

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

A. GENERAL INFORMATIONPermit No: 95-13344Exam Date: 11/2/2015

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: Richard and Susan Cane
- Owner of Record Correct? X Y N
- Address of Record Correct? Y N
- If No: Address

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

4. **SOURCE** TRIBUTARY

Couer D Alene Lake

Spokane River

Method of Determination: GIS and Taxlot 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
None			

Comments: There are several water rights that appear to overlap this place of use. Water rights 95-13347, 95-12255, 95-15556 are for lots north of the property associated with this permit. Water rights 95-11446, 95-15425, 95-13258, 95-16124, 95-15425, 95-15475, and 95-8677 are for lots south of the property. Water rights 95-7222, 95-8300, 95-8677, and 95-12725 are east of the main road running to the east of the property. Water right 95-7733 is in the same name as the permit holder, but it is for a different lot approximately 4 lots south of this property, and currently owned by a McDaniel.

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

Water Right No.	Source	Purpose of Use	Basis
NONE			

Comments: See the description above of the possible overlapping rights.

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
Lake Pump	4		SW	SE	13	48N	4W	B.M.	Kootenai
								B.M.	
								B.M.	

Method of Determination: GIS and Taxlot data.Change in POD? X N Amendment Required? X N

PLEASE NOTE: Whereas the 40 acre tract designation is correct, and amendment isn't necessary to add the government lot. The government lot was correctly added to the application for permit.

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	
48N	4W	13															D		
		Lot #															4		
Total Acres =																			

Method of Determination: GISChange in POU? X N Amendment Required? X N

PLEASE NOTE: Whereas the 40 acre tract designation is correct, and amendment isn't necessary to add the government lot. The government lot was correctly added to the application for permit.

 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
Lake Pump	Unknown	Unknown	Unknown	Unknown	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

YES 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. The owner didn't know the size of pump that they had, so I will recommend a diversion rate of 0.04 cfs, which is what was requested on their application for permit.

Theoretical Calculation = 0.04 cfs

Permit allowed = 0.04 cfs

I am recommending a Diversion rate of 0.04 cfs for this permit.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

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 USE

Irrigation X Y N # Stock Domestic # of Homes 1

Other: < >

Change in Purpose of Use? Y N

Method of Determination: Taxlot data and conversations with owner.

If Yes: From Use To Use Amount CFS AFA

H. NARRATIVE/REMARKS/COMMENTS

This permit is qualified for an in-house exam. The Proof Of Beneficial Use form confirmed that the fish screen was installed, so the fish screen condition doesn't need to be carried forward to licensing. The application for permit doesn't supply any pump information, but this diversion rate is a standard for in-house use and up to ½ acre of yard irrigation. The two lots together for this property only have 0.3 acres, and that would include the home, outbuildings and driveways. Therefore, they don't have a ½ acre to irrigate. All of the conditions have been met, and it is reasonable to believe that the owners are using water for this system. Therefore, I am recommending a diversion rate of 0.04 cfs and 1.2 af, which is the standard for domestic uses. The Taxlot data shows the home was built in 1989, so the owners are just now catching the water rights up to the actual use on the ground.

I am going to leave the conditions 004, X01, and 187 on the license, but I am going to remove condition X15 since the owner confirmed that this condition has been complied with. I also added conditions X59 and X60 to clearly identify the parcel associated with this permit.

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 to 10/31	0.04 CFS	1.2 AF
<u>Totals:</u>		0.04 CFS	1.2 AF

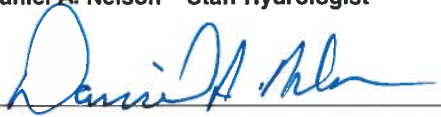
2. Recommended Amendments

___ Change P.D. as reflected above ___ Add P.D. as reflected above ___ None

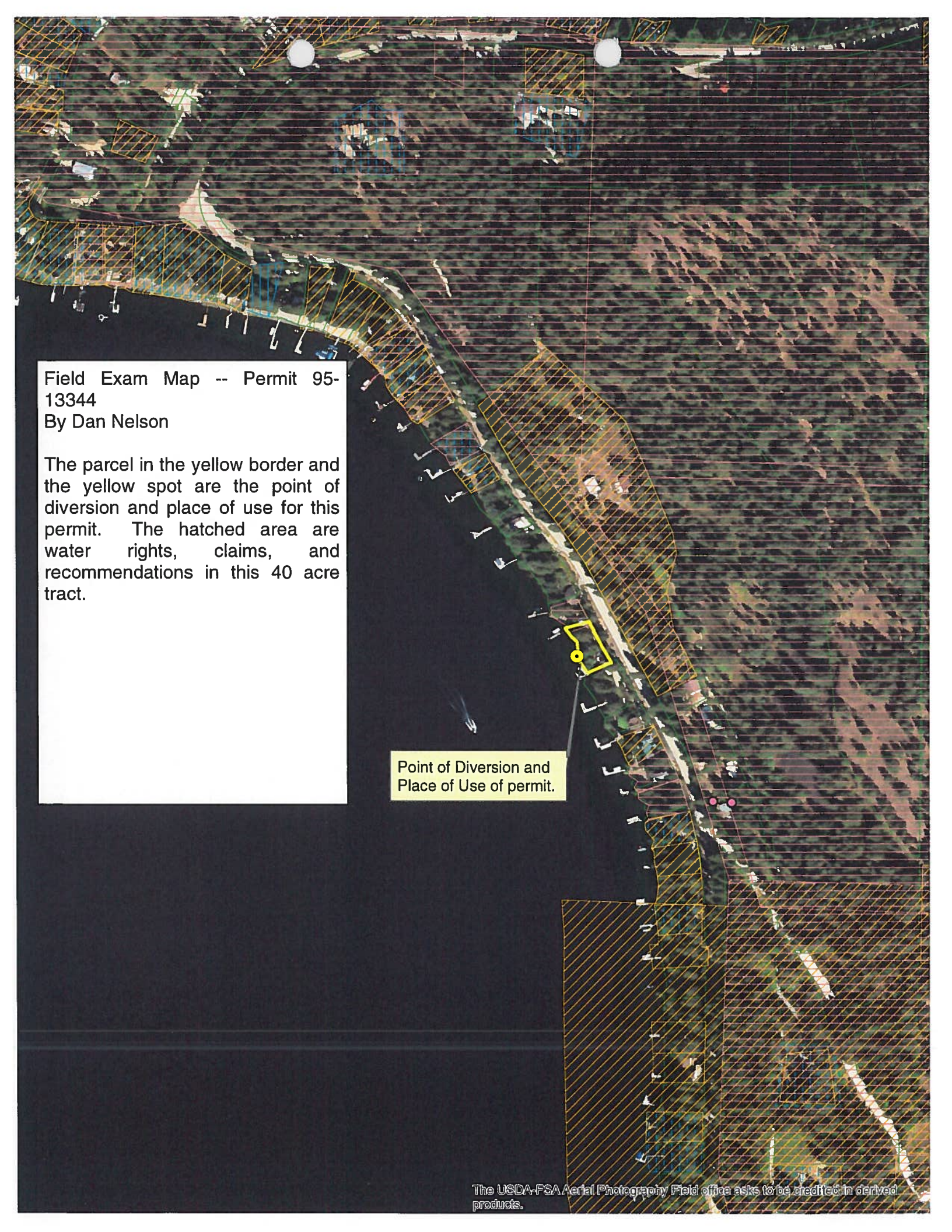
___ Change P.U. as reflected above ___ Add P.U. as reflected above ___ None

Other: < >

J. AUTHENTICATION – Daniel A. Nelson – Staff Hydrologist

Field Examiner's Name  Date 11-2-15

Reviewer _____ Date _____

An aerial photograph of a coastal area. A large tract of land is outlined with a yellow border and filled with yellow diagonal hatching. A small yellow circle marks a specific point on the shoreline within this tract. The surrounding area includes a dark body of water, a road, and various buildings and structures. The hatched area follows the coastline and extends inland.

Field Exam Map -- Permit 95-13344

By Dan Nelson

The parcel in the yellow border and the yellow spot are the point of diversion and place of use for this permit. The hatched area are water rights, claims, and recommendations in this 40 acre tract.

Point of Diversion and
Place of Use of permit.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-13344
 Reviewer: Dan Nelson
 Date of Review: 11/2/2015

P/D No.:

	Scenario 1	Scenario 2	Scenario 3	
PUMP HORSEPOWER	0.75	1	1.5	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	40	40	40	
DISCHARGE PRESSURE	50	50	50	
RATE OF FLOW (cfs)	0.03	0.04	0.06	Average
	13	18	27	0.04
				19.26

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 lake pump, so the pumping level and lake level would be similar. There is approximately 40 feet of elevation from the lake to the home per the Department's contour lines, so I estimated the pumping level at 40 feet. The standard pressure tank for a home has a turn on/ turn off set at 40 and 60 psi. Therefore, I used an average pressure estimate of 50 psi. Using these elements, it would take a 1 Hp pump to deliver the 0.04 cfs allowed by the permit, which seems reasonable for a domestic pump system.