

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

A. GENERAL INFORMATIONPermit No: 95-16640

Exam Date: 09/23/14

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: Doug Burkhardt
- Owner of Record Correct? X Y ___ N
- Address of Record Correct? X Y ___ N
- If No: Address

3. Beneficial Use Fees have been paid: X Y ___ N Receipt No: C099417

4. **SOURCE** TRIBUTARY

Coeur d'Alene Lake

Spokane River

Method of Determination: GIS

Change 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:

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

Water Right No.	Source	Purpose of Use	Basis

Comments:

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

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Coeur d'Alene Lake			NE	SW	23	49N	04W	B.M.	Kootenai
								B.M.	
								B.M.	

Method of Determination: Permittee map

Change in POD? N Amendment Required? N

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	
49N	04W	23									X								
		Lot #																	
Total Acres =																			0.5

Method of Determination: Taxlot

Change in POU? N Amendment Required? N☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components.

Indicate weir size/pipe as applicable. 1" PVC from lake to 1 hp pump. Pipe extends 30' into lake.

☒ 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
		1			1"

*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: _____

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: Theoretical

1 hp pump. Per IDWR standard: Assume pump efficiency = 0.7 (70%) and PSI = 60 psi for small irrigation. Lift estimated from Contour Elevations (GIS visual) between pump and intake = 5'.

$$Q = (8.8 \times 1 \times 70) / (10 + (60 \times 2.31)) = (8.8 \times 1 \times 0.7) / (10 + (60 \times 2.31)) = 0.04 \text{ cfs}$$

Theoretical Measurement = **0.04 cfs**Permit allowed = **0.04 cfs**License recommend for **0.04 cfs.****F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation: **N/A**

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

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

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{\hspace{2cm}}$$

2. Volume Calculations for Other Uses:

1 home x 0.6 af = 0.6 af per Administrative Memo

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

Other:

Change in Purpose of Use? N

Method of Determination:

If Yes: From Use To Use Amount CFS AFA **H. NARRATIVE/REMARKS/COMMENTS**

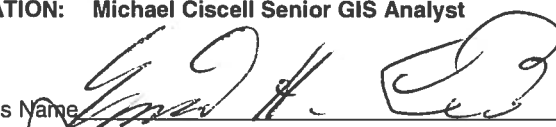
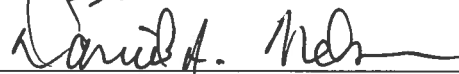
Water Right is for Domestic and ½ acre of irrigation. System has 1 hp pump from lake through 1" PVC pipe. 4 ½ gallon holding tank stores water used primarily to irrigate less than ½ acre, based on permittee comments.

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>
Domestic	01/01 to 12/31	0.04 CFS	0.6 AF
<u>Totals:</u>		0.04 CFS	0.6 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

Other:

J. AUTHENTICATION: Michael Ciscell Senior GIS AnalystField Examiner's Name  Date 7/23/14Reviewer  Date 9-26-14

Theoretical
Horsepower
Equation
Worksheet

WR # 95-16640

Reviewed by:
Michael Ciscell

Reviewed: 9/23/2014

	<u>Scenario</u> <u>1</u>	<u>Scenario</u> <u>2</u>	<u>Scenario</u> <u>3</u>	
P/D No.:1				
PUMP HORSEPOWER	1	1	1	
BOOSTER				
HORSEPOWER	0	0	0	
PUMPING LEVEL	10	10	10	
DISCHARGE				
PRESSURE	40	50	60	
RATE OF FLOW				AVE
cfs)	0.06	0.05	0.04	0.05
(gpm)	27.0	22.0	18.6	22.55

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: Data collected on 09/23/2014 during in-office field exam.
Pump discharges into a holding tank. To determine the pump's capacity assumed discharge pressure scenario's of 40, 60, 80.
Since the above theoretical contains several assumptions, I think it is reasonable to support the 0.04 cfs capacity recommended on the permit assuming 60 psi.

