

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

A. GENERAL INFORMATION

Permit No: 95-10817

Exam Date: 11/28/2014

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: Engwer Living Trust
- Owner of Record Correct? ☒ Yes ☐ No
- Address of Record Correct? ☒ Yes ☐ No
- If No: Address

3. Beneficial Use Fees have been paid: ☒ Yes ☐ No Receipt No: N030959

4. **SOURCE** **TRIBUTARY**

Ground Water

Method of Determination: Well permit # on application for permit was used to secure drillers report.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

Comments: POU shape shows water right for 0.3 acres matches ownership data for neighbor property to the south..

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

Water Right No.	Source	Purpose of Use	Basis

Comments: No POD overlap.**C. DIVERSION AND DELIVERY SYSTEM****1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
GROUND WATER			NE	SE	34	53N	03W		KOOTENAI

Method of Determination: Legal Description in permit validated by PLS data and mapping.Change in POD? ☐ Yes ☒ NoAmendment Required? ☐ Yes ☒ No

2. **PLACE OF USE:** 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	
53N	03W	34													1.5				1.5

Method of Determination: Map of property submitted by land owner identifies POU clearly. Aerial photography used with ArcMap tools to measure irrigated land area.

Change in POU? ☐ Yes ☒ No Amendment 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
Unk.	Unk	1.5	Unk	Unk	Unk

*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

2. Measurements: In-office field exam. Theoretical flow included in report.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

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

Efficiency = 0.70

Depth to water = 130 ft.

psi = 35-55

hp= 1.5

See attached theoretical sheet.

0.03 cfs/ acre * 1.5 acres = 0.045 cfs

Measurement = 0.04cfs

Permit allowed = 0.12 cfs

License recommend for 0.04 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.5 \times 3.0 = 4.5 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.04 \times 214 \times 1.9835 = 17.0 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 4.5 \text{ af}$$

2. Volume Calculations for Other Uses: None.**G. PURPOSE OF USE**Irrigation ☒ Yes ☐ No # Stock 0 Domestic # of Homes 0

Other: < >

Change in Purpose of Use? ☐ Yes ☒ NoMethod 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 95-10817 authorized the diversion of 0.12 cfs from ground water for irrigation purposes. Because of the small permitted diversion rate and POU, this qualifies for an in-office field exam. The exam was completed on Nov 28, 2014 by WRA Patrick Kelly.

Legal description of POU & POD on the permit were found to be accurate for the property in the name of Engwer Living Trust. A map outlining the POU and POD was submitted with the application for permit was useful in outlining the place of use. Aerial photography of the land shows the region is heavily forested. Only a portion of the property is developed. Place of use was measured with ArcMap tools and I included all areas that appeared to have been irrigated land. This measured out to be 1.5 acres and will become the limiting factor from the 4.0 acres that was applied for.

Overlap review showed another irrigation right within the NESE QQ. The water right is in the name of Stephen Craun, who owns the property directly south of Engwer Living Trust. A well drillers report from the same year as the priority date (1990) was found. Because the WR authorizes 0.3 acres, I am confident that there is no overlap and the beneficial use is for separate uses. I found no information that would suggest an overlap at the point of diversion exists.

A 1.5 hp pump was recorded in application for permit. Pumping level was determined from static water level on well drillers permit. 10 feet was added to account for drawdown in the system. A range of discharge pressures were used under what we would expect to see from small irrigation systems (35-55 psi). Theoretical average flow rate is 0.04 cfs.

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 – 10/31	0.04 cfs	4.5 af
	<u>Totals</u>	0.04 cfs	4.5 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: < >

J. AUTHENTICATION

Field Examiner's Name Patricia Wiley Date 11/28/2014

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Field Exam Map
95-10817

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

03W



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.0225 0.045 0.09 Miles



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-10817
 Reviewer: Patrick Kelly
 Date of Review: 11/28/2014

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	1.5	1.5	1.5
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	130	130	130
DISCHARGE PRESSURE	35	45	55
RATE OF FLOW (cfs)	0.04	0.04	0.04 0.04

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.
 No Friction

Examiners Notes:

A 1.5 hp pump was recorded in application for permit. Pumping level was determined from static water level on well drillers permit. 10 feet was added to account for drawdown in the system. A range of discharge pressures were used under what we would expect to see from small irrigation systems (35-55 psi). Theoretical average flow rate is 0.04 cfs.

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

[illegible]

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE POSTAL DEPARTMENT