

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

A. GENERAL INFORMATIONExam Date 12/05/20231. 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: NICK SORANI

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: C117273

4. Source: Tributary:

LAKE PEND OREILLE

PEND OREILLE RIVER

Method of Determination:

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 rights overlapping the permit place of use (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
Inlet in Lake Pend Oreille	4		NW	SW	33	57N	01W	B.M.	BONNER

Method of Determination: GIS and Taxlot 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										0.3							0.3
		Lot #										4							
Total Acres =																			0.3

Method of Determination: Bonner County Maps, GIS, and TAXLOT DATAChange in POU? ___ Y X N Amendment Required? ___ Y X N

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

Indicate weir size/pipe as applicable:

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

X Photo of Diversion and System Attached

3. Diversion Id No.*	Motor Make	HP	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Screened inlet in Cr	Unknown	5.5	Unknown	HD Power Inc.	Model HD3XH, 60m ³ /Hr

*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 did not have pump details, but thought it to be no greater than 1 to 2 Hp. A maximum head of about 40 ft was estimated 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.

$$Q = (0.5\text{Hp})(8.8)(0.80 \text{ efficiency}) / (40 \text{ ft lift}) + (2.31) * (45 \text{ psi}) = 0.02\text{cfs}$$

Theoretical Calculation= 0.02 cfs

Permit allowed = 0.14cfs

Recommendation= 0.01cfs

Comments:

The permit holder submitted a system diagram, which outlined the boundary of the irrigated area and identifying the locations of sprinklers, which he described on a phone call as Rainbird gear drive-rotary sprinklers.

Approximately 0.02cfs is possible with a 1/2 Hp pump. According to Administrative memo #17 up to 0.03cfs per acre is standard for the irrigation of up to 5 acres. I am recommending a diversion rate of 0.01cfs for the license.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.3 \text{ acre} \times 3.0 \text{ AF} = 0.9 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.01\text{cfs} \times 213 \text{ days} \times 1.9835 = 4.2 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 0.9 \text{ AF}$$

Comments:

The reported annual volume and area were rounded as per Administrative Memo #6.

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 Taxlot Data

H. NARRATIVE/REMARKS/COMMENTS

This permit for the irrigation of 4.7 acres qualifies for an in-office examination for license. The permit holder submitted the Proof of Beneficial Use, received by IDWR ON November 3rd, 2023. It was noted in previous correspondence on file that the beneficial use due date on the permit or October 1, 2023, is an error as the permit holder requested 1 year to develop the use and the permit was issued October 3, 2023. The actual proof due date was corrected to October 1, 2024.

In section 5 of the proof of beneficial use the permit holder described the system as a submersible pump delivering water through a 3/4" PVC line to 4 lines approximately 40' long with 4 sprinklers each, which irrigates the lawn area. In section 3 the permit holder stated the extent of use developed is approximately 1/2 acre of irrigation. The documents submitted with the proof of beneficial use included a map of the irrigated area with a diagram of where the water lines and sprinklers are located. Aerial imagery including Bonner County GIS and Google Earth (see figures 1-3) indicated approximately 0.3 acres of developed lawn area. I called the permit holder December 4, 2023, inquiring about the area irrigated and the permit holder agreed that the actual area irrigated is approximately 1/3 of an acre and confirmed that the irrigated area shape and sprinkler locations hand drawn on the map submitted are accurate. He explained that the sprinklers are all Rainbird gear drive rotating sprinklers, which provides the irrigation of the outlined area, including under and around the trees in the yard.

A theoretical calculation supports that even the smallest 1/2 Hp submersible pump is capable of providing the 0.01cfs rate standard for the irrigation of 0.3 acres (as per Administrative Memos #17 and 6). The headgate standard is 3AF/acre for basin 96. A headgate calculation was used to determine an acceptable annual volume of 0.9 AF.

I am recommending the license be issued with a rate of 0.01cfs, an annual volume of 0.9 AF and conditions 004, X31, and X60. Condition R66 should be replaced with condition X31, the irrigated area is less than 1 acre. Condition 029 should be removed, the permit holder stated in section 6 of the proof of beneficial use that a fish screen is installed at the intake.

Have conditions of permit approval been met? ☒ 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	0.01CFS	0.9 AF
	<u>Totals:</u>	0.01CFS	0.9 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

Other: < >

J. AUTHENTICATION- Bob Howe- Water Resource Agent

Field Examiner's



Date

12/21/23

Reviewer



Date

12/21/23



Figure 1- Bonner County GIS- image of the north end of the parcel with lawn area identified in the map submitted with the proof of beneficial use.

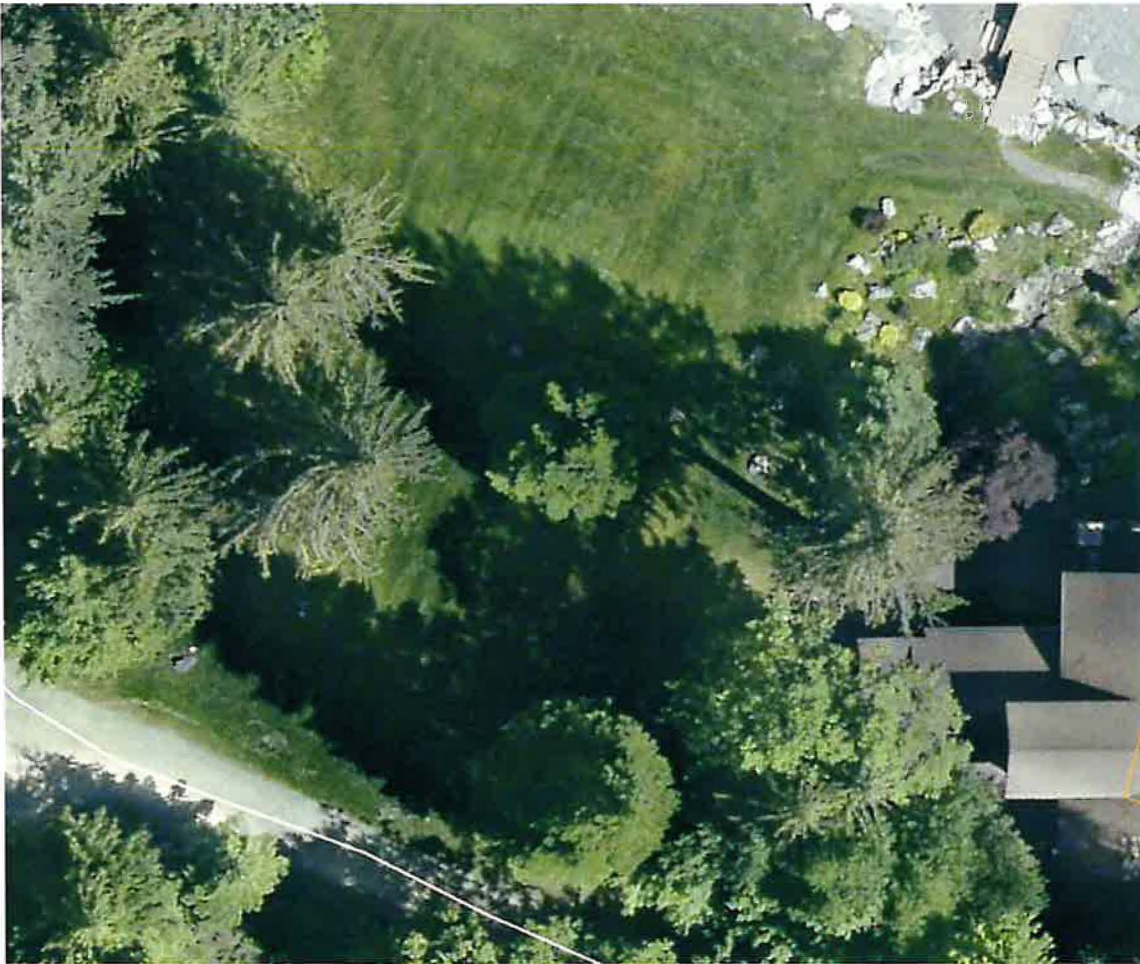


Figure 2- Bonner County GIS- Zoomed in images were used to confirm irrigation evidence in the areas shaded by trees.



Figure 3- Google Earth 2022- Image of the north end of the appurtenant parcel. Lawn areas are evident in areas shadowed in other imagery.