

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9739
Exam Date: 08/16/2022

1. Current Owner:
ARROWHEAD RANCH WATER ASSOCIATION INC PO BOX 1276 SANDPOINT ID 83864-0862
2. Accompanied by: Fred Vincent
Phone No: 206-927-1698
Address: PO Box 184 Cocolalla ID 83813
Relationship to permit Holder: President – Arrowhead Ranch Water Assn.

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
96-4058	Cocolalla Lake	Irrigation	Statutory Claim – not filed on yet in CFPRBA
96-8187	Groundwater	Domestic	License
96-8970	Cocolalla Lake	Irrigation	License
96-9566	Groundwater	Domestic & Irrigation	License
96-9848	Cocolalla Lake	Domestic	Permit

Comments: Numerous overlapping water rights as detailed below:

- 96-4058 – this statutory claim has not been validated by the department and doesn't have a notice of claim at this time in the ongoing Clarkfork Pend Oreille River Basin Adjudication (CFPRBA) process. Backfile information does indicate this statutory claim may be associated with parcels RP017420000010A & RP017420000020A. The first parcel is owned by the Bennett Trust, Michael D Bennett (Trustee), and is one of the parcels that Permit 96-9739 serves domestic water to 1 home with ½ acre irrigation included. I have not recommended combined use conditions for licensing this permit due to the statutory claim not being claimed nor validated by IDWR at this time. If a Notice of Claim was filed, the irrigation use from the lake is a separate use not associated with the applicant's community GW well system and there is no concern for overlap.
- 96-8187 – this licensed right authorizes domestic use for 2 homes from a separate groundwater well than the applicant's water source. A Notice of Claim has not been filed in the CFPRBA to date. I evaluated backfile data for 96-8187 which shows map documents that illustrate the well and POU for the two homes is located on parcel RP55N02W183400A, which is not associated with the applicant's community well and collective domestic use POU(s). There is no concern for overlap.
- 96-8970 – this license authorizes irrigation from Lake Cocolalla with backfile data illustrating the POU/POD is associated with parcel RP00693000010A, which is not associated with the applicant's water system and not a concern for overlap.
- 96-9566 – this license uses a separate groundwater well but does serve 1 home and irrigation for parcel RP017420000010A, which directly overlaps this Permit's POU for 1 home domestic use. I have recommended licensing 96-9739 with a condition of approval like X35 that describes combined use between the two separate systems for 1 home domestic use associated with the parcel described above, if the notice of claim filed on 96-9566 is decreed as claimed.
- 96-9848 – this Active Permit authorizes development of a Cocolalla Lake water source system for domestic use of 1 home with ½ acre irrigation included on parcel RP017420000020A for Ryan Mills. At the date of field exam for 96-9739 Mr. Mills home was still service connected to the Arrowhead Ranch Water Company LLC's community groundwater system. I'm not recommending inclusion of combined use for the licensing of 96-9739 as the lake water system hasn't been developed at the date of my exam. **Future beneficial use exam for 96-9848 should investigate overlap concern and assign combined use limitations if the property owner for RP017420000020A is still served water from groundwater system for 96-9739.**

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
96-9579	Groundwater	Domestic	License w/Notice of Claim filed in the CFPRBA
96-10650	Groundwater	Domestic	Permit in process for licensing approval

Comments:

- 96-9579 – this license with Notice of Claim filed in the CFPRBA uses the same groundwater well as this water right and 96-10650. I conducted the field exam for both this permit and 96-10650 simultaneously and am currently finalizing both permits for license approval. Due to the direct overlap between PODs, I am recommending condition X35 for licensing approval for this permit, 96-9579 & 96-10650. X35 shall describe that when combined the three water rights shall not exceed a maximum diversion rate of 0.05 cfs, which is the largest diversion rate found between the three water rights at time of their respective beneficial use field examinations. In the future if the applicant changes the well pump configuration a new application for permit shall be required to authorize a larger diversion rate. In sum, the three WRs serve 13 homes for domestic use, which would benefit a department standard diversion rate of 0.17 cfs, but the applicant is limited by pump performance as developed at time of field exam(s). Condition F06 was updated during licensing review to state that 96-9579, 96-9739, & 96-10650 share the same POD.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER L1 (NW¼ NW¼), Sec. 18, Twp 55N, Rge 02W, B.M. BONNER County

Method of Determination: GPS; POD is located at -116°37.7920, 48°7.2321, well 96-94-N-170.

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	
55N	02W	18					X L6	X L1											

Method of Determination: Beneficial use field examination & 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
96-94-N-170	Franklin Electric	5	Unknown	Franklin Electric	Unknown

D. FLOW MEASUREMENTS

1.

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

2. Measurements: I was unable to perform flow measurements; the main service line from the GW well is buried routing directly to a vaulted 2,000-gal storage reservoir prior to service pipes daylighting in the pump station. A Theoretic Pump Equations derived a flow rate of 20.9 gpm or **0.05 cfs** considering department rounding standards.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation with 5 hp pump at depth of 620 ft with system operating pressure of 60 PSI equals 20.9 gpm or 0.046 cfs, which equals 0.05 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A
2. Volume Calculations for Other Uses: Maximum diversion rate equals 3 homes x 1.2 afa per home = 3.6 af.

G. NARRATIVE/REMARKS/COMMENTS

Beneficial use field exam conducted on 8/16/2022 with the applicant's representative, Fred Vincent – President of Arrowhead Ranch Water Association Inc., showed groundwater being diverted for domestic purposes. At the POD, well 96-94-N-170 located in Lot 3 - Arrowhead Ranch Sub., has a 5 hp Franklin Electric pump motor installed. The main service line routes downhill to the east to a 2,000-gal community storage reservoir prior to distribution to service connections. The pump station houses multiple pressure tanks that are incorporated in the delivery system. I was unable to perform flow measurements due to inadequate pipe requirements. A Theoretic Pump Equation was evaluated during licensing review, which demonstrates the 5 hp pump capacity of **0.05 cfs** considering department rounding standards, which is recommended for licensing as the maximum diversion rate.

The applicant owns prior WR license 96-9579 & active Permit 96-10650, which share this permit's POD. As discussed above, condition F06 was included during the permit approval process & I've revised F06 during licensing review to describe the three water rights sharing the single POD. Additionally, the three WRs have overlapping concerns for diversion rate from the single GW well. I have recommended licensing 96-9739 & Permit 96-10650 with condition X35 that describes that when the three WRs are combined, they shall not exceed a maximum diversion rate of 0.05 cfs based on the 5 hp pump installed at time of examination. During the exam Mr. Vincent asserted he was in the process of working with DEQ to evaluate replacement of the current pump with a larger pump. If the water system is changed from current configuration, a new application for permit shall be required to add additional diversion rate above the 0.05 cfs authorized for WRs 96-9579, 96-9739, & 96-10650 when combined.

Mr. Vincent & I walked the POU during the exam and photographs were taken of the three domestic homes included with this permit. Small scale irrigation was occurring on each of the three parcels as authorized by ½ acre per home on the permit. During licensing review, I used ArcMap aerial imagery to assign POU shapes of approximately 0.8 acres in size which allows for the primary residence and up to ½ acre irrigation. The annual volume & maximum diversion volume recommended for licensing equals 3 homes x 1.2 af per home = **3.6 af**. The applicant's system serves a total of 13 homes including the 3 associated with this permit, and once active permit 96-10650's, and 9 homes associated with prior Right 96-9579. The system is monitored by DEQ under PWS No. ID 1090289. Mr. Vincent asserts that a 3-inch service line follows

roadways to serve the downhill properties on the system and a 2-inch service line routes to all the uphill properties from the pump station.

During Licensing review several changes were made to conditions of approval toward licensing as follows:

- I removed conditions 26A, 046, & 106 based on compliance by the applicant. PWS No. ID1090289.
- I revised condition F06 to include Active Permit 96-10650 which was field examined at the same time as this permit and is being recommended for licensing congruently with this right.
- I added condition X59 & X60 to accurately describe the POD & POU located within named subdivision(s).
- A text version of X35 was added describing combined use limits between Rights 96-9566 & 96-9739 for domestic use for 1 home.
- Condition X35 was added to described diversion rate combined use limits between Rights 96-9579, 96-9739, & 96-10650, limiting all three to a maximum diversion rate of 0.05 cfs between the rights from the shared well.

All other conditions on the permit shall be carried forward to licensing. All overlapping concerns toward licensing this right have been designated in detail on PG 1 & 2 of this report and subsequent addition of conditions of approval (text & X35). 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	0.05 CFS	3.6 AF
Totals:		0.05 CFS	3.6 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 ☒ X None

I. AUTHENTICATION

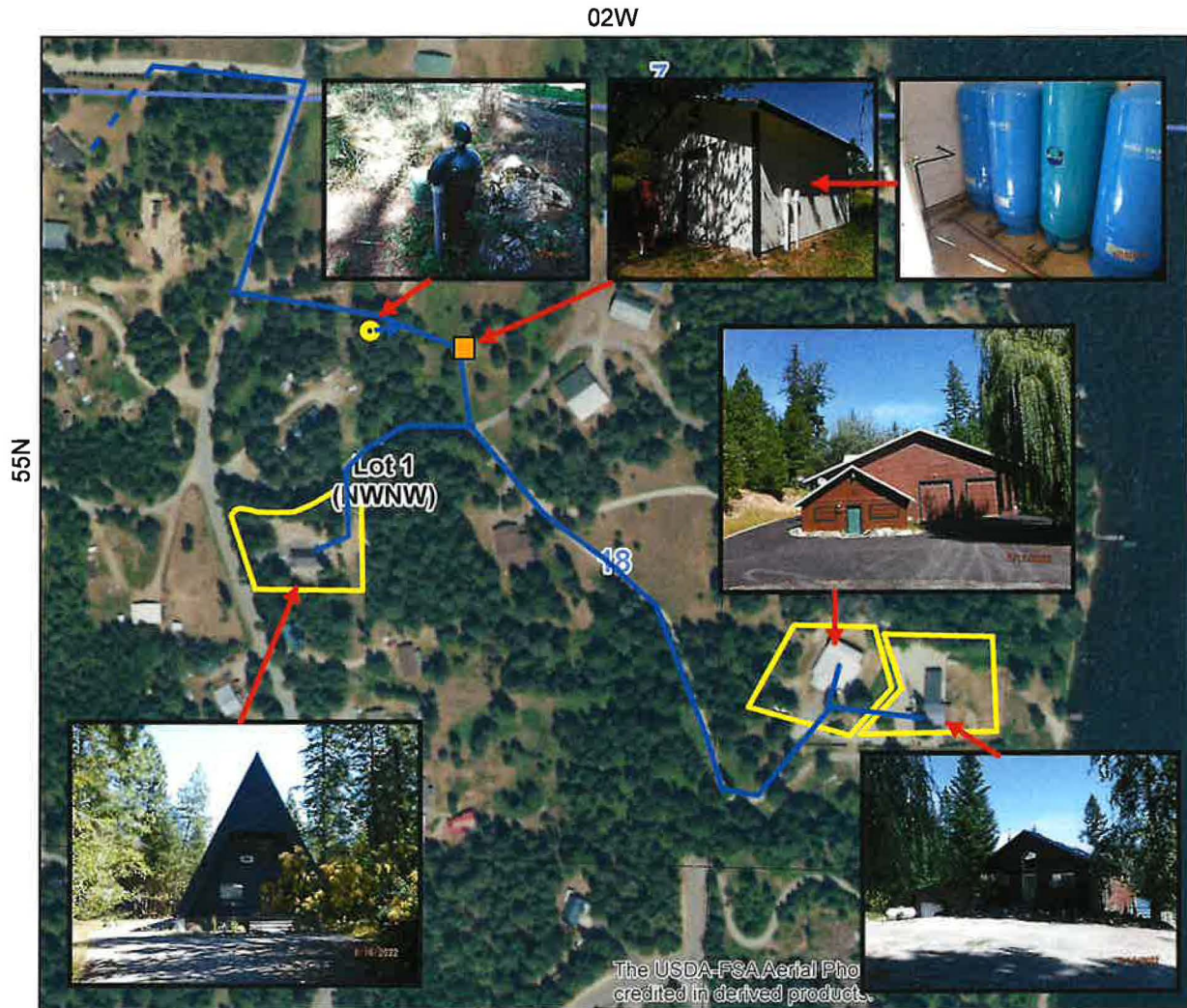
Luke Bates -

Field Examiner's Name [Signature] Date 12/19/2023

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9739

This map depicts the DOMESTIC system diagram.



0 0.0375 0.075 0.15 Miles

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



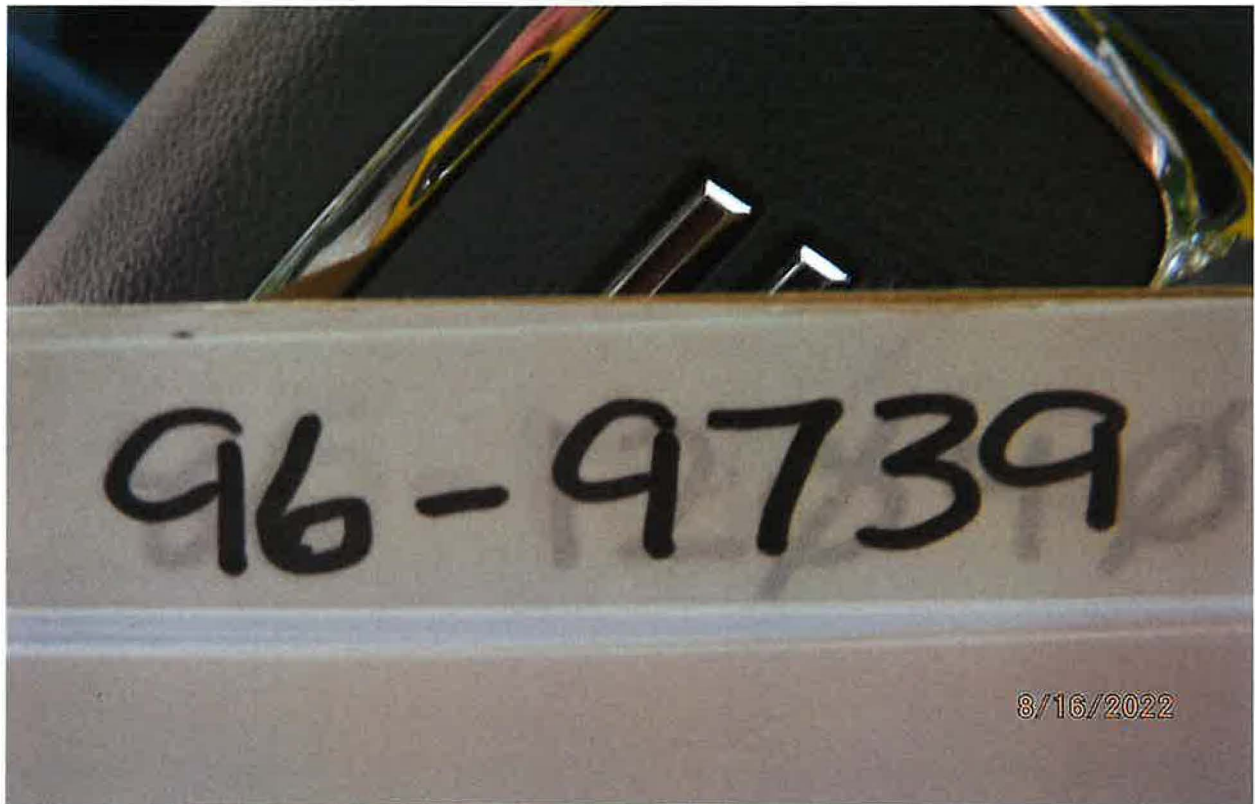
THEORETICAL PUMPING EQUATION(S) FOR WR# 96-9739

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 620 ft, and running at 60 psi.

PUMP EQUATION

WATER RIGHT No. 96-9739

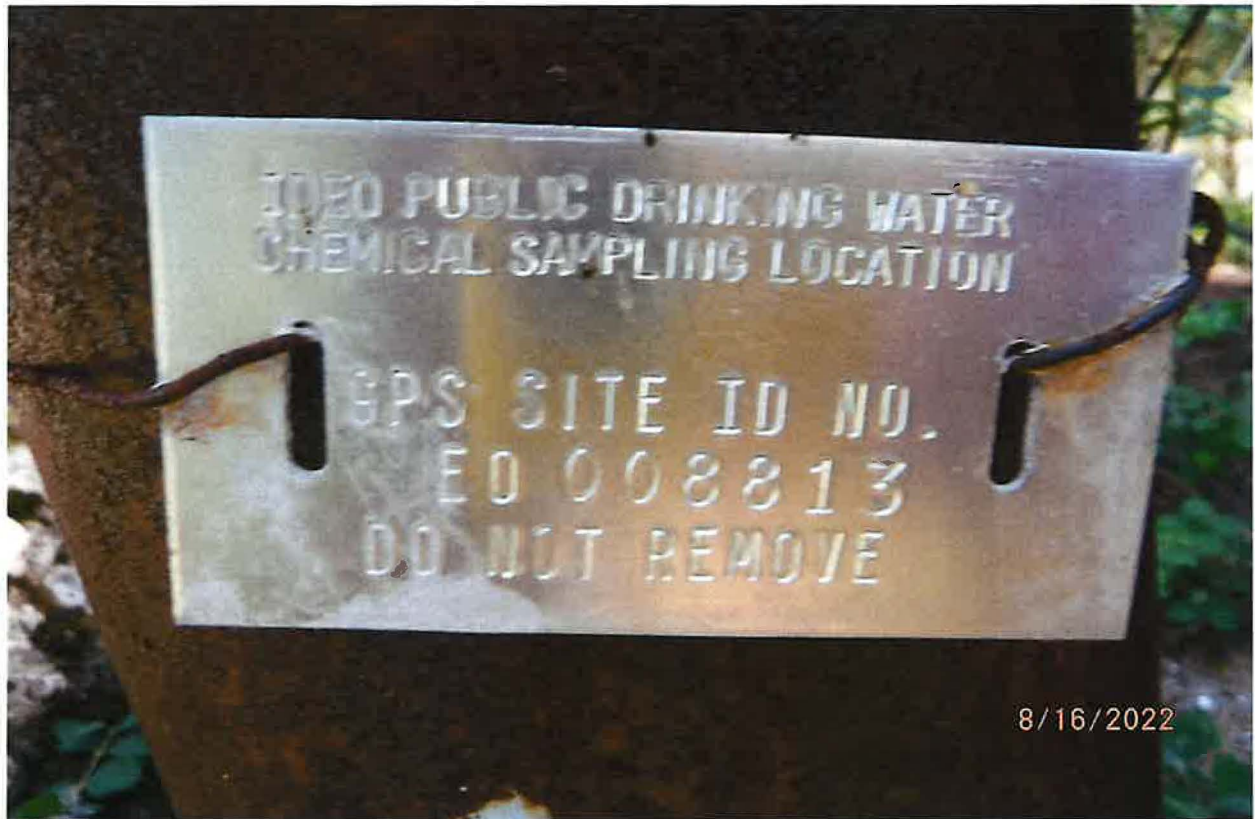
96-94-N-170	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = HP*8.8*Eff/H	5	758.7755	0.8	620	60
Q = 0.046 cfs 20.9 gpm					



BENEFICIAL USE FIELD EXAMINATION DATE 8/16/2022



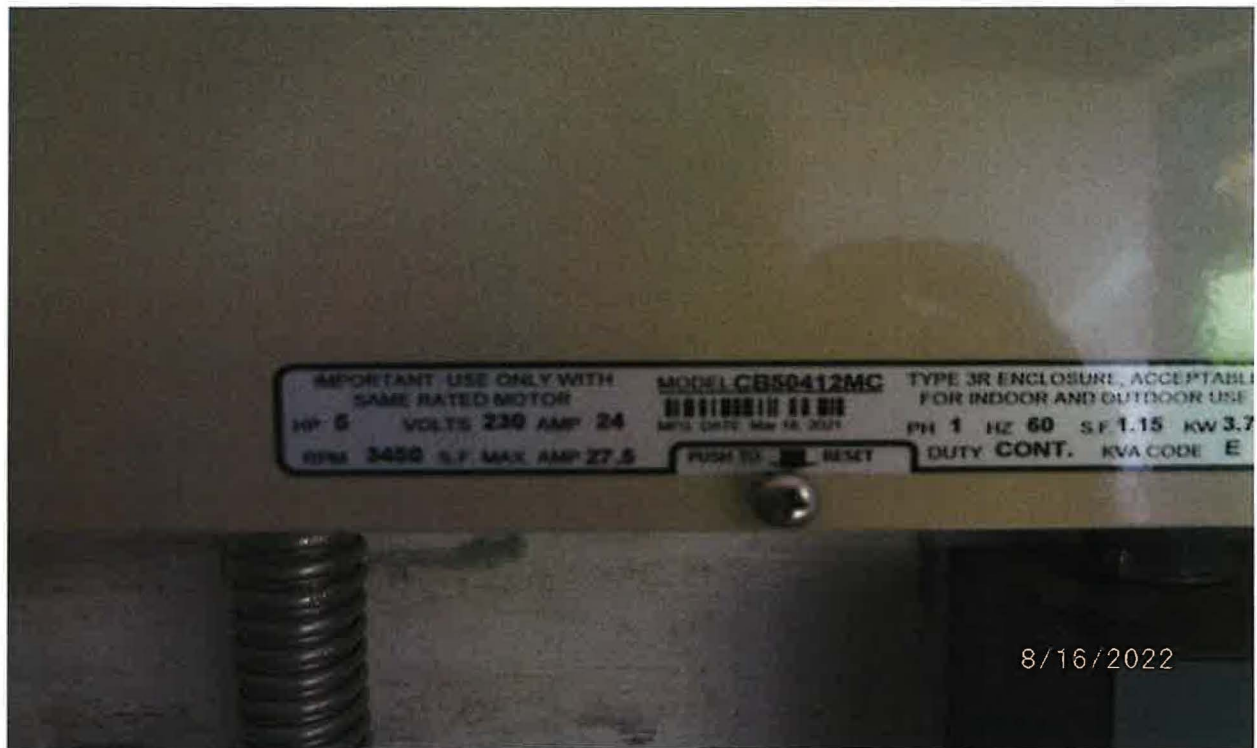
POD – WELL 96-94-N-170



DEQ – TAG, CORRESPONDING Public Water System No. ID1090289



MAIN SERVICE LINE ROUTES DIRECT TO PUMP HOUSE AND PRESSURE TANKS PRIOR TO DISTRIBUTION
TO POU



5 HP PUMP MOTOR INSTALLED IN WELL



DIVERTING WORKS INCORPORATES SEVERAL PRESSURE TANKS FOR THE COMMUNITY SYSTEM



WATER LINE & VALVES LOCATED OFF RD





DOMESTIC POU – Lot 1 Michael and Dennis Subdivision; RP017420000010A



DOMESTIC POU – Lot 2 Michael and Dennis Subdivision; RP017420000020A



DOMESTIC POU – Lot 5A REPLAT, Arrowhead Ranch Subdivision; RP0069300005A0A