

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 71-11014
Exam Date: 08/27/2024

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

2. Accompanied by: N/A
Phone No:
Address:
Relationship to permit Holder:

3. **SOURCE:**
WILLIAMS CREEK

Tributary
SALMON RIVER

Method of Determination: On-site inspection

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
POU is contained within the POU's of all the irrigation water rights listed in #2 below			

Comments: _____

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

Water Right No.	Source	Purpose of Use	Basis
71-10149	Williams Creek	Irrigation	Decree
71-2016	Williams Creek	Irrigation	Decree
71-2052	Williams Creek	Irrigation	Decree
71-2053B	Williams Creek	Irrigation	Decree
71-10765	Williams Creek	Irrigation	Decree

Comments: _____

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

WILLIAMS CREEK NE¼ SW¼, Sec. 20, Twp 09N, Rge 14E, B.M. CUSTER County

Method of Determination: On-site inspection

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	
09N	14E	20								X	X								

3. Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
PODID 976054					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Staff Gauge & Measuring Tape						

2. Measurements: 3.25" diameter orifice (0.05761 sf); High water mark was 1.64' above the center of the orifice

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method: Utilized orifice flow equation from an 8/24/2011 memorandum regarding methodology for flow measurements for fish bypass permits:

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

Where C_d = coefficient of discharge for orifice (0.67 was determined to be an appropriate coefficient per memo)

A_o = Area of orifice opening in feet²

G = 32.2 ft per second²

h = measured head above center of orifice opening in feet

$$0.67 \times 0.05761 \text{ sf} \times [2(32.2 \text{ fps}^2)(1.64')]^{1/2} = 0.39667 \text{ cfs} \approx 0.40 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses: Fish Propagation:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Season of Use}) \times 1.9835 = (0.4 \text{ cfs}) \times (184 \text{ days}) \times 1.9835 = 146 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

On 8/27/2024 I visited the fish screen and headgate for this right to conduct a field exam. I found a functioning fish screen and bypass structure on Williams Creek. There was 3.25" diameter bypass openings on a slide plate which covered the opening of the bypass pipe that allows juvenile fish to travel back out to the stream. The head measured above the center of the 3.25" orifice was at 1.64'. Based on the orifice flow equation, there would be approximately 0.4 cfs flowing through the bypass during high water flows.

Recommend licensing 0.4 cfs with a volume of 146 af.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	
FISH PROPAGATION	05/01 to 10/31	0.40 CFS	146 AF

Totals: 0.40 CFS 146 AF

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 X None

I. AUTHENTICATION

Bill Mills - Water Resource Agent, Senior

Field Examiner's Name Bill Mills Date 9-18-2024

Reviewer By Shin Date 9/30/2024



Figure 1: Fish Screen with bypass (notice t-handle on left side where bypass is located)

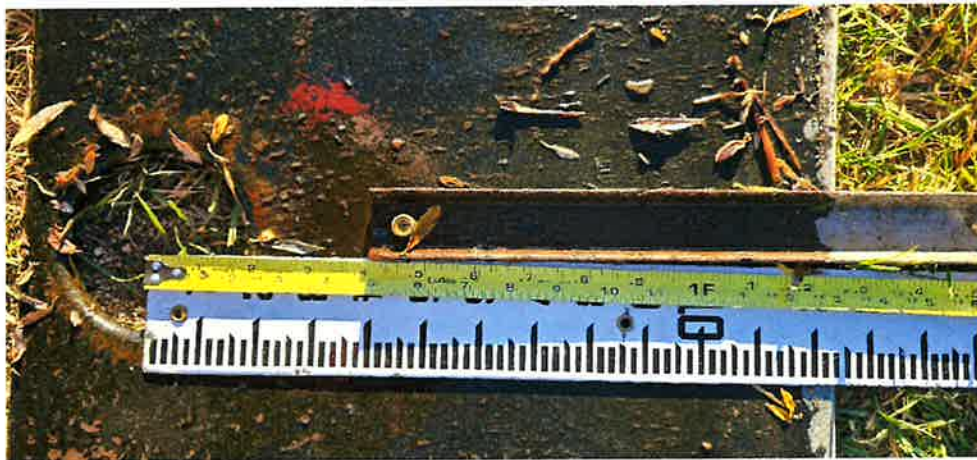


Figure 2: Measuring to High Water Mark (not visible in photo)



Figure 3: Headgate

System Diagram

