

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 47-17461
Exam Date: 04/17/2019

1. Current Owner:

LORI YOUNG
AND/OR
MICKEY YOUNG
1750 E 4550 N BUHL ID 83316

2. Accompanied by: Mickey Young, permit holder and Kent Aasa, IDWR

Phone No: Mickey Young- 623-261-2339

Address:

Relationship to permit Holder:

3. **SOURCE:**

UNNAMED STREAM

Tributary

MUD CREEK

Method of Determination: ArcMap DRG layer

B. OVERLAP REVIEW

1. Other water rights with the same place of use: a portion of right 47-2370 covers evaporative losses from this permit.

Water Right No.	Source	Purpose of Use	Basis
47-2370	Unnamed stream	Wildlife storage	decree

Comments: Transfer #74313 converted a portion of right 47-2370 from irrigation to wildlife storage to cover consumptive evaporative losses associated with this permit.

2. Other water rights with the same point-of-diversion: 47-2370

Water Right No.	Source	Purpose of Use	Basis
47-2370	Unnamed stream	Irrigation	decree

Comments: Flow through the pond is used as irrigation below the pond.

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

UNNAMED STREAM NW¼ SW¼, Sec. 26, Twp 09S, Rge 14E, B.M. TWIN FALLS County

Method of Determination: ArcMap aerial imagery and site visit

2. **PLACE OF USE:** WILDLIFE STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09S	14E	26										X							

Method of Determination: ArcMap aerial imagery and site visit

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
NA					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NA						

2. Measurements: A direct measurement was not possible, so a measurement using the Mannings formula via an on-line Mannings flow calculator was used. Kent Aasa and myself surveyed the slope of the pipe and retrieved other parameters needed for the calculation. The pipe was smooth steel, had a diameter of 10", a length of 92', and a rise/run of 3.76'/92'. The roughness coefficient was 0.012 for smooth steel pipe. See attached sheet.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Using the Mannings calculation, a potential flow rate of 4.8 cfs is possible for this pipeline, but the permitted rate of 0.36 cfs is the maximum allowed and is the recommended rate.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: NA

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses: A 2007 field survey was conducted by IDWR personnel who determined the volume of the reservoir to be 4.15 AF. Current imagery shows the reservoir to have a surface area of 1.5 acres, and since the spillway of the reservoir appears to be situated as it was in 2007, the volume is still approximately 4.2 AF.

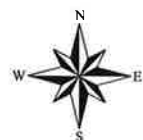
47-17461 System Diagram



Legend

- Township/Range
- Sections
- QQ

0 0.02 0.04 0.08 Miles





POD (at arrow) on unnamed stream. Pipe is partially submerged and obscured by a trash screen and aquatic vegetation. Note rock wing dam across stream.

Flow of water into reservoir from pipeline (obscured by rocks and cattails). Arrow shows direction of flow. Note gravel deposit created by inflow.





View of reservoir looking downstream.

View of reservoir looking upstream.



Young permit 47-17461



Assorted wildlife at the Young reservoir.





Spillway of dam partially obscured by cattails.

Wildlife at reservoir.



Young Permit 47-17461

Manning flow calculation for theoretical flow of pipe into reservoir

Set units: m mm ft in

Pipe diameter, d_o	0.833 ft ▼
Manning roughness, n ? (http://www.engineeringtoolbox.com/mannings-roughness-d_799.html)	0.012
Pressure slope (possibly ? (.../pressureslope.php) equal to pipe slope), S_o	0.040869565 rise/run ▼
Percent of (or ratio to) full depth (100% or 1 if flowing full)	1 fraction ▼

Results

Flow, Q	4.7930	cfs ▼
Velocity, v	8.7950	ft/sec ▼
Velocity head, h_v	1.2022	ft ▼
Flow area	0.5450	ft^2 ▼
Wetted perimeter	2.6169	ft ▼
Hydraulic radius	0.2083	ft ▼
Top width, T	0.0000	ft ▼
Froude number, F	0.00	
Shear stress (tractive force), τ	0.5314	psf ▼

Table 1: Mannings Roughness Coefficients (n)^[1]

Surface	Best	Good	Fair	Poor
Uncoated cast iron pipe	0.012	0.013	0.014	0.015
Coated cast iron pipe	0.011	0.012	0.013	0.014
Commercial wrought iron pipe, black	0.012	0.013	0.014	0.015
Commercial wrought iron pipe, galvanized	0.013	0.014	0.015	0.017
Coated cast iron pipe	0.011	0.012	0.013	0.014
Commercial wrought iron pipe, black	0.012	0.013	0.014	0.015
Commercial wrought iron pipe, galvanized	0.013	0.014	0.015	0.017
Smooth brass and glass pipe	0.009	0.010	0.011	0.013
Smooth lock bar and welded OD pipe	0.010	0.011	0.013	0.014
Smooth steel pipe		0.012		
Riveted and spiral steel pipe	0.013	0.015	0.017	0.018
Vitrified clay sewer pipe	0.011	0.015	0.015	0.017
Common clay drainage tile	0.011	0.012	0.014	0.017
Glazed brickwork	0.011	0.012	0.013	0.015
Brick in cement mortar; brick sewers	0.012	0.013	0.015	0.017
Neat cement surfaces	0.010	0.011	0.012	0.013
Cement mortar surfaces	0.011	0.012	0.013	0.015
Concrete pipe	0.012	0.013	0.015	0.016
Wood-stave pipe	0.010	0.011	0.012	0.013
Corrugated Polyethylene (PE) with smooth inner walls		0.009		0.015
Corrugated Polyethylene (PE) with corrugated inner walls		0.018		0.025
PVC		0.009		0.011