

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 55-7460

Exam Date: 10/10/2012

1. Current Owner: RICHARD D ECHEVARRIA
PO BOX 897
HOMEDALE ID 83628-0897
(208)412-6412
2. Accompanied by: Richard D. Echevarria
Phone No: Work – 337-4077 and Mobile 412-6412
Address: Same as Above
Relationship to Permit Holder: Owner

3. **SOURCE**

SPRING

TRIBUTARY

SINKS

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
2. Other water rights with the same point of diversion:

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

SPRING NE1/4SE1/4SW1/4 Sec. 10, Twp 08S, Rge 05W, B.M. OWYHEE County

Method of Determination: GPS, GIS, and Visual Inspection

2.

PLACE OF USE: DOMESTIC STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
08S 05W 10												X					

PLACE OF USE: AESTHETIC STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
08S 05W 10												X					

PLACE OF USE: DOMESTIC

Twp Rge Sec	NE				NW				SW				SE				Totals
08S 05W 10	<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>	
												X					

PLACE OF USE: STOCKWATER

Twp Rge Sec	NE				NW				SW				SE				Totals
08S 05W 10	<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>	
												X					

PLACE OF USE: STOCKWATER STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
08S 05W 10	<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>	
												X					

PLACE OF USE: DOMESTIC FROM STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
08S 05W 10	<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>	
												X					

Method of Determination: GPS, GIS, and Visual Inspection

3. YES Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- YES Aerial Photo Attached (required for irrigation of 10+ acres).
- YES Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Spring Box -- Site Tag # A0017519	NONE				¾ inch Black Plastic pipe.

*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: See attached spreadsheet**E. FLOW CALCULATIONS** X Additional Computation Sheets Attached

Measured Method:

Measurement = 0.03 cfs
 Permit allowed = 0.04 cfs

License recommend for 0.03 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:

Storage volume =

$$0.03 \text{ acre surface area} \times 2 \text{ deep} = 0.06 \text{ acre feet pond volume (rounded to 0.1)}$$

$$\text{evaporation volume (see Spreadsheet)} = 0.1 \text{ af}$$

$$0.1 \text{ evaporation volume} + 0.1 \text{ af pond volume} = 0.2 \text{ af total volume}$$

All of the storage components are limited to 0.2 af

Domestic =

$$1 \text{ home no irrigation} = 0.6 \text{ af per field examiner's handbook}$$

$$\text{Domestic from storage limited to 0.2 af (limited of storage capacity)}$$

Stockwater =

$$30 \text{ range cattle / horses} = 12 \text{ gpd} \times 214 \text{ maximum days of use} / 325850 = 0.24 \text{ af}$$

$$\text{Stockwater from storage} = 0.2 \text{ af (limited by storage capacity)}$$

Maximum Possible Volume Capacity =

$$0.03 \text{ cfs} \times 214 \text{ maximum days of use} \times 1.9835 = 12.7 \text{ af}$$

Allowable Total Volume =

Maximum Domestic Volume =	0.6 af (Live Flow Volume Allowed)
Maximum Stockwater Volume =	0.3 af (Live Flow Volume Allowed)
<u>Storage Capacity =</u>	<u>0.2 af (Combination of all storage components)</u>
Total Volume =	1.1 af

G. NARRATIVE/REMARKS/COMMENTS

The water for this water right is diverted in the NESESW of Section 10, Township 8 south, Range 5 West. The initial diversion consists of a small pond 13 ft to 15 ft wide by 90 ft long by 2 ft deep excavated in a boggy area on South Mountain. The excavated pond naturally fills with water. Earth from the pond was piled into a berm on the downhill slope. A trench was constructed under the berm and a 6 inch perforated pipeline was buried in the trench. Water from the pond infiltrates the berm and fills the perforated pipeline. The water from the pipeline is delivered to a 2 ft square wooden spring box. A ¾ inch black plastic pipeline delivers the water from the spring box to a camping area where a travel trailer is placed during the summer months – approximately 214 days. The pond is approximately 67 feet uphill from the camp site with approximately 55 ft of elevation difference. This system is gravity flow system.

The domestic use is for in-house use only. No irrigation is done with this system, so this water right should be conditioned for in-house use only. The livestock drink directly out of the pond. The spring is most active during the early part of the summer and begins to dry up towards fall. The pond at the time of my field exam was practically empty, but there clear evidence of the water level and hoof prints of the stock in the area using the pond for a source of water. Since the pond and the perforated pipeline were constructed directly on the spring/boggy area, there is no need for the diversion to storage component.

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>
DOMESTIC STORAGE	01/01 to 12/31		0.20 AF
AESTHETIC STORAGE	01/01 to 12/31		0.20 AF
DOMESTIC	01/01 to 12/31	0.030 CFS	0.60 AF
STOCKWATER	01/01 to 12/31	0.010 CFS	0.30 AF
STOCKWATER STORAGE	01/01 to 12/31		0.20 AF
DOMESTIC FROM STORAGE	01/01 to 12/31		0.20 AF
<u>Totals:</u>		0.030 CFS	1.10 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 Daniel A. Nelson – Staff Hydrologist

Field Examiner's Name  Date 12.20.2012

Reviewer _____ Date _____

State of Idaho
Department of Water Resources

Field Exam Map

55-7460

This map depicts the DOMESTIC STORAGE, AESTHETIC STORAGE, STOCKWATER STORAGE and Stockwater are shown in the upper oval shape, and the DOMESTIC AND DOMESTIC FROM STORAGE are shown in the square shate. place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

R05W



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.0275 0.055 0.11 Miles





System Design Water
Right 55-7460
By Dan Nelson

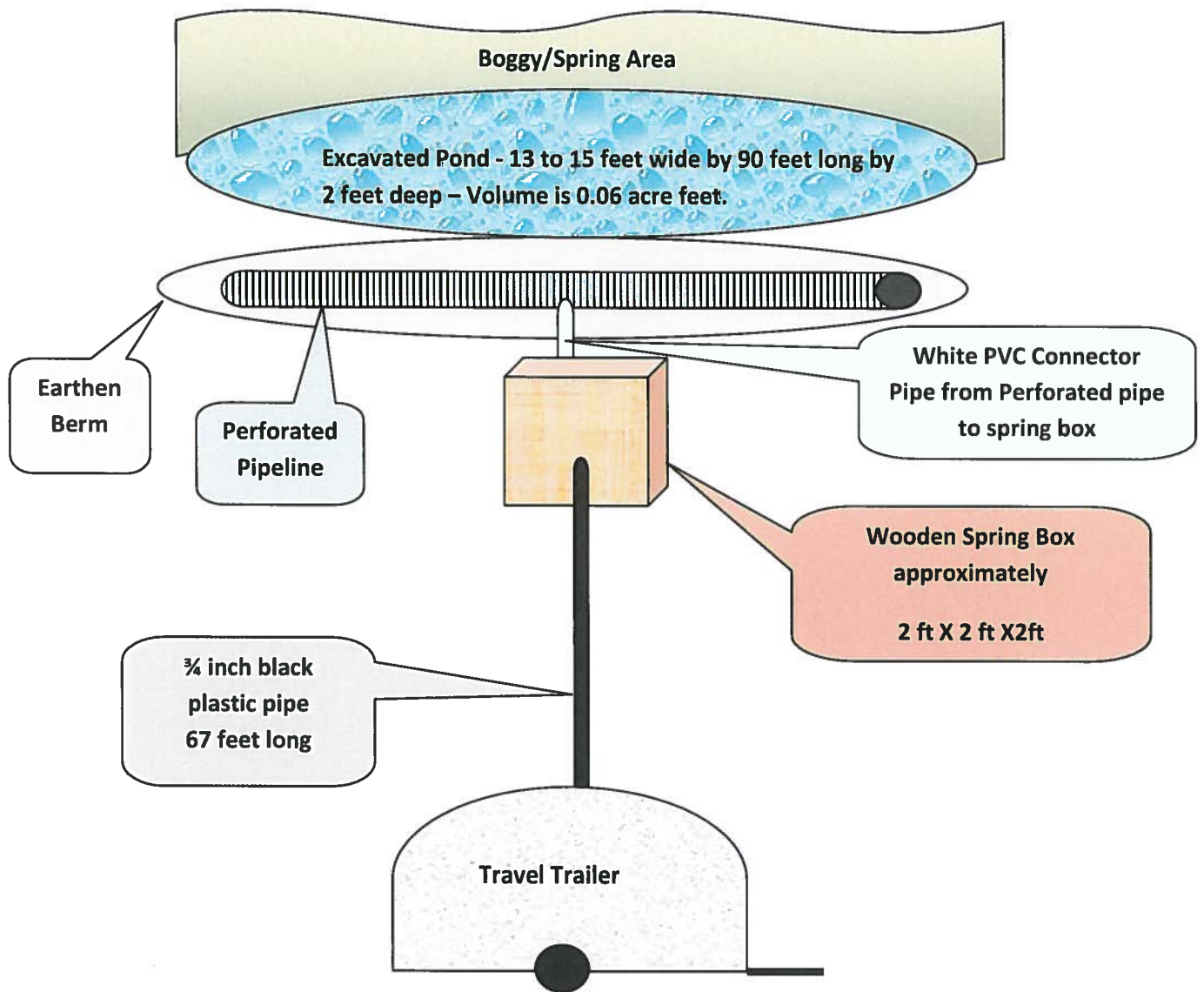
The water for this permit is diverted from a boggy/spring area by excavation of a small pond. The pond is used to water range cattle and horses. A large berm has been constructed on the downhill side of the pond to hold the water in the pond. Under this berm, a perforated pipe has been installed to capture the seepage out of the pond and spring area. The perforated pipe diverts into a small spring box that discharges the water into a $\frac{3}{4}$ black plastic pipeline that supplies water to a travel trailer.

System Diagram

Water Right 55-7460

By Dan Nelson

(not to scale)



The water for this permit is diverted from a boggy/spring area by excavation of a small pond. The pond is used to water range cattle and horses. A large berm has been constructed on the downhill side of the pond to hold the water in the pond. Under this berm, a perforated pipe has been installed to capture the seepage out of the pond and spring area. The perforated pipe diverts into a small spring box that discharges the water into a $\frac{3}{4}$ black plastic pipeline that supplies water to travel a trailer.

Flow Rate (Q) Calculator

Step 1 - Input Elevation Measurement Data

Note, input measured elevations where prompted, input N/A for elevation measurements not obtained. Refer to Figure 1.

Water Surface Elevation = 7,592 feet

About Step 1

Pipe Inlet Elevation = 7,590 feet

Pipe Outlet Elevation = 7,555 feet

Step 2 - Input Pipeline Dimensional Data

Length of Pipe, L = 67 feet

About Step 2

Diam. of Pipe, D = 0.75 inches (inside diam.)

Step 3 - Select Pipe Material Type from Pull Down Menu

plastic (PVC or ABS)

About Step 3

C = 130 unitless (Hazen-Williams Roughness Coeff.)

Step 4 - Iteratively Solve for Flow Rate w/ Scroll Bar Controls

Initial Flow Rate, Q_i = 0.0272 cfs

About Step 4

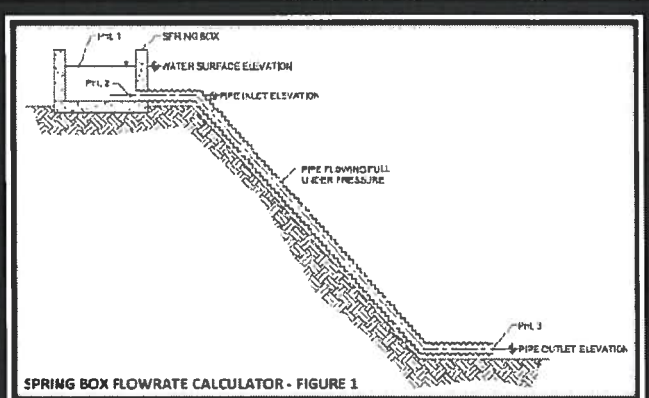
Recommended 1st Guess, Q_{rec} = 0.0153 cfs

Output:

Friction Head, h_f = 35.7 feet

Flow Rate, Q_f = 0.0286 cfs OKAY

READ ME



Scroll Bar Controls

Ones: [scroll bar]

1/1,000ths: [scroll bar]

1/10ths: [scroll bar]

1/10,000ths: [scroll bar]

1/100ths: [scroll bar]

About Scroll Bar Use

Comments:

Diversion Rate is 0.03CFS.

Precipitation Loss Calculation

Date: December 18, 2012

Prepared by: Dan Nelson

Water Right No: 55-7460

Grandview Station

P = Precipitation

ET= Evapotranspiration

P_d = Precipitation deficit

P_d = P- ET

P_d

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/>

P_d = convert to AFA: (mm/yr) / (convert to feet) x # acres =

986		304.8		0.03	
(From ET Idaho)					

P_d = 0.10 AFA



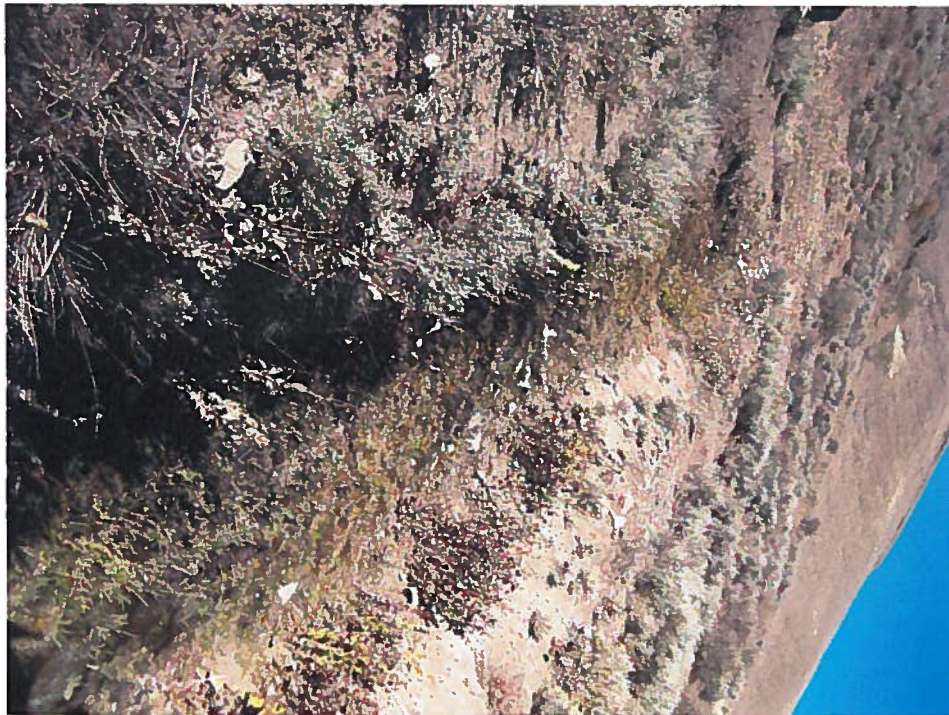
* Use the Precipitation Deficit for 'P' value

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 10/10/2012

FILE NUMBER 55-7460



These are photos of the pond. The pond is 13 to 15 feet wide and 90 feet long. The pond is 2 feet deep. The total volume for the pond is 0.06 af. The pond was developed in a boggy area, and dries up toward the end of the summer. There was evidence of range cattle using the pond for water.



PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 10/10/2012

FILE NUMBER 55-7460



This is a photo of the spring box from the top of the berm on the south bank of the small pond.



This is a picture of the wooden spring box. The white pipe behind the spring box is the perforated pipeline. It sits below the bottom of the pond.



This photo shows a section of the perforated pipe. The perforated pipe is actually PVC pipe that has been cut. This is similar practice used on well screens.



This photo shows the $\frac{3}{4}$ inch black plastic pipe that delivered water to the trailer site. The cattle had disconnected the pipe, so it wasn't connected into the system. The only designation of the trailer site was a area where wood was stacked for a camp fire.