

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33846
Exam Date: 09/13/2023

1. Current Owner:
H DAVID CHRISTENSEN 18250 VAN SLYKE RD WILDER ID 83676-5560
2. Accompanied by: David Christensen
Phone No: (208) 863-1953
Address: 18250 Van Slyke Rd, Wilder, ID 83676
Relationship to permit Holder: Same

3. **SOURCE:**
GROUND WATER

Method of Determination: Permit application, IDWR records, and field examination

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-2806	Ground Water	Irrigation	Decreed
63-233K	Boise River	Irrigation	Decreed

Comments: Overlaps Wilder Irrigation District Service Area-multiple right numbers. 63-2806 overlaps in section 31 only.

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

Water Right No.	Source	Purpose of Use	Basis
63-2806	Ground Water	Irrigation	Decreed

Comments: 63-2806 overlaps in section 31 only

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SE¼ NW¼, Sec. 32, Twp 04N, Rge 04W, B.M. CANYON County

Method of Determination: Field examination, Garmin Handheld GPS, and ArcMap tools with aerial imagery.

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	04W	31													35			35	70.0
04N	04W	32							27	37									64.0

Total Acres: 134

Method of Determination: ArcMap tools with aerial imagery and observation during field exam.

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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
D0068860	Model 5KS445DAE6034	200	CJFT080U007		

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements:

Measured Method: Seametrics In-line Magmeter

Reading Date	Device	Rate (gpm)	Rate (cfs)
9/13/2023	Mag-Meter	819	1.82

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

Theoretical Pump Calculation:

$$(8.8) \times (200 \text{ hp}) \times 0.75 / [(600) + (55 \times 2.31)] = 1.82 \text{ cfs or } 814.8 \text{ gpm}$$

Beneficial Use Calculation Based on Permit Application Rate of 0.01266 cfs/acre:

Location	Description	cfs	acres	Rate/acre	volume
Boehner Rd	Linear Pivot	0.81	64.0	0.0127	288
Van Slyke Rd	Half Pivot	0.89	70.0	0.0127	315
	Both Pivots	1.70	134.0	0.0127	603

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 134.0 \text{ ac} \times 4.5 \text{ af/ac} = 603 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 1.70 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 877 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 603$$

2. Volume Calculations for Other Uses:

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G. NARRATIVE/REMARKS/COMMENTS

H. David Christensen is the owner of permit 63-33846 for irrigation in Canyon County. The proof of beneficial use was submitted on 12/10/2018 with an examination fee of \$125. Aerial imagery confirms that the irrigation system was in place by the 2019 irrigation season. An exam was conducted on September 13, 2023, by water resource agent Allen Bradbury accompanied by David Christensen. Current Canyon County tax parcel data shows H David and Sandra J Christensen as the owners of the property pertinent to the place of use, therefore no ownership change is necessary.

The original application was intended to supplement Wilder Irrigation District surface water with ground water and bring acres irrigated by water right 63-2806 up to a rate of 0.02 cfs/acre. Water right 63-2806 is a ground water right for 1.0 cfs on 79 acres in section 31 with a rate per acre of 0.0127 cfs/acre. Question 9 on the original permit application calculates 1.40 cfs for 70 acres (0.02 cfs/acre) along Boehner Rd and 0.46 cfs for 73 acres (0.0063 cfs/acre) along Van Slyke Rd. Adding the 63-2806 rate of 1 cfs to the 0.46 cfs gives a standard use rate of 0.02 cfs acre. Water from 63-2806 cannot be used in section 32. These issues are considered in the following analysis.

Currently, corn, sugar beets, and alfalfa are grown on this POU and the crops are watered by a linear pivot in section 32 along Boehner Rd and a half pivot and handline system in section 31 along Van Slyke Rd. A 200 hp vertical turbine pump sits atop a 16-inch well (metal tag #D0068860) with a lift of 600 feet. The pump discharges into a two-way split with an 8-inch line going west to supply the linear pivot and a 10-inch line going south across Boehner Rd before traveling west and eventually tying into the half pivot and handlines along Van Slyke Rd. Based on calculations made in ArcGis there are 64 irrigated acres along Boehner Rd and 70 irrigated acres along Van Slyke Rd. Therefore I am recommending a place of use of (64 ac + 70 ac) 134 acres.

The 10-inch line from the well has an in-line Seametrics flow meter which was used to measure flow during the field exam. The meter read a maximum of 819 gpm or 1.83 cfs during the exam. A theoretical diversion rate was used to corroborate the in-line flow meter reading. Based on a pump set of 600 feet BGS, the estimated theoretical rate for the 200 hp pump was 1.82 cfs. Since the original permit was applied for such that the acres overlapping WR 63-2806 would be brought up to 0.02 cfs/acre, and the remaining, non-overlapping acres at the full 0.02 cfs/acres, and there were 70 acres found to overlap 63-2806, and another 64 acres not overlapping, the recommended rate was calculated as follows:

$$(70 \text{ ac} \times 0.0073 \text{ cfs/ac}) + (64 \text{ ac} \times 0.02 \text{ cfs/ac}) = 1.97 \text{ cfs.}$$

A combined use limit is added to this right to describe the use of water right 63-2806 which has a POU of 79 acres giving a combined use not to not exceed a total diversion rate of 1.83 cfs, a total annual maximum diversion volume of 644 af at the field headgate, and the irrigation of 143 acres. (see attached calculations).

Overlap & Discrepancies in Map and Legal Description

The township, range and section lines do not align with the Canyon County tax lot lines. The section lines and property are slightly shifted and do not match the actual fields. This misalignment creates the impression that there is irrigation in adjacent quarter-quarters that were not on the permit. However, the acres in question are attributed to a projection error in the Departments Public Land Survey System (PLS) layer and therefore are not included in the legal description of the water right. The shape was drawn to align with the field; however, Departments PLS grid lines and county tax lot lines were interpolated to determine legal description. Thus, an amendment is not required.

Changes in Condition from Permit to Licensing

Condition 26A was removed as per licensing standards.

Condition 121 was replaced with condition 103 as per department standards.

Condition 004 was removed because the well is on the water right holder's property.

Condition WB7 was modified to reflect new volume calculations.

Replaced conditions 065, 104 with 943, as per licensing standards.

Added condition R61.

Removed condition W51, as per licensing standards.

Add X35 Rights 63-2806 and 63-33846 when combined shall not exceed a total diversion rate of 1.83 cfs, a total annual maximum diversion volume of 644 af at the field headgate, and the irrigation of 143 acres.

Have conditions of permit approval been met? ☒ Yes ☐ No

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H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Volume</u>
IRRIGATION	03/01 to 11/15	1.70 CFS	603 AF

Totals: 1.70 CFS 603 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

Allen Bradbury -

Field Examiner's Name Allen Bradbury Date 9/22/23
Reviewer [Signature] Date 9/28/23

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