestion. Number four asks for a new finding. The new finding states essentially that it is undisputed that Lake Byron was used for public recreational purposes on a legally continuous basis since 1931. Public recreational uses include the use of the lake for fishing, boating, swimming, picnicking and other recreational purposes. Mr. Guhin said that is probably correct, however, according to Mr. Guhin's notes and the recorded tapes, there was not a lot of testimony to this effect.

Regarding Ms. Davis' proposals, Mr. Guhin suggested that Findings of Facts Nos. 1, 2 and 5 be rejected. He suggested the board accept Ms. Davis' proposed Findings of Fact Nos. 3 and 4. Mr. Guhin suggested that the board reject Ms. Davis' proposed Conclusions of Law Nos. 1-4, and reject Ms. Davis' proposed Final Decision.

Motion by Freeman, seconded by Rollag, to accept Ms. Davis proposed Findings of Fact Nos. 3 and 4, reject Ms. Davis' proposed Findings of Fact, 1, 2, and 5; Conclusions of Law Nos. 1, 2, 3, and 4; and reject Ms. Davis' proposed Final Decision. Motion carried.

Motion by Freeman, seconded by Rollag, to adopt the Board's proposed Findings of Fact, Conclusions of Law and Final Decision, as amended by the Department's proposed Nos. 1, 2, 3, and 4. Motion carried.

VIDEO ON PROPOSED LAB AT HOMESTAKE: The board watched a 10 minute video explaining the proposal for the National Underground Laboratory to be located at the Homestake Mine.



DENR
SOUTH DAKOTA

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

Memo to File

Coteau Lakes- N, S, E, W in Deuel County

VWR No. 1465-3

The OHWM was set by the Water Management Board on May 2 & 3, 2001.

OHWM elevation 1829.5 fmsl NGVD29

The outlet elevation was set by the Water Management Board on May 2 & 3, 2001.

Outlet elevation 1827.4 fmsl NGVD29

**The Water Management Board validated Vested Water Right No 1465-3 on May 2 & 3,
2001.**