

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-35034
Exam Date: 08/12/2024

1. Does this qualify for an in-office field exam (IDAPA 37.03.02.035.01.r)? X Y ___ N

- a. X Irrigation of 5 acres or less
b. ___ Storage of up to 14.6 AF for stockwater purposes only
c. ___ Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less.
d. X Other Domestic Use

2. Current Owner: **DIANE E RICE 10161 LILAC PL MIDDLETON ID 83644-5408**

Owner of Record Correct? ___ N

Address of Record Correct? ___ N

If No Explain:

3. Beneficial Use Fees have been paid: X Y ___ N Receipt No: C111927

3. SOURCE:

GROUND WATER

Method of Determination: GIS, Canyon County Tax Parcel Data, and the well drillers report.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-22363, et al	Groundwater	Municipal (City of Middleton)	License, Decreed
63-28716	Groundwater	Domestic, Stockwater	Decreed (2000)
63-29012	Groundwater	Domestic, Stockwater	Decreed (2000)
63-32524, 163, 179B, et al.	Bosie River	Irrigation (Canton County Water Co LTD)	Decreed (2009)

Comments: The permit Place of Use (POU) is overlapped by municipal and Irrigation Company service areas. Rights 63-28716 and 63-29012 for domestic and stockwater use have overlapping POU legal descriptions. However, the description is the entire 40-acre quarter/quarter and a backfile search indicates that they are both on parcels other than that of the permit POU.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
63-20988	Groundwater	Domestic	Decreed (2000)

Comments: The permit well diversion is shared with 2 other properties, including that of right 63-20988. However, the permit holder described each system having their own pipeline and pump to divert water from the well. A signed shared well agreement was submitted with the application for permit.

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

GROUND WATER SE¼ NE¼, Sec. 8, Twp 04N, Rge 02W, B.M. CANYON County

Method of Determination: GIS, Canyon County Tax Parcel Data, and the well drillers report.

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	
04N	02W	8				X													

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	
04N	02W	8				0.2													0.2

Total Acres: 0.2

Method of Determination: GIS, Canyon County Tax Parcel Data, and the Canyon County GIS imagery.

Change in POU? ___ Y X N Amendment Required? ___ Y X N

- 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
D0087914	Grundfos	¾	97855081	Unknown	Unknown

D. FLOW MEASUREMENTS

1.

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

2. Measurement Comments: A measurement is not necessary for an in-office examination. The permit holder provided that the pump used is ¾ Hp. A maximum lift of about 100ft was estimated to the licensed POU using the DRG map and well driller's report. Typical domestic systems operate at 30-60 PSI, a median pressure of 45PSI was used to make a theoretical rate calculation for the system.

E. FLOW CALCULATIONSAdditional Computation Sheets Attached

Measured Method:

A theoretical calculation and Administrative Memos #17 & 22 were used to determine a reasonable rate of diversion.

$$Q = (0.75\text{Hp})(8.8)(0.90 \text{ efficiency}) / (100 \text{ ft lift}) + (2.31) * (45 \text{ psi}) = 0.03\text{cfs}$$

Well test= 35GPM for 1 hr. = 0.08 cfs, with an artesian flow of 3gpm measured over 12 hrs.

Theoretical Calculation= 0.03cfs

Permit allowed = 0.05 cfs

Recommendation= 0.05cfs

Comments: The permit holder provided the pump horsepower (¾ Hp) and irrigated areas of approximately 0.2-acre total were confirmed using GIS, Google Earth, and Canyon County GIS imagery. The system was described as a 1 ¼" galvanized pipe from the well head to a ¾ Hp Grundfos pump delivering water to the home and spigots for irrigation. Two neighbors on the east side of the parcel divert from the same well, but each has their own service line and pump.

A theoretical calculation found that approximately 0.03 cfs is possible with the ¾ Hp pump. According to Administrative memo #17 up to 0.03cfs per acre is standard for the irrigation of up to 5 acres. I recommend a diversion rate of 0.01cfs for the irrigation of 0.2-acre on the license. Although there is artesian flow at the well it does not make a significant difference in the dynamic head. However, based on the well driller's report the potential instantaneous rate is potentially much higher initially, but not sustainable for an hour.

I am recommending 0.04cfs as a reasonable rate for domestic use in 1 home on the license, as per Administrative Memo #22.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.2\text{-acre} \times 4.5 \text{ AFA} = 0.9 \text{ AF annually}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.01 \text{ cfs} \times 260 \text{ Days} \times 1.9835 = 5.2 \text{ AF annually}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 0.9 \text{ AF annually}$$

2. Volume Calculations for Other Uses: **Domestic Use- internal only**

The standard volume for internal domestic use without irrigation is 0.6 AF annually, as per Administrative Memo #22.

Comments: I recommend the license be issued with 0.9 AF annually for the irrigation of 0.2-acre, per the field headgate calculation above, and 0.6 AF annually for domestic use in 1 home, per Administrative Memo #22.

G. PURPOSE OF USEIrrigation X Y N # Stock NA Domestic # of Homes 1 Change in Purpose of Use? Y X N Method of Determination: Canyon County GIS Maps, GIS, and Tax lot Data**H. NARRATIVE/REMARKS/COMMENTS**

The parameters of the permit and the documentation provided by the permit holder qualify this permit for an in-house exam. Any place of use overlapping the purposed license has been ruled out as they either are due to municipal or irrigation entity service areas or are domestic rights with legal descriptions only identifying the quarter/quarter section, with different appurtenant parcels. The point of diversion is within Water District 63; however, it is downstream of Star and not in concern as outlined by administrative memo #59. The well which is shared with the neighboring parcels to the east of the POU is authorized through a shared well agreement submitted with the application for permit.

In section 5 of the proof the permit holder stated that there was pump installed. After correspondence the permit holder submitted photos of the pump (photo 1) and irrigated areas (photos 2-4) via email. The permit holder emailed describing the system as a ¾ Hp pump to the home and spigots where hoses for portable sprinklers used throughout the POU. A theoretical calculation and the well driller's report indicate that the system is capable of the instantaneous rate of the permit.

All the conditions on the permit have been met, and I was able to confirm through imagery(figures 1 & 2) and photos provided by the permit holder that the owners are irrigating approximately 0.2acre. I recommend a diversion rate of 0.01cfs on the license for the irrigation of approximately 0.2-acre(as per administrative memo #17) and 0.9 AF annually (as per the field headgate calculation in section F of this report).

I recommend the license be issued with conditions X31, WB5, X59, X60, 004, and 103. Condition R69 should be replaced with X31 for the irrigation of less than 1 acre, as per current guidance. Condition 121 should be replaced with condition 103 at licensing, as per current guidance.

Have conditions of permit approval been met? X Yes No**I. 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	0.6 AF
IRRIGATION	03/01 to 11/15	0.01 CFS	0.9 AF

Totals: 0.05 CFS 1.5 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

J. AUTHENTICATION Bob Howe - Water Resource AgentField Examiner's Name Bob Howe Date 8/21/2024Reviewer Cody Date 10-28-2024

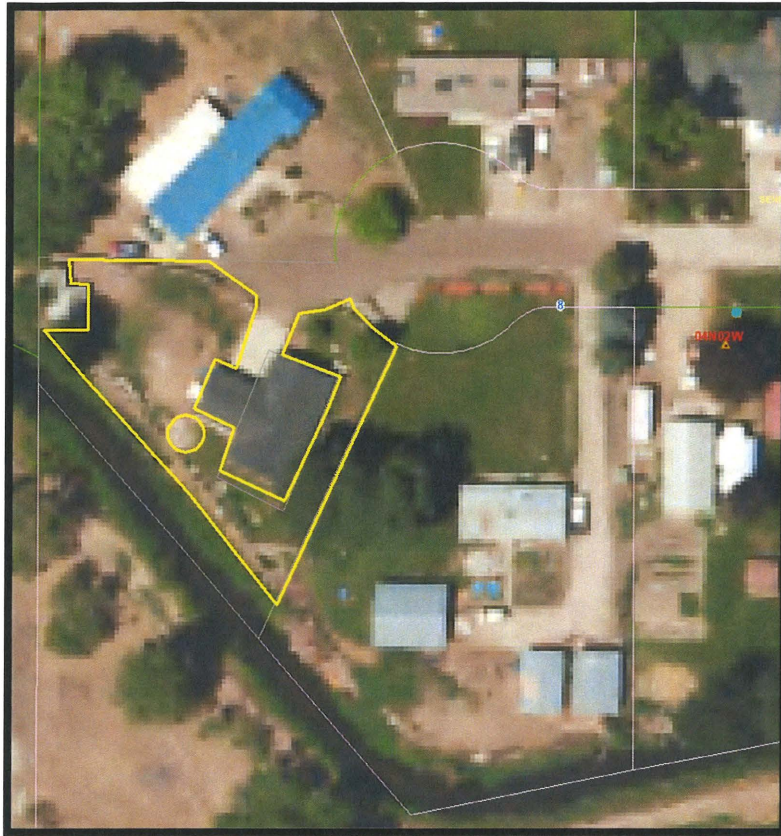


Figure 1- GIS NAIP imagery -Irrigation POU outlined in yellow. POD is blue point on the right of the image.



Figure 2 – Canyon County GIS Maps -Parcel appurtenant to the POU is labeled #4.



Figure 3- System Diagram emailed by the permit holder.

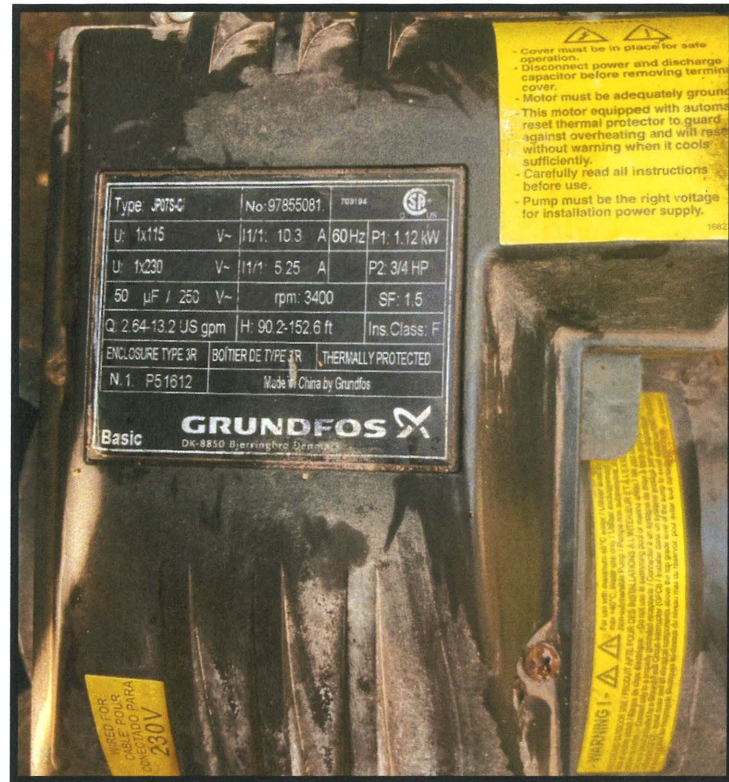


Photo 1- Grundfos ¾ Hp pump located northeast of the permit holder's home.



Photo 2- Taken facing southwest from the gate at the west side of the driveway north of the garage.



Photo 3- Taken facing west from the gate on the west side of the driveway.



Photo 4- Taken facing northwest from the gate at the west side of the driveway.