

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

A. GENERAL INFORMATIONExam Date: 12/20/2024

1. Does this qualify for an in-office field exam (IDAPA 37.03.02.035.01.r)? X Y N
- a. Irrigation of 5 acres or less
b. Storage of up to 14.6 AF for stockwater purposes only
c. X Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
d. Other < >
2. Current Owner: Nathan Pettit
Owner of Record Correct? X Y N
Address of Record Correct? X Y N
If No Explain:
3. Beneficial Use Fees have been paid: X Y N Receipt No: C119474
4. Source: Pend Oreille River Tributary: Columbia River

Method of Determination: GIS, Idaho Tax Parcel Data, and the permit holders Statement of Completion for Proof of Beneficial Use.

Change in Source: Y X N

B. OVERLAP REVIEW

1. Other water rights with the same place of use: No Overlap

Water Right No.	Source	Purpose of Use	Basis
96-8823	Groundwater	Domestic, Irrigation	License

Comments: Water Right (WR) 96-8823 overlaps the permitted place of use (POU). The WR does authorize irrigation but diverts from a different source and is not connected to the 96-9775's diversion system. Therefore, there is no reason to limit this permit with the overlapping right when combined.

2. Other water rights with the same point of diversion: X No Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A			

Comments: No other water rights or adjudication claims overlap the permitted point of diversion (POD).

C. DIVERSION AND DELIVERY SYSTEM

1. Location of Point(s) of Diversion:

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Pend Oreille River	9	SW	SE	SE	31	57N	02W	B.M.	Bonner

Method of Determination: GIS and Idaho Tax Parcel Data.

Change in POD? Y X N Amendment Required? Y X N

2. Place of Use: Domestic

TWP	RGE	Sec	NE				NW				SW				SE			
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE
57N	02W	31															D	D
		Lot #															8	9

Method of Determination: GIS, Idaho Tax Parcel Data, 2023 NAIP, and Bonner County Aerial Imagery.

Change in POU? Y X N Amendment Required? Y X N

3. Diversion System Information:

Description: The diversion system consists of a perforated intake from the Pend Oreille River. Water is diverted via a 1.5 hp pump and delivered to a 5-zone sprinkler system with 4-6 heads per zone.

☐ Delivery System Diagram Attached. (mark all major components and distances between components)

☒ Aerial Photo indicating the location of the recommended POD and POU (required).

☒ Additional Aerial Photo.

☐ Photo of Diversion and System Attached

3. Diversion Id No.*	Motor Make	HP	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
N/A					

*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
N/A						

2. Measurement Comments: The permit holder provided a pump horsepower of 1.5 and a lift of 10 ft was determined using Google Earth. Therefore, a diversion rate calculation is possible.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Since the permit holder provided a pump horsepower of 1.5 and a lift of 10 ft was determined using Google Earth a diversion rate calculation was possible. According to the calculation the system can handle an average of 0.09 cfs over three different pressures against the pump, 30, 40 and 50 psi. The permit authorized 0.04 cfs. According to Administrative Application Processing Memo #22 the standard diversion rate for a single domestic use is 0.04 cfs. I am recommending a 0.04 cfs diversion rate.

Diversion Rate Calculation = 0.09 cfs

Administrative Application Processing Memo #22 Standard: 0.04 cfs

Permit allowed = 0.04 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ No Separate Irrigation Use Authorized on the Permit.
I.R.

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

$V = \text{Smaller of } V_{\text{I.R.}} \text{ and } V_{\text{D.R.}} =$ See Above

2. Volume Calculations for Other Uses: The permit authorizes external domestic use only. According to Administrative Application Processing Memo #22 the standard diversion volume for a single external domestic use is 0.6 af for up to 1/2 an acre of yard irrigation. I am recommending a 0.6 af diversion volume.

G. PURPOSE OF USE

Irrigation ☒ Y ☐ N # Stock N/A Domestic # of Homes External Use for One Home

Change in Purpose of Use? ☐ Y ☒ N

Method of Determination: GIS, Idaho Tax Parcel Data, 2023 NAIP Aerial Imagery, 2023 Bonner County Aerial Imagery, and the permit holders Proof Statement.

H. NARRATIVE/REMARKS/COMMENTS

This permit qualifies for an in-office examination. According to Idaho Tax Parcel Data the property was developed in 2020. The permit authorizes external domestic use including up to ½ an acre of yard irrigation in association with one home. According to 2023 NAIP and Bonner County Aerial Imagery up to ½ an acre of yard irrigation was developed. The diversion system consists of a perforated intake pipe in the Pend Oreille River diverted by a 1.5 hp pump. Water is pumped to a 5-zone sprinkler system with 4-6 sprinklers per zone. A condition on the permit requires the permit holder to install a fish screen on their pump intake meeting the fish screening and passage requirements of the Idaho Department of Fish and Game. According to the permit holder's application for permit the pump intake is perforated and meets fish screening requirements.

Since the permit holder provided a pump horsepower and a lift could be determined using Google Earth a diversion rate calculation was possible. According to the calculation the diversion system can handle 0.04 cfs authorized on the permit. On average, over three different pressures against the pump, the system could handle 0.09 cfs. The standards set in Administrative Application Processing Memo #22 aided in determining a diversion rate and volume recommendation. All of the conditions have been met and development of beneficial use was confirmed within authorization on the permit. Therefore, I am recommending a 0.04 cfs diversion rate and 0.6 af diversion volume.

Conditions 239, 187, and 004 should remain on the license. Condition 029 should be removed because the permit holders confirmed they installed a fish screen on their pump intake meeting the fish screening and passage requirements of the Idaho Department of Fish and Game. Condition 26A should be removed as is standard with licensing.

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>
Domestic	04/01-10/31	0.04 CFS	0.6 AF
	<u>Totals:</u>	0.04 CFS	0.6 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

J. AUTHENTICATION

Field Examiner: Skyler Cheever – Water Resource Agent, Sr – State Office

Field Examiner's  Date 12/20/2024
Reviewer  Date 8/19/25

Field Exam Map

Map showing the authorized point of diversion (yellow point) and place of use (orange outline).



2023 Bonner County Aerial Imagery

96-9775 2023 Aerial Imagery



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 97-9775
 Examiner: Skyler C
 Date of Field Exam: 12/20/2024

	Option 1	OPTION 2	OPTION 3	
P/D No.:				
PUMP HORSEPOWER	1.5	1.5	1.5	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	10	10	10	
DISCHARGE PRESSURE	30	40	50	
FRICTION	0	0	0	
RATE OF FLOW (cfs)	0.12	0.09	0.07	AVE
(gpm)	52.3	40.5	33.0	0.09

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

Lift was determined using Google Earth. Hp was provided by the permit holder on their statment of Completion for Proof of Benefical Use.