

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 79-14220

Exam Date: 8/22/2012

1. Current Owner: DEER CREEK LLC
501 BAYBROOK CT
BOISE ID 83706
208-424-3865
2. Accompanied by: Bob Payne
Phone No: 208-413-0277
Address: 831 6th Avenue, Lewiston, ID 83501
Relationship to Permit Holder: Property Manager

3. **SOURCE**

SALMON RIVER

TRIBUTARY

SNAKE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 79-14083
2. Other water rights with the same point of diversion: 79-14083

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

SALMON RIVER

L1 SE1/4NW1/4

Sec. 27, Twp 31N, Rge 03W, B.M.

LEWIS County

Method of Determination: Arc Map (Aerial Photo)

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
31N	03W	27			2.0				1.3										3.3
					L 3				L 1										

Total Acres: 3.3

Method of Determination: Arc Map (Aerial Photo); Tax Lots.

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

4.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
N/A		2		Gould	(2" & 1 1/2")

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
Pitot Tube						

2. Measurements: Pitot tube pressure measurement of 48 psi. Pitot tube did not fit the 3/16" sprinkler head nozzle, so the pressure measurement is lower than the normal operating pressure. Therefore, assuming an operating pressure of 60 psi, the sprinkler discharge for a 3/16" nozzle equals 8.12 gpm (IDWR Sprinkler Discharge Table). Four sprinklers are operated per station. $Q = 4 \times 8.12 \text{ gpm} = 32.5 \text{ gpm}$ (0.07 cfs). As indicated on the IDWR Expected Flows for Pipe Diameters, the flow capacity for a 1 1/2" pipe is 0.07 cfs, which confirms that the estimated operating pressure of 60 psi was a correct assumption.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: (Theoretical Horsepower Equation)

$$Q = 8.8 \times 0.7 \times 2/50 + (2.31 \times 60) = 12.32/188.6 = 0.07 \text{ cfs}$$

$$P = 60 \text{ psi (Estimated)}$$

$$Z = 50' \text{ (Estimated)}$$

$$HP = 2$$

(Sprinkler Head Discharge Table – 4 3/16" heads @ 60 psi)

$$Q = 4 \text{ heads} \times 8.12 \text{ gpm} = 32.5 \text{ gpm (0.07 cfs)}$$

$$Q(1 \frac{1}{2}" \text{ flow capacity}) = 0.07 \text{ cfs (IDWR Expected Flows for Pipe Diameters)}$$

$$Q(\text{theoretical}) = 0.07 \text{ cfs} = Q(\text{sprinkler heads}) = Q(\text{pipe capacity}) < 0.12 \text{ cfs } Q(\text{permit})$$

Appears that the current pumping system is not capable of attaining the permit diversion rate of 0.12 cfs for irrigation of 3.3 acres.

Therefore, recommend a beneficial use diversion rate of 0.07 cfs, which is the current system capacity.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3.3 \times 3.0 = 9.9 \text{ AFA}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.07 \times 246 \times 1.9835 = 34.2 \text{ AFA}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 9.9 \text{ AFA}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS**WATER SUPPLY SYSTEM:**

A 2-hp submersible pump, which is attached to the end of the 2" PVC suction line, is used to divert water from the Salmon River for irrigation of approximately 3.3 acres of land southerly and easterly of the home site. Water is pumped through a 2" PVC screened suction line to the 1" PVC irrigation main lines. The suction line, which reduces to 1 1/2" PVC at the beach, extends northerly to the top of the river bank and connects to the 1" irrigation main lines. The suction line is approximately 100-feet in length. The estimated pump lift from the bank of the Salmon River is 50-feet.

The pump controls consist of a manual 'on' and 'off' switch on a small control panel pedestal located at the top of the river bank near the river/beach access road.

IRRIGATION SYSTEM:

The irrigation system is comprised of 1" main lines and 3/16" Rainbird sprinkler heads.

OVERLAP ANALYSIS:

Point of Diversion: Water Right Permit No. 79-14083 (Fire Protection) and Water Right Permit No. 79-14220 (Irrigation) have the same point of diversion from the Salmon River.

Place of Use: The places of use for Water Right Permit No. 79-14083 (fire protection), and Water Right No. 79-14220 (irrigation), overlap.

MAPPING DEFICIENCY:

The location of quarter-quarter lines as shown on the attached aerial photo are not shown in the proper locations. By inspection of the aerial photo, it appears that a portion of the right holder's parcel is located within the NENW and the NWNE 1/4 of Section 27.

The right holder's warranty deed confirms that the aerial maps representation of the location of the quarter-quarter lines are incorrectly represented. According to the aerial photo, the right holder's irrigation main line and valve boxes are located north of the quarter-quarter lines on land owned by the Idaho Fish & Game Department. The legal description from the warranty deed indicates that the 'Point of Beginning' is the Center North 1/16 corner, which is located on the quarter-quarter line. The aerial photo shows that the Center North 1/16 corner and the quarter-quarter lines are located within the right holders parcel.

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

CONDITION NO.6 (X59) – Point of diversion is located within an existing pump station. No permanent pump station exists. A 2-hp submersible pump is attached to the end of the 2" PVC suction line, and pumps water directly to the 1" irrigation main lines.

RATE &/OR STORAGE RECOMMENDED FOR LICENSING

Description	Rate of Flow (cfs)		Storage (af)
Permit Amount	0.12	&/or	N/A
Beneficial Use Limit	0.12	&/or	N/A
System Measurement	0.07(theoretical)	&/or	N/A
Proof Fee Amount	0.20	&/or	N/A
Recommended Amount	0.07	&/or	N/A

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/15 to 10/31	0.070 CFS	9.9 AFA
<u>Totals:</u>		0.070 CFS	9.9 AFA

2. Recommended Amendments

___ Change P.D. as reflected above ___ Add P.D. as reflected above X None

___ Change P.U. as reflected above ___ Add P.U. as reflected above ___ Other

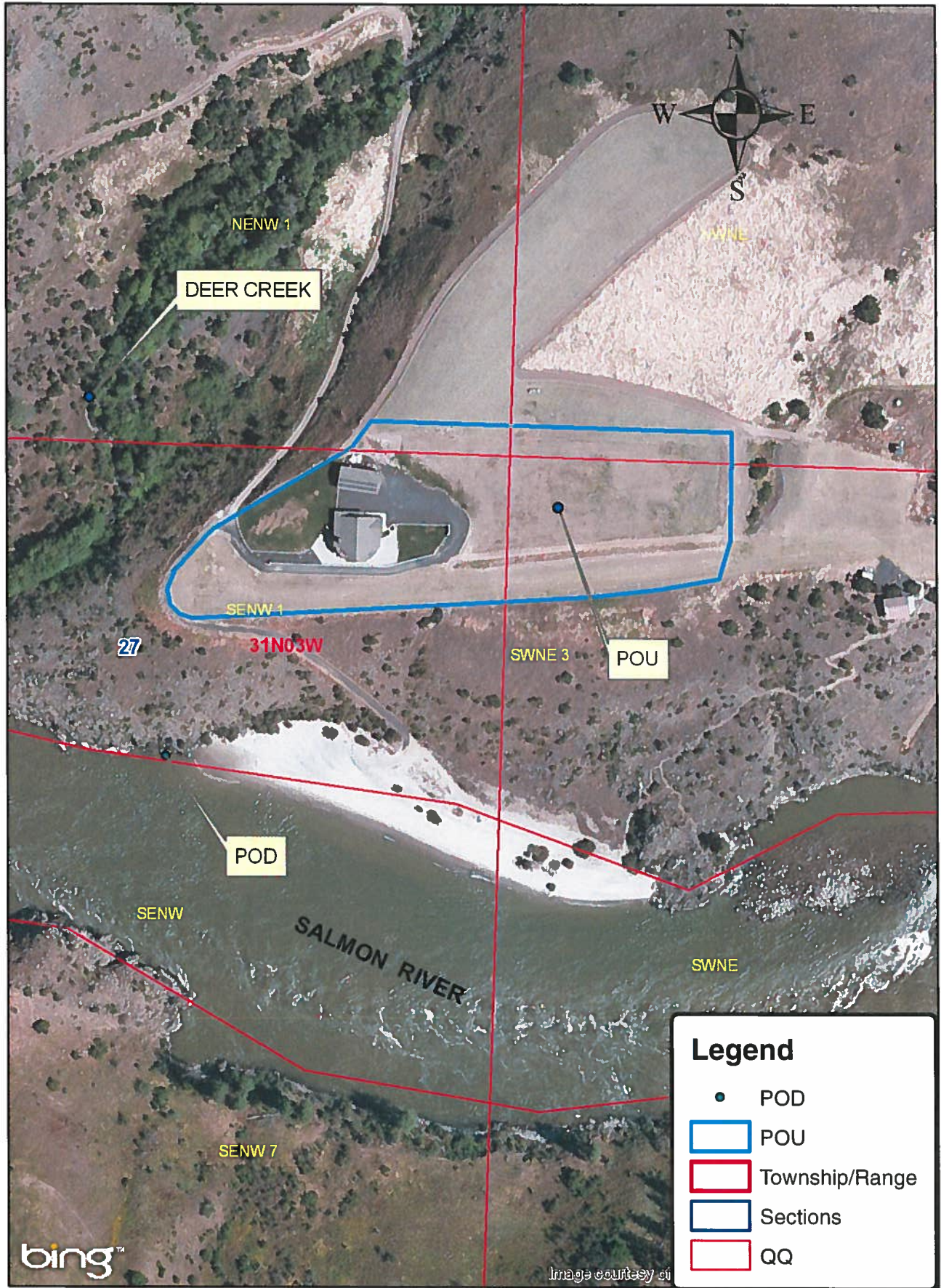
I. AUTHENTICATION

Field Examiner's Name Rick Collingwood Date 1/30/13

Reviewer _____ Date _____

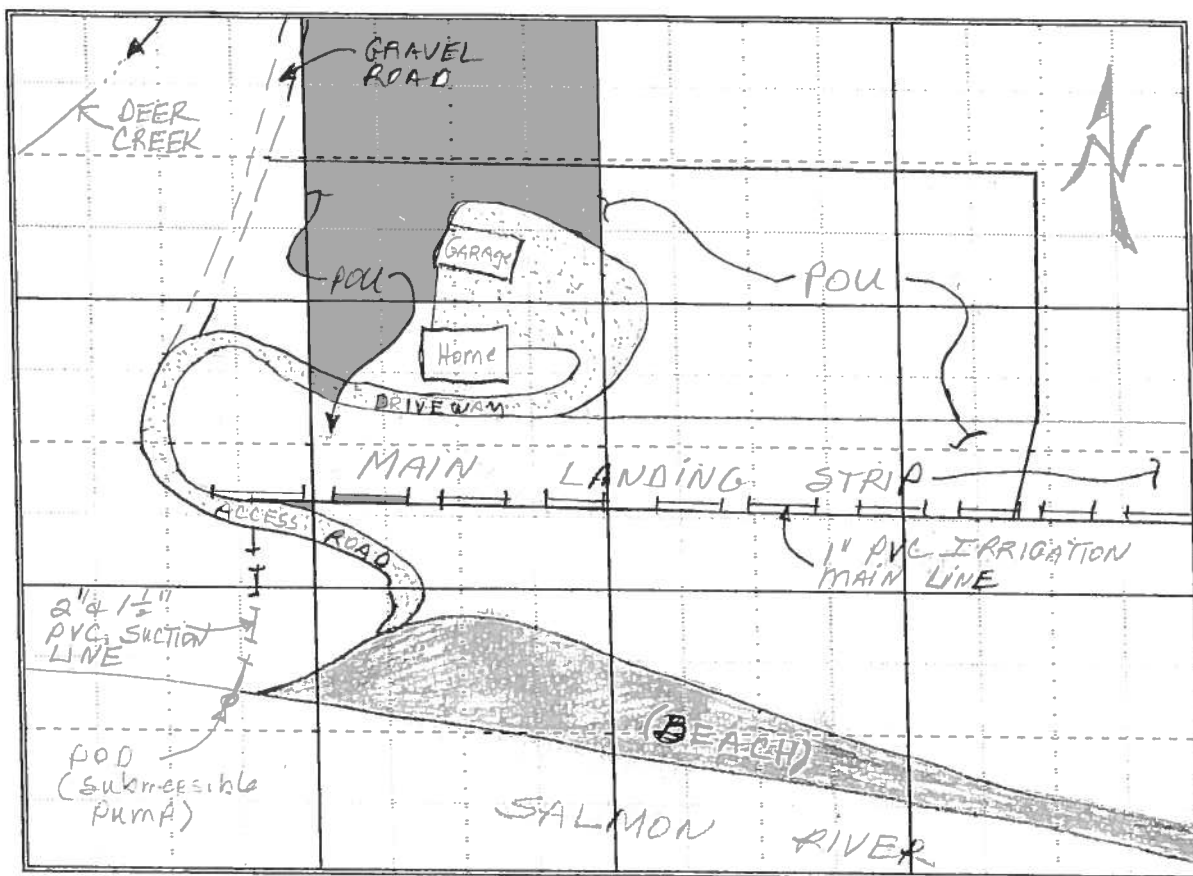
79-14220
GOV'T. LOTS 1 & 3

BING AERIAL PHOTO - 2011



Form 219 07/11

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☐ see attached.



Scale: 1" = NTS

- ☐ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

FIELD EXAM PHOTOS

Water Right Permit: 79-14220
PLS: SE1/4, NW1/4 Section 27, T.31N, R.03W.
Field Examiner: RC

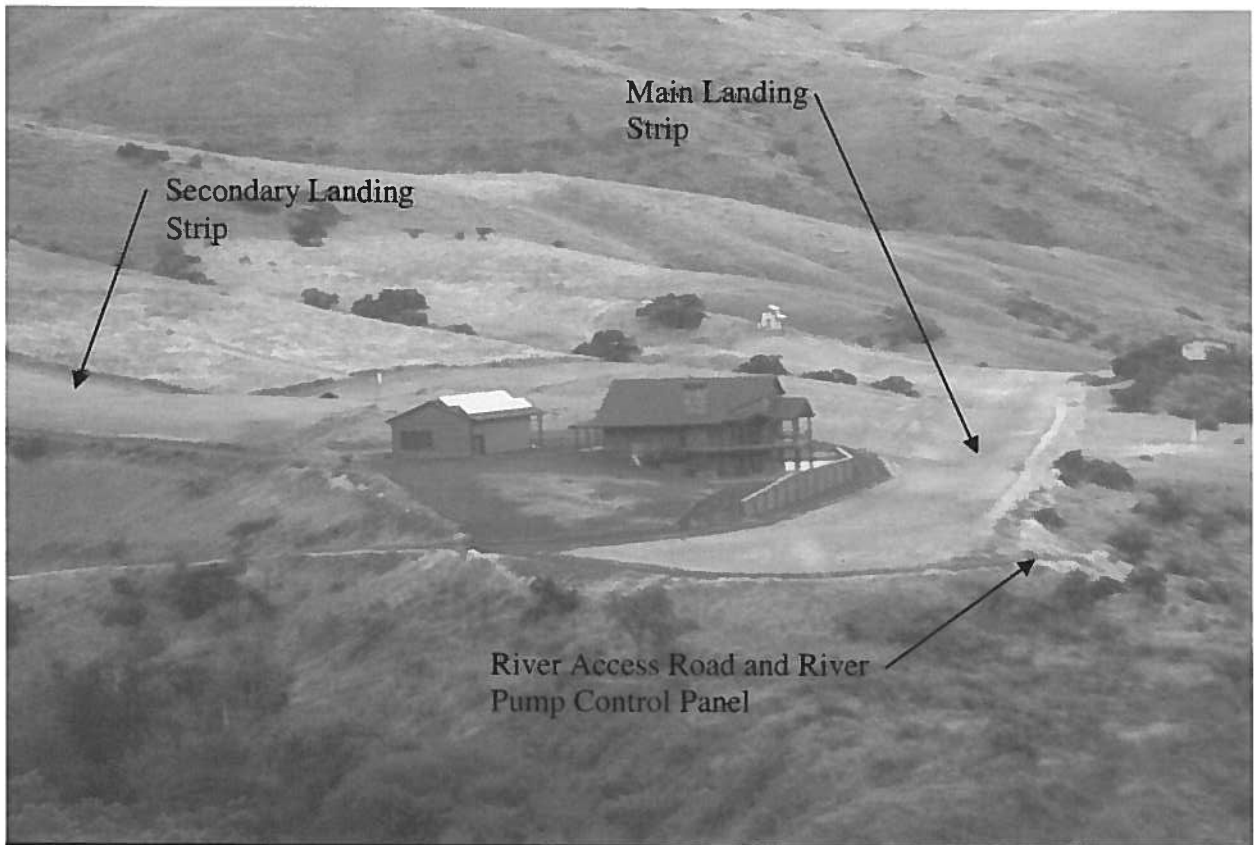
Field Exam Date: 8-22-12



Point of Diversion: View of screened 2-hp submersible pump and 2" suction line on north bank of the Salmon River. The 2" PVC suction line extends to the beach where it is reduced to 1 1/2" PVC before extending up the river bank to the 1" irrigation main line.



Place of Use: View easterly of the Rainbird sprinklers irrigating the main landing strip. Approximately 1,000 lineal feet of 1" PVC main line extends easterly to the end of the landing strip. The control panel for the 2-hp submersible pump is located near the access road shown at the right.



Place of Use: View easterly of the irrigable area surrounding the Deer Creek, LLC structures and access roads. The main landing strip is shown to the right, while the southerly end of the secondary landing strip is shown to the left.