

Considered: _____

WATER PERMIT NO. 2028-2

MAP No. same

Name of Applicant Custer State Park

Post Office Address HCR 83, Box 70, Custer SD 57730

Amount of Water Claimed 0.10 cfs Total Acres NA

Source of Water Supply ground water up to 5 wells

Water to be used for COM & REC purposes County Custer

About 11 miles E of Custer

PROOF OF PUBLICATION: Received _____ Not Received _____

APPLICATION: Approved _____ Subject to _____

F.F. & C.L. Adopted _____ Not Approved _____ Deferred _____

PRIORITY _____ Date Received July 9, 1987 Fee none Remarks no fee

required from State Agency

Corrected Application Received _____ Period of Annual Use Jan 1 - Dec 31

WATER QUALITY APPROVAL RECEIVED NA APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as Application YES _____ NO _____ REMARKS _____

Diversion Point well sites: SE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$
section 22; NE $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$ section 27; all in
T3S-R6E

Land to be Irrigated NA

			22		
			well sites		
			SE $\frac{1}{4}$ SW $\frac{1}{4}$		
			SW $\frac{1}{4}$ SE $\frac{1}{4}$		
			27		

Well Log: Driller not constructed Licensed YES _____ NO _____

Depth of Well $\approx$ 250 feet REMARKS _____

Type of Map topo PREPARED BY Greg Goebel Natural Resource Analyst
Reviewed and the Number

assigned on July 27, 1987 By Ron Durrall

Mail to: Water Rights Div.
DWNr, Foss Bldg.
Pierre, SD 57501
(605) 773-3352
P.L. 6/2/67

No. 2028-2 Hydrologic Unit 10120109
Map No. same Basin Upper Cheyenne R.
Newspaper Custer County Chronicle, Box 551 (w)

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

Check use of water: Industrial ☐ Commercial ☒ Municipal ☐ Other Common Distribution System ☐
Rural Water System ☐ Suburban Housing ☐ Geothermal Heat ☐ Institutional ☐ Recreational ☒
Domestic ☐ (above 18gpm) Other ☒ Fire protection

Type of Application: Check one or more of the following

New ☒ Vested Right ☐ Future Use ☐ Change Use ☐
☐ Amend Permit No. _____ with old priority date retained
Change diversion point(s) ☐ Add diversion point(s) ☐ Other ☐ _____
☐ Application to: Change diversion point(s) ☐ Add diversion point(s) ☐ on Permit No. _____
☐ Construction to use water reserved by Future Use Permit No. _____



- Name of Applicant Custer State Park Phone No. 255-4515
Post Office Address HCR 83, Box 70, Custer State SD Zip Code 57730
(Street, RR or Box) (City)
- Amount of water claimed (c.f.s.) ~~0.10 cfs~~ 45 gpm 0.64 cfs
- Source of water supply Groundwater, up to 5 wells 1 Well
- Location of point of diversion Proposed well site #1 is located in NE 1/4 NW 1/4
SE 1/4, SW 1/4, Sec. 22, T33, R6E. Proposed well #2 is located in the NW 1/4, NE 1/4,
Sec. 27, T3S, R6E. County Custer
- Counties where water will be used Custer
- Annual period during which water is to be used January 1 to December 31
- Give a brief description of proposed project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

The proposed wells are needed to supply additional water to the Game Lodge Area Facilities. Well sites 2, 3, 1 would be drilled and developed in that sequence until 45 gpm of additional water would be achieved. For additional information see attached preliminary engineering report.

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map (see instruction)

STATE OF SOUTH DAKOTA)
County of Custer ss

I, Rollie Noem, Director, Custer State Park the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

Signed Rollie Noem

Subscribed and sworn to before me this 7 day of July 1987

James F. Lester
Notary Public

WATER PERMIT

The Water Management Board hereby approves Water Permit Application No. 2028-2

Custer State Park HCR 83, Box 70
(Applicant) (Street, RR or Box)

Custer SD 57730 With the following qualifications.
(City) (State) (Zip Code)

1. The casing of the well to be constructed under Permit No. 2028-2 shall be pressure grouted with cement (bottom to top) and the well constructed in compliance with Water Management Board Well Construction Rules, Chapter 74:02:04. Well construction shall be by a licensed well driller.
2. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same formation. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in domestic wells.

Date of first receipt of application July 9, 1987.

Date of return to applicant for correction, amendments or changes required _____, 19____.

Date of receipt of ~~corrected~~ ^{amended} application Jan. 5, 1988. Approved March 3, 1988.

The Water Management Board approved this Water Permit No. 2028-2 authorizing the construction of the water use system and the placing of water to beneficial use as stated in the Application and as qualified in the Water Permit approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is January 5, 1988.
2. The equivalent of at least one-fifth of the specified work is ~~to be~~ completed ~~on or before~~ _____, 19_____.
3. The whole of said work is ~~to be~~ completed ~~on or before~~ _____, 19_____.
4. The limit of time for proof of beneficial use of water appropriated in accordance herewith is _____, 19_____.
5. The water appropriated shall be used for the purpose of commercial and recreational use by the Game Lodge Facilities and for fire protection purposes
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 unlawfully impaired by this appropriation.
7. The amount of the appropriation granted shall not exceed 0.64 cubic feet per second; neither shall it exceed the amount of water needed for the beneficial uses served and to which water is actually and beneficially applied for COM, REC & Fire protection ~~on or before~~ _____, 19_____. The water is to be used during the following described annual period: Jan. 1 - Dec. 31

WATER MANAGEMENT BOARD

By: John H. Galt
Chief Engineer

Division of Water Rights
 Dept. of Water and Natural Resources

APR 28 1988

_____, 19____

Supplemental Information

(type or print in ink)

1. Well Information - Proposed construction

- a) Drill Hole Diameter 6 inches Depth 250 feet
- b) Casing Type Schedule 40 Black Steel Diameter 6 inches Thickness .280 inches
- c) Screen Type N/A Diameter N/A Thickness N/A
- d) Gravel Pack Thickness N/A Length of Gravel Pack N/A
- e) Depth to Top of Water Bearing Material unknown
- f) Depth to Water (ground surface to water level) unknown
- g) Distance to nearest existing domestic well:
 On applicants property 1,500 feet On property owned by others Not closer than 2.5 miles.

2. Dugout Information Estimates N/A

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

3. Water Storage Dams N/A

If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should be shown on the map submitted with the application.

- a) If a private engineering firm or government agency was involved in the design of this dam please give their name and address:

b) Freeboard _____

c) Crest Width _____

Crest Length _____

d) Height _____

e) Primary Outlet Capacity _____
 If Pipe, diameter _____

f) Secondary Spillway Capacity _____
 Spillway width _____

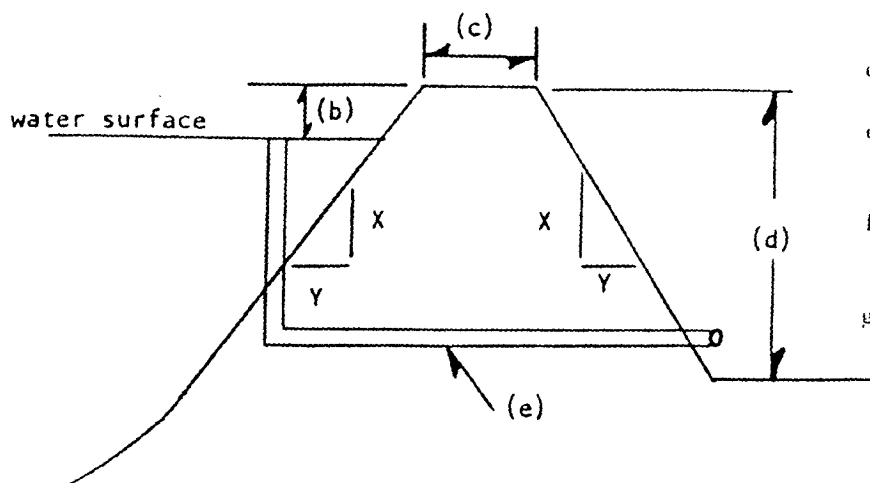
g) X & Y Slope
 Upstream _____

Downstream _____

Surface Area of Impoundment _____

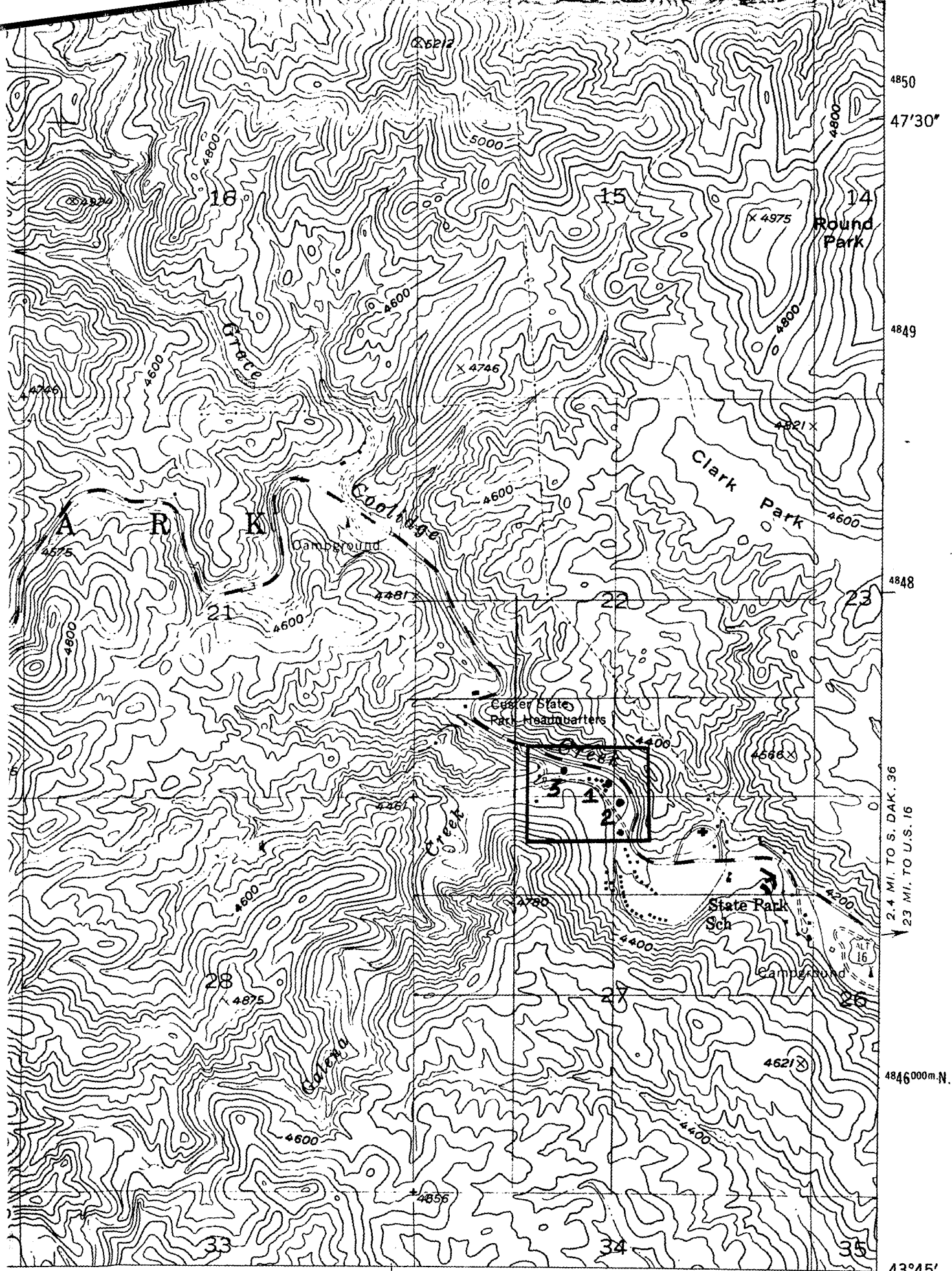
Storage _____ acre feet

Drainage area above dam _____



John Doe

Signature of Applicant



4850
47'30"

4849

4848

2.4 MI. TO S. DAK. 36
23 MI. TO U.S. 16

4846000m N.

43°45'

25' 628 629000m E.

• INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1976

• PROPOSED WELL SITES

103°22'30"

ROAD CLASSIFICATION

Greg Gochel

April 16, 2002

(BUTCH 53)

MILE

Treatment Plant Well

Game Fish and Parks Department

Custer State Park Well

NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 3 S., R. 6 E.

Elev. 4390 T. D. 150 feet

- 0 - 15 Alluvium and broken rock, no sample
- 20 Pegmatite granite, white, weathered, consisting of quartz, feldspar, mica and a trace of tourmaline
- 25 Pegmatite, same, slightly weathered
- 30 Pegmatite, same, still slightly weathered
- 30 - 35 Schist, weathered, quartz-mica
- 40 Schist, same
- 45 Schist, quartz-mica, very slightly weathered
- 55 Schist, quartz-mica, fresh
- 65 Schist, quartz-mica; trace pegmatite veins
- 70 Schist, probably quartz-hornblende-mica
- 70 - 75 Pegmatite, white; mica slightly weathered and feldspar is iron stained
- 80 Pegmatite, white, 3/4; schist, probably a "horse", 1/4
- 90 Pegmatite, some of feldspar is iron-stained; trace mica schist in last sample
- 90 - 100 Schist, quartz-mica; trace pegmatite
- 105 Schist, quartz-mica, 2/3; white pegmatite, 1/3
- 110 Schist, quartz-mica, 2/3; white pegmatite, 1/3
- 115 Schist, quartz-mica, 2/3; white pegmatite, 1/3
- 115 - 120 Schist, quartz-mica-epidote
- 125 Schist, quartz-mica
- 125 - 130 Pegmatite, white, 3/4; schist as above, 1/4
- 135 Pegmatite, feldspars more or less iron-stained
- 140 Pegmatite, feldspars slightly stained to fresh
- 145 Pegmatite, white, fresh
- 147 Pegmatite, badly weathered
- 147 - 150 Schist, quartz-hornblende-mica

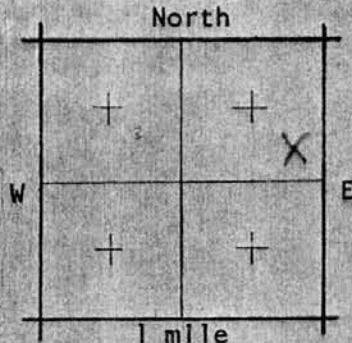
Location NE 1/4 Sec 27 Twp 35 Rg 6E

County

Custer

North

Please mark well location with an "X"

Well Completion Date 4-21-82

PROPOSED USE:

☒ Domestic ☐ Municipal ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Stock
Method of Drilling: Rotary - Downhole Hammer

WELL CONSTRUCTION:

Diameter of hole 6 inches Depth 200 feetCasing: ☒ Steel ☐ Plastic ☐ OtherSpecify 2 1/2" - .280 wall - 6' 8 1/2'
 Pipe Weight Diameter From To
 lb/ft inches feet feet
 lb/ft inches feet feet
Was a well screen used? ☐ Yes ☒ NoIf Not Specify Screen Type Slot Size Length Diameter Was Casing left open end? ☒ Yes ☐ NoWas a Packer or seal used? ☐ Yes ☒ NoIf so what material? Was well gravel packed? ☐ Yes ☒ NoWas well grouted? ☒ Yes ☐ NoDescribe grouting procedure To what depth? 20 FeetWhat was grouting material? type III cementIf cement, how many sacks? Location of packer(s) and screen or perforated pipe WAS WELL PLUGGED OR ABANDONED ☐ Yes ☒ NoIf so how and with what material?

Well Owner:

Name Custer State ParkAddress AREA-Visitor Center &

Well Log:

Depth Game Log

Formation

From

To

DRIFT	0	10
Pegmatite - light color	10	58
Pegmatite ^{water - 18 gpm} ~~dark color~~	58	61
Pegmatite dark color	61	70
Pegmatite green w/ quartz	70	80
Pegmatite grey	80	90
Pegmatite light color	90	103
Pegmatite dark - water - 18 gpm	103	106
Pegmatite - light color water 20 gpm	106	160
Pegmatite w/ quartz - ^{fractured} water 36 gpm	160	165

STATIC WATER LEVEL 10' FeetIf flowing: closed in pressure PSIGPM flow through inch pipeControlled by ☐ Valve ☐ Reducers ☐ OtherIf other; specify Can well be completely shut off?

WELL TEST DATA:

☒ Pumped w/pump - 28 gpm☐ Bailed Describe: ☐ Other

Pumping Level Below Land Surface

55 ft. After 10 ^{min} hrs. pumped 45 GPM147 ft. After 3 1/2 ^{min} hrs. pumped 30 GPM146 ft. After 3 1/2 ^{min} hrs. pumped 28 GPM146 ft. " 6 ^{min} " " 28 ^{gpm}Remarks: Pegmatite grey - 165 - 175Pegmatite yellow - 175 - 200Water - 28 gpmWater Recovery: 60' in 5 min.35' in 10 min.20' in 15 min.14' in 30 min.This well was drilled under license # 324

and this report is true and accurate.

Alexander Delg.

Drilling Firm

Signed by 4-29-82

Date

GAME LODGE WATER SYSTEM

Description:

The existing public water system for the Game Lodge Area of the Park consists of two sub-systems connected by a pressure reducing valve. The upper sub-system is known as the Filter Plant System, while the lower sub-system is referred to as the Game Lodge System. The general layout of the water system is as shown on pages No.

1.) The "Filter Plant System" consists of a well, a water intake structure, a small water treatment plant, a storage reservoir, and distribution piping. Use of the water intake structure and water treatment plant was terminated in 1973 with the construction of the drilled well.

<u>Item</u>	<u>Quantity</u>	<u>Installation Date</u>
Well (47 GPM)	1	1973
Water Intake Structure	1	1962
Water Treatment Plant	1	1962
25,000 gal Steel Storage Reservoir	1	1962
6" C.I.P. (Cast Iron Pipe)	630 Ln. Ft.	1962
4" C.I.P.	7300 Ln. Ft.	1962
4" Gate Valve	5	1962
Fire Hydrant	3	1962

The well was completed in 1973 at a depth of 150 feet. It was test pumped at 50 gpm for five hours, with water level at the 90 ft. depth, by park personnel. This well is equipped with a Flint & Walling 4 F 55 A-30 eleven stage pump, and 3 H.P. 3 phase motor. The pump is at a depth of 134 feet. This well has consistently provided 47 gpm since its construction. According to park personnel,

the water meter has been inaccurate since at least February 1985 and is presently in the process of being repaired. The water is treated with liquid sodium hypochlorite solution by use of a chemical feed pump whenever the well pump is operating. This water is then conveyed directly to a 25,000 gallon steel reservoir. The reservoir is the on grade type and is located on the hillside above the well.

The distribution piping begins at the reservoir and continues downstream along Grace Coolidge Creek to the Coolidge Inn where it is connected to the Game Lodge System by a pressure reducing valve. This distribution system⁶ is not looped.

2.) The "Game Lodge System" consists of two wells, an infiltration gallery, a chlorinator, a storage reservoir and distribution piping.

<u>Item</u>	<u>Quantity</u>	<u>Installation Date</u>
Shallow Well (44 gpm)	1	1920 - 1930
Drilled Well (28 gpm)	1	1982
Chlorinator	1	1962
21,000 gallon Concrete Storage Reservoir	1	1940 (Approx.)
4" C.I.P. (Cast Iron Pipe)	3370 Ln. Ft.	1962
3" C.I.P.	2100 Ln. Ft.	1920 - 1930
2½" Gal. Steel Pipe	975 Ln. Ft.	1962
2" Gal Steel Pipe	1120 Ln. Ft.	1930 (Approx.)
2" P.V.C. Pipe	630 Ln. Ft.	1979 (Replaced 2" Galv.)
1" Polyeth. Pipe	470 Ln. Ft.	1979 (Replaced 1" Coppe

The size and yield of the infiltration gallery are unknown. This gallery feeds a shallow hand-dug well located on the bank of Grace Coolidge Creek across Highway 16A from the Game Lodge. The pump house is adjacent to the well and is equipped

with 3 H.P. Centrifugal pump capable of pumping 44 gpm to the system. According to records, this well has been pumped dry in the past during periods of low stream flow. This water supply has been reported to become turbid at times when high stream flows existing in Grace Coolidge Creek.

The drilled well completed in 1982 was test pumped at 28 gpm for six hours with the water level at the 146 foot depth. The overall depth of the well is 200 feet and the submersible pump is at a depth of 185 feet. The pump is a Grundfos submersible pump with a 2 H.P. motor. Records indicate this well to be providing 14 to 15 gpm to the system.

Both of the wells are equipped with a meter and chlorinator chemical feed pump similar to the Filter Plant System. Water is conveyed to the concrete reservoir located on the hillside near the Visitors Center Building.

The distribution piping extends from the lower end of the Filter Plant System near Coolidge Inn to the group use area comfort station. This distribution system is not looped. Portions of the old galvanized and copper mains were replaced with plastic pipe by Park Personnel in 1979.

Investigation:

Personnel of Scott Engineering Company made on site investigations, field measurements and obtained relative elevations. Available plans and reports were reviewed along with interviewing park employees that have knowledge of the existing conditions. Copies of records, notes and data on the system were furnished by park employees.

In 1985 park personnel drained and cleaned the concrete reservoir. At that time they noted the condition of the inside, made measurements and photographed the interior. These were made available to Scott Engineering Company. This reservoir is shaped in the form of an inverted truncated pyramid. From the site investigation, the wooden roof structure was observed to be in poor condition. Roof decking and rafters are rotting. The upper two feet of the concrete reservoir walls are deteriorating in areas and the existing joints are not sealed. Small openings also exist between the roof structure and the concrete walls. The overhead control wiring is attached very low on the structure.

The shallow well pump is controlled by floats located in the concrete reservoir, while the drilled well pump is controlled by a Healy-Ruff Company pressure controller. The pressure controls for the drilled well are continually having to be adjusted by park personnel to get the well pump to fill the reservoir with water and also to keep water from overflowing the reservoir.

According to park personnel, after about 8 hours of pumping the drilled well at 14 to 15 gpm, the water level will drop to the point where there is only about 20 feet of water depth left in the well. Also, in the past, rocks have been pumped from this well into the system.

The buildings housing the equipment for both the shallow well and the drilled well appeared to be in good condition with no major problems noted.

The 1980 study and report that was furnished to us indicates that leakage of approximately 9-12 gpm existed between the valve by the tent campground and the headquarters. In July of 1985 park personnel repaired a leak of approximately 7 gpm on the headquarters building service line. This would reduce the leakage considerably and some of the remainder may not be found.

The report also recommended the replacement of galvanized water lines. A portion of this had been replaced in 1979 and at that time it was seriously deteriorated. We have no plans to show where this line is located and no report of any of this having been replaced.

Design Criteria:

The criteria which was used to determine the adequacy of the existing facilities was to compare them with the Ten States Standards and criteria for the Design of Public Water Supply Facilities in South Dakota.

1.) Water Demand - To determine the design flows for each part of the water system, park personnel provided Scott Engineering Company with a list of the facilities served by each system and the estimated number of persons using the facilities at full capacity. Table A shows the design average daily demand for the two sub-systems.

The summertime demands are typically 25 percent greater than the daily average for an entire year.

Therefore the Design Average Daily Demand = $77855 \times 1.25 = 97,320$ gpd ($67\frac{1}{2}$ gpm)

Maximum daily demand is assumed to be 80 percent greater than the average daily use for an entire year.

Design maximum daily demand = $77855 \times 1.8 = 140,140$ gpd (97 gpm)

TABLE B shows the recorded average daily water pumped from the Filter Plant Well. In July of 1984 and in August of 1985, water was transferred to the Game Lodge System by use of the valve separating the two sub-systems.

TABLE C shows the recorded average daily water pumped from the shallow well and the drilled well on the Game Lodge System.

TABLE A

DESIGN AVERAGE DAILY DEMAND*

Date Prepared January 8, 1986

1.) Filter Plant Well Water System

	<u>Gallons Per Day</u>
Residences: 4 total-12 bedrooms total x 200 gpd/bedroom	2,400
Dormitory: 32 people x 50 gpcd	1,600
Campgrounds: 32 units x 3 people/unit x 50 gpcd	4,800
Comfort Stations: Assume 200 visitors x 10 gpcd	2,000
Offices: (14 employees x 25 gpcd) + (25 visitors x 10 gpcd)	600
Coolidge Inn Restrooms: Assume 300 people x 10 gpcd	3,000
AVERAGE DAILY SUMMER DEMAND	14,400 gpd
	10 gpm

2.) Game Lodge Well Water System

	<u>Gallons Per Day</u>
Residences: 4 total-9 bedrooms total x 200 gpd/bedroom	1,800
Dormitories: 72 people x 50 gpcd	3,600
Schoolhouse Restroom: Assume 5 people/day x 10 gpcd	50
Cabins: 106 people x 50 pgcd	5,300
Campgrounds: 55 units x 3 people/unit x 50 gpcd	8,250
Group Campground: 10 people/day x 50 gpcd (48 groups/120 days x approx. 25 people/group)	500

	<u>Gallons Per Day</u>
Comfort Stations: 3 total - Assume 200 visitors x 10 gpcd	2,000
Game Lodge Restaurant: 140 seats x 150 gpd/seat	21,000
Coolidge Inn Restaurant: 60 seats x 150 gpd/seat	9,000
Game Lodge-Lodge and Motel Units - 181 people x 60 gpcd	10,860
Game Lodge Bar: 18 seats Assume 40 people/day x 3 gpcd	120
Chapel: Assume 50 visitors/day x 5 gpcd	250
Visitor Center: 315 visitors/day x 5 gpcd + 8 employees x 25 gpcd	1,775
AVERAGE DAILY SUMMER DEMAND	64,505
	(45) gpm
TOTAL AVERAGE DAILY SUMMER DEMAND-BOTH SYSTEMS	77,855 gpm
	(55) gpm

* Information on facilities and number of persons from Custer State Park Personnel. Data compiled from 1980 Study & Report, TABLE 2. The demands do not include line leakage, lawn watering or fire suppression.

TABLE B

GAME LODGE SHALLOW WELL
Average Gallons/Day

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1980	539	546	-----No Record-----			29,284	43,167	37,056	22,552	6,889	32,052	27,063
1981	1,915	2,170	2,117	4,974	11,026	32,284	47,004	32,800	20,398	4,002	2,319	2,184
1982	2,132	2,124	2,192	4,286	17,137	27,983	43,833	37,026	13,831	1,563	1,144	860
1983	1,052	1,091	1,985	3,181	10,479	27,788	30,919	30,119	19,487	9,109	8,335	1,927
1984	-----Using drilled well-----						1,231	9,804	6,642	1,642	959	4
1985	8	5	13	308	3,501	14,928	25,413	17,802	3,414	2,209	1,423	879

GAME LODGE DRILLED WELL
Average Gallons/Day

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1984	2,666	2,186	3,419	3,565	11,040	23,336	27,891	17,023	12,127	583	734	2,082
1985	3,510	2,266	1,936	2,591	15,104	17,180	15,758	13,884	10,821	60	8	4

GAME LODGE WATER SYSTEM
Shallow Well and Drilled Well
Total Average Gallons/Day

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1984	2,666	2,186	3,419	3,565	11,040	23,336	29,122	26,827	18,769	2,225	1,693	2,086
1985	3,518	2,271	1,949	2,899	18,605	32,108	41,171	31,686	14,235	2,269	1,431	883

TABLE C

FILTER PLANT WELL

Average Gallons/Day

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1980	17,272	16,897	16,784	18,330	20,406	23,998	29,592	23,665	19,503	16,975	15,472	1,622
1981	1,855	2,013	3,350	5,226	2,997	10,410	14,533	6,442	8,525	3,441	2,796	2,054
1982	1,875	1,618	1,607	2,397	6,761	5,989	15,747	16,094	3,664	1,938	1,591	15,277
1983	1,493	1,345	1,448	2,021	8,347	12,973	25,627	25,693	21,850	17,948	19,000	19,377
1984	23,123	1,845	1,217	1,604	4,961	7,962	13,356	16,778	4,907	1,654	1,529	3,410
1985	13,565	15,454	16,713	16,910	25,979	32,893	30,952	12,025	3,826	1,314	1,229	1,810

The records show that the average daily demand during June and July of 1985 would be approximately 68,600 gpd. The peak daily demand can not be determined from available records but for a period close to the 4th of July in 1985, an average of 89600 gpd was used.

The Design Average Daily Summer Demand and the Design Peak Daily Demand are both higher than the Peak Daily and Average Daily Demands of record. We have no record of how many people were using the facilities at this time and water usage shows an increase. We do not want to reduce design quantities on the basis of recorded use.

According to the Ten States Standard, the ground water source capacity shall equal or exceed the Design Maximum Daily Demand and with the largest producing well out of service, the ground water source shall equal or exceed the Design Average Daily Demand. The Game Lodge Drilled Well is currently producing approximately 14 to 15 gpm. The total water system has a capacity of 105 gpm. With the Filter Plant Well (largest producing well 47 gpm) out of service, the two Game Lodge wells provide approximately 58 gpm. However, the Game Lodge shallow well (44 gpm) cannot be relied upon to consistently provide the quantity and quality of water required. Water from this shallow well has been reported to become turbid at times of high stream flow in Grace Coolidge Creek and the well has been pumped dry during low stream flow periods. This indicates that an additional water supply source, with a capacity of approximately 44 gpm, is required to meet the Ten States Standards.

The Ten States Standards requires that finished water storage capacity equal the Design Average Daily Demand. This would require storage of 97,500 gallons of finished water. The total current available storage amounts to 46,000 gallons. Therefore, a minimum of 51,500 gallons of additional storage is needed.

The existing water system is not capable of providing the required fire flows for the Game Lodge and Coolidge Inn as determined by the Insurance Services Office Criteria. However, if the system were to have a 6" main from the reservoir to a fire hydrant close to the Game Lodge it may slow a major fire or extinguish a small fire. A pumper could pump from the hydrant on a 6" main without collapsing the main. This should not be considered as fire protection because it is inadequate; but the contents of the reservoir would be available and could no doubt be a great help in suppressing a fire while waiting for more help.

Recommendations:

- 1.) Wells: Two 22 gpm wells with necessary piping, controls and pumps should be added to the water system.

Once the new wells are put into service, regular usage of the existing shallow Game Lodge well should be discontinued. The shallow well should be maintained for standby use should one of the other wells be temporarily out of service.

- 2.) Water Storage: Available cost effective alternatives for finished water storage are as follows:

- A.) The existing Game Lodge concrete storage reservoir should be upgraded. This would require removing and replacing the existing roof structure. The upper portion of the concrete structure (one to two feet) should be refurbished where the concrete is deteriorated and where joints are not sealed. The existing interior concrete surfaces should be cleaned and a sealer applied. The overhead electrical service from the shallow well pump house should be replaced.

A 51,500 gallon storage reservoir should be constructed adjacent to the existing Game Lodge concrete storage reservoir. It should be such that it will function in parallel with and operate at the same depth as the existing reservoir.

B.) A 72,500 gallon steel reservoir should be constructed on the Game Lodge system. This reservoir would replace the existing Game Lodge concrete reservoir and additional concrete reservoir. (A above)

C.) The existing Filter Plant Steel reservoir should have both the interior and exterior surfaces painted. The tank is in good condition.

3.) Distribution System: The remainder of the 2 inch galvanized steel pipe should be replaced with new 4 inch water main. A portion of the 2 inch galvanized pipe was replaced in 1979 because of deterioration occurring from the corrosive action of the surrounding soil.

4.) The existing pressure valve, strainer and valving connecting the two water sub-systems near the Coolidge Inn should be removed and replaced. The valve should maintain a static water level in the Game Lodge reservoir with the Game Lodge wells temporarily shut off.

Estimated Game Lodge Water

1. Additional Wells

Well (estimated depth 200 ft.)	9,000	
Pump, Piping, Chlorinator, and Controls	<u>5,000</u>	
	14,000	
Engineering & Contingencies	<u>2,800</u>	
TOTAL	16,800	
Two Wells		33,600

2. 51,500 gallon reservoir adjacent to existing Game Lodge concrete reservoir.

New Concrete Reservoir:

Apprx. 105 Cu. Yds. @\$300/Cu. Yd.	31,500	
Excavation, Backfill & Site Preparation	3,750	
Piping, Valves & Controls	<u>2,000</u>	
SUB TOTAL	37,250	

Existing Concrete Reservoir:

Remove & replace existing roof & electrical service	7,000	
Repair deteriorated concrete, seal joints, clean & seal concrete surfaces	<u>2,800</u>	
Engineering & Contingencies	<u>9,410</u>	
TOTAL		56,460

3. 72,500 gallon reservoir for Game Lodge System in lieu of item 2 above.

Steel Reservoir	46,600	
Site preparation & foundation	500	
Supply & drain piping, valves & controls	2,400	
Engineering & Contingencies	<u>8,910</u>	
TOTAL		58,410

4. Replacement of 2 inch Galvanized pipe
with new 4 inch water main.

4" Water Main	1,120 Ln. Ft. @ 6.00/ft.	6,720	
4" Gate Valve & Box	3 Ea. @400.00/Ea.	1,200	
8" Casing	40 Ln. Ft. @50/ft.	2,000	
	Engineering & Contingencies	<u>1,980</u>	
	TOTAL		11,900.00

5. Pressure Valve connection between sub-systems

Pressure Valve	950	
Strainer & valving	1,200	
Engineering & Contingencies	<u>430</u>	
TOTAL		2,580

**South Dakota
Department of
Game, Fish and Parks**

Custer State Park
HCR 83, Box 70
Custer, South Dakota 57730
605-255-4515

July 7, 1987

Ron Duvall
Water Rights Division
DWNR - Foss Building
Pierre, South Dakota 57501



Dear Mr. Duvall:

Enclosed are water permit applications for the Game Lodge water system and the Sylvan Lake water system.

The amount of water being requested for each system is taken from Preliminary Study and Report for Fiscal 1986 Construction and Repair Projects in Custer State Park, January 1986, Scott Engineering Company. Portions of the study which deal with the Game Lodge water system and the Sylvan Lake water system are enclosed.

Also, refer to the enclosed letter dated July 3, 1987 from Scott Engineering Company with updated information on the Sylvan Lake water system. The amount of water being requested in the Sylvan Lake water permit application is 70 gpm. Maximum daily demand (86 gpm) - existing well (18 gpm) = additional water needed (68 gpm).

If you have any questions concerning the water permit applications, please call this office.

Sincerely,

Greg Goebel
Greg Goebel
Natural Resource Analyst

GRG:wsn

Enc.

cc: Rollie Noem, Director, Custer State Park

South Dakota
Department of
Game, Fish and Parks

July 15, 1987

Dale Ludens
Field Representative
2823 W. Main
Rapid City, South Dakota 57702

Custer State Park	
HCR 83, Box 70	
Custer, South Dakota 57730	
605-255-4515	
WHS	JUL 21 1987
F	
Ray	
FILE	
RECEIVED	
RECEIVED	

Dear Dale:

At your request this letter provides reference of our discussions regarding the Game Lodge and Sylvan Lake well sites. The following two items were discussed and agreed to at our meeting held at the Visitor Center on July 9, 1987. The first item concerns the Game Lodge well site.

The Game Lodge well site has been moved from the north side of the gravel road to the south side of the gravel road. (See attached map.) Division Director Rollie Noem has approved moving the well site. The reason for moving the well site is to relocate it out of the flood plain.

The benefits of moving the well site are as follows: 1) The cost of additional well casing and mounding around the well will be avoided. 2) Less water pipe and electrical wire will be required to reach the pump house site. 3) The water pipe from the well to the pump house will not cross a sewer line.

Dr. Paul Gries, the consulting geologist who originally located the well site, advised on June 25, 1987 that there would not be substantially less chances of finding water in a well on the south side of the gravel road as compared to the north side of the gravel road.

The second item concerns the Game Lodge and Sylvan Lake wells. DWNR has advised that a water permit is not required prior to well drilling. So not having the water permits should not prevent the well driller from drilling the wells. The water permit applications have been submitted to DWNR and are being reviewed by their staff.

Sincerely,

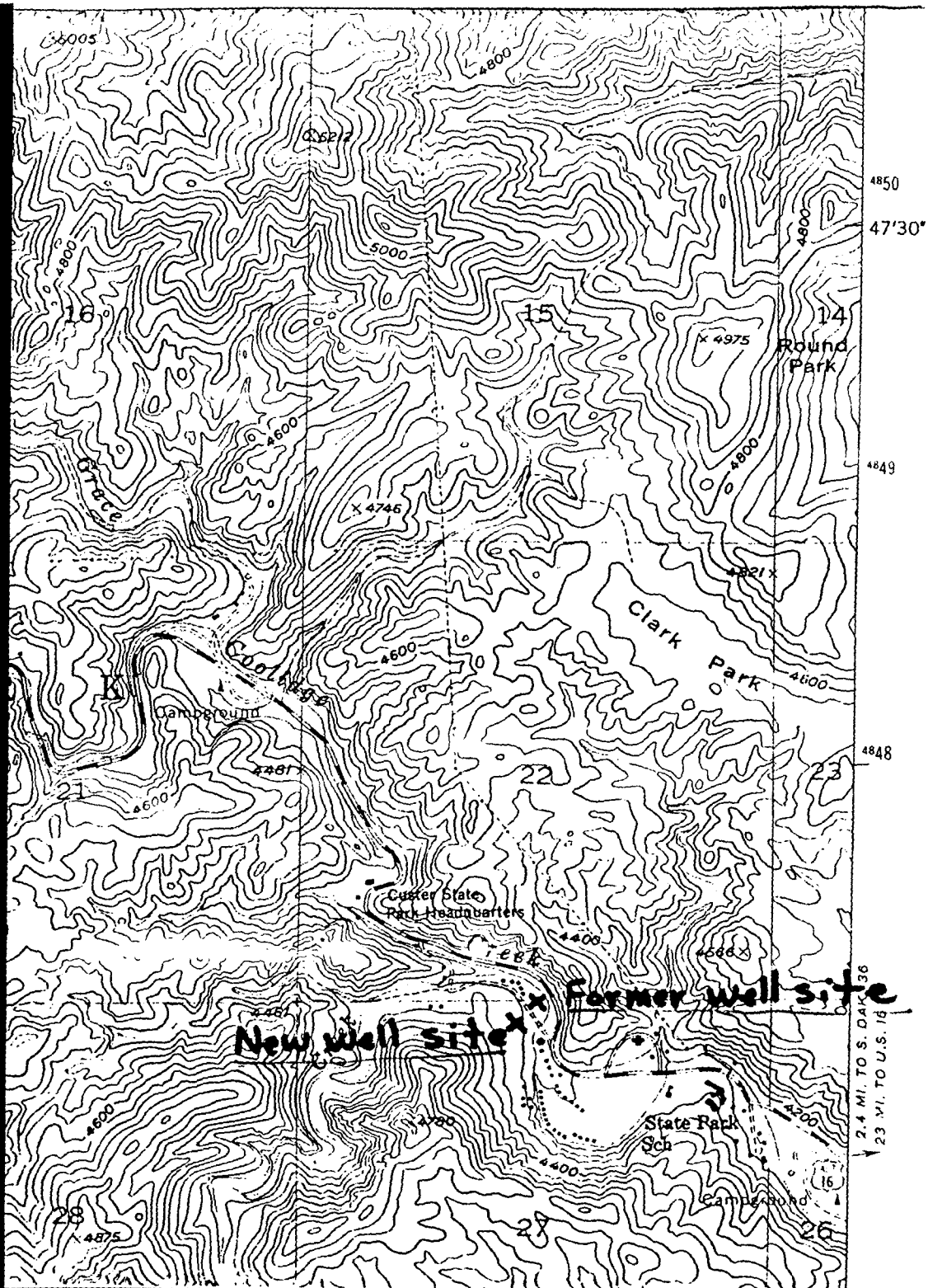
Greg Gebel
Greg Gebel, Natural Resource Analyst

GRG:wan

Enc.

cc: Rollie Noem
Ray McDorman ✓
Neil Stodolski
John Scott
Dennis Williams

SHERER



REPORT ON PERMIT APPLICATION NO. 2028-2
CUSTER STATE PARK
August 3, 1987

Permit Application No. 2028-2 proposes to appropriate 0.10 cubic feet of water per second from up to 5 wells, 250 feet deep, to be located in the SE 1/4 SW 1/4 and the SW 1/4 SE 1/4 Section 22; the NE 1/4 NW 1/4 and the NW 1/4 NE 1/4 Section 27, all in T3S-R6E. Water is to be used for commercial and recreational purposes by the Game Lodge area facilities.

AQUIFER Pre-Cambrian Rock

GEOLOGY AND AQUIFER CHARACTERISTICS

The Pre-Cambrian Rock in this area consists primarily of granite and pegmatite intrusives, predominately large sills, within quartzite and sillimanite schist country rock. (Redden, 1975). This crystalline rock is distinguished by low porosity, and transmits water to wells along joints, faults, and fractures. Voids exist in the rock either as small intergranular openings (primary porosity) or small fractures (secondary porosity). The total porosity of the Pre-Cambrian is assumed to be 3%, and the effective porosity, containing the recoverable ground water, primarily in cracks and joints, is assumed to be 1 % (Rahn, 1979).

Recharge to the Pre-Cambrian Rock is through infiltration of precipitation falling directly on the outcrop, and possibly streamflow from Grace Coolidge Creek. The average annual recharge to the Pre-Cambrian Rock has not been quantified.

REVIEW OF EXISTING WATER RIGHTS

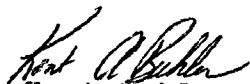
The Division of Water Rights does not have record of any domestic wells within one mile of the proposed diversion points.

There is one existing water permit within one mile of the proposed diversion points. It is Permit No. 1847-2, Custer State Park, for 0.06 cfs from one well 200 feet deep, located in the N 1/2 Section 27, T3S-R6E. In 1969 the Department of Game, Fish & Parks applied for a permit (No. 996-2) for water from the creek (gallery system) and a hearing was held. There were a number of protests at the hearing and some expert testimony presented. The Water Management Board deferred the permit request for study and subsequently, the Department of Game, Fish & Parks withdrew the application.

CONCLUSIONS

1. Permit Application No. 2028-2 proposes to appropriate 0.10 cfs from up to 5 Pre-Cambrian rock wells.
2. Because of the properties of the Pre-Cambrian Rock, fracture porosity and permeability, it may be possible to develop 0.10 cfs from one well, or five wells may be necessary to provide the required water.

3. Average annual recharge has not been quantified for the Pre-Cambrian Rock in this area.
4. The requested appropriation (0.10 cfs) should not have an Engineer adverse effect on any existing water rights.


Kent Buhler

Natural Resources

REFERENCES

- Redden, J.A., 1975, "Precambrian Geology of the Black Hills", Mineral and Water Resources of South Dakota, Committee on Interior and Insular Affairs, United States Senate, U.S. Government Printing Office, Washington, D.C.
- Rahn, P.H., 1979, "Ground Water Resources of Western South Dakota", U.S. Army Corps of Engineers, SDSM&T Project #2533, Rapid City, SD

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2028-3

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning Water Permit Application No. 2028-2, Custer State Park, HCR 83, Box 70, Custer SD.

The Chief Engineer is recommending APPROVAL of Application No. 2028-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) in the public interest with the following qualifications:

1. The casing of the wells to be constructed under Permit No. 2028-2 shall be pressure grouted with cement (bottom to top) and the wells constructed in compliance with Water Management Board Well Construction Rules, Chapter 74:02:04.
2. The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same formation. The well owner, under this Permit, shall control his withdrawals so there is not a reduction of needed water supplies in domestic wells.

See the attached report for additional information.


JOHN HATCH, Chief Engineer
August 4, 1987



Department of Water & Natural Resources

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

Water Rights Division
(605) 773-3352

August 5, 1987

NOTE:

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

Custer State Park
HCR 83, Box 70
Custer, South Dakota 57730

Dear Sir:

Your Application No. 2027-2 & /2028-2 for a permit to appropriate water for
commercial & recreational use, has been examined and found to
comply with the South Dakota Water Laws and applicable rules. A notice of
your intent to appropriate water has been sent to the Publisher of the

Custer County Chronicle printed at Custer

South Dakota. For your information, a copy of this notice, the recommendation
of the Chief Engineer and a report on the application are enclosed. Please
review this notice prior to publication and notify this office, if you have
any corrections or questions.

BE SURE TO CONTACT THE ABOVE NEWSPAPER IMMEDIATELY TO AUTHORIZE PUBLICATION
OF YOUR NOTICE OF INTENT TO APPROPRIATE WATER AND TO ARRANGE FOR PAYMENT.
Early contact with the paper can eliminate delays. The publisher has been
instructed to publish your notice once each week for two consecutive weeks
with the last publication to occur at least twenty days before the board
meeting. We must receive Proof of Publication before the application can be
considered by the Water Management Board.

Sincerely,

RON DUVALL
Natural Resources Engineer

enclosures



Department of Water & Natural Resources

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

August 5, 1987

Custer County Chronicle
Box 551
Custer, South Dakota 57730

Dear Sir:

Enclosed is a Notice of Hearing to Application No. 2027-2 & 2028-2. Please publish this notice once each week for two consecutive weeks in your paper. The first publication should be on or before August 12, 1987.

The APPLICANT MUST VERIFY TO YOU THAT THE NOTICE IS TO BE PUBLISHED, before you make the first publication. Please BILL the APPLICANT for the cost of publication. The APPLICANT is Custer State Park, HCR 83, Box 70, Custer, South Dakota 57730.

A copy of BOTH publications must be SENT to the WATER RIGHTS DIVISION. IMMEDIATELY return the FIRST publication with the FIRST Transmittal form on the bottom of this page. The first copy is needed to check the publication for errors so any corrections can be made before in the second publication. Publication errors can invalidate the public notice and cause the applicant costly delays.

Please be sure the SECOND publication is returned IMMEDIATELY with the enclosed Proof of Publication form. DO NOT WAIT until the end of the month or the billing cycle. The permit application cannot be considered by the Water Management Board until proof of publication has been received.

Sincerely,

Ron Duvall
Natural Resources Engineer
605 773-3352

enclosures

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

FIRST TRANSMITTAL NOTICE
No. _____

TO: Water Rights Division
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of _____ enclosing Notice of Hearing to Appropriate Water by Application No. _____ which was first published in our issue of _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

Name

Newspaper

Instruction to Newspaper - Publish first publication of the following Notice on or before August 12, 1987 with 2nd publication 1 week later. The applicant is responsible for payment.

NOTICE OF HEARING on Application Nos. 2027-2 & 2028-2 to Appropriate Water

Notice is hereby given that Custer State Park whose mailing address is HCR 83, Box 70, Custer, South Dakota has filed Application No. 2027-2 for a permit to appropriate 0.16 cubic feet of water per second from up to 6 wells (Pre-Cambrian Rock) 250 feet deep to be located in the SE 1/4 SE 1/4 Section 30; SW 1/4 SW 1/4 Section 29; all in T2S, R5E. Water is to be used for commercial and recreational purposes by the Sylvan Lake Area Facilities.

Application No. 2028-2 is to appropriate 0.10 cubic feet of water per second from up to 5 wells (Pre-Cambrian Rock) 250 feet deep to be located in the SE 1/4 SW 1/4, SW 1/4 SE 1/4 Section 22; NE 1/4 NW 1/4, NW 1/4 NE 1/4 Section 27; all in T3S, R6E. Water is to be used for commercial and recreational purposes by the Game Lodge Area Facilities.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends APPROVAL of Application Nos. 2027-2 & 2028-2 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) it is a beneficial use of water and 4) it is in the public interest.

The application will be considered by the Water Management Board in Room 216, Joe Foss Bldg, Pierre SD, September 9, 1987 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve the with qualifications, 3) defer, or 4) deny these applications after it reaches a conclusion based upon facts presented at the public hearings. Any interested person who may be affected by a Board decision and who intends to participate in a hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and the Chief Engineer by August 28, 1987. The petition may be informal, but it must include a statement describing the petitioner's interest in an application, the reasons for the petitioner's opposition to or support of an application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

These applications are made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-5-20.1, 46-5-8.1; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

These hearings are adversary proceedings. The applicant or any person, after filing a petition, 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. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

Any person wishing a copy of the Chief Engineer's recommendation, further information on an application or to assure access to the hearing by the handicapped can contact the Water Rights Division, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of a hearing will be automatically extended for at least twenty days upon written request of the applicant or person who has filed a petition to oppose or support an application. The request for extension must be filed with the Chief Engineer by August 28, 1987.

No. 202702 &
2028-2

Notice is hereby given that Custer State Park whose mailing address is HCR 83, Box 70, Custer, South Dakota has filed Application No. 2027-2 for a permit to appropriate 0.16 cubic feet of water per second from up to 6 wells (Pre-Cambrian Rock) 250 feet deep to be located in the SE1/4 SE1/4 Section 30; SW1/4 SW1/4 Section 29; all in T2S, R5E. Water is to be used for commercial and recreational purposes by the Sylvan Lake Area Facilities.

Application No. 2028-2 is to appropriate 0.10 cubic feet of water per second from up to 5 wells (Pre-Cambrian Rock) 250 feet deep to be located in the SE1/4 SW1/4, SW1/4 SE1/4 Section 22; NE 1/4 NW1/4, NW1/4 NE1/4 Section 27; all in T3S, R6E. Water is to be used for commercial and recreational purposes by the Game Lodge Area Facilities.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends APPROVAL of Application Nos. 2027-2 & 2028-2 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) it is a beneficial use of water and 4) it is in the public interest.

The applications will be considered by the Water Management Board in Room 216, Joe Foss Bldg., Pierre, SD, September 9, 1987 at 10:00 a.m.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve the with qualifications, 3) defer, or 4) deny these applications after it reaches a conclusions upon facts presented at the public hearings. Any interested person who may be affected by a Board decision and who intends to participate in a hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and the Chief Engineer by August 28, 1987. The petition may be informal, but it must include a statement describing the petitioner's interest in an application, the reasons for the petitioner's opposition to or support of an application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

These applications are made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, and Board Rules ARSD 74:02.01:01 thru 74:02.01:15.

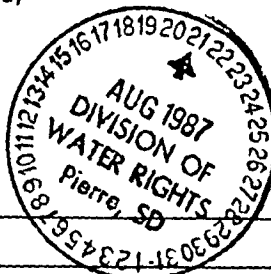
These hearings are adversary proceedings. The applicant or any person after filing a petition, has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

Any person wishing a copy of the Chief Engineer's recommendation, further information on an application or to assure access to the hearing by the handicapped can contact the Water Rights Division, Joe Foss Bldg. Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of a hearing will be automatically extended for at least twenty days upon written request of the applicant or person who has filed a petition to oppose or support an application. The request for extension must be filed with the Chief Engineer by August 28, 1987.

#728 8/12 & 8/19/87

(Title)

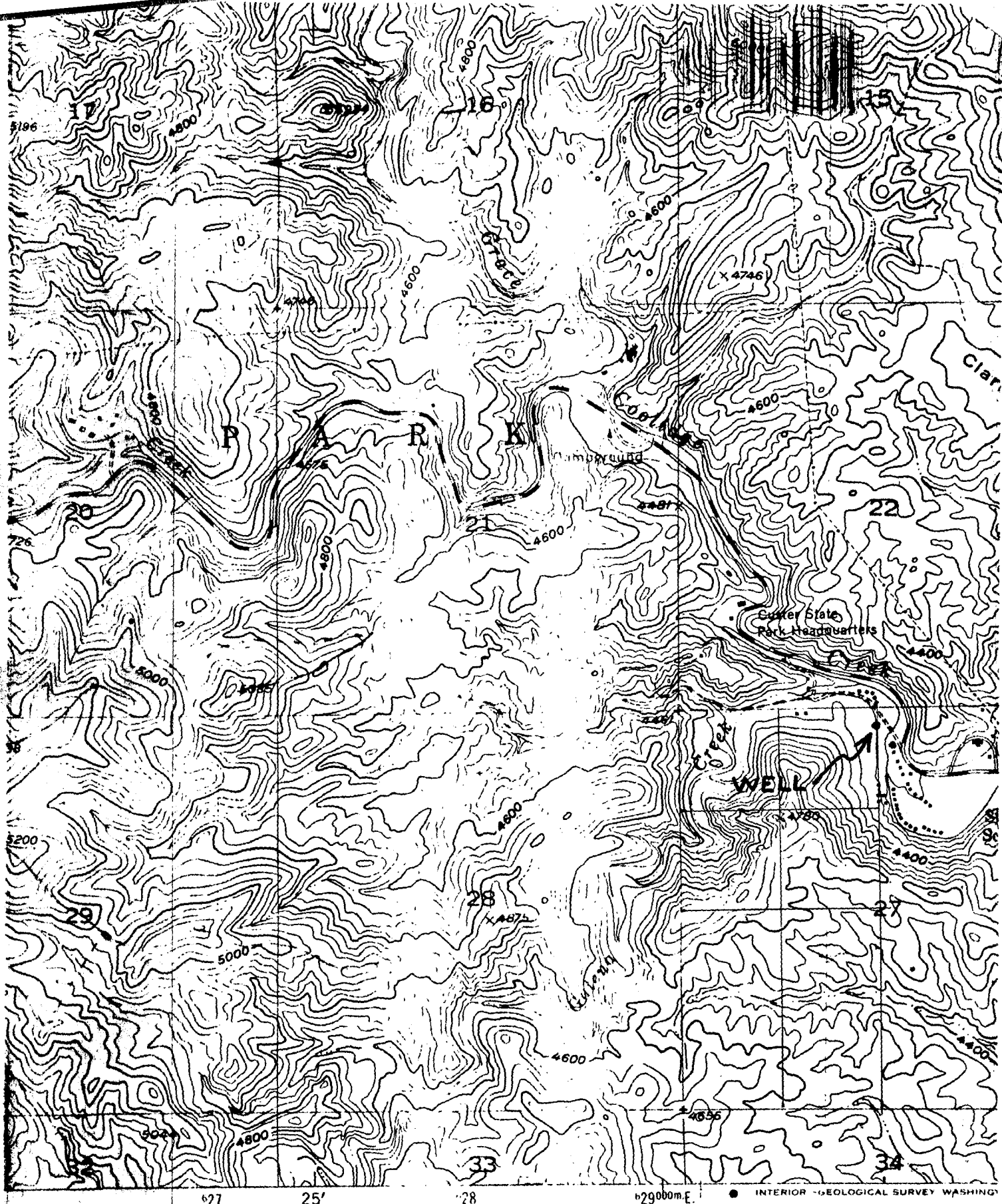
(Date Signed)



August 12, 1987 - 27.06

August 19, 1987 - 21.65

Total - \$48.71



• LOCATION OF WELL DRILLED ON AUGUST 17, 1987

Greg Goebel

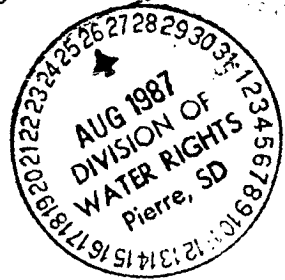
1-4-88

Amended April 11 2028-2

Thomas H. Callan
R.R. #3, Hires Trace
Morton, IL 61550-9803
H. (309) 266-9802
B. (309) 675-9433

August 22, 1987

Chief Engineer
Water Rights Division
Joe Foss Building
523 E. Capitol
Pierre, South Dakota 57501-3181



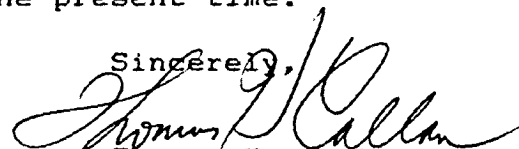
RE: Permit Application No. 2027-2
Permit Application No. 2028-2

Dear Sir:

This is a request on behalf of my mother, Helen M. Callan, my sister, Chris Molitor, and myself, Thomas H. Callan, in regard to the above permits that any action upon them be extended for at least twenty days for the following reasons:

1. We will need the time to secure and review a copy of your recommendation and Custer State Park's applications prior to the hearing date.
2. If, after studying the application and your recommendation, we determine this use of the water would conflict with the ranching operations in the area and would not be in the public interest, we will need the time to secure legal counsel and organize other ranchers that will be affected.
3. From the official notice that appeared in the Custer Chronicle, the potential environmental impact of this application is significant. I am somewhat confused as to the total water appropriation that would result. (That is, would the 0.16 F3/S from permit 2027-2 be a total from all six wells or would it be per well? I have the same question about permit 2028-2.) In any case, a total of eleven new wells up to 250 feet deep in the Pre-Cambrian formations is significant in itself and warrants further study as to environmental impact.
4. In addition, from a personal standpoint, I will need to get time off and make travel arrangements to prepare for and attend the hearing.

For the above reasons, we would appreciate it if you could postpone consideration of these applications at the present time.

Sincerely,

Thomas H. Callan

cc: Helen M. Callan
Chris Molitor

Thomas H. Callan
R.R. #3, Hires Trace
Morton, IL 61550-9803
H. (309) 266-9802
B. (309) 675-9433

August 22, 1987

Chief Engineer
Water Rights Division
Joe Foss Building
523 E. Capitol
Pierre, South Dakota 57501-3181



RE: Permit Application No. 2027-2
Permit Application No. 2028-2

Dear Sir:

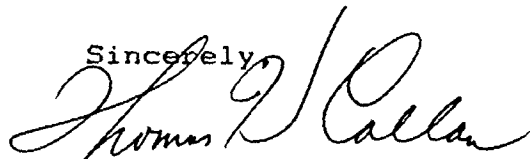
Please find enclosed an informal Petition to Intervene, to Contest, and to Oppose the above two Applications. Also enclosed, is a check for \$2.50 to cover the filing fee of the petition if one is required. If not, please return my check.

My mother and I would further request that the time for the hearing be extended for at least twenty days to enable us time to secure and review copies of the applications, secure legal counsel, and adequately prepare for the hearing.

Our main reasons in requesting this continuance are (1) the potential significant environmental impact of a total of eleven new wells in the Pre-Cambrian formation, (2) the need for time to study the applications as well as your recommendation to determine if this appropriation is beneficial use of water and whether it is indeed in the public interest, (3) the need to assess the impact of the applications on ranching operations in the area, and (4) my need to arrange my schedule to have enough time to prepare for and attend the hearing if we deem it necessary.

I would appreciate it if you would place me on your mailing list for copies of any future documents supplied by anyone to the file in this matter. By this, I am formally requesting that as parties to this matter, we receive copies of anything filed by either the state or the applicants.

Thank you for your attention.

Sincerely,

Thomas H. Callan

cc: Helen M. Callan
Chris Molitor
Custer State Park

BEFORE THE WATER MANAGEMENT BOARD

STATE OF SOUTH DAKOTA

IN THE MATTER OF APPLICATION NOS. 2027-2 AND 2028-2)
OF CUSTER STATE PARK TO APPROPRIATE WATER FOR)
COMMERCIAL AND RECREATIONAL PURPOSES FOR THE)
SYLVAN LAKE AND GAME LODGE FACILITIES)

PETITION TO INTERVENE, TO CONTEST, AND TO OPPOSE APPLICATIONS

NATURE OF FILING AND DISCLAIMER

Let it be known that the nature of this filing is informal--that I am not an attorney and make no claims to knowledge of required legal format for filings before your board.

I am filing this petition in compliance with the terms posted in the notice of the above two applications appearing the Custer Chronicle on August 12, 1987: "The petition may be informal but it must include a statement describing the petitioner's interest in an application, the reasons for the petitioner's opposition to or support of an application, and the signature and mailing address of the petitioner ..."

STATEMENT OF PETITIONER'S INTEREST

I am filing this petition on behalf of my mother (Helen M. Callan), my sister (Chris Molitor), and myself (Thomas H. Callan). My mother is owner of the 88 ranch--an operation which could be materially affected by the drilling of eleven additional wells and the resulting water appropriation listed in the two applications above.

My sister and I have an interest because of our legal status as heirs to the ranching operation.

STATEMENT OF OPPOSITION TO APPLICATIONS

Our opposition to the above applications is based on a concern that the appropriation of water could materially affect ranching operations in the area which depend on the existence of an adequate water supply.

Many ranchers have wells in Pre-Cambrian formation and depend on that water for both business and personal use. Eleven new wells in the Pre-Cambrian formation and the resulting appropriation of water could have a definite impact on the level of the water table.

We are also not convinced by the notice that the appropriation is beneficial use of water or is in the public interest. Without reviewing the applications, we have no information as to how the water will be used.

Our concern is also based on a previous filing before the board by Custer State Park. This filing (Water Right Application No. 996-2) was denied by the board at their September 3, 1969 meeting. This filing was different in nature from the current filings. It was a proposed diversion of water (0.46 F³/S) from Grace Coolidge Creek. The proposed use of the water at that time was for irrigation of a 55 acre golf course.

It is for these reasons (and perhaps other reasons that will be determined after reviewing the applications and Chief Engineer's recommendation) that we oppose both of the applications noted above.

MAILING ADDRESSES

The mailing addresses of the petitioners are:

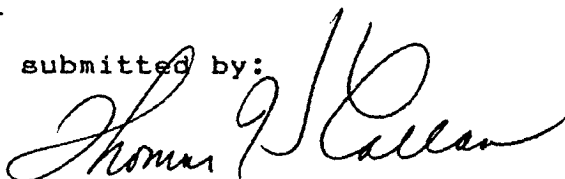
Thomas H. Callan
R.R. #3, Hires Trace
Morton, IL 61550-9803

Helen M. Callan
R.R. #1, Box 41
Hermosa, SD 57744

Chris Molitor
Box 74
Smithwick, SD 57782

SIGNATURE OF PETITIONER

This petition is hereby submitted by:



Thomas H. Callan
R.R. #3, Hires Trace
Morton, IL 61550-9803

CERTIFICATE OF SERVICE BY MAIL

I, Thomas H. Callan, as representative for the above named petitioners do hereby certify that on this 24th day of August, 1987, served the above petition upon the Applicant and filed the above Petition with the Chief Engineer by depositing same with the United States Post Office, first-class postage prepaid, in Peoria, Illinois, addressed as posted in the public notice (Custer Chronicle, August 12, 1987):

Custer State Park
HCR 83, Box 70
Custer, SD 57730

Chief Engineer
Water Rights Division
Joe Foss Building
523 E. Capitol
Pierre, SD 57501-3181



Department of Water & Natural Resources

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

August 27, 1987

Thomas H Callan
RR 3, Hires Trace
Morton IL 61550-9803

Dear Mr. Callan:

I am writing to answer your questions raised in the attached letter dated August 22, 1987 regarding the water appropriations for Application Nos. 2027-2 and 2028-2.

The proposed water appropriation of 0.16 cfs (72 gpm) and 0.10 cfs (45 gpm) for Application Nos. 2027-2 and 2028-2, respectively, are total appropriations for each application and not an appropriation for each well. Several wells have been specified on each application for the following reasons:

1. The amount of water that a well may produce from the Pre-Cambrian Rock is unpredictable and several wells may be needed to obtain 72 and 45 gpm.
2. The applicant for a water permit can not construct any wells in addition to the number specified on the permit application. Therefore, if the amount of water appropriated can not be obtained from the number of wells specified on an approved permit then the applicant must make an application to amend the permit to increase the number of wells. This is a time-consuming process which can be avoided with proper planning.
3. A standby well may also be constructed for use in event problems develop with the production well or wells.

This is the basis for the wording "up to 6 wells" and "up to 5 wells" used in the notice of hearing for the permit applications. The applicant (Custer State Park) then has the latitude to construct the number of wells needed to pump 72 gpm and 45 gpm (Application Nos. 2027-2 and 2028-2) with possible standby wells.

Please contact us if you have any questions. No filing fee is required with the petitions. Enclosed is your check for \$2.50.

Sincerely,

RON DUVALL
Natural Resources Engineer
605 773-3352

cc: Helen M Callan
Chris Molitor
Rollie Noem, Director of Custer State Park

SOUTH Dakota Department of
Water & Natural Resources

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

August 27, 1987

NOTICE

TO: Parties of Record (see attached list)

FROM: John Hatch, Chief Engineer
Water Rights Division
605 773-3352 *John Hatch*

SUBJECT: Automatic Continuance of Hearing on Water Permit
Application No. 2027-2 and 2028-2, Custer State Park

A petition in opposition to Water Permit Application No. 2027-2 and 2028-2 and request for an automatic continuance of hearing (see attached letter) has been received from Thomas H Callan, Helen M Callan and Chris Molitor. Pursuant to SDCL 46-2A-4 and 46-2A-5, the hearing on Application Nos. 2027-2 and 2028-2 is automatically continued and will NOT be held at the September 9, 1987 Board meeting. The hearing on Application Nos. 2072-1 and 2027-2 will now be held December 2, 1987 at 10:15 am at the Howard Johnson Motel, Roosevelt and Jefferson Room, 2211 LaCrosse St, Rapid City SD. The agenda time is an estimate. The actual time of hearing may be later than 10:15 am due to previous agenda items.

cc: Harold Deering, Assistant Attorney General
Water Management Board

August 26, 1987
(date)

page 1 of

Parties of Record before Water Management Board regarding
Water Permit Application Nos. 2027-2 and 2028-2,
Custer State Park

FOR:

AGAINST:

1. Rollie Noem, Director
Custer State Park
HCR 83, Box 70
Custer SD 57730

Thomas H. Callan
RR #3, Hires Trace
Morton, IL 61550-9803

2. _____

Helen M. Callan
RR #1, Box 41
Hermosa SD 57744

3. _____

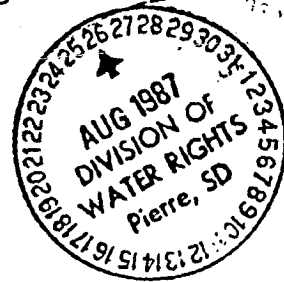
Chris Molitor
Box 74
Smithwick, SD 57782

4. _____

5. _____

Thomas H. Callan
R.R. #3, Hires Trace
Morton, IL 61550-9803
H. (309) 266-9802
B. (309) 675-9433

August 22, 1987



Chief Engineer
Water Rights Division
Joe Foss Building
523 E. Capitol
Pierre, South Dakota 57501-3181

RE: Permit Application No. 2027-2
Permit Application No. 2028-2

Dear Sir:

This is a request on behalf of my mother, Helen M. Callan, my sister, Chris Molitor, and myself, Thomas H. Callan, in regard to the above permits that any action upon them be extended for at least twenty days for the following reasons:

1. We will need the time to secure and review a copy of your recommendation and Custer State Park's applications prior to the hearing date.
2. If, after studying the application and your recommendation, we determine this use of the water would conflict with the ranching operations in the area and would not be in the public interest, we will need the time to secure legal counsel and organize other ranchers that will be affected.
3. From the official notice that appeared in the Custer Chronicle, the potential environmental impact of this application is significant. I am somewhat confused as to the total water appropriation that would result. (That is, would the 0.16 F3/S from permit 2027-2 be a total from all six wells or would it be per well? I have the same question about permit 2028-2.) In any case, a total of eleven new wells up to 250 feet deep in the Pre-Cambrian formations is significant in itself and warrants further study as to environmental impact.
4. In addition, from a personal standpoint, I will need to get time off and make travel arrangements to prepare for and attend the hearing.

For the above reasons, we would appreciate it if you could postpone consideration of these applications at the present time.

Sincerely,

Thomas H. Callan

cc: Helen M. Callan
Chris Molitor

**South Dakota
Department of
Game, Fish and Parks**

Custer State Park
HCR 83, Box 70
Custer, South Dakota 57730
605-255-4515

November 20, 1987

Re: Water Permit Application No. 2028-2 (Game Lodge-45gpm)
Water Permit Application No. 2027-2 (Sylvan Lake-70gpm)

Ron Duvall
Water Rights Division
DWNR-Joe Foss Building
Pierre, SD 57501



Dear Mr. Duvall:

On August 17, 1987 a well was drilled in the Game Lodge area. The well produces 285 gpm which is extraordinary. The high flow rate of water from this well would be useful in the case of a structure fire or forest fire. However, only 45 gpm is requested in the permit application so we will be amending the application to a higher rate of flow.

The water permit application is scheduled for hearing on December 2, 1987. However, because we will be amending the application we request that the hearing is deferred on water permit application no 2028-2 until the next DWNR Board meeting.

On November 5, 1987 a well was drilled in the Sylvan Lake area. The well produces approximately 60 gpm. A representative of the Department of Game, Fish and Parks will be present at the DWNR Board meeting on December 2, 1987 for the hearing on water permit application no 2027-2 (Sylvan Lake).

Sincerely

Greg Goebel
Natural Resource Analyst
Custer State Park

GG:dd

cc Rollie Noem
Dennis Williams
Ron Koth

South Dakota Department of
Water & Natural Resources

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

November 25, 1987

NOTICE

TO: Rollie Noem, Director
Custer State Park
HCR 83, Box 70
Custer SD 57730
and Parties of Record (see attached list)

FROM: John Hatch, Chief Engineer *John Hatch*
Water Rights Division
605 773-3352

SUBJECT: Continuance of Hearing on Water Permit Application No.
2028-2, Custer State Park

The Water Management Board will NOT consider Water Permit Application No. 2028-2 at the December 2-4, 1987 Board meeting. A written request has been received from Greg Goebel, Natural Resource Analyst, (copy attached) on November 23, 1987 to delay consideration of Application No. 2028-2. The proposed amendment to increase the diversion rate will require that Application No. 2028-2 be readvertised to give public notice of the amendment. Parties of Record will be given personal notice of the new hearing time and location. Water Permit Application No. 2027-2 will be considered by the Board at the December 2-4, 1987 meeting as previously scheduled in the notice dated August 27, 1987.

cc: Harold Deering, Assistant Attorney General
John Guhin, Assistant Attorney General

August 26, 1987
(date)

page 1 of

Parties of Record before Water Management Board regarding
Water Permit Application Nos. 2028-2 and 2027-2,
Custer State Park

FOR:

AGAINST:

1. Rollie Noem, Director
Custer State Park
HCR 83, Box 70
Custer, SD 57730
2. Helen M. Callan
RR #3, Hires Trace
Morton, IL 61550-9803
3. Helen M. Callan
RR #1, Box 41
Hermosa, SD 57744
4. Chris Molitor
Box 74
Smithwick, SD 57782
5.

CERTIFICATION

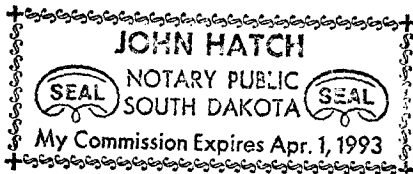
I hereby certify that on November 25, 1987 I have personally deposited with the U.S. Mail, postage prepaid envelopes containing Notice of Continuance of Hearing on Water Permit Application No. 2028-2 Custer State Park addressed as shown on the parties of record sheet.

Karen Schlaak

KAREN SCHLAAK
Senior Secretary

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 30th day of November, 1987.



John Hatch
Notary Public

South Dakota
Department of
Game, Fish and Parks

Custer State Park
HCR 83, Box 70
Custer, South Dakota 57730
605-255-4515

January 4, 1988

Ron Duvall
Water Rights Division
DWNR - Joe Foss Building
Pierre, SD 57501



RE: Water Permit Application No. 2028-2 (Game Lodge)

Dear Mr. Duvall:

Please amend Water Permit Application No. 2028-2 as follows:

1. Change the amount of water requested from "0.10 cfs" to "0.64 cfs".
2. Change the source of water supply from "groundwater, up to five wells" to "groundwater, one well".
3. Change the location of point of diversion from "SE 1/4 SW 1/4, SW 1/4 SE 1/4 Section 22; NE 1/4 NW 1/4, NW 1/4 NE 1/4 Section 27; all in T3S, R6E" to "NE 1/4 NW 1/4 Section 27, T3S, R6E".

The reason for amendment number 1 is to take advantage of a 0.64 cfs well which was drilled on August 17, 1987. The high pumping rate would be useful in the case of forest fires or structure fires.

The reason for amendment number 2 is that additional wells will not be needed to provide the desired quantity of water. The actual quantity of water pumped in future years is expected to average the same as the average for the last 5 years. The total quantity of water pumped per year from the three existing wells which serve the Game Lodge Area is as follows:

<u>Year</u>	<u>Million Gallons Per Year</u>
1983	9.2
1984	6.4
1985	10.1
1986	7.4
1987	7.6

The reason for amendment number 3 is to describe the location of the single well drilled on August 17, 1987. See enclosed map for location of the well.

I understand that the proposed amendments in this letter will require that Application No. 2028-2 be readvertised to give the public notice of the amendments and that the Parties of Record will be given personal notice of the new hearing time and location. I request that Water Permit Application No. 2028-2 be considered at the next Water Management Board meeting, scheduled for March 2-3, 1988.

Also, I accept your offer that your office will personally contact the Parties of Record opposing Application No. 2028-2 and confirm that they understand the Application and its amendments. I understand that they would be contacted when the application is first readvertised.

Sincerely,



Rolie Noem
Division Director

RN/GG:dd

Enclosure: map

cc: Dennis Williams
Ron Koth

REPORT ON AMENDED PERMIT APPLICATION NO. 2028-2
CUSTER STATE PARK
JANUARY 15, 1988

Permit Application No. 2028-2 as amended proposes to appropriate 0.64 cubic feet of water per second (cfs) from one well 250 feet deep, located in the NE 1/4 NW 1/4 Section 27, T3S, R6E. The water is to be used for commercial, recreational, and fire protection purposes by the Game Lodge area facilities.

Aquifer: Pre-Cambrian Rock

Geology and Aquifer Characteristics

The Pre-Cambrian Rock in this area consists primarily of granite and pegmatite intrusives, predominately large sills, within the quartzite and sillimanite schist country rock (Redden, 1975). This crystalline rock is distinguished by low porosity, and transmits water to wells along joints, faults, and fractures. Voids exist in the rock either as small intergranular openings (primary porosity) or fractures (secondary porosity). The total porosity of the Pre-Cambrian is assumed to be 3%, and the effective porosity, containing the recoverable ground water, primarily in cracks and joints, is assumed to be 1% (Rahn, 1979). Crystalline rocks, because of their limited porosity and permeability, are generally not considered as a significant aquifer, and a wells potential is usually reflective of the secondary porosity in the well area (site specific).

Recharge to the Pre-Cambrian Rock is accomplished through infiltration of precipitation falling directly on the outcrop. Runoff over the outcrop, and possibly streamflow from Grace Coolidge Creek in this area. The average annual recharge to the Pre-Cambrian Rock has not been quantified.

Review of Existing Water Rights

The Division of Water Rights does not have any record of any domestic wells within one mile of this well site.

There is one existing water permit within one mile of this well site. It is Permit No. 1847-2, Custer State Park, for 0.06 cfs from one well 200 feet deep, located in the N 1/2 Section 27, T3S, R6E. In 1969, the Department of Game, Fish and Parks applied for a permit (No. 996-2) for water from the creek (gallery system) and a hearing was held. There were a number of protests at the hearing and some expert testimony was presented. the Water Management Board deferred the permit request for study and subsequently, the Department of Game, Fish and Parks withdrew the application.

Conclusions

1. Permit No. 2028-2 as amended proposes to appropriate 0.64 cfs from one Pre-Cambrian well.
2. The Pre-Cambrian Rock transmits water to wells primarily through fracture porosity and permeability. Well yields are site-specific and influenced by fracture density and orientation.
3. The application indicates the test well drilled at this site produces 285 gpm (0.64 cfs).
4. Average annual recharge has not been quantified for the Pre-Cambrian Rock in this area.
5. The requested appropriation (0.64 cfs) should have no adverse effect on existing water rights in this area.



KENT BUHLER
Natural Resources Engineer

References

- Redden, J.A., 1975, Precambrian Geology of the Black Hills, Minerals and Water Resources of South Dakota, Committee on Interior and Insular Affairs, United States Senate, US Government Printing Office, Washington, D.C.
- Rahn, P.H., 1979, Groundwater Resources of Western South Dakota, US Army Corps of Engineers, SDSM & T Project #2533, Rapid City SD.

RECOMMENDATION OF CHIEF ENGINEER FOR AMENDED WATER PERMIT
APPLICATION NO. 2028-2, Custer State Park

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning amended Water Permit Application No. 2028-2, Custer State Park, HCR 83, Box 70, Custer SD.

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

1. The casing of the well to be constructed under Permit No. 2028-2 shall be pressure grouted with cement (bottom to top) and the well constructed in compliance with Water Management Board Well Construction Rules, Chapter 74:02:04. Well construction shall be by a licensed well driller.
2. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same formation. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in domestic wells.

See the attached report for additional information.


JOHN HATCH, Chief Engineer
January 21, 1988

SOUTH DAKOTA
Department of
Water & Natural Resources

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

January 22, 1988

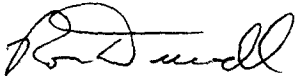
Thomas H Callan
RR 3, Hires Trace
Morton IL 61550-9803

Dear Mr. Callan:

This letter is response to proposed amendments to Application No. 2028-2, Custer State Park. Enclosed is a copy of the Notice of Hearing on Amended Application No. 2028-2 and a letter dated January 4, 1988 outlining the amendments and stating the reasons for the amendments. The Notice also states the proposed changes to the application and gives the hearing date and place.

The enclosed Notice and letter are for your information. Please contact me, if you have any questions regarding the proposed amendments or about the upcoming hearing.

Sincerely,



RON DUVALL
Natural Resources Engineer

cc: Helen M Callan
Chris Molitor



Department of Water & Natural Resources

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

Water Rights Division
(605) 773-3352

January 22, 1988

NOTE:

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

Custer State Park
HCR 83, Box 70
Custer SD 57730

Dear Sir:

Your Application No. 2028-2 for a permit to appropriate water for
commercial & recreational use, has been examined and found to
comply with the South Dakota Water Laws and applicable rules. A notice of
your intent to appropriate water has been sent to the Publisher of the

CUSTER COUNTY CHRONICLE

printed at Custer

South Dakota. For your information, a copy of this notice, the recommendation
of the Chief Engineer and a report on the application are enclosed. Please
review this notice prior to publication and notify this office, if you have
any corrections or questions.

BE SURE TO CONTACT THE ABOVE NEWSPAPER IMMEDIATELY TO AUTHORIZE PUBLICATION
OF YOUR NOTICE OF INTENT TO APPROPRIATE WATER AND TO ARRANGE FOR PAYMENT.
Early contact with the paper can eliminate delays. The publisher has been
instructed to publish your notice once each week for two consecutive weeks
with the last publication to occur at least twenty days before the board
meeting. We must receive Proof of Publication before the application can be
considered by the Water Management Board.

Sincerely,

RON DUVAL
Natural Resources Engineer

enclosures



Department of Water & Natural Resources

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

January 22, 1988

CUSTER COUNTY CHRONICLE
Box 551
Custer SD 57730

Dear Sir:

Enclosed is a Notice of Hearing on Application No. 2028-2 to be published twice. Please publish the first notice on or before January 27, 1988 with the second publication 7 days later.

The APPLICANT MUST VERIFY TO YOU THAT THE NOTICE IS TO BE PUBLISHED, before you make the first publication. Please BILL the APPLICANT for the cost of publication. The APPLICANT is Custer State Park, HCR 83, Box 70, Custer SD 57730

A copy of BOTH publications must be SENT to the WATER RIGHTS DIVISION. IMMEDIATELY return the FIRST publication with the FIRST Transmittal form on the bottom of this page. The first copy is needed to check the publication for errors so any corrections can be made in the second publication. Publication errors can invalidate the public notice and cause the applicant costly delays.

Please be sure the SECOND publication is returned IMMEDIATELY with the enclosed Proof of Publication form. DO NOT WAIT until the end of the month or the billing cycle. The permit application cannot be considered by the Water Management Board until proof of publication has been received.

Sincerely,

Ron Duvall
Natural Resources Engineer
605 773-3352

enclosures

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

FIRST TRANSMITTAL NOTICE

No. _____

TO: Water Rights Division
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of _____ enclosing Notice of Hearing to Appropriate Water by Application No. _____ which was first published in our issue of _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

Name

Newspaper

Instruction to Newspaper - Publish first publication of the following Notice on or before January 27, 1988 with 2nd publication 1 week later. The applicant is responsible for payment.

NOTICE OF HEARING on Amended Application No. 2028-2 to Appropriate Water

Notice is hereby given that Custer State Park whose mailing address is HCR 83, Box 70, Custer, South Dakota has made amendments to Application No. 2028-2 originally advertised on August 12 and 19, 1987 for a public hearing. The amendments to Application No. 2028-2 are to increase the water appropriation from 0.10 cubic feet of water per second (cfs) to 0.64 cfs and reduce the proposed number of wells from 5 wells to 1 well (Pre-Cambrian Rock) located in the NE 1/4 NW 1/4 Section 27, T3S, R6E. Water is to be used for commercial and recreational purposes by the Game Lodge Area Facilities. The increase in diversion rate to 0.64 cfs is to allow an increased pumping capacity from the well for fire protection purposes.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends Approval of Application No. 2028-2 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) it is a beneficial use of water and 4) it is in the public interest.

The application will be considered by the Water Management Board in Room 216, Joe Foss Bldg, Pierre SD, March 2, 1988 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve the with qualifications, 3) defer, or 4) deny the application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and the Chief Engineer by February 19, 1988. The petition may be informal, but it must include a statement describing the petitioner's interest in the application, the reasons for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14 and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

This hearing is an adversary proceeding. The applicant or any person, after filing a petition, 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. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by February 19, 1988.

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA)
)SS.
COUNTY OF CUSTER)

Randall O'Neill

of said county, being duly sworn, on oath says that ~~he is publisher of~~ the CUSTER COUNTY CHRONICLE, a weekly newspaper printed and published in Custer City, said County of Custer and has full and personal knowledge of all the facts herein stated; that said newspaper is a legal newspaper and has a bona-fide circulation of at least two hundred copies weekly, and has been published within said County for fifty-two successive weeks next prior to the publication of the notice herein, mentioned, and was and is printed wholly or in part in an office maintained at said place of publication: that the Notice of Hearing on amended application #2028-2, a printed copy of which, taken from the paper in which the same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said newspaper at least once each week for 2 successive week(s), on the day of each week on which said newspaper was regularly published, to wit:

January 27, 1988; February 3, 1988;
_____, 19____; _____, 19____;
_____, 19____; _____, 19____;
_____, 19____; _____, 19____;
_____, 19____; _____, 19____;

that the full amount of the fees for the publication of the annexed notice is \$ 19.11.

Subscribed and sworn to me before this 3
of February, 19 88

Suanne Quick
Notary Public

My commission expires: June 30, 1994.

NOTICE OF HEARING on Amended Application No. 2028-2 to Appropriate Water

Notice is hereby given that Custer State Park whose mailing address is HCR 83, Box 70, Custer, South Dakota has made amendments to Application No. 2028-2 originally advertised on August 12 and 19, 1987 for a public hearing. The amendments to Application No. 2028-2 are to increase the water appropriation from 0.10 cubic feet of water per second (cfs) to 0.64 cfs and reduce the proposed number of wells from 5 wells to 1 well (Pre-Cambrian Rock) located in the NE 1/4 NW 1/4 Section 27, T3S, R6E. Water is to be used for commercial and recreational purposes by the Game Lodge Area Facilities. The increase in diversion rate to 0.64 cfs is to allow an increased pumping capacity from the well for fire protection purposes.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends Approval of Application No. 2028-2 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) it is a beneficial use of water and 4) it is in the public interest.

The application will be considered by the Water Management Board in Room 216, Joe Foss Bldg, Pierre SD, March 2, 1988 at 10:00 a.m.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to 1) approve, 2) approve the application with qualifications, 3) defer, or 4) deny the application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and the Chief Engineer by February 19, 1988. The petition may be informal, but it must include a statement describing the petitioner's interest in the application, the reasons for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15, 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14 and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

This hearing is an adversary proceeding. The applicant or any person, after filing a petition, 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. Decision of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by February 19, 1988.
#27 1/27 & 2/3/88





Department of Water & Natural Resources

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

Water Rights Division
605 773-3352

APR 28 1988

Rollie Noem, Director
Custer State Park
HCR 83, Box 70
Custer, South Dakota 57730

Dear Mr. Noem:

Enclosed is your Water Permit No. 2028-2 as approved by the Water Management Board authorizing the water diversion system and apply the water to beneficial use, not exceeding the limits as specified in the Water Permit.

We will schedule an inspection so that the Water License may be issued to you, thus completing your acquisition of a Water Right.

Very truly yours,

A handwritten signature in black ink, appearing to read "John Hatch". The signature is written in a cursive, flowing style.

JOHN HATCH, Chief Engineer
Water Rights Division

JH: ms

enclosure

**Permit Nos. 1847-2 & 2028-2
Custer County**

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

Other permit/license(s) associated with project: **1027-2, 2027-2, & 2172-2**

Contact Person & Address: **Greg Goebel, Custer State Park, HCR 83 Box 70, Custer, SD 57730**

Report Of Examination of Works

On **June 4, 2001**, I made a thorough examination of the water use system authorizing the appropriation of 0.06 cubic feet per second (cfs) and 0.64 cfs of water from two (2) wells for **commercial, recreational, and domestic** purposes by the **Custer State Park Headquarters and Game Lodge Facilities**.

Permit No. **1847-2** authorizes 0.06 cfs withdrawal with the priority date of June 3, 1983 from a **200-foot well** located at the **North-South Center Line of the NE¼ Section 27 T3S R6E, 1320 feet West and 105 feet South of the Northeast Corner Section 27 (N43° 46.999' W103° 23.015')**. Custer State Park refers to this well as **Game Lodge # 3**. This well is capable of producing 0.06 cfs of water.

Permit No. **2028-2** authorizes 0.64 cfs withdrawal with the priority date of January 5, 1988 from a **203-foot well** located in the **NE¼ NW¼ Section 27 T3S R6E, 2480 feet East and 210 feet South of the Northwest Corner Section 27 (N43° 46.024' W103° 23.360')**. Custer State Park refers to this well as **Game Lodge # 2**. This well is capable of producing 0.63 cfs of water.

The wells and distribution system are in **good condition**.

Review of Permit Qualifications and Regulations:

- 1) Special qualifications to permit being abided by: **Yes**
- 2) All structures, wells and lands on map: **Yes**
- 3) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period: **NA**
- 4) Exceptions to compliance are: **None**

Report on the Specifics of the System:

Diversion Point Information for Game Lodge #3 (1847-2):

- | | |
|--|------------------------------------|
| 1) Well Drilling Firm: Alexander Drilling Co. | 2) No. of Wells: 1 |
| 3) Depth(s): 200 feet | 4) Well logs available: Yes |

Casing:

- 1) Diameter: **6 5/8 inch OD**
- 2) Length: **21 feet**
- 3) Type: **Steel**

Screen:

- | | |
|---------------------------------------|----------------------|
| 1) Type: None | 2) Length: NA |
| 3) Static water level: 10 foot | |

Pump\ Motor:

- | | |
|---|------------------------------------|
| 1) Pump Make: Unknown, Submersible, Electric | 2) Pump Model: NA |
| 3) Capacity: 28 gpm | 4) Motor Make: NA |
| 5) Motor Model No.: Unknown | 6) Horsepower rating: NA hp |

Distribution System:

- 1) Type: 21,000 gallon reservoir. 1, 2, 2.5, 3, & 4 inch cast iron, galvanized steel, PVC, & poly lines
- 2) Length: Approximately 9000 feet

Diversion Point Information for Game Lodge #2 (2028-2):

- 1) Well Drilling Firm: Alexander Drilling Co.
- 2) No. of Wells: 1
- 3) Depth(s): 203 feet
- 4) Well logs available: Yes

Casing:

- 1) Diameter: 6 5/8 inch OD
- 2) Length: 205 feet
- 4) Type: Steel

Screen:

- 1) Type: Perforated Pipe
- 2) Length: 126 feet
- 3) Static water level: 20 foot

Pump\ Motor:

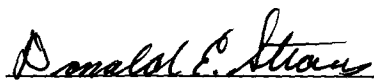
- 1) Pump Make: Unknown, Submersible, Electric
- 2) Pump Model: NA
- 3) Capacity: 281 gpm
- 4) Motor Make: NA
- 5) Motor Model No.: Unknown
- 6) Horsepower rating: NA hp

Distribution System:

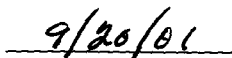
- 3) Type: 21,000 gallon reservoir. 1, 2, 2.5, 3, & 4 inch cast iron, galvanized steel, PVC, & poly lines
- 4) Length: Approximately 9000 feet

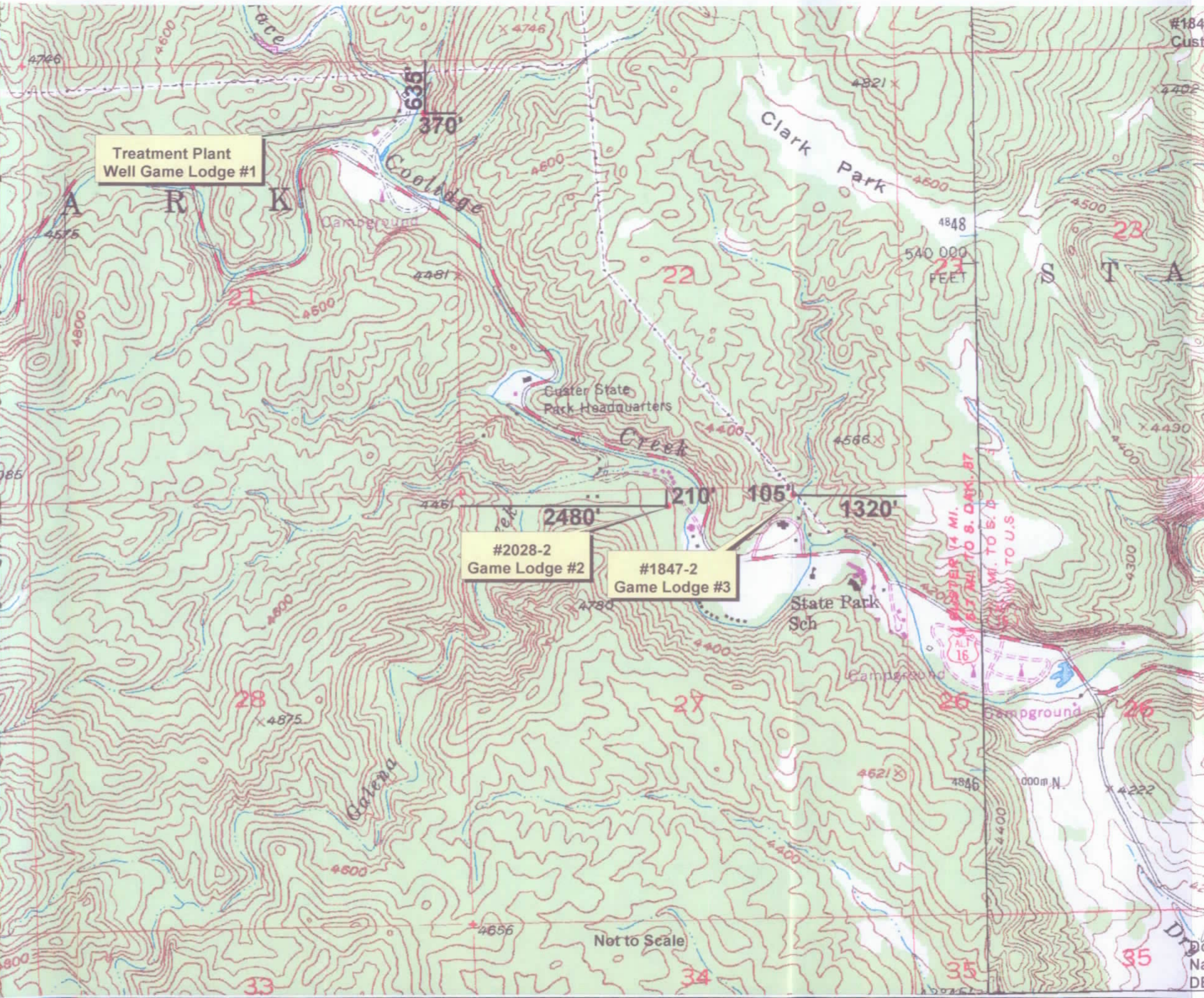
COMMENTS:

These permits can be incorporated into one license with 0.06 cfs priority date June 3, 1983 and 0.63 cfs priority date January 5, 1988 allocations.



Donald E. Stroup
Natural Resources Project Engineer
DENR, Water Rights Program


Date



Donald E. Stroup
Donald E. Stroup
Natural Resources Project Engineer
DENR Water Rights Program

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2028-2

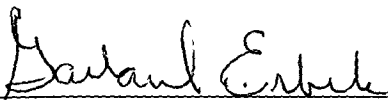
(1) Custer State Park, HCR 83 Box 70, Custer SD 57730 made Application No. 2028-2, July 9, 1987 for a water permit to divert 0.64 cubic feet of water per second (cfs) from groundwater (one well), Custer County, South Dakota for commercial, recreation and fire protection purposes. Permit No. 2028-2, with a priority date of January 5, 1988 was approved March 3, 1988 and issued to the applicant for diversion of water with construction of the described water supply system and the application to beneficial use of said water completed.

Water Permit No. 1847-2 with a priority date of June 3, 1983 authorized 0.06 cfs from one well. The applicable portions of No. 1847-2 have been incorporated into No. 2028-2.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 0.69 cubic feet of water per second for beneficial use. The location of the diversion points are: Game Lodge #3 – 1,320 feet west and 105 feet south of the northeast corner Section 27-T3S-R6E (N ½ NE ¼) and Game Lodge #2 – 2,480 feet east and 210 feet south of the northwest corner Section 27-T3S-R6E (NE ¼ NW ¼).

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use at the Custer State Park Headquarters and the Game Lodge Facilities.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Custer State Park, HCR 83 Box 70, Custer SD 57730 the holder and/or owner of Incorporated Water Right No. 2028-2 is issued a license to appropriate water, the right to use 0.69 cubic feet of water per second from groundwater (two wells) with priority dates of June 3, 1983 (0.06 cfs) and January 5, 1988 (0.63 cfs) from the locations specified in (2) of this license for commercial, recreation and fire protection purposes. This license is subject to any limitations or qualifications listed in Incorporated Water Right No. 2028-2 and subject to South Dakota State Law.



GARLAND ERBELE, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

MAR 04 2002

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

MAR 04 2002

2172-2
2028-2

Greg Goebel
Custer State Park
HC 83 Box 70
Custer, SD 57730

Dear Mr. Goebel:

Enclosed are Water License Nos. 2172-2, 2028-2. This is the final water right document completing your process of obtaining a Water Right.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the wells authorized by Water Right Nos. 2172-2, and 2028-2, constructs a replacement well and does not plan to use the old wells, the old wells are 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.

Sincerely,

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

NOTE: The applicable portions of No. 1847-2 are incorporated into Water License No. 2028-2.

enclosures