

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 74-16225
Exam Date: 06/11/2024

1. Current Owner:
STATE OF IDAHO FISH & GAME COMMISSION
PO BOX 25 BOISE ID 83720
2. Accompanied by: Mike Demick (IDFG)
Phone No: (208) 866-2593
Address: Baker Country Store, Baker, ID (meeting place)
Relationship to permit Holder: IDFG Representative

3. **SOURCE:**
EIGHTEENMILE CREEK

Tributary
LEMHI RIVER

Method of Determination: GARMIN Trex GPS & GIS

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
74-7255	GROUND WATER	IRRIGATION	LICENSE
74-2169	EIGHTEENMILE CREEK	IRRIGATION	DECREED(2009)
74-15668	EIGHTEENMILE CREEK	IRRIGATION	DECREED(2007)

Comments: The only water rights overlapping the permitted place of use (POU) are irrigation rights, a different beneficial use from the permit. As the permitted use non-consumptive and the rate is administered at the headgate so that the permitted volume is diverted in addition to the existing rights there are no concerns regarding any negative impact to existing rights.

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

Water Right No.	Source	Purpose of Use	Basis
74-2169	EIGHTEENMILE CREEK	IRRIGATION	DECREED(2009)
74-15668	EIGHTEENMILE CREEK	IRRIGATION	DECREED(2007)

Comments: The above irrigation rights share the headgate diverting water from the creek along a ditch to the fish screen enclosure about 100yds downstream where most of the water passes through the screen drum into a pipeline to a pump delivering water to the right POUs. As the permitted use non-consumptive (returning the flow to the creek) and the rate can be administered at the headgate so that the permitted volume is diverted in addition to the existing rights supplied by the irrigation ditch there are no concerns regarding negative impact to existing rights.

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

EIGHTEENMILE CREEK L4 (SW¼ SW¼), Sec. 7, Twp 15N, Rge 27E, B.M. LEMHI County

Method of Determination: GARMIN Trex GPS- Headgate N44°38.294 W113°17.597, Fish Bypass N44°38.342 W113°17.603 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	
15N	27E	7											X L4						

Method of Determination: GARMIN Trex GPS and GIS.

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
LEMC-03	NA	NA	NA	NA	NA

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Staff Gauge	Feet to 10 ^{ths}	Unknown	Unknown	Unknown	3.3'	NA

2. Measurements: Total head measured from the center of the orifice, 2 1/2" above the bottom of the fish bypass enclosure.**E. FLOW CALCULATIONS** Additional Computation Sheets AttachedMeasured Method: A staff gauge was used to measure the total head above the center of the 4" orifice in the bypass enclosure.

Formula for Discharge from a Tank:

$$C_d A_o (2gh)^{1/2} = Q \text{ (discharge in cfs)}$$

Where- C_d = coefficient of discharge = 0.67 (based on 2011 Fish Bypass memo) A_o = Area of orifice opening in ft² = $(A = \pi r^2)$ g = 32.2 ft/sec (constant)Orifice diameter = 4" = **0.33ft**Orifice r = **0.165ft** h = Head above the center of the orifice = **2.62 ft from bottom of enclosure - (2.5in. to center of hole/12in/ft) = 2.412ft**est. highwater mark (2' 10") = **approx. 2.83ft - 0.208ft (center of 4" hole) = 2.63ft**

$$A_o = \pi * 0.165^2 = 0.0855 \text{ ft}^2$$

$$\text{(water level)} \quad 0.67 \times 0.0855 \text{ft}^2 (2 * 32.2 * 2.412)^{1/2} = 0.71 \text{cfs}$$

$$\text{(highwater mark)} \quad 0.67 \times 0.0855 \text{ft}^2 (2 * 32.2 * 2.63)^{1/2} = 0.75 \text{cfs (within 10% of full permitted rate)}$$

Coeff x 1.113 = (see table below)

COEFF of DIS.	RATE
0.61	0.68cfs
0.70	0.78cfs
0.80	0.89cfs
0.90	1.00cfs
1.00	1.11cfs

Recommended Rate = 0.80cfs

Comments: In the 2011 memo titled "Basin 71 and 72 IDFG Fish Bypass Permit Files" upstream and downstream measurements recorded at fish bypass sites in basins 71 and 71 were reverse calculated using the formula for discharge from a tank to find a reasonable coefficient of discharge for use in calculating rates at fish bypass installation. The variance in streamflow effecting environment factors (such as gaining or losing reaches) from upstream to downstream measurement sites lend to using a more liberal representation of the coefficient within the standard range (USBR Watermasters Handbook lists the Coeff. of Discharge ranging from 0.61-1.0). Although the coefficient value of 0.67 used in Basin 71 and 72 field examinations results in a calculated discharge rate of 0.75cfs (within 10% of the permitted rate) a standard coefficient of 0.70 is also cited in the 2011 memo, and the median coefficient of 0.81 for the standard range would exceed the permitted rate. I recommend the license is issued for the full permitted rate of 0.80cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses:

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

$$0.80\text{cfs} \times 246 \text{ days (3/15 to 11/15)} \times 1.9835 = 390.4 \text{ AF} \approx 390 \text{ AF}$$

Comments: The fish bypass is designed for use whenever the ditch is in use for the irrigation season. I recommend the license be issued for 390 AF annually, based on usage calculation above.

G. NARRATIVE/REMARKS/COMMENTS

The headgate Idaho Fish and Game (IDFG) identifies as LEMC-03 (photo 1) diverts water from Eighteen Mile Creek into a ditch which flows approximately 100yds to the northwest to a 4'6" wide steel enclosure with a fish screen (figure 1). The bypass and fish screen are to prevent juvenile fish from being trapped in the irrigation ditch. The head within the fish screen enclosure can be adjusted at the second headgate valve downstream of the water wheel (photo 2). The waterwheel mechanically rotates the screen drum to keep it clear of debris. A maximum of 0.80cfs bypasses the screen through a 4" round orifice slip panel in the west side of the enclosure (photo 3) where flow is returned to Eighteen Mile Creek approximately 40ft to the north through a 10" diameter PVC pipe (photo 4). A second orifice downstream of the fish screen is set higher in the enclosure to act as an overflow (photo 5) which returns water to Eighteen Mile Creek through a second 10" diameter PVC pipe running parallel to the fish bypass pipe. At the time of the field examination high flows in the creek were still being returned to the creek through the overflow pipe.

Based on the field measurement and Department processing guidance for fish bypass diversions I recommend the license is issued for the full permitted rate of 0.80cfs and an annual volume of 390 AF. Condition 01H should be replaced with condition R02 at licensing as per current guidance.

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	03/15 to 11/15	0.80 CFS	390 AF

Totals: 0.80 CFS 390 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 Bob Howe - Water Resource Agent

Field Examiner's Name [Signature] Date 7-17-2024

Reviewer [Signature] Date 9-17-24

LEMC-03**STREAM NAME:** Eighteen Mile Creek**SCREEN NAME:** LEM-03**DATUM:** WGS 84**LAT:** 44.639133**LONG:** -113.293487**INSTALLATION TO NMFS:** 2019**DESIGN FLOW (CFS):** 2.2**FLOW AGREEMENT (CFS):** 1.8**TOTAL WATER RIGHTS (CFS):** 1.8**# DRUMS / DIAMETER x LENGTH:** Modular, closed drum; 1 / 18" x 4'6"**ADDITIONAL NOTES:**

VEHICLE ACCESS: Heading from Salmon on Hwy 28, drive to Leadore. Take a left on Hwy 29 (heading up towards Railroad Canyon/Canyon Creek). Take a right heading up the Hawley Creek Road, staying straight on the main road (past LEMC-01). Drive about 3.9 miles staying right of FS Road #275 at the "Y" heading up Hawley Creek. From this "Y", drive almost 1.2 miles and turn right on 2-track. Drive .6 of a mile and turn right on 2 track. Drive about .4 of a mile to fence corner, then along fence road over .4 of mile to gate on left. Continue through gate and drive about .3 to screen.

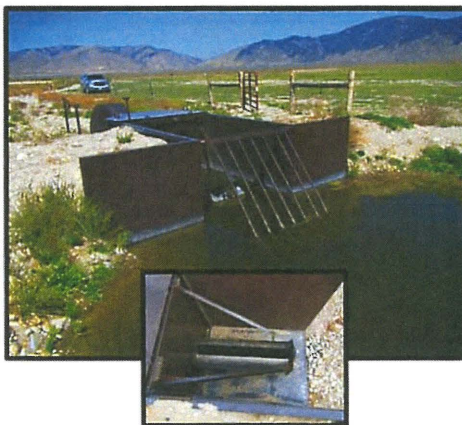


Figure 1- IDFG fish screen specifications for LEMC-03 on Eighteen Mile Creek.

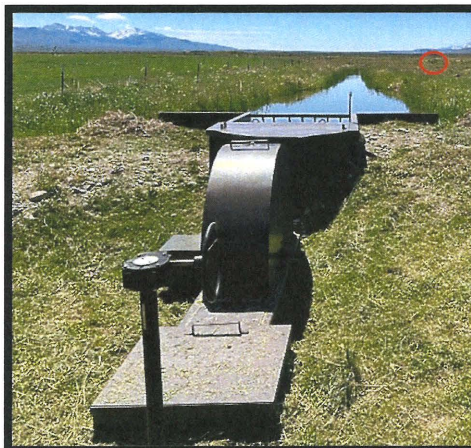
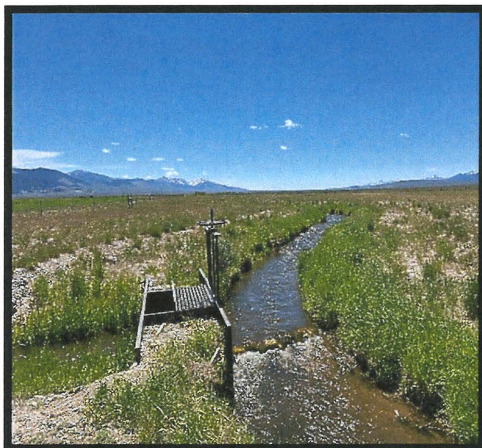


Photo 1- (Left) Facing southeast at the LEMC-03 headgate. **Photo 2-** (Right) Facing southeast at the rear of the fish screen with LEMC-03 at the diversion from the creek in the upper right of the image (circled in red).



Photo 3- (left) Orifice slip panel removed from the right side of the enclosure. **Photo 4-** (Right) 10" PVC bypass pipe with the 10" PVC overflow pipe on the right of it returning flow to Eighteen Mile Creek.



Photo 5- At the center of the image the overflow orifice visible below the fish screen enclosure. The orifice slip panel handle is seen installed on the right side of the screen enclosure.



Figure 2- System diagram (NAIP 2023 imagery)

Howe, Bob

From: Demick, Mike
Sent: Thursday, May 30, 2024 8:55 AM
To: Howe, Bob
Subject: RE: Scheduling Field Examinations for Lemhi Basin 74- Rights 74-16224 to 74-16227

Rob: Let's meet at the Baker Amish Store located 9 miles south of Salmon on Highway 28. When you're done with your 8 am exam, call/text me (208-866-2593) and I'll be there in 15 minutes.

From there, we can drive up Pratt Creek and completed those two exams. We probably should take 1 vehicle to those screens, as we have to cross private land and there's very little room for turning multiple vehicles around.

The other two fish screens are located from BLM land near Leadore, 50-55 miles south of Salmon. Access is easy with lots of room.

Like I mentioned earlier, roads to all these fish screens can be difficult if we have lots of precipitation. Should be fine, but fingers crossed.

Mike

From: Howe, Bob <Bob.Howe@idwr.idaho.gov>
Sent: Wednesday, May 29, 2024 4:33 PM
To: Demick, Mike <mike.demick@idfg.idaho.gov>
Subject: RE: Scheduling Field Examinations for Lemhi Basin 74- Rights 74-16224 to 74-16227

Hi Mike,

I have you scheduled for the Morning of Tuesday June 11, 2024. We are planning to complete the field exams for all 4 Fish Screens, Permits #74-16224, 74-16225, 74-16226, and 74-16227. Please let me know where you would like to meet us in Salmon. That day we have an 8am exam in town but should be available before 10am.

Feel free to reach out with any questions or concerns my office phone is (208)287-4847 and when I am in Salmon, I will be using my cell phone # (208)447-8828.

I am looking forward to seeing you. Thank you for your time and assistance in this matter.

Best Regards,

Bob Howe

 IDAHO DEPARTMENT OF
WATER RESOURCES
Bob Howe | Water Resource Agent
322 E Front St, PO Box 83720, Boise, ID 83720
(208) 287-4800 | www.idwr.idaho.gov

From: Demick, Mike <mike.demick@idfg.idaho.gov>
Sent: Thursday, May 2, 2024 4:52 PM
To: Howe, Bob <Bob.Howe@idwr.idaho.gov>
Subject: RE: Scheduling Field Examinations for Lemhi Basin 74- Rights 74-16224 to 74-16227

Bob: Right now, I'm available for the site visits anytime on June 11, 13 or 14th. Just let me know.

Canyon and 18-mile Creek fish screens are near Leadore (1 hour from Salmon), and the 2 Pratt Creek Screens are southeast of Salmon about 30 minutes. The roads to all screens can be muddy, depending on precip.

Mike

From: Howe, Bob <Bob.Howe@idwr.idaho.gov>

Sent: Thursday, May 2, 2024 3:55 PM

To: Demick, Mike <mike.demick@idfg.idaho.gov>

Subject: Scheduling Field Examinations for Lemhi Basin 74- Rights 74-16224 to 74-16227

Hi Mike,

Please read through the attached letter being sent out today. Please note that the paper documents will be mailed to the address on the right files. I am planning a trip to Basin 74 for license Examinations on the week of June 10th to June 14th. Four IDFG Fish Screen (Fish Propagation) rights need to be scheduled for a day during that week, if at all possible. Please let me know what day(s) someone can be available if needed for the examinations to be conducted. I am trying to schedule with specific times and dates as soon as possible, but will it will be dependent on the responses received. Thank you for your time and attention in this matter.

Best Regards,

Bob Howe

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Governor Brad Little

Director Mathew Weaver

May 2, 2024

STATE OF IDAHO FISH & GAME COMMISSION

Attn: MIKE DEMICK

PO BOX 25

BOISE, ID 83707-0025

RE: Scheduling Field Exam for Water Right Permit Nos. 74-16224, 74-16225, 74-16226, & 74-16227

Dear Permit Holder:

We are planning to conduct water right examinations in the vicinity of the above-referenced permit **on the week of June 10 to June 14, 2024**. An examination is needed to verify the water use in order to issue water right licenses.

The above-referenced permits each authorize **0.80 CFS** from **Canyon Creek (74-16224), Eighteen Mile Creek (74-16225), and Pratt Creek (74-16226 & 74-16227)** tributary to the Lemhi River for **Fish Propagation** use. **If you have developed a beneficial use and still own the place of use property, please contact me at your earliest convenience to schedule an examination.**

If you did not develop a beneficial use of water under the permit during the beneficial use period, a license cannot be issued and the permit should be relinquished. If that use was developed, but have ceased using the water and you currently carry no interest in it, please relinquish the permit by submitting the enclosed Relinquishment of Permit form (no fee required).

If you did develop a beneficial use of water under the permit, but you no longer own the place of use property identified in the permit, please submit the enclosed Ownership Change form with the applicable \$25 processing fee.

Please contact me within the next thirty (30) days at (208) 287-4847 to either schedule an examination or submit a relinquishment or assignment form. If you no longer own the place of use property and/or do not respond to this letter, the department will work with the current property owner to issue a license or void the permit.

Sincerely,



IDAHO DEPARTMENT OF
WATER RESOURCES

Bob Howe | Water Resource Agent

322 E Front St. PO Box 83720, Boise, ID 83720

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Enclosures: Relinquishment of Permit form
Change of Ownership form
Water Permit Reports and Maps