

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 43-7084
Exam Date: 7/16/2019

1. Current Owner:
ALVIN E CARPENTER 991 E OTTLEY RD ELBA ID 83342-8658
2. Accompanied by: Todd Carpenter
Relationship to permit Holder: son
3. SOURCE:
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use:

Water Right No.	Source	Purpose of Use	Basis
43-342	Cross Creek	Irrigation	Decreed
43-10564	Dry Wash	Irrigation	Decreed

2. Other water rights with the same point-of-diversion: None

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼ NW¼, Sec. 5, Twp 14S, Rge 25E, B.M. CASSIA County

Method of Determination: Aerial imagery in ArcMap, on-site inspection, GPS

2. 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	
14S	25E	5							33	16	3.6	6.8							59.4

Total Acres: 59.4

Method of Determination: Aerial imagery in ArcMap (1984, 1987, 1992)

3. ATTACHMENTS

☒ 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 INFORMATION

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
A0002603	US ELECTRICAL MOTORS	60	6234 / S12S257R008R-15	LAYNE & BOWLER LP90374	

D. FLOW MEASUREMENTS**1. MEASUREMENT EQUIPMENT**

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Portable Flowmeter	Ultrasonic	Panametrics				
Installed Flowmeter	Magnetic	Lindsay Growsmart	IM3000	GT15040094	4"	

2. Measurements:

IDWR water distribution staff utilized a portable flowmeter to measure flow, which was compared to the measured value from the installed magnetic flowmeter.

The portable meter measured an average flow rate of 356.3 gallons per minute over a 10 minute period.

The highest instantaneous flow rate observed on the installed meter during the 10 minute period was 389.2 gallons per minute. The installed flowmeter meets IDWR specifications and appeared to be in a better location for measurement than the portable flowmeter, so the values from the installed meter were used for the field exam.

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

$$389.2 \text{ gpm} \times \frac{1 \text{ cfs}}{448.83 \text{ gpm}} = 0.87 \text{ cfs}$$

F. VOLUME CALCULATIONS**1. Volume Calculations for irrigation:**

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 59.4 \text{ ac} \times 4 \text{ ac-ft/ac} = 237.6 \text{ AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.87 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 369.3 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 237.6 \text{ AF} \rightarrow \text{rounds to } 238.0 \text{ per significant figure guidelines}$$

2. Volume Calculations for Other Uses: N/A**G. NARRATIVE/REMARKS/COMMENTS**

Based on a review of the backfile for this permit, it appears the applicants intended to drill 2 wells and utilize the water from those wells to replace surface water that they diverted higher up in the drainage. The application appears to describe two distinct farms. Attached is a copy of the map submitted with the (amended) application for permit which illustrates the overall intent. On the first farm, located in Sections 1 and 2 of Twp 14S Rng 24E and Section 6 of Twp 14S Rng 25E, the application appears to propose to divert water out of Cassia Creek at the west end of the property (two points of re-diversion identified) and replace that water by injecting pumped groundwater from a proposed well in Section 1 back into Cassia Creek. On the second farm, located in Section 5 of Twp 14S Rng 25E, the application appears to propose to divert extra water from the Barker Ditch (which is diverted from Cross Creek) upstream of the farm and replace it with pumped groundwater from a second proposed well in Section 5.

Nathan Erickson and David Graybill from IDWR Water Distribution and I met with Todd Carpenter, the son of the permit holder, for the field exam. Mr. Carpenter explained that they experienced drilling difficulties with the well proposed in

Section 1 of Twp 14S Rng 24E so it was never developed. Therefore, the aspects of the permit that relate to that farm (one point of diversion, two points of re-diversion, one point of injection, and 500 acres of the irrigation place of use) were not developed as permitted and will be dropped from the license.

On the other farm in Section 5, the proposed well was drilled. At the time of the field exam, I observed the well in operation. Mr. Carpenter explained that it is piped through a 6" mainline to two pivots. Risers are also located on the mainline which allow for irrigation of additional land using hand lines. Following the field exam, I spoke with Mr. Carpenter on the phone and discussed the exchange situation with the Barker Ditch as it was described on the permit. He indicated that the well did not produce as much water as they anticipated so they do not use it in the way it was proposed in the original application. Rather, they use the well to pump water directly to the pivots once the overlapping surface water rights are out of priority. Mr. Carpenter indicated that it was acceptable to remove the point of re-diversion and point of injection at licensing. This leaves 1 point of diversion on the license. The permit allowed up to 80 acres to be irrigated on this portion of the farm; however, a review of aerial imagery during the permit development period and conversation with Mr. Carpenter indicates that only 59.4 acres were developed. The two overlapping decreed surface water rights allow up to 59.4 acres when combined, so a condition will be added to the license limiting all three rights to 59.4 acres when combined. Condition 943 will also be added to the license to indicate that this is a supplemental right.

The permit season of use was originally 4/01 – 11/01; however, the standard irrigation season of use is 4/01-10/31 for this area so this will be recommended for the license.

Have conditions of permit approval been met? ☒ 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	4/01 to 10/31	0.87 CFS	238.0 AF

Totals: 0.87 CFS 238.0 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 Allison Inouye - Water Resource Agent, Senior

Field Examiner's Name Allison Inouye Date 7/24/2019

Reviewer _____ Date _____

Hand-drawn map of a water diversion project on a grid. The map shows a main canal with several branches and crossings. Key features include:

- A north arrow pointing up.
- A red line labeled "Points of Injection from Wells" with arrows pointing to specific locations.
- A red line labeled "Points of Re-Diversion" with arrows pointing to other locations.
- A black line labeled "Cross Cr." crossing the canal.
- A black line labeled "Ditch" branching off.
- A black line labeled "Berker Ditch" at the bottom right.
- The map is divided into sections labeled "Lot 6", "Lot 7", and "Lot 9".
- Dimensions are given in feet: 20, 40, 45, 35, 5, 25.
- A scale bar at the bottom indicates distances of 0, 100, 200, and 300 feet.

Terrie Stephens
(Applicant)

Attachment to 43-7084 Beneficial Use Field Report:
Map submitted w/ Amended Application for Permit 5/1/1978

Attachment to 43-7084 Beneficial Use Field Report: System Diagram, Aerial Photo, & Map

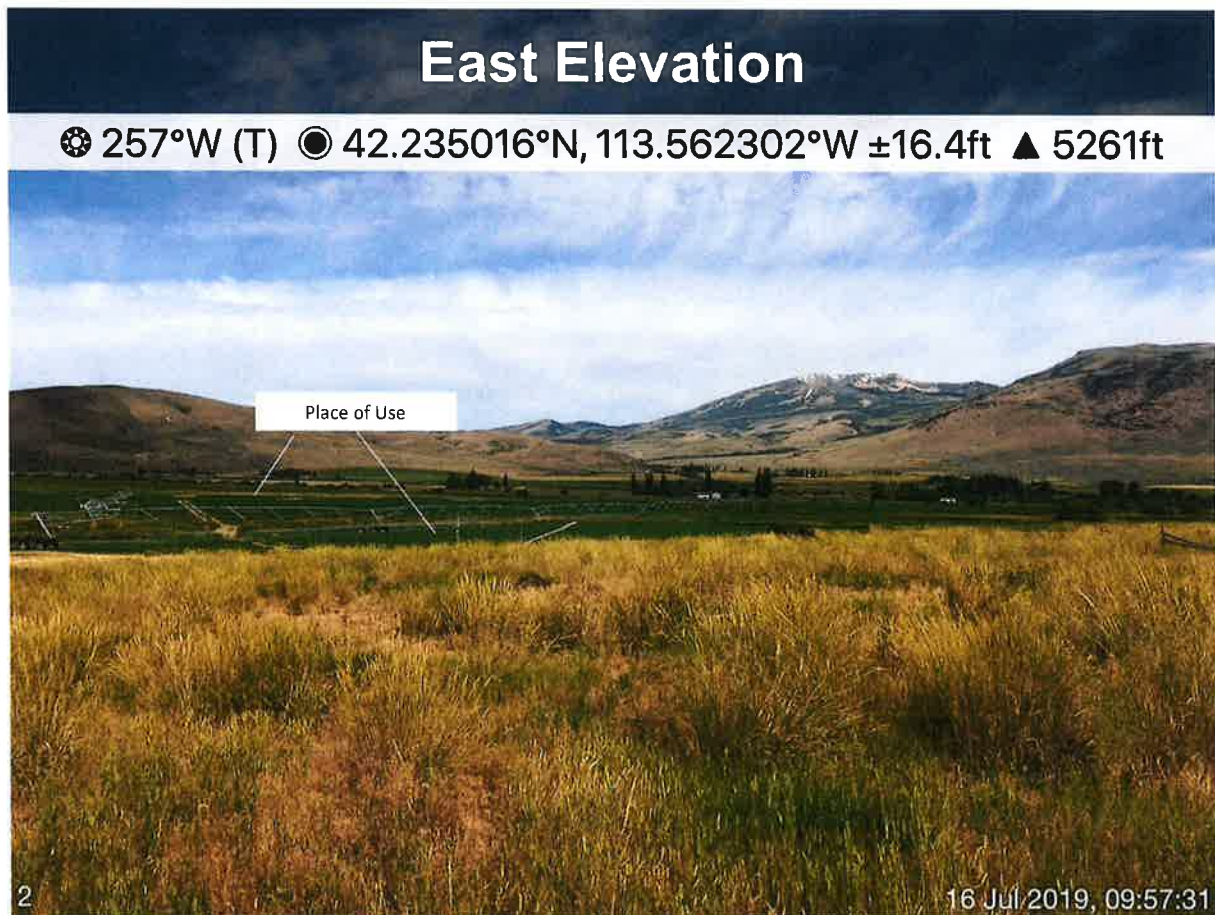
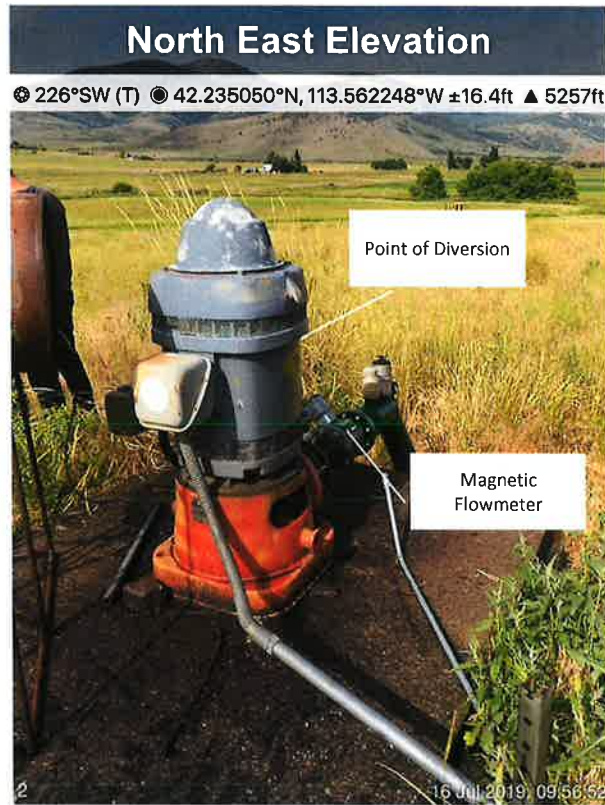


Legend

- Township/Range
- Sections
- QQ



Attachment to 43-7084 Beneficial Use Field Report - Photographs



Attachment to 43-7084 Beneficial Use Field Report - Photographs

Installed meter
display – peak flow
rate observed during
field exam

