

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17817
Exam Date: 07/26/2024

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: **William & Susan Perkins**

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: N044775

3. **SOURCE:**
HAYDEN LAKE

Tributary
SINKS

Method of Determination: Kootenai County Maps, GIS, and Tax Parcel Data

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
95-27	HAYDEN LAKE	DOMESTIC	DECREEED (1973)
95-332	HAYDEN LAKE	DOMESTIC	DECREEED (1973)
95-376	HAYDEN LAKE	DOMESTIC	DECREEED (1973)
95-411	HAYDEN LAKE	DOMESTIC	DECREEED (1973)
95-483	HAYDEN LAKE	DOMESTIC	DECREEED (1973)

Comments: The only overlapping rights are domestic use and the permit holder stated that they use a separate filtered pump system for internal domestic uses only. There are no irrigation rights overlapping the permit place of use (POU).

2. Other water rights with the same point-of-diversion: 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 SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

HAYDEN LAKE SW¼ NW¼, Sec. 3, Twp 51N, Rge 03W, B.M. KOOTENAI County

Method of Determination: Kootenai County Maps, GIS, and Tax Parcel Data

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N	03W	3							0.1										0.1

Total Acres: 0.1

Method of Determination: Kootenai County Maps, GIS, and Tax Parcel Data

3.

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

X 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.

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

X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Model #	Pump Make	Pump Serial No. or Discharge Size
Screened lake Inlet	Utilitech	1	UT100USP	Unknown	Unknown

D. FLOW MEASUREMENTS

1.

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

2. Measurements: The permit holder stated that the system uses a 1.0 Hp pump (photo provided). A maximum head of about 55ft was estimated to the POU based on the well drillers log and DRG map. No measurement is required for an in-house exam, but a theoretical calculation and Administrative Memos #17 & 6 were used to determine a reasonable diversion rate.

E. FLOW CALCULATIONS

Measured Method: _____ Additional Computation Sheets Attached

$$Q = (1\text{Hp})(8.8)(.80 \text{ efficiency}) / (55 \text{ lift in ft}) + (2.31) * (40 \text{ pressure psi}) = 0.05\text{cfs}$$

Theoretical Calculation = 0.09cfs

Permit allowed = 0.01cfs

BU limited rate = 0.01cfs

Recommendation = 0.01cfs

Comments: Approximately 0.1-acre of irrigation was measured via GIS aerial imagery. A phone call to the permit holder William "Bill" Perkins on July 26, 2024, who confirmed the irrigated areas. The system was described by the permit holder as a 1Hp pump, which delivers water via a 5/8" garden hose to a portable sprinkler used throughout the permit POU.

The theoretical calculation determined approximately 0.05cfs is possible with a 1Hp pump. According to Administrative memo #17 up to 0.03cfs 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 0.01cfs for the license, as per Administrative Memos 17 & 6.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

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

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.01\text{cfs} \times 246 \text{ days} \times 1.9835 = 4.9 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 0.3 \text{ AF}$$

2. Volume Calculations for Other Uses:

The POU was rounded to 0.1 AF, as per Administrative Memo #6 requiring the reportable rate be rounded to the tenths place. I recommend the license be issued with 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 0.2-acre qualifies for an in-office examination for license. The Proof of Beneficial Use was received by IDWR on June 21, 2024, stating in section #3 that the beneficial use was developed for domestic use in 1 home and 0.2-acre of irrigation. I was able to confirm approximately 0.1-acre of irrigation was developed using aerial imagery (Figures 1 & 2) and a photo of the seedlings and bushes on the north side of the house (photo 3), submitted by the permit holder. The permit holder confirmed that no domestic use is occurring under this permit and the only irrigation is in the area between the house and lake and along the swale on the north side of the house. The Kootenai County Maps imagery provided a clear view of the house, dock and stairs between the dock and landing around the home in early 2023.

A theoretical calculation confirmed that the pump (photos 1 & 2) can deliver the rate on the permit. The irrigation place of use confirmed by the permit holder was measured using GIS to be less than 0.1-acre but was rounded up for reporting as per guidance. I recommend the license be issued for a rate of 0.01cfs, as per Administrative Memos #17 and #6. I recommend the license be issued with a maximum 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.

The permit holder confirmed that a fish screen is installed on the intake hose. I recommend the license be issued with conditions X15, X31, 01R, R05, & 004. Condition 26A should be removed at licensing as per current guidance. Condition R66 should be replaced with condition X31 at licensing as the irrigation POU is less than 1 acre.

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>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/15 to 11/15	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

I. AUTHENTICATION Bob Howe - Water Resource Agent

Field Examiner's Name Bob Howe Date 8/1/24

Reviewer PH Date 8/12/24



Figure 1- GIS NAIP, 2023 Imagery of the irrigation place of use (outlined in blue) and point of diversion (blue Point).



Figure 2- GIS NAIP, 2021 Imagery of the irrigation place of use (outlined in blue) and point of diversion (blue point).



Figure 3- Kootenai County Maps 2023 Imagery of the parcel appurtenant to the permit.



Photo 1- (above) 1 Hp pump with hose bib visible in the upper left of image.

Photo 2-(below) Specification tag on pump.





Photo 3- North side of the house with seedlings and grass just getting established. Bushes along the fence from the tree to the rear of the house are being grown to provide privacy between the permit holder and neighbors to the north.