

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33839

Exam Date: 9/9/2016

1. Current Owner:

MELVIN GOODSON 22910 TEN DAVIS RD PARMA ID 83660 (208) 722-5937 And

WANDA GOODSON 22910 TEN DAVIS RD PARMA ID 83660 (208)880-7203

2. Accompanied by: Michael GoodsonPhone No: 208-880-1569Address: 26701 Fountain Rd Parma ID 83660Relationship to Permit Holder: Brother, farmer

3. SOURCE:

GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW1. Other water rights with the same place of use: Black Canyon / Farmers Co-Op2. Other water rights with the same point-of-diversion: 63-8544, Permit 63-33840**C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NE¼NE¼ Sec. 19, Twp 05N, Rge 04W, B.M. CANYON County

Method of Determination: GPS of diversion collected on site.

2.

PLACE OF 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	
05N	04W	19		37.0															37.0

Total Acres: 37

Method of Determination: Aerial photography of irrigated property measured using ArcMap tools and digital PLSS mapping.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

☒ Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be

☒ 1:24,000 or greater.☒ Aerial Photo Attached (required for irrigation of 10+ acres).☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
NENE Well	Holloshaft	Unk.	020192B127R031	Unk.	Open discharge to ditch

*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: Mannings equation used supported with rate-profile method.**E. FLOW** x Additional Computation Sheets Attached**CALCULATIONS**Measured Method: Rate- profile estimation $Q = V \cdot A$ $A = 1.31 \text{ ft}^2$ (per manning spreadsheet)Average time to travel 22.58 ft. = 16.88 sec = $\Rightarrow$ $V = 22.58 \text{ ft} / 16.88 \text{ s} = 1.34 \text{ ft/sec}$ $Q = 1.34 \text{ ft/s} \cdot 1.31 \text{ ft}^2 = 1.75 \text{ cfs}$ Measured Method: Manning Equation $Q = 1.65 \text{ cfs}$ (See attached)**F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

 $V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 37 \cdot 4.5 = 166.5 \text{ af}$ $V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.74 \cdot 260 \cdot 1.9835 = 381.6 \text{ af}$ $V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 166.5 \text{ af}$ 2. Volume Calculations for Other Uses: None.**G. NARRATIVE/REMARKS/COMMENTS**

A field exam was conducted on Sept 9, 2016 by WRA's Patrick Kelly and Aaron Skinner. We were met on site by Michael Goodson. Mr. Goodson has a good understanding of the system and runs day to day operations. Water right exams for permits 63-33839 and 63-33840 were being conducted concurrently since they share the same delivery system from the single well.

Ownership of the permit in the name of Melvin & Wanda Goodson matches current property taxlot data. No assignments or change of ownership is needed at the time of licensing.

The well is located in the NENE quarter as described by the permit so a POD amendment will not be required. A diesel motor pulls water from a 12" well that appears to have been drilled before current well drilling standards were implemented. I could not obtain a well log record through department databases. Michael provided one at the time of the exam, however the well log indicates a 12", 440' well drilled in 1977 by Phipps Drilling in the NESE of Section 19 Twn 1 South Rng 2 West. This is far and away from the site we visited, and is likely not such an erroneous error.

POD overlap review found irrigation ground water right 63-8544 is also diverted from the well. 63-8544 authorizes the diversion of 1.42 cfs. A 1.75 cfs diversion rate is recommended for the combined use limit with all other rights as the max diversion rate associated from the well.

The POU is within the Black Canyon and Farmers Co-Op Irrigation Districts. 63-33839 and 63-33840 are supplemental irrigation rights. Overlap review found no other ground water rights. No amendments are required for the POU.

An open stretch of ditch was measured while water was being diverted into the ditch. A known distance of 22.58' was used to measure the average velocity using small twigs. An average velocity of 1.34 ft/sec through a 1.31 ft² profile suggests a total diversion rate of 1.75 cfs. This information is used to help confirm the Mannings equation that was completed and calculates a diversion of 1.65 cfs.

H. RECOMMENDATIONS**1. Recommended Amounts****BENEFICIAL USE****IRRIGATION****PERIOD OF USE**

03/01 to 11/15

DIVERSION RATE

0.74 CFS

ANNUAL VOLUME

166.5 AF

Totals:

0.740 CFS

166.50 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**I. AUTHENTICATION**Field Examiner's Name Patrick Kelly Date 9-9-2016

Reviewer _____ Date _____

63-33839 & 63-33840 System Diagram



Manning Flow Rate Calculation Summary Report

General Information:

Permit/Claim Number(s): 63-33839 and 63-33840

Name of Claimant/Permit Holder: Melvin and Manda Goodson / Michael and Melanie Goodson

Name of Ditch, Canal, or Stream: Local ditch diversion

Date of Measurement: Sept. 9, 2016

Data Collect By: Patrick Kelly, WRA

Measurement Location: NE 1/4 NE 1/4 Section: 19 TWNS: 05N RNG: 04W

Channel Description Information:

Channel Type

☐ Pipe Full ☐ Circular ☐ Rectangular ☐ V-Notch ☒ Trapezoidal ☐ User Defined

Channel Description: Well discharges into an open ditch. Ditch is lined concrete with seams sealed.

☒ Photo(s) Attached

☒ Map(s) Attached

Channel Cross Sectional Information:

Basis

☐ High Water Mark ☒ Water Surface

Water Flow

0.00

Channel Channel

0.00

Rectangular Channel

0.00

User Defined Channel

0.00

2/2/2016 Channel

Trapezoidal Channel

0.00

Height: 1.5'

0.00

Depth of Flow: 0.7'

0.00

Top Width: 2.5'

Bottom Width: 1.23'

Channel Slope Information:

Basis

☒ High Water Mark ☐ Channel Bottom ☐ Land Surface

Upstream
Elevation Meas. (ft)

Downstream
Elev. Meas. (ft)

Distance Between
US & DS Points (ft)

Slope (ft/ft)
|US - DS|/Dist.

Upper Alignment: 2340

2330

1595

0.0063

Middle Alignment:

Lower Alignment:

Manning Calculation Output

Q = 1.65 CFS

V = 1.26 FPS

A = 1.31 SF

S = 0.0063 FT/FT

n = 0.02

Manning's Equation Calculator for Flow Rate in Any Open Channel

S = 0.0063 ft/ft

n = 0.020 manning's coefficient

A = 1.31 area (ft²)

WP = 13.12 wetted perimeter (ft)

R = 0.10 hydraulic radius (ft)

Q = 1.65 flow rate (CFS)

Channel Slope

Slope Options

☐ Manual Entry

☒ Slope Calculator

Slope Calculator

Rise = 10 feet

Run = 1595 feet

Slope, S = 0.0063 ft/ft

Channel Material, (n):  natural channel, very poor condition

READ ME

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.

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

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

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

**Wetted Perimeter and X-Sectional Flow Calculator for
Flow Rate in a User Defined Open Channel**

READ ME

Input No. of Measurement Points Used to Define the Channel

Note: a minimum of four measurement points must be used, with a maximum of 12.

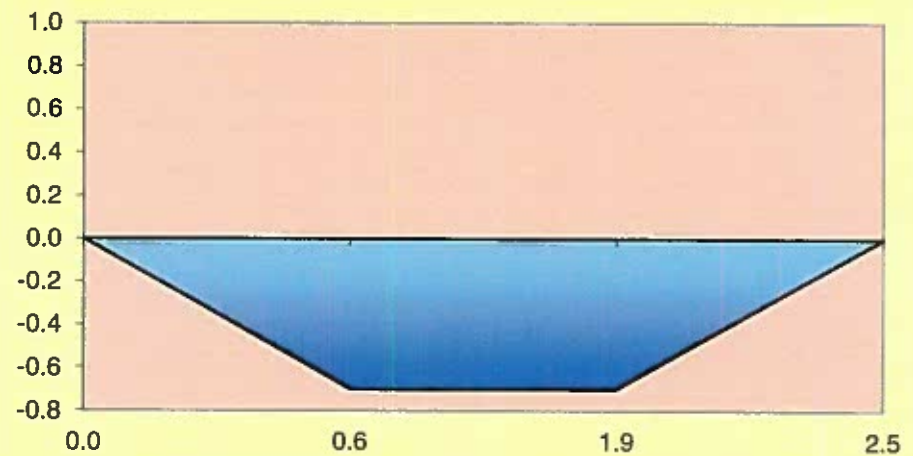
◀ ▶

4 No. of Selected Measurement Points

Input Channel Measurement Points

	X (ft)	Y (-ft)
1st Meas. Point:	0.0	0.0
2nd Meas. Point:	0.6	-0.7
3rd Meas. Point:	1.9	-0.7
4th Meas. Point:	2.5	0.0

Flow Area



X-Sectional Area of Flow

A = 1.31 square feet

Wetted Perimeter

WP = 3.12 feet

BasinSequence Owner

Source
GROUND WATER
GROUND WATER
BOISE RIVER
BOISE RIVER
BOISE RIVER
BOISE RIVER
ELIJAH SLOUGH
WILSON SLOUGH
ELIJAH DRAIN
WILSON DRAIN
BOISE RIVER
SAND HOLLOW DRAIN
CONWAY DRAIN
GROUND WATER
GROUND WATER
GROUND WATER
PAYETTE RIVER
TUNNEL NO 2 DRAIN

[illegible]

OSN04W19

BasinSequence Draft

BasinSequence	Draft	Owner
63-33839	N	GOODSON, MELVIN; GOODSON, WANDA
63-33840	N	GOODSON, MELANIE; GOODSON, MICHAEL
63-21042	N	HARTMAN JR, ORVILLE E; HARTMAN, CAROL J
63-21043	N	HARTMAN JR, ORVILLE E; HARTMAN, CAROL J
63-21044	N	HARTMAN, WILLIAM J
63-23238	N	BRESHEARS, HAROLD L; BRESHEARS, INA M
63-23486	N	HERTIG, IRENE
63-23903	N	TEN DAVIS COMMUNITY HALL ASSN
63-27938	N	GOODSON, ANNIE K; GOODSON, AUSTIN M
63-27939	N	GOODSON, AUSTIN M; GOODSON, MELVIN
63-29049	N	ROSS, EARL R; ROSS, REBA
63-29050	N	ROSS, EARL R; ROSS, REBA
63-8463	N	HARTMAN JR, ORVILLE E; HARTMAN, CAROL J
63-8544	N	GOODSON, ANNIE K; GOODSON, AUSTIN M
63-8948	N	ROSS, CAROLYN B; ROSS, EARL R; ROSS, REBA

Source

Source
GROUND WATER
GROUND WATER
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GROUND WATER

NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE
X															
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