

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-9060

Exam Date: 8/13/2007

1. Current Owner: BETTY LOU ZIRKLE
PO BOX 1229
RATHDRUM ID 83858
(208)6871485
2. Accompanied by: Michael J. Williams
Phone No: (208) 687.1485
Address: PO Box 1229 Rathdrum, ID 83858
Relationship to Permit Holder: Son-in-Law

3. SOURCE TRIBUTARY
SPRING SINKS

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NONE
2. Other water rights with the same point of diversion: NONE

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

SPRING (42) SW1/4NW1/4, Sec. 18, Twp 52N, Rge 04W, B.M. KOOTENAI County

Method of Determination: Rathdrum Quadrangle, 7.5' Minute, USGS
Topographic Map
Garmin GPS Receiver

2.

PLACE OF USE: WILDLIFE STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 04W 18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
													X	X			
<u>PLACE OF USE:</u> IRRIGATION																	
Twp Rge Sec	NE				NW				SW				SE				Totals
52N 04W 18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
													14.7	.3			15.0
Total Acres:	15																

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

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4.

Well or DiversionID No.*Motor MakeHpMotor Serial No.Pump MakePump Serial No. or DischargeSize

—

Briggs &

16

4 Cycle

Teel

Self Priming Centrifugal

—

Stratton

Industrial/
Commercial

—

Pump

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

MeasurementEquipmentTypeMakeModel No.Serial No.SizeCalib. Date

2. Measurements:

None. See Theoretical Calculations.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

PUMP EQUATIONS		WATER RIGHT # 95-9066				
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q						
=	HP*8.8*Eff/H	16	85.95238	0.7	5	35
Q						
=	1.149 cfs					

Measured Method:

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (15) \times (3) = 45 \text{ AFA}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (.20) \times (246) \times (1.9835) = 97.58 \text{ AFA}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 45 \text{ AFA}$$

2. Volume Calculations for Other Uses: wildlife storage

Actual Storage exceeds Permit

Permit Amount = 2 AF

wildlife Storage = 2 AF

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G. NARRATIVE/REMARKS/COMMENTS

Water system for 95-9060 begins at a spring on a hillside that has been dug to feed water directly to a ditch. The spring sank into the ground before being dug to the ditch. The ditch is a man-made structure with the appearance of an unnamed stream that follows the base of a hillside. The ditch begins above the spring in the Northwest Quarter of Section 18 T.52N R4W and flows southeast past the spring along the base of a forested hillside in Section 18 to a pond shown as intermittent on the USGS Rathdrum 7.5 Minute Quadrangle. This Spring location is in different quarter section than that shown on the Permit.

There is no connection between the ditch and the nearby stream shown originating in Section 14 and Section 13 of the USGS Rathdrum 7.5 Minute Quadrangle. The solid blue line stream shown on the Rathdrum Quadrangle flows northeast. The stream enters the South end of Twin Lakes.

The ditch collects water from the hillside to the South and runoff from an irrigated field to the North before dividing into two channels on either side of a small island. Water is backed up in the two channels on either side of the island by a concrete block dam. The dam is approximately two feet in height and lies completely within the channel. Wood boards at the center of the dam, when removed, allow all water to pass through the dam eliminating any impoundment in the upper pond and discharging into the lower mill pond.

A vertical inlet pipe (glory hole) lies approximately one foot upstream from the dam. The glory hole is connected to an underground water line underneath the streambed to the lower mill pond (intermittent pond). The line emerges under the surface of the mill pond. This pond was formerly used for log storage at a sawmill. The surface of the mill pond lies downstream approximately 10 feet below the water surface level at the dam. The water system ends at the mill pond.

Water is held when boards are in place at the dam to back up water into the two channels on either side of the island. A Briggs and Stratton 16 Horsepower pump on a wheeled trailer is used to draw water from the two stream channels for irrigation on the island between the channels and on a field lying to the North. Estimated surface area of the two stream channels that are flooded by the dam is .58 acres (25264.80 square feet). Average depth is two feet.

Storage capacity exceeds the permit amount of 2.0 Acre Feet. Estimated surface area of the lower mill pond is .6 acres with an average depth of five feet. Storage capacity of the two channels on either side of the island is .58 acres with an average depth of two feet (25264.80 Sq. Ft.). Combined storage capacity is calculated at 4.16 Acre Feet.

Waterfowl nesting platforms are on the island and other locations near the mill pond. A culvert bridge connects the island to the field to the North and allows the irrigation pump to be brought on to the island.

The spring is located, at GPS coordinates (116 Degrees 53.335 47 Degrees 51.²⁰⁶~~204~~). This location is more than 2250 feet upstream from the start of the channels on either side of the island. The location differs from the quarter quarter shown on the permit.

The irrigation pump is moved within the NW 1/4 SE 1/4, S.18 T52N R04W to supply irrigation water within this quarter-quarter and the adjoining quarter-quarter to the South. Both the dam (GPS 47 50.992 116 52.818) & the irrigation pump (GPS 47 51.021 116 52.855) locations are in the NW 1/4 SE 1/4 S.18 T52N R04W.

The irrigation system uses the 16 HP pump and metal hand lines. The system was in operation during the exam. No volume meter was available for flow measurement. Theoretical calculations indicate the pump can instantaneously divert the Permit amount. The pump can also divert all water in storage behind the dam.

A well is located near the irrigated area for this Permit but use from the well does not overlap. The well head is visible between the wheeled 16 HP irrigation pump and a residence in the attached photographs. High chain link fences on the property reflect prior use for a game farm.

Field exams for Licensed Water Rights 95-7688 and 95-9061 were reviewed for overlap. The licensed quarter-quarter sections in 95-7688 and 95-9061 include the same quarter quarters as 95-9060 but the actual Places of Use do not overlap and there are no common PODs with 95-9061.

The property owner receives property tax assessments for the Twin Lakes Adjudication. This appears to be an error since the spring sinks before reaching either Twin Lakes or Rathdrum Creek. The Kootenai property tax boundary inaccurately shows the spring to be located off of the 95-9060 property. The spring is on property owned by Mrs.

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Betty Lou Zirkle (95-9060 owner).

Mrs. Zirkle stated on Feb. 19, 2008 that the narrow green strip along the ditch located north of the forest in the NESW of Section 18, T50NR04W receives water from underground sources and is not irrigated with her irrigation system. No irrigation pipe was seen in this area during the Field Exam.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
WILDLIFE STORAGE	01/01 to 12/31		2.00 AF
IRRIGATION	03/15 to 11/15	0.200 CFS	45.00 AF
	<u>Totals:</u>	0.200 CFS	47.00 AF

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name

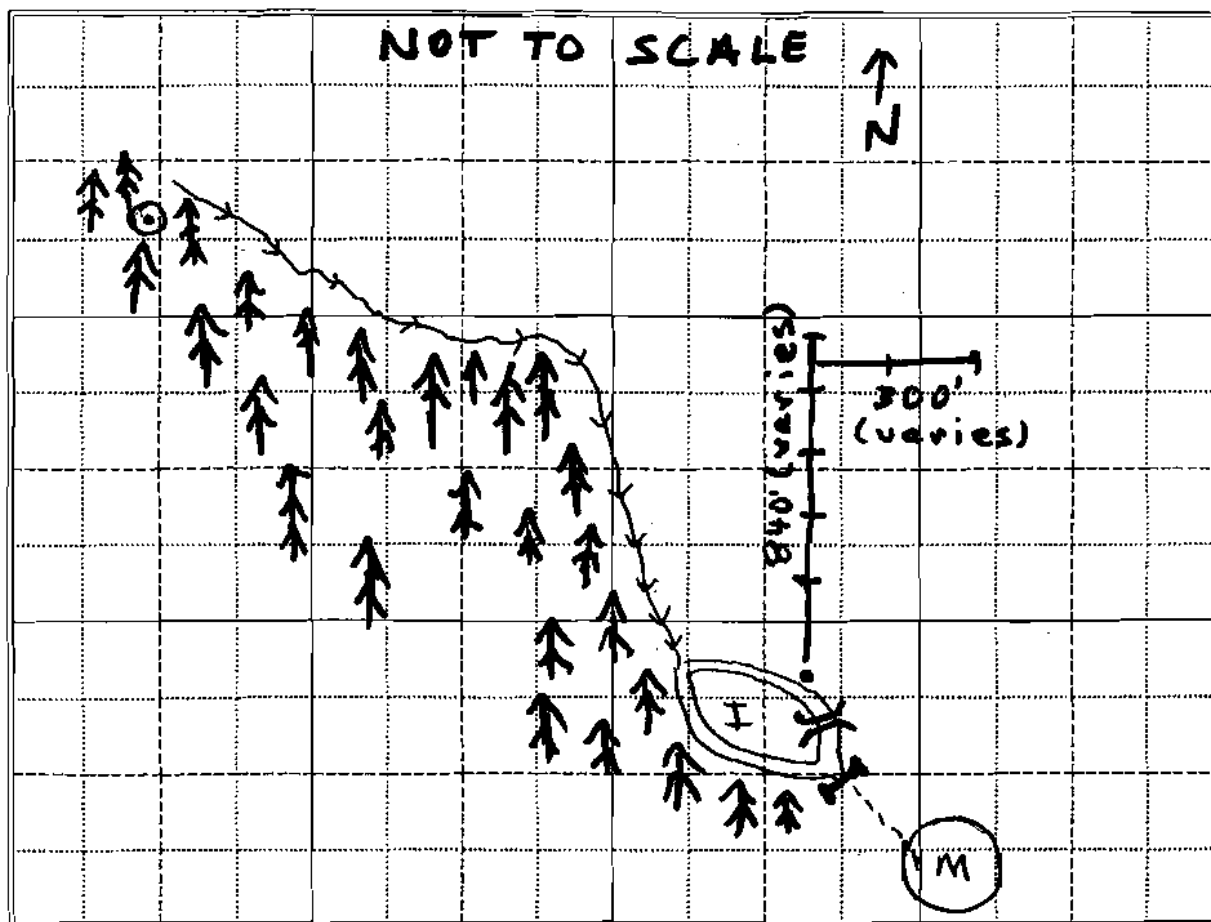
Reviewer

Date

Date

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3. Delivery System Diagram: Include all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable.



⊙ Spring

→ Ditch mimicking natural stream

≈ Channel

Ⓜ Mill Pond

• Pump (Mobile)

++ Pipe with Sprinklers

🌲🌲 Forest

Ⓢ Island

|| Bridge

I Dam

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E 53

RATHDRUM QUADRANGLE

IDAHO-KOOTENAI CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)

SW/4 SPIRIT LAKE 15' QUADRANGLE

2679 IV NW
(SPIRIT LAKE WEST)

506 55'

507 R. 5 W.

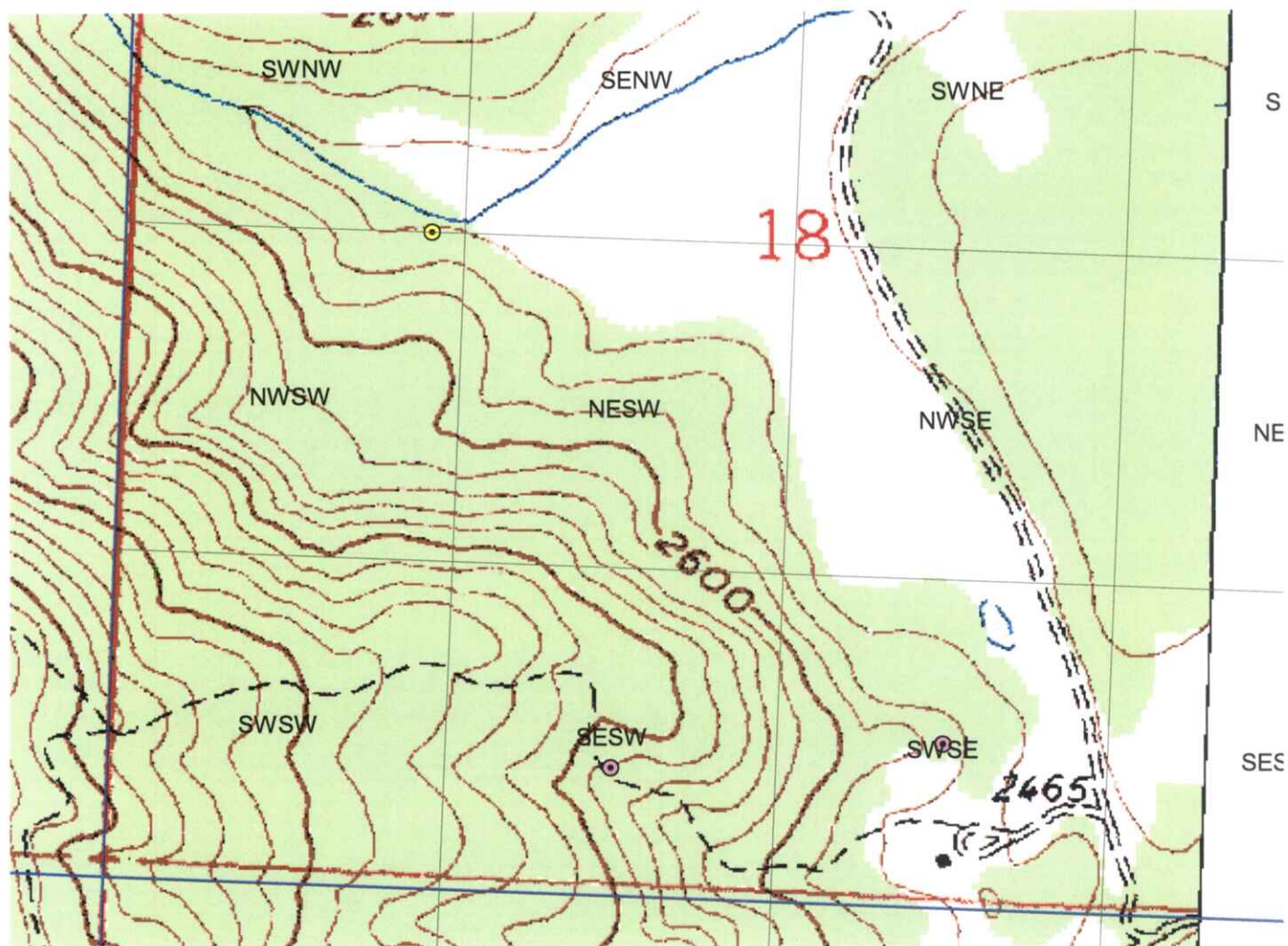
508 220 000 FEET R. 4 W.

509 1



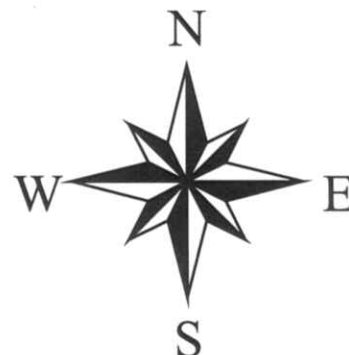
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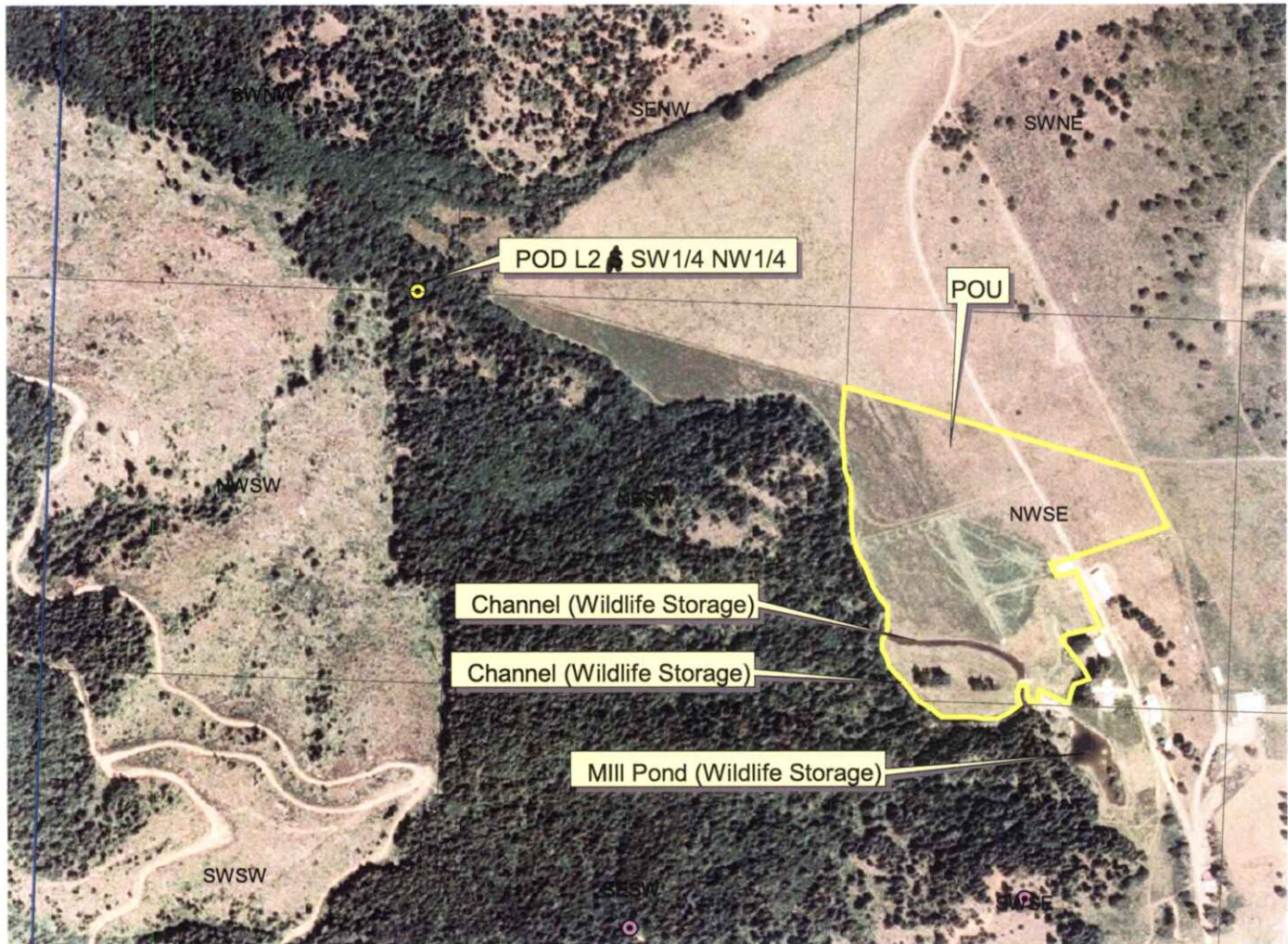
0.2 0 0.2 0.4 Miles

-  GCDB52N04W GCDB
-  Right POD
-  Pod.shp
-  Place of use.shp
-  Sections



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0.2 0 0.2 0.4 Miles

-  GCDB52N05W GCDB
-  GCDB52N04W GCDB
-  Right POD
-  Pod.shp
-  Place of use.shp
-  Sections



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95-9060 Cinder Block Dam With Island Behind

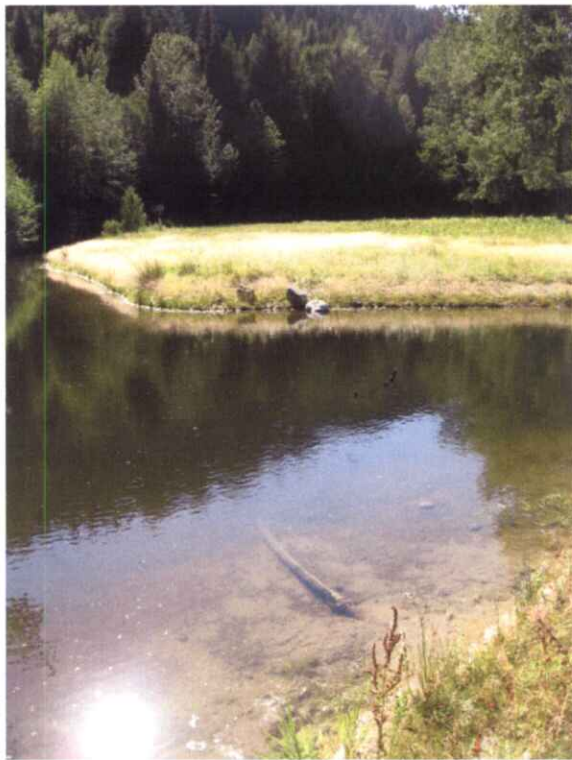


95-9060 Wood Check Boards

95- 9060



95-9060 Glory Hole to Mill Pond



95-9060 Unused pipe for Mobile Pump and Island

95-9060



95-9060 Culvert Bridge to Island and Wildlife Nest Platform



95-9060 16 HP pump withdrawing water from Channel North of Island

95-9060



95-9060 Centrifugal pump on mobile dolly



95-9060 16 HP Pump data plate on mobile dolly

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95-9060 Water Line and sprinklers from Pump to POU

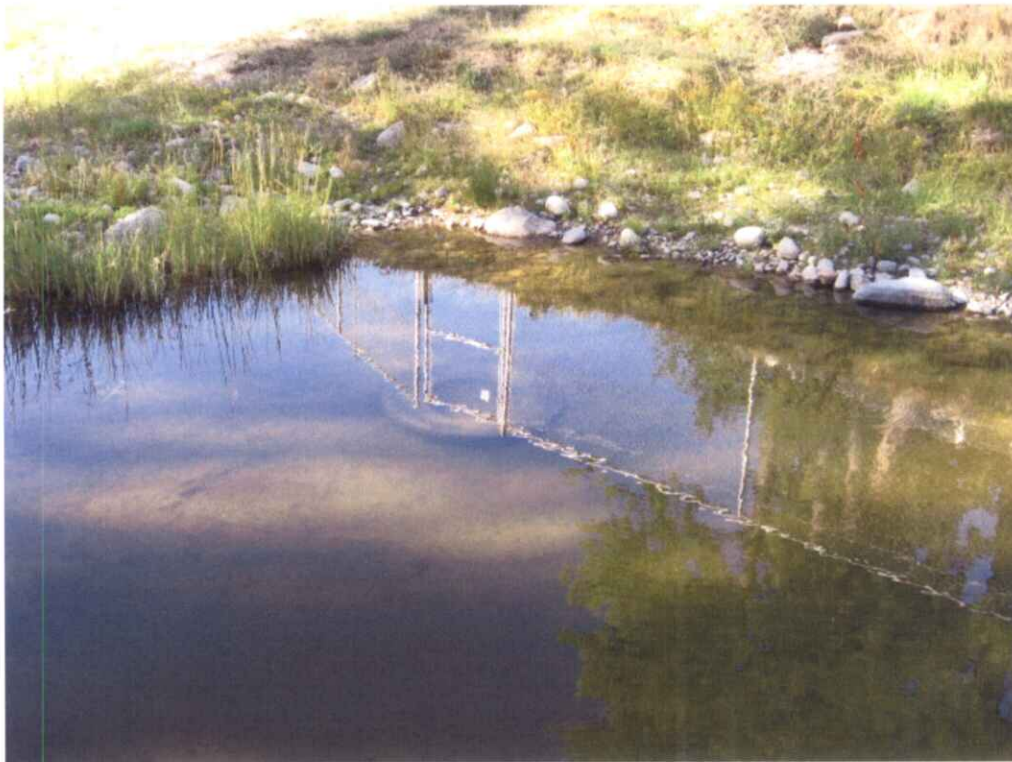


95-9060 Water Line and part of POU with horse barn

95-9060



95-9060 Sprinklers operating on POU



95-9060 Inlet from Glory Hole into Mill Pond

95-9060



95-9060 Mill Pond

95-9060