

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-10431

Exam Date: 05/18/2023

1. Current Owner:
HEILMANN LIVING TRUST PO BOX 938 SAGLE ID 83860

2. Accompanied by: Cheri Heilmann
Phone No: (530) 575-9630
Address: Same as above
Relationship to permit Holder: Applicant

3. **SOURCE:**
GROUND WATER

Method of Determination: ArcMap & DRG

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Comments: The applicants have a claim for Domestic Use and this Water Right for 1 acre of Irrigation. These uses do not overlap but are separate uses from the same source.

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

Water Right No.	Source	Purpose of Use	Basis
96-10398	GROUNDWATER	DOMESTIC	ADJUDICATION CLAIM

Comments: The applicants use the same well for both Domestic Use and 1 acre of Irrigation. These uses do not overlap but are separate and don't cause any overlap concerns.

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

GROUND WATER SW¼ SE¼, Sec. 10, Twp 56N, Rge 02W, B.M. BONNER County

Method of Determination: GPS. POD is well D0010150 located at -116° 33.2148, 48° 12.5318 (+/- 13 ft)

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	
56N	02W	10															1.0		1.0

Right Acre Limit: 1.0

Total Acres: 1.0

Method of Determination:

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 Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0010150	CB10412	1		CENTRI PRO	

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Three 5-gallon bucket tests were completed from a frost-free hydrant co-located with the well, with an average of three resulting in a diversion rate of 16.9 gpm = **0.04 cfs**, considering department rounding standards.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: 5-GAL Bucket Test = (5 gal / 19.16 sec) x 60 sec/min = 15.66 gpm
 = (5 gal / 16.87 sec) x 60 sec/min = 17.78 gpm
 = (5 gal / 17.43 sec) x 60 sec/min = 17.21 gpm

Average of 3ea 5-GAL Bucket Tests = (15.66 gpm + 17.78 gpm + 17.21 gpm) / 3 = 16.9 gpm = 0.04 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

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

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.04 \text{ cfs} \times 214 \times 1.9835 = 17.0 \text{ af}$$

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

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 5/18/2023 with the applicant, Cheri Heilmann, showed a groundwater well supplying water for irrigation use. At the POD, well D0010150 has a 1 HP CentriPro Pump Model CB10412 well pump motor installed. Three 5-gallon bucket tests were completed from a frost-free hydrant co-located with the well, with an average of three resulting in a diversion rate of 0.04 cfs, considering department rounding standards, which is higher than the recommended amount of 0.03 cfs for licensing purposes. A Theoretical Pump Equation was done which estimated the same amount (0.04 cfs) as the 5-Gal Bucket Test. The Standard rate of 0.03 cfs per acre is being recommended as the maximum diversion rate for licensing.

During the exam the irrigation POU was walked with the applicant and sketched out on field maps. The main irrigation trunk line has 3 hose bibs placed at different locations on the property. The sprinkler system has 26 zones with 5-7 sprinklers per zone. It has a frost-free hydrant by the well head. The irrigated area was calculated using ArcMap and field exam drawings and equaled the amount the applicant applied for of 1 acre. The maximum diversion volume recommended for licensing equals irrigation annual volume of **3.0 af**.

I removed conditions 046 during licensing review, as the applicant had completed the well installation. All other conditions

have been carried forward to licensing.

Overlap concerns: I performed a water right overlap evaluation during licensing review and did not find any overlap concerns for this water right. This permit was approved for irrigation of 1 acre. The claim in adjudication 96-10398 is for Domestic use from the same well but the well produces enough to satisfy both uses. There are no other overlapping 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>	
IRRIGATION	04/01 to 10/31	0.03 CFS	
<u>Totals:</u>		0.03 CFS	3.0 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 Alle Date 12/12/23

Reviewer Chase Belf Date 4/25/2024

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-10431

This map depicts the IRRIGATION system diagram.



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

- Hose Bibs
- Picture Location



THEORETICAL PUMPING EQUATION(S) FOR WR# 96-10431

Theoretical Pumping Equation is estimated to lift 65 ft, and running at 52 psi.

PUMP EQUATION

WATER RIGHT No. 96-10431

Pump in Well D0010150	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
$Q = \frac{HP \cdot 8.8 \cdot \text{Eff}}{H}$	1	185.2721	0.8	65	52
$Q =$ 0.038 cfs 17.1 gpm					

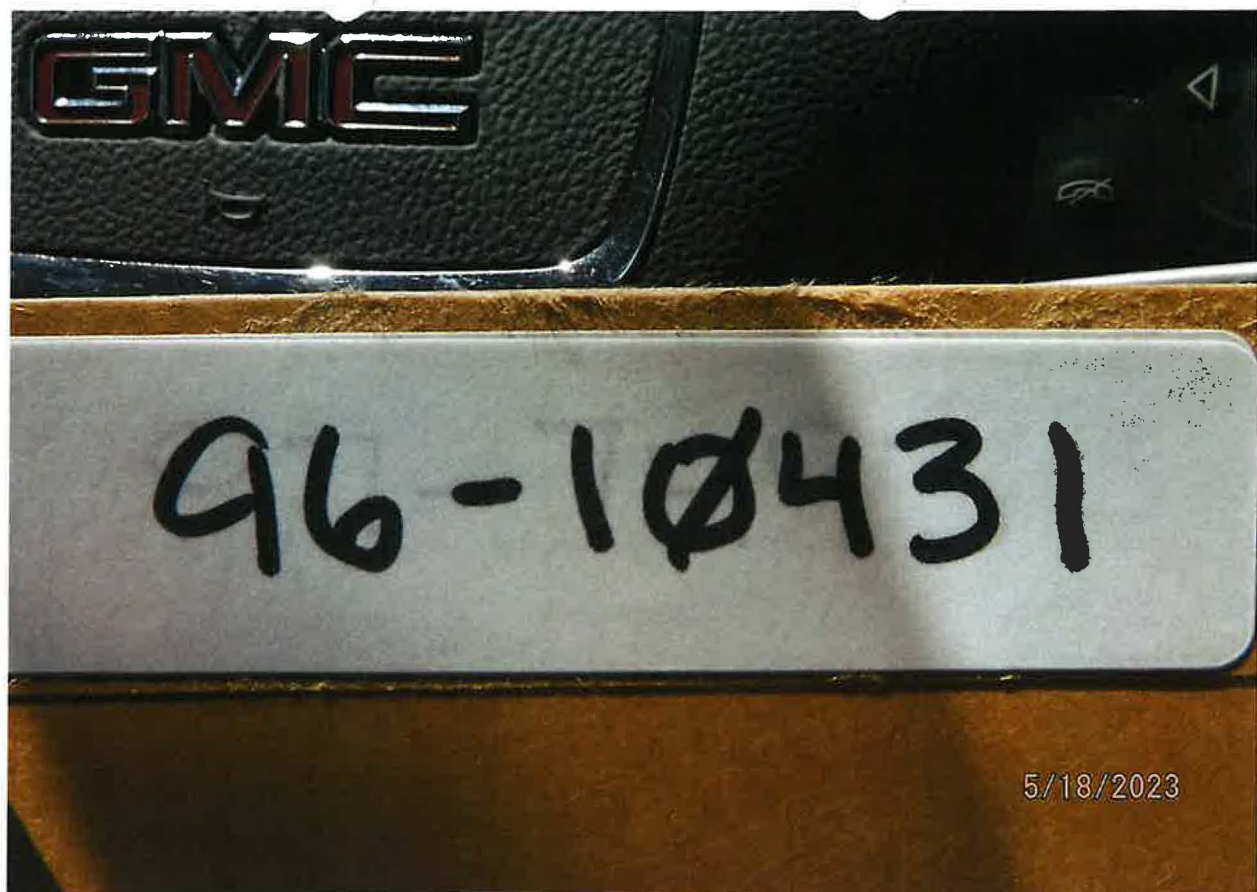
THEORETICAL PUMPING EQUATION(S) FOR WR# 96-10431

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 75 ft, and running at 50 psi.

PUMP EQUATION

WATER RIGHT No. 96-10431

D0010150	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = $HP \cdot 8.8 \cdot \text{Eff} / H$	1	190.6463	0.8	75	50
Q = 0.037 cfs 16.6 gpm					



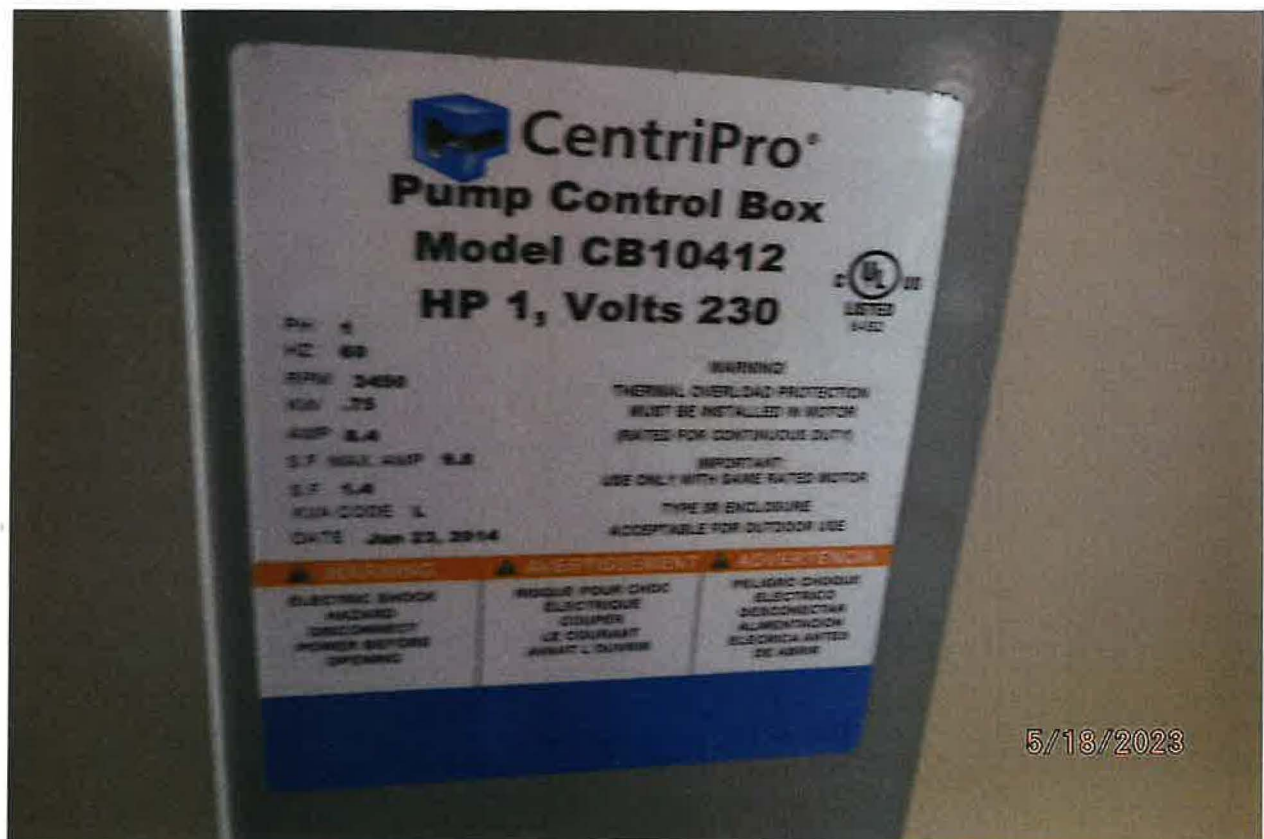
BENEFICIAL USE FIELD EXAMINATION DATE 5/18/2023



POD – GROUNDWATER WELL



WELL D-TAG D0010150



CENTRIPRO MODEL CB10412 1 HP PUMP MOTOR INSTALLED IN WELL



50 PSI WATER SYSTEM OPERATING PRESSURE



WATER SYSTEM COMPONENTS



IRRIGATION POU – BY AUTOMATED SPRINKLER SYSTEM & HOSE W/SPRINKLERS FROM HYDRANTS





IRRIGATION POU – LAWN & GARDEN



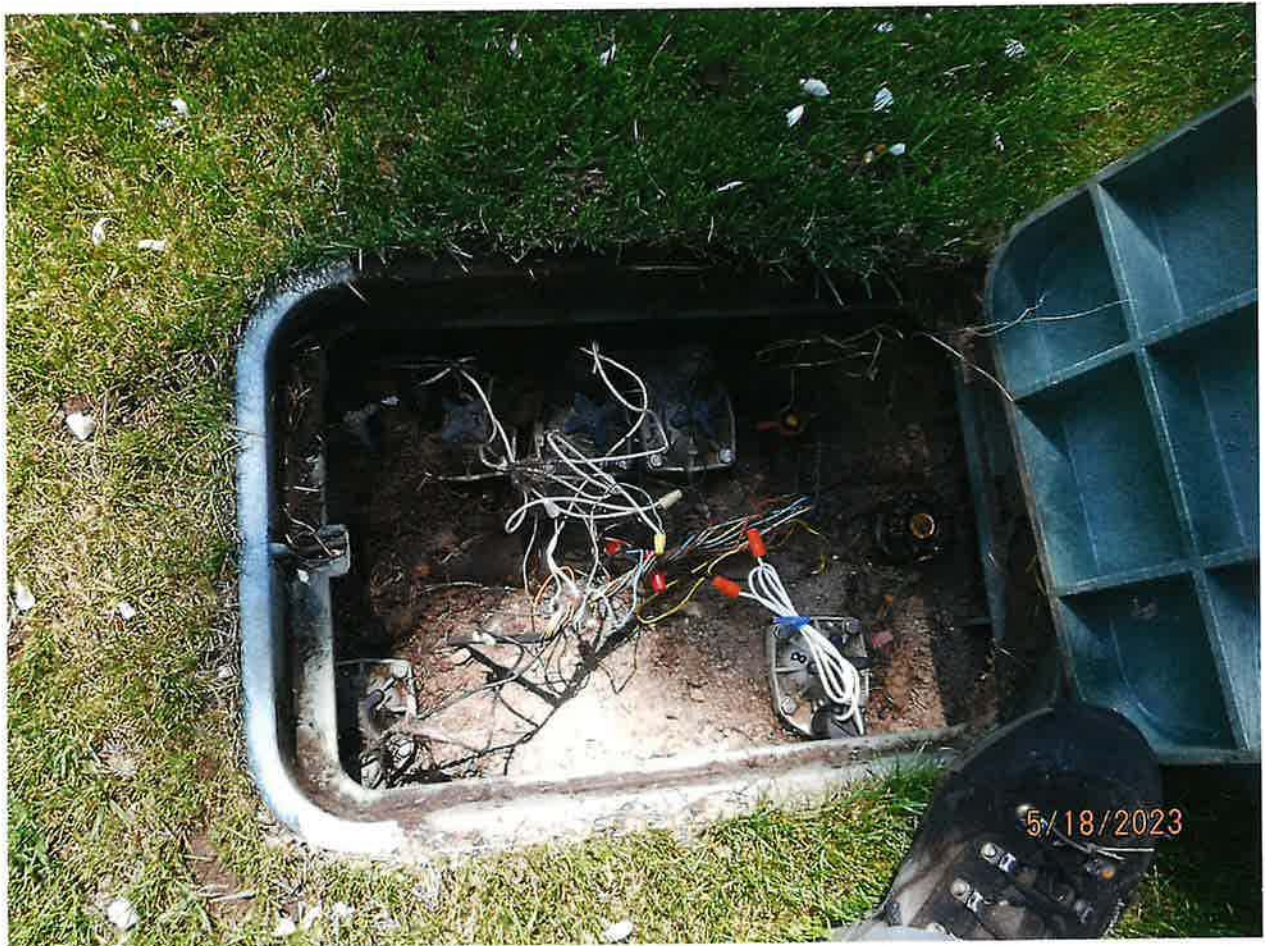


IRRIGATION POU





IRRIGATION POU – HOSE BIB, PRESSURIZED SYSTEM ZONE CONTROL BOX





IRRIGATION POU – GREEN SPACE ISLAND IN DRIVEWAY ROUND-ABOUT



IRRIGATION POU – ROAD FRONTAGE WEST SIDE OF PARCEL



IRRIGATION POU – ROAD FRONTAGE EAST SIDE OF PARCEL



IRRIGATION POU – BETWEEN SHOP AND RESIDENCE