

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

A. GENERAL INFORMATION

Permit No: 95-9429

Exam Date: 4/16/2014

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: Jim & Ramona Engh
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: CO97239

4. SOURCE**TRIBUTARY**

Coeur d'Alene Lake

Spokane River

Method of Determination: Applicant submitted an aerial photo map that outlined POD & POU.

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: There are no other water rights that share POU

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

Water Right No.	Source	Purpose of Use	Basis

Comments: There are no other water rights that share POD.

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 Lake	2		NW	NW	23	48N	04W		KOOTENAI

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 & 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	04W	23							0.5										0.5

Method of Determination: Map of property submitted by land owner identifies POU clearly. PLSS data through ArcMap match.

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
Lake Pump	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 so flow measurements not applicable.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

Administrator memo #17 authorizes a irrigation flow rate of 0/03 cfs per acre.

>>> 0.5 acres * 0.03 cfs/acre = 0.015 cfs

See the theoretical calculation sheet with a number of scenarios providing a calculated average flow rate of 0.04 cfs.

Measurement = 0.04 cfs

Permit allowed = 0.03 cfs

License recommend for 0.02 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.5 \times 3.0 = 1.5$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \times 246 \times 1.9835 = 9.8$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 1.5$

2. Volume Calculations for Other Uses: NONE

G. PURPOSE OF USEIrrigation ☒ Yes ☐ No # Stock 0 Domestic # of Homes 0

Other: < >

Change in Purpose of Use? ☐ Yes ☒ No

Method of Determination: Information in the water right file is consistent with aerial photography of the property.

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA _____

H. NARRATIVE/REMARKS/COMMENTS

Permit 95-9429 authorized the use of 0.03 cfs from Coeur d'Alene Lake for irrigation water purposes. Based on the information provided in the water right file, this qualifies for an in-office field exam.

There was initial concern when locating the property when matching the legal description. The PLSS data on our ArcMap layer runs a QQ boundary directly through the middle of the Engh property. The application and permit only identified the NWNW L2 of section 23 as a POU & POD. The digital map layer would indicate an amendment would be required to include the SWSW L6 QQ. However, the map that were included in the application for permit show the property completely within the NWNW L2 QQ. I loaded the DRG topo map which has legal boundaries included. This too showed that the Engh property was solely within the NWNW L2 QQ. This leads me to believe that there is a small error in the PLSS data that has created a slight shift to the south east. I have included a map of the DRG topo map and digital PLSS data that shows this. For this reason, I believe an amendment is not necessary and the description on the permit is correct.

Horsepower of pump was indicated in the application for permit. Theoretical calculations were completed and attached to this report. To complete the theoretical flow calculations, I used a range of pumping levels to cover the slope of the property. The theoretical rate of 0.04 cfs was close to the 0.03 cfs rate that was permitted. A shape file for place of use was made and contains all of the property from the shore to the road. Property owned by the Engh's was not included in the POU because aerial photography indicates irrigation of the property has not been used. This area was measured to be half an acre. This was the limiting factor on rate since per Administrator Memo #17 states 0.03 cfs per acre up to 5 acres of irrigation is allowable.

Place of use comparison on ArcMap showed no overlap to the property. I was able to track down other water rights identified in the POU/POD comparison report. All of which were mostly located to the south of the Engh's property.

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>
Irrigation	03/15-11/15	0.02 cfs	1.5 af
	<u>Totals</u>	0.02 cfs	1.5 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. AUTHENTICATIONField Examiner's Name Patricia Kelly Date 04/16/2014

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Field Exam Map
95-9429

This map depicts the IRRIGATION 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 0.0425 0.085 0.17 Miles





THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-9429
 Reviewer: Patrick Kelly
 Date of Review: 4/16/2014

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	1	1	1
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	40	60	80
DISCHARGE PRESSURE	50	50	50
RATE OF FLOW (cfs)	0.04	0.04	0.03 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

Examiners Notes:

Lift was taken from DRG topo map to measure the point of diversion to the place of use or storage tank. Used 50 psi for strong discharge pressure using standard sprinkler systems. Pumping levels change across property. Average rate of flow is 0.04 cfs. This represents that the recommended 0.02cfs is capable of being supplied to the property.

Process	Basin Sequence	Draft	Owner	Source	POD/ POU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	95-10363	N	MELKA, BRIAN	COEUR D ALENE LAKE	POD					X												0
Water Right	95-10363	N	MELKA, BRIAN	COEUR D ALENE LAKE	POU					X												0
Water Right	95-13010	N	KENNEDY, CLARA; KENNEDY, NORMAN	COEUR D ALENE LAKE	POD							X										0
Water Right	95-13010	N	KENNEDY, CLARA; KENNEDY, NORMAN	COEUR D ALENE LAKE	POU							X										0
Water Right	95-13084	N	MATHEISON LIVING TRUST	COEUR D ALENE LAKE	POD							X										0
Water Right	95-13084	N	MATHEISON LIVING TRUST	COEUR D ALENE LAKE	POU							X										0
Water Permit	95-13342	N	HENRY L NORDHOFF REVOCABLE TRUST	COEUR D ALENE LAKE	POD					X												0
Water Permit	95-13342	N	HENRY L NORDHOFF REVOCABLE TRUST	COEUR D ALENE LAKE	POU					X												0
Water Right	95-13935	N	CLAUSEN, LUKE	COEUR D ALENE LAKE	POD							X										0
Water Right	95-13935	N	CLAUSEN, LUKE	COEUR D ALENE LAKE	POU							X										0
Water Permit	95-15115	Y	BEERMAN, ARWEN; BEERMAN, MICHAEL	COEUR D ALENE LAKE	POD							X										0
Water Permit	95-15115	Y	BEERMAN, ARWEN; BEERMAN, MICHAEL	COEUR D ALENE LAKE	POU							X										0
Water Right	95-16404	N	MCCREA AGE LLC	COEUR D ALENE LAKE	POD					X												0
Water Right	95-4131	N	VICTOR, ELMER NEIL; VICTOR, MARY	COEUR D ALENE LAKE	POD	X																0
Water Right	95-4131	N	VICTOR, ELMER NEIL; VICTOR, MARY	COEUR D ALENE LAKE	POU	1.0																1
Water Right	95-4515	N	VENTRIS, TOM	COEUR D ALENE LAKE	POD																	0
Water Right	95-4515	N	VENTRIS, TOM	COEUR D ALENE LAKE	POU																	0
Water Right	95-4700	N	WESTACOTT, JAMES R; WESTACOTT, WILLA L	COEUR D ALENE LAKE	POD																	0
Water Right	95-4700	N	WESTACOTT, JAMES R; WESTACOTT, WILLA L	COEUR D ALENE LAKE	POU																	0
Water Right	95-7520	N	CHAFFEE, CARROLL N	COEUR D ALENE LAKE	POD					X												0
Water Right	95-7520	N	CHAFFEE, CARROLL N	COEUR D ALENE LAKE	POU					X												0
Water Right	95-8165	N	FIELD, BEVERLY A; FIELD, EDWIN	COEUR D ALENE LAKE	POD					X												0
Water Right	95-8165	N	FIELD, BEVERLY A; FIELD, EDWIN	COEUR D ALENE LAKE	POU					X												0
Water Right	95-8207	N	POWDERHORN BAY WATER ASSN	GROUND WATER	POU					X												0
Water Right	95-8319	N	NAKATA, HERBERT M	COEUR D ALENE LAKE	POD							X										0
Water Right	95-8319	N	NAKATA, HERBERT M	COEUR D ALENE LAKE	POU							X										0
Water Right	95-8386	N	DORENDORF, MARVIN E	COEUR D ALENE LAKE	POD							X										0
Water Right	95-8386	N	DORENDORF, MARVIN E	COEUR D ALENE LAKE	POU							X										0
Water Right	95-8705	N	IRWIN FAMILY TRUST	COEUR D ALENE LAKE	POD					X												0
Water Right	95-8705	N	IRWIN FAMILY TRUST	COEUR D ALENE LAKE	POU					0.1												0.1

DOMESTIC, WRONG LEGAL.

DOMESTIC FOR QQ SOUTH -

PROPERTY SOUTH. DOMESTIC.

IRRIGATES PROP SOUTH BORDER OF QQ.

Water Right	95-8711	N	CHAFFEE, LILLIS RUTH; CHAFFEE, LOIS; CHAFFEE, MARY ELIZABETH; CHAFFEE,	COEUR D ALENE LAKE	POD					X								0
Water Right	95-8711	N	CHAFFEE, LILLIS RUTH; CHAFFEE, LOIS; CHAFFEE, MARY ELIZABETH; CHAFFEE,	COEUR D ALENE LAKE	POU					X								0
Water Right	95-8785	N	ZOLLARS, VERNON	COEUR D ALENE LAKE	POD					X								0
Water Right	95-8785	N	ZOLLARS, VERNON	COEUR D ALENE LAKE	POU					X								0
Water Right	95-8935	N	ULLRICH, BRIAN P	COEUR D ALENE LAKE	POD					X								0
Water Right	95-8935	N	ULLRICH, BRIAN P	COEUR D ALENE LAKE	POU					X								0
Water Right	95-8953	N	MANGIS, DON; MANGIS, MARY	GROUND WATER	POD					X								0
Water Right	95-8953	N	MANGIS, DON; MANGIS, MARY	GROUND WATER	POU					X								0
Water Right	95-9050	N	MEYER, RICHARD	COEUR D ALENE LAKE	POD					X								0
Water Right	95-9050	N	MEYER, RICHARD	COEUR D ALENE LAKE	POU					1.0								1
Water Right	95-9065	N	MEYER, RICHARD	COEUR D ALENE LAKE	POD					X								0
Water Right	95-9065	N	MEYER, RICHARD	COEUR D ALENE LAKE	POU					1.0								1
Water Permit	95-9429	N	ENGH, JIM; ENGH,	COEUR D ALENE LAKE	POD					X								0
Water Permit	95-9429	N	ENGH, JIM; ENGH,	COEUR D ALENE LAKE	POU					1.0								1
Water Right	95-9489	N	CAMERON, JANA; CAMERON, RICKI T	COEUR D ALENE LAKE	POD					X								0
Water Right	95-9489	N	CAMERON, JANA; CAMERON, RICKI T	COEUR D ALENE LAKE	POU					X								0