

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

A. GENERAL INFORMATIONPermit No: 95-13710Exam Date: 2/3/2016

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: Earl and Elisabeth Mastin
- Owner of Record Correct? X Y ___ N
- Address of Record Correct? Y ___ N
- If No: Address

Tax lot data shows the Mastin Living Trust as the owners of the property.

3. Beneficial Use Fees have been paid: X Y ___ N Receipt No: C0
4. SOURCE TRIBUTARY
- Coeur D Alene Lake Spokane River
- Method of Determination: GIS and Taxlot Data
- 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
NONE			

Comments: There are no water rights that directly overlap the place of use. Adjudication claims 95-13313, 95-12759, 95-13952 and 95-13900 are east of the permit holder's property. Water rights 95-8025 and 95-8642 are west of the property. Water rights 95-8447 and 95-14356 are south of the property.

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

Water Right No.	Source	Purpose of Use	Basis
NONE			

Comments: There are no water rights that directly overlap the point of diversion. Water right 95-13313 is an adjudication claim that shows the point of diversion on the permit holder's property, but the claim states only one home uses the well, and the place of use is lot next door to the east. Adjudication claims 95-13952 and 95-13900 also shows the point of diversion on the property, but those lots are also to the east of the permit holder's property. Water right 95-12759 is also east of the property. I am suspecting that these points of diversion are all all nominal points placed in the center of the tax lot. Water rights 95-8025 and 95-8642 are west of the property. Water rights 95-8447 and 95-14356 are south of the property.

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

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
River Pump	4		SW	SE	26	50N	4W	B.M.	Kootenai
								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: 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	4w	26															D		
		Lot #															4		
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				

*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, but a theoretical calculation was used to determine if the diversion rate is reasonable.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

A theoretical analysis shows that a diversion rate of 0.04 cfs is possible with a 1 Hp pump.

Theoretical Calculation = 0.04 cfs

Permit allowed = 0.04 cfs

I am recommending a diversion rate of 0.04 cfs, since it appears as though a standard domestic 1 Hp pump can deliver the 0.04 cfs applied for in the permit.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\quad X 3.5 \quad} = \underline{\hspace{2cm}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{\quad X 214 \quad X 1.9835 \quad} = \underline{\hspace{2cm}}$$

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

2. Volume Calculations for Other Uses:

This is a domestic use. According to processing memo #22, and Domestic use for in-house and yard irrigation can have up to 1.2 acre feet of annual water use. I am recommending 1.2 af for this permit.

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

This permit is qualified for an in-house exam. The permit states that this use is for one home with up to ½ acre of yard irrigation. Aerial photos show the home and possible yard irrigation, so this permit can be licensed for domestic use.

The proof of beneficial use statement said that a fish screen less than 0.25 inch is installed, so it appears as though the conditions of this permit have been met.

Condition 2 (26A) was removed as is standard. The remaining conditions for the permit were carried forward to licensing. I would like to add a subdivision lot description for this permit, but the tax lot legal description doesn't supply a subdivision lot description.

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	1.2 AF
<u>Totals:</u>		0.04 CFS	1.2 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 – DANIEL A. NELSON – STAFF HYDROLOGIST

Field Examiner's Name



Date

2-3-16

Reviewer

Date

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-13710
 Reviewer: Dan Nelson
 Date of Review: 2/3/2016

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

Scenario 1
0.75
0
60
50
0.03
12

Scenario 2
1
0
60
50
0.04
16

Scenario 3
1.5
0
60
50
0.05
24

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:

The contour lines in mapping show approximately 60 feet elevation change from the lake level to the home, so I estimated a lift of 60 feet. I used an average pressure of 50 psi, since most domestic systems operate between 40 and 60 psi. Using the above theoretical calculations, I determined that 0.04 cfs could be diverted using a 1 Hp lake pump. This sounds reasonable for a single domestic system. The permit allowed up to 0.04 cfs, so it reasonable to allow the full permitted amount of 0.04 cfs.

Permit 95-13710
by Dan Nelson

The yellow Border is the place
of use and the yellow dot is the
point of diversion. The place of
use is the tax lot.

