

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 86-12089
Exam Date: 03/05/2021

1. Current Owner:
MICHAEL T BARROWS 1035 DEER RD DEARY ID 83823-8612 AND/OR
SANDI J BARROWS 1035 DEER RD DEARY ID 83823-8612
2. Accompanied by: Michael Barrows
Phone No: 208-877-1990
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: NO Overlap
2. Other water rights with the same point-of-diversion: NO Overlap

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER NE¼ NE¼, Sec. 7, Twp 40N, Rge 02W, B.M. LATAH County

Method of Determination: GPS. POD located at -116° 37.700, 46° 49.769, well tag D0067766.

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	
40N	02W	7	X																

Method of Determination: Field exam and Arcmap aerial imagery.

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
D0067766		2			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
5 GAL BUCKET MEASUREMENT						

2. Measurements: a 5 gallon bucket measurement was taken from a frost free hydrant co-located with the well, resulting in a flow rate of 5 gal / 15.02 sec x 60 sec/min = 19.97 gpm = **0.04 cfs**, considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 5 gallon bucket measurement: (5 gal / 15.02 sec) x 60 sec/min = 19.97 gpm = 0.04 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

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

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

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

2. Volume Calculations for Other Uses:

$$\text{Domestic annual volume} = 1 \text{ home} \times 1.2 \text{ af} = \mathbf{1.2 \text{ af}}$$

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 5/5/2021 with the applicant, Michael Barrows, showed a groundwater well (D0067766) being used for domestic purposes. At the POD, the water system has a 2 HP pump that diverts water direct to a pressure tank. A 5 gallon bucket measurement was completed from a frost free co-located with the well, with resulting diversion rate equal to (5 gal / 15.02 sec) x 60 sec/min = 19.97 gpm = 0.04 cfs considering department rounding standards. This flow rate corresponds with a theoretic pumping equation calculation of 21.4 gpm with 2 hp pump at 145 feet depth, and system operating at 65 psi. The applicant's diversion is slightly over 18 gpm, but due to rounding requirements the **0.04 cfs** is recommended for licensing purposes.

During the exam, one home was observed at the domestic POU. The applicant's home sits on a minor knoll, and the groundwater table was observed in a 4 inch vertical percolation pipe to be approximately 1 ½ feet below the surface at time of exam. Mr. Barrows states the water table stays high most of summer, and is sufficient to provide groundwater to the trees

that run along his driveway. Additionally, directly south of the home is a large dog pen that is fenced in and is not watered. The ½ acre of irrigation covered under domestic use includes a portion of lawn primarily on the eastern side of the home, as well as a small plot of orchard trees located to the west of the home. The orchard trees are watered using an efficient drip system, and the lawn portion around the home is watered using frost free hydrant-to-hose and sprinklers. The domestic use was sketched out on field maps at time of exam, and during licensing review Arcmap aerial imagery was used to accurately trace out the domestic POU. The domestic annual volume recommended for licensing equals 1 home x 1.2 af = **1.2 af**.

Sentinel layers were used to identify any additional irrigation occurring on the applicant's property. Year 2019 was used, and spring and summer months up to July all show water saturation (red), which supports the high water table in this area. Aerial imagery capture date 20190917 was reviewed and shows minor irrigation and supports the non-irrigated areas around the applicant's property. This process was completed, as the field exam was conducted early in the year and irrigation was not actively being conducted on the property.

All conditions on the permit will be carried forward to the license. There are no overlap concerns associated with this permit.

Have conditions of permit approval been met? X 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	0.04 CFS	1.2 AF
<u>Totals:</u>		0.04 CFS	1.2 AF

2. Recommended Amendments

Change P.D. as reflected above Add P.D. as reflected above X None

Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION

Luke Bates - Water Resource Agent

Field Examiner's Name Luke Bates Date 03/12/2021

Reviewer Ash Fink Date 3/15/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
86-12089

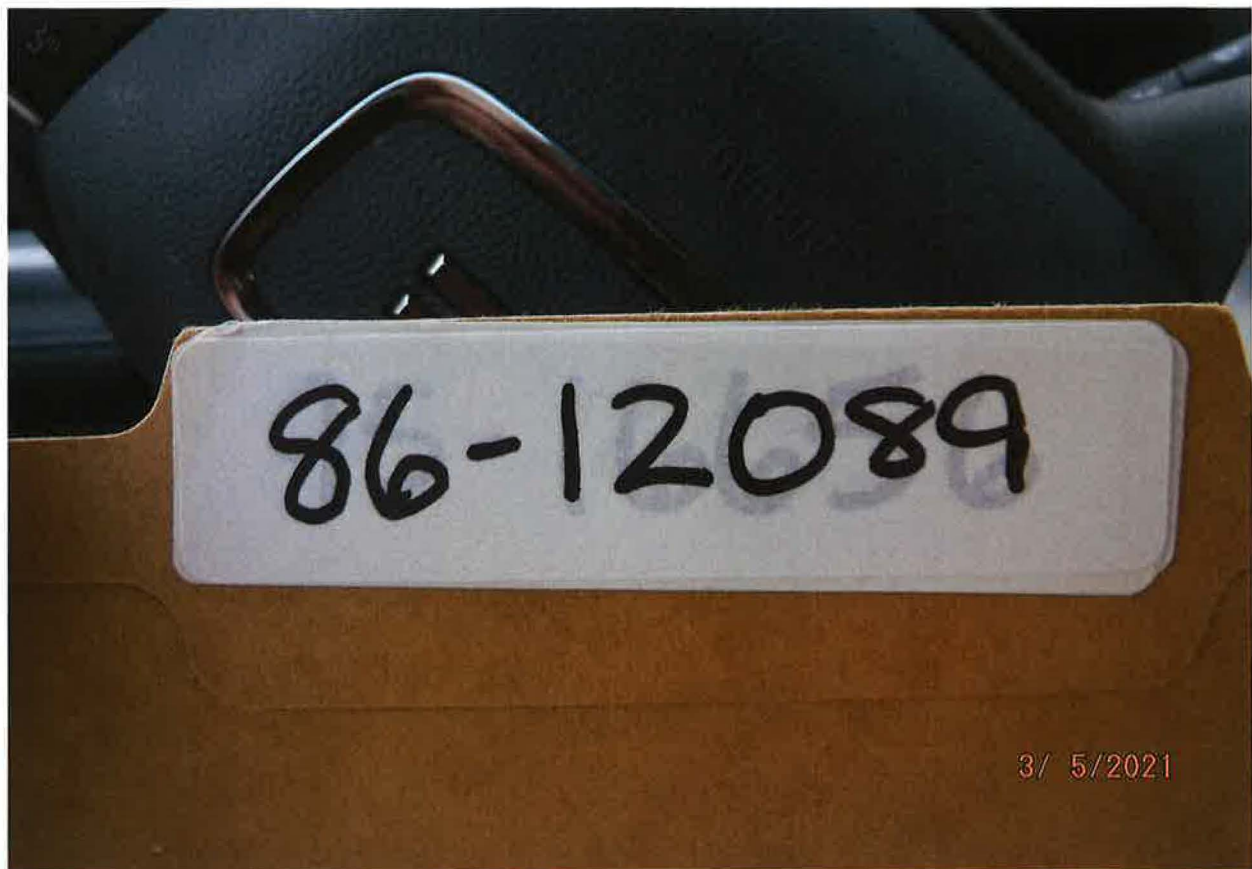
DOMESTIC system diagram.



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

0 0.035 0.07 0.14 Miles





F.E. DATE – 3/5/2021



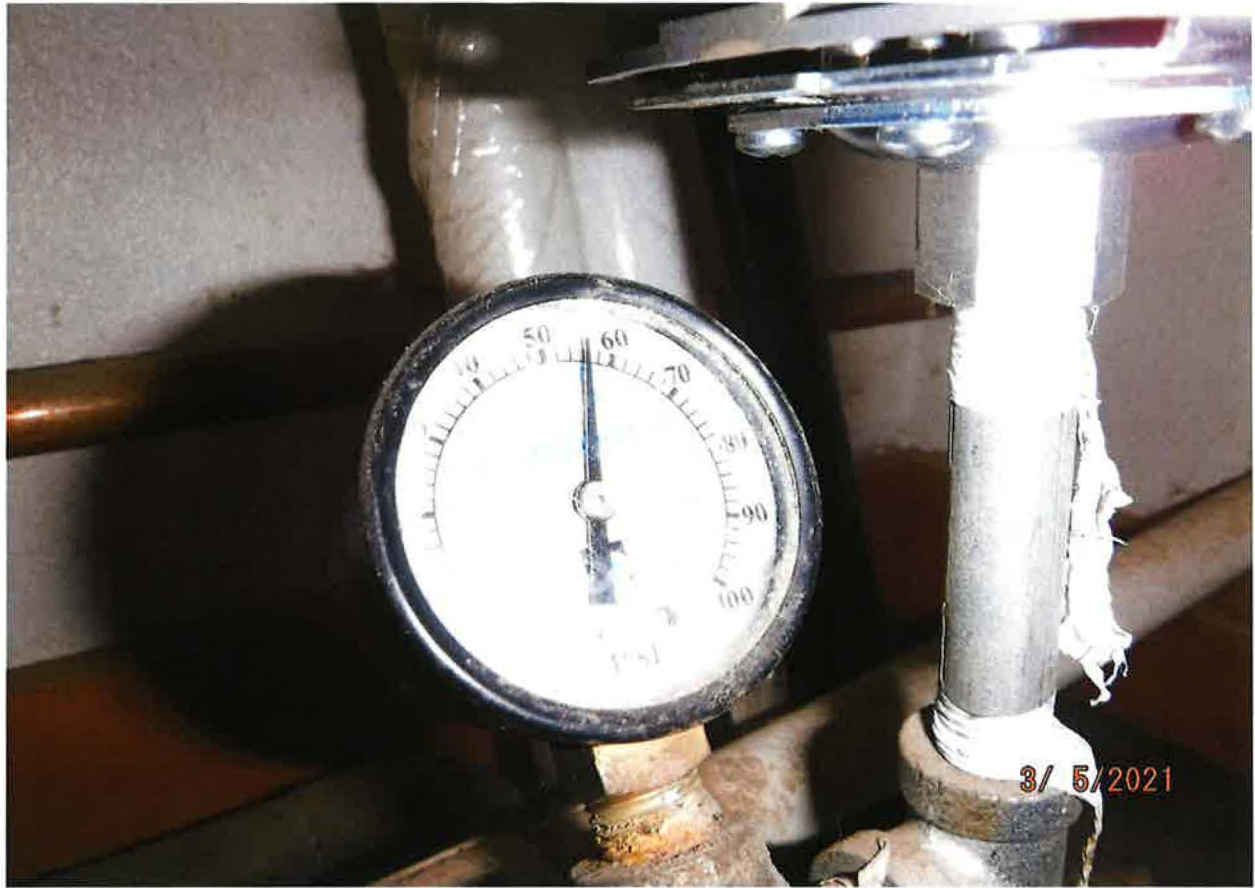
POD – GROUNDWATER WELL D0067766



WELL D-TAG D0067766



2 HP PUMP MOTOR INSTALLED ON PUMP IN WELL



55-65 PSI SYSTEM OPERATING PRESSURE



WATER SYSTEM PRESSURE TANK



5 GALLON BUCKET FLOW MEASUREMENT TAKEN FROM FROST FREE HYDRANT



DOMESTIC POU



DOMESTIC POU – APPLICANT WATERS TREES AROUND HOME



APPLICANT USES DRIP SYSTEM IRRIGATION FOR SMALL ORCHARD TREES (>1/2 acre)