

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-07579
Exam Date: 12/7/2018

1. Current Owner:

SHILOH WARM SPRINGS RANCH LLC
PO BOX 510
CHALLIS ID 83226

2. Accompanied by: Post-exam interview with Jeri D'Orazio

Phone No: 208-339-4326

Address:

Relationship to Permit Holder: Contact for property owner in regards to water issues

3. SOURCE:

WARM SPRING CREEK

TRIBUTARY:

SALMON RIVER

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:WARM SPRING CREEK NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 10, Twp 12N, Rge 20E, B.M. CUSTER County

Method of Determination: ArcMap aerial imagery, DRG layer and site visit

2.

PLACE OF USE: WILDLIFE 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	
12N	20E	10										X							

Method of Determination: ArcMap aerial imagery and site visit

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

 x 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.

 x x Aerial Photo Attached (required for irrigation of 10+ acres). x 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					

*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
NA						

2. Measurements: No measurement made; on-stream storage.

E. FLOW

Additional Computation Sheets Attached

CALCULATIONS

Measured Method: NA

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: NA

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

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

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

2. Volume Calculations for Other Uses: Volume of pond is calculated by multiplying the surface area measured from ArcMap, 0.25 acres, by the average depth, which was estimated at 3' for an actual volume of 0.75 AF. Seepage was assumed to be negligible because of the swampy nature of the area around the pond, and the evaporation portion of the IDWR pond loss calculator was used to calculate the annual evaporative losses to be 0.5 AF. This suggests a combined total volume of 1.25 AF be recommended for the volume of the right.

G. NARRATIVE/REMARKS/COMMENTS

The field exam for permit 72-7579 was conducted on December 7, 2018. I was unable to make contact with Jeri D'Orazio, the contact person for Shiloh Warm Springs Ranch, until after the exam was completed. The application for permit was filed on October 25, 1999, but was held until 2005 due to the Salmon-Clearwater Basin and Wilderness Moratoriums. Numerous issues caused further delays in processing the application until the permit was finally approved in August of 2012. Proof of Beneficial Use was filed late, on October 29, 2013, which caused the priority date to be advanced to December 21, 1999.

This permit is for on-stream wildlife storage near the headwaters of Warm Spring Creek, approximately 800 feet downstream from Warm Spring. Much earth-moving and topographic rearrangement has occurred in the past, but from the DRG layer of ArcMap and studying multiple aerial images of the area, it does appear to be an on-stream impoundment. Most of the flow from Warm Spring is diverted just upstream of this pond, so the flow through the pond is very minimal, with much of the flow originating from seepage from the canal which diverts the flow from Warm Spring. An earthen dam, about 4-5 feet in height, impounds the water, and it features a wooden check/steel culvert structure to control the water level. It appears that this structure is set upon the level of the stream bed, which would enable the emptying of the pond; a condition of the permit. This structure and the check above the pond which diverts the spring water into the canal upstream could be modified to allow for measurement above and below the pond, though the condition requiring it should be dropped due to the fact that the seepage from the canal enters the pond along much of its length, making such measurements meaningless. Additionally, the wooden check structure at the face of the dam could be modified to be locked in the open position, which would not allow water to be impounded in the reservoir, another condition of the permit.

IDWR requested comments from the Idaho Department of Fish and Game regarding this permit, and they replied that they had no comments, so no fish screening or fish passage requirements were sought by IDFG.

Because the exam was conducted in December in cold weather, no wildlife could be observed drinking from, or flying onto, the water, but numerous animal tracks around the pond in the snow attest to the likelihood that animals use the pond year-round.

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>
WILDLIFE STORAGE	01/01 to 12/31		1.3 AF
<u>Totals:</u>			1.30 AF

2. Recommended Amendments

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

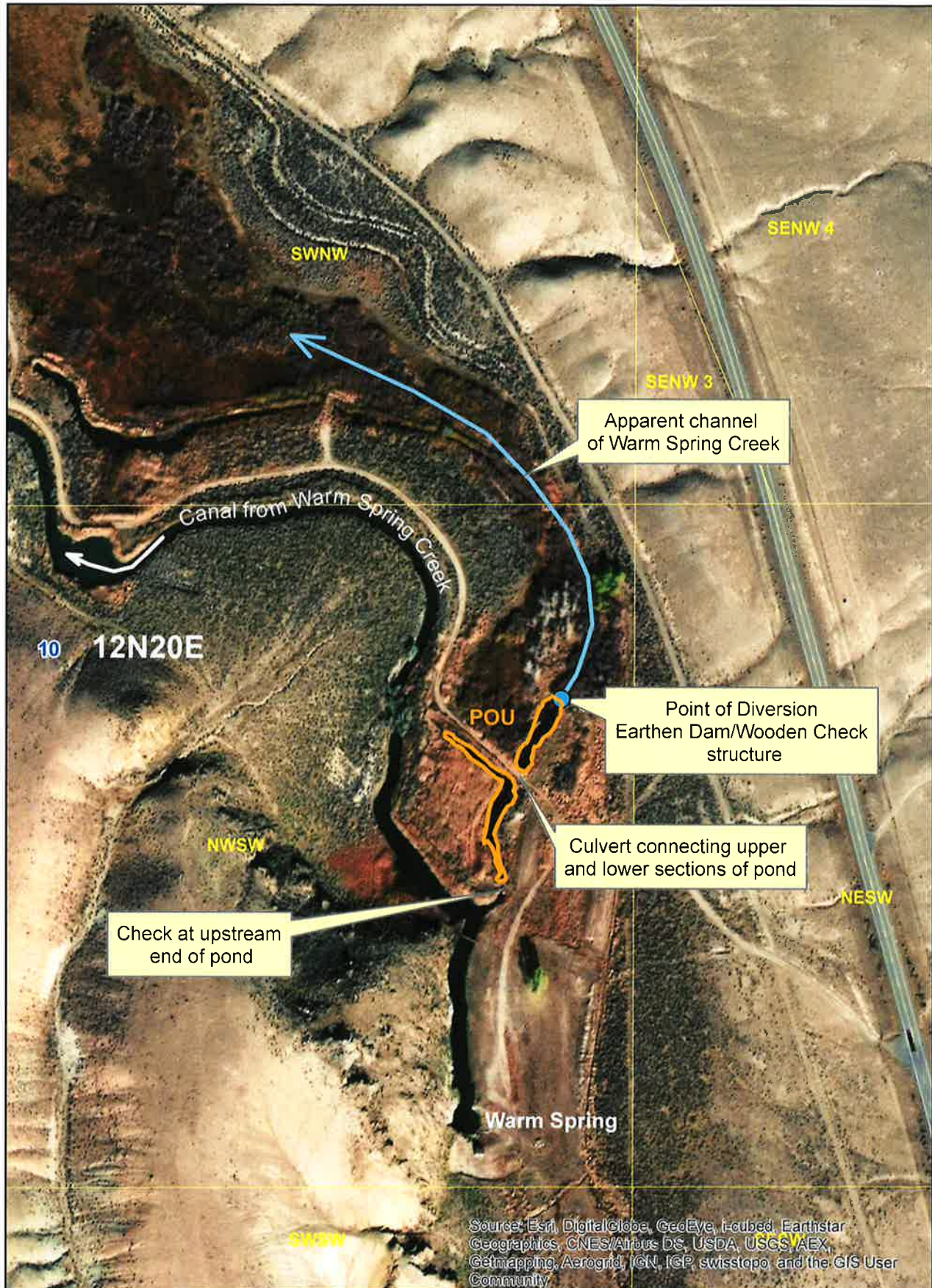
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

Field Examiner's Name  Date 12-20-18

Reviewer _____ Date _____

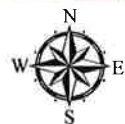
System Diagram 72-75 9



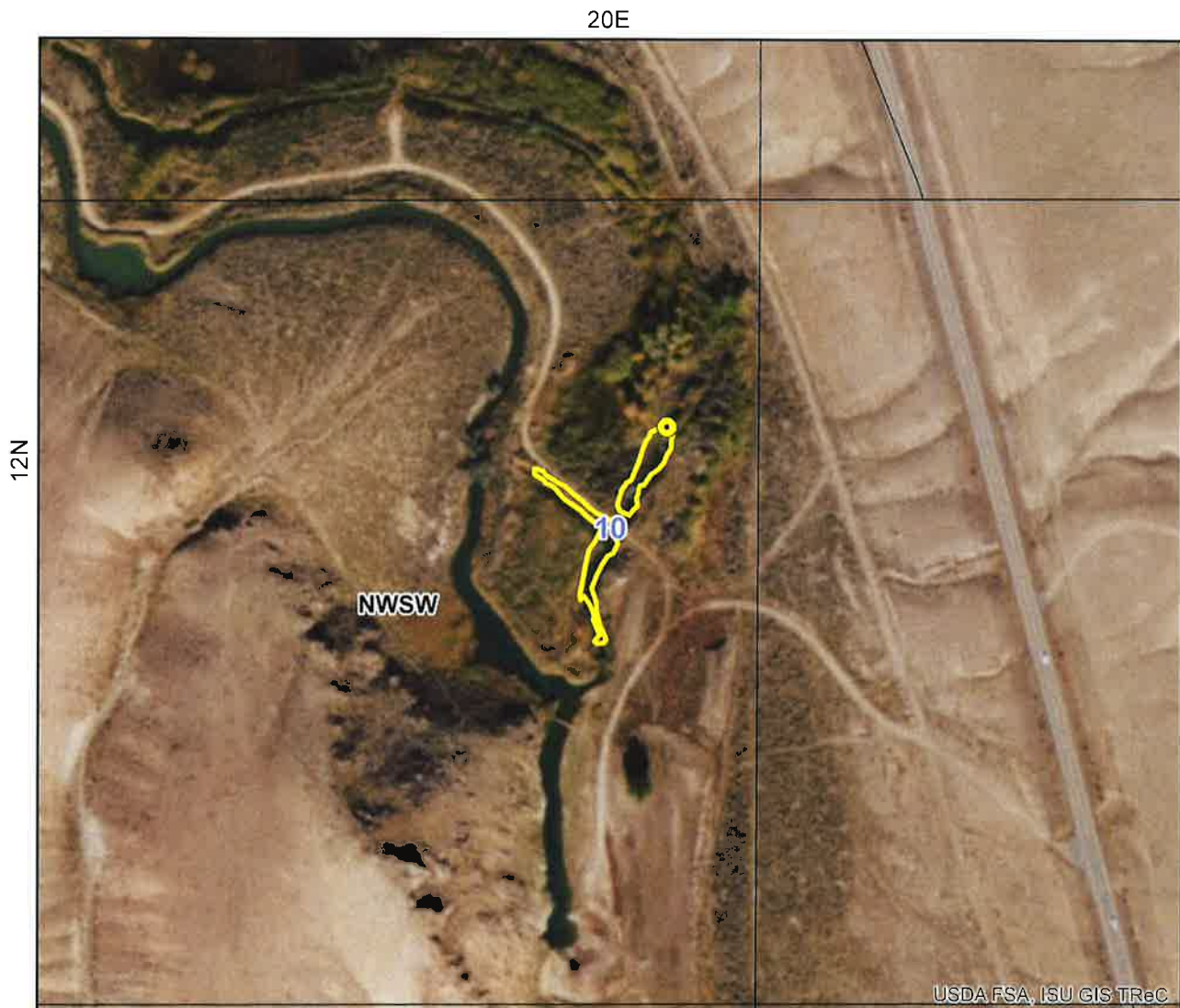
Legend

- Township/Range
- Sections
- QQ

0 0.0275 0.055 0.11 Miles



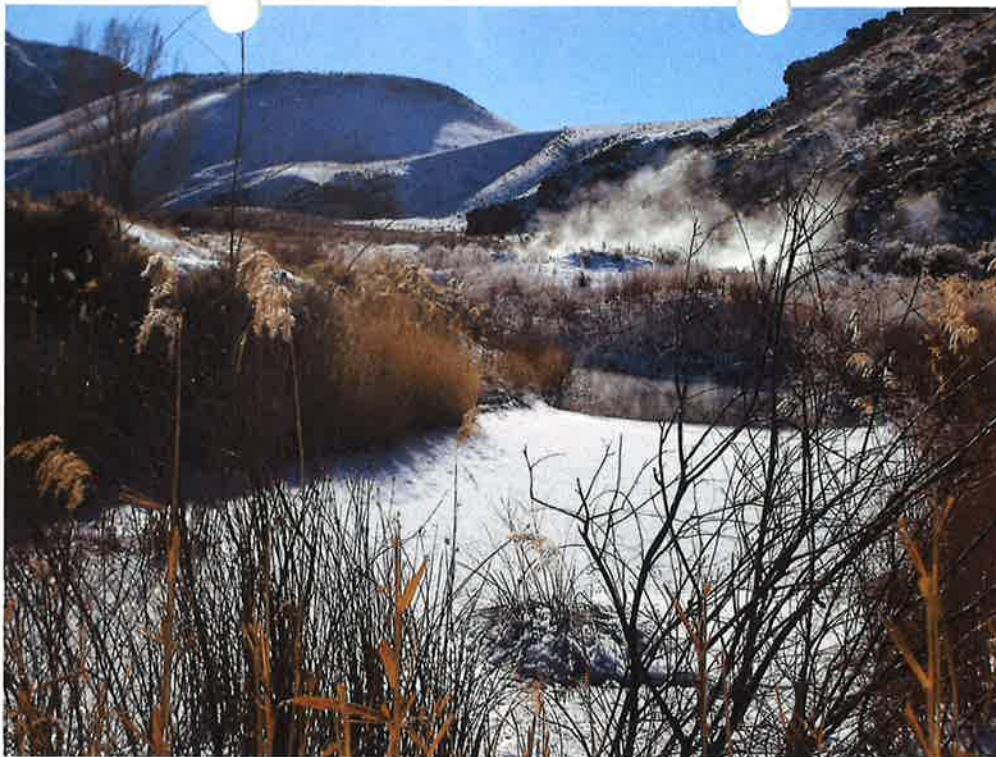
State of Idaho
Department of Water Resources
Water Right License
72-7579



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

0 0.035 0.07 0.14 Miles





View of pond above roadway

Pond below roadway





The point of diversion – a wooden check at the head of a culvert in an earthen dam on stream channel



Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

FILE NUMBER	72-7579
REVIEWER	J. Bitzenburg
DATE	12/19/2018

User Input
Calculated value
Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:

P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at <X:/Spatial/Climate/ETIdahostations.shp>.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any negative precipitation deficit values.

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

Precipitation Deficit

Station: Twin Falls 2 NNE (NWS -- 109294)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.12	31	0.00
Feb	0.21	28	5.88
March	0.93	31	28.83
April	1.88	30	56.40
May	2.30	31	71.30
June	2.98	30	89.40
July	3.80	31	117.80
August	3.28	31	101.68
September	2.10	30	63.00
October	1.20	31	37.20
November	0.05	30	1.50
December	-0.15	31	0.00

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS -- 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

Total mm/year = 572.99

$$[(\text{mm/yr}) \div (\text{convert to feet})] \times (\text{Surface area of pond, in acres}) = \text{Evaporation Loss in Acre Feet}$$

(572.99 ÷ 304.8) X 0.25 = 0.5 AFA