

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 36-16183

Exam Date: 6/1/2011

1. Current Owner: UNITED STATES OF AMERICA ACTING THROUGH
USDI BUREAU OF LAND MANAGEMENT
IDAHO STATE OFFICE
1387 S VINNELL WAY
BOISE ID 83709-1657
(208)373-4000

2. **SOURCE**

GROUND WATER

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 SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER

SE1/4SE1/4SW1/4

Sec. 33, Twp 08S, Rge 27E, B.M.

BLAINE County

Method of Determination: Waypoints were collected with a Garmin GPS map 76S receiver and downloaded into an ArcMap shapefile that corresponds with 2009 aerial photography and verified the points of diversion to be in Twp 08S Rge 27E S 33 SESESW¼. See attached map.

2.

PLACE OF USE: STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>Totals</u>
08S	27E	33												X					

PLACE OF USE: WILDLIFE

Twp	Rge	Sec	NE				NW				SW				SE				
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>Totals</u>
08S	27E	33												X					

Method of Determination: Waypoints were collected with a Garmin GPS map 76S receiver and downloaded into an ArcMap shapefile that corresponds with 2009 aerial photography and verified the points of diversion to be in Twp 08S Rge 27E S 33 SESESW¼. See attached map.

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.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
		3/4			

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
Five Gallon Bucket						

2. Measurements: Flow determined using a five gallon bucket.
Bucket filled to calibrated five gallon mark in 21.98 seconds. From the chart in IDWR Field Examiners Handbook the measurement is approximately equivalent to 14 gpm or 0.03 cfs with 0.3 gpm potential measurement error.

E. FLOW CALCULATIONS☐ Additional Computation Sheets Attached

Measured Method: Theoretical yield:

$$Q = \frac{8.8 \times (Hp) \times (Eff)}{H}$$

Where: Hp = 3/4 Hp (per BLM records)

Eff = efficiency = 70% assumed

H = total head = pumping level = (2.31 x system pressure)
pumping level of 70 feet (per Steve Davis BLM Hydrologist)
assume system pressure = 30 psi

$$H = 70 + (30 \times 2.31) = 139.3$$

$$Q = \frac{8.8 \times .75 \times .70}{139.3} = 0.03 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

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

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

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

2. Volume Calculations for Other Uses: Stockwater/Wildlife:

According to Steve Davis, BLM Hydrologist, Burley District Office, the troughs supply water to 511 range cattle. Typical season of use is April 15 to October 31, but the BLM desires a flexible season of use as cattle may be kept on range longer if field and range conditions permit, therefore I'm estimating use based on a potential nine month season of use:

$$511 \text{ cattle} \times 12 \text{ gpd} \times 275 \text{ days} / 325850 = 5.2 \text{ AF}$$

Jeremy Bisson, BLM Wildlife Biologist, Burley District Office estimates wildlife use of the trough to be approximately 41 ungulates (elk, deer and antelope):

$$41 \text{ ungulates} \times 12 \text{ gpd} \times 365 / 325850 = 0.6 \text{ AF}$$

$$\text{Total: } 0.6 \text{ AF} + 5.2 \text{ AF} = \underline{5.8 \text{ AF}}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 36-16183 is for 0.07 cfs stockwater/wildlife in two troughs supplied water from a well.

Application for permit 36-16183 submitted by US Dept of Interior/ Bureau of Land Management was filed on September 30, 2003, and proof of Beneficial Use was submitted October 31, 2003.

Existing system consists of a well that supplies water from a ¾ hp pump powered by a generator. Water is pumped through 2 inch galvanized pipe uphill (18 foot elevation gain; 104 foot distance) into a large storage tank (22 feet x 6.67 feet) which is in an adjacent QQ, but isn't accessible to wildlife and at 0.03 cfs would fill to capacity in less than 24 hours. The Tank then delivers water back downhill through two separate 2 inch galvanized supply lines to two troughs (14.6 feet x 2.2 feet). The southern trough is at a distance of 288 feet with a 17 foot elevation drop, while the western trough is at a distance of 234 feet and has a 11 foot elevation drop. The southern trough has no external shut off valve and the water level was regulated by a float valve in the trough. The western trough has an external shut off valve and float valve and was empty on the day of the field exam.

Cattle were present at the southern trough on the day of the exam. I counted 43 adjacent to the trough while I spotted several hundred in the area while driving to and from the site. According to Steve Davis, BLM Hydrologist, the well is utilized by 511 range cattle. According to Jeremy Bisson, BLM Wildlife Biologist, the troughs are used by approximately 41 ungulates (elk, deer and antelope). I saw one antelope on my drive up to the troughs.

I spoke with Steve Davis concerning the requested rate of diversion of 0.07 cfs, as it was apparent that a ¾ hp pump at a depth of 70 feet could only deliver approximately 0.03 cfs. Steve stated he wasn't exactly sure how the requested amount on the permit was derived and that the calculated and measured 0.03 cfs is more than ample to supply that many range cattle and wildlife. Period of use is from 01/01 to 12/31 but volume was calculated for nine months as cattle may be present on range any time of year depending on range and weather conditions, but won't be on the range more than nine months in a given year.

Recommend permitting a rate of diversion of 0.03 cfs and an annual volume of 5.8 af.

Have conditions of permit approval been met? x 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	0.030 CFS	5.2 AF
WILDLIFE	01/01 to 12/31	0.030 CFS	0.6 AF
<u>Totals:</u>		0.030 CFS	5.8 AF

2. Recommended Amendments

___ Change P.D. as reflected above ___ Add P.D. as reflected above x None

___ Change P.U. as reflected above ___ Add P.U. as reflected above ___ Other

I. AUTHENTICATION

Field Examiner's Name

Date

Reviewer

Date

Bill Noll
CS Maria

6-13-2011

6/28/2011

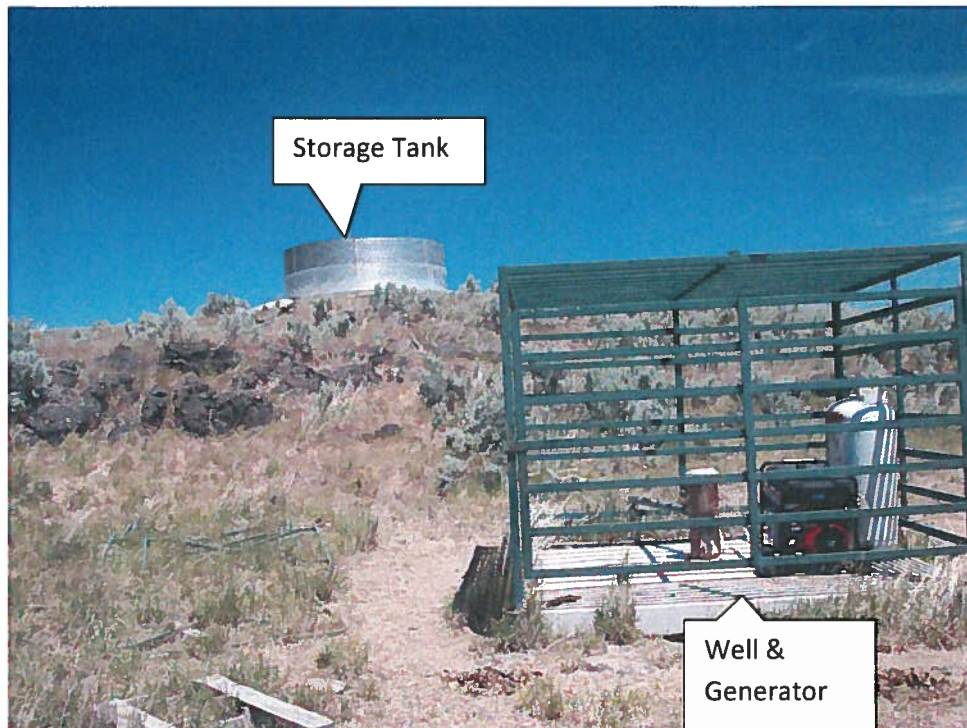


Figure 1: Well and storage tank



Figure 2: Southern trough

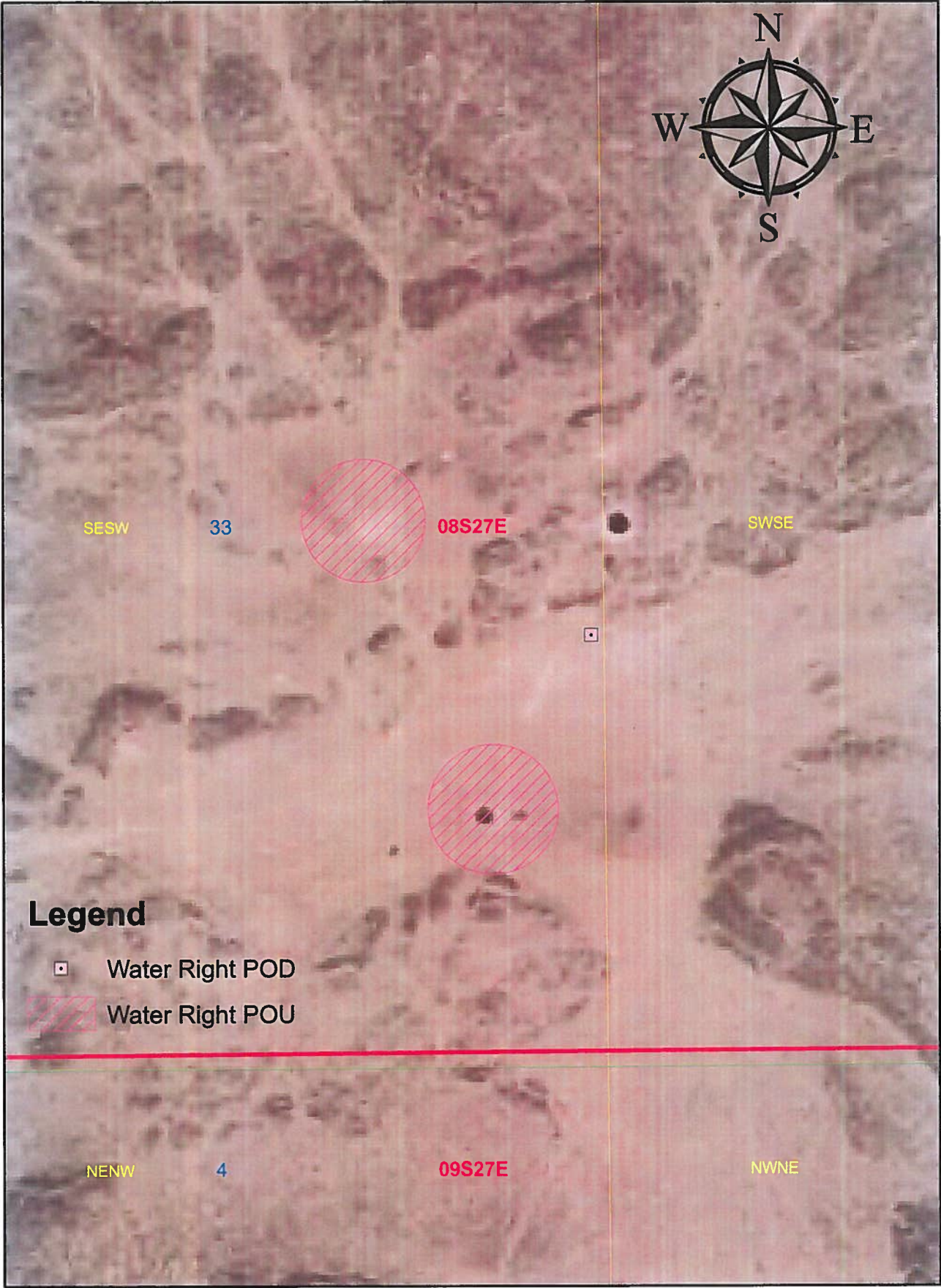


Figure 3: Western trough



Figure 4: Southern trough in use

Permit No. 36-16183



Water Service Area Boundary for United States Of America Acting Through

