

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 37-20387

Exam Date: 9/23/2015

1. Current Owner: DELBERT MC MURDO JR
748 E 250 N
FAIRFIELD ID 83327
(208) 720-2640

And/Or

BARBARA MC MURDO
748 E 250 N
FAIRFIELD ID 83327
(208) 720-2640

2. Accompanied by: Delbert Mc Murdo Jr (permit holder) and Jana Reeder (IDWR)

- | | |
|------------------|------------------|
| 3. <u>SOURCE</u> | <u>TRIBUTARY</u> |
| SPRING | SINKS |

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:**

SPRING SW1/4NW1/4NW1/4 Sec. 26, Twp 01N, Rge 15E, B.M.
CAMAS County

Method of Determination: Aerial photography and site visit

2.

PLACE OF USE: STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
01N	15E	26						X											

Method of Determination: Aerial photography and site visit

D. FLOW MEASUREMENTS

Not required for permits with irrigation of less than five (5) acres or permits with the total combined diversion rate for all the uses established in connection with the permit not exceeding twenty-four one hundredths (0.24) cubic feet per second per new Beneficial Use Examination Rules implemented 3/29/2012.

E. FLOW CALCULATIONSHazen-Williams Formula

$$V = 1.318 \times C_h \times R^{0.63} \times S^{0.54}$$

V = Velocity (ft/s)

C_h = Hazen-Williams Friction Coefficient = 130 (for old/plastic pipe)

R = Hydraulic Radius = Cross Sectional Area / Wetted Perimeter = D/4 (for round pipes)

for 1" dia pipe D = 1" = 0.0833 ft (the permit holder indicated that 1" diameter plastic pipe was installed to the trough)

$$R = 0.0833/4 = 0.02083$$

S = h_f/L = Slope of Energy Grade Line = 0.0286 (obtained from approximate elevation difference of 10 feet between the spring and the trough based on field observation and estimated pipe length of 350 ft measured via ARCMAP)

$$V = 1.318 \times 130 \times (0.02083)^{0.63} \times (0.0286)^{0.54}$$

$$V = 2.19 \text{ ft / sec}$$

$$Q = VA \text{ where } A = \pi r^2 = \pi (.5/12)^2 = 0.005 \text{ ft}^2 \text{ for 1 inch diameter pipe}$$

$$Q = (2.19 \text{ ft/ sec})(0.005 \text{ ft}^2) = 0.012 \text{ cfs}$$

Calculated rate of 0.01 cfs is less than permitted rate of 0.04 cfs. Note that this system is very similar to the 37-20386 system (located about 900 feet to the east) which was measured at 0.03 cfs during its licensing exam in 2008. It was observed that there was significantly more fall on the 37-20386 system versus the 37-20387 system. In addition, Delbert Mc Murdo Jr (permit holder) indicated that the 37-20387 system does not produce as much flow as the 37-20386 system. Therefore, it is recommended to license the calculated estimate of 0.01 cfs.

F. VOLUME CALCULATIONS

Not required for 42-111 type domestic uses per new Beneficial Use Examination Rules implemented 3/29/2012. Stockwater use can be considered a "part a" domestic use (up to 13,000 gpd).

G. NARRATIVE/REMARKS/COMMENTS

Application for Permit 37-20387 was filed on April 27, 2001 for the diversion of 0.04 cfs from a spring for stockwater use along the hills northeast of Fairfield. Permit 37-20387 was approved on August 16, 2001 with a Proof of Beneficial Use due date of August 1, 2006. Proof of Beneficial Use was filed on July 26, 2006. On September 23, 2015, Jana Reeder and I met Delbert Mc Murdo Jr, the permit holder, at the site and conducted the licensing exam for permit 37-20387.

The system consists of a fenced off spring with a perforated section of buried pipe collecting spring water that connects to a one inch buried plastic pipeline leading to a single cattle trough. Mr. Mc Murdo indicated that the perforated section is a four inch diameter pipe that ties into the pipeline leading to the trough. During the exam, it was noted that the system appeared to be in a state of disrepair. Mr. Mc Murdo indicated that elk had stomped out the collection pipe/pipeline below the fenced off spring and created a wallow. An estimate of the system capacity using the Hazen-Williams Formula indicates that the system could theoretically divert about 0.01 cfs, which is below the permitted rate of 0.04 cfs. Note that this system is very similar to the 37-20386 system (located about 900 feet to the east) which was measured at 0.03 cfs during its licensing exam in 2008. It was observed that there was significantly more fall on the 37-20386 system versus the 37-20387 system. In addition, Delbert Mc Murdo Jr (permit holder) indicated that the 37-20387 system does not produce as much flow as the 37-20386 system. Therefore, it is recommended to license the calculated estimate of 0.01 cfs.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

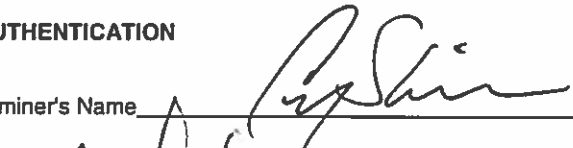
<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
STOCKWATER	01/01 to 12/31	0.01 CFS	N/A
<u>Totals:</u>		0.01 CFS	N/A

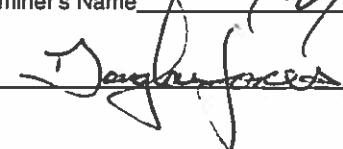
2. Recommended Amendments

☐ 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

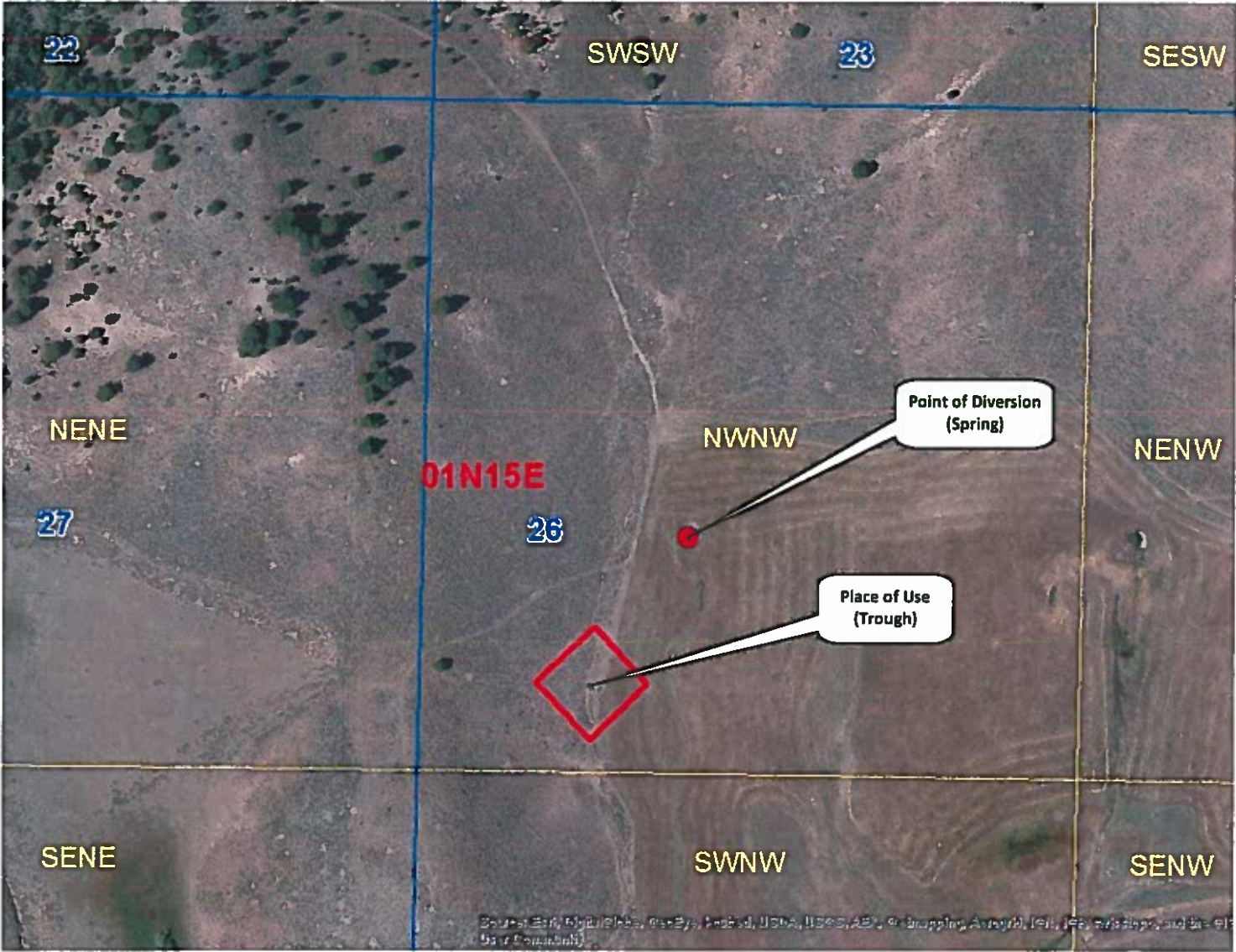
I. AUTHENTICATION

Field Examiner's Name  Date 9/28/15

Reviewer  Date 10/5/15

37-20387 Point of Diversion & Place of Use Map

ESRI Aerial Photography



37-20387 Point of Diversion & Place of Use Photos



ABOVE: View of point of diversion (fenced spring) and leaking pipeline below the spring. Mr. Mc Murdo indicated that elk had stomped out the collection pipe/pipeline below the fenced off spring and created a wallow.

BELOW: View of place of use (trough) at the end of the buried pipeline.

