

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATIONExam Date: 4/17/2024

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. ___ Other < >

2. Current Owner: Dennis and Jamie Erdt

Owner of Record Correct? ___ N

Address of Record Correct? ___ N

If No Explain: N/A

3. Beneficial Use Fees have been paid: X Y ___ N Receipt No: C118113

4. Source: Tributary:

Boyer Slough Lake Pend Oreille

Method of Determination: GIS, Tax Parcel Data, and the permit holders Statement of Completion for Proof of Beneficial Use.

Change in Source: ___ Y X N

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
96-4016	Boyer Slough	Irrigation	Active Claim
96-8569	Groundwater	Irrigation	License

Comments: The places of use for water right 96-8569 and claim 96-4016 overlap the permitted place of use according to the GIS place of use shape. However, after reviewing the water right backfiles it was confirmed these rights do not overlap.

2. Other water rights with the same point of diversion: X No Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A			

Comments: N/A

C. DIVERSION AND DELIVERY SYSTEM

1. Location of Point(s) of Diversion:

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Boyer Slough			NE	NW	7	57N	01W	B.M.	Bonner

Method of Determination: GIS and Tax Parcel Data.

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

2. Place of Use: Irrigation

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
57N	01W	7					0.5												0.5
		Lot #																	
Total Acres =																			0.5

Method of Determination: GIS, Tax Parcel Data, and 2023 Bonner County Aerial Imagery.Change in POU? Y X N Amendment Required? Y X N Delivery System Diagram Attached (required). Indicate all major components and distances between components. X Aerial Imagery indicating the location of the POD and POU. X Aerial Photo Attached (required for irrigation of 10+ acres). Photo of Diversion and System Attached

3. Diversion Id No.*	Motor Make	HP	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
		0.5			20 gpm

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1. Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurement Comments: The permit holder provided a pump horsepower of 0.5 and a lift of 43ft was determined using Google Earth. Therefore, a diversion rate calculation is possible.**E. FLOW CALCULATIONS** X Additional Computation Sheets Attached

Measured Method: Since the permit holder provided a pump horsepower of 0.5 and a lift of 43ft was determined a diversion rate calculation was possible. According to the calculation the system can handle a 0.02 cfs diversion rate with a 40-psi discharge pressure. According to Administrative Processing Memo #17 the standard diversion rate/acre for the irrigation of 5 acres or less is 0.03 cfs/acre. I am recommending a 0.02 cfs diversion rate.

$$Q = (0.5 \text{ hp}) * (8.8) * (70\% \text{ efficiency}) / (43\text{ft of lift}) + (2.31) * (40 \text{ psi discharge pressure}) = 0.02 \text{ cfs}$$

$$(0.5 \text{ acres}) * (0.03 \text{ cfs/acre}) = 0.015 \text{ cfs or } 0.02 \text{ cfs rounded}$$

Diversion Rate Calculation = 0.02 cfs

Administrative Processing Memo #17 Calculation = 0.02 cfs

Permit allowed = 0.02 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) * (\text{Irrigation Requirement}) = (0.5 \text{ acres}) * (3.0 \text{ af/acre}) = 1.5 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] * (\text{Days in Irrigation season}) * 1.9835 = (0.02 \text{ cfs}) * (214 \text{ days}) * (1.9835 \text{ af/day}) = 8.5 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 1.5 \text{ af}$$

G. PURPOSE OF USEIrrigation X Y N # Stock N/A Domestic # of Homes N/A Change in Purpose of Use? Y X N Method of Determination: GIS, Tax Parcel Data, 2023 Bonner County Aerial Imagery, and the permit holders Statement of Completion for Proof of Beneficial Use.**H. NARRATIVE/REMARKS/COMMENTS**

This permit qualifies for an in-office examination. According to Tax Parcel Data the property was developed in 2004. The permit authorized the irrigation of 0.5 acres of irrigation diverting from the Boyer Slough. According to 2023 Bonner County Aerial Imagery 0.5 acres of irrigation occurred within the development period. A condition on the permit requires the permit holder to install a fish screen meeting the fish screening and passage requirements of the Idaho Department of Fish and Game. The permit holder confirmed a fish screen was installed on their Proof Statement.

Since the permit holder provided a pump horsepower of 0.5 and a lift of 43ft was determined using Google Earth a diversion rate calculation was possible. The calculation determined the system can handle 0.02 cfs with a 40-psi discharge pressure. The standards set in Administrative Processing Memo #17 were used to make a diversion rate recommendation. All of the conditions have been met and development of the permitted beneficial use was confirmed within authorization on the permit. Therefore, I am recommending a 0.02 cfs diversion rate and 1.5 af volume.

Condition X31, X59, X60, and 004 should remain on the license. Condition 029 should be removed because the permit holder installed a fish screen meeting the fish screening and passage requirements of the Idaho Department of Fish and Game.

Have conditions of permit approval been met? X Yes No**I. RECOMMENDATIONS**

1. Recommended Amounts:

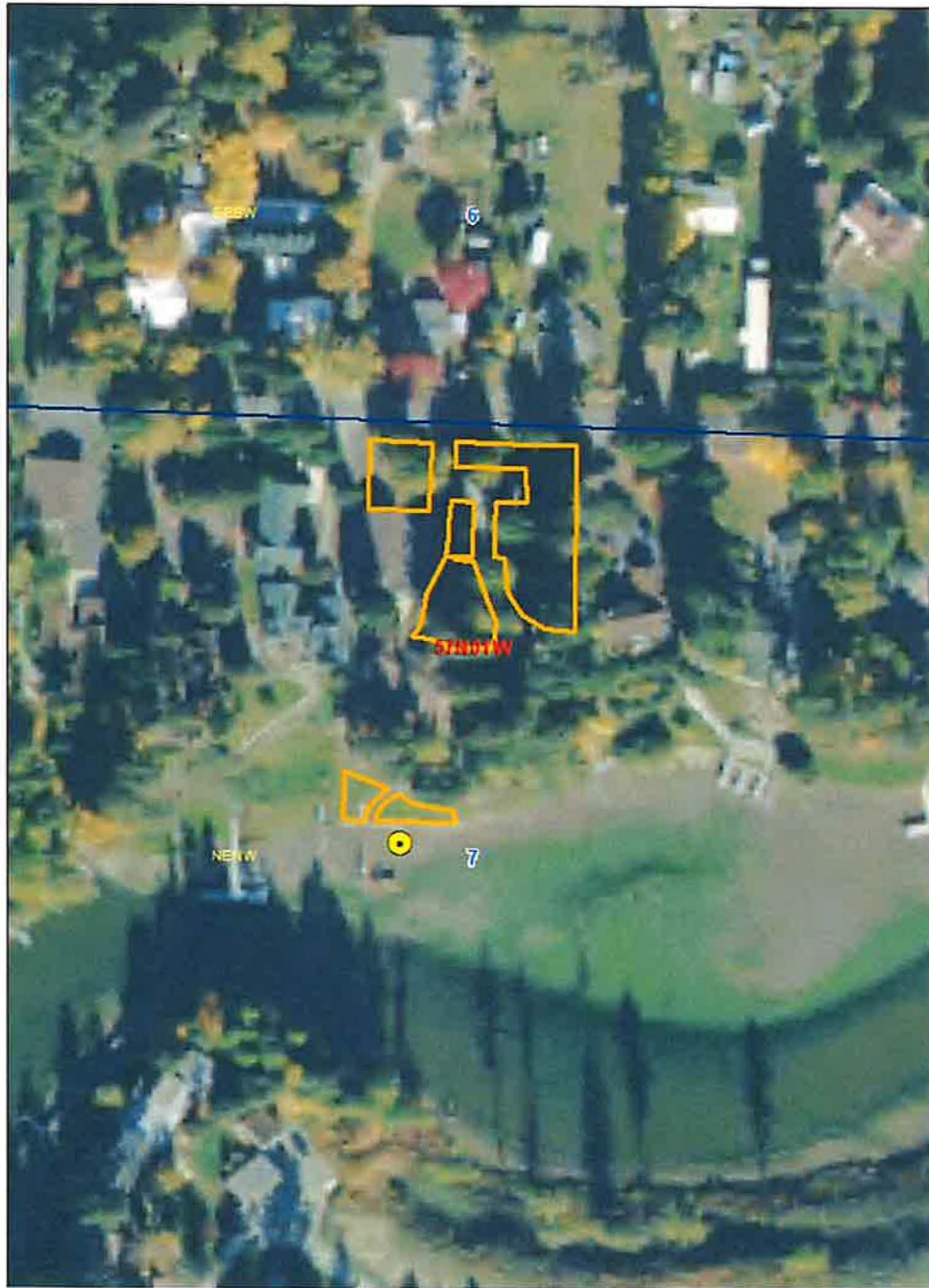
<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Irrigation	04/01-10/31	0.02 CFS	1.5 AF
	<u>Totals:</u>	0.02 CFS	1.5 AF

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**Field Examiner: **Skyler Cheever – Water Resource Agent**Field Examiner's  Date 4/17/2024Reviewer  Date 4/23/24

Field Exam Map

Map showing the authorized point of diversion (yellow point) and irrigated place of use (orange outline).



2023 Bonner County Aerial Imagery

Imagery indicated 0.5 acres of irrigation occurred within the development period.

96-11977 Aerial Imagery



4/16/2024

Road Centerlines

- Primary
- Secondary
- Local; Ramp



Parcels

- World Boundaries and Places
- World Imagery
- Low Resolution 15m Imagery

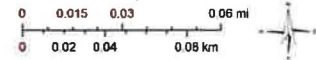
High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

60cm Resolution Metadata

1:2,157



Esri, HERE, Garmin, (c) OpenStreetMap

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 96-11977
Examiner: Skyler C.
Date of Field Exam: 4/17/2024

Option 1

P/D No.:

PUMP HORSEPOWER	0.5
BOOSTER HORSEPOWER	0
PUMPING LEVEL	43
DISCHARGE PRESSURE	40
FRICTION	0
RATE OF FLOW (cfs)	0.02
(gpm)	10.2

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

Lift was determined using Google Earth. Hp was provided by the permit holder on their Statement of Completion for Proof of Beneficial Use. A standard psi of 40 to 60 psi was used to estimate the pressure against