

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-17013
Exam Date: 09/16/2024

1. Current Owner:
STATE OF IDAHO FISH & GAME COMMISSION
PO BOX 25 BOISE ID 83707-0025

3. **SOURCE:**
CHALLIS CREEK

Tributary
SALMON RIVER

Method of Determination: ArcMap and Field Exam observation

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
72-29C	White Valley Creek	Irrigation, Stock water	Decreed

Comments: Fish Screen is adjacent to Challis Creek and does not affect irrigated land.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
72-16604	Challis Creek	Irrigation	Decreed
72-16603	Challis Creek	Irrigation	Decreed
72-29B	Bear, Pats, & Challis Creeks	Irrigation	Decreed

Comments: Fish Screen simply re-routes entrained fish back to the creek without negatively impacting water rights.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

CHALLIS CREEK SW¼ NW¼, Sec. 4, Twp 14N, Rge 18E, B.M. CUSTER County

Method of Determination: ArcMap and Field Exam observation

PLACE OF USE: FISH PROPAGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
14N	18E	4							X										

Method of Determination: ArcMap and Field Exam observation

- 2.
- ☒ 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

3.

Well or Diversion ID No.*
N/A

D. FLOW MEASUREMENTS

1. Measurements: Head: High water mark of 21.5 inches (1.79 ft). Orifice area: 4 inch diameter hole (.087 ft²)

E. FLOW CALCULATIONS

Measured Method: A flow measurement was obtained using an orifice flow equation discussed in an August 24, 2011 Memorandum that utilizes a head measurement and the area of an orifice.

$$Q = C_d A_o (2gh)^{1/2}$$

Where: C_d = coefficient of discharge for orifice

A_o = Area of orifice opening in ft²

$G = 32.2$ ft per second²

H = measured head above center of orifice opening (in feet)

$$0.67(0.087 \text{ ft}^2) [2(32.2 \text{ ft per second}^2)(1.79 \text{ ft})]^{1/2} = 0.625 \text{ or } \mathbf{0.63 \text{ cfs}}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: **N/A**

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \mathbf{N/A}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$$

2. Volume Calculations for Other Uses: Water rights diverted through fish screen are authorized for 214 day irrigation season.

$$V_{DR} = 0.63 \text{ cfs} \times 214 \text{ days} \times 1.9835 = \mathbf{267.4 \text{ AF}}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 72-17013 was filed on July 29, 2022 by the Idaho Department of Fish and Game (IDFG) for the diversion of 0.80 cfs of non-consumptive use of water for a fish bypass screen structure. The fish bypass structure and the Point of Diversion (POD) are both located on land owned by Randy Rice. The structure itself, is located between the POD and the place of use (POU) of the water rights authorized to use the POD. A bypass pipe is used to flush any entrained fish back to Challis Creek.

I obtained permission from the owner several days before, and on 09/16/2024 I performed the field exam. The POD on Challis creek consists of a lockable headgate that diverts water down a side channel to the fish screen structure. Water flows through the fish screen structure to irrigate downstream fields. A small portion of water carries any entrained fish from the structure back to Challis Creek through a buried 10-inch bypass pipe. Water flow through the bypass pipe is controlled by a 4-inch diameter orifice cut in a 16 inch square slide gate.

On the day of the field exam a low flow of water was passing through the structure. An obvious high-water mark was visible on the side walls of the structure. A maximum flow rate was determined by using the area of the orifice and the height of the high-water mark (from the center of the orifice opening). The flow rate and volume calculations are shown above in Section F.

Conditions on the permit have been complied with and I recommend licensing Water Permit 72-17013 for a flow rate of 0.63 cfs and an annual volume of 267.4 AF.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
FISH PROPAGATION	04/01 to 10/31	0.80 CFS	267.4 AF
<u>Totals:</u>		0.63 CFS	267.4 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 ☒ None

I. AUTHENTICATION

Kent Aasa - Water Resource Agent, Senior

Field Examiner's Name

Date

09-18-2024

Reviewer

Date

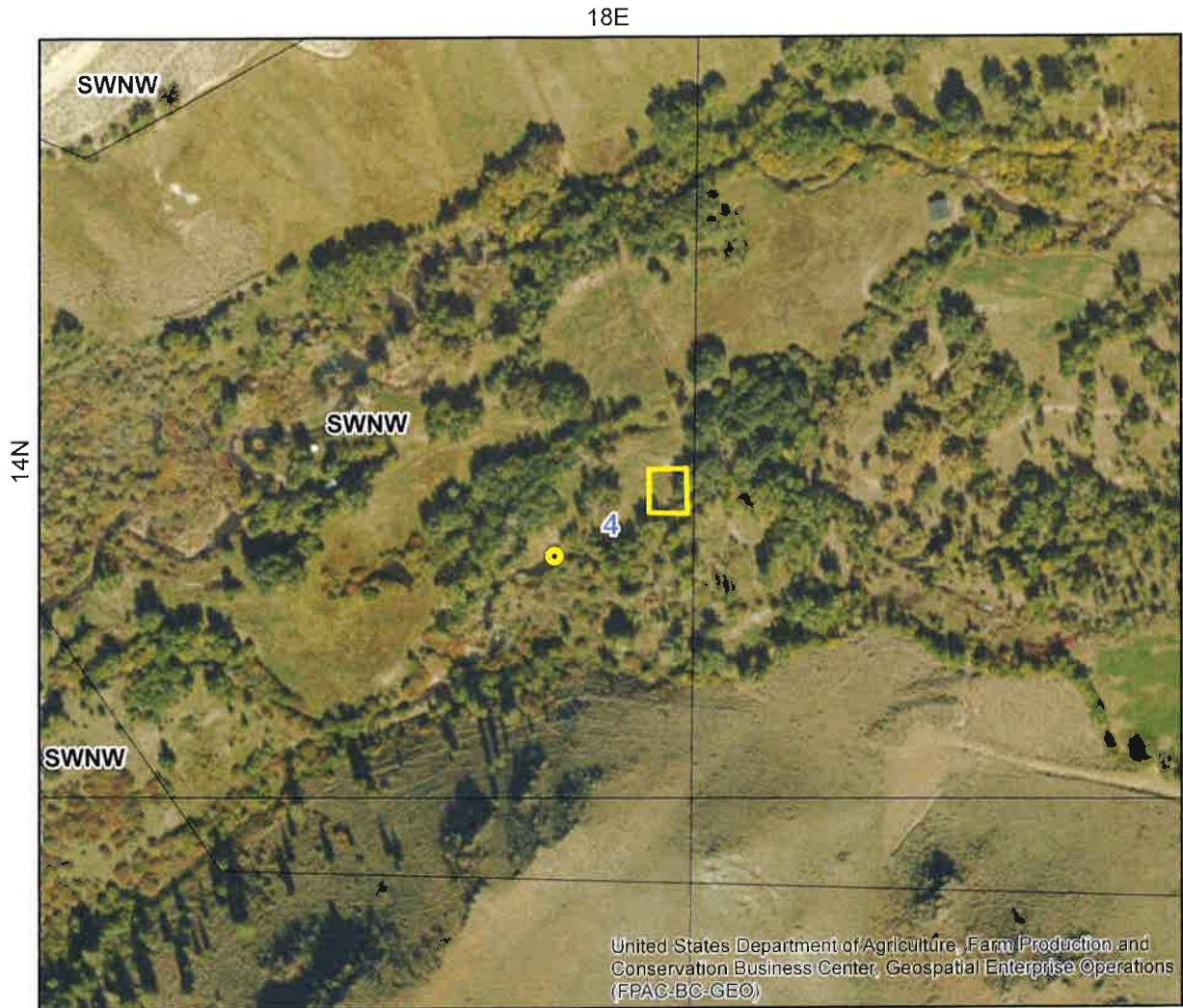
09/30/2024

72-17013



Field Exam 72-17013

State of Idaho
Department of Water Resources
Water Right
72-17013



0 0.035 0.07 0.14 Miles

-  Place Of Use Boundary
-  Point of Diversion
-  State Outline
-  Townships
-  PLS Sections
-  Quarter Quarters

Field Exam 72-17013



72-17013 POD



72-17013

POU



72-17013

By-pass Pipe

