

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 45-7342

Exam Date: 9/19/2007

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. Accompanied by:

Phone No:

Address:

Relationship to Permit Holder:

3. SOURCE

SPRING

TRIBUTARY

COLD CREEK

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

SE1/4SW1/4SW1/4

Sec. 21, Twp 15S, Rge 22E, B.M.

CASSIA County

Method of Determination: GPS

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
15S	22E	21											X						

PLACE OF USE: WILDLIFE

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
15S	22E	21											X						

Method of Determination: GPS – used nominal shape for POU

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 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 Size</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

2. Measurements: Theoretical – see Flow Calculations Below

E. FLOW CALCULATIONS

Measured Method: Theoretical

_____ Additional Computation Sheets Attached

Hazen-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

R = Hydraulic Radius = Cross Sectional Area / Wetted Perimeter

S = h_f/L = Slope of Energy Grade Line

For 1.5" old/plastic pipe: C_h = 130; For Delivery System: S = 0.14 ; => V = 6.68 ft/s & Q = 0.08 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

800 Range Cattle at 12 gpd/head:

$$\frac{12 \text{ gpd/head} \times 800 \text{ head} \times 304 \text{ days}}{325850 \text{ gallons/AF}} = 8.96 \text{ AFA}$$

1200 sheep @ 2 gpd/sheep:

$$\frac{2 \text{ gpd/head} \times 1200 \text{ head} \times 304 \text{ days}}{325850 \text{ gallons/AF}} = 2.24 \text{ AFA}$$

Volume for Stock = 8.96 AFA + 2.24 AFA = 11.2 AFA & Volume for Wildlife = 0.1 AFA; Total Recommended 11.3 AFA

G. NARRATIVE/REMARKS/COMMENTS

Benny Walker, Kelly Chirstensen, and Jeff Cooper performed the field examination on September 19, 2007. The apparent head of the Spring (POD) had been developed, though it was impossible to see in what manner. No information was available from Steve Davis (BLM-Burley) or the current range technician about the system development or construction materials. However, some information was derived from a Preliminary Order Before the State of Idaho, In the Matter of Application for Permit No. 45-07342 in the Name of the Bureau of Land Management, which indicated that ...the spring was developed using (10) feet of perforated pipe close to the surface of the ground.

From the field examination, it was assumed that a spring box had been placed at the POD and covered with soil. The POD was found to be in the same legal as described by the applicant (T15S R22E Sec 21 SWSW), apporixmately 500 ft east from the access road. The application gives the local name of Darens Spring as the source, tributary to Goose Creek. However, according to the USGS Blue Hill Quad Map, the source is actually an unnamed spring, which was inferred to be tributary to cold creek. At the time of the examination, the spring dissipated just below the developed system into its natural drainage.

The POU was found to be in the location as described by the application (15S 22E Sec. 21 SWSW). Two stockwater tanks had been placed ~10ft north of the natural spring drainage, ~215 ft east of the access road, and ~285 ft west of the POD. There is approximately 40 ft of head over 288 ft for a gradient of 0.14 between the POD and POU. The two tanks that make up the POU were constructed from an aircraft engine shipping container that had the following dimensions (LxWxD): 8 ft x3 ft x 3 ft (West Tank) and 8 ft x 3 ft x 2 ft (East Tank) for a total volume of 150 cubic ft or 1122 gallons. Because a large portion of the system was buried, we were unable to locate the inlet to the tanks, though it appeared the two were tied together. A buried outlet was apparent ~15 ft west and downstream of the tanks.

The delivery system was largely buried and in disrepair at the time of the exam. According to a phone conversation with Steve Davis on 9/20/2007, the range technician was unaware that the system was not working. The point of disrepair was difficult to locate, but it was evident that something, most likely sediment, had obstructed water from filling the two tanks. The water intended to fill the tanks was instead flowing down the drainage. During the exam we found water backing up ~150 ft east of the POD, where an upstream 1.5" plastic pipe had been placed into a downstream 2" steel pipe. It was unclear if this was an expansion of the system or if the steel pipe had be placed over the plastic pipe as a protective sleeve. The amount of head from the POD to this point had allowed the water to wash away the soil, giving us an opportunity to visually inspect that portion of the system.

Since no physical measurement was possible, a theoretical measurement was made assuming the 1.5" plastic pipe went the entire length between the POD and POU. This resulted in a flow of 0.08 cfs.

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

H. RECOMMENDATIONS

1. Recommended Amounts

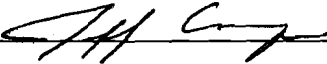
<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
STOCKWATER	05/01 to 10/30	0.030 CFS	11.2 AF
WILDLIFE	01/01 to 12/31	0.010 CFS	0.1 AF
<u>Totals:</u>		0.030 CFS	11.3 AF

2. Recommended Amendments

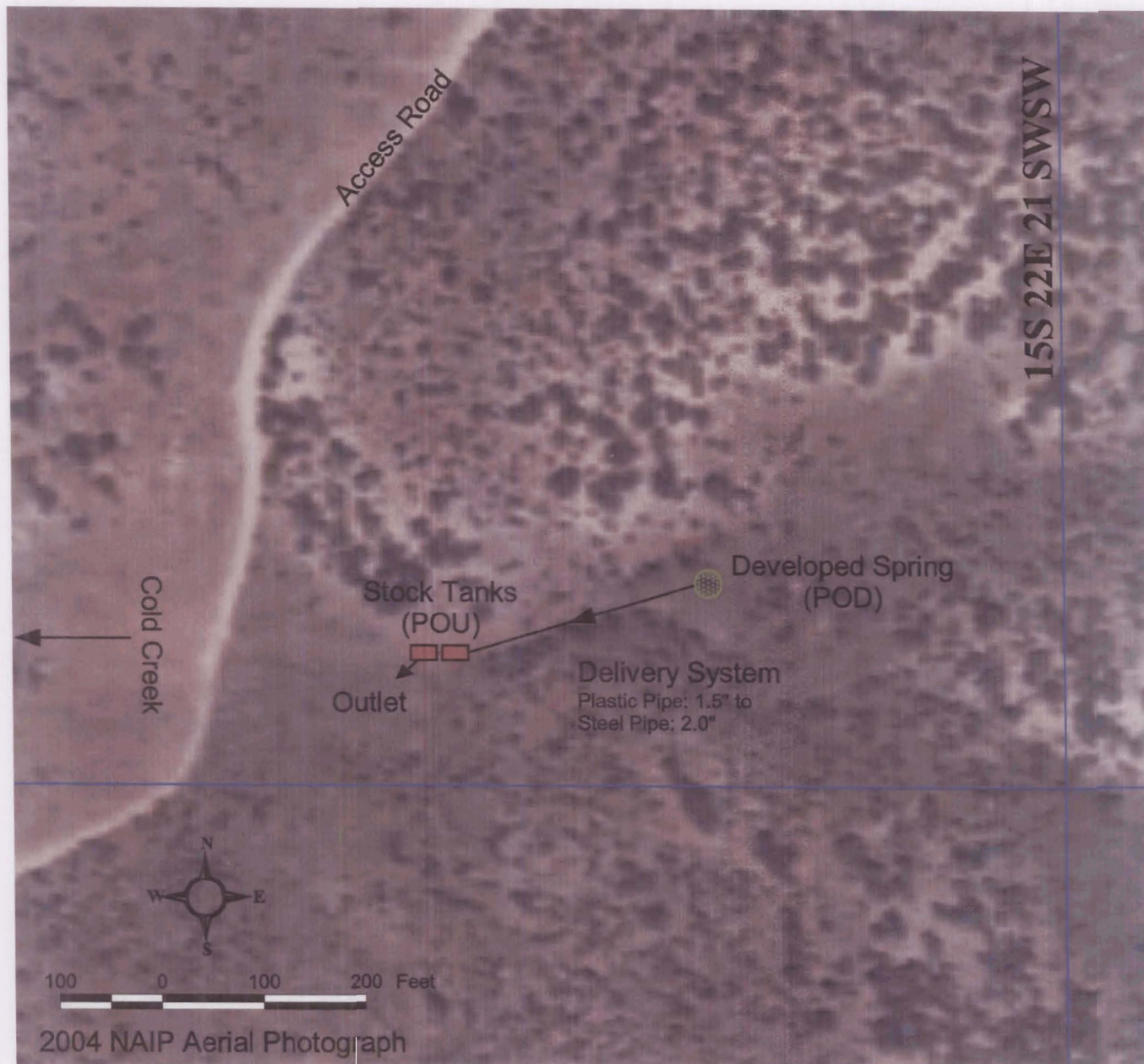
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

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

I. AUTHENTICATION

Field Examiner's Name  Date 10/18/07

Reviewer _____ Date _____



Delivery System Diagram

Agents: J. Cooper, B. Walker, K. Christensen

Date: 9/19/2007

Permit # 45-7342

Photo date 9-19-2007

pg1 of 2

Benny Walker

Photo # 1 The head of the spring
Looking SW in this photo



Photo # 2 Two tanks looking East.



Spring head location East of tanks.



Photo # 3 Outlet approximately 15 ft west and downstream of the tanks



1 ½" black plastic pipe
Start of 2" steel line

Photo # 4, 1.5" plastic pipe into a 2" steel pipe in disrepair, On North side looking down on pipe line