

**WATER PERMIT NO. 5874-3**

Name of Applicant: William Ray Gibbons

Address: 1709 Derald Drive, Brookings SD 57<sup>0</sup>06

Phone: 605 692-8551

Amount of Water Claimed: 162 acre-feet

Total Acres: NA

Source of Water Supply: runoff

Depth of Well: NA

Water to be used for: fish & wildlife and recreation

County: Brookings

Type of Waste Disposal System: NA

Location: 10 miles northeast of Brookings

PRIORITY

Date Received: 7-5-95

Fee: \$225.00

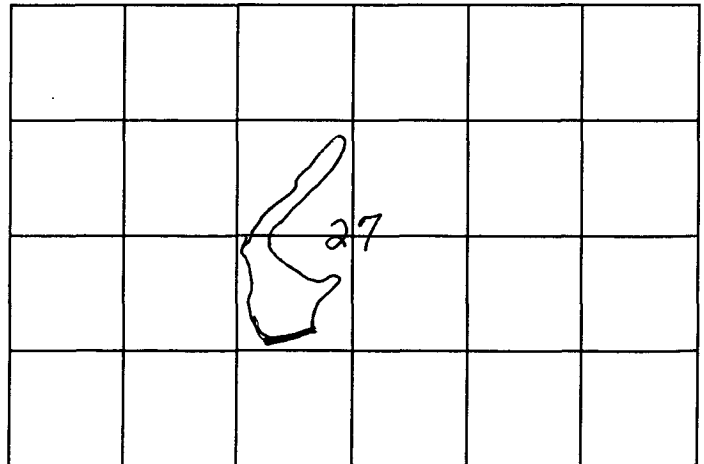
Corrected Application Received: 7-31-95

Period of Annual Use: Jan 1 - Dec 31

Remarks:

Diversion Point: NE 1/4 SW 1/4 Sec 27-T111N-R48W

Water Impounded: NE 1/4 SW 1/4, SE 1/4  
NW 1/4 Sec 27-T111N-R48W



Reviewed and the Number Assigned on: 7-5-95

By: **Karen Schlaak**

Notice of Hearing - date to intervene: \_\_\_\_\_

**FORM 2: Application for uses other than irrigation**

(type or print)

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

No. 5874-3 Hydrologic Unit 10170202  
Basin Sioux River  
Newspaper Brookings Register, PO Box 177, Brookings  
(office use only)



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

**Check use of water:**

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

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

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

1. Name of Applicant William Ray Gibbons Phone 692-8551  
(check one) ☒ Owner      ☐ Tenant/lessee  
Mailing Address 1709 Derdall Drive Brookings State SD 57006  
(Street, RR, or Box) (City) (Zip Code)
2. Amount of water claimed \_\_\_\_\_ \*CFS or \_\_\_\_\_ \*\*GPM 162 \*\*\*AF  
(\*Cubic Feet per Second) (\*\*Gallons per Minute) (\*\*\*)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
3. Source of water supply Surface runoff
4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) dam in NE 1/4 of  
SW 1/4 of Sec 27 T111N R48W Brookings County South Dakota  
Water Impounded: NE 1/4 SW 1/4, SE 1/4 NW 1/4 Sec 27-T111N-R48W County Brookings
5. County or counties where water will be used Brookings
6. Annual period during which water is to be used Annual Jan 1 - Dec 31
7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)  
See Form 2A. Construction of a dam to impound water over approximately 20 acres.

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach map and any other technical information. (see instructions)

**STATE OF SOUTH DAKOTA)**

County of Brookings )<sup>SS</sup>

I, William Gibbons, 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 William Gibbons  
Subscribed and sworn to before me this 3<sup>rd</sup> day of July 19 95

Deirda A. Campbell  
Notary Public  
Commission Expires 5/26/98

## Supplemental Information

(type or print in ink)

### 1. Well Information - Proposed Construction

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

### 2. Dugout Information

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

### 3. Water Storage Dams

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

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

Pete Anderson, NRCS Engineer  
NRCS Area Office  
520 3rd Avenue  
Brookings, SD 57006

b) Freeboard \_\_\_\_\_ 5.0 ft

c) Crest Width \_\_\_\_\_ 12.0 ft

Crest Length \_\_\_\_\_ 400 ft

d) Height \_\_\_\_\_ 19.4 ft

e) Primary Outlet Capacity \_\_\_\_\_ 142 CFS

If pipe, diameter \_\_\_\_\_ 18 inches, 24 inch riser

f) Secondary Spillway Capacity \_\_\_\_\_ 605 CFS

Spillway Width \_\_\_\_\_ 66 ft

g) X & Y Slope

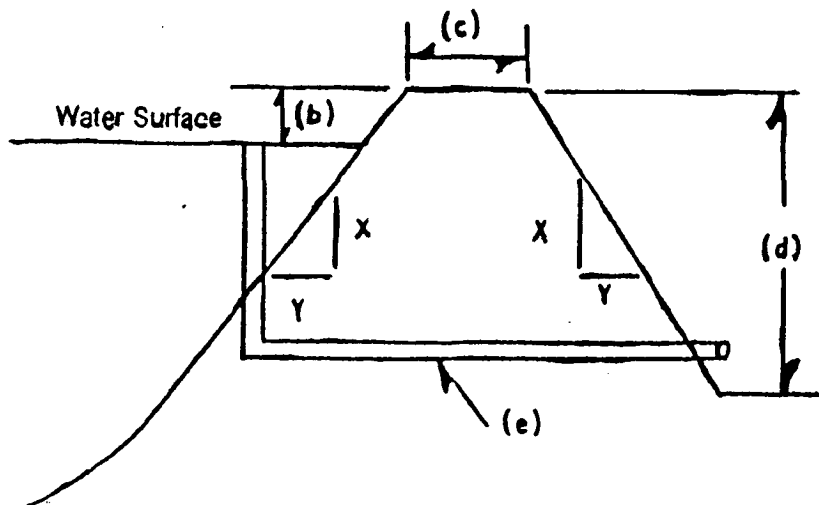
Upstream \_\_\_\_\_ 3:1

Downstream \_\_\_\_\_ 3:1

h) Surface Area of Impoundment \_\_\_\_\_ 20.2 acres

i) Storage \_\_\_\_\_ 148 \_\_\_\_\_ Acre Feet

j) Drainage Area Above Dam \_\_\_\_\_ 1163 \_\_\_\_\_ Acres



**SOUTH DAKOTA  
WATER PERMIT NO. 5874-3**

Date of first receipt of application July 5, 1995.

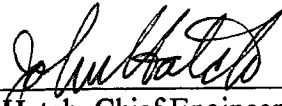
The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 5874-3 to William Ray Gibbons, 1709 Derald Drive, Brookings SD 57006 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 5874-3 impounds 162 acre-feet of water from local runoff by constructing a dam located in the NE 1/4 SW 1/4 Section 27 with water impounded in the NE 1/4 SW 1/4, SE 1/4 NW 1/4 Section 27; all in T111N-R48W. This permit authorizes impoundment of water sufficient to maintain water at the outlet elevation of 1750 feet mean sea level.
2. The water appropriated shall be used for the purpose of providing habitat for fish and wildlife production and recreational use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 - December 31
4. The date of approval of Permit No. 5874-3 is September 5, 1995.
5. The date from which applicant may claim right is July 5, 1995.
6. One-fifth of the construction is to be completed on or before March 5, 1995.
7. All construction is to be completed on or before September 5, 2000.
8. Water is to be put to beneficial use on or before September 5, 2004.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

**QUALIFICATIONS**

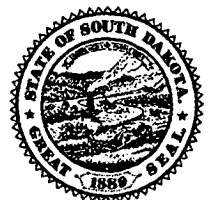
1. Water Permit No. 5874-3 authorizes a dam with storage capacity of 162 acre-feet of water and sufficient water annually to maintain the water level to the outlet elevation of 1750 feet mean sea level.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

**WATER MANAGEMENT BOARD**

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

**SEP 19 1995**

date





**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

March 16, 1992

Bill Gibbons  
108 Medary Village  
Brookings, SD 57006

Dear Mr. Gibbons:

Enclosed are the application forms you will need to file for your dam project we discussed today over the phone. The forms should be completed and returned to us, along with the application map and \$150.00 filing fee. Review and approval of plans and specifications will also be required before the dam can be constructed.

If you have further questions, please feel free to contact me.

Sincerely,

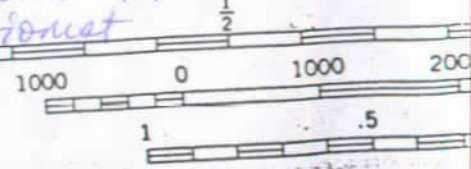
Timothy G. Schaal, P.E.  
Natural Resources Engineer  
Water Rights Division  
(605) 773-3352

enclosures



Geological Survey  
JUL 1995  
DIVISION OF  
WATER RIGHTS  
Pierre, SD

Kevin Cameron Howell 7/3/95  
District Conservationist  
NRS-USDA  
Brookings



CONTO

# RECEIPT

414541

## Division of Water Rights

### South Dakota Department of Environment and Natural Resources

Pierre, \_\_\_\_\_, July 5, 19 95

RECEIVED OF William Ray Gibbons, 1709 Derald Dr, Brookings, SD 57006

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

|                                                                                                                              |              |        |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------|
| Fee for Application for Permit No. <u>5874-3</u> to Appropriate Water, to construct and to put water to beneficial use _____ | 225          | 00     |
| Fee for Application for Permit No. _____ to Appropriate Water, for Future Use _____                                          |              |        |
| Fee to retain Future Use Permit No. _____ after period of seven years.                                                       |              |        |
| Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____                          |              |        |
| Fee for Filing Transfer Form _____                                                                                           |              |        |
| Fee for Filing Extension Request _____                                                                                       |              |        |
| Fee for _____                                                                                                                |              |        |
| _____                                                                                                                        |              |        |
| _____                                                                                                                        |              |        |
| (Any Other Work Provided by Law)                                                                                             | <b>Total</b> | 225 00 |

By John Hatchcock  
Chief Engineer



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

July 5, 1995

William Ray Gibbons  
1709 Derdall Drive  
Brookings SD 57006

Dear Mr. Gibbons:

After review of the water permit application received on July 5, 1995, it was determined that a written preliminary risk assessment of the downstream hazard potential needs to be provided to aid in determining the hazard classification for the proposed dam (see enclosed Safety of Dams Rules Sections 74:02:08:05 and 74:02:08:05.01). The hazard classification for the dam (Category 1, 2 or 3) needs to be known in order to determine what provisions of the Safety of Dams Rules will apply to the dam.

An assessment of the downstream hazard potential is to consist of a list of properties downstream from the dam (homes, roads, dams and other structures) with the potential affects of a dam failure to these properties. The legal descriptions of these downstream properties and the elevation above the waterway need to be included in the assessment. The risk assessment needs to be prepared by an engineer as defined in the Safety of Dams rules. The Natural Resources Conservation Service may be able to assist with the risk assessment.

Plans and specifications for the dam will also be needed pursuant to the Safety of Dams Rules Chapter 74:02:08.

Upon receipt of the above, further processing of the application will continue. If you have any questions, please contact this office.

Sincerely,

Karen Schlaak  
Environmental Scientist  
605 773-3352

enclosure

## Hydrology and Hydraulic Design -- Principal Spillway

\*\*\* Hydro-Yardage Version 3.1 Dated: 9/28/90 \*\*\*

Landowner: Gibbons Bill Site: 2

Location: SW 4, S 27, T 111, R 54 in Brookings County, SD

Computer Operator: Pete Anderson -- Routed on 07-27-1995 @ 09:06:18

## &lt;&lt; Hydrology Input &gt;&gt;

Drainage Area = 1168 acres -- P - 2 24 Hour Rainfall = 2.6 Inches

Type II Storm

Runoff Curve Number = 67

Time of Concentration = 2.00 Hours

## &lt;&lt; Principal Spillway Data for a Drop Inlet &gt;&gt; Pipe type = SPP &gt;&gt;

Pipe Diameter = 24 Inches Riser diameter = 60 Inches

Type of Principal Spillway Outlet &gt;&gt; Cantilever

Estimated Conduit Length = 84 Feet Mannings roughness coefficient = 0.010

Inlet Elevation = 97.0 Principal spillway outlet = 81.0

Elevation of the ditch bottom at the centerline of fill = 81.0

Storage below crest = 161.92 ac. ft. Aer. sediment storage = 0.00 ac. ft.

## &lt;&lt; Elevation-Storage-Outflow Table &gt;&gt;

| Elevation<br>(Ft.) | Storage<br>(Ac. Ft.) | Outflow<br>(CFS) | * | Elevation<br>(Ft.) | Storage<br>(Ac. Ft.) | Outflow<br>(CFS) |
|--------------------|----------------------|------------------|---|--------------------|----------------------|------------------|
| 97.0               | 0.00                 | 0.00             | * | 101.0              | 84.96                | 37.97            |
| 98.0               | 19.75                | 27.48            | * | 102.0              | 108.46               | 40.87            |
| 99.0               | 40.48                | 31.37            | * | 103.0              | 133.09               | 43.58            |
| 100.0              | 62.26                | 34.82            | * | 104.0              | 159.17               | 46.13            |

The emergency spillway is set at elevation &lt;&lt; 98.0 &gt;&gt;

with a temporary storage of &lt;&lt; 19.75 &gt;&gt; acre feet

and a total storage to this elevation of &lt;&lt; 181.67 &gt;&gt; acre feet

The &lt;&lt;TR-60&gt;&gt; product for this structure

is 30.84 and the effective fill height is 17.0 feet

&lt;&lt; This routing is not valid, since it is a TR-60 Structure &gt;&gt;

The P- 2 year rainfall of 2.6 inches

produces a peak runoff of 111 cfs



## Hydrology and Hydraulic Design -- Emergency Spillway

\*\*\* Hydro-Yardage Version 3.1 Dated: 9/28/90 \*\*\*

Landowner: Gibbons Bill Site: 2

Location: SW 4, S 27, T 111, R 54 in Brookings County, SD

Computer Operator: Pete Anderson -- Routed on 07-27-1995 @ 09:06:19



## &lt;&lt; Hydrology Input &gt;&gt;

Drainage Area = 1168 acres -- P - 25 24 Hour Rainfall = 4.6 Inches

Type II Storm

Runoff Curve Number = 67

Time of Concentration = 2.00 Hours

## &lt;&lt; Principal Spillway Data for a Drop Inlet &gt;&gt; Pipe type = SPP &gt;&gt;

Pipe Diameter = 24 Inches Riser diameter = 60 Inches

Type of Principal Spillway Outlet &gt;&gt; Cantilever

Estimated Conduit Length = 84 Feet Mannings roughness coefficient = 0.010

Inlet Elevation = 97.0 Principal spillway outlet = 81.0

Elevation of the ditch bottom at the centerline of fill = 81.0

Storage below crest = 161.92 ac. ft. Aer. sediment storage = 0.00 ac. ft.

## &lt;&lt; Elevation-Storage-Outflow Table &gt;&gt;

| Elevation<br>(Ft.) | Storage<br>(Ac. Ft.) | Outflow<br>(CFS) | *   | Elevation<br>(Ft.) | Storage<br>(Ac. Ft.) | Outflow<br>(CFS) |
|--------------------|----------------------|------------------|-----|--------------------|----------------------|------------------|
| 97.0               | 0.00                 | 0.00             | *   | 100.5              | 73.61                | 585.17           |
| 98.0               | 19.75                | 27.48            | ✓ * | 101.0              | 84.96                | 847.95           |
| 98.5               | 30.11                | 68.96            | *   | 101.5              | 96.71                | 1103.43          |
| 99.0               | 40.48                | 111.82           | *   | 102.0              | 108.46               | 1454.70          |
| 99.5               | 51.37                | 150.55           | *   | 103.0              | 133.09               | 2167.56          |
| 100.0              | 62.26                | 355.42           | *   | 104.0              | 159.17               | 3036.25          |

## &lt;&lt; This routing is not valid, since it is a TR-60 Structure &gt;&gt;

Elevation of the emergency spillway = 98.0

Bottom width of the emergency spillway = 62 feet

Vegetated Retardance = ' B ' Crest Length = 120 feet

Flow depth of the water in the emergency spillway = 1.80 feet

Emergency spillway flow = 233.8 cfs with a velocity of 5.0 ft./sec.

Minimum exit slope = 1% -- Maximum exit slope = 8 %

Maximum water surface in the emergency occurs at elevation 99.8

The P- 25 year rainfall of 4.6 inches  
produces a peak runoff of 544 cfs

The total storage to the top of fill elevation 100.8 equals 242.3 acre feet

&lt;&lt;Earthfill quantities based of centerline of fill section&gt;&gt;

Under file code Bill2G.xse

\*\*\* Hydro-Yardage Version 3.1 Dated: 9/28/90 \*\*\*  
 (Includes berm, main fill, core trench & spway dike)

Landowner ----- Gibbons Bill Site no.----- 2  
 District ----- Brookings County  
 Location ----- SW 4, S 27, T 111, R 54  
 Computed by --- Pete Anderson  
 Date ----- 07-27-1995 @ 09:06:20



Top of fill elev ----- 100.8  
 Top width ----- 12 Feet  
 Emergency spillway elev. ----- 98.0  
 The emergency spillway is located on the right side  
 Upstream fill slope = 3.0:1 Downstream fill slope = 2.5:1  
 Elevation of crest ----- 97.0  
 Berm width ----- 0 feet

Core trench depth = 5.0 feet with a length of 617.8 feet  
 ( Core trench assumed 10.0 ft. bottom w/ 1.0:1 sideslopes )

Spillway dike length = 60 feet with a 13 % sidehill slope  
 Emergency dike topwidth = 8 feet with sideslopes of 3.0:1 and 3.0:1  
 with a fill height of 2.8 feet

| Station | Elevation | Yardage x 2 | Station | Elevation | Yardage x 2 |
|---------|-----------|-------------|---------|-----------|-------------|
| 160.0   | 104.0     | 0.0         | 760.0   | 79.5      | 1168.0      |
| 290.0   | 102.0     | 0.0         | 800.0   | 82.0      | 4574.9      |
| 316.0   | 100.8     | 0.0         | 900.0   | 82.0      | 10166.8     |
| 398.2   | 97.0      | 357.1       | 960.0   | 90.0      | 4226.8      |
| 500.0   | 92.3      | 1769.1      | 1016.0  | 97.0      | 1326.9      |
| 520.0   | 90.0      | 658.1       | 1018.0  | 97.3      | 15.5        |
| 600.0   | 82.0      | 5635.7      | 1024.0  | 98.0      | 38.6        |
| 670.0   | 81.5      | 7286.8      | 1040.0  | 100.0     | 0.0         |
| 750.0   | 81.5      | 8522.1      | 1130.0  | 106.0     | 0.0         |

Main fill including berm (if any berm) ----- 22873.0 cu. yds.  
 Emergency spway dike fill ----- 282.0 cu. yds.  
 Core trench ----- 1493.0 cu. yds.  
 -----  
 Total structure yardage ----- 24648.0 cu. yds.

&lt;&lt;&lt; Notes &gt;&gt;&gt;

Fill yardage includes stripping 0.50 ft. deep plus (berm yardage)  
 Emergency dike yardage based on depth plus 0.50 ft. deep stripping  
 Core trench yardage based on depth minus 0.50 ft. deep stripping  
 Settlement of 5.0 % was used on the earthfill computations

&lt;&lt; Structure Summary &gt;&gt;

Sheet 1 of 2

\*\*\* Hydro-Yardage Version 3.1 Dated: 9/28/90 \*\*\*

Computed by: Pete Anderson on 07-27-1995 @ 09:06:20

Owner's Name ----- Gibbons Bill  
 Site name or number ----- 2  
 District ----- Brookings County, SD  
 Location ----- SW 4, S 27, T 111, R 54  
 Drainage area ----- 1168 Acres

Permanent pond area ----- 19.30 acres  
 Permanent storage below crest ----- 161.92 acre feet  
 Temporary storage to the emergency spillway ----- 19.75 acre feet  
 Total storage to the emergency spillway ----- 181.67 acre feet  
 Total storage to the top of fill ----- 242.34 acre feet

Fill height at centerline of fill ----- 19.8 feet  
 Effective fill height ----- 17.0 feet  
 Overall fill height to downstream toe ----- 20.0 feet

TR-60 product &gt; &gt; 3088 &lt; &lt;

&lt;&lt; This routing is not valid, since it is a TR-60 Structure &gt;&gt;

&lt;&lt; Principal Spillway Hydrology Design &gt;&gt;

Rainfall Distribution Type >>II << Runoff Curve Number 67  
 P 2 - 24 hr. rainfall = 2.6 inches - Time of concentration = 2.00 hr.  
 Peak runoff = 111 cfs -- Peak runoff volume = 38.81 ac. ft.

&lt;&lt; Principal Spillway &gt;&gt;

(Note: Pipe length shown is the centerline of pipe  
 perpendicular to the centerline of fill)

Pipe length used in the routing = 85.0 lin. ft.

84.0 Lin. Feet of 24 inch diam. SPP with a Drop inlet  
 6.0 Lin. Feet of 60 inch diam. SPP for the riser  
 Mannings Friction value 'n' = 0.0100

&lt;&lt; Emergency Spillway Hydrology Design &gt;&gt;

P 25 - 24 hr. rainfall = 4.6 inches  
 Peak runoff = 544 cfs -- Peak runoff volume = 148.93 ac. ft.

&lt;&lt; Emergency Spillway &gt;&gt;

Bottom width of the emergency spillway = 62 feet  
 Vegetated Retardance = ' B' Crest Length = 120 feet  
 Emergency spillway flow = 233.8 cfs  
 Velocity = 5.0 ft./sec.  
 Minimum exit slope = 1% -- Maximum exit slope = 8%



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<< Structure Summary continued >>
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Sheet 2 of 2

\*\*\* Hydro-Yardage Version 3.1 Dated: 9/28/90 \*\*\*

Computed by: Pete Anderson on 07-27-1995 @ 09:06:21

Owner's Name ----- Gibbons Bill

Site name or number ----- 2

District ----- Brookings County, SD

Location ----- SW 4, S 27, T 111, R 54

(Note: Dimensions shown are for the centerline of pipe perpendicular to the centerline of fill)

A circular ink stamp. The outer ring contains the number "20612282425262728293031-12345678910111213141516171819". In the center, there is a small upward-pointing arrow above the text "JUL 1995", "WATER RIGHTS PROGRAM", and "Puerto, SD".

Pipe length used in the routing = 85.0 lin. ft.

Top of constructed fill = 101.8.

Settled top of fill = 100.8      Top width = 12 feet

Upstream fill slope = 3.0:1      Downstream fill slope = 2.5:1

Emergency spillway = 98.40      Downstream toe elevation = 80.8

Pipe outlet = 81.0 Elbow elevation = 81.4

Elevation of crest = 1972.0      Berm width = 0

Frontslope dimension = 14.4 feet    Backslope dimension = 52.5 feet

Length of pipe beyond toe = 4.0 feet

Length of pipe from pipe outlet to elbow = 12.0 feet

Barrel Invert Elevation = 98.774

Pipe Slope = 0.171 -- Friction Slope = 0.071 (with water surface at emerg. crest)

Maximum elevation for invert barrel = 80.21 to prevent barrel orifice control

The riser height = 3.30 feet

Minimum riser height to prevent Barrel Orifice Flow= 16.79 feet

Fabricate the conduit to the riser with a 99.8 degree elbow

Fabricate a 8 degree elbow located 12.0 feet from the outlet

\*\*\*\* Cost Estimate \*\*\*\*

23155 cubic yards earth fill @ 0.90 = 20839.70

1493 cubic yards core trench @ 1.50 = 2239.50

84 lin. ft. of 24 in. diameter SPP conduit @ 72.00 = 6048.00

6 lin. ft. of 60 in. diameter SPP riser @ 0.00 = 0.00

Total estimated cost 29127.20

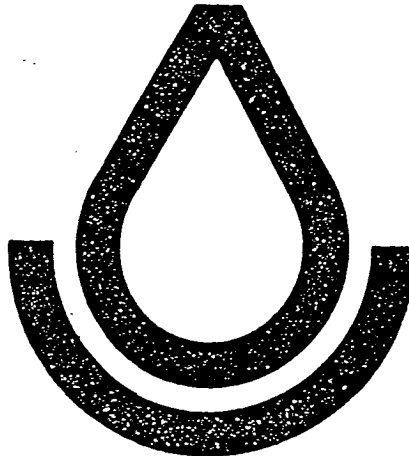


CONSTRUCTION SPECIFICATIONS

for

BILL GIBBONS

FARM POND



Prepared by:

USDA, SOIL CONSERVATION SERVICE

PETE ANDERSON

Assisting:

BROOKINGS Conservation District

## CHECKLIST

## SOUTH DAKOTA CONSTRUCTION AND MATERIAL SPECIFICATIONS

## CONSTRUCTION SPECIFICATIONS

| Check Column | Specification No. SD- | Title                                                 |
|--------------|-----------------------|-------------------------------------------------------|
|              | 1                     | Clearing 6/82                                         |
|              | 2                     | Clearing and Grubbing 6/82                            |
|              | 3                     | Structure Removal 6/82                                |
| X            | 4                     | Stripping 6/82                                        |
| ✓            | 5                     | Excavation 6/82                                       |
|              | 6                     | Excavated Ponds (Dugouts) 6/82                        |
|              | 7A                    | Earth Fill - Class A - (Controlled Compaction) 6/82   |
| ✓            | 7S                    | Earth Fill - Class S - (Method Type Compaction) 6/82  |
|              | 7U                    | Earth Fill - Class U - (Uncompacted) 8/71             |
|              | 8                     | Rock Riprap and Bedding 6/82                          |
|              | 9                     | Drain Fill and Filter 6/82                            |
| X            | 10                    | Salvaging and Spreading Topsoil 6/82                  |
|              | 11                    | Clearing and Earthwork (AWMS) 12/89                   |
|              | 12A                   | Concrete (Class 3500) 6/82                            |
|              | 12B                   | Concrete for Minor Structures (less than 5 c.y.) 6/82 |
|              | 13                    | Steel Reinforcement 8/71                              |
|              | 14                    | Wood and Steel Structures (AWMS) 12/89                |
| X            | 15                    | Corrugated Metal Pipe Conduits 11/87                  |
| X            | 16                    | Timber Fabrication and Installation 7/77              |
| X            | 17                    | Metal Fabrication and Installation 11/87              |
|              | 18                    | Wire Mesh Gabions 6/82                                |
|              | 19                    | PVC Sediment Basin Drain (AWMS) 12/89                 |

# CONSTRUCTION SPECIFICATIONS

| Check Column | Specification No. SD- | Title                                                         |
|--------------|-----------------------|---------------------------------------------------------------|
|              | 20                    | Pipeline-Plastic (Irrigation) 6/82                            |
| 7            | 20 1/2                | Pipeline-Plastic (Stockwater and/or Domestic) 6/82            |
|              | 21                    | Steel Pipelines 6/82                                          |
|              | 22                    | Concrete Pipelines 6/82                                       |
|              | 23                    | Asbestos Cement Pipelines 8/71                                |
|              | 24                    | Land Leveling 11/77                                           |
|              | 25                    | Diversion 6/82                                                |
|              | 26                    | Terraces 6/82                                                 |
|              | 27                    | Waterway Improvement 8/71                                     |
| X            | 28                    | Seeding (Requires Specific Site Recommendations) 8/71         |
|              | 29                    | Sodding (Requires Specific Site Recommendations) 8/71         |
|              | 30                    | Fencing 6/82                                                  |
|              | 31                    | Cathodic Protection 11/79                                     |
|              | 32                    | Well 8/86                                                     |
|              | 33                    | Mulch Blankets and Nets 10/86                                 |
|              |                       | MATERIAL SPECIFICATIONS                                       |
| X            | 50                    | Zinc-Coated Iron or Steel Corrugated Pipe 8/71                |
|              | 51                    | Aluminum Corrugated Pipe 8/71                                 |
|              | 52                    | Steel Pipe and Fittings 8/71                                  |
|              | 53                    | Concrete Irrigation Pipe, Drainage Pipe, and Drain Tile 10/75 |
|              | 54                    | Asbestos-Cement Pipe 6/82                                     |
|              | 55                    | Plastic Pipe 6/82                                             |
|              |                       |                                                               |



United States  
Department of  
Agriculture

Natural Resources  
Conservation  
Service

520 Third Avenue  
P.O. Box 626  
Brookings, SD 57006-0626

PRELIMINARY RISK ASSESSMENT  
DOWNSTREAM HAZARD POTENTIAL

William Gibbons Dam  
Brookings County  
T-111-N, R-48-W, N1/2, SW1/4 sec 27

\* see attached map

| <u>Property</u> | <u>Distance from Dam</u> | <u>Prop. El.</u> | <u>Water El.</u> |
|-----------------|--------------------------|------------------|------------------|
| County Rd. 8    | .25 mi south             | 1738             | 1730             |
| T-111-N, R-48-W |                          |                  |                  |
| SW1/4 sec 27    |                          |                  |                  |

|                       |                                   |      |      |
|-----------------------|-----------------------------------|------|------|
| Leonard Henneman Farm | 2.25 mi southwest                 | 1693 | 1675 |
| T-111-N, R-48-W       | on Deer Creek floodplain which is |      |      |
| SW 1/4 sec 33         | 2/3 mile wide for the last 1.3 mi |      |      |

\* The remainder of the downstream area is also in Deer Creek floodplain which continues to widen

|                 |                  |      |      |
|-----------------|------------------|------|------|
| Township road   | 2.5 mi southwest | 1685 | 1675 |
| T-110-N, R-48-W |                  |      |      |
| NW1/4 sec 4     |                  |      |      |

|                 |                   |      |      |
|-----------------|-------------------|------|------|
| Township road   | 3.25 mi southwest | 1674 | 1667 |
| T-110-N, R-48-W |                   |      |      |
| S1/2 sec 5      |                   |      |      |

|                 |                  |      |      |
|-----------------|------------------|------|------|
| Township road   | 4.5 mi southwest | 1670 | 1658 |
| T-110-N, R-48-N |                  |      |      |
| SW1/4 sec 8     |                  |      |      |

|                 |                  |      |      |
|-----------------|------------------|------|------|
| Dale Bowne Farm | 4.5 mi southwest | 1670 | 1658 |
| T-110-N, R-48-W |                  |      |      |
| SE1/4, sec 7    |                  |      |      |

|                      |                  |      |      |
|----------------------|------------------|------|------|
| Clarence Hansen Farm | 5.5 mi southwest | 1661 | 1650 |
| T-110-N, R-48-W      |                  |      |      |
| SW1/4 sec 7          |                  |      |      |

|                 |                  |      |      |
|-----------------|------------------|------|------|
| County Road 25  | 5.5 mi southwest | 1664 | 1650 |
| T-110-N, R-48-W |                  |      |      |
| NW1/4 sec 18    |                  |      |      |

AURORA QUADRANGLE  
SOUTH DAKOTA-BROOKINGS CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC  
WHITE 4.2 MI.



Form 2A  
(Complete applicable portions only)

## Supplemental Information

(type or print in ink)

### 1. Well Information - Proposed Construction

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

### 2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) \_\_\_\_\_
- b) System Capacity (gallons) \_\_\_\_\_ c) Year Constructed \_\_\_\_\_
- d) Connected to the City of \_\_\_\_\_ Sanitary System.

### 3. Dugout Information

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

### 4. Water Storage Dams

William Gibbons Dam Brookings County

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

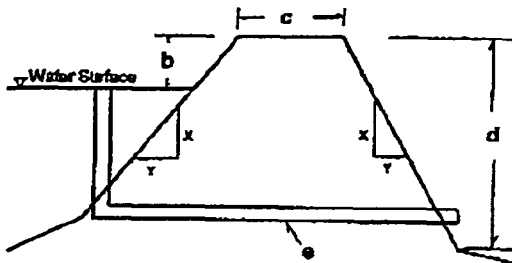
- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

Pete Anderson, P.E.

NRCS Area Office

520 3rd Ave, Box 626

Brookings, SD 57006



b) Freeboard 3.8 ft

c) Crest Width 12 ft

Crest Length 750 ft

d) Height 21 ft

e) Primary Outlet Capacity 28 cfs

If pipe, diameter 60" riser, 24" pipe

f) Secondary Spillway Capacity 234 cfs

Spillway Width ~~100 ft~~ 100 ft

g) X & Y Slope

Upstream 3:1

Downstream 2.5:1

h) Surface Area of Impoundment 19.3 A

i) Storage ~~162~~ 162 Acre Feet

j) Drainage Area Above Dam 1168 Acres

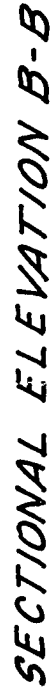
CONSTRUCTION NOTE:

- 1.) The two joints between the CPE and CMP shall be wrapped with butyl rubber. The butyl rubber shall be securely connected to each pipe to exclude soil particles. An alternative method is to wrap the joint between the 30" dia. CMP and the 24" dia. CPE pipe with an industrial grade tape.
- 2.) Ground where earth fill is to be placed shall be stripped and then scarified to a depth of 6 inches. Salvage and spread topsoil.
- 3.) Seed above HWL., the top and backslope of dam, the E. S., all dikes, and all disturbed areas designated by the engineer.
- 4.) According to NEM. 210-520.21 this is a class "A" hazard structure located in a rural agriculture area. This structure is to be maintained in accordance with Operation and Maintenance Guidelines.
- 5.) 24" diameter CPE shall conform to AASHTO M-294 Type S and the material compound shall conform to ASTM D-3350. CPE pipe shall be annular corrugations. The CPE pipe shall be smooth on the inside and corrugated on the outside and have an "n" value of 0.010. CPE pipe shall be Hancor "Sure-Lok" or equal.
- 6.) The core trench shall be inspected and approved by the authorized personnel prior to backfill.
- 7.) CPE pipe joints shall be watertight. Pipe Joint couplers shall be Hi-Q Sure-Lok 10.8 or equal.
- 8.) The critical compaction of earth fill around the pipe occurs from the midpoint of the pipe to the bottom of the pipe. Care is to be taken to assure proper compaction in this zone. There shall be full time inspection when the P. S. is installed.

BILL GIBBONS  
FARM POND  
BROOKINGS COUNTY

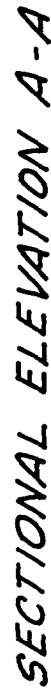
sheet 3 of 5

| RISER<br>DIA.<br>IN. | BARREL<br>DIA.<br>IN. | BAR<br>SIZE | MARK | TYPE | NO.<br>REQ'D. | LENGTH<br>FT.-IN. | TOTAL<br>LENGTH<br>FT.-IN. | TOTAL<br>WT. LB. | CONC.<br>CU. YD. | C<br>IN. | L<br>FT.-IN. |
|----------------------|-----------------------|-------------|------|------|---------------|-------------------|----------------------------|------------------|------------------|----------|--------------|
| 60                   | 30                    | 4           | 1    | STR. | 14            | 6'-6"             | 91'-0"                     | 61               | 1.9              | 6        | 7'-0"        |



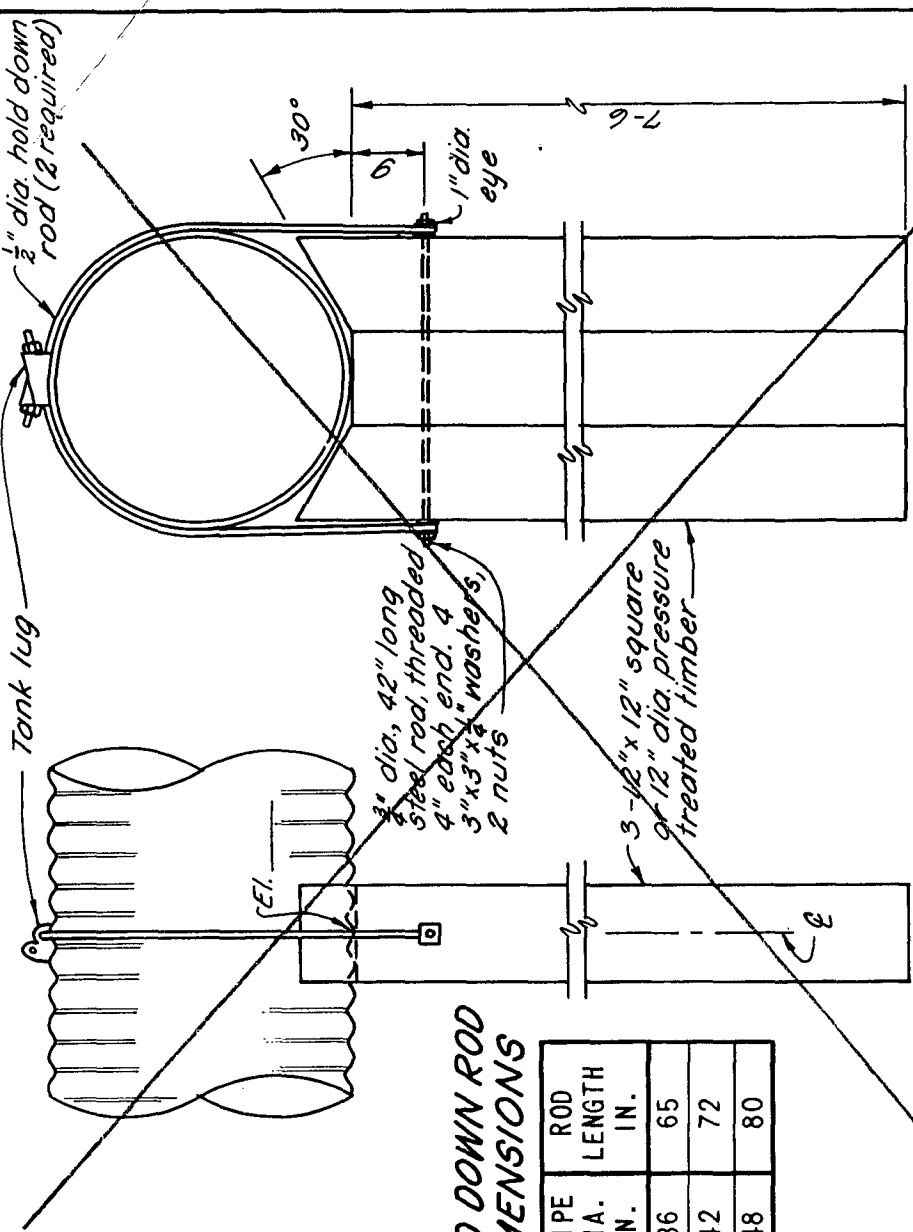
| RISER<br>DIA.<br>IN. | D<br>IN. | N<br>IN. | O<br>FT.-IN. | BAFFLE<br>AREA<br>SQ.FT. | BAFFLE<br>WT.LB. | 1/4" X 1 1/2"<br>FLAT BAR<br>LENGTH, FT. IN. | NO.<br>REQ'D. | FLAT BAR<br>WT. LB. | 1 1/2" X 1 1/2"<br>X 3/16" ANGLE<br>INCHES | NO.<br>REQ'D. | ANGLE<br>WT. LB. |
|----------------------|----------|----------|--------------|--------------------------|------------------|----------------------------------------------|---------------|---------------------|--------------------------------------------|---------------|------------------|
| 60                   | 24       | 18       | 9'-0         | 21                       | 118              | 3'-7"                                        | 4             | 18                  | 8                                          | 2             | 2.4              |

1. ALL CUTS SHALL BE SAW OR SHEAR CUTS.
2. ALL GALVANIZING DAMAGED BY CUTTING, DRILLING, OR WELDING SHALL BE REPAIRED BY PAINTING WITH TWO COATS OF ZINC DUST-ZINC OXIDE PRIMER.
3. FOR TRASH RACK AND BAFFLE DETAILS, SEE PLAN SERIES 6.
4. ALL BOLTS SHALL HAVE A NUT AND SPLIT WASHER.
5. ALL BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED, CADMIUM PLATED, OR STAINLESS STEEL.
6. HOLES IN BRACES SHALL BE SPACED AND LOCATED TO MATCH CORRUGATIONS IN PIPE AND BAFFLE.



OPERATOR: BILL GIBBONS  
CONSERVATION DISTRICT: BROOKINGS

|          |                 |       |         |             |       |
|----------|-----------------|-------|---------|-------------|-------|
| Designed | <i>Anderson</i> | Date  | 7-27-73 | Approved by |       |
| Drawn    |                 | Title |         |             |       |
| Traced   |                 | Title |         |             |       |
| Checked  |                 | Sheet | 5       |             | Drawn |
|          |                 | NO.   | 6       |             | of    |



HOLD DOWN ROD  
DIMENSIONS

| PIPE<br>DIA.<br>IN. | ROD<br>LENGTH<br>IN. |
|---------------------|----------------------|
| 36                  | 65                   |
| 42                  | 72                   |
| 48                  | 80                   |

SIDE ELEVATION  
END ELEVATION  
TIMBER PROP FOR 36" TO 48" DIA. C.M. PIPE

NOTES:

1. STEEL PARTS SHALL BE STRUCTURAL QUALITY STEEL.
2. GALVANIZE OR PAINT ALL STEEL ITEMS AS SPECIFIED.
3. CROSS OUT PLANS NOT APPLICABLE.

TIMBER PIPE SUPPORT

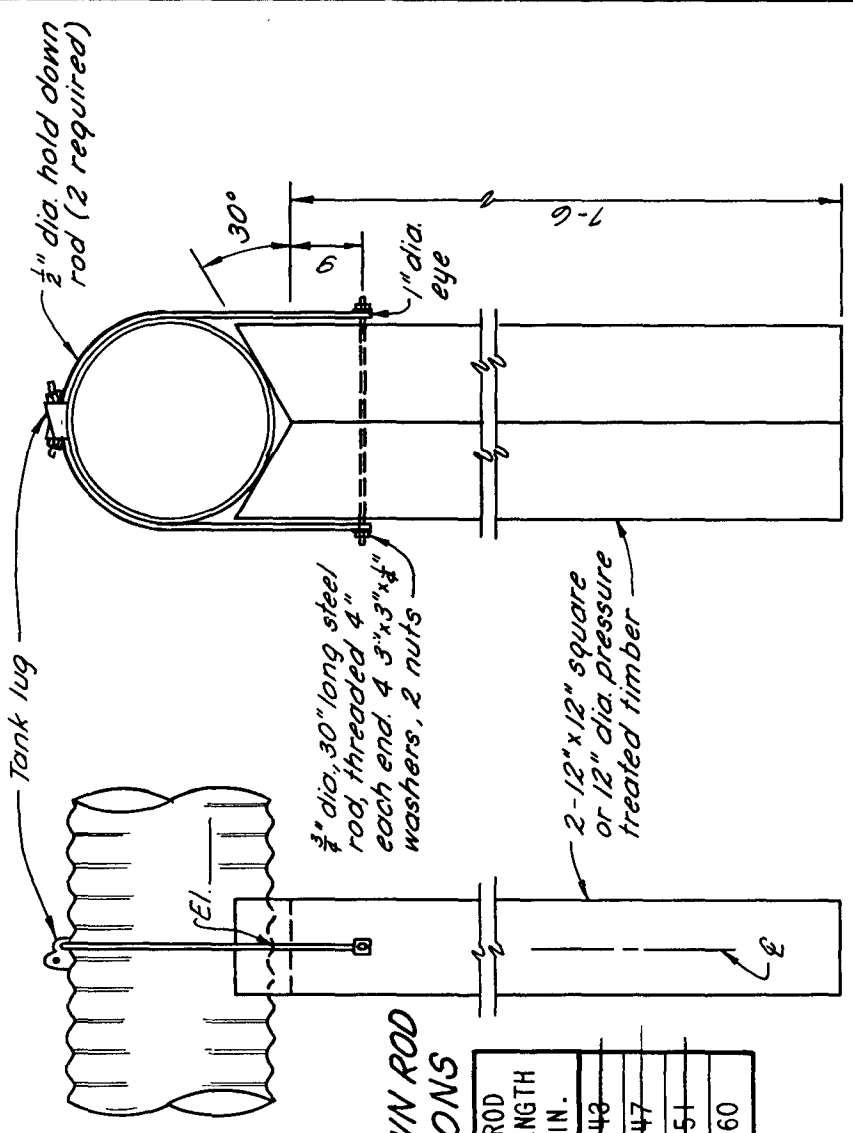
OPERATOR: BILL GIBBONS  
 CONSERVATION DISTRICT: BARREKINGS  
 U. S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE

Designed: ANDERSON  
 Drawn: \_\_\_\_\_  
 Traced: \_\_\_\_\_  
 Checked: \_\_\_\_\_

Approved by: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Date: \_\_\_\_\_

Sheet No. 5 of 6  
 Drawing No. \_\_\_\_\_

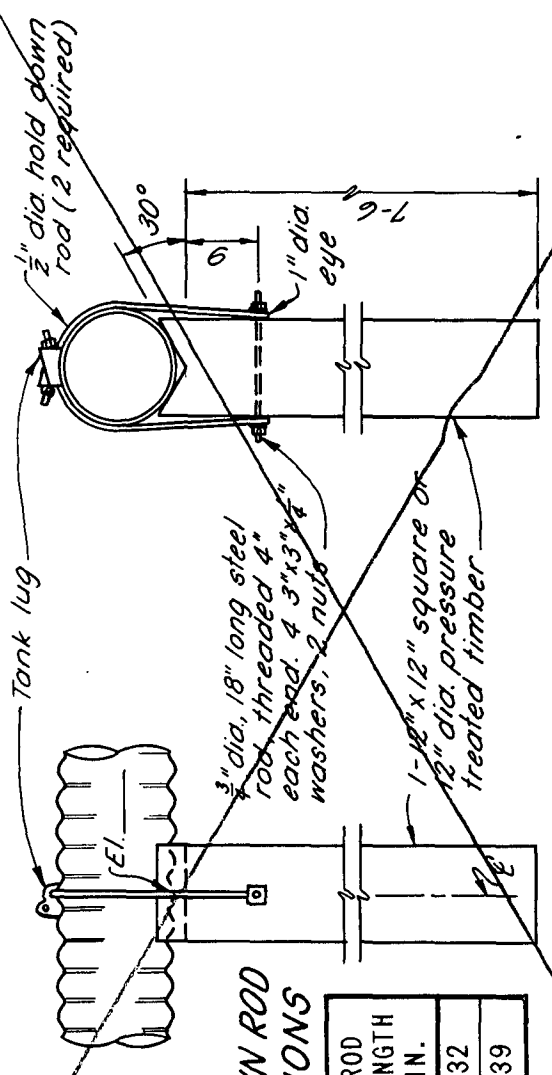
JOB PLAN NO. 4.1



HOLD DOWN ROD  
DIMENSIONS

| PIPE<br>DIA.<br>IN. | ROD<br>LENGTH<br>IN. |
|---------------------|----------------------|
| 18                  | 43                   |
| 21                  | 47                   |
| 24                  | 51                   |
| 30                  | 60                   |

SIDE ELEVATION  
END ELEVATION  
TIMBER PROP FOR 18" TO 30" DIA. C.M. PIPE

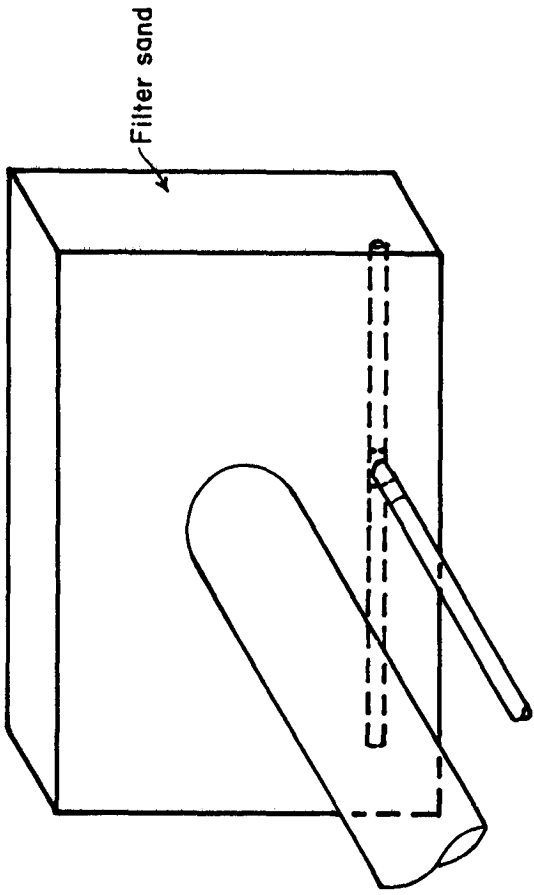


HOLD DOWN ROD  
DIMENSIONS

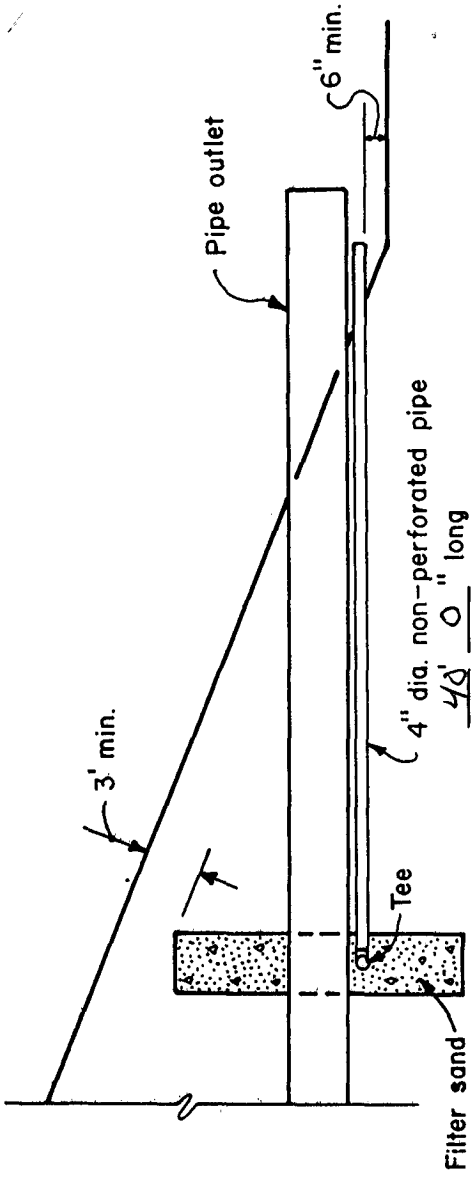
| PIPE<br>DIA.<br>IN. | ROD<br>LENGTH<br>IN. |
|---------------------|----------------------|
| 12                  | 32                   |
| 15                  | 39                   |

SIDE ELEVATION  
END ELEVATION  
TIMBER PROP FOR 12" TO 15" DIA. C.M. PIPE

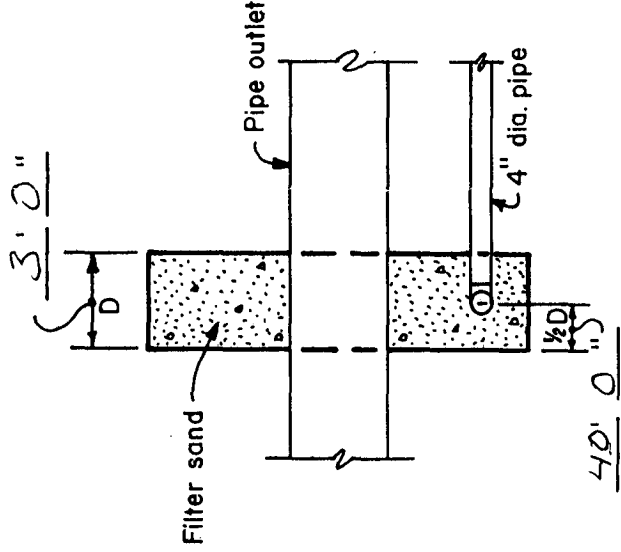




ISOMETRIC VIEW



OUTLET DETAIL



SIDE VIEW

| SIEVE SIZE | PERCENT PASSING |
|------------|-----------------|
| 3/8"       | 100             |
| 4          | 95-100          |
| 8          | 80-100          |
| 16         | 50-85           |
| 30         | 25-60           |
| 50         | 10-30           |
| 100        | 2-10            |

FILTER GRADATION



Sec. 27, T. 111, R. 54

Brookings County

LOCATION

# SAND ANTISEEP COLLAR

OPERATOR BILL GIBSON

CONSERVATION DISTRICT BROOKINGS

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Designed Anderson 7-95

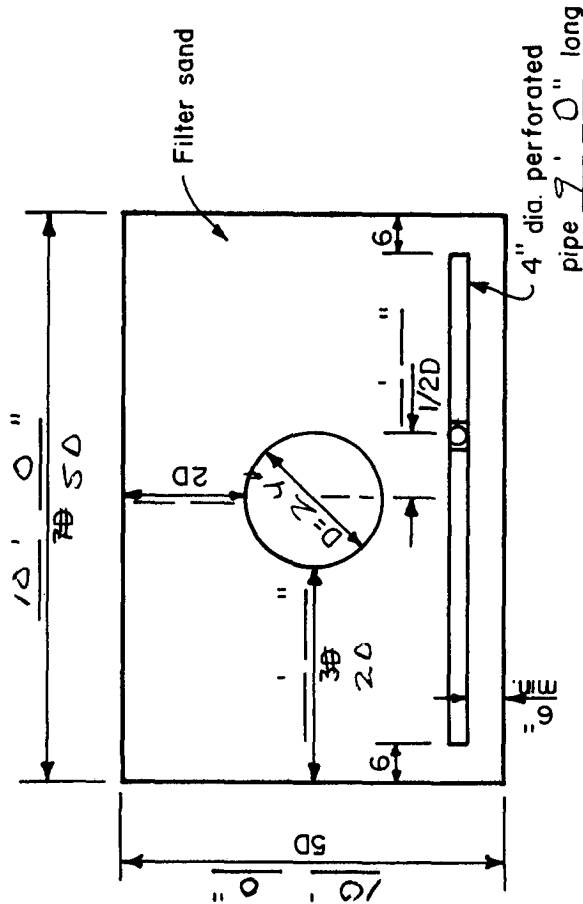
Approved by \_\_\_\_\_

Drawn \_\_\_\_\_

Traced \_\_\_\_\_

Checked \_\_\_\_\_

JOB PLAN NO. 3.8



UPSTREAM VIEW

## NOTE:

1. THE 4" DIA. PIPE SHALL BE ASTM D1785, SCHEDULE 40, PVC.
2. PROVIDE AN ANIMAL GUARD ON DRAIN OUTLET PIPE. DRILL 2, 1/2" DIA. HOLES, ON 6" FROM END OF PIPE AND PLACE A 3/8" DIA., 5 1/2" LONG GALVANIZED STEEL BOLT THRU THEM AND SECURE WITH A NUT (PLACE BOLT HORIZONTAL).

STA. 7+50

70 60 50 40 30 20 10 0 10 20 30 40 50 60

PRINCIPAL SPWY.  
RISER EL. 97.0 (4' OF 60" DIA.)  
SEE JOB PLAN 5.4

TOP EL. 100.8  
5% ALLOWANCE  
FOR SETTLEMENT

PRINCIPAL SPWY.  
INVERT OUTLET EL. 81.0  
SLEEVE CPE WITH  
22" OF 30" DIA. C.M.P.  
FABRICATE 9" ELBOW  
8' FROM U.S. END

LOCAL BEAM  
8'x8'

BUTYL RUBBER  
SAND ANTI-SEEP  
COLLAR SEE J.P. 3.8

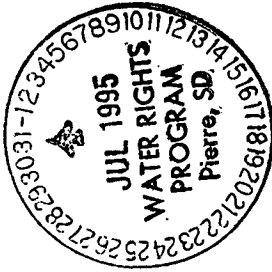
ELBOW EL. 81.4  
PIPE SUPPORT  
SEE JOB PLAN 4.1

ROCK RIPRAP  
12' LONG X 6' WIDE X 1.5' THICK  
6" → 18" ROCK SIZE  
MOSTLY BIG ROCK  
(4.0 CU. YD.)  
TOP OF ROCK IS EL. 80.0

CORE TRENCH

STRIPPING 0.5'

| TABLE OF QUANTITIES                              |          |      |
|--------------------------------------------------|----------|------|
| ITEM                                             | UNIT     | QUAN |
| 24" DIA. CPE (R=0.01)                            | LIN. FT. | 60   |
| 30" DIA. C.M.P.                                  | LIN. FT. | 22   |
| 60" DIA. RISER w/6' OF<br>30" C.M.P. (4' OF 60") | EACH     | 1    |
| ANTI-SEEP COLLAR                                 | CU. YD.  | 11.1 |
| ROCK RIPRAP                                      | CU. YD.  | 4    |
| BUTYL RUBBER                                     | EACH     | 2    |
| PIPE SUPPORT                                     | EACH     | 1    |

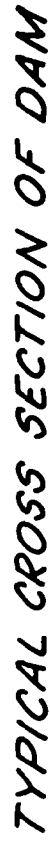


BILL GIBBONS  
FARM POND BROOKING'S CO.  
SW 4, S. 27, T. 111, R. 54

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

|                          |                  |                   |
|--------------------------|------------------|-------------------|
| Designed <i>Anderson</i> | Date <i>7-95</i> | Approved by _____ |
| Drawn _____              | Title _____      |                   |
| Traced _____             | Sheet _____      | Drawing No. _____ |
| Checked _____            | No. <i>2</i>     | of <i>6</i>       |

## LOCATION



# EARTH DAM

JUL 1995  
 WATER RIGHTS  
 PROGRAM  
 Pierre, SD

Approximate scale 1" = 200

**JOB PLAN NO. 1.0**



Water Permit Application #5874-3  
William Ray Gibbons

Top of Dam Elev. - 100.8  
P. Spillway Elev. - 97  
2nd Spillway Elev. - 98  
Bottom - 80

Height = 21 ft

Cat. 3 Dam

Normal Storage Capacity - 162 Ac.-Ft. - Surf. Area = 19.3 Ac.  
Int. Storage Capacity - 182 Ac.-Ft.  
Maximum Storage Capacity - 242 Ac.-Ft.

Int. Storage  $\times$  Eff Height  $(182 \times 18) = 3276 > 3000 \therefore 50$  year  
Min. Spillway Design Flood

From USGS Techniques of Est. Flood Peaks in SD (WRI 80-80)

$$\begin{aligned} DA &= 1.82 \text{ m}^2 \\ \text{Slope} &= 100 \text{ ft/mi} \\ SI &= 3.16 \end{aligned}$$

### Secondary Spillway Capacity

$$Q = C L H^{3/4} \quad H = 2.8 \quad L = 100$$

$$= (2.6)(100)(2.8)^{3/4}$$

$$\underline{Q = 1200 \text{ cfs}} \quad \underline{OK}$$

Section 74:02:08:09

1. Topo Map - OK
2. Dam Axis Profile - OK
3. Dam X-Section - OK
4. Area Capacity Data - OK
5. Outlet Details - OK
6. Spillway Rating - OK
7. Spillway Details - OK
8. Specs - OK
9. EPP - NA - OK

SCS Annual Yield

DA = 1163 Acres  
CN = 67 (use 70)  
Isogram = 2 1/2

10% Chance = 1.55 Ac-In/Acr  
1163 x 1.55 / 12 = 150 Ac-Ft.

50% Chance = 0.26 Ac-In/Acrn  
 $1163 \times 0.26 / 12 = \underline{25 \text{ Ac-Ft.}}$



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

August 9, 1995

Pete Anderson, P.E.  
Natural Resources Conservation Service  
520 Third Avenue  
Brookings, SD 57006-0626

Dear Mr. Anderson:

We have reviewed the plans and specifications for the Gibbons Dam located in the SW 1/4 of Section 27-T111N-R48W, in Brookings County. The plans and specifications as submitted are approved. Approval of the plans and specifications does not authorize construction of the project. No construction may begin until Water Permit Application No. 5874-3 is approved.

Our review was to determine compliance with the requirements of the Water Management Board Safety of Dams Rules, Chapter 74:02:08. Approval of these plans and specifications does not release Mr. Gibbons, as owner of the dam, from the responsibility for operating and maintaining the dam in good repair to ensure the safety of the dam.

The Gibbons Dam will be classified as a small size Category 3, Low Hazard Dam with an embankment height of 21 feet and a normal storage capacity of 162 acre-feet and a maximum storage capacity of 242 acre-feet.

If you have any questions, please feel free to contact us.

Sincerely,

Gale N. Selken, P.E.  
Natural Resources Engineer IV  
for John Hatch, Chief Engineer  
Water Rights Program  
(605) 773-3352

c: Bill Gibbons, landowner

REPORT ON  
WATER PERMIT APPLICATION NO. 5874-3  
WILLIAM RAY GIBBONS  
August 7, 1995

Water Permit Application No. 5874-3 has been filed by William Ray Gibbons to appropriate 162 acre-feet of water annually by constructing a dam. The dam will be located in the SW 1/4 of Section 27-T111N-R48W on an unnamed tributary to Deer Creek, in Brookings County. The impounded water will be used to provide habitat for fish and wildlife production and recreational use.

Discussion:

The Gibbons Dam will be classified as a Category 3, Low Hazard dam. The dam has been designed by the Natural Resources Conservation Service (formerly SCS) and the plans and specifications have been reviewed and approved; however, construction cannot start until Water Permit Application No. 5874-3 is approved.

The dam will be 21 feet high with a normal storage capacity of 162 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 242 acre-feet with a reservoir level at the top of dam elevation. A dam of this size and hazard classification is required to have a minimum spillway design capable of passing a 50-year frequency event.

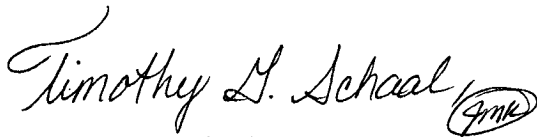
The Gibbons Dam is designed to have a 60 inch diameter CMP drop inlet spillway with a 24 inch diameter high density plastic barrel with 3.8 feet of head available between the riser and the top of dam. The dam will also have a 100 foot wide earthcut secondary spillway with 2.8 feet of head available between the spillway crest and the top of dam. The Gibbons Dam will have a drainage area of 1.84 square miles. This drainage area will produce a peak runoff of 555 cfs during a 50-year frequency event. The Gibbons Dam will have the spillway capacity to pass 1200 cfs without overtopping the embankment.

The annual yield for this drainage area with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be approximately 25 acre-feet. The annual yield for this basin with a 10 percent chance of occurrence, or 1 out of 10 years, is expected to be 150 acre-feet.

The Gibbons Dam will be located on an unnamed tributary to Deer Creek about 1.5 miles upstream of the confluence of the tributary and Deer Creek and about 14 miles upstream of the confluence of Deer Creek and the Big Sioux River. There are no existing Water Permits/Rights on the unnamed tributary or Deer Creek between the proposed dam and the Big Sioux River.

Conclusion:

1. Water Permit Application No. 5874-3 should be approved since unappropriated water is available and approval should not have any adverse effects on existing Water Permits/Rights.
2. If approved, the low flow bypass requirement for downstream domestic use should be a qualification on Water Permit Application No. 5874-3.

Handwritten signature of Timothy G. Schaal in cursive script, followed by a circled monogram "TGS".

Timothy G. Schaal, P.E.  
Natural Resources Engineer III

Approved by:

Handwritten signature of Gale N. Selken in cursive script.

Gale N. Selken, P.E.  
Natural Resources Engineer IV

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT  
APPLICATION NO. 5874-3**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 5874-3, William Ray Gibbons, 1709 Derald Drive, Brookings, SD 57006.

The Chief Engineer is recommending APPROVAL of Application No. 5874-3 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. Water Permit No. 5874-3 authorizes a dam with storage capacity of 162 acre-feet of water and sufficient water annually to maintain the water level to the outlet elevation of 1750 feet mean sea level.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

See report on application for additional information.



JOHN HATCH, Chief Engineer  
August 8, 1995



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

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

August 9, 1995

William Ray Gibbons  
1709 Derdall Drive  
Brookings, SD 57006

Dear Mr. Gibbons:

Water Permit Application No. 5874-3 for fish and wildlife, and recreational use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Brookings Register printed at Brookings, SD (Ph # 605-692-6271). For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice of Hearing 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 twenty days before the board meeting. The newspaper has been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Eric Gronlund  
Natural Resources Engineer  
605 773-3352

enclosures

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



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

Brookings Register  
PO Box 177  
Brookings, SD 57006-0177

ATTENTION: Legal Department

Enclosed is a Notice of Hearing on Application No. 5874-3 to be published twice. Please publish the first notice on August 16, 1995, 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 William Ray Gibbons, 1709 Derald Drive, Brookings, SD 57006 (Ph # 605-692-8551).

A copy of BOTH publications must be SENT to the WATER RIGHTS PROGRAM. 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. No action may be taken on the permit application until proof of publication has been received.

Sincerely,

Eric Gronlund  
Natural Resources Engineer  
605 773-3352

enclosures

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

FIRST TRANSMITTAL NOTICE

TO: Eric Gronlund  
Water Rights Program  
Joe Foss Building  
Pierre SD 57501-3181

No. \_\_\_\_\_

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 Notice on August 19, 1995, with the second publication 7 days later. The applicant is responsible for payment.

---

NOTICE OF APPLICATION NO. 5874-3 to Appropriate Water

Notice is given that William Ray Gibbons, 1709 Derdall Drive, Brookings, SD 57006 has filed an application for a water permit to impound 162 acre-feet of water from local runoff by constructing a dam located in the NE 1/4 SW 1/4 Section 27 with water impounded in the NE 1/4 SW 1/4, SE 1/4 NW 1/4 Section 27; all in T111N-R48W. This application requests impoundment of water sufficient to maintain water at the outlet elevation of 1750 feet mean sea level and is to be used to provide habitat for fish and wildlife production and recreational use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 5874-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the chief engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the chief engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and chief engineer. The applicant must file a petition if contesting the chief engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by September 5, 1995.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.

**PROOF OF PUBLICATION**

STATE OF SOUTH DAKOTA )  
County of Brookings ) SS

1. Nancy P. Skyberg

certify that the attached printed Notice was

taken from the Brookings  
Register

printed and published in Brookings

County of Brookings and State of

South Dakota. The notice was published in  
the newspaper on the following two dates:

August 16, 1995

August 23, 1995

Cost of Printing: thirty-eight  
dollars + ninety-five cents  
\$38.95

Nancy P. Skyberg  
(Signature)

Legal Ad Coordinator  
(Title)

Sept 13, 1995  
(Date Signed)



Legal 559, 2x, August 16, 23  
NOTICE OF APPLICATION  
NO. 5874-3

to Appropriate Water

Notice is given that William Ray Gibbons, 1709 Derald Drive, Brookings, SD 57006 has filed an application for a water permit to impound 162 acre-feet of water from local runoff by constructing a dam located in the NE1/4 SW1/4 Section 27 with water impounded in the NE1/4 SW1/4, SE1/4 NW1/4 Section 27; all in T111N- R48W. This application requests impoundment of water sufficient to maintain water at the outlet elevation of 1750 feet mean sea level and is to be used to provide habitat for fish and wildlife production and recreational use.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 5874-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the chief engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the chief engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

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The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application.

Nettie H. Myers, Secretary,  
Department of Environment and  
Natural Resources.



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

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

SEP 19 1995

William Ray Gibbons  
1709 Derdall Drive  
Brookings, SD 57006

Dear Mr. Gibbons:

Enclosed is Water Permit No. 5874-3 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Also enclosed is Form 10, Notice of Completion of Works and Application of Water to Beneficial Use, which you are to complete and submit to the Chief Engineer when you have completed the system and/or have put the water to beneficial use. An inspection can then be scheduled so that the Water License may be issued, thus completing your acquisition of a Water Right.

Very truly yours,

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

enclosures

**PLEASE NOTE:** Certain changes can be made in your permit within the five year construction period, usually without affecting the priority date provided an application to amend your permit is made within the five year period - i.e. changes in location or number of diversion points (wells) or location of land to be irrigated. Well locations for wells into the same aquifer can be moved up to 660 feet without application.

Applications to amend a permit after the five year construction period will be assigned a new priority date. Applications to change water sources, to add lands or increase original diversion rates, if approved will usually receive the date of the new application as a priority date regardless of the five year construction period

**NOTICE OF COMPLETION OF WORKS AND  
APPLICATION OF WATER TO BENEFICIAL USE**Date 11/10/96

TO: Water Rights Division, DENR  
523 E. Capitol  
Pierre, SD 57501-3181

FROM: William Gibbons 1709 Derdall Drive  
(name) (address)  
Brookings SD 57006 692-8551  
(city) (state) (zip) (phone)

I have completed the construction of the water diversion system and I have put the water to beneficial use to the maximum extent it is going to be used. I have not exceeded the amounts specified in Water Permit No. 5874-3.

Water Permit No. 5874-3 states that the diversion system is to be constructed by Sept. 5, 2000, and that the water is put to beneficial use by Sept 5, 2004.  
(date) (date)

The diversion system was completed on 10/25/96.  
(date)

Applying the water to beneficial use was completed on 10/25/96.  
(date)

You may schedule an inspection so that the Water License may be issued.

William Gibbons  
(signature)



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

July 15, 2002

5874-3 and 6067-3

William Ray Gibbons  
1709 Derdall Drive  
Brookings SD 57006

Dear Mr. Gibbons:

On May 28, 2002 the investigation of your dams, including the extent of application of water to beneficial use, as developed under Water Permit Nos. 5874-3 and 6067-3, was completed by Tim Schaal, a staff engineer with our program. Your final water right document, the water license, can now be issued.

State law requires that we charge a \$50.00 fee for the investigation and issuance of each water license. Upon receipt of the \$100.00 fee from you, we will complete processing your water licenses. The check or money order for the fee should be made payable to the "Water Rights Program".

Your licensed water rights will be similar to a property right that can not be lost as long as the water use continues and you abide by the permit requirements.

If you have any questions regarding the water permits, investigation of your dam or payment of the fee, please contact Genny McMath with our program at (605) 773-3352.

Sincerely,

A handwritten signature in cursive script that reads "Karen Schlaak".

Karen Schlaak  
Water Rights Program  
(605) 773-3352

# RECEIPT

## Water Rights Program

South Dakota Department of Environment and Natural Resources

417240

Pierre, July 24, 2002

RECEIVED OF Bill Gibbons, 1709 Dardall Dr., Brookings, SD 57006  
the following amount in fees for services rendered as provided for by law:

|                                                                                                                         |       |       |
|-------------------------------------------------------------------------------------------------------------------------|-------|-------|
| Fee for Application for Permit No. _____ to Appropriate Water, to construct<br>and to put water to beneficial use _____ |       |       |
| Fee for Application for Permit No. _____ to Appropriate Water, for Future<br>Use _____                                  |       |       |
| Fee to retain Future Use Permit No. _____ after period of seven years.                                                  |       |       |
| Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water<br>License No. <u>5874-3</u>          | 50    | 00    |
| Fee for Filing Transfer Form _____                                                                                      |       |       |
| Fee for Filing Extension Request _____                                                                                  |       |       |
| Fee for _____                                                                                                           |       |       |
| _____                                                                                                                   |       |       |
| _____                                                                                                                   |       |       |
| (Any Other Work Provided by Law)                                                                                        | Total | 50 00 |

By Darland Ebele  
Chief Engineer *gm*

**Permit No. 5874-3**  
**Sioux River - Water District**

**Report Of Examination Of Works And/Or Application of Water To Beneficial Use**

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

I have this day, **May 28, 2002**, made a thorough examination of the water use system constructed by **William Ray Gibbons** of **1709 Derald Drive, Brookings, SD 57006** holder of Permit No. **5874-3**, bearing the priority of **July 5, 1995** authorizing the storage of **162** acre-feet of the waters of **runoff** for **fish & wildlife propagation and recreational use** purposes, in **Brookings** County.

I have to report on the conditions of the same as follows:

A. Works used to divert the water:

**A 21 foot high dam with a 60 inch dia. CMP drop inlet spillway with a 24 inch dia. HDPE barrel as the primary spillway and a 100 foot wide earthcut secondary spillway that stores 162 acre-feet of water.**

B. Works used to transport water to place of use:

N/A

C. Works used to apply water to beneficial use:

**A 21 foot high dam with a 60 inch dia. CMP drop inlet spillway with a 24 inch dia. HDPE barrel as the primary spillway and a 100 foot wide earthcut secondary spillway that stores 162 acre-feet of water.**

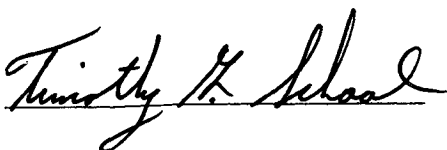
The system is in the following condition **good**. The point of diversion is located **1400 ft. north & 2400 ft. east of the SW corner of Sec. 27-T111N-R48W (NE 1/4 SW 1/4)**. The works are capable of storing **162** acre-feet of water which is to be used for **fish & wildlife propagation and recreational use**. Water has been put to beneficial use to the maximum extent as follows:

**A 21 foot high dam with a 60 inch dia. CMP drop inlet spillway with a 24 inch dia. HDPE barrel as the primary spillway and a 100 foot wide earthcut secondary spillway that stores 162 acre-feet of water.**

and the license should be issued for **162** acre-feet of storage.

Applicable permit qualifications have been complied with: Yes **X**

Exceptions to compliance are: **none**      Date Report Completed: **July 11, 2002**



Timothy G. Schaal, P.E.  
Natural Resources Engineer Specialist  
DENR, Water Rights Program

## **REPORT ON INSPECTION OF PERMIT NO. 5874-3**

Other permit(s) associated with the project: 6067-3

DATE OF INSPECTION: May 28, 2002

NAME & ADDRESS OF INSPECTION CONTACT/ Bill Gibbons

RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE: owner

NAME & ADDRESS OF PERMIT HOLDER: William Ray Gibbons, 1709 Derald Drive, Brookings,  
SD 57006

DIVERSION POINT LEGAL LOCATION: 1400 ft. north & 2400 ft. east of the SW corner of  
Sec. 27-T111N-R48W ( NE 1/4 SW 1/4).

### **DAM INFORMATION:**

- 1) Height to crest 21 feet
- 2) Height to primary spillway 17 feet
- 3) Height to secondary spillway 18 feet
- 4) Crest width 12 feet
- 5) Crest length 400 feet
- 6) Spillway length XXX feet
- 7) Spillway width 100 feet
- 8) Approx. storage (Normal) 162 acre-feet
- 9) Approx. storage (Maximum) 242 acre-feet
- 10) Date constructed: October 25, 1996

### **PERMIT QUALIFICATIONS AND REGULATIONS:**

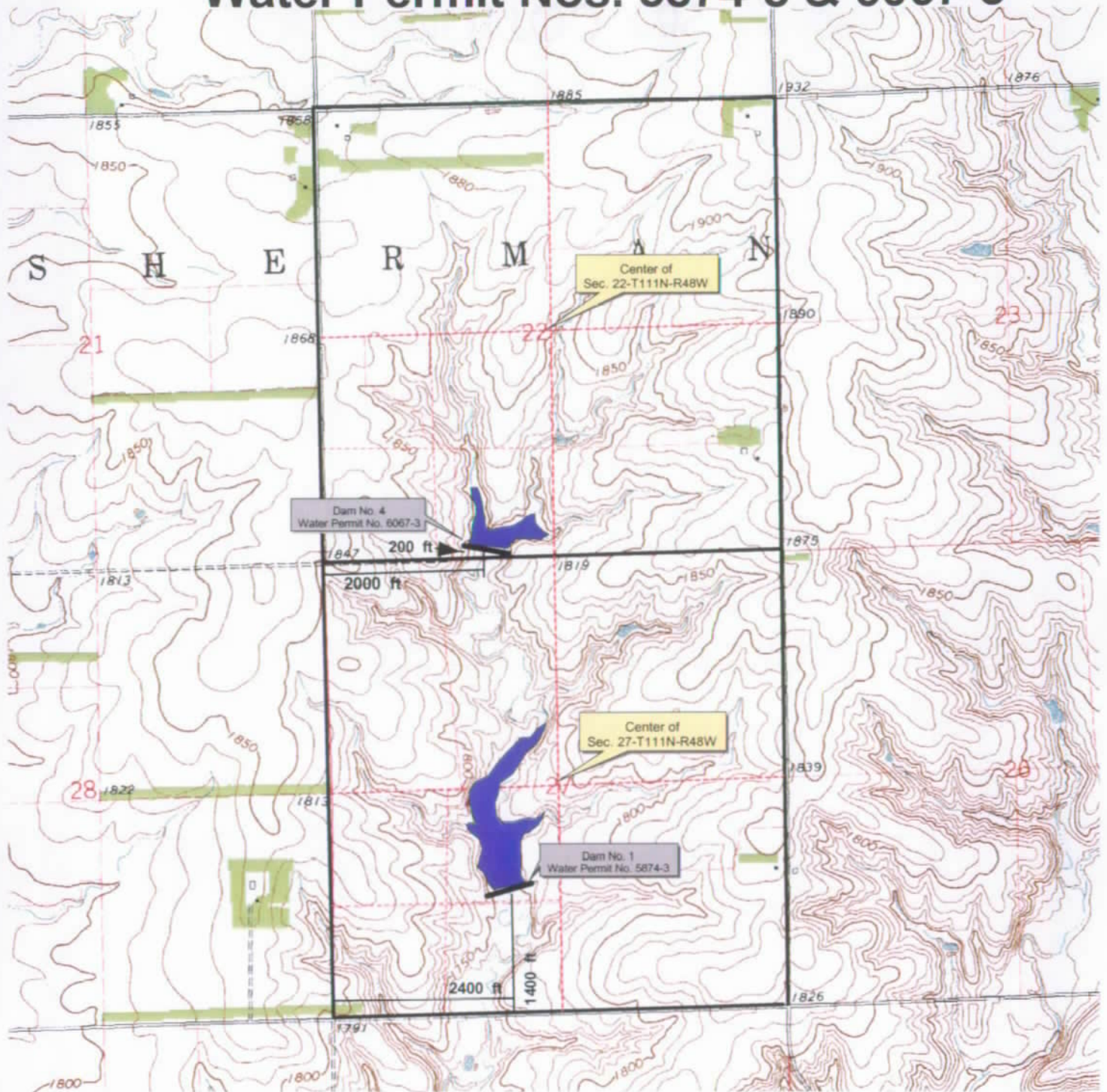
- 1) Soil and water permit lands agree with lands being irrigated and lands listed on permit N/A
- 2) Special qualifications to permit being abided by yes
- 3) All structures, wells and lands on map yes
- 4) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period N/A

Enclosed please find a check for \$100  
to cover the water Permit #'s 5874-3  
and 6067-3.

Bill Gibbons  
1709 Dordall Dr  
Brookings, SD 57006

RECEIVED  
JUL 24 2002  
WATER RIGHTS  
PROGRAM

# Water Permit Nos. 5874-3 & 6067-3



0.5 0 0.5 1 1.5 Miles



*Timothy G. Schaal*  
Timothy G. Schaal, P.E. 7/11/02  
Natural Resources Engineer Specialist  
Water Rights Program

# STATE OF SOUTH DAKOTA

## WATER LICENSE NO. 5874-3

(1) William Ray Gibbons, 1709 Derald Drive, Brookings SD 57006 made Application No. 5874-3, July 5, 1995 for a water permit to impound 162 acre-feet of water from runoff, Brookings County, South Dakota for fish & wildlife propagation and recreational use purposes. Permit No. 5874-3, with a priority date of July 5, 1995 was approved September 5, 1995 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before September 5, 2000 and for the application to beneficial use of said water on or before September 5, 2004.

(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 storage dam and is entitled to impound 162 acre-feet of water for beneficial use with sufficient water annually to maintain the water level to the outlet elevation of 1750 feet mean sea level. The location of the storage dam (spillway) is 1,400 feet north and 2,400 feet east of the southwest corner of Section 27-T111N-R48W (NE ¼ SW ¼).

(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use.

(4) Pursuant to South Dakota Water Law 46-5-30.1 William Ray Gibbons, 1709 Derald Drive, Brookings SD 57006 the holder and/or owner of Water Right No. 5874-3 is issued a license to appropriate water, the right to impound 162 acre-feet of water from runoff with sufficient water annually to maintain the water level to the outlet elevation of 1750 feet mean sea level with a priority date of July 5, 1995 from the location specified in (2) of this license for fish & wildlife propagation and recreational use purposes. This license is subject to any limitations or qualifications listed in Water Right No. 5874-3 and subject to South Dakota State Law.



Garland Erbele, Chief Engineer  
Water Rights Program  
Department of Environment and Natural Resources

SEP 20 2002

date





**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

SEP 20 2002

5874-3  
6067-3

William Ray Gibbons  
1709 Derdall Drive  
Brookings SD 57006

Dear Mr. Gibbons:

Enclosed are Water License Nos. 5874-3 & 6067-3. This is the final water right document completing your process of obtaining a Water Right. Enclosed are Receipt Nos. 417240 and 417241 each in the amount of \$50.00 which you paid for the investigation and issuance of the Water License No. 5874-3 and 6067-3.

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

Sincerely,

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

enclosures