

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

A. GENERAL INFORMATION

Permit No: 91-7280

Exam Date: 11/4/2015

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: Betty A Ellis
- Owner-of-Record Correct? ☒ Yes ☐ No
- Address-of-Record Correct? ☒ Yes ☐ No
- If No: <Address>

Available Benewah County taxlot information shows the owner of the property as Betty A Ellis Revocable Trust

3. Beneficial Use Fees have been paid: ☒ Yes ☐ No Receipt No: C100986

4. SOURCE

St Joe River

TRIBUTARY

Coeur D'Alene Lake

Method of Determination: Applicant submitted an aerial photo image of the 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

Comments: Statutory claim and CdA Recommendation 91-4023 is for domestic use on adjacent St Joe Riverside Tract 15 & 16 Those tracts are also owned by Betty A Ellis Revocable Trust.

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 SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	TWP	RGE		County
St Joe River			SW	SE	14	46N	01W	B.M.	BENEWAH

Method of Determination: The legal description in the permit is validated by PLS data and aerial photography. The POD is located within the river channel, not in a government lot.

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

2. **LOCATION OF PLACE(S) 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	
46N	01W	14															.25	.25	.50
																	L6	L8	

Method of Determination: See the image provided with the application. The place of use is St Joe Riverside Tract 17. This tract is bisected by the QQ line between government lots 6 and 8.

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.

The pipe size is unknown. This Ellis pump diverts water from the river and delivers it to Tract 17 only.

☒ 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.		3/4		Sta Rite	Jet pump 1-inch discharge

*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. No measurements taken

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

0.02 cfs = 1 inch per acre (IDWR standard) 0.5 acres x (0.02 cfs) = 0.01 cfs

Per App. Processing Memo #17, up to 0.03 cfs/acre for irrigation of up to 5 acres is acceptable. 0.5 acres x (0.03 cfs) = 0.015 cfs

Calculated standard = 0.015 cfs (rounds to 0.02 cfs)

Permit allowed = 0.04 cfs

License recommended for 0.02 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.5 \times 3 = 1.5 \text{ af}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = .04 \times 231 \times 1.9835 = 18.3 \text{ af}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 1.5 \text{ af}$

Volume Calculations for Other Uses: see change in nature of use discussion below

G. PURPOSE OF USE

Irrigation ☒ Yes ☐ No # Stock _____ Domestic # of Homes none
 Other: < >
 Change in Purpose of Use? ☒ Yes ☐ No
 Method of Determination: Applicant confirmed that no home is currently built on the tract.
 If Yes: From Use Domestic To Use Irrigation Amount _____ CFS _____ AFA

H. NARRATIVE/REMARKS/COMMENTS

Permit 91-7280 authorized a diversion from the St Joe River of 0.04 cfs for domestic purposes in the form of irrigation of a ½ acre. Based on the small permitted diversion rate, this permit qualifies for an in-office field exam.

The legal description of the POU was used to locate the property. Available taxlot information shows that the Betty A Ellis Revocable Trust is owner of Lot 17 in the St Joe Riverside Tracts. The QQ line divides the tract. The east half of the tract is in PLSS gov't lot 8, (SESE) while the west half is in PLSS gov't lot 6 (SWSE).

The Betty A Ellis Revocable Trust also owns tracts 15 and 16 of the St Joe Riverside Tracts. According to the permit holder, each tract has its own POD and pump.

I assumed that this pump intake had appropriate fish screening.

I created the POD shape based on the Permit POD shape. The POD appears to be located in the river channel rather than in any government lot but is nearest to Tract-Lot 17 of the St Joe Riverside Tracts. An amendment is not needed to remove a government lot from the legal description.

A map identifying the POU was submitted with the application. However, that map identified the entirety of Tract 17 as the POU which is more than ½ acre. On the tract there is a portable shed, but no home at this time. I created the ½ acre POU shape based primarily on taxlot information. Available 2015 imagery doesn't clearly show which ½ acre of tract 17 was irrigated.

Although a home is not constructed on this tract, Betty Ellis anticipates selling Tract 17 separately and was advised to establish a separate water right for the tract.

The permit authorized the standard rate for a domestic use in the form of irrigation associated with a home. There is irrigation but not a home. The permit will need to be amended to change the use from domestic to irrigation.

Change in Nature of Use from Domestic to Irrigation

The permit implied 0.5 acre irrigation as the only consumptive use. The consumptive use is 2 af/ac in this area. The consumptive use volume calculation $0.5 \text{ ac} \times 2 \text{ af/ac} = 1 \text{ afa}$. However, the permit also implied that the total domestic volume would be 1.2 afa.

The standard rate and volume calculations appear in sections E & F respectively.

The table below summarizes the calculations and the license recommendations for the change in use.

	Rate (cfs)	Volume (af)	Acre
Implied by permit	0.04	1.2	0.5
Standard irrigation calc	0.02 (see section E above)	1.5 (see section F above)	0.5
Consumptive use calc	N/A	1.0 (= 2af/ac x 0.5 ac)	0.5
License	0.02	1.2	0.5

Have conditions of permit approval been met? ☒ Yes ☐ No

I. RECOMMENDATIONS**1. Recommended Amounts**

BENEFICIAL USE	PERIOD OF USE	DIVERSION RATE	ANNUAL VOLUME
Irrigation	03/15-10/31	0.02 cfs	1.2 AF
<u>Totals</u>		0.02 cfs	1.2 AF

Because this is a diversion out of a river, no volume is required for the license pursuant to BU Exam Rule 35 j.

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: nature of use

I. AUTHENTICATION

Field Examiner's Name Michele Edl Date November 4, 2015

Reviewer Camila Steigler Date 11-5-2015



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 91-7280
 Reviewer: Michele Edl
 Date of Review: 10/28/2015

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	0.75	0.75	0.75
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	10.0	10.0	10.0
DISCHARGE PRESSURE	35	45	55
RATE OF FLOW (cfs)	0.05	0.04	0.03 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:

Horsepower was given by the applicant. Lift was estimated by the applicant and is from the pump location in the river to the irrigation level of the property. Discharge pressure ranges from 35-55 psi to account for expected sprinkler system in use.

MEMORANDUM

Date: October 28, 2015
To: Water Right File 91-7280
From: medl
Re: phone log

I spoke to Betty Ellis over the phone today about the uses developed under this permit, 91-7280.

She stated that she had been about to call us because they were going to pull the pump and to close the seasonal home for the winter. She wanted to know if IDWR would be sending an inspector soon. I told her that I had almost enough information to issue a license and that I would be using a calculation method to confirm the beneficial uses.

Betty Ellis provided me with the following information about this system:

This water use originates from one POD on the St Joe River. The POD is fitted with a $\frac{3}{4}$ HP pump that is used for irrigating the tract. She said it was a Sta-Rite sw jet pump. She bought it in March of this year and installed it shortly thereafter.

The lift from the river to the irrigation level of the property is ~ 10 ft.

There is a mobile shop on the property but no home; only irrigation. The seasonal home is located to the west on tracts 15 & 16.

When I asked her to clarify the POD, Betty explained that she owned three tracts in the St Joe Riverside Tracts: tracts 15, 16, and 17. Tract 17 is the most recent purchase. Each of the three tracts has a dedicated pump and POD. She stated that she was advised to develop the water rights that way in anticipation of selling the tracts separately.