

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-7975

Exam Date: 07/19/2018

1. Current Owner:
TIM L HARLAN PO BOX B BONNERS FERRY ID 83805 AND/OR
REBECCA M HARLAN PO BOX B BONNERS FERRY ID 83805
2. Accompanied by: Tim Harlan
Phone No: (206) 321-1111
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and GPS.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
98-2037	MISSION CREEK	IRRIGATION	LICENSE

Comments: WR 98-2037 references Mission Creek Water Association for irrigation near the applicant's property, but is not an overlap concern.

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 NE¼ SW¼, Sec. 32, Twp 64N, Rge 01E, B.M. BOUNDARY County

Method of Determination: Arcmap and GPS. POD located at -116°22.061, 48°51.172, D0017281

PLACE OF USE: STOCKWATER and 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	
64N	01E	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
D0017281	FRANKLIN ELECTRIC	1.5			

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 piping from POD to POU being a sub-surface installation.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: See attached Theoretic Pumping Equation worksheet. Theoretic pumping equation calculated 10.2 gpm, with a pump depth of 375 feet operating at 40 psi. Resulting diversion rate = 0.02 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses:

$$\text{STOCKWATER component} = 50 \text{ head goats} \times 2 \text{ gal per day} \times 365 \text{ day per year} = 36,500 \text{ gal}$$

$$50 \text{ chickens} \times 5 \text{ gal per day} \times 365 \text{ day per year} = 91,250 \text{ gal}$$

$$= \text{Total Stockwater Annual Volume} = (36,500 \text{ gal} + 91,250 \text{ gal}) / 325,850 \text{ gal/af} = 0.4 \text{ af}$$

G. NARRATIVE/REMARKS/COMMENTS

At time of permitting, applicant had applied for a water right that incorporated two separate PODs (wells), which were not connected. Water right 98-7975 was split into two water rights. As a result, the commercial component was not associated with this water right's well, and was removed from license (reference WR 98-8016, split that incorporates commercial).

Field exam with applicant, Tim Harlan, showed a well providing water for stockwater and domestic uses. Water was diverted from the well for use at a one home, with up to ½ acre irrigation, and to water 50 goats & 50 chickens. Water was piped underground to pressure tank, resulting in no access for flow measurements. Theoretic pumping equation derived 0.02 cfs from the applicant's 1.5 hp pump, as such theoretical pump equation values will be used to license this water right for a diversion rate of 0.02 cfs.

At time of exam, stockwater was being used for 50 goats, 50 chickens, and domestic use for one home with up to ½ acre irrigation. Stock animals were present all year, supporting a 365 day season of use. During licensing, POU was traced out to include house and structures/pens that housed goats and chickens. The stockwater component annual volume was calculated as:

$(50 \text{ goats} \times 2 \text{ gal per day} \times 365 \text{ gal per year}) + (50 \text{ chickens} \times 5 \text{ gal per day} \times 365 \text{ gal per year}) / 325,850 \text{ gal/af} = 0.39 \text{ af}$, which was rounded up to **0.4 af** to conform with department significant figures (Application Process No.6, administrative memo).

The domestic component annual volume was calculated as:

$0.6 \text{ af (1 home)} + 0.6 \text{ af (domestic irrigation up to } \frac{1}{2} \text{ acre)} = \mathbf{1.2 \text{ af}}$.

A maximum diversion volume was derived by adding total annual volume of stockwater and domestic components ($0.4 \text{ af} + 1.2 \text{ af} = 1.6 \text{ af}$, see volume calculations above). As a result, **1.6 af** maximum diversion volume will be applied to license.

Conditions 046, 082, and X03 were removed from license. Condition X02 was edited to describe 50 goats and 50 chickens for stockwater usage. Condition X35 was added to describe the combined limitation in total diversion rate of 0.02 cfs for stockwater purposes between water right 98-7975 and 98-8016. All other conditions remain on license. WR 98-2037 overlaps this water right, but is for irrigation use by Mission Creek Water Association not in the area of this water right and is not a concern.

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>
STOCKWATER	01/01 to 12/31	0.02 CFS	0.4 AF
DOMESTIC	01/01 to 12/31	0.02 CFS	1.2 AF
<u>Totals:</u>		0.02 CFS	1.6 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 ☒ None

I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name Adam Fink Date 4/21/2020

Reviewer [Signature] Date 4/15/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
98-7975

STOCKWATER system diagram.

01E



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

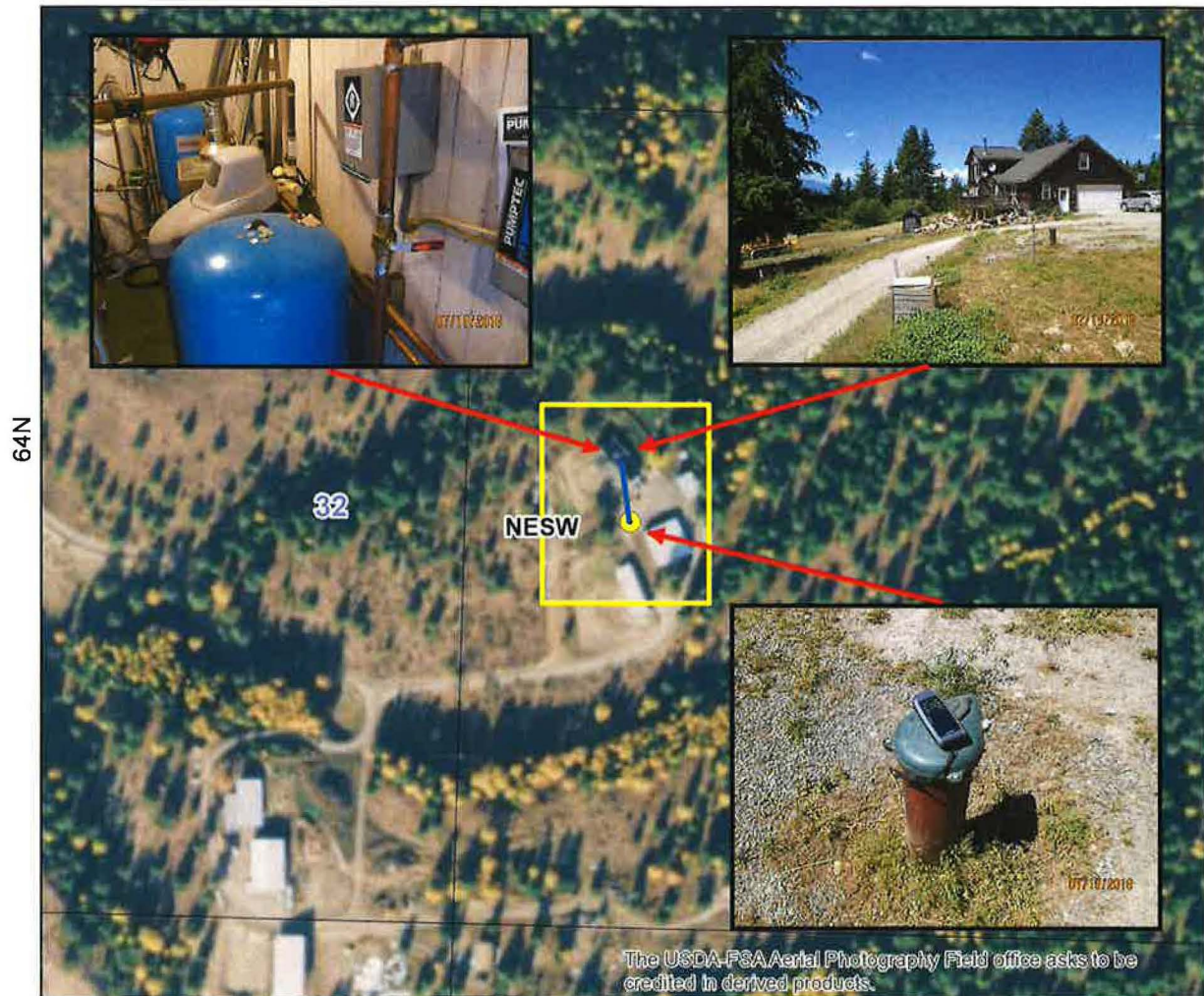
0 0.035 0.07 0.14 Miles



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DOMESTIC system diagram.

01E



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

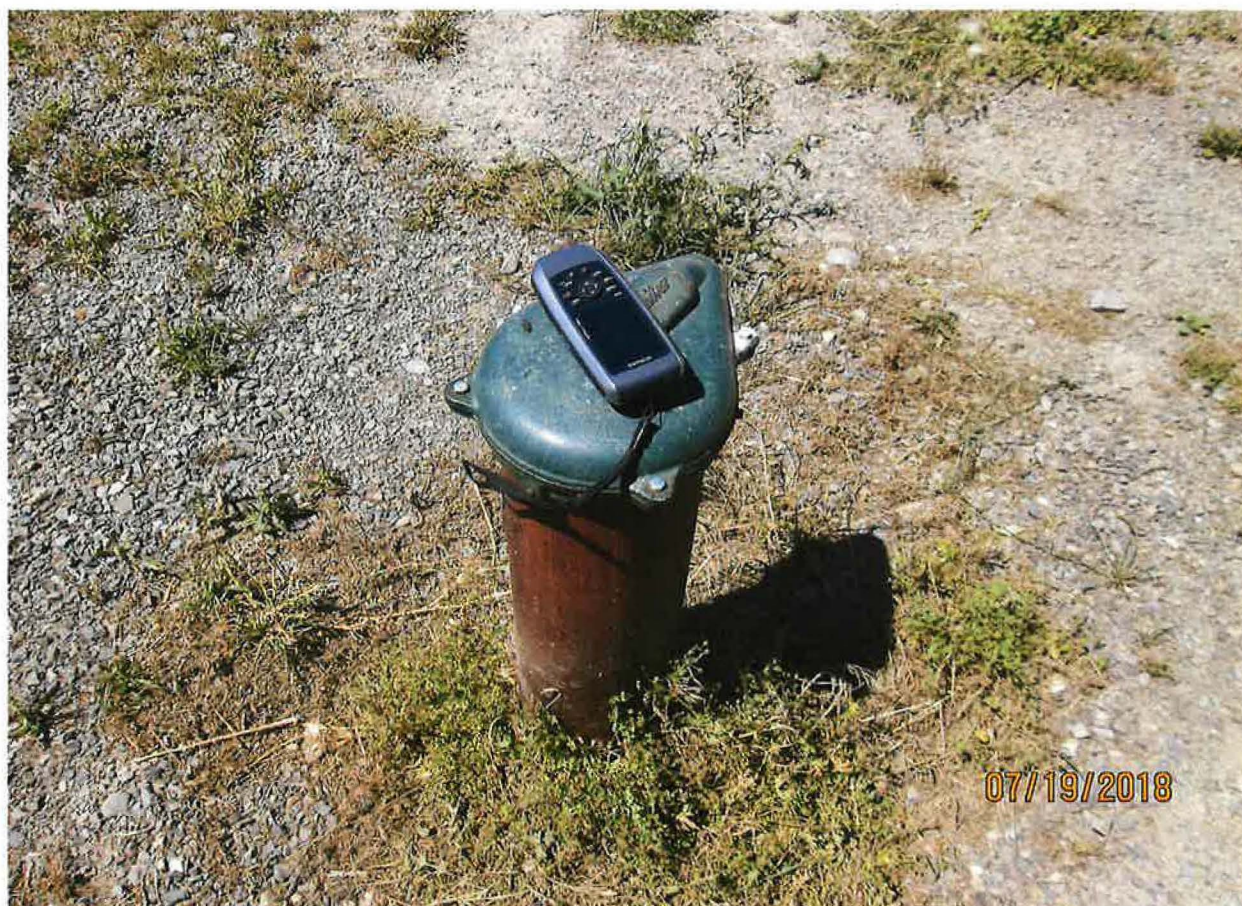
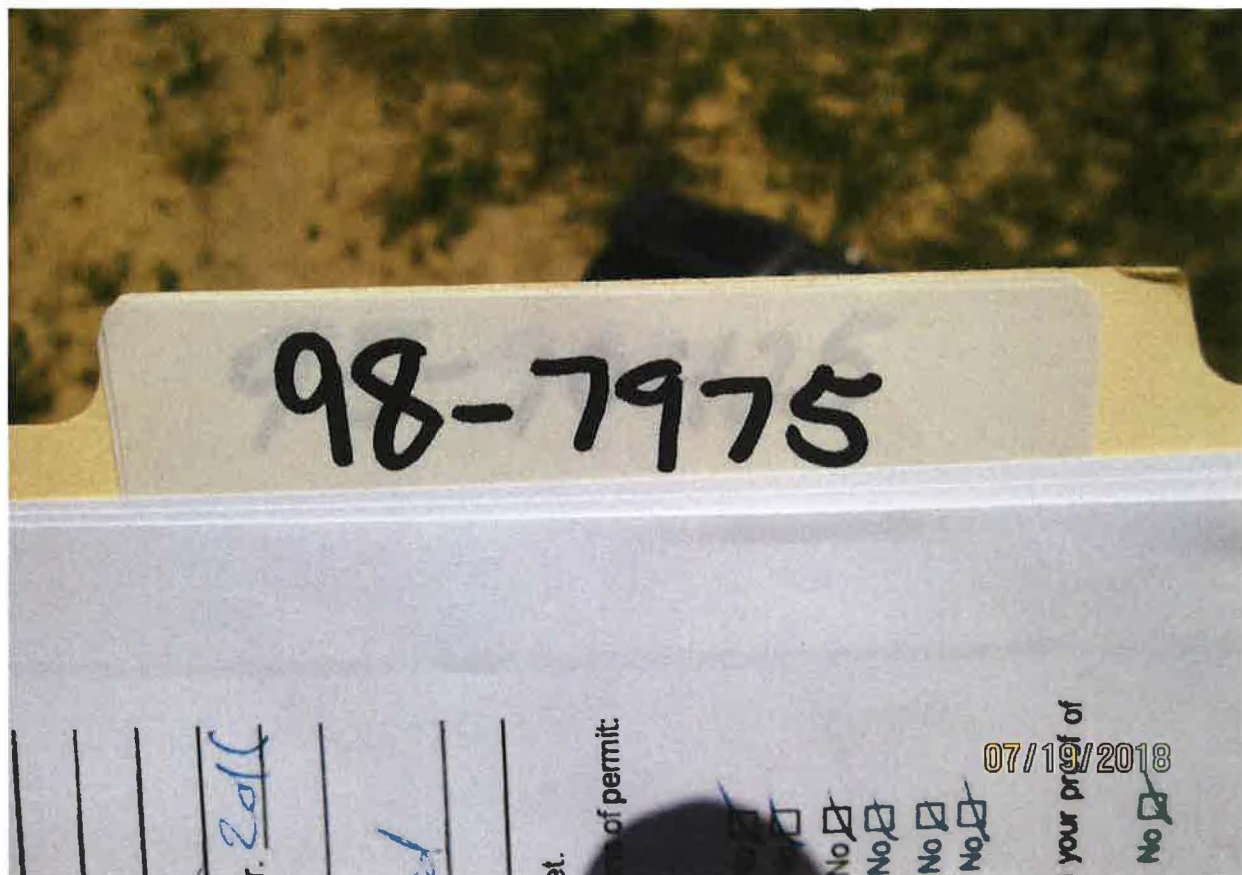
0 0.035 0.07 0.14 Miles



THEORETICAL PUMPING EQUATION FOR WR# 98-7975

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 375 ft, and running at 40 psi.

<u>PUMP EQUATIONS</u>					
WATER RIGHT No. 98-7975					
	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
$Q = \frac{HP * 8.8 * Eff}{H}$	1.5	467.517	0.8	375	40
Q = 0.023 cfs 10.2 gpm					





POD D0017281



1.5 HP PUMP



PRESSURE TANK / PUMP ROOM



DOMESTIC POU



STOCKWATER POU

