

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17271
Exam Date: 10/19/2023

1. Current Owner:
BROWNING ESTATES WATER ASSOCIATION PO BOX 1132 ATHOL ID 83801-1132
2. Accompanied by: Shane Nalen
Phone No: (956) 330-1111
Address: 1004 E Seasons Rd., Athol, ID 83801
Relationship to permit Holder: Property Owner in Browning Estates Water Association

3. SOURCE:

GROUND WATER

Method of Determination: ArcMap & DRG - Well D-TAG # D0073396**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: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-17317	Well # D0073396	DOMESTIC	

Comments: Browning Estates Water Association has 6 homes that share a well #D0073396 and have two water rights #95-17271 and #95-17317. Water Right #95-17317 is licensed for 4 homes which includes irrigation of ½ acre per home. This water right #95-17271 is for 2 homes with ½ an acre of irrigation for each home. Due to pressure tanks, we had to perform a TPE to calculate the diversion rate which is 0.03 cfs or 13.9 gpm. The system has two 3,000-gallon tanks for storage. This would equate to 6 homes x 1.2 af x 325,850 gallons/365 days = 6,428 acre feet per day which lines up with our Application Processing Memo #73 – Utilization of the 24-Hour Fill Allowance for Impoundments. One of the storage tanks has a pressure pump in it which pushes water to the Concrete Vault that houses a Flow Meter, another pressurized tank and 6 individual water lines with shut off valves.

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼ NE¼, Sec. 25, Twp 53N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS Locator POD is located at **47.9168849, -116.7716680, Well D-TAG D0073396****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	
53N	04W	25		X															

Method of Determination: GPS Locator and ArcMap

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
D0073396	Franklin Electric	3			

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. Main water line from well routed directly to two storage tanks, one having a pressure pump in it to move the water to a concrete vault that houses the flow meter, another pressurized tank and 6 individual water lines with shut off valves.

E. FLOW CALCULATIONS☒

Additional Computation Sheets Attached

Measured Method: Theoretic pump equation estimates flow as follows:

- D0069388 – 3 hp pump at 585 ft with 45 PSI operating pressure equals **0.03 cfs** considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \text{ ac} \times 3 \text{ afa} = 3 \text{ af}$$

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

$$V = \text{Smaller of } V_{I.R} \text{ and } V_{D.R} = 3 \text{ af}$$

2. Volume Calculations for Other Uses: Domestic annual volume = in-home water usage for 2 homes = **1.2 af**.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 10/19/2023 with Christina Nalen, owner of parcel #OL1650010010, showed a groundwater well being used for domestic and irrigation uses. At the POD, GW well D0073396 and the control panel for the 3 HP pump motor installed in the well as part of the diverting works routes a buried main service line to two storage tanks. One storage tank has a pressure pump to send water to the concrete vault with a Flow Meter and another pressure tank. The water lines go out from the pressure tank to the homes for domestic and irrigation use. I was unable to perform a flow measurement due to inadequate pipe requirements. A theoretic pump equation derives flow rate for of 13.8 gpm or 0.03 cfs considering department rounding standards.

The permit approved development for 2 homes with ½ acre irrigation for each home which is a annual volume of 2.4 af using department standards. The permit was approved for a diversion rate of 0.06 cfs. When calculating the pump performance using the TPE, the maximum diversion rate for licensing equals **0.03 cfs**.

The domestic POU, observed during the exam, consisted of two homes with ½ acre irrigation per home. Photographs of the domestic uses were taken and are clearly visible in Arcmap aerial imagery, which was used to trace out the domestic POU during licensing review. Annual volume for domestic in-home use for 2 homes equals **2.4 af** as recommended for licensing.

Browning Estates Water Association has 6 homes that share a well #D0073396. The water right #95-17317 was licensed for a diversion rate of 0.10 cfs and a total volume of 4.8 af. for 4 homes with ½ acre irrigation each. This water right #95-17271 is for 2 homes with ½ an acre of irrigation for each home but due to the TPE calculation, the maximum diversion rate we can recommend is 0.03 cfs. We have added Condition 928 stating that the combined use for both of these water rights shall not exceed 0.10 cfs which is the maximum diversion rate for WR#95-17317.

Conditions 046 and 26A were removed from the permit during licensing review. All other conditions on the permit shall be carried forward to licensing. I've added condition 928 as described above to mitigate overlap concerns between Water Right 95-17317 & this Right 95-17271. As the residences share a well, I've included description of combined use limitations for domestic use of 6 homes between the two rights with a combined use of no more than 0.10 cfs. There are no additional overlapping concerns for licensing this right.

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	0.03 CFS	2.4 AF

Totals: 0.03 CFS 2.4 AF

2. Recommended Amendments

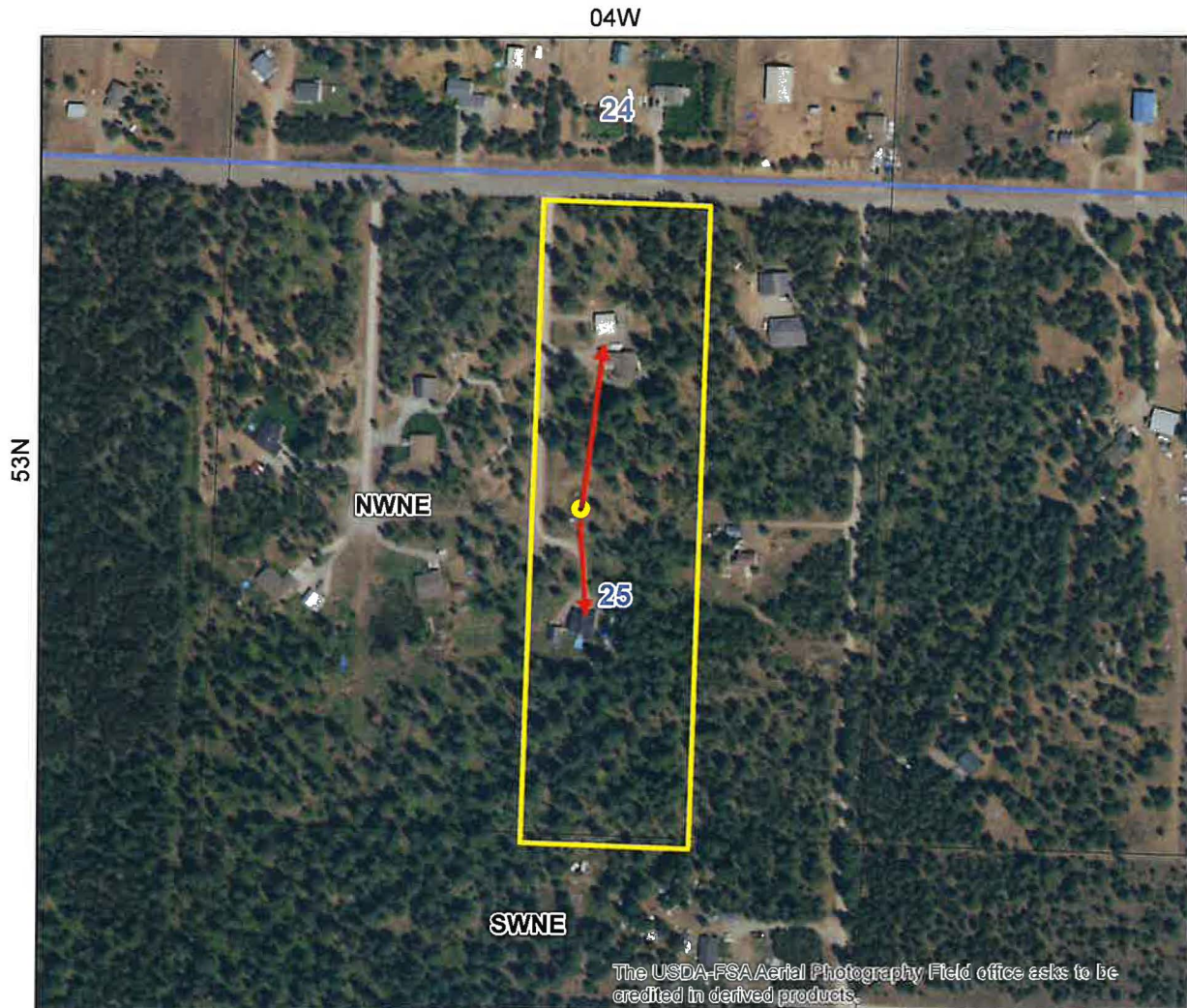
 Change P.D. as reflected above Add P.D. as reflected above X None
 Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION Tammy Alleman -

Field Examiner's Name Tammy Alleman Date 12/19/23
 Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment to Water Right
95-17271

This map depicts the DOMESTIC place of use diagram.



0 0.045 0.09 0.18 Miles

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



THEORETICAL PUMPING EQUATION(S) FOR WR# 95-17271

Theoretical Pumping Equation is estimated to lift 585 ft, and running at 45 psi.					
<u>PUMP EQUATION</u>					
WATER RIGHT No. 95-17271					
Pump in Well D0073396	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = HP*8.8*Eff/H	3	689.0816	0.8	585	45
Q = 0.031 cfs 13.8 gpm					

95-17271

BENEFICIAL USE FIELD EXAM 10/19/23



POD – WELL TAG #D0073396



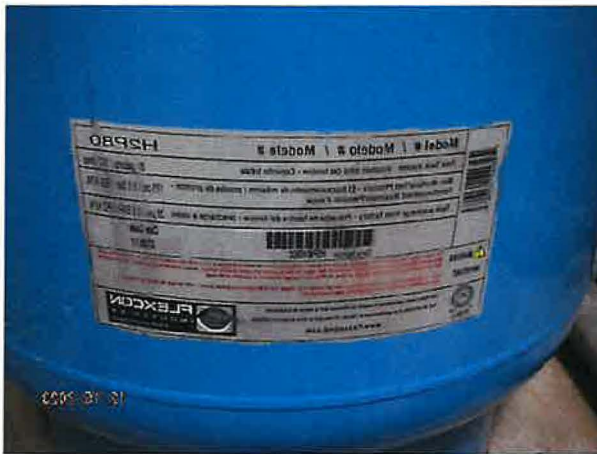


TWO 3,000 GALLON STORAGE TANKS





LINE COMING IN TO FLOW METER FROM STORAGE TANK (WITH PRESSURE PUMP) ABOVE AND PRESSURE TANK BELOW



WATER LINES TO 6 HOMES WITH SHUTOFF VALVES

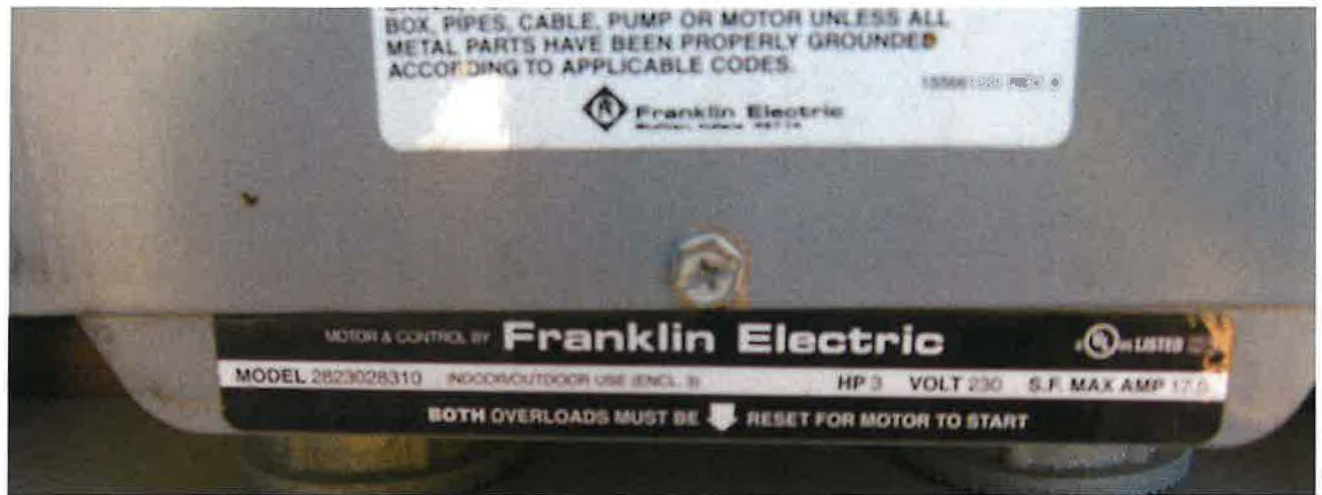




CONCRETE VAULT CONTAINING PRESSURE TANK AND ON/OFF VALVES FOR WATER TO EACH HOME



PUMP HOUSE OVERVIEW



3 HP FRANKLIN ELECTRIC PUMP AND POTECTION SYSTEM





POU - 2 HOMES (DOMESTIC USE)





POU – FRONT YARD IRRIGATION





POU – IRRIGATION LINES IN FRONT YARD



POU - BACKYARD IRRIGATION

Alleman, Tammy

From: Shane Nalen <shane_nalen@yahoo.com>
Sent: Monday, October 23, 2023 11:54 AM
To: Alleman, Tammy
Subject: Re: Field Exam on Water Right 95-17271

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

#1 concrete vault. Contains on/off for water to each household and pressure tank.

#2/#3. Concrete water tanks

Thanks

Shane Nalen

On Oct 23, 2023, at 9:57 AM, Alleman, Tammy <Tammy.Alleman@idwr.idaho.gov> wrote:

Hi Shane,

Thank you for the prompt response. I have a question on the things in the pictures. I had thought that the first picture was the holding tank but now, I am thinking it is the latter pictures #2 & #3. Can you explain what Pictures #1, 2, & 3 are for my exam?

Thank you,

Tammy

From: Shane Nalen <shane_nalen@yahoo.com>
Sent: Monday, October 23, 2023 9:38 AM
To: Alleman, Tammy <Tammy.Alleman@idwr.idaho.gov>
Subject: Re: Field Exam on Water Right 95-17271

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Hi Tammy,

We have 2, 3000 gallon tanks. Thanks