

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

A. GENERAL INFORMATION

Permit No: 95-12169

Exam Date: 3/5/2014

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? ☒ Yes ☐ No
- 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: Alan, David, Roger & Joyce Torgerson
Owner of Record Correct? ☒ Yes ☐ No
Address of Record Correct? ☒ Yes ☐ No
If No: Address

3. Beneficial Use Fees have been paid: ☒ Yes ☐ No Receipt No: NO30043

4. SOURCE**TRIBUTARY**

Coeur D'Alene Lake

Spokane River

Method of Determination: Applicant submitted a map identifying location of property and point of diversion.

Change in Source: ☐ Yes ☒ No**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments: Irrigation rights are not pertinent to this water right.

2. Other water rights with the same point of diversion: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments: There are many diversions in the lake. However none share this point of diversion.

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

Source	Govt. Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.	County
Coeur D'Alene	4		SE	SW	23	49N	04W	Kootenai
							B.M.	

Method of Determination: Legal Description in permit validated by PLS data and mapping.

Change in POD? ☐ Yes ☒ NoAmendment Required? ☐ Yes ☒ No

2. PLACE OF USE: Use: Domestic & Stockwater

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
49N	04W	23												X L4					

Method of Determination: Aerial map of property submitted by land owner identifies POU clearly.

Change in POU? ☐ Yes ☒ No Amendment Required? ☐ Yes ☒ No☐ Delivery System Diagram Attached (required). Indicate all major components and distances between components.

Indicate weir size/pipe as applicable.

☒ 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
NA	Unk	1	Unk	Unk	Unk

*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

2. Measurements: In-office field exam. Theoretical taken.**E. FLOW CALCULATIONS**☒ Additional Computation Sheets Attached

Measured Method:

Per IDWR standard: Assume pump efficiency = 0.7 (70%) and PSI = 40psi for small irrigation. Lift estimated from Contour Elevations (GIS visual, 40 ft. min. unit) between pump and yard = 40.

$$Q = (8.8 \times \text{HP} \times \text{EFF}) / (\text{Lift} + (\text{PSI} \times 2.31)) = (8.8 \times 1 \times 0.7) / (40 + (40 \times 2.31)) = 0.04 \text{ cfs}$$

Per App. Processing Memo #22, 2 houses served allows a rate of 0.06 cfs. Given the theoretical limit of 0.04 and the permitted rate of 0.04, I will recommend a diversion rate of 0.04 cfs for domestic and 0.04 for fire protection.

See theoretical calculation sheet attached.

Measurement = 0.04 cfs

Permit allowed = 0.04 cfs for domestic & 0.20 cfs for fire protection

License recommend for 0.04 cfs for both.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\quad\quad} \times 3.5 = \underline{\quad\quad}$$

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

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

2. Volume Calculations for Other Uses:

G. PURPOSE OF USE

Irrigation ☐ Yes ☒ No # Stock Domestic # of Homes 2

Other: < >

Change in Purpose of Use? ☐ Yes ☒ No

Method of Determination: Aerial photography of the property shows the two homes are built on land that is owned by the Torgerson's. Phone conversations with Alan confirm the purpose of the system.

If Yes: From Use To Use Amount CFS AFA

H. NARRATIVE/REMARKS/COMMENTS

Permit 95-12169 authorized the use of 0.20 cfs surface water for domestic and fire protection purposes. The proof of beneficial use form indicates the system provides water for use on 2 homes pumped from Coeur d'Alene Lake. For the in-house field exam, property ownership and location were verified with ArcMap data. With all of the information provided in the application and what was found through aerial photography, an in-office field exam is acceptable.

Contact was made with Alan Torgerson to confirm that a fish screen was put into place. Mr. Torgerson visited the Idaho Fish and Game Department to make sure that what he has is suitable to what is required to pump in the surface water. In this discussion, he informed me that the domestic water for the two homes come from a 450 ft well on the property and the water being diverted from this system is strictly for yard work and fire protection through sprinklers. Changes to the conditions were made for this reason.

The permit allowed 0.20 cfs to be diverted for fire protection. However the theoretical calculations show that the system is limited to 0.04 cfs. This is the reason for the lowered flow rate. There was no information on the number of sprinklers or the capacity of the sprinkler heads. This was just another method to support the theoretical flow rate.

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	01/01-12/31	0.04	
Fire Protection	01/01-12/31	0.04	
	<u>Totals</u>	0.04 CFS	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

Other: < >

J. AUTHENTICATION

Field Examiner's Name Patricia Wiley Date 03-05-14

Reviewer Daniel H. Nelson Date 3-7-14

State of Idaho
Department of Water Resources
Field Exam Map
95-12169

This map depicts the DOMESTIC place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.0075 0.015 0.03 Miles



State of Idaho
Department of Water Resources
Field Exam Map
95-12169

This map depicts the FIRE PROTECTION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.0075 0.015 0.03 Miles



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-12169
 Reviewer: Patrick Kelly
 Date of Review: 3/5/2014

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	1	1	1
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	40	40	40
DISCHARGE PRESSURE	40	45	50
RATE OF FLOW (cfs)	0.05	0.04	0.04 0.04

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

# of sprinklers (5/32")	3	4	5
sprinkler rate (gal/min)	5	5	5
Total flow rate (cfs)	0.03	0.04	0.06 0.04

Examiners Notes:

It appears from the topo map that they are lifting the water 40 feet from the lake to the surface of yard on the property. A range of different pressures that are expected for a 1 hp pump show and average of 0.04 cfs. Given the size of the property, I may expect 3-4 sprinklers being used. A calculation of the flow rate for a number of sprinklers were taken and represent an average of 0.04 cfs, the same as the theoretical rate.