

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-10410
Exam Date: 09/24/2023

1. Current Owner:
TIM AHLERS 246 AHLERS RD PRIEST RIVER ID 83856-9319 AND/OR
PATTI AHLERS 246 AHLERS RD PRIEST RIVER ID 83856-9319
2. Accompanied by: Tim Ahlers
Phone No: 208-597-2802
Address: Same as above
Relationship to permit Holder: Permit holder.

3. **SOURCE:**
SPRING

Tributary
SINKS

Method of Determination: ArcMap, DRG, and Beneficial Use Field Exam.

B. OVERLAP REVIEW

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

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

SPRING L1 (NW¼ NE¼ NE¼), Sec. 5, Twp 54N, Rge 04W, B.M. BONNER County

Method of Determination: GPS. Spring box located at -116°51.2768, 48°3.8696.

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	
54N	04W	5	0.1 L1																0.1
55N	04W	32																0.1	0.1

Total Acres: 0.2

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
54N	04W	5	X L1																
55N	04W	32																X	

Method of Determination: Beneficial use field examination, ArcMap aerial imagery, & Bonner County GIS tax parcel map.

- 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
SPRING					

D. FLOW MEASUREMENTS

1.

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

2. Measurements: I was unable to perform flow measurements due to inadequate pipe requirements. The spring with buried 1 inch poly pipe enters an enclosed concrete-block, roofed storage reservoir, that didn't allow access to the intake pipe. Overflow from the storage reservoir in late September was less than 4.5 gpm as illustrated by photographs at time of exam.

E. FLOW CALCULATIONS

Measured Method: Visual observations during the exam conducted in late September 2023; the overflow discharge from the storage reservoir was less than 5 gpm, indicating the water balance for the reservoir equates to inflow rate = outflow rate. Mr. Ahler asserts the spring doesn't produce as well in the fall, and during early summer months the flow is approximately double in rate. Based in this information, I'm recommending licensing with a flow rate of **0.02 cfs** or 9 gpm.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.2 \text{ ac} \times 3.0 \text{ afa} = 0.6 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 8.5$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{0.6 \text{ af.}}$$

2. Volume Calculations for Other Uses: Maximum diversion volume = **0.6 af** (domestic use) + 0.6 af (irrigation use) = **1.2 af**.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 9/24/2023 with the applicant, Tim Ahlers, showed water from a spring being diverted for domestic and small-scale irrigation uses. At the POD, a short segment of covered corrugated storm pipe has been installed vertically to serve as a spring box, with 1 inch poly pipe gravity flowing a short distance to a storage reservoir. The storage reservoir was hand constructed using concrete blocks and has a tin roof. A ¾ inch main service line routes from the reservoir downgrade using approximately 550 ft of head pressure gravity flow for use at the applicant's home and lawn area.

I was unable to complete flow measurements from the buried 1" poly-pipe at intake into the covered reservoir. An overflow discharge 1 inch poly pipe was observed during the exam that illustrated low flow of less than 5 gpm. Mr. Ahlers stated in the fall the spring flow reduces to approximately 2-3 gpm, but the spring capacity is increased early in the year and during early summer months. Based on water balance concepts the overflow discharge is being displaced by water intake to the reservoir from the spring in agreement to the approximately 2-3 gpm, but I'm recommending a diversion rate for licensing purposes of **0.02 cfs** or 9 gpm based on the applicant's understanding of the larger spring flow capacity realized earlier in the season.

The main water line has multiple frost-free hydrants tee connected prior to the home service connection, and water pressure was very good at time of exam with the hydrant operated. The domestic POU was observed as a primary residence and a shop with a water line for hand washing and bathroom. I utilized ArcMap aerial imagery during licensing review to assign the domestic POU. The annual volume for in-home water use only (irrigation covered under separate component) equals **0.6 af**.

The irrigation POU was documented during the exam on field maps and photographs. Small scale irrigation occurs in the immediate area around the primary residence, but Mr. Ahlers asserts most of the spring water is conserved for in-home use, and a separate WR 96-10409 uses two ponds for most of the irrigation occurring on the property. Irrigation between the two WRs is separate acreage and there is no concern for overlap between the two WRs. During licensing review, I used ArcMap aerial imagery to trace out the irrigation POU, consisting of 0.2 acres of lawn and landscape by hose & portable sprinkler or flood irrigation. The annual volume for irrigation equals **0.6 af** and the maximum diversion rate recommended for licensing equals the sum of both beneficial uses = **1.2 af**.

I replaced condition R66 with X31 during licensing review to better describe small scale irrigation of less than 1 acre occurring from the spring water system. All other conditions on the permit shall be carried forward to licensing. There are no overlapping water right concerns toward licensing this right.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
IRRIGATION	04/01 to 10/31	0.02 CFS	0.6 AF
DOMESTIC	01/01 to 12/31	0.02 CFS	0.6 AF

Totals: 0.02 CFS 1.2 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

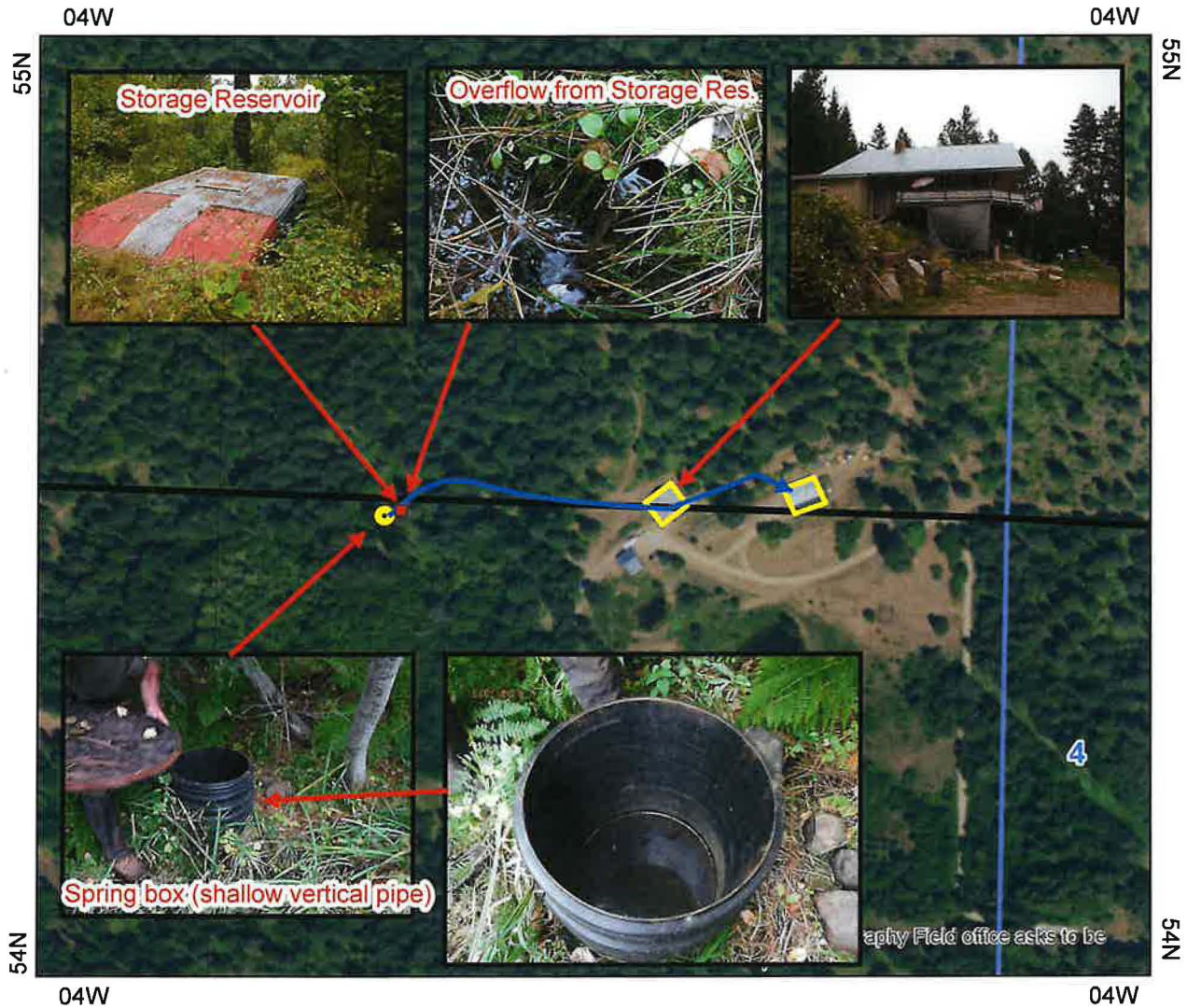
I. AUTHENTICATION Luke Bates -

Field Examiner's Name  Date 12/12/2023

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-10410

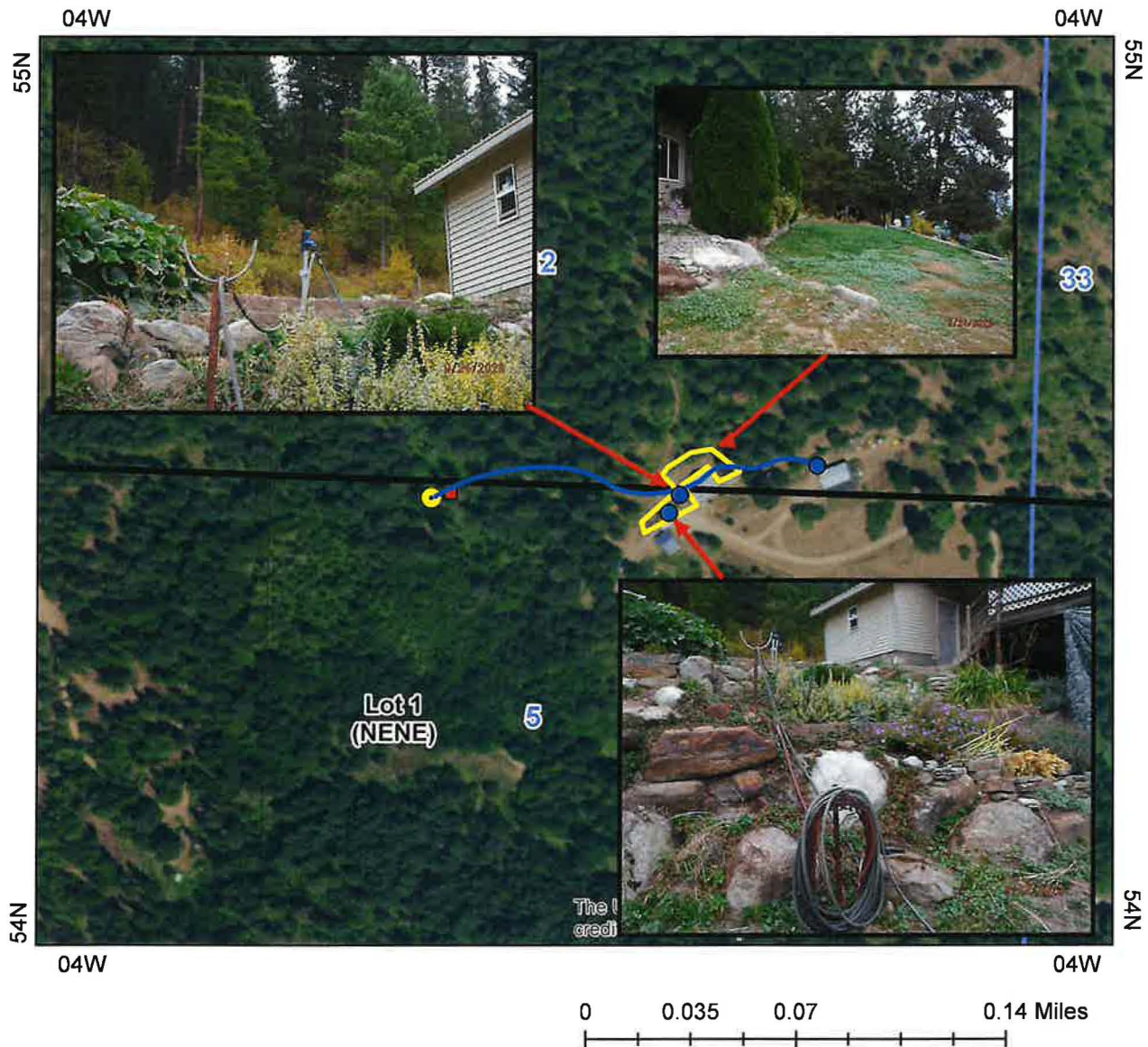
This map depicts the DOMESTIC system diagram.



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

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This map depicts the IRRIGATION system diagram.



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



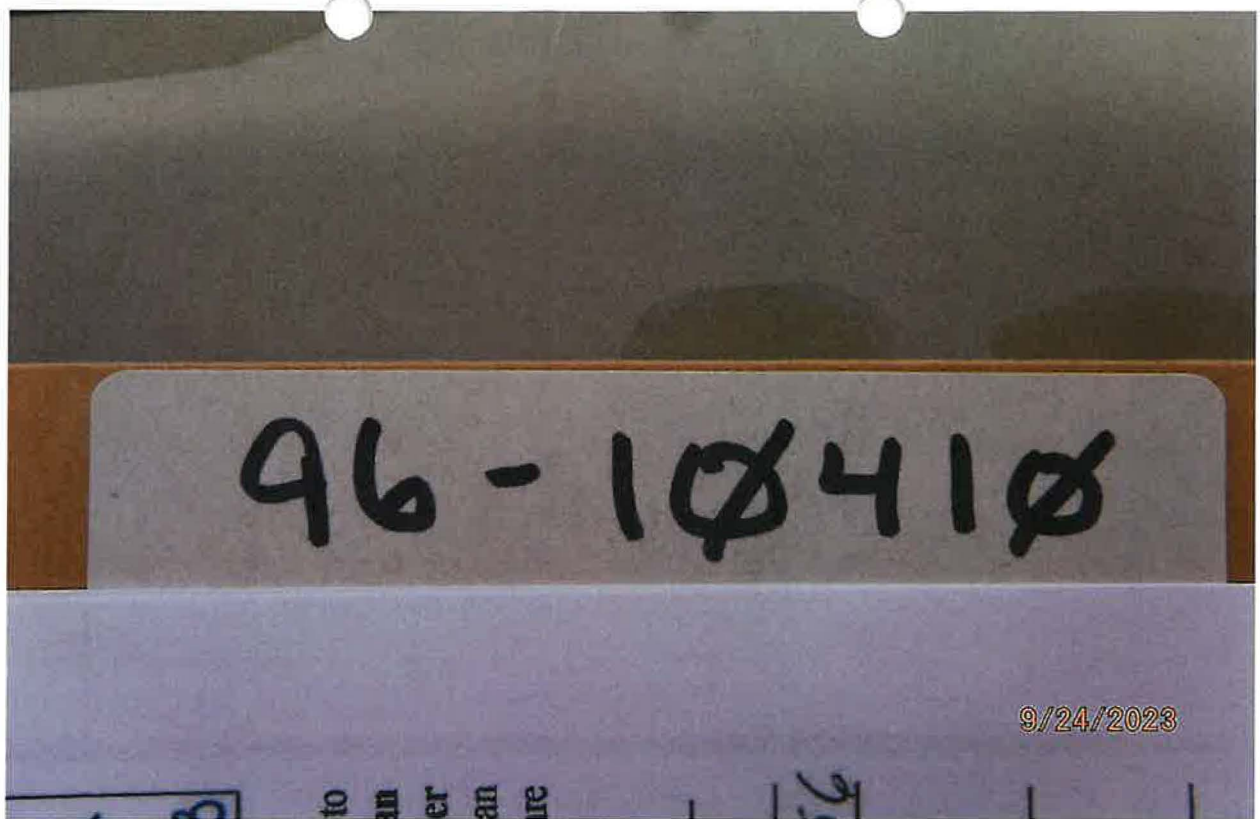
96-10410 – LICENSING REVIEW – AERIAL OVERLAY OF SPRING AND STORAGE RESERVOIR



- SPRING LOCATION -116 51.2768, 48 3.8696
- STORAGE RESERVOIR, RED ROOF



Image retrieved from www.bonnercountyid.gov/public/ on 12/11/2023 – L.Bates



BENEFICIAL USE FIELD EXAMINATION DATE 9/24/2023



POD – SPRING SOURCE WITH VERTICAL CORRUGATED PIPE VERTICALLY INSTALLED SERVING AS A SPRING BOX



POD – SPRING SOURCE FILLS TO APPROXIMATELY GROUND LEVEL AND HAS 1" PIPE GRAVITY FLOWING TO A 550-GAL STORAGE RESERVOIR PRIOR TO DISTRIBUTION FOR BENEFICIAL USE



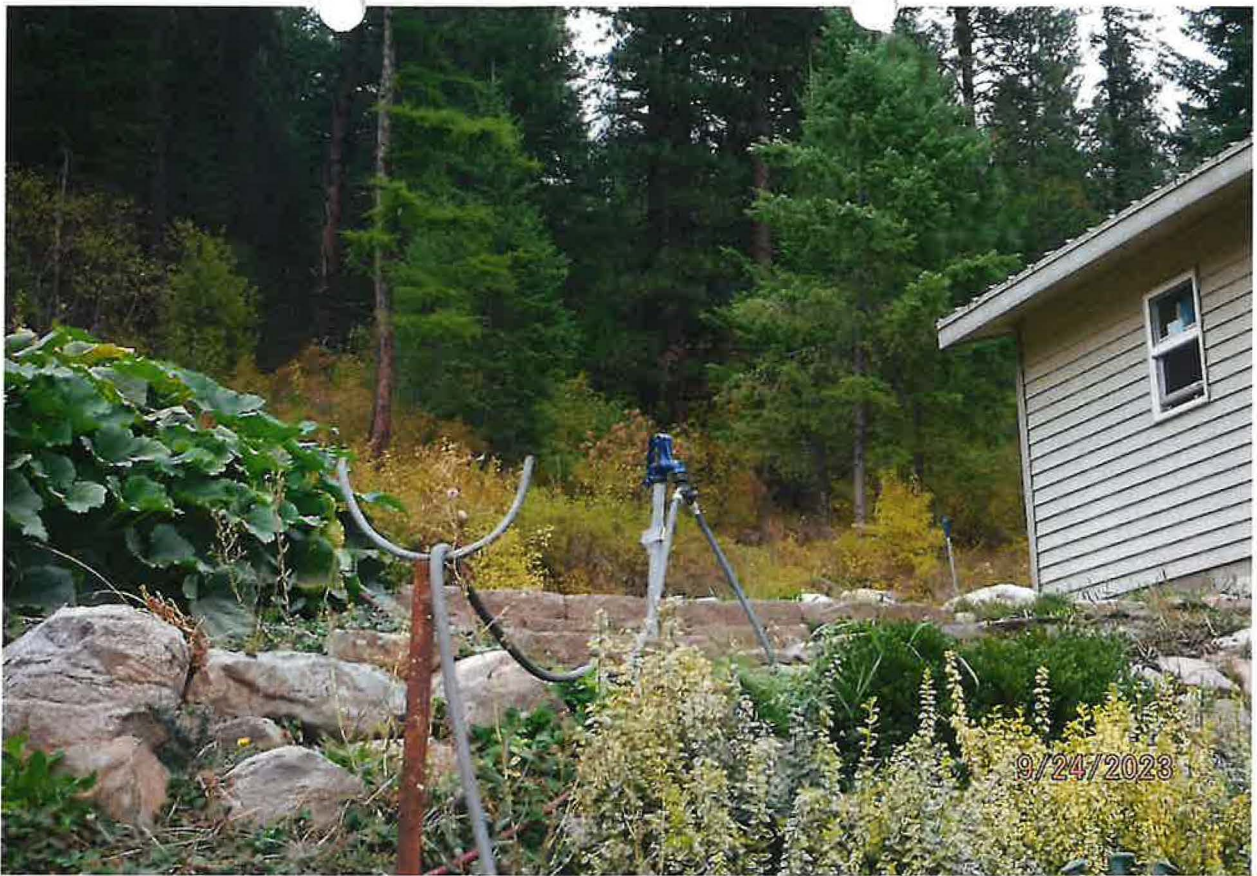
DIVERTING WORKS INCLUDE 550-GAL COVERED STORAGE RESERVOIR



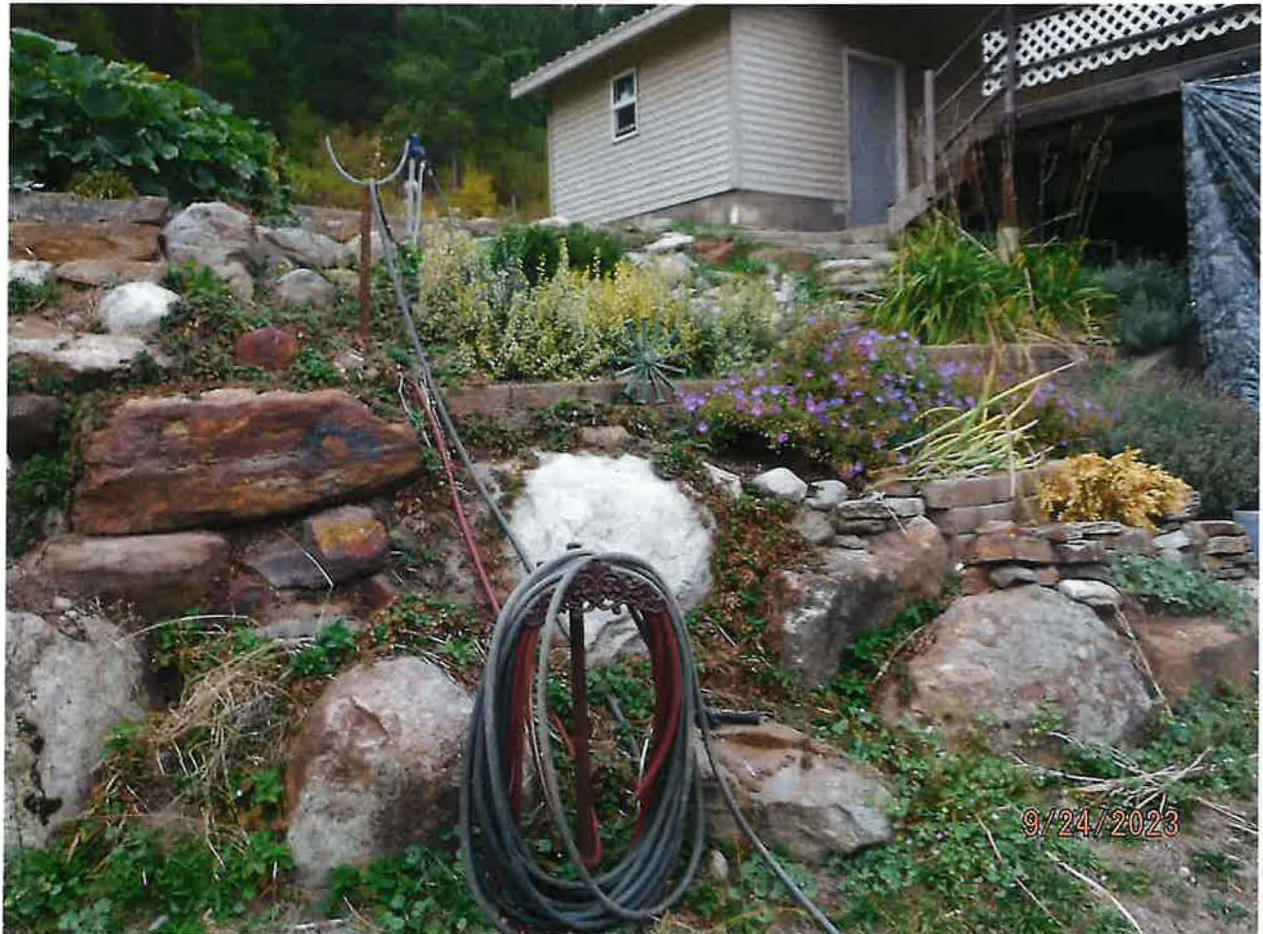
OVERFLOW DISCHARGE FROM STORAGE RESERVOIR



DOMESTIC POU – 1 HOME WITH 1 SHOP WHICH RECEIVES GRAVITY FLOW SPRING WATER



IRRIGATION POU – THREE (3) FROST FREE HYDRANTS CONNECTED TO MAIN SERVICE LINE FOR IRRIGATION OF SMALL LAWN SPACE AND LANDSCAPE AREAS AROUND RESIDENCE





IRRIGATION POU -