

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

A. GENERAL INFORMATIONPermit No: 94-9494Exam Date: 4/28/2017

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? X Y N
- Irrigation of 5 acres or less
 - Storage of up to 14.6 AF for stockwater purposes only
 - Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - Other < >

2. Current Owner: Name: Charles E. Leis Trust
- Owner of Record Correct? X Y N
- Address of Record Correct? Y N
- If No: Address

Tax lot parcel shows Charles E. Leis Trust as the owner of the property.

3. Beneficial Use Fees have been paid: X Y N Receipt No: C0

4. SOURCE**TRIBUTARY**

Coeur D Alene River

Coeur D Alene Lake

Method of Determination: GIS and Tax Parcel DataChange in Source: Y X N**B. OVERLAP REVIEW**

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

Water Right No.	Source	Purpose of Use	Basis

Comments: There are 5 neighbors to the west and 2 neighbors to the east that have water rights in the same 40 acre tracts, but they are for different places of use.

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

Water Right No.	Source	Purpose of Use	Basis

Comments: There are 5 neighbors to the west and 2 neighbors to the east that have water rights in the same 40 acre tracts, but they are for different places of use.

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

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
River Diversion	1		SE	NE	25	50N	2E	B.M.	Shoshone
								B.M.	
								B.M.	

Method of Determination: GIS and Tax Lot data.

Change in POD? X N Amendment Required? X N

2. **PLACE OF USE:** 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	
50N	2E	25				.4													.4
		Lot #				1													
50N	2E	30						0.4	.6										1.0
		Lot #						16	3										
Total Acres =																			1.4

2. **PLACE OF USE:** Use: Domestic

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
50N	2E	25				D													
		Lot #				1													
50N	2E	30						D	D										
		Lot #						16	3										
Total Acres =																			

Method of Determination: GIS and Tax Lot DataChange in POU? X N Amendment Required? X N Delivery System Diagram Attached (required). Indicate all major components and distances between components.

Indicate weir size/pipe as applicable.

 X Aerial Photo Attached (required for irrigation of 10+ acres). Photo of Diversion and System Attached

4. Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
River Pump	Unknown	1.5			

*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
NONE						

2. Measurements: No measurement is required for an in-house exam. I did do a theoretical calculation to determine if the flow rate was possible with a 1.5 hp pump.

E. FLOW CALCULATIONSYES Additional Computation Sheets

Attached

Measured Method:

There was very little information in the file describing the pumping system for this permit, so I used a theoretical calculation using several assumptions to see if the flow rate seemed reasonable. I used the standard irrigation requirements allowed for the irrigation of property less than 5 acres of 0.03 cfs per acre allowed in Processing Administrative Memorandum #17. The standard for domestic use of 0.04 cfs was also used according to Processing Administrative Memorandum #22.

Theoretical Calculation 0.08 cfs**Acre Limits = 1.4 acres X 0.03 cfs per acre = 0.042 cfs****Domestic Use Allowed per Admin. Memo #22 = 0.04**

Permit allowed = 0.04 cfs for Domestic

0.04 cfs for Irrigation

For A Total of = 0.04 cfs

I am recommending a diversion rate of 0.04 cfs, per the limitations of the permit. The total use could have allowed up to 0.08 cfs, but the permit is the limiting factor.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.4 \text{ acres} \times 3 = 4.2 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.05 \text{ cfs} \times 214 \times 1.9835 = 17 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 4.5 \text{ af}$$

Please Note: This is a surface water right, so no volume will be included on the water right license.

2. Volume Calculations for Other Uses:

Per Processing Administrative Memorandum #22, the in-house use without irrigation is limited to 0.6 af. The domestic use will need to be addressed in a condition, since the irrigation use would not have a volume.

G. PURPOSE OF USEIrrigation X Y N # Stock Domestic # of Homes 1

Other: < >

Change in Purpose of Use? Y NMethod of Determination: Taxlot data and conversations with owner.If Yes: From Use To Use Amount CFS AFA **H. NARRATIVE/REMARKS/COMMENTS**

The proof of beneficial use for this permit was filed before any irrigation could occur under the permit. However, it appears from the aerial photography that this parcel has been irrigated in the past. It appears as though this permit was filed to catch up on the paperwork for a use that has been in place for some time. I had to go back to 2009 imagery to find a time when this parcel didn't appear to have been irrigated. Unfortunately, the aerial imagery doesn't supply the perfect confirmation of irrigated ground versus non-irrigated ground, but I believe they are adequate enough to move forward with the licensing of this permit.

The permit could have been issued with a diversion rate where the domestic use and the irrigation use were additive, but the regional staff decided not to follow that path. Therefore, I limited the diversion rates to the amounts approved by the permit.

The permit holder stated in the proof of beneficial use form that they had complied with the fish screen requirements set forth by Fish and Game. Therefore, we can move forward with the licensing of this permit.

All of the conditions on the permit should be carried forward to licensing with some alterations. Condition 1 (X15) will be modified to state that the fish screen shall be maintained. Condition 4 (X01) will be changed to condition 132 to show the domestic use is for in-house use only. A condition will be added to describe the volume for the domestic use, since the irrigation use won't have a volume listed because it is surface water.

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

I. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Domestic	01/01 to 12/31	0.04 CFS	0.6 AF
Irrigation	04/01 to 10/31	0.04 CFS	
<u>Totals:</u>		0.04 CFS	0.6 AF

Please Note: This is a surface water right, so no volume will be included on the irrigation portion of water right license, but a condition will be added to include the volume for the domestic use.

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

Other: < >

J. AUTHENTICATION – DANIEL A. NELSON – WATER RIGHT ANALYST 3

Field Examiner's Name



Date

4-28-17

Reviewer

Date



2015 Aerial Photo from ArcMap:



Both of the above photos show the property had been irrigated prior to the filing of the permit in January of 2017

Permit 94-9494 Field Exam Map

2017 Google Maps Image:



2015 Aerial Photo from ArcMap:



2009 Google Earth Image:



2009 Aerial Photo from ArcMap:



The above photos show the ground not being irrigated in 2009 and being irrigated in 2015 and from the aerial image from the Google Maps in 2017.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 94-9494
 Reviewer: Dan Nelson
 Date of Review: 4/28/2017

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

Scenario 1
1.5
0
10
40
0.09
40

Scenario 2
1.5
0
10
50
0.07
33

Scenario 2
1.5
0
10
60
0.06
28

Average
 0.08
 36.77

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.
 No Friction

Examiners Notes:

This is a fairly flat area, so I used an estimated 10 feet of lift. I also estimated the diversion pressure as being between 40 and 60 psi. Using these numbers, the 1.5 Hp pump that the permit holder stated in the application that they use for this facility should provide more than enough water for the irrigation system. The permit limits the total use to 0.04 cfs, so this pump should be able to supply more than enough water.