

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Exam Date: 04/15/2024

1. Does this qualify for an in-office field exam (IDAPA 37.03.02.035.01.r)? X Y ___ N

- a. X Irrigation of 5 acres or less
b. ___ Storage of up to 14.6 AF for stockwater purposes only
c. ___ Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less.
d. ___ Other < >

2. Current Owner: **EWERS RETREAT LLC**

Owner of Record Correct? ___ N

Address of Record Correct? ___ N

If No Explain:

3. Beneficial Use Fees have been paid: X Y ___ N Receipt No: C118115

4. Source: Tributary:

LAKE PEND OREILLE**PEND OREILLE RIVER**Method of Determination: Bonner County Maps, GIS, and Tax Lot Data.Change in Source: ___ Y X N**B. OVERLAP REVIEW**1. Other water rights with the same place of use: X No Overlap

Water Right No.	Source	Purpose of Use	Basis
NONE	NA	NA	NA

Comments: There are no irrigation rights overlapping the permit POU.2. Other water rights with the same point of diversion: X NO Overlap

Water Right No.	Source	Purpose of Use	Basis
NONE	NA	NA	NA

Comments: There are no rights sharing the permit point of diversion (POD).**C. DIVERSION AND DELIVERY SYSTEM**

1. Location of Point(s) of Diversion:

Source	Govt. Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.		County
Lake Pend Oreille	4		NW	SW	33	57N	01W	B.M.	BONNER

Method of Determination: GIS and Tax lot data.Change in POD? ___ Y X N Amendment Required? ___ Y X N

2. Place of Use: IRRIGATION

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
57N	01W	33										0.1						0.1	
		Lot #										4							
Total Acres =																	0.1		

Method of Determination: Bonner County Maps, GIS, and Tax Lot Data.Change in POU? ___ Y X N Amendment Required? ___ Y X N

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

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).

___ Photo of Diversion and System Attached

3. Diversion Id No.*	Motor Make	HP	Pump Model	Pump Make	Pump Serial No. or Discharge Size
Screened inlet in lake	Unknown	1 ½	Unknown	Unknown	Unknown

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

D. FLOW MEASUREMENTS

1. Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE	NA	NA	NA	NA	NA	NA

2. Measurement Comments: The permit holder stated on the statement of completion that the system operates on a 1 ½ Hp pump. A maximum head of about 40 ft was estimated to the licensed POU using the DRG map.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

A theoretical calculation and Administrative Memo #17 were used to determine a reasonable rate of diversion.

$$Q = (1.5 \text{ Hp})(8.8)(0.80 \text{ efficiency}) / (40 \text{ ft lift}) + (2.31)(45 \text{ psi}) = 0.07 \text{ cfs}$$

Theoretical Calculation = 0.07 cfs

Permit allowed = 0.03 cfs

Recommendation = 0.01 cfs

BU Limit = 0.01 cfs

Comments:

Approximately 0.1-acre of irrigation was measured via GIS aerial imagery. A phone call to the permit holder Matt Ewers, April 15, 2024, who confirmed the irrigated areas via email. The system was described in the system map included with the Statement of Completion as a 1 ½ Hp pump, which delivers water to the sprinkler system for irrigation.

The theoretical calculation determined approximately 0.07 cfs is possible with a 1.5 Hp pump. According to Administrative memo #17 up to 0.03 cfs per acre is standard for the irrigation of up to 5 acres. The confirmed irrigated POU is approximately 0.1 acres. I am recommending a diversion rate of 0.01 cfs for the license, as per Administrative Memos 17 & 6.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{0.1\text{-acre} \times 3.0 \text{ AF} = 0.3 \text{ AF}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{0.01 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 4.3 \text{ AF}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{0.3 \text{ AF}}$$

Comments:

As the POU is less than 1 acre condition X31 should remain on the license stating an annual volume 0.3 AF for the irrigation of 0.1-acre, as per the headgate calculation above.

G. PURPOSE OF USE

Irrigation X Y N # Stock NA Domestic # of Homes NA

Change in Purpose of Use? Y X N

Method of Determination: Bonner County Maps, GIS, and Tax lot Data

H. NARRATIVE/REMARKS/COMMENTS

This permit for the irrigation of 0.5-acre qualifies for an in-office examination for license. The permit holder submitted the Proof of Beneficial Use, received by IDWR on April 8, 2024, stating in section #3 that the beneficial use was developed for 0.25 acre of irrigation. I was able to confirm approximately 0.1-acre of irrigation was developed using aerial imagery (see figures 1 & 2), an emailed description of the irrigated area, and the map submitted with the Statement of Completion. The permit holder confirmed that his property extends past the wet dock in the southeast corner of the POU. The imagery and parcel layers are misaligned in the local GIS data. Imagery with a GIS measurement was emailed to the permit holder to clarify the areas irrigated. The area is bound on the east and west by paver paths between the docks, fire pit, and home. The confirmed areas of irrigation were less than 0.1-acre (Figures 3 & 4), but the measurement is rounded to the nearest tenth acre, as per Administrative Memo #6.

A theoretical calculation confirmed that the pump could deliver the rate on the permit. The irrigation place of use confirmed for the license is less than 0.1-acre. I am recommending the license be issued for a rate of 0.01cfs, as per Administrative Memos #17 and #6. I am recommending the license be issued for an annual volume of 0.3 AF for the irrigation of 0.1-acre, based on the field headgate calculation in section F of this report.

I recommend the license be issued with conditions X31& 004. Condition 029 should be removed from the license as the permit holder confirmed that there is a screen installed at the intake.

Have conditions of permit approval been met? X Yes No

I. RECOMMENDATIONS**1. Recommended Amounts:**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/01 TO 10/31	0.01 CFS	0.3 AF
	<u>Totals:</u>	0.01 CFS	0.3 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

Other: < >

J. AUTHENTICATION- Bob Howe- Water Resource Agent

Field Examiner's  Date 4/22/24

Reviewer  Date 4/22/24



Figure 1- Bonner County GIS- imagery of the parcel appurtenant to the permit POU and neighboring parcels. Note, several boundaries run through homes, the imagery is offset to the parcel lines.



Figure 2- Bonner County GIS- imagery- Irrigated POU is visible east of the paver path from the northeast corner of the home to the dry dock to the north. The area is bounded on the west by a paver path running from the wet dock to the dry dock and the fire pit area.



Figure 3-Bonner County GIS-imagery measurement of the irrigation POU described by the permit holder. The area along the rip rap at the shore has a paver path from the wet dock to the dry dock, and there is no irrigation further west than the paver path from the house to the dry dock.



Figure 4- GIS 2023- imagery- The irrigation POU is outlined in blue. The POD is indicated by a blue point. The permit holder confirmed that the areas west of the paver path and the area along the shoreline between the docks are not irrigated.