

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9658

Exam Date: 08/30/2018

1. Current Owner:

JOHN WESLEY HARBUCK 4964 COLBURN-CULVER RD SANDPOINT ID 83864 AND
SUSAN BATES-HARBUCK 4964 COLBURN-CULVER RD SANDPOINT ID 83864

2. Accompanied by: John and Susan Harbuck

Phone No: (208) 263-9894

Address: Same as above

Relationship to permit Holder: Permit Holder.

3. SOURCE:

SPRING

Tributary

GROUSE CREEK

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

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

NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

2. Other water rights with the same point-of-diversion:

NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

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

SPRING SW¼ NW¼ SW¼, Sec. 2, Twp 58N, Rge 01W, B.M. BONNER County

Method of Determination: Maps and GPS. POD located at -116°26.293, 45°24.324.

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	
58N	01W	2										0.2							0.2

Total Acres: 0.2

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
58N	01W	2										X							

Method of Determination: Arcmap and Field Exam GPS.

3.

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

X Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X

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

X

Photo of Diversion and System Attached

X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Submersible pump	Unkown	0.5			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: Unable to perform flow measurement because system pumped directly into storage tank.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretical pumping equation estimates flow at 0.02 cfs. See attached theoretical pumping equation worksheet.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.2 \text{ acre} \times 3 \text{ af} = 0.6 \text{ af.}$$

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

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 0.6 \text{ af.}$$

2. Volume Calculations for Other Uses:

Domestic use for in home = 0.6 af

$$1 \text{ home} \times 0.6 \text{ af} = 0.6 \text{ af}$$

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed with the applicants, John and Susan Harbuck, showed a submersible pump from a spring being used for domestic and irrigation purposes. At POD, has a 0.5 HP submersible pump which diverted water into a 1,000 gallon holding tank. I was unable to perform a flow measurement because water was diverted directly into holding tank with no proper place to perform measurement. Theoretical pumping equation was used to estimate a flow rate of 0.02 cfs. The pump was estimated to have a pumping lift of 80 feet based upon topographic map data, and the system running at 40 psi (equation attached).

The applicants permit authorized a diversion rate of 0.04 cfs for domestic uses, and a rate of 0.03 cfs for irrigation uses. Because theoretical pumping equation estimates applicants submersible pump at POD is limited to 0.02 cfs (see theoretical pumping equation), the diversion rate for domestic use will be licensed for 0.02 cfs and annual volume of 0.6 af. The applicant's POU for irrigation equals 0.2 acres. Based on that 0.2 acres x 0.03 cfs = 0.006 cfs. The value of 0.006 cfs is rounded up to 0.01 cfs and the diversion rate for irrigation will be licensed at 0.01 cfs and annual volume of 0.6 af. The applicants were using frost free hydrants with hoses and sprinklers for the irrigation of their garden. The combined diversion rate is limited by the applicant's submersible pumping performance, which limits the diversion to 0.02 cfs. The total diversion rate of 0.02 cfs and annual volume of 1.2 af for domestic and irrigation will be carried forward to licensing.

All conditions applied to the permit should be carried forward to licensing. There is no overlap concerns.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	0.01 CFS	0.6 AF
DOMESTIC	01/01 to 12/31	0.02 CFS	0.6 AF

Totals: 0.02 CFS 1.2 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 ☒ None

I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name Adam Fink Date 3/23/2020
 Reviewer Luke Bates Date 3/23/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam.
96-9658

IRRIGATION system diagram.

01W



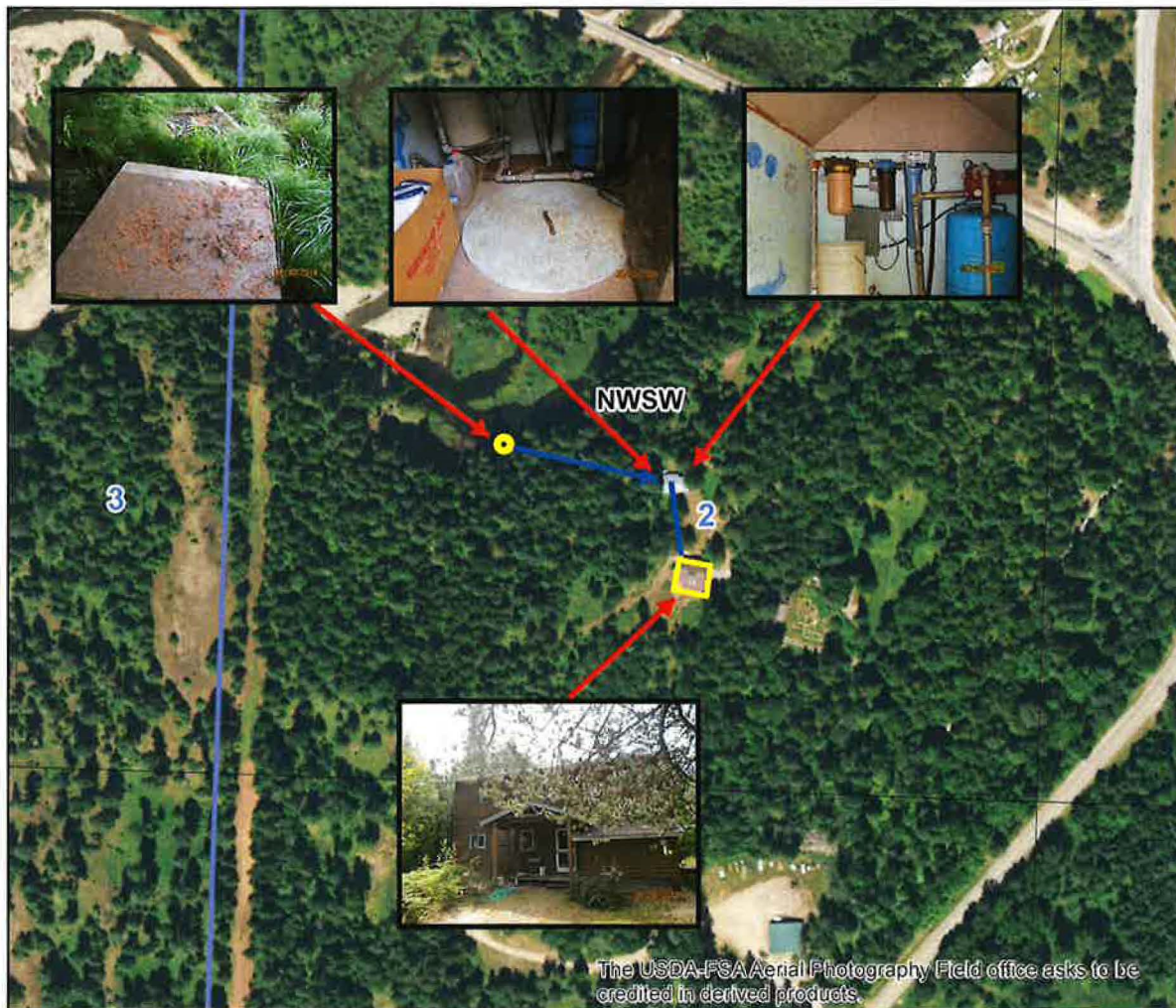
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.035 0.07 0.14 Miles

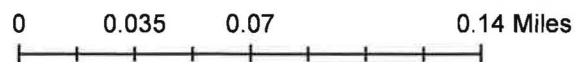


DOMESTIC system diagram.

58N



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



PUMP EQUATIONS WATER RIGHT No. 96-9658						
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	0.5	172.517	0.8	80	40
Q =		0.020 cfs	9.2 gpm			



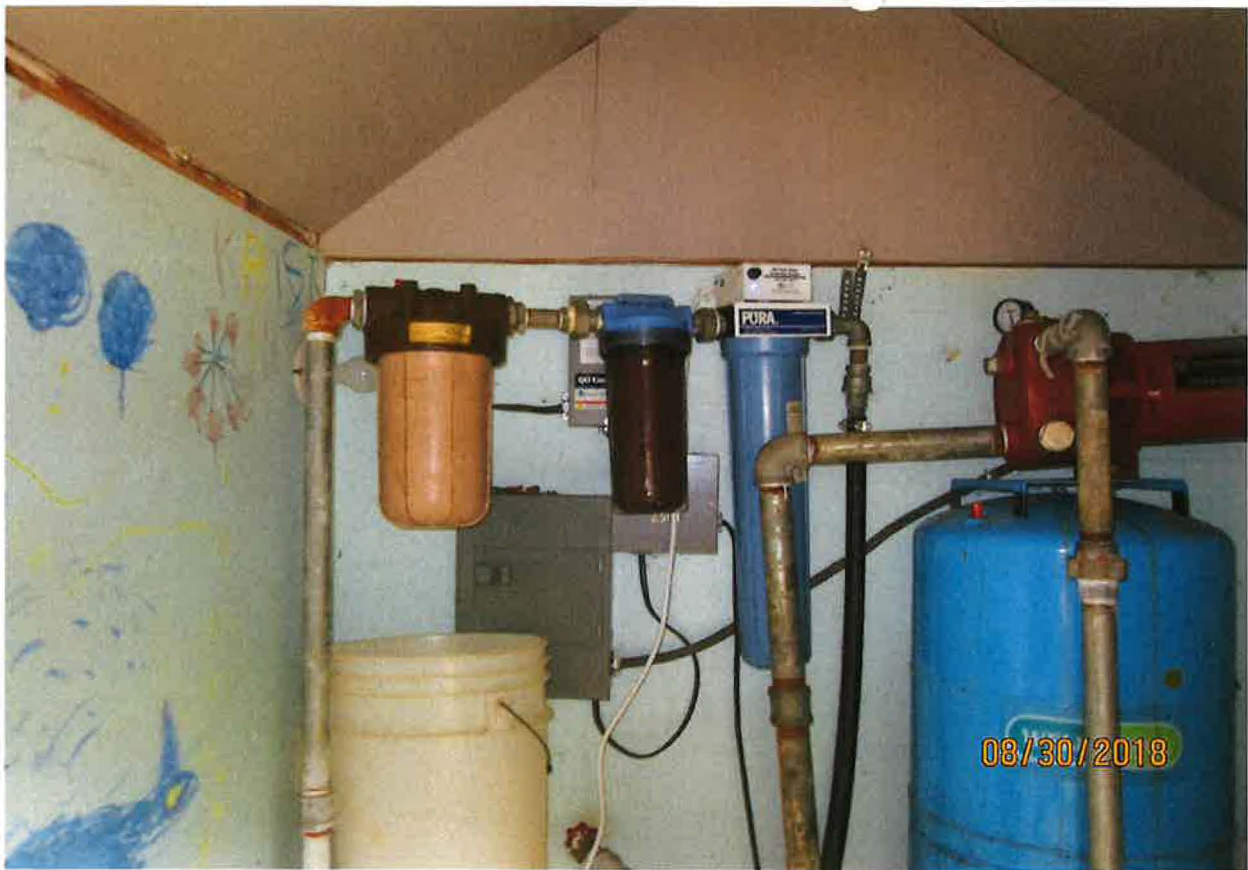
POD – SPRING BOX WITH SUBMERSIBLE PUMP



POD



PUMP HOUSE



PUMP HOUSE



POU - DOMESTIC



POU – IRRIGATION





POU – IRRIGATION

