

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9800

Exam Date: 09/19/2019

1. Current Owner:
KIRK DAVIDSON 990 SHINGLE MILL RD SANDPOINT ID 83864-7421
2. Accompanied by: Kirk Davidson
Phone No: 208-255-5215
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
96-7011	LAKE PEND ORIELLE	DOMESTIC	LICENSE
96-8953	LAKE PEND ORIELLE	MUNICIPAL	LICENSE

Comments: Both WRs 96-7011 and 96-8953 overlap this water right, but use water from Lake Pend Orielle and do not influence this water right.

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 SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER SW¼ SE¼, Sec. 32, Twp 58N, Rge 01W, B.M. BONNER County

Method of Determination: Maps and GPS. POD is hand dug well located at -116°29.472, 48°19.975.

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	32															1.6	0.3	1.9

Total Acres: 1.9

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	32															X		

Method of Determination: Arcmap and Field Exam.

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

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

☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
HAND DUG WELL	FRANKLIN	0.5			

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Unable to perform flow measurement due to water being pumped from covered concrete cistern associated with hand dug well, directly to pressure tank.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Theoretic pumping equation calculated 15.4 gpm, with a pump depth of 10 feet operating at 40 psi. Resulting diversion rate = 0.03 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.9 \text{ ac} \times 3.0 \text{ af} = \mathbf{5.7 \text{ af}}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 12.7 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 5.7 \text{ af}$$

2. Volume Calculations for Other Uses:

$$\text{Domestic use one home} = 0.6 \text{ af}$$

$$\text{Combined annual volume} = 0.6 \text{ af (domestic)} + 5.7 \text{ af (irrigation)} = \mathbf{6.3 \text{ af}} \text{ Maximum diversion volume.}$$

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed with the applicant, Kirk Davidson, showed a 12 ft deep, hand dug well, being used for domestic and irrigation purposes. The well was covered with a concrete cistern, and has a 1/2 HP pump which diverts water into a pressure tank. I was unable to perform a flow measurement because water was diverted directly into pressure tank with no proper place to perform measurement. Theoretical pumping equation was used to estimate a flow rate of 0.034 cfs, which was rounded down to 0.03 cfs (rounded to account for department significant figures admin memo application processing No. 6). The pump was estimated to be 10 feet down and the system running at 40 psi (equation attached). The license will be issued with a maximum diversion rate of 0.03 cfs.

WR 96-9800 was split from WR 96-9537, and the STOCKWATER and INDUSTRIAL components were removed from this license as they were not put to beneficial use at time of field exam. Splitting of license did not enlarge the original permit authorized diversion rate. For WR 96-9800, only 1 home was applied to the domestic component, and the rate of diversion was changed to 0.03 cfs. 0.03 cfs is less than the domestic standard of 0.04 cfs, but the applicant is limited by the amount of water the 1/2 hp pump can produce. As such, 0.03 cfs is the maximum diversion rate applied to license.

There was one home identified during field exam, and the domestic volume will be licensed for 0.6 af. Irrigation was observed during field exam, and was traced out during licensing review equaling 1.9 acres. The irrigation was from hoses and above ground tripod moveable sprinklers. The irrigation volume will be licensed 5.7 af (1.9 acres x 3.0 af per acre). The overall license will be approved with a maximum diversion volume of 6.3 af (0.6 af domestic + 5.7 af irrigation).

At time of licensing, the permitted POU for irrigation component, and the irrigation Period of Use were found to be inaccurate, see below:

POU: authorized on permit = Irrigation 58N01W32SWSE.

POU: verified at time of licensing = Irrigation 58N01W32SWSE and 58N01W32SESE.

Season of Use: authorized on permit = 03/15 to 10/31 (for Irrigation component).

Season of Use: verified at time of licensing = 04/01 to 10/31 (corrected to standard use for irrigation component).

An Application for Amendment was initiated, and mailed with cover letter to applicant on 20 April 2020.

Condition 132 was added to reflect domestic use for one home after the split of water right. Condition R66 was added to describe irrigation limitations of no more than 0.03 cfs per acre nor more than 3.0 afa per acre. Condition 004 was added to describe right of way or easement restrictions. Water Rights 96-7011 and 96-8953 overlap this water right, but use water from Lake Pend Orielle and do not influence this water right, and are not a concern for overlap.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
IRRIGATION	04/01 to 10/31	0.03 CFS	5.7 AF
DOMESTIC	01/01 to 12/31	0.03 CFS	0.6 AF

Totals: 0.03 CFS 6.3 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 5/18/2020

Reviewer JBQBP Date 4/30/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9800

DOMESTIC system diagram.



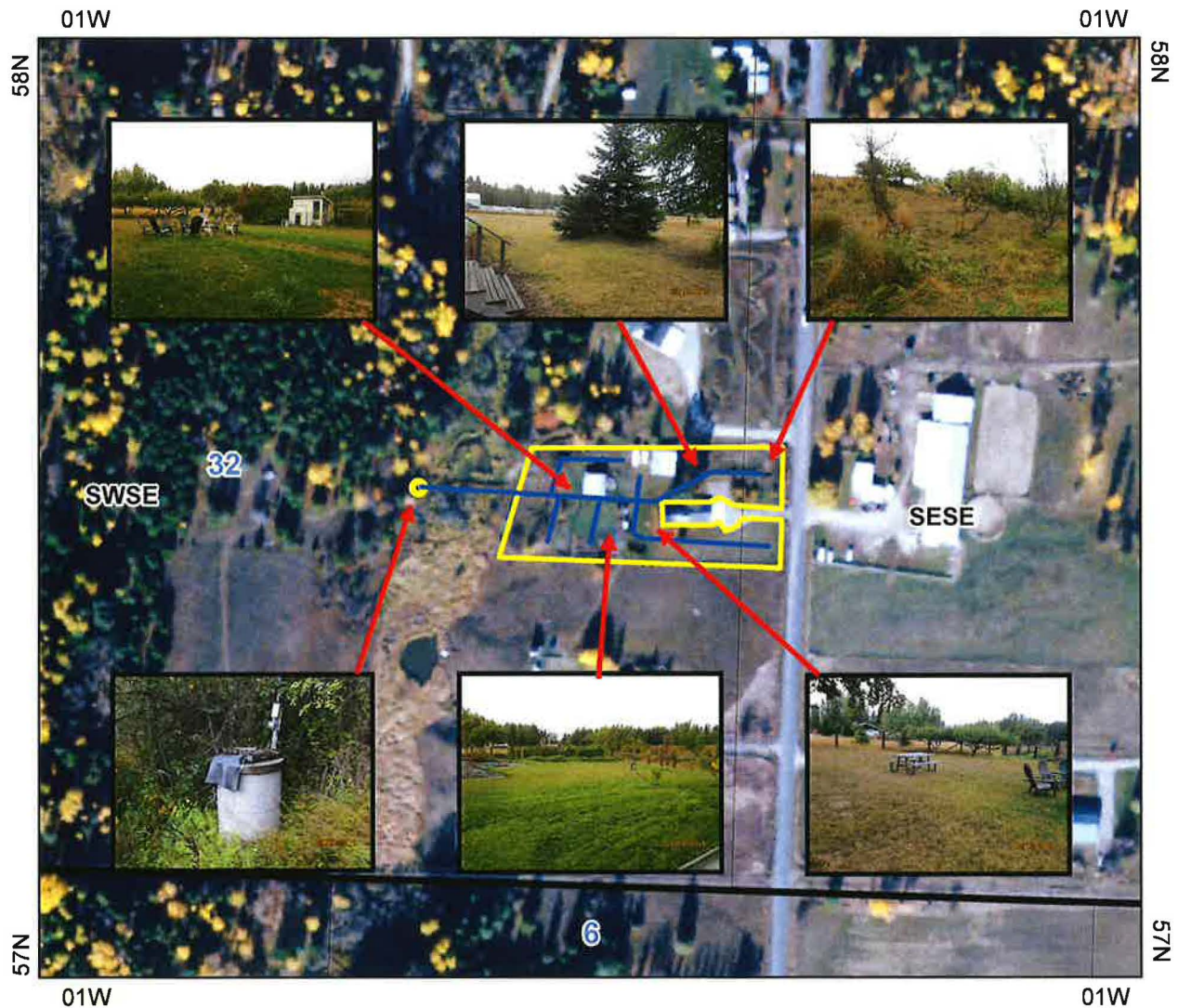
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.035 0.07 0.14 Miles



State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9800

IRRIGATION system diagram.



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

0 0.035 0.07 0.14 Miles



MEMORANDUM

To: Water Right Permit 96-9800

From: Luke Bates 

Date: 4/30/2020

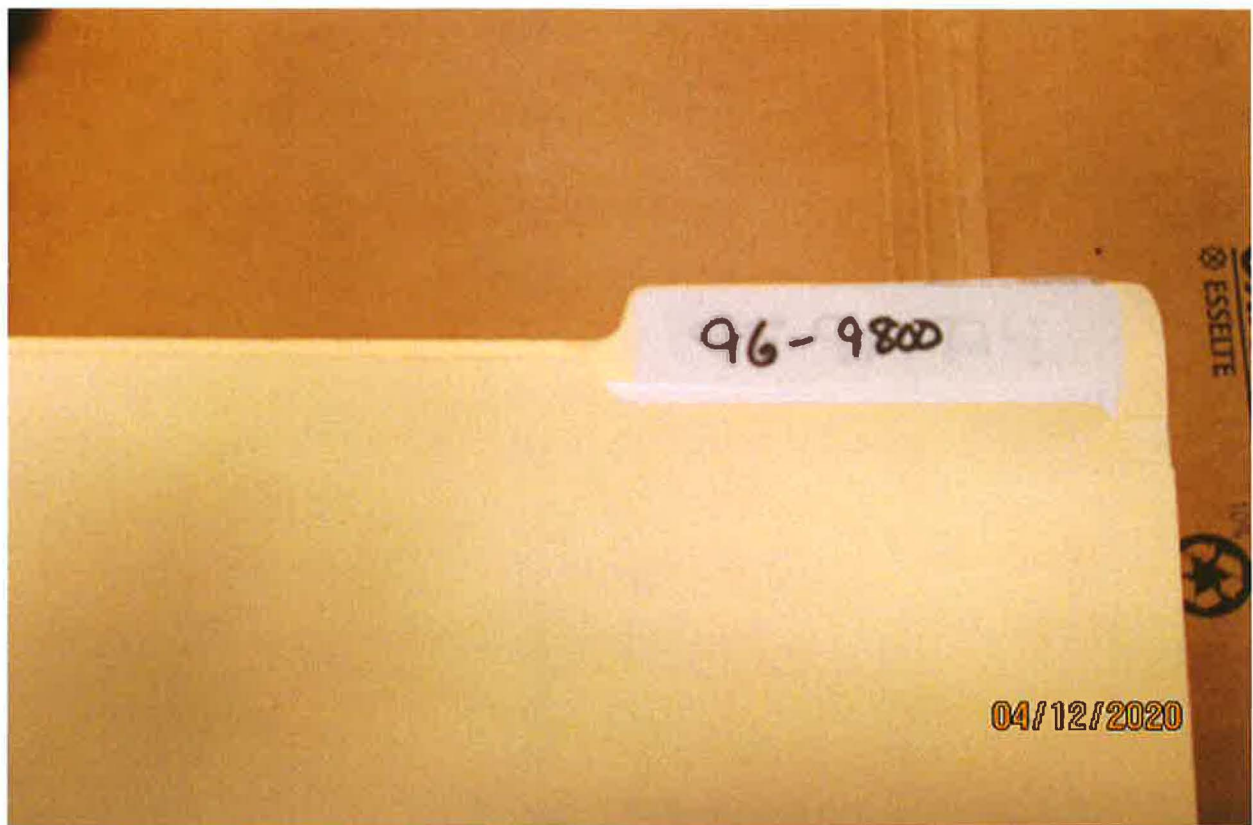
Re: Application for a Permit to Appropriate Water within the State of Idaho.

An application for permit was received for domestic and irrigation use in the name of Kirk Davidson. The application was advertised with the season of use of 3/15-10/31. The department's standard season for the irrigation at the applicant's property is 4/1-10/31. Season of use will be changed on the license to reflect the department standard.

THEORETICAL PUMPING EQUATION FOR WR# 96-9800

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 10 ft, and running at 40 psi.

<u>PUMP EQUATIONS</u>						
WATER RIGHT No.			96-9800			
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	$HP \cdot 8.8 \cdot \text{Eff} / H$	0.5	102.517	0.8	10	40
Q =		0.034 cfs	15.4 gpm			



POD – HAND DUG WELL



POD – HAND DUG WELL



½ HP PUMP



FRANKLIN PUMP ELECTRIC PANEL



IRRIGATION POU



IRRIGATION POU





IRRIGATION POU





IRRIGATION POU - ORCHARD