

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-16761
Exam Date: 07/13/2020

1. Current Owner:
ERNIE C KROLL 17147 S PAINTED ROSE RD WORLEY ID 83876
2. Accompanied by: Ernie Kroll
Phone No: 208-446-6476
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-16758	GROUNDWATER	DOMESTIC / STOCKWATER	BENEFICIAL USE RECOMMENDED CLAIM

Comments: Right 95-16758 is a beneficial use claim by same applicant for domestic and stockwater use; the claim has been recommended, pending determination for decree.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
95-16758	GROUNDWATER	DOMESTIC / STOCKWATER	BENEFICIAL USE RECOMMENDED CLAIM

Comments: Recommended beneficial use claim 95-16758 is for same applicant's property from the same POD (well) as this right, pending determination for decree.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER NW¼ SW¼, Sec. 10, Twp 48N, Rge 05W, B.M. KOOTENAI County

Method of Determination: GPS. POD located at -116°58.503, 47°30.911. Well D0003199.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
48N	05W	10										0.6							0.6

Total Acres: 0.6

Method of Determination: Field exam and Arcmap.

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
D0003199		3			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurement because system pumped directly into pressure tank with inadequate pipe to conduct a measurement.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: Theoretical pumping equation estimates flow at 0.05 cfs, considering Department rounding standards. Pump was estimated to be 325 feet deep, with a 50 psi operating pressure. Due to irrigated acreage equaling 0.6 acres, the diversion rate derived for this license equals 0.03 cfs (diversion rate for small acreage) x 0.6 acres = **0.02 cfs**, considering Department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.6 \text{ acres} \times 3.0 \text{ afa} = \mathbf{1.8 \text{ af}}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 9.8$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 1.8 \text{ af}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 7/13/2020 with the applicant, Ernie Kroll, showed a well being used for irrigation purposes. The well, D0003199, has a 3 HP pump which diverted water into a pressure tank. I was unable to perform a flow measurement because water was diverted directly into pressure tank with no proper place to perform measurement. Theoretical pumping equation was used to estimate a flow rate of 0.05 cfs. The pump was estimated to be 325 feet down and the system running at 50 psi. Due to the small size of the area irrigated, 0.6 acres, the Department diversion rate equals $0.03 \text{ cfs} \times 0.6 \text{ acres} = 0.02 \text{ cfs}$ considering Department rounding standards. It is recommended that **0.02 cfs** be assigned for licensing. The applicant's pump produces a greater diversion rate than this permit is licensed for, but applicant's well also services one home that applicant has an active beneficial use claim in recommended status, thus mitigating the concern for over-diversion of water; condition 928 was added to this right to further mitigate any overlap concern

The applicant permitted for 3 acres of irrigation, but during field exam, only irrigation around the home was identified. Aerial imagery does not clearly represent the irrigation that was taking place, as the applicant watered by hose and sprinkler to irrigate rows of trees and grass areas he was actively trying to get to take root. Photographs were taken, illustrating the irrigation areas. Applicant used black pvc pipe to route water throughout the irrigated area, and also connected to frost free hydrants. Arcmap was used to trace out the irrigated area identified during field exam, equaling 0.6 acres. The annual and maximum diversion volume is equal to $0.6 \text{ acres} \times 3.0 \text{ afa} = 1.8 \text{ af}$, which will be applied to the license.

Conditions 046 and 26A were removed from permit during licensing review. All other conditions remain on permit for licensing purposes. Right 95-16758 is a beneficial use claim by same applicant for domestic and stockwater use on same parcel; the claim has been recommended, and is pending determination for decree. Condition 928 was added to this right, 95-16781, in order to mitigate any overlap concerns between 95-16758 and 95-16781. There are no other concerns for overlap for this water right.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/15 to 10/15	0.02 CFS	1.8 AF
Totals:		0.02 CFS	1.8 AF

2. Recommended Amendments

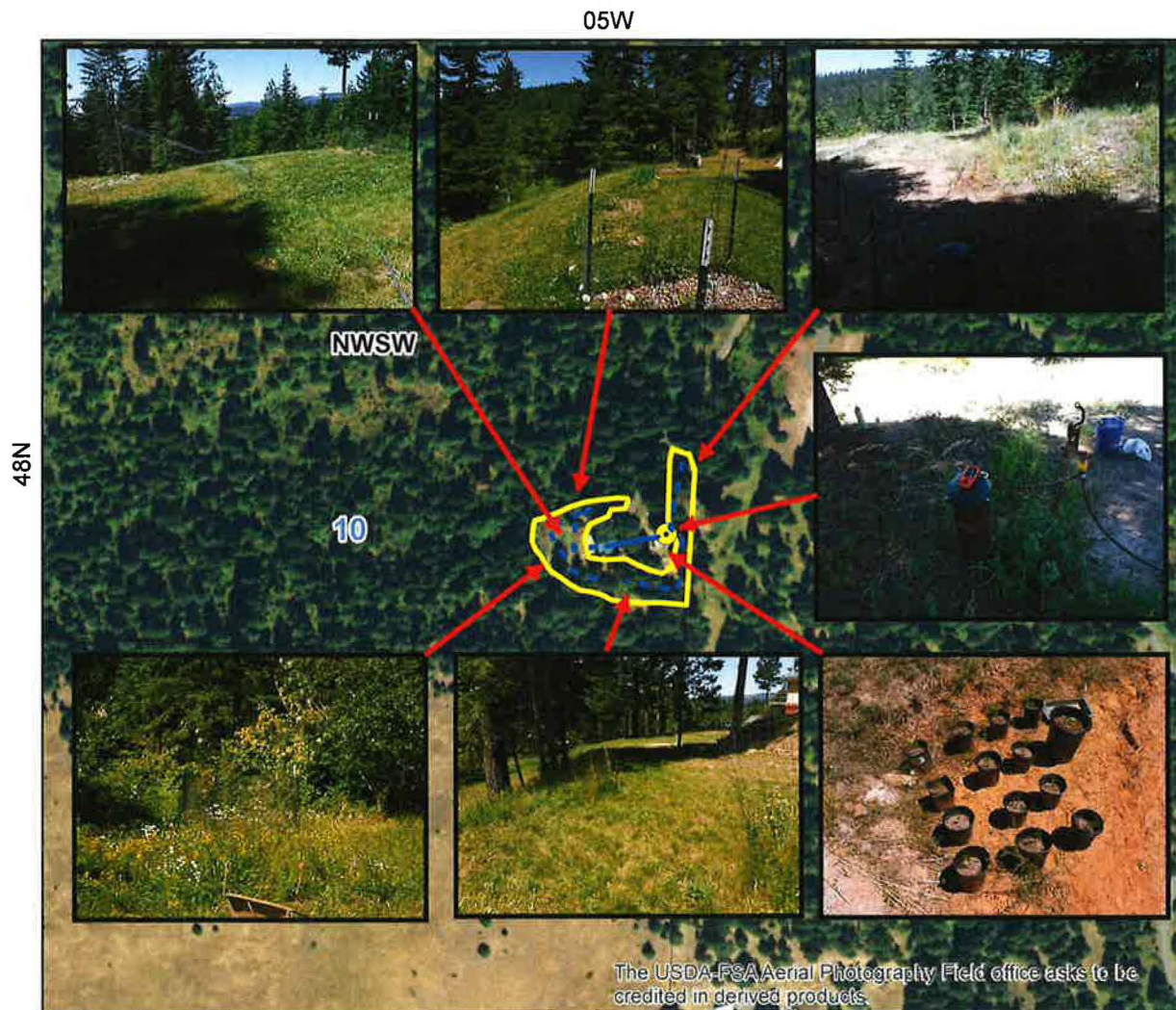
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name  Date 8/24/2020
 Reviewer Adam Fink Date 8/31/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-16761

IRRIGATION system diagram.



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

0 0.035 0.07 0.14 Miles



MEMORANDUM

To: Water Right Permit 95-16761

From: Luke Bates



Date: 8/24/2020

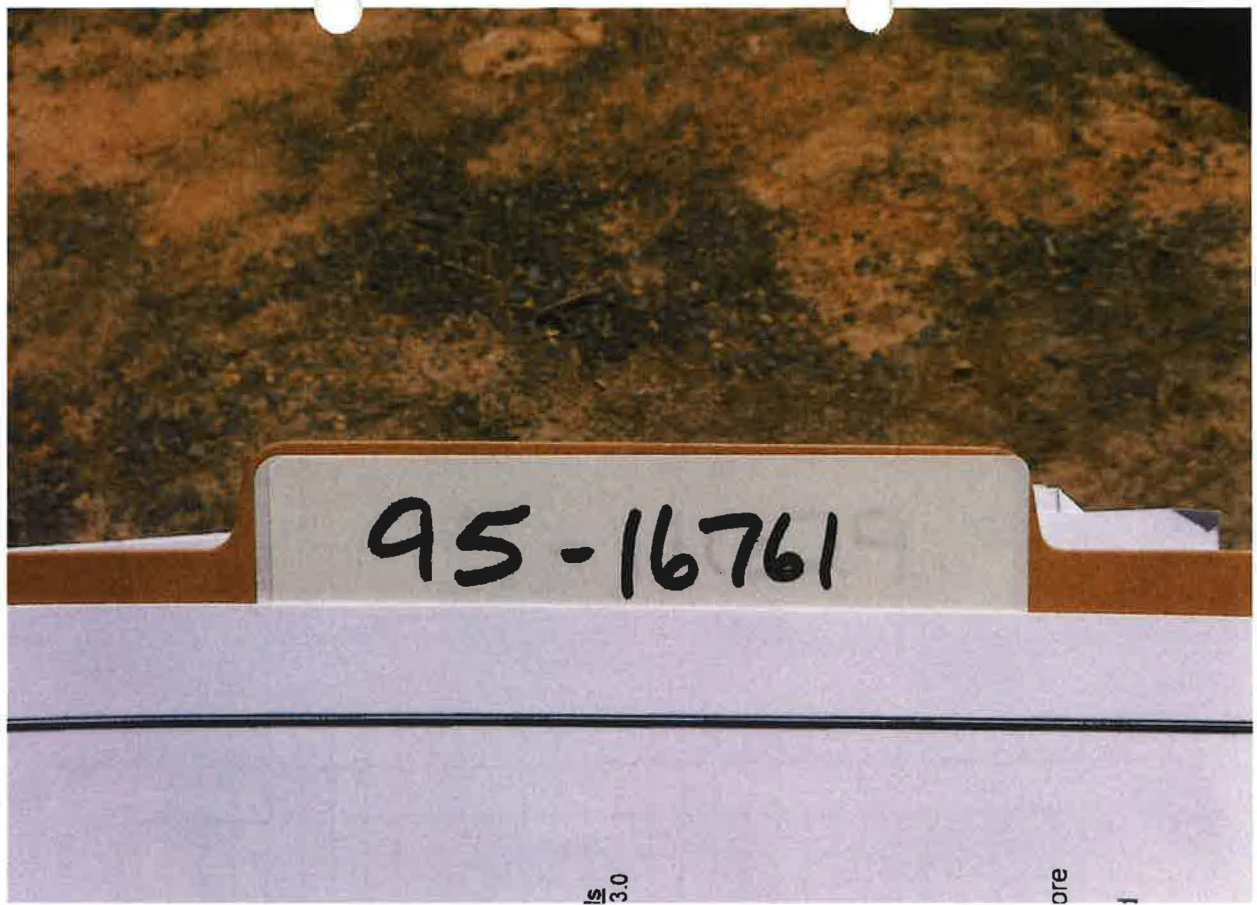
Re: Application for a Permit to Appropriate Water within the State of Idaho.

An application for permit was received for irrigation use in the name of Ernie C Kroll. The application was advertised with the season of use of 3/15-10/15. The department's standard season for the irrigation at the applicant's property is 3/15-11/15. Season of use will be changed on the license to reflect the department standard.

THEORETICAL PUMPING EQUATION FOR WR# 95-16761

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 325 ft, and running at 50 psi.

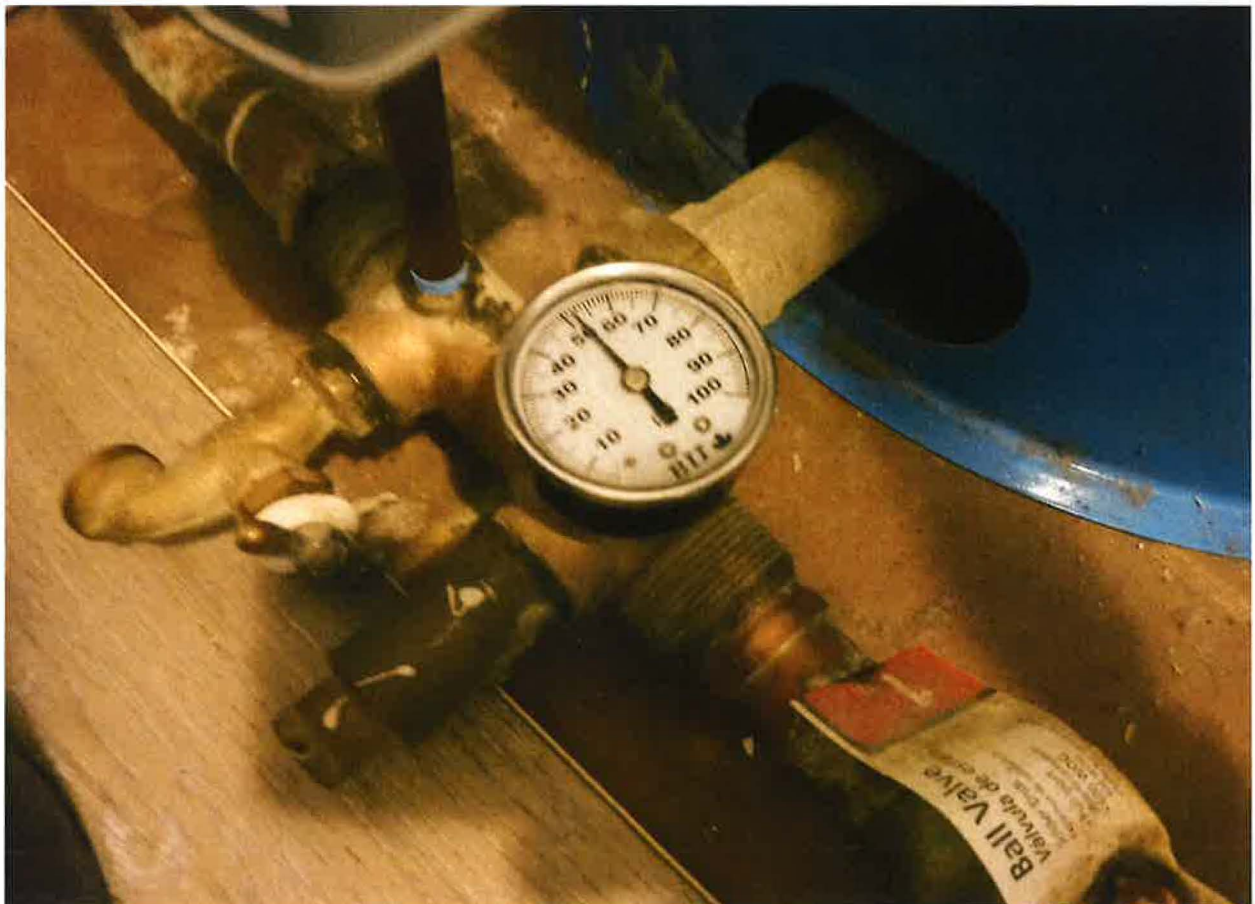
<u>PUMP EQUATIONS</u>						
WATER RIGHT No. 95-16761						
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	3	440.6463	0.8	325	50
Q =		0.048 cfs		21.5 gpm		



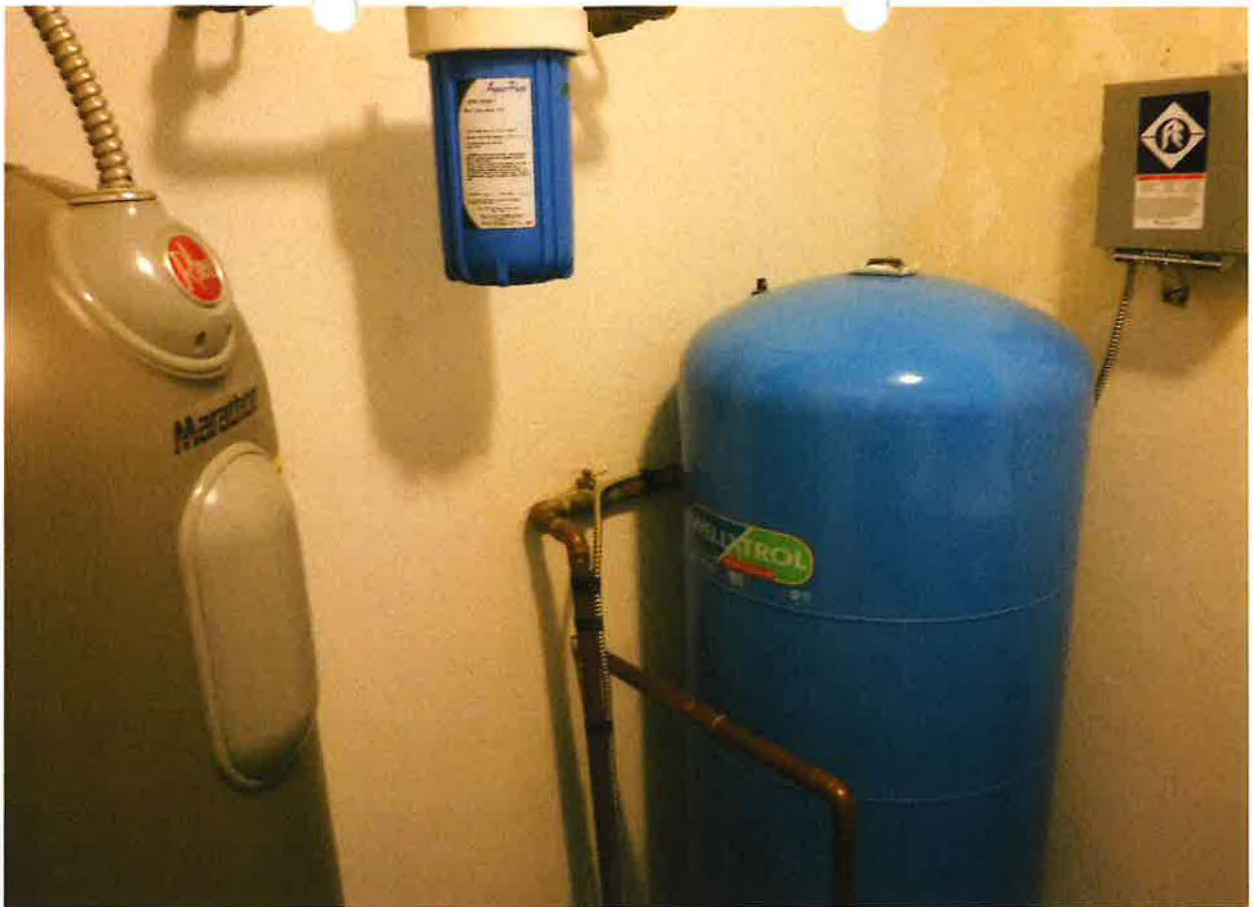
POD - D0003199



POD – WELL D-0003199



50 PSI OPERATING PRESSURE



SYSTEM PRESSURE TANK



3 HP PUMP



IRRIGATION POU – SMALL TREES WITH RED TAPE DISTRIBUTED IN LINE





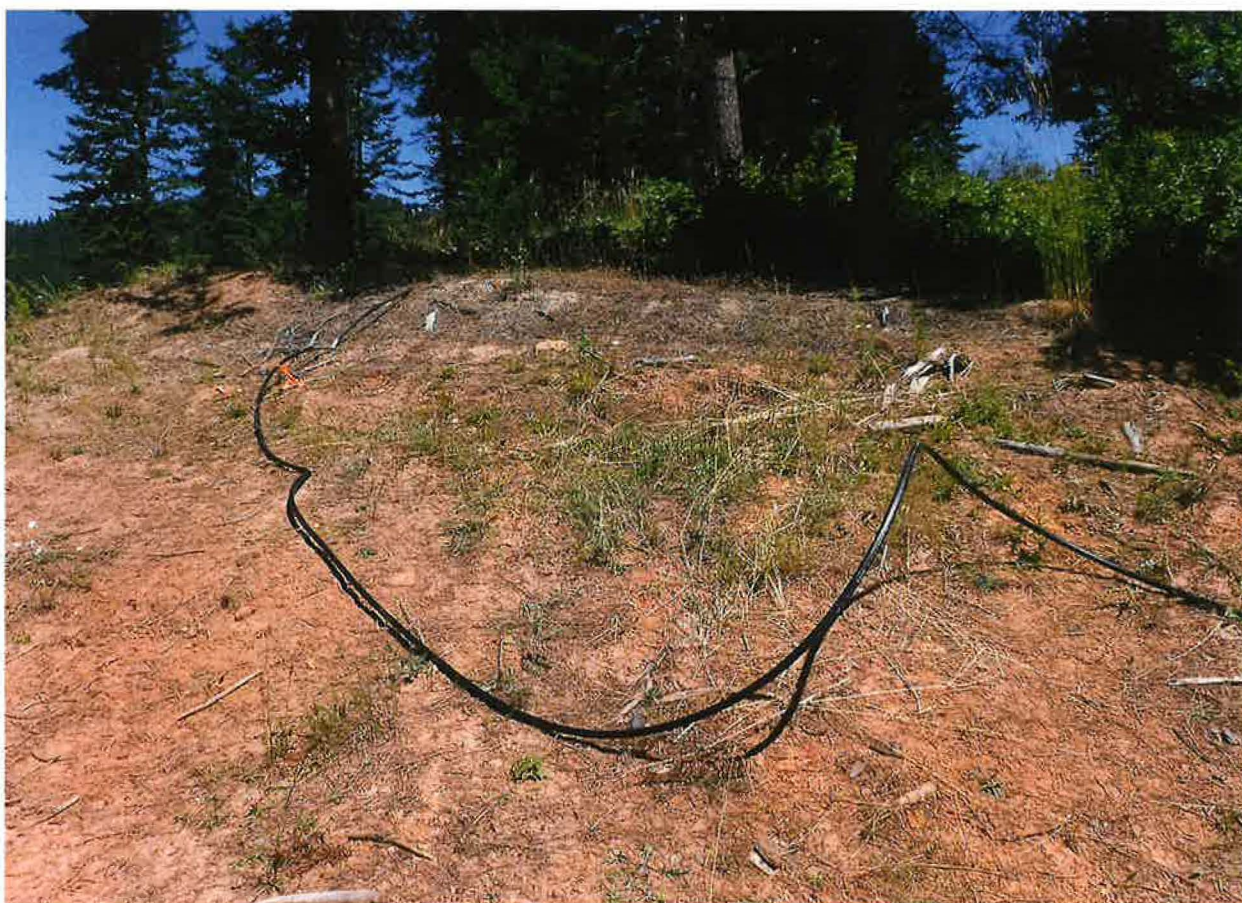
IRRIGATION POU



IRRIGATION TREE STARTERS



IRRIGATION 1" WATER PIPE THROUGHOUT POU



IRRIGATION POLY PIPE

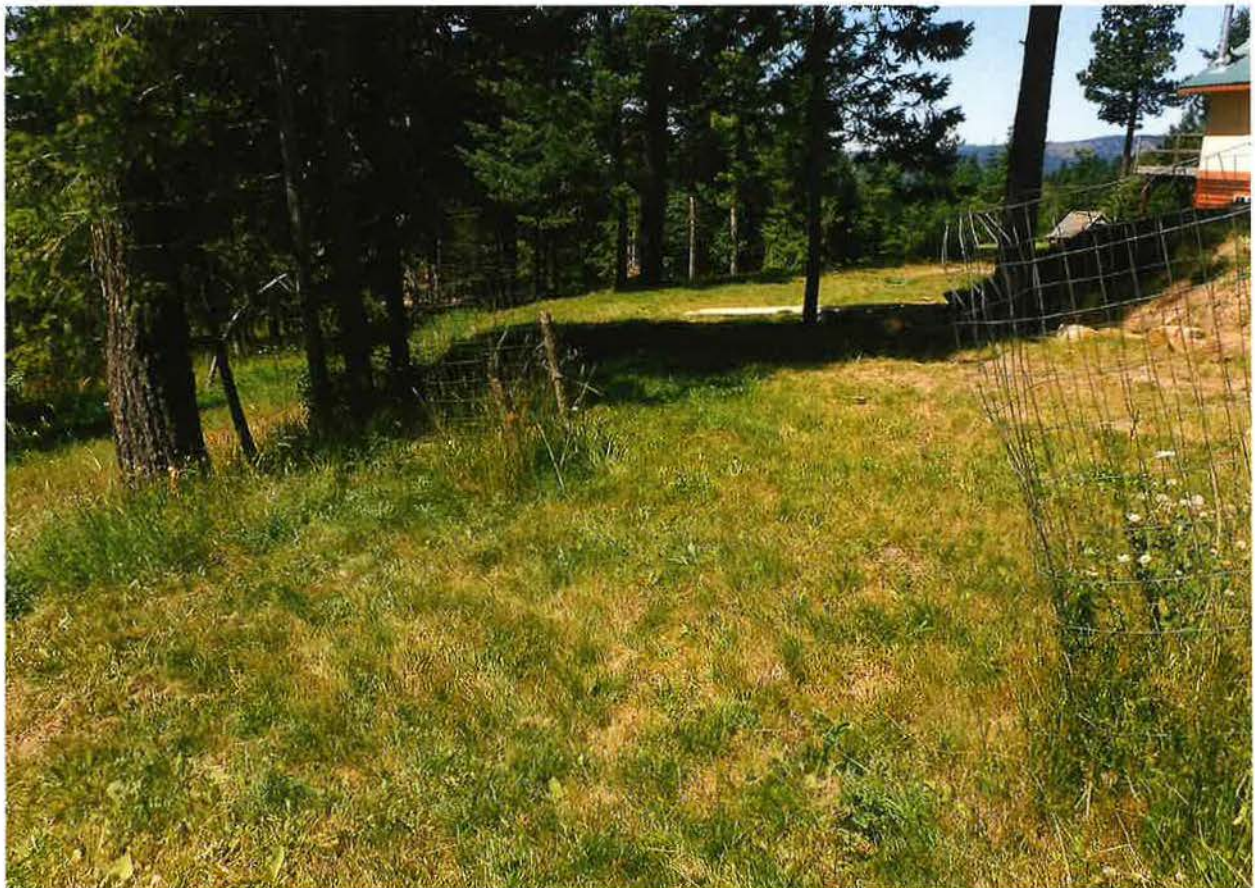


IRRIGATION POU





IRRIGATION POU





IRRIGATION POU



IRRIGATION POU – ABOVE GROUND RAIN BIRD SPRINKLERS



RAIN BIRD SPRINKLERS WITH HOSE



ABOVE GROUND IRRIGATION AT POU