

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

A. GENERAL INFORMATION

Permit No: 67-15111

Exam Date: 12/10/2014

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: Vernon & Marilyn Lolley, Gary & Angie Walker
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: W042578

4. **SOURCE** **TRIBUTARY**

Springs

Method of Determination: Map of property detailing system delivery was submitted with application for permit.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: No POU overlap.

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

Water Right No.	Source	Purpose of Use	Basis

Comments: No POD overlap.**C. DIVERSION AND DELIVERY SYSTEM**

1. **LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.	County
SPRINGS		NW	SW	SE	27	13N	03W	WASHINGTON

Method of Determination: Legal Description in permit validated by PLS data and mapping. Applicant submitted map identifying POD clearly.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	
05N	02W	36												D					
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Method of Determination: Map of property submitted by land owner identifies POU clearly.Change in POU? ☐ Yes ☒ No Amendment Required? ☐ Yes ☒ No

3.

☒ 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
Unk.	Unk	Unk	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 flow included in report.**E. FLOW CALCULATIONS**☒ Additional Computation Sheets Attached

Measured Method:

Gravity system in place uses domestic tank and trough system.

See attached Mannings equation sheet.

Measurement = 0.07 c fs**Permit allowed = 0.07 cfs****License recommend for 0.07 cfs.**

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

Domestic use: administrator memo #22 recommends a volume of 1.2 af per home.

Stockwater use: 60 head * 12 gallons/head * 365 days/year * 3.07E-6 = 0.81 af

G. PURPOSE OF USE

Irrigation ☒ Yes ☐ No # Stock 60 Domestic # of Homes 1

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 63-33954 authorized the diversion of 0.07 cfs from a spring for stockwater and domestic purposes. Because of the small permitted diversion rate and POU, this qualifies for an in-office field exam. The exam was completed on Dec 11, 2014 by WRA Patrick Kelly.

Legal description of POU & POD on the permit were found to be accurate for the property in the name of two property owners. Ownership of the land matches owners of the permit as this was a joint effort by the two neighbors. A map outlining the POU and POD was submitted with the application for permit. This became a useful tool when describing the water system. Notes on the map identified "stock tanks". A telephone conversation with Mr. Vernon Lolley confirmed that these were 4-500 gallon troughs, and that no storage component would need to be licensed. Aerial photography of the land confirmed the uses that were described.

I found no information that would suggest an overlap at the point of diversion or place of use exists.

Mr. Lolley confirmed that this was strictly a gravity system in place, and that no pumps are used to divert the water. The Mannings Equation spreadsheet was used (attached) to qualify a diversion rate for the system. ArcMap tools were used to measure a run of approximately 825 feet. Topography maps of the property shows a relief of 90 feet from the point of diversion or spring to the lowest part of the system where the house exists. The theoretical Q of 0.07 cfs matches what was permitted and I found no further evidence to suggest a lesser rate.

Volume was found using administrator memos number 3 and 22 for stockwater and domestic uses.

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 cfs	1.2 af
Stockwater	01/01-12/31	0.03 cfs	0.8 af
	<u>Totals</u>	0.07 cfs	2.0 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 ☐ Other

Other: < >

J. AUTHENTICATION

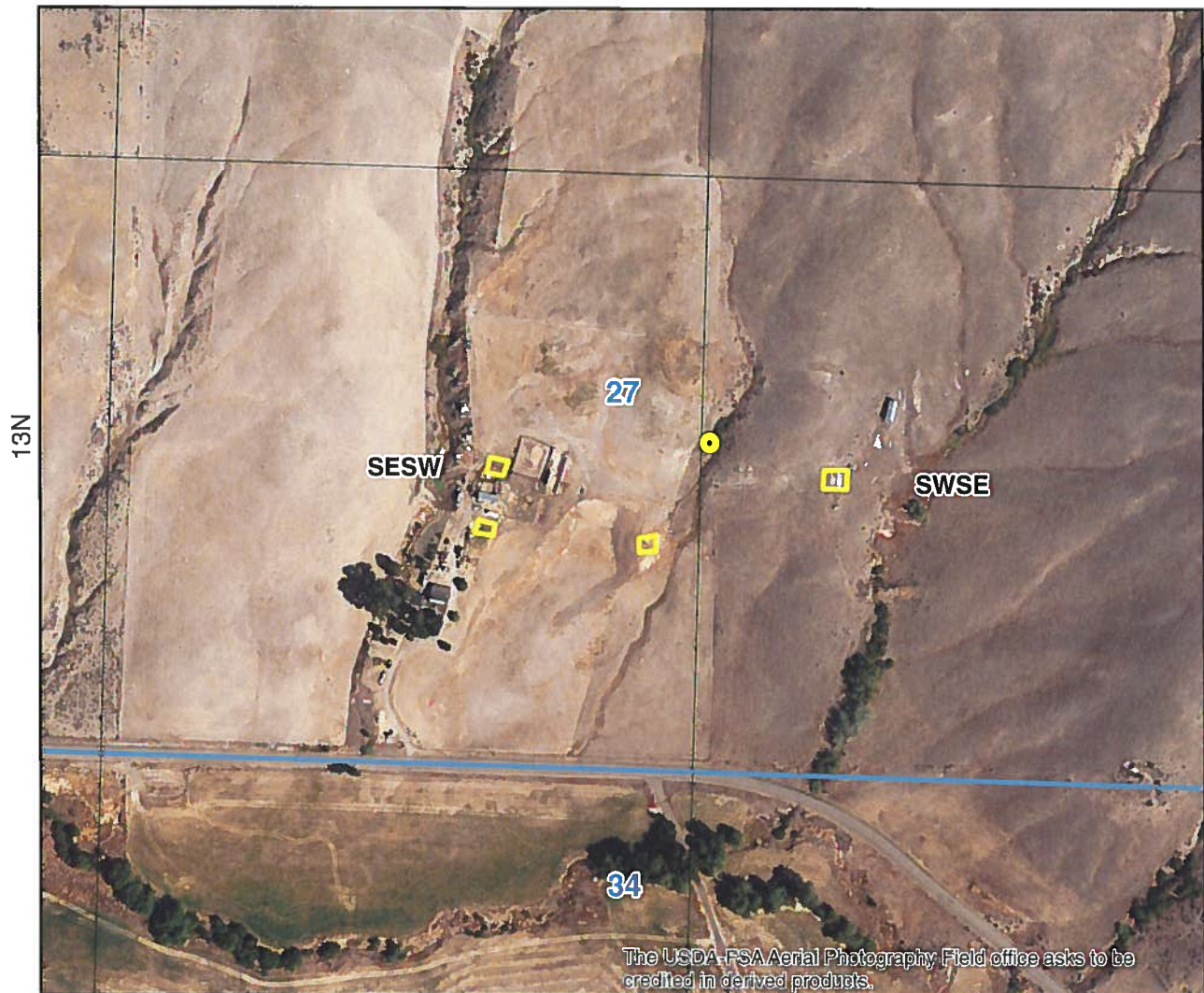
Field Examiner's Name Patrick Whiting Date 12-11-2014

Reviewer Camille Skuggs Date 12-17-2014

State of Idaho
Department of Water Resources
Field Exam Map
67-15111

This map depicts the STOCKWATER 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.

03W



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

0 0.05 0.1 0.2 Miles



Manning's Equation Calculator for Flow Rate in a Circular Conduit Flowing Full

READ ME

S = 0.1091 ft/ft
 n = 0.009 manning's coefficient
 d = 1.5 pipe diameter (inches)
 D = 0.13 pipe diameter (feet)
 r = 0.06 pipe radius (feet)
 A = 0.01 area (ft²)
 WP = 0.39 wetted perimeter (ft)
 R = 0.03 hydraulic radius (ft)
 Q = 0.07 flow rate (CFS)

Channel Slope

Slope Options
☐ Manual Entry ☒ Slope Calculator

Slope Calculator

Rise = 90 feet
 Run = 825 feet
 Slope, S = 0.1091 ft/ft

Pipe Material, (n):

plastic (pvc, abs)

Pipe Diameter (inches)

1.5 inches

Water Right No.: 95-10719
 Reviewer: Patrick Kelly
 Date of Review: 12/11/2014

Manning's Equation (1), is an empirical formula that solves for velocity (v) in a open channel under uniform flow. The continuity equation (2) when combined with equation (1) allows for the computation of the flow rate (Q) in an open channel under uniform flow.

In equations (1) and (3), η refers to Manning's Coefficient of Roughness and can be found in tabulated form for many open channel types. R is the hydraulic radius of the open channel and is equal to the area of the open channel divided by the wetted perimeter, $R = A/P$. S is the slope of the energy grade line which is often assumed to be equal to the slope of the channel.

Because Manning's Equation is empirical the units are not arbitrary. To obtain a velocity in ft/s and a flow rate in ft³/s, area must be reported in ft², hydraulic radius must be reported in ft, and S must be reported in ft/ft. Manning's Coefficient of Roughness is a unitless constant.

$$(1) \quad v = 1.49 \left(\frac{1}{\eta} \right) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

$$(2) \quad Q = vA$$

$$(3) \quad Q = 1.49 \left(\frac{1}{\eta} \right) (A) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

ANALYSIS SHEET FOR PROOF OF BENEFICIAL USE

Permit No.: 67-15111

Reviewed By: dblock

Date: November 24, 2014

	<u>Yes</u>	<u>No</u>		<u>Yes</u>	<u>No</u>
Proof received timely?	X		Drilling permit required?		X
License examination fee required?	X		Drilling permit No.:		
Appropriate fee submitted?	X		Drilling permit upgrade needed?		
Receipt No.:		W042221, W042578	Well driller's report filed?		
Additional Amount Due:			Measuring device required?		X
Name and address same as permit?	X		Measuring device installed?		
Are the water uses correct?	X		Measure device waiver requested?		

Priority Calculation

Date proof received		10/10/2014
Date proof due	-	10/01/2015
Lapse notice sent	-	
No. of days late	=	0
Holiday allowance	+	
Priority date	+	05/13/2014
New priority date	=	05/13/2014

Deficiencies of Actions Items

Proof deemed acceptable.

Gave file to Water right agent for in-house license review.

Water right agent will enter the proof made date in AdHoc at the time of licensing.