

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

A. GENERAL INFORMATION

Permit No: 95-16809

Exam Date: 11/20/2014

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? ☒ Yes ☐ No

- 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: Tom and Marie Flanagan

Owner-of-Record Correct? ☒ Yes ☐ NoAddress-of-Record Correct? ☒ Yes ☐ No

If No: The Flanagans spend a portion of the year in CA. Mail sent to Post Falls is forwarded.

3. Beneficial Use Fees have been paid: ☒ Yes ☐ No Receipt No: N0308444. **SOURCE**

Spokane River

TRIBUTARY

Columbia River

Method of Determination: Applicant submitted an aerial photo map that outlined POU.

Change in Source: ☐ Yes ☒ No**B. OVERLAP REVIEW**1. Other water rights with the same place of use: Overlap? ☒ Yes ☐ No

Water Right No.	Source	Purpose of Use	Basis
95-14300	Ground water	Domestic	(NIA) Beneficial Use Claim

Comments: The Flanagans also have a domestic well and have filed a claim for the use.

The POU is within the service territory of Green Ferry Water & Sewer District (see WR 95-7557). Because the Flanagan property is served by a domestic well and a leach field provides effluent treatment for the Flanagans and several other properties in this area, it's not clear that the Flanagan's lot is actually served by the district.

2. Other water rights with the same point of diversion: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments:

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	TWP	RGE		County
Spokane River	2		NE	NE	10	50N	5W		KOOTENAI

Method of Determination: The Legal Description in the permit is validated by PLS data and aerial photography.

Change in POD? ☐ Yes ☒ NoAmendment Required? ☐ Yes ☒ No

2. **LOCATION OF POINT(S) OF PLACE(S) OF USE:**

Use: Domestic as 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	
50N	5W	10	D																
			L2																

Method of Determination: A map of the property submitted by the applicant identifies the POU as Spokane riverfront property.

Change in POU? ☐ Yes ☒ NoAmendment Required? ☐ Yes ☒ No

3.

☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.☒ 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
Unknown				Unknown	Unknown

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

The Flanagans operate a small pump which is attached to a pressurized irrigation system.

D. FLOW MEASUREMENTS

1. Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: In-office field exam. No measurements taken**E. FLOW CALCULATIONS**☒ Additional Computation Sheet Attached

Measured Method:

Permit allowed = 0.06 cfs

License recommended for 0.06 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.1 \times 3 = 0.3$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \frac{0.06}{0.6} \times 246 \times 1.9835 = 29.3$$

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

Volume Calculations for Other Uses: standard volume for domestic

G. PURPOSE OF USEIrrigation ☐ Yes ☒ No # Stock _____Domestic # of Homes 1 external use

Other: < >

Change in Purpose of Use? ☐ Yes ☒ No

Method of Determination: Information in the water right file is consistent with aerial photography of the property.

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

H. NARRATIVE/REMARKS/COMMENTS

Permit 95-16809 authorized the diversion from the Spokane River of 0.06 cfs for domestic purposes. Based on the small permitted diversion rate, this permit qualifies for an in-office field exam.

Legal descriptions of the POU and POD were used to locate the property. The available Kootenai County taxlot records show Thomas J Flanagan and Kathleen M Flanagan Revocable Trust as the owner.

A map identifying the property was submitted with the application.

A small pump diverts water from the river to supply a pressurized, 10-head sprinkler system on the Flanagan property. The application stated that the service line is 1-inch diameter which is the standard minimum pipe diameter. Mr. Flanagan stated that the system consists of 2 zones. There are 4 sprinkler heads in one zone, 6 heads in the other.

Overlap review showed that NIA claim 95-14300 for domestic use from ground water is associated with the Flanagans and this property. The location of the domestic well is not known.

I selected the permit POD shape as the POD for the license.

I created the POU shape based on aerial photography. The irrigation is for less than ½ acre. The use qualifies as domestic under §42-111 (1)b and will be limited to 13, 000 gpd.

The Flanagan's and several other property owners in the area share ownership of a leach field to handle their effluent. That property is located on the QQ line between the NENE and SENE in section 10. See the attachment to the permit.

The permit authorized more than the standard rate for a small external irrigation (domestic) use. I have run several scenarios which estimate possible pump sizes and pumping rates. I found that 0.06 cfs can be reasonable. I conferred with Eric Davis (Northern Region) who had drafted the permit. Eric remembered the permit and stated that more than 7 heads required a higher rate. Therefore, I am recommending the higher permitted rate and but the standard volume for the use.

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>
Domestic	01/01-12/31	0.06 cfs	0.6 af
	<u>Totals</u>	0.06 cfs	0.6 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 ☐ Other

Other: < >

I. AUTHENTICATIONField Examiner's Name Michele Edl Date November 20, 2014Reviewer Camela Skaggs Date 11-21-2014

THEORETICAL HORSEPOWER EQUATION WORKSHEET

Water Right No.: 95-16809

Reviewer: Michele Edl

Date of Review: 11/20/2014

P/D No.: Senerio 1 Senerio 2 Senerio 3 To estimate hp at 55% efficiency: $HP = ft\ hd \times Q(gpm) / 2178$
HP est = 0.859091 scenario 1

PUMP HORSEPOWER 1 1.25 1.33 1.002273 scenario 2

BOOSTER HORSEPOWER 0 0 0 1.288636 scenario 3

PING LEVEL 20 20 20

DISCHARGE PRESSURE 30 35 45 minimum pressures: drip = 30 psi; spray type = 40 psi; rotor type = 45 psi

RATE OF FLOW (cfs) 0.054 0.060 0.0519 0.055

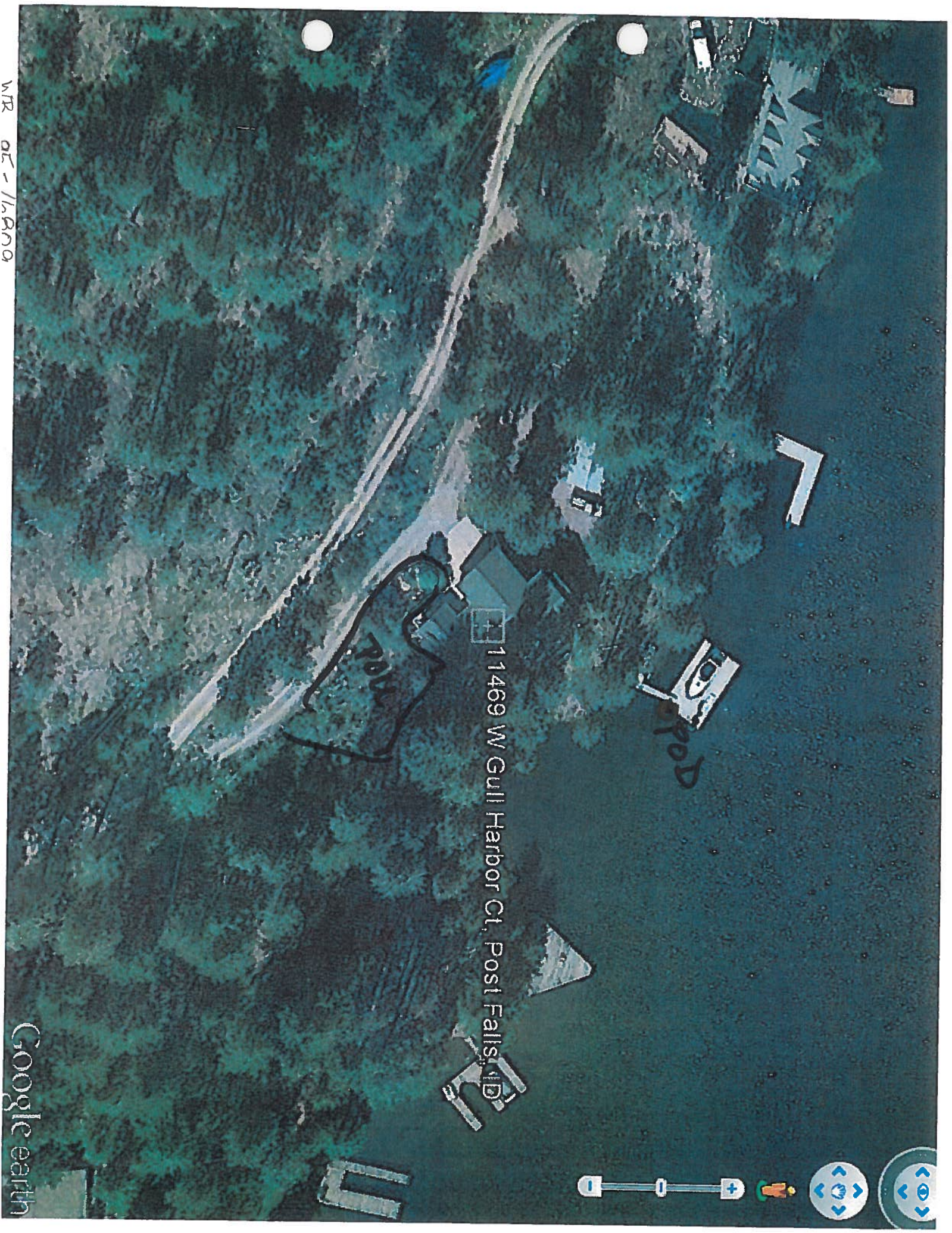
0.06 cfs ~27 gpm

The above calculates the formula = $Q = \frac{8.8 * (Efficiency) * hp}{depth\ to\ water + 2.31 * (psi) + friction}$

Assumptions: 55 efficiency Industry standard is to assume 55% efficiency if nothing is known about the pump
No Friction

Examiners Notes:

To estimate hp assuming 55% efficiency the formula is: $HP\ estimated = ft.\ hd. \times Q(gpm) / 2178$



WR ac-16800

Google earth