

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9360
Exam Date: 07/20/2021

1. Current Owner:
RYAN BENNETT 764 GEENEN RD COCOLALLA ID 83813-9705
2. Accompanied by: Ryan Bennett
Phone No: 208-255-2160
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
96-9882	UNNAMED STREAM	IRRIGATION	split Water Right – In process licensing review

Comments: 96-9882 has been split from this permit during licensing review, due to the groundwater well (96-9360) and unnamed stream (96-9882) being separate sources and not co-mingling in the applicant's water system. 96-9882 overlaps the irrigation POU for this permit & condition X35 has been added during licensing review to mitigate overlap concerns.

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 NW¼ SE¼, Sec. 12, Twp 55N, Rge 03W, B.M. BONNER County

Method of Determination: GPS; POD located at -116°38.457, 48°7.556 well 96-96-N-316.

PLACE OF USE: IRRIGATION

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	03W	12														1.0			1.0

Total Acres: 1.0

PLACE OF USE: STOCKWATER

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	03W	12													X				

Method of Determination: Field examination and Arcmap aerial imagery.

3.

X Delivery System Diagram Attached (required). Indicate all major components and distances between components. 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 Serial No.	Pump Make	Pump Serial No. or Discharge Size
96-96-N-316	FRANKLIN	2			

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. A theoretic pumping equation was computed which derives a flow rate of 7.8 gpm or 0.02 cfs considering department rounding standards with the 2 HP pump installed at a depth of 710 feet with 45 PSI operating pressure.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation = 2 HP pump/motor, installed at depth of 710 feet, with 45 PSI operating pressure = 7.8 gpm or 0.17 cfs = 0.02 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \text{ ac} \times 3.0 \text{ afa} = 3.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 214\text{-days} \times 1.9835 = 8.5$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 3.0 \text{ af}$$

2. Volume Calculations for Other Uses:

- Stockwater annual volume =
 - 6 horse x 12 gpd x 365 days = 26,280 gal per year
 - 25 chickens at 1 gpd x 365 days = 9,125 gal per year
 - 4 goats x 2 gpd x 365 days = 2,920 gal per year
 - Stockwater Total = 26,280 gal (Horse) + 9,125 gal (Chicken) + 2,920 gal (Goat) / 325,850 gal per af = 0.1 af considering department rounding standards.
- Maximum diversion volume = 3.0 af (irrigation) + 0.1 af (stockwater) = 3.1 af

G. NARRATIVE/REMARKS/COMMENTS

Right 96-9882 has been split from permitted Right 96-9360 due to the groundwater source and unnamed source uses being separate water systems that do not co-mingle. Permit 96-9360 accounts for the groundwater source water uses.

Field exam performed on 7/20/2021 with the applicant, Ryan Bennett, showed a groundwater well being used for irrigation and stockwater uses. At the POD, an older well No. 96-96-N-316 has a main service line that routes directly to a small pump house and pressure tank before being distributed to uses. I was unable to perform flow measurements due to inadequate pipe requirements. A theoretic pumping equation was computed which derives a flow rate of 7.8 gpm or 0.02 cfs considering department rounding standards with the 2 HP pump/motor installed at a depth of 710 feet with 45 PSI operating pressure. The approved permit authorized development of water uses with larger diversion rates, but the applicant is limited by the pump performance found at time of field exam. Stockwater diversion rate remains 0.02 cfs, but irrigation diversion rate is limited to 0.02 cfs. The maximum diversion rate recommended for licensing purposes equals **0.02 cfs**.

The irrigation POU was walked with Mr. Bennett and consists of small lawn spaces around the main home, a small fenced in green space with orchard trees, and a large garden with row crops and berry bushes. From the pressure tank water service pipes route beneath ground to each of the irrigation areas. Frost-free hydrants and hose-bibs from the house provide irrigation by hose and sprinkler and irrigation riser pipes to runs of micro-emitters & soaker hoses are used by the applicant for the garden area. Field maps were used to sketch the irrigation POU, and during licensing review Arcmap aerial imagery was used to trace out the irrigation POU equaling 1.0 acres. The annual volume for irrigation equals 1.0 ac x 3.0 afa = 3.0 af, which is recommended to license this permit.

The stockwater POU consists of fenced in treed pastureland and open area around the home for use by horses, goats, and chickens. Arcmap was used to designate the POU which is central to the well and area that is reachable by garden hoses. Due to the abnormally dry year, the horses were not being pastured on property at time of exam, but photographs were taken which show well used stock areas. The stockwater annual volume equals 26,280 gal (6 horses) + 9,125 gal (25 chickens) + 2,920 gal (4 goats) / 325,850 gal per af = **0.1 af** considering department rounding standards. The maximum diversion volume for licensing purposes equals **3.1 af**.

Conditions 26A, 01M, and X02 were removed from the permit during licensing review. Condition R62 was replaced with R58 to describe the 3.0 afa per acre limitation for the irrigation beneficial use. Condition 004 is being carried to licensing. Overlap concerns: 96-9882 has been split from this permit during licensing review, due to the groundwater well (96-9360) and unnamed stream (96-9882) being separate sources and not co-mingling in the applicant's water system(s). 96-9882 overlaps the irrigation POU for this permit & condition X35 has been added during licensing review to mitigate overlap concerns; X35 describes combined use limits for the total irrigation acreage of 1.0 acres at the POU. There are no further overlap concerns for this water 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>
IRRIGATION	04/01 to 10/31	0.02 CFS	3.0 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF

Totals: 0.02 CFS 3.1 AF

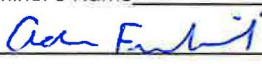
2. Recommended Amendments

☐ 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 12/3/2021

Reviewer  Date 12/30/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9360

IRRIGATION system diagram.

03W



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

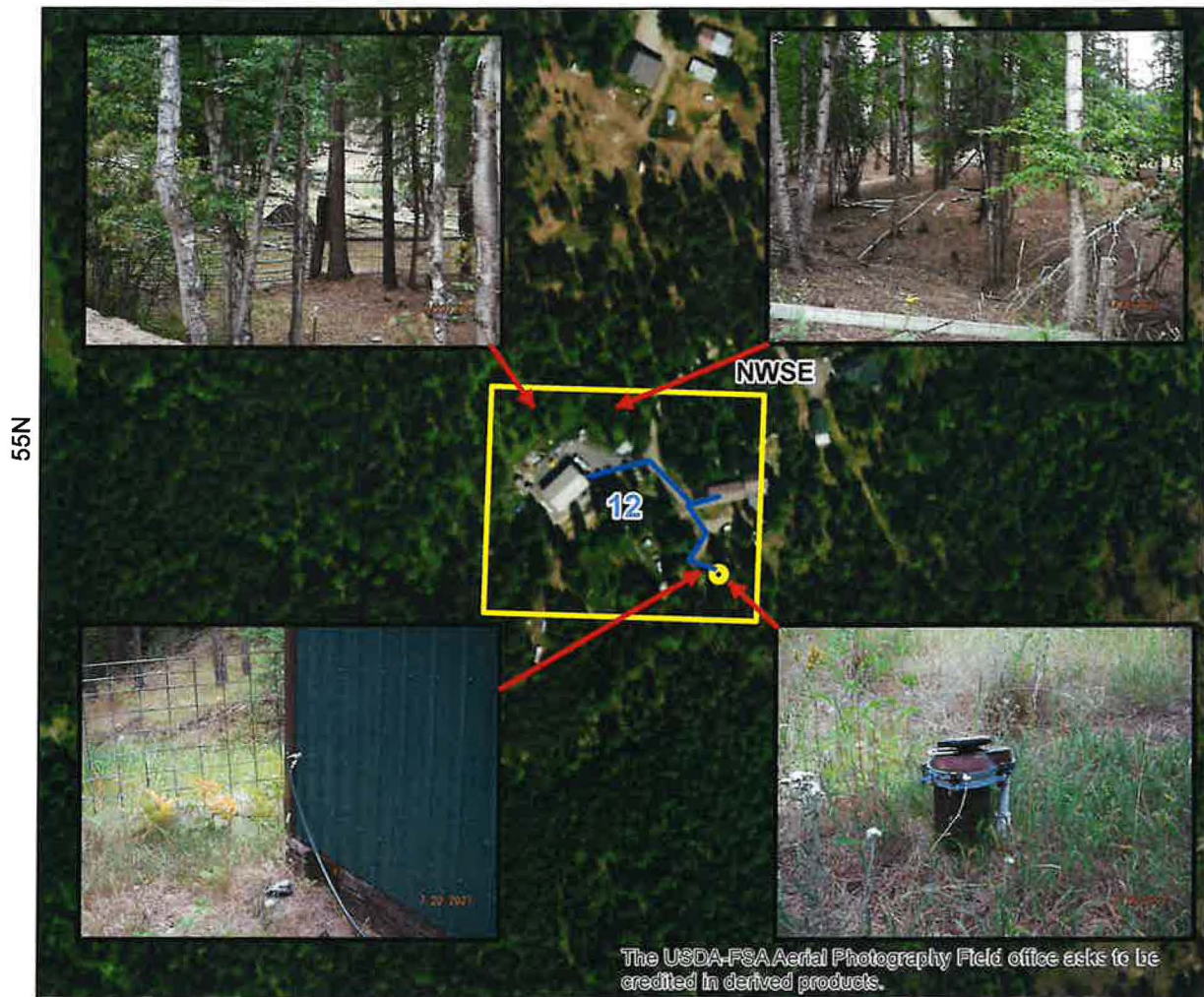
0 0.035 0.07 0.14 Miles



State of Idaho
Department of Water Resources
Attachment to Water Right License
96-9360

This map depicts the STOCKWATER place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

03W



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

0 0.035 0.07 0.14 Miles



FORWARD WITH COPY TO WATER RESOURCES

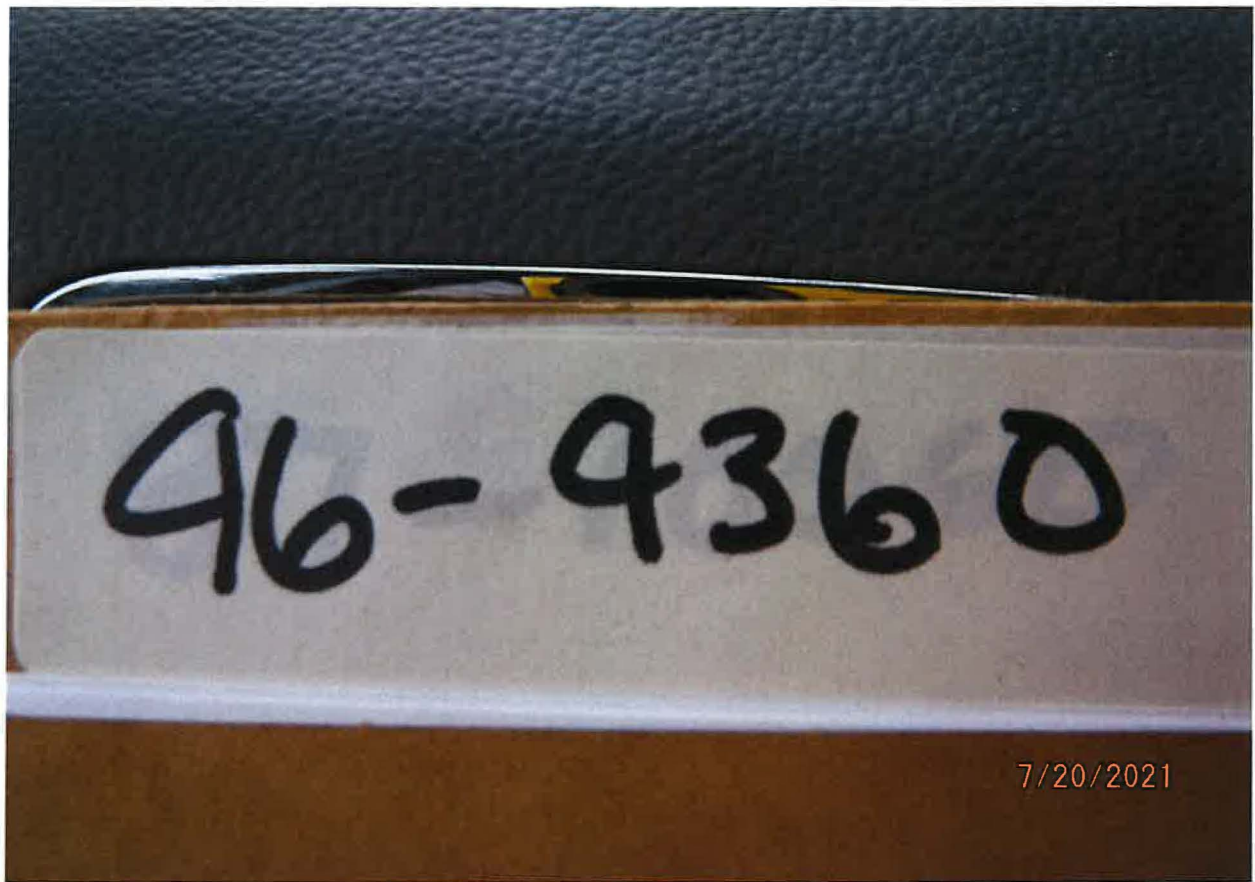
THEORETICAL PUMPING EQUATION(S) FOR WR# 96-9360

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 710 ft, and running at 45 psi.

PUMP EQUATIONS

WATER RIGHT No. 96-9360

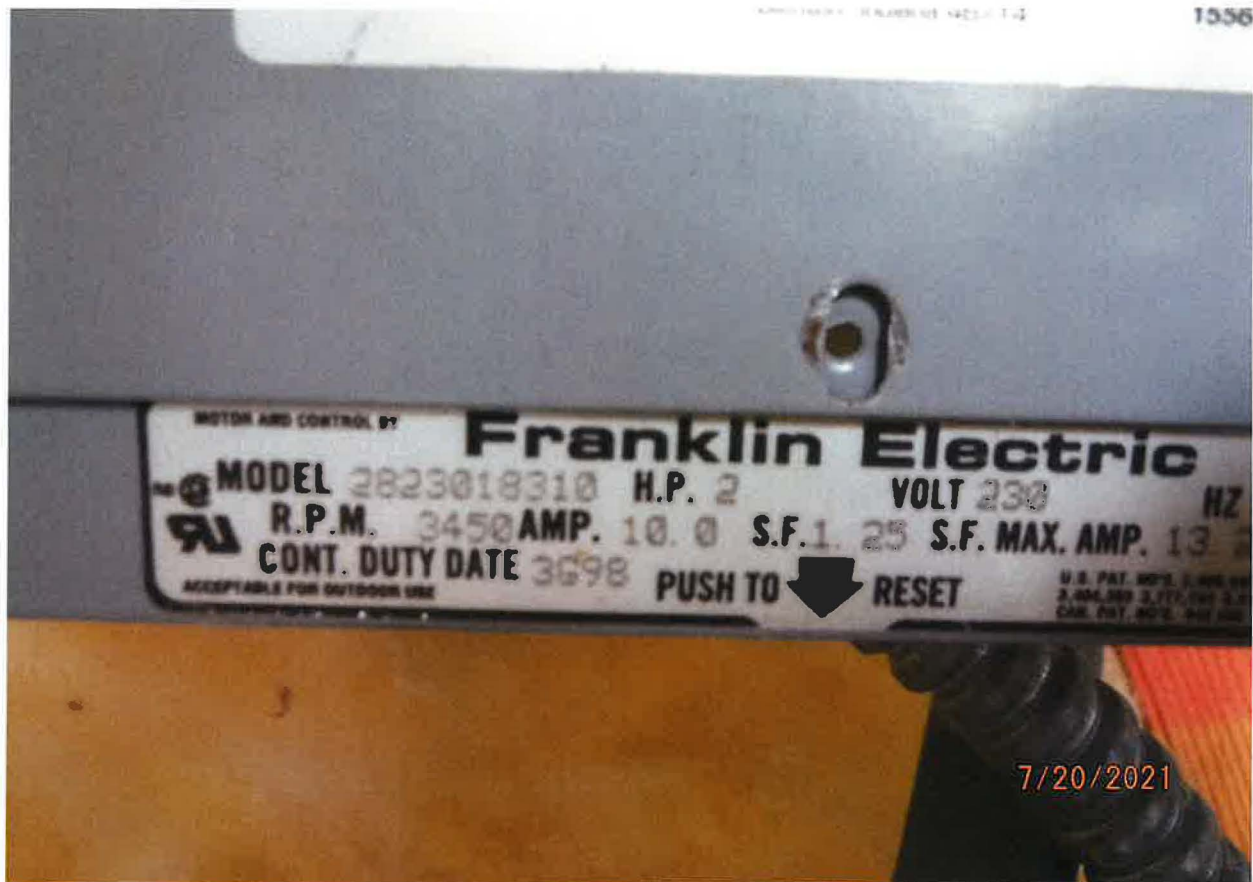
96-96-N-316	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = $HP \cdot 8.8 \cdot \text{Eff} / H$	2	814.0816	0.8	710	45
Q = 0.017 cfs 7.8 gpm					



FIELD EXAM DATE 7/20/2021



POD - WELL 96-96-N-316



2 HP PUMP INSTALLED IN WELL



WELL PUMP WITH SMALL PRESSURE POT



PUMP HOUSE



IRRIGATION POU – ASSORTED FRUIT TREES LOCATED IN POU



IRRIGATION POU



IRRIGATION POU – RISER PIPE TO SMALL EMITTER SPRINKLERS



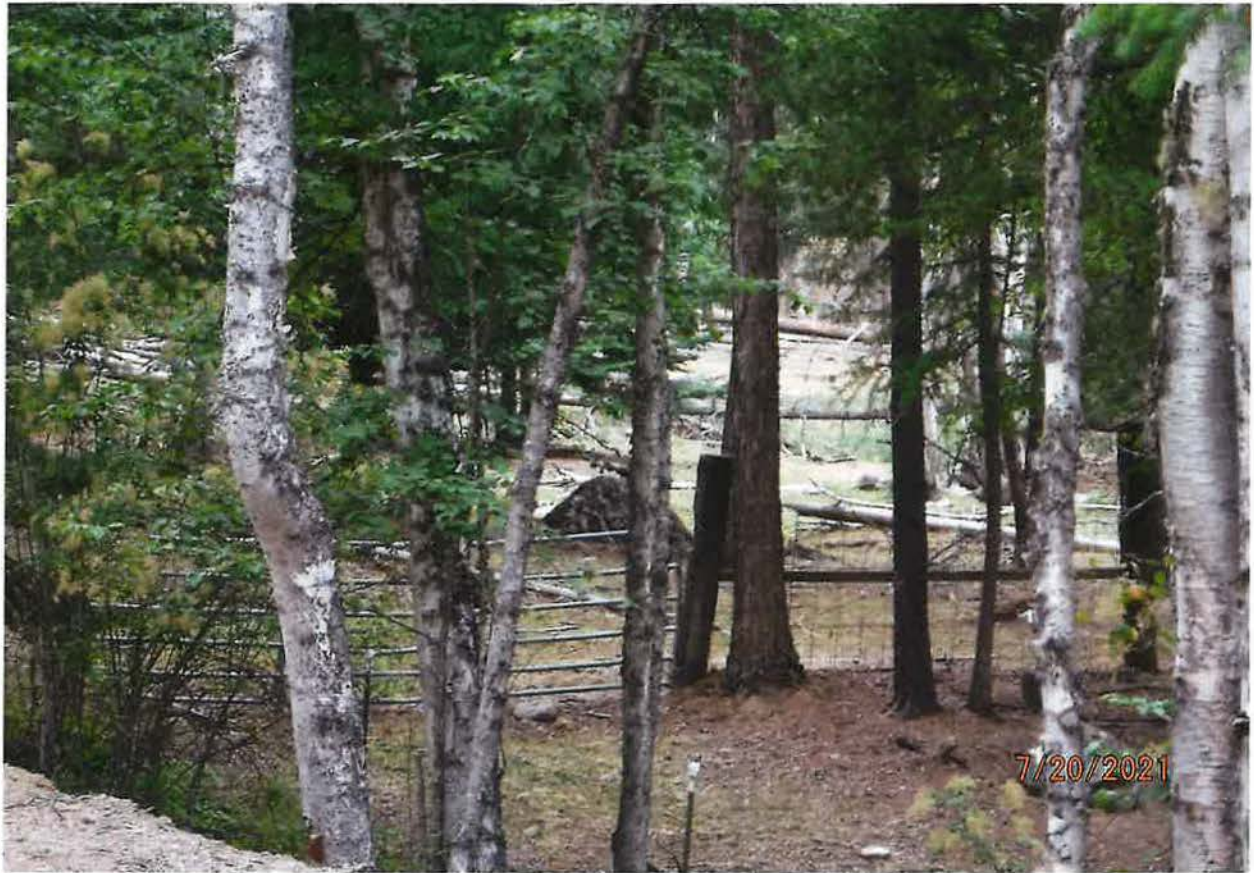
IRRIGATION POU





IRRIGATION POU





STOCKWATER POU

