

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-12241
Exam Date: 8/8/2016

1. Current Owner:
THEO LEAVELL
7140 W DICKMAN RD
MELBA ID 83641
(208)386-9461
- And/Or
- GARY W LEAVELL
7140 W DICKMAN RD
MELBA ID 83641
(208)880-3350

2. Accompanied by: Son of Gary Leavell
Phone No: N/A
Address: N/A
Relationship to Permit Holder: Son of Gary Leavell

3. SOURCE:
GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point-of-diversion: None

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

GROUND WATER SW¼NE¼ Sec. 19, Twp 01N, Rge 01W, B.M. ADA County

Method of Determination:

- One well was observed on the property.
- A GPS for the well was taken.

2.

PLACE OF 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	
01N	01W	19			X														

PLACE OF USE: 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	
01N	01W	19		X	X														

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	
01N	01W	19		1.0	5.8														6.8

Total Acres: 6.8

Method of Determination:

- On-site field exam
- Aerial imagery
- PLSS review

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.
Indicate weir size/pipe as applicable.

 X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

 X Aerial Photo Attached (required for irrigation of 10+ acres).

 X 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
D0064017	Variable Freq Drive	7.5	N/A	N/A	N/A

*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
N/A						

2. Measurements:

- Unable to take a direct measurement at time of field exam.
- A theoretical was completed averaging 0.14 cfs, which is a good estimated calculation. I will recommend a total of 0.14 cfs for licensing.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Efficiency = 0.70

Depth to water = 145 to 250 ft.

psi = 60

hp = 7.5

See attached theoretical sheet.

Theoretical = **0.14 cfs**

Sprinkler Nozzle Estimation:

3/16" nozzle observed

8.12 gpm @ 60 psi

10 sprinklers operate at one time

10(8.12) = 81.2 gpm = **0.18 cfs**

Permit	0.20 cfs
B.U. Standard Allowance	0.20 cfs
B. U. Proof Fee	\$50 → 0.0 to 0.20 cfs
Measurement or Theoretical Rate	0.14 / 0.18 cfs
License Recommendation	0.14 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 6.8(4.5) = 30.6 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = .14(260)(1.9835) = 72.2 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 30.6 \text{ af}$$

2. Volume Calculations for Other Uses:

- Domestic – 0.6 af based on Administrative Memo 22.
- Stockwater – Ten range cattle - suggested 12 gpd = 120 gpd = 43,800 gpy = 0.13 af.
 - This volume justifies 0.2 per Administrative Memo #3.

G. NARRATIVE/REMARKS/COMMENTS

A field exam was completed by Water Resource Agents Patrick Kelly and Rachel Sommer on August 8, 2016. The exam was completed to assess the permit holders use of the approved uses; domestic for 1 home, irrigation for 8 acres and stock water for 10 range cattle; located T1N, R1W, S19; in the NWNE and the SWNE from one ground water well in the SWNE.

Irrigation was approved up to 1 acre in the NWNE and 7 acres in the SWNE. During the beneficial use period, 6.8 of the 8 irrigatable acres had been watered; 1 acre in the NWNE and 5.8 in the SWNE. The fields are fed through 1" pipe fed to sprinklers observed with 3/16" nozzles running only 10 sprinklers at a time. 10 3/16" sprinklers run at one time averaging a total of 81.2 gpm = 0.18 cfs. My recommendation is for the standard rate of 0.02 cfs per acre for 6.8 acres of irrigation with a rate of 0.14 cfs.

Domestic uses were approved for 1 home in the NWNE and/or the SWNE. The home is solely located in the SWNE. My recommendation is to remove the NWNE from the place of use for the domestic use.

Stock water use was approved for 10 head of range cattle not to exceed a rate of .02 cfs. During the field exam 10 head of range cattle were counted. The cattle are located in both the NWNE and SWNE. I recommend no changes be made to the stockwater.

One point of diversion for ground water was approved under this permit. A well was drilled on May 3, 1996, under permit no. 63-96-W0198-000. It was then replaced by well D0064017 on September 8, 2012, and then modified on June 27, 2014, with tag no. D0067252. One well was located on the property; I recommend no changes be made to the point of diversion.

The system uses a 60 gpm pump with 7.5 hp. A PSI gage installed on the system showed a pressure of 60 psi during the field exam. Theoretical average flow rate is 0.14 cfs. This is a reasonable diversion rate given it matches close to the pump curve rating as well as the observed diversion rate recorded during the pump test reported on the well log. A rate of ~~0.20~~ ^{0.14} cfs is recommended.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
STOCKWATER	01/01 to 12/31	0.02 CFS	0.2 AF
DOMESTIC	01/01 to 12/31	0.04 CFS	0.6 AF
IRRIGATION	03/01 to 11/15	0.14 CFS	30.6 AF
	<u>Totals:</u>	0.14 CFS	31.4 AF

2. Recommended Amendments NONE

☐ 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

I. AUTHENTICATION

Field Examiner's Name Rachel Sommer Date 10-31-16

Reviewer _____ Date _____

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-12241
 Reviewer: RACHEL SOMMER
 Date of Review: 9/8/2016

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	7.5	7.5	7.5
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	145	203	250
DISCHARGE PRESSURE	60	60	60
RATE OF FLOW (cfs)	0.16	0.14	0.12 0.14

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:

Sprinkler nozzles observed at 3/16". This would allow 8.12 gpm @ 60 psi .
 Having 10 sprinklers operating at one time: 10(8.12) = 81.2 gpm = 0.18 cfs.

Mountain Home Office
1240 N W Beaman St
Mountain Home, ID 83647
208-587-9055
fax 208-587-9818



DRILLING & PUMP CO.
www.hiddlestondrilling.com

Boise Office
5932 W Victory
Boise, ID 83709
208-362-2900
fax 208-362-9723

RECEIVED

AUG 18 2016

WATER RESOURCES
WESTERN REGION

ESTIMATE

Date: August 27, 2012

Gary Leavell
7140 W. Dickman Rd.
Melba, Idaho 83641

Phone: 880-3350
Fax: 323-1519
Email: gary@iavcabinets.com

RE: 1-6" x 300' replacement well at 7140 West Dickman Road Melba, Idaho

DRILLING

QUANTITY	UNITS	DESCRIPTION	UNIT PRICE	EXTENDED
1	Each	Well Drilling Permit	\$90.00	\$90.00
70	Feet	10" Diameter Borehole	\$38.00	\$2,660.00
230	Feet	6" Diameter Borehole	\$18.00	\$4,140.00
70	Feet	6" Casing	\$18.05	\$1,263.50
1	Each	6" Drive Shoe	\$83.03	\$83.03
1	Each	State of Idaho required Surface Seal	\$500.00	\$500.00
Drill Subtotal				\$8,736.53

PUMP SET AT 273 FEET

QUANTITY	UNITS	DESCRIPTION	UNIT PRICE	EXTENDED
1	L.S.	7.5 HP VFD 55 GPM Goulds Pump System (Variable Frequency Drive)	\$12,443.49	\$12,443.49

Drilling & Variable Freq Pump Total **\$21,180.02**

PUMP TOTAL INCLUDES PUMP, MOTOR, CONTROLLER, DROP PIPE, SUBWIRE, PITLESS, CHECK VALVE, ASSY TEE, PRESSURE TANK, WELL SEAL, BASIC ELECTRICAL PARTS, BASIC PLUMBING PARTS, 100 FEET OF UNDERGROUND PIPE AND WIRE, PERMITS, TAXES AND FREIGHT. ANY UNFORSEEN WIRING OR PLUMBING IS EXTRA.

* Trenching is \$90.00 per hour if required.

** Drilling prices are based on current fuel prices. We reserve the right to charge a reasonable fuel surcharge to cover fuel price increases.**

Thank you for the opportunity to bid this project

Gary Oyler
Hiddleston Drilling and Pump Co.

Accepted By _____ Date: _____

Estimate good for 30 days

8/28/2012

2015 Arial Imagery



2013 Arial Imagery



2011 Imagery



Notes

Under permit no 63-12241, the Leavells were authorized stock water for 10 range cattle, domestic use for 1 home in the NWNE and SWNE and irrigation of 1 acre in the NWNE and 7 acres in the SWNE.

Arial imagery supports the beneficial use of stock water for 10 cattle, 1 domestic home in the SWNE, and 1 acre of irrigation in the NWNE and 5.8 acres of irrigation in the SWNE.

Irrigation Use



Run 10 sprinklers varying in nozzle size used for irrigation of fields at one time.

Stock Water Use



10 range cattle watered by troughs.

Well Location



43.24.665
-116.30.163

PSI Reading from Pump Station



52.4 Hz
19.8 A
60.0 PSI



NENW

NWNE

POD

POD

01N01W

19

SENW

SWNE

NESW

NWSE

The USDA FSA Aerial Photography Field office asks to be credited in derived products.

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FORWARD WHITE COPY TO WATER RESOURCES

Overlap Analysis

TRS	Water Right	Owners	Source	POD / POU	Use	NWNE	SWNE	TotalA cres
01N01W19	63-12241	GARY LEAVELL THEO LEAVELL	GROUND WATER	POD	WELL		X	
01N01W19	63-12241	GARY LEAVELL THEO LEAVELL	GROUND WATER	POU	DOMESTIC		X	
01N01W19	63-12241	GARY LEAVELL THEO LEAVELL	GROUND WATER	POU	IRRIGATION	1	5.8	6.8
01N01W19	63-12241	GARY LEAVELL THEO LEAVELL	GROUND WATER	POU	STOCKWATER	X	X	