

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 75-14825

Exam Date: 11/5/2020

1. Current Owner:
STATE OF IDAHO
DEPT OF FISH AND GAME
PO BOX 25
BOISE, ID 83707-0025

2. Accompanied by: None

3. **SOURCE:**
CARMEN CREEK

Tributary
SALMON RIVER

Method of Determination: Field exam and GIS

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
75-10922	Springs	Stockwater	Decreed

2. Other water rights with the same point-of-diversion:

Water Right No.	Source	Purpose of Use	Basis
75-4337	Carmen Creek	Irrigation	Decreed
75-77A	Carmen Creek	Irrigation	Decreed
75-10061K	Carmen Creek	Irrigation	Decreed
75-10296	Carmen Creek	Irrigation	Decreed
75-14905	Carmen Creek	Irrigation	Decreed
75-14906	Carmen Creek	Irrigation	Decreed
75-14907	Carmen Creek	Irrigation	Decreed
75-14908	Carmen Creek	Irrigation	Decreed

Comments: The purpose of this fish propagation right is to allow IDFG to provide a screened diversion with fish bypass to satisfy the water rights listed above. The installation of the screened diversion authorized by this permit moved the point of diversion for the Brandon Lower Ditch, which services the rights listed above. The point of diversion for those rights was never updated, thus the point of diversion on the water rights no longer represents the physical location of the diversion.

C. DIVERSION AND DELIVERY SYSTEM

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

CARMEN CREEK SE¼ SW¼, Sec. 24, Twp 23N, Rge 22E, B.M. LEMHI County

Method of Determination: Field exam and GIS

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	
23N	22E	24												X					

Method of Determination: Field exam and GIS

D. FLOW MEASUREMENTS

1. Measurements: None taken. The configuration of this diversion does not allow for the direct measurement of only the Fish Propagation portion of the water being diverted.

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method:

The following equation has been used historically by IDWR for similar IDFG fish bypass structures:

$$Q = C_d A_o \sqrt{(2gh)}$$

Where:

Q = flowrate (cfs)

 C_d = coefficient of discharge A_o = Area of orifice opening (ft²)g = gravitational acceleration $\left(32.2 \frac{\text{ft}}{\text{s}^2}\right)$

h = Measured head above center of orifice opening (ft)

The orifice diameter for this structure is 4 inches, which results in $A_o = 0.09 \text{ ft}^2$.

The high water mark measured above the orifice center was 2.1 ft.

The standard coefficient of discharge used by IDWR for similar IDFG diversion structures is 0.67.

$$Q = 0.70 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses: $0.7 \text{ cfs} \times 1.9835 \text{ AF/cfs/day} \times 214 \text{ days/season} = 297 \text{ AF/season}$

G. NARRATIVE/REMARKS/COMMENTS

This diversion structure is similar to many other diversions built by Fish & Game throughout the Lemhi and Salmon River basins to protect fish from entering the irrigating works. The calculated flowrate does not meet the permitted rate. It is recommended the calculated rate replace the permitted rate on the license.

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>	<u>Annual volume</u>
FISH PROPAGATION	04/01 to 10/31	0.7 CFS	297 AF

Totals: 0.7 CFS

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

Brian Normandeau – Associate Engineer

Field Examiner's Name: Brian Normandeau

Date: 12/4/2020

Reviewer _____ Date _____



Photo 1: Diversion on Carmen Creek



Photo 2: Fish screen/bypass approach



Photo 3: Fish screen structure



Photo 4: Fish bypass return to Carmen Creek



Legend

-  Place of Use
-  Point of Diversion
-  Township/Range
-  Sections
-  QQ

0 170 340 680 Feet

1 inch = 250 feet

