

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

A. GENERAL INFORMATIONPermit No: 97-7617

Exam Date: 8/3/2022

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. Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - d. Other < >
2. Current Owner: Name: John Holzer
- Owner of Record Correct? X Y N
- Address of Record Correct? Y N
- If No: Address

The Department's parcel data shows John and Cyndi Holzer as the owners of the property. I don't see any issues with the ownership of this property.

3. Beneficial Use Fees have been paid: X Y N Receipt No: C113557
4. **SOURCE** **TRIBUTARY**
- Pend Oreille River Columbia River
- Method of Determination: GIS and Tax Parcel Data
- Change in Source: Y X N

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis

Comments: There are no other water rights in this area.

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

Water Right No.	Source	Purpose of Use	Basis
96-9852	Ground Water	Domestic	Permit

Comments: Permit 96-9852 is a domestic right owned by Swan Shores II Homeowner's Association Inc. This right provides the domestic use for the property. It appears from the aerial imagery, the only domestic use is for a trailer that is parked on this property.

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	5		SW	NE	34	57N	3W	B.M.	Bonner
								B.M.	
								B.M.	

Method of Determination: GIS and Tax Parcel Data.Change in POD? X N Amendment Required? X N**2. PLACE OF USE:** Use: Domestic and stockwater

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	3W	34			0.3														
		Lot #			5														
Total Acres =																			

Method of Determination: GIS and Tax Parcel DataChange in POU? X N Amendment Required? X N 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). Photo of Diversion and System Attached

4. Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
River Pump	Unknown	1.5			1 inch

*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						

2. Measurements: No measurement is required for an in-house exam.**E. FLOW CALCULATIONS** Additional Computation Sheets Attached

Measured Method:

There was information submitted with the *Statement of Completion for Submitting Proof of Beneficial Use* ("Proof") the states the pump used was a 1.5 Hp pump and the discharge pipeline was a 1-inch PVC pipeline. Administrative Processing Memorandum #17 allows 0.03 cfs per acre. The permit allowed 0.01 cfs.

Theoretical Calculation = $[0.70 \times 1.5 \text{ Hp} \times 8.8] / [20 \text{ ft lift} + (50 \text{ psi} \times 2.31)] = 0.14 \text{ cfs or } 63 \text{ gpm}$

Please Note: The plasticranger.com website has flow charts for 1 inch Schedule 40 and 80 pipelines shows rating for a 1-inch pipe ranges from 5 to 30 gpm and 1.9 to 11.6 feet per second. Per the Texas Agricultural Extension Service paper for "Calculating Horsepower Requirements and Sizing Irrigation Supply Pipelines", it is recommended to not have more than a 5 feet per second flow to avoid water hammer in a system. This paper also suggests limiting flows in a 1-inch PVC pipeline to 15 gpm. Since this is a sprinkler system, water hammer would cause some serious damage to sprinklers. I believe the designed flow rate didn't exceed 10 to 15 gpm or 3.9 to 5.8 feet per second. A ½ Hp pump using the same data would produce 0.05 cfs or 21 gpm $[(0.70 \times 0.5 \text{ Hp} \times 8.8) / [20 \text{ ft lift} + (50 \text{ psi} \times 2.31)] = 0.05 \text{ cfs or } 21 \text{ gpm}]$, and ¼ Hp pump using the same data would produce 0.02 cfs or 10 gpm $[(0.70 \times 0.25 \text{ Hp} \times 8.8) / [20 \text{ ft lift} + (50 \text{ psi} \times 2.31)] = 0.02 \text{ cfs or } 10 \text{ gpm}]$. I think the permit holder is confused on the pump size he has, so the theoretical is not a good option for determining the flow rate for this permit. The standard system design for a yard sprinkling system is generally around 12 gpm per zone, and the photo of his sprinkler regulation boxes looks like it could be set at 12.5 gpm.

Administrative Memo #17 = 0.03 cfs X 0.1 acres = 0.003 cfs rounded to 0.01 cfs
Permit allowed = 0.01 cfs

I am recommending 0.01 cfs for the irrigation use as limited by the permit even though the system is probably operating at 12 gpm or 0.03 cfs.

VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.1 \times 3.0 = 0.3 \text{ acre-feet}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.01 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 4.2 \text{ acre-feet}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 0.3 \text{ acre-feet}$$

Please Note: No volume is required on a this right according to Idaho Beneficial Use Rule IDAPA 37.03.02.035.01.j.viii.

2. Volume Calculations for Other Uses:

G. PURPOSE OF USE

Irrigation ☐ Y ☐ N # Stock _____ Domestic # of Homes _____

Other: < >

Change in Purpose of Use? ☐ Y ☐ N

Method of Determination: Taxlot data and conversations with owner.

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA _____

H. NARRATIVE/REMARKS/COMMENTS

This permit qualifies for an in-house examination. This permit authorized a water use from Pend Oreille River to Irrigate 0.1 acres. I was able to find 0.1 acres of irrigation and probably a little bit more. The diversion rate was limited to 0.01 cfs, which seems a bit low for this type of use. I would have recommended that the permit holder request 0.03 cfs, since that is the standard for a sprinkler system per zone and what they appear to have developed. Other than the low diversion rate, I didn't find any issues with this permit.

The permit holder provided a photo of the foot valve or fish screen for this system. The permit holder also supplied a copy of the conditional use permit to place a pump in the river.

Conditions 004, X15, X16, and X60 should be carried forward to licensing. Condition R66 should be changed to condition X31 as is standard. No further conditions are required for the licensing of this permit.

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	0.01 CFS	
<u>Totals:</u>		0.01 CFS	

Please Note: No volume is required on a this right according to Idaho Beneficial Use Rule IDAPA 37.03.02.035.01.j.viii.

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 – DANIEL A. NELSON – WATER RIGHT ANALYST 3

Field Examiner's Name  Date 8-4-2022

Reviewer  Date 8/4/22

Field Exam Map:

The yellow border shows the place of use for the domestic use and the yellow point shows the point of diversion. The parcel boundaries are shown by the green border.



Google Earth Elevations Map below shows approximately 20 feet of lift for the pump.

