

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 78-12414
Exam Date: 06/16/2021

1. Current Owner:
RICHARD STUBBS 1322 E BRAEMERE RD BOISE ID 83702 AND/OR
TYRA STUBBS 1322 E BRAEMERE RD BOISE ID 83702
2. Accompanied by: Richard Stubbs
Phone No: 208-345-8600
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
78-7348	LITTLE ELK CREEK	IRRIGATION, DOMESTIC	LICENSE

Comments: licensed right 78-7348 is issued for the irrigation of 1.0 acre and domestic use 1 home with a POU that overlaps this right's domestic POU. Due to the 40-ac tract generic POU designated there is no way to substantiate whether overlap directly associates with this permit's water uses, and condition X35 is not recommended for licensing right 78-7348.

2. Other water rights with the same point-of-diversion: NO Overlap

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

GROUND WATER SE¼ SW¼, Sec. 23, Twp 22N, Rge 01E, B.M. IDAHO County

Method of Determination: GPS. POD is a well located beneath the homes floor at -116°18.206, 45° 13.510, D0040124.

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	
22N	01E	23												X					

Method of Determination: Field examination and Arcmap aerial imagery.

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

X Indicate weir size/pipe as applicable.

X 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

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Model No.	Pump Make	Pump Serial No. or Discharge Size
D0040124	GRUNDFOS	1/2	91126153		

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Unable to perform flow measurements due to inadequate pipe requirements. Groundwater well is located beneath the subfloor of the home, which was built over it due to construction site space availability. Main service line routes direct to a pressure tank prior to distribution of water uses. A theoretic pump equation was developed which derives a flow rate of 3.9 gpm or **0.01 cfs** considering department rounding standards with the pump installed at a depth of 300 ft and operating pressure of 45 PSI.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation with ½ HP Grundfos pump motor installed at 300 feet, with system operating pressure of 45 PSI derives a flow rate of 3.9 gpm or 0.009 cfs = 0.01 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A – the irrigation component was not developed above ½ an acre. Applicant agreed with removing the irrigation component from the permit and including ½ acre irrigation associated with the domestic beneficial use toward licensing this permit. See attached department memorandum dated 6/23/2021 & email correspondence between IDWR staff and applicant pertaining to this revision of the permit at time of licensing.

2. Volume Calculations for Other Uses:

- Maximum diversion volume = **1.2 af** for domestic in-home use with up to ½ acre irrigation included.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 6/16/2021 with the applicant, Richard Stubbs, showed a groundwater well being used for domestic uses. At the POD, well D004014 was found to be located within the foundation and crawlspace of the applicants' home with piping direct to a pressure tank prior to distribution for domestic use(s). I was unable to perform flow measurements due to inadequate pipe requirements. The applicant's home was likely built over the well due to construction site space availability on the parcel. A theoretic pump equation was developed which derives a flow rate of 3.9 gpm or **0.01 cfs** considering department rounding standards with the 1/2 HP pump installed at a depth of 300 ft and operating pressure of 45 PSI, which is recommended as the maximum diversion rate for licensing purposes.

During the field exam, the applicant provided access to the utility closet that housed the pressure tank and diverting work pipes routing to in home use and exterior frost-free hydrants. The domestic POU consists of the primary residence constructed between the small basin's creek and side-hill. The applicant uses well water to irrigate up to ½ an acre of orchard trees. Aside from the trees, there was minor landscape shrubs that received water and no lawn space to speak of. The annual volume associated with the domestic use equals **1.2 acre-feet** annually, which aligns with the department standard for 1 home with ½ acre irrigation & is recommended as the maximum diversion volume for licensing purposes.

The applicant's statement of completion included irrigation of 26 acres, which was based on the permit approved irrigation beneficial use component for development of up to 26 acres. During the exam, Mr. Stubbs identified the acreage he has developed with the use of well water, which equates to approximately ½ acre. This is likely a result of the low flow capacity well & pump installed. Following the exam, email correspondence was initiated on 6/23/2021 between department staff and Mr. Stubbs discussing the minimal irrigation found during the exam and recommending revision of the permit during licensing review to remove the irrigation beneficial use component. I recommended removal of the irrigation component and assigning the ½ acre irrigation to the domestic beneficial use based on field exam validation of the water system and development of water use in the development period of the permit. Mr. Stubbs replied via email correspondence agreement to the revision. As such, the permit was revised removing the irrigation component, and the maximum diversion volume for licensing purposes incorporates volume associated with the ½ acre irrigation covered under domestic use (reference department memorandum dated 6/23/2021).

Condition 01M was removed from the permit during licensing review. Condition 121 was replaced by 103. Condition WB5 was replaced by X01, and condition 187 was added describing irrigation up to ½ acre covered under domestic use. All other conditions on the permit shall be carried to the license. Overlap concerns: licensed right 78-7348 was issued for the irrigation of 1.0 acres and domestic use 1 home with a POU that overlaps this right's domestic POU. Due to the 40-ac tract generic POU designated there is no way to substantiate whether overlap directly associates with this permit's water uses, and condition X35 is not recommended for licensing right 78-7348. The irrigation occurring under right 78-7348 was identified by the applicant in email correspondence to be for "fruit trees and other vegetation throughout the property below Little Elk Creek". Review of Arcmap aerial imagery and the DRG layer show the creek flows through a large portion of the applicant's parcel, and it is reasonable to assume the irrigation occurring is not the same as the ½ acre of irrigation co-located with the home that receives groundwater from the well. There are no additional overlap concerns for this right.

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>
DOMESTIC	01/01 to 12/31	0.01 CFS	1.2 AF
<u>Totals:</u>		0.01 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 -

Field Examiner's Name  Date 2/14/2022
 Reviewer  Date 2/14/2022

State of Idaho
Department of Water Resources
Attachment to Field Exam
78-12414

DOMESTIC system diagram.



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

0 0.035 0.07 0.14 Miles



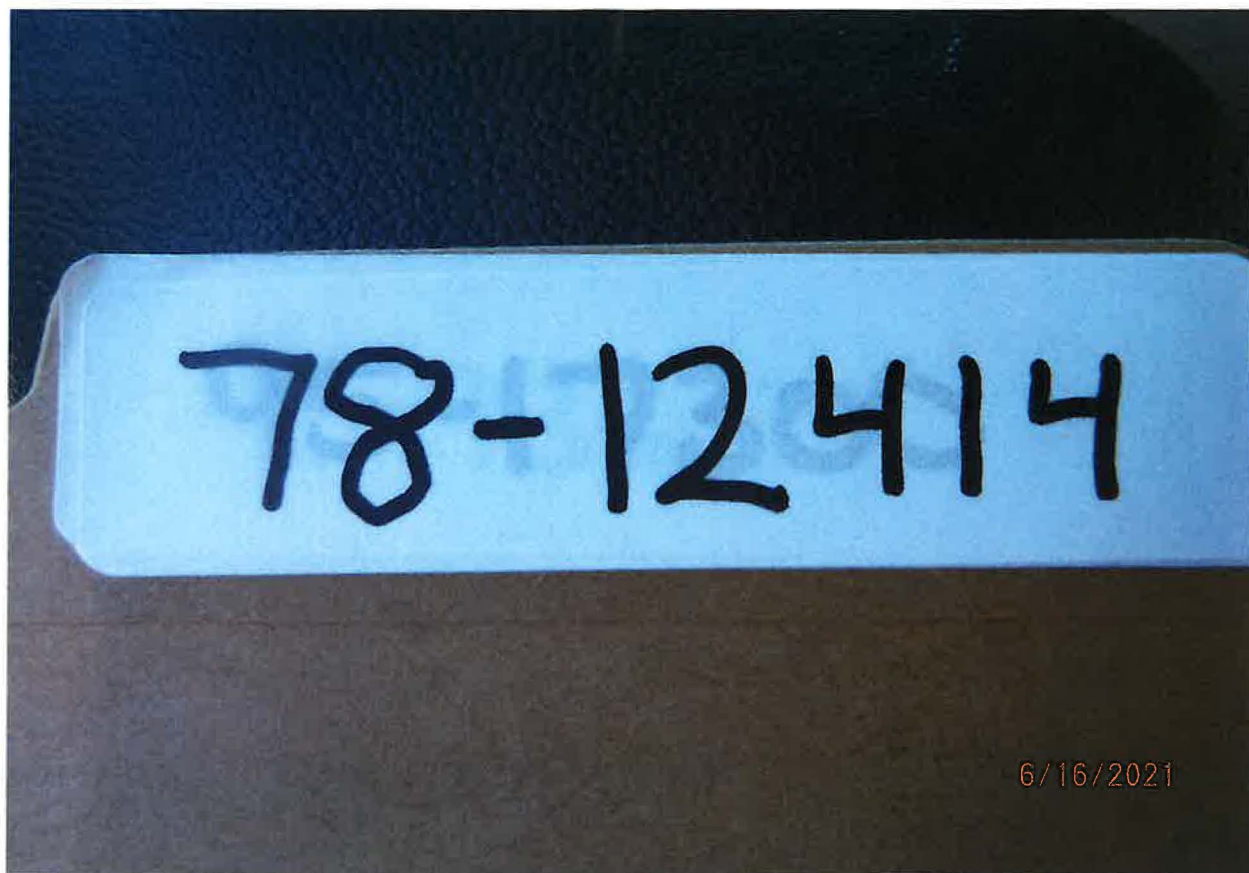
THEORETICAL PUMPING EQUATION(S) FOR WR# 78-12414

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 300 ft, and running at 45 psi.

PUMP EQUATIONS

WATER RIGHT No. 78-12414

D0040124	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	404.0816	0.8	300	45
Q = 0.009 cfs 3.9 gpm					



FIELD EXAM DATE 6/16/2021



POD – GROUNDWATER WELL – NOT VISIBLE AS HOME IS CONSTRUCTED OVER THE WELL D0040124



GRUNDFOS 1/2 HP SUBMERSIBLE PUMP INSTALLED IN WELL



45 – 48 PSI SYSTEM OPERATING PRESSURE



DOMESTIC POU – MAIN RESIDENCE



DOMESTIC POU – IRRIGATION INCLUDED UP TO ½ ACRE – FRUIT TREES AND LANDSCAPE WATERING