

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-8003

Exam Date: 08/20/2024

1. Current Owner:

JACOB W HUBBARD 7008 KANIKSU ST BONNERS FERRY ID 83805-7535 AND/OR
JODI P HUBBARD 7008 KANIKSU ST BONNERS FERRY ID 83805-7535

2. Accompanied by: JACOB W HUBBARD

Phone No: 208-290-2767

Address: Same as above

Relationship to permit Holder: Permit Holder.

3. **SOURCE:**

KOOTENAI RIVER

Tributary

COLUMBIA RIVER

Method of Determination: ArcMap and DRG Layer.**B. OVERLAP REVIEW**1. Other water rights with the same place of use: NO Overlap2. Other water rights with the same point-of-diversion: NO Overlap**C. DIVERSION AND DELIVERY SYSTEM**1. **LOCATION OF POINT(S) OF DIVERSION:**

KOOTENAI RIVER L1 (NW¼ NE¼), Sec. 28, Twp 62N, Rge 01E, B.M. BOUNDARY County

Method of Determination:

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	
62N	01E	28		7.7 L1															7.7

Total Acres: 7.7

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
62N	01E	28		X L1															

Method of Determination: Beneficial use field exam and ArcMap aerial imagery.

3.

X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X 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 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
CENTRIFUGAL PUMP		7.5		BERKELEY	S/N 837131 2-INCH DISCHARGE PORT

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
FLOWMETER	ULTRASONIC TIME TRANSIT	GE PANAMETRIC	PT900	M06210067	CLAMP ON	4/2/2024

2. Measurements: I conducted flow measurements using a GE Panametric PT900 Ultrasonic flowmeter during the field exam. The flow measurement results from the 10-minute average derived GPM flow rate equaling 61.9 gpm or 0.14 cfs considering department rounding standards.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: GE Panametric PT900 Ultrasonic flowmeter = 0.138 cfs = 0.14 cfs (see attached)

- Permit approved maximum diversion rate of 0.28 cfs; irrigation use 0.26 cfs, stockwater use 0.02 cfs.
- Diversion rate authorized for 7.7 acres irrigation observed = 0.02 cfs x 7.7 ac = 0.15 cfs
- I recommended **0.14 cfs** as the irrigation diversion rate and maximum diversion rate based on the 7.5 hp pump capacity observed at time of exam, which limits the Permit Holder slightly below the Department standard rate detailed above.
- I've recommended a stockwater diversion rate of **0.02 cfs**, which is covered by the pump capacity for licensing purposes.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 7.7 \text{ ac} \times 3.0 \text{ afa} = 23.1 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.14 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 59.4 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 23.1 \text{ af}$$

2. Volume Calculations for Other Uses:

- The irrigation beneficial use from the Kootenai River water source is exempt from the volume reporting requirements in accordance with IDAPA 37.03.02, Section 035.
- Stockwater Annual Volume = 7 head cattle x 12 gpd x 365 day = 30,660 gal per year / 325,850 gal per acre-feet = 0.09 af + 20 chickens (adds to rounding factor) annual volume rounds to **0.1 af** considering Department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

A beneficial use field exam was conducted on 8/20/2024 with the applicant, Mr. Jacob Hubbard, which showed Kootenai River water being diverted for irrigation & stockwater uses. At the POD, the applicant has installed a winchable pump rack to frame enabling the pump to be raised or lowered dependent on bank full river conditions. A 7.5 hp Berkeley centrifugal pump Model 2WPL, S/N 837131, intakes water from a flexible pipe with ¼ mesh fish screen. From the pump water is conveyed up the steep river embankment to the water uses using flexible fire hose. Based on the flexible hoses used I wasn't able to connect a flow meter until the irrigation system adapted to 2-inch aluminum hand line. I conducted flow measurements with the pump set at 63 Hz deriving a flow rate of **0.14 cfs** (see attached worksheet), which is recommended for licensing as the irrigation beneficial use diversion rate and maximum diversion rate.

During the exam Mr. Hubbard and I walked the irrigation POU, and I used field maps to sketch the active irrigation acreage. Hand line with 14 impact sprinklers is rotated to water an alfalfa field; the field extends to family property to the NW which uses dry agricultural practices to harvest. Mr. Hubbard asserts that the portion of the field within his parcel typically is a foot taller per cutting due to the ability to irrigate the crops regularly. A portion of the irrigation POU is watered for stock feed, and stock is rotated to one of three pen areas throughout the season to keep them out of the main pasture and lawn areas. The irrigation POU in and around the main residence is watered by a big gun sprinkler connected by flexible fire hoses. Mr. Hubbard asserts the spray diameter of the big gun is sufficient to irrigate an area of lawn, garden, and orchard trees near the residence.

During licensing review, I used ArcMap aerial imagery to accurately trace the irrigation POU consisting of 7.7 acres. The annual volume recommended equals 7.7 ac x 3.0 afa = 23.1 af but as this water system uses a surface water source, no annual volume values are recorded on the face of the license. Irrigation volume limits are defined by conditions of approval authorizing 0.02 cfs per acre and 3.0 afa at the field headgate for irrigation water use.

The stockwater POU consists of three legs of fenced area serving as the interface between the river and lowlands that is used by the applicant for three breeding pair cattle and 1 bull. Additionally, a chicken couple with up to 20 chickens is housed by the main residence that uses surface water at times but not consistently. A portable stock tank is filled for cattle use and Mr. Hubbard & I filled the tank during the exam as we discussed the water system. Photographs were taken to illustrate the stockwater use and the annual volume recommended equals **0.1 af** annually, which is rounded up based on Department rounding standards and accounts for any minor surface water used for chickens. The diversion rate for stockwater equals 0.02 cfs based on the total number of stock which is covered by the applicant's pump.

I removed condition 26A and X02 from the permit during licensing review; all other conditions on the Permit are being carried forward to the license. During the exam I spoke to Mr. Hubbard about the near future adjudication process for the Kootenai River Basin; I explained that although just finalizing the permit for licensing a Notice of Claim will be required to keep the water use active as licensing during the adjudication process. Mr. Hubbard has a groundwater well that serves the residence for domestic uses which may be filed on during the future adjudication process as well. There are no overlapping water right concerns toward licensing 98-8003.

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>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	0.14 CFS	
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF

Totals: 0.14 CFS

2. Recommended Amendments

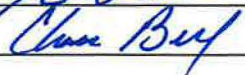
_____ Change P.D. as reflected above _____ Add P.D. as reflected above X None

_____ Change P.U. as reflected above _____ Add P.U. as reflected above X None

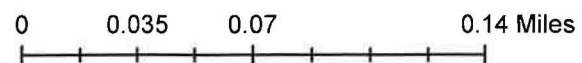
I. AUTHENTICATION

Luke Bates – Sr Water Resource Agent

Field Examiner's Name  Date 10/4/2024

Reviewer  Date 3/25/2025

This map depicts the IRRIGATION system diagram.

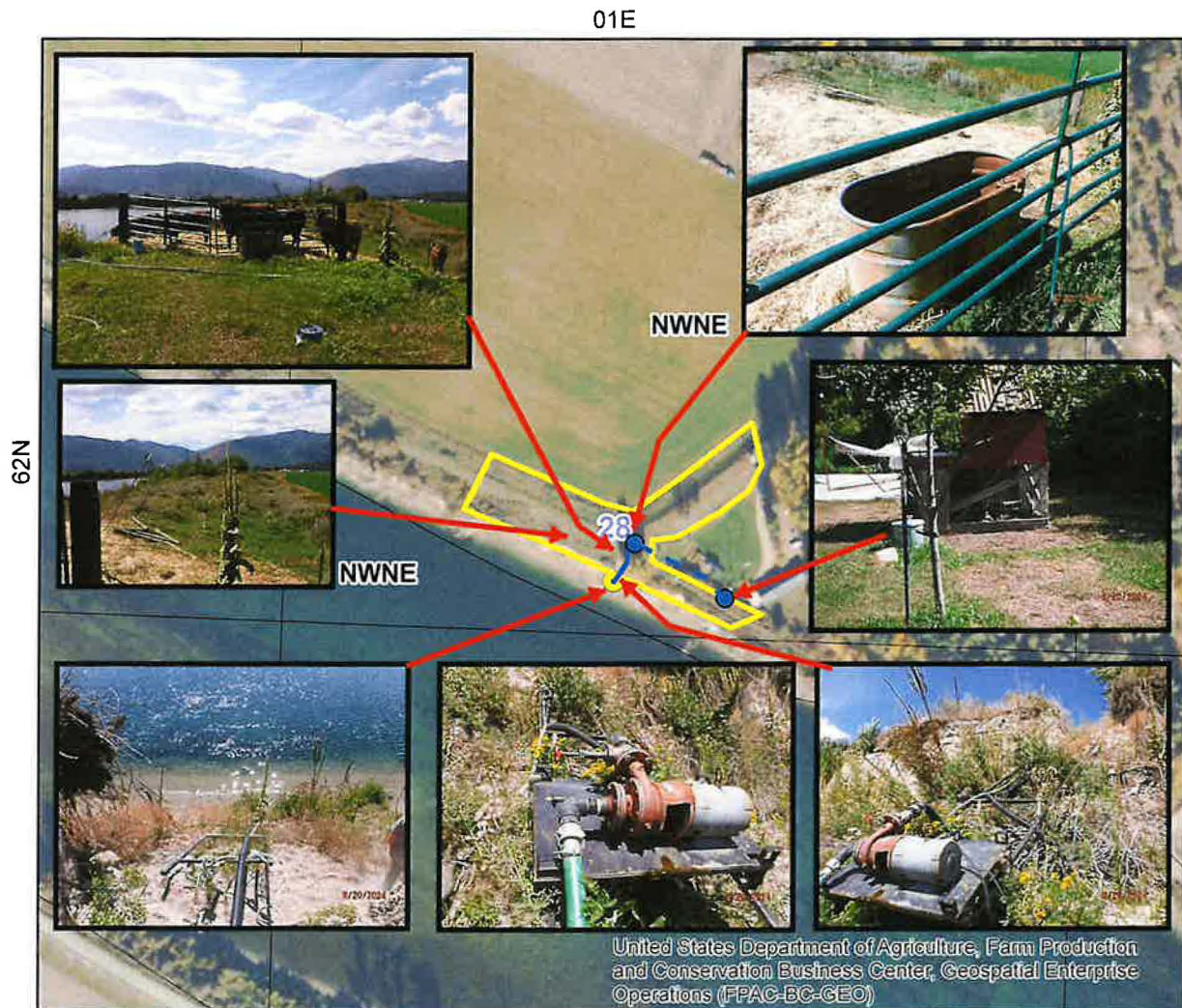


-  Place Of Use Boundary
-  Point of Diversion
-  Townships
-  PLS Sections
-  Quarter Quarters



State of Idaho
Department of Water Resources
Attachment to Field Exam
98-8003

This map depicts the STOCKWATER system diagram.



0 0.035 0.07 0.14 Miles

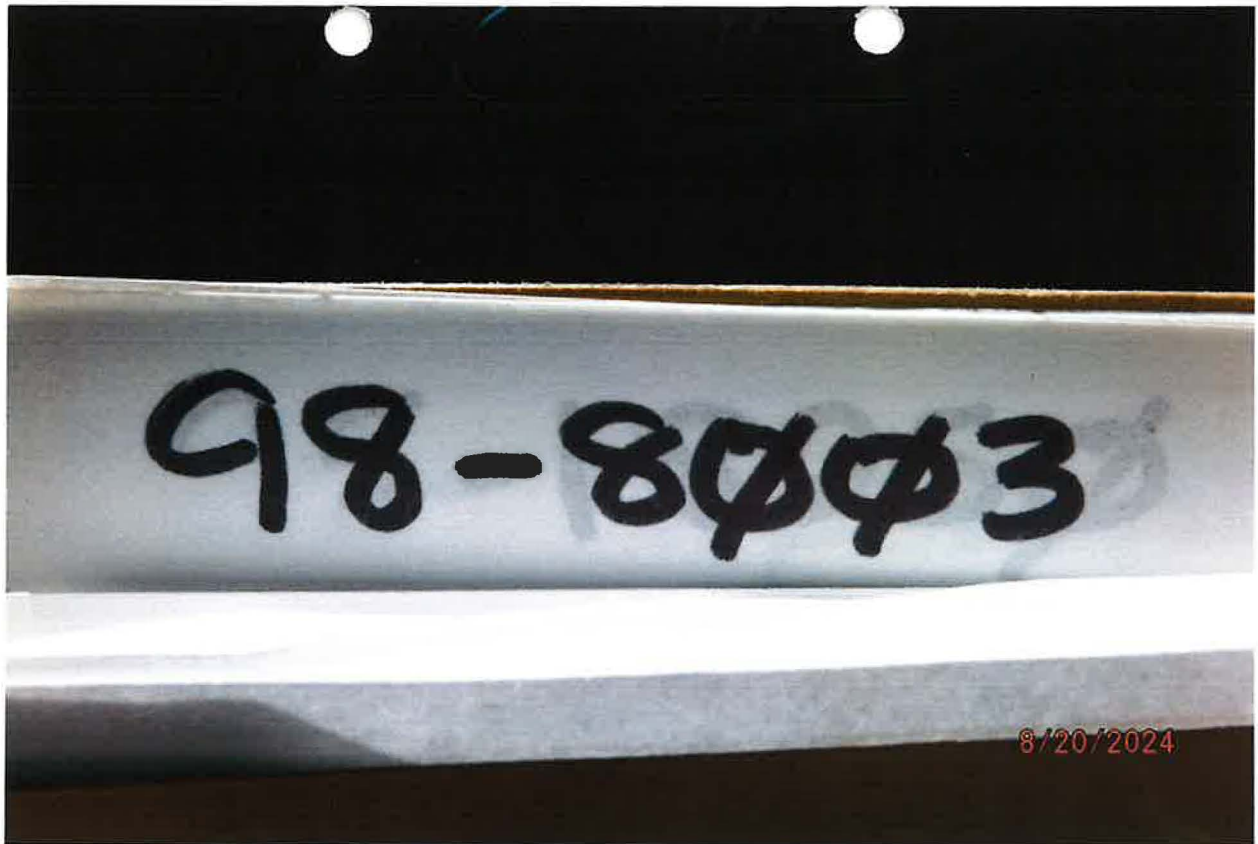
-  Place Of Use Boundary
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-  Townships
-  PLS Sections
-  Quarter Quarters



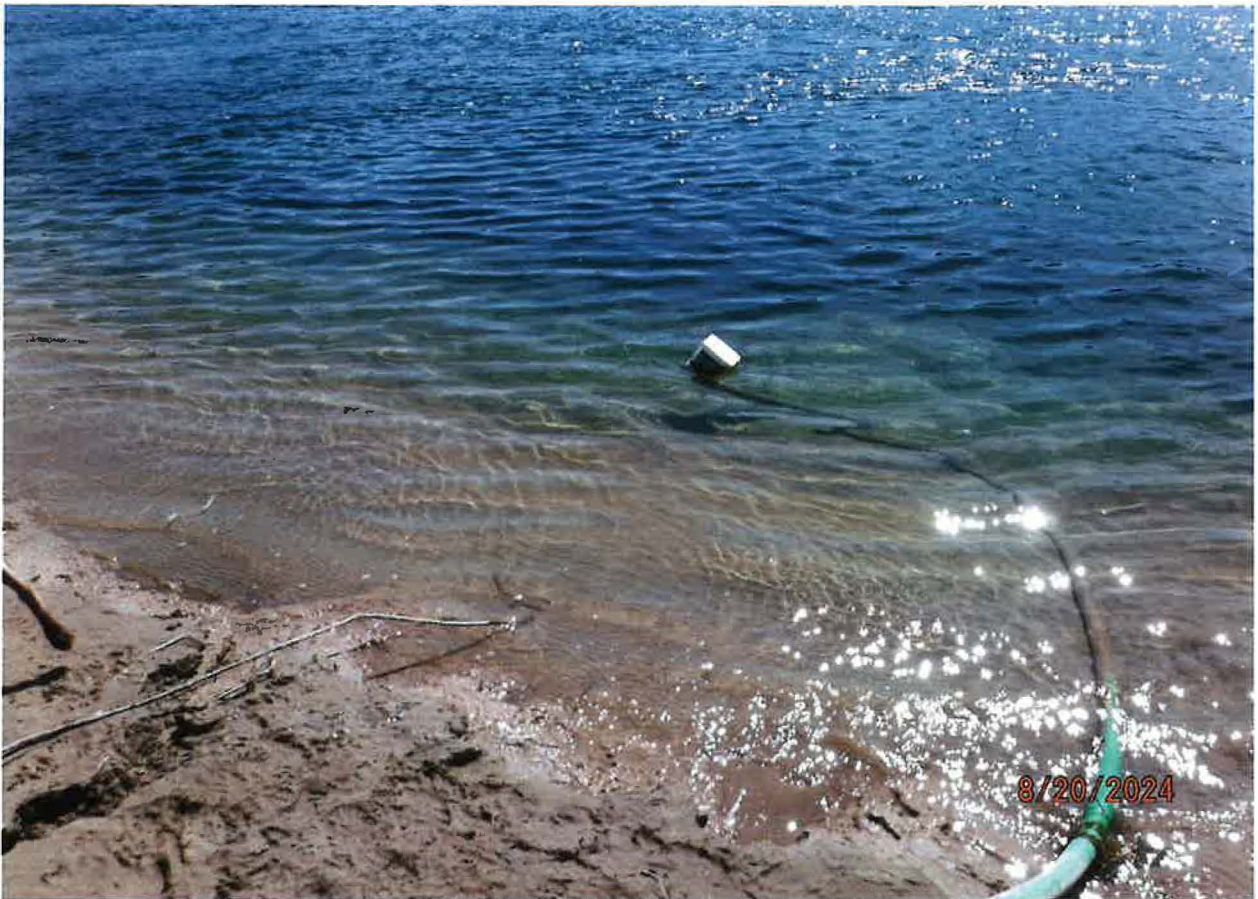
Flow Measurement Beneficial Use Field Exam 98-8003

Date/Time 8/20/2024	Velocity ft/s	Volume Gallons/min	Fwd Totalizer Fwd Gallons	Error
14:25:00	7.8929	61.9777	326.4204	Error:0
14:26:00	7.9429	62.371	388.466	Error:0
14:27:00	7.9115	62.1238	450.5086	Error:0
14:28:00	7.8474	61.6204	512.3336	Error:0
14:29:00	7.9021	62.0507	574.3208	Error:0
14:30:00	7.8683	61.7851	636.2447	Error:0
14:31:00	7.8897	61.9529	698.0566	Error:0
14:32:00	7.8861	61.9243	760.0635	Error:0
14:33:00	7.8876	61.9363	822.1031	Error:0
14:34:00	7.8995	62.0297	883.8448	Error:0
14:35:00	7.86	61.7194	945.7744	Error:0
Average Velocity	7.89	7.5 HP BERKELEY CENTRIFUGAL PUMP		
Max Velocity	7.9429			
Min Velocity	7.8474			
Average GPM	62.0			
Max GPM	62.4			
Min GPM	61.6			
Beginning Reading			326.420	
Ending Reading			945.774	
Difference in Readings			619.354	
Difference / 10 readings			61.935	GPM
Conversion from GPM to CFS (/448.83)			0.138	CFS
Measuring Device: GE PT900 S/N M06210067			Last Calibration Date: 4/2/2024	

**7.5 HP BERKELEY
CENTRIFUGAL PUMP**



BENEFICIAL USE FIELD EXAM DATE 8/20/2024

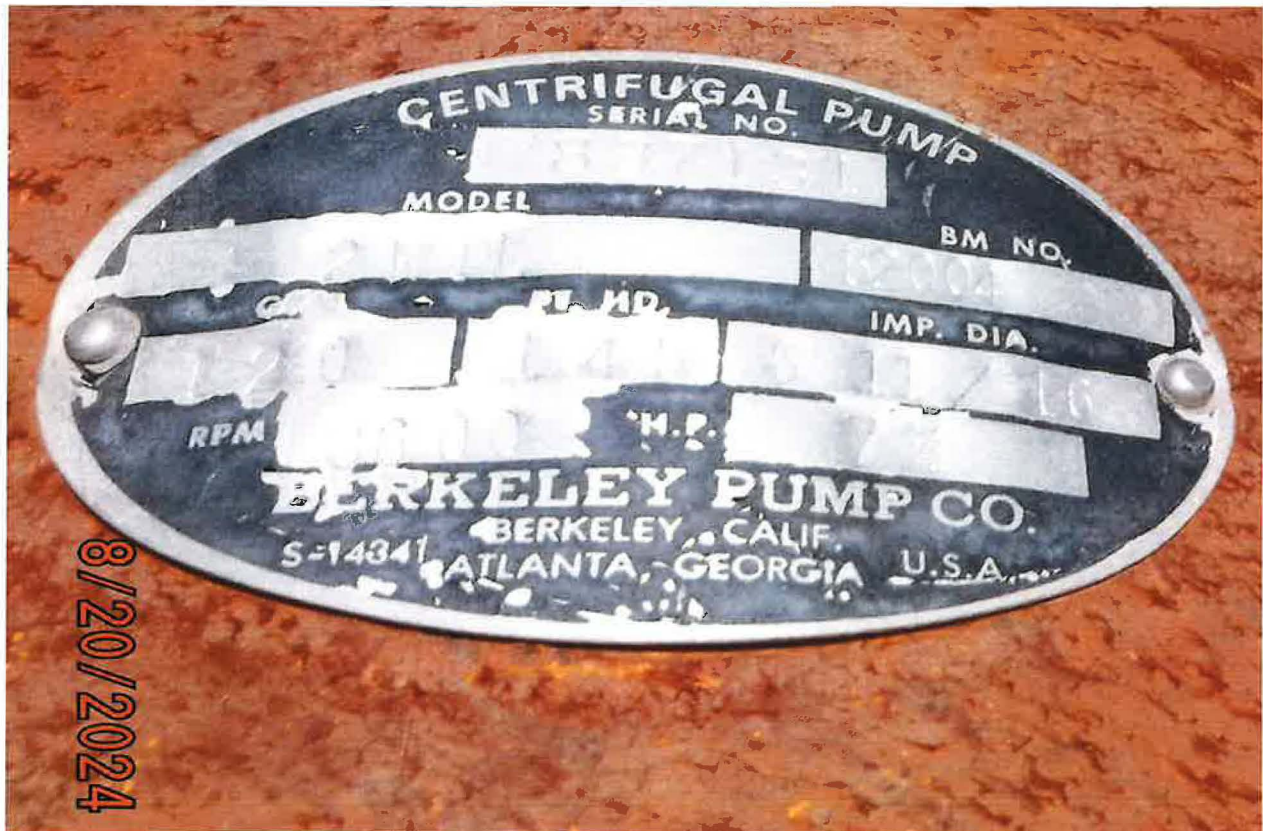


POD – SCREENED FLEX PIPE INTAKE IN THE KOOTENAI RIVER



POD – BERKELEY CENTRIFUGAL PUMP WITH 2-INCH DISCHARGE PORT





POD – 7.5 HP BERKELEY CENTRIFUGAL PUMP S/N 837131



CONVEYANCE SYSTEM – 2-INCH FLEXIBLE PIPELINE ROUTED UPGRADE 30-FT ELEVATION GAIN PRIOR TO DISTRIBUTION TO IRRIGATION & STOCKWATER SYSTEMS



STOCKWATER POU – PORTABLE STOCK TANKS FILLED BY HOSE



STOCKWATER & IRRIGATION POU – WATERED FOR STOCK FEED BETWEEN ALFALFA FIELD AND LAWN IRRIGATION



STOCKWATER AND IRRIGATION POU – EMBANKMENT BETWEEN RIVER FRONT
AND ALFALFA FIELD WATERED FOR STOCK ANIMAL FEED



STOCKWATER POU – 7 HEAD CATTLE OBSERVED USING STOCK TANK FILLED BY
LATERAL LINE AND GARDEN HOSE



IRRIGATION WATER CONVEYANCE SYSTEM – 2-INCH FLEX FIRE HOSE ROUTED TO 2-INCH ALUMINUM HAND LINE W/IMPACT SPRINKLERS & A SEPARATE BIG GUN SPRINKLER

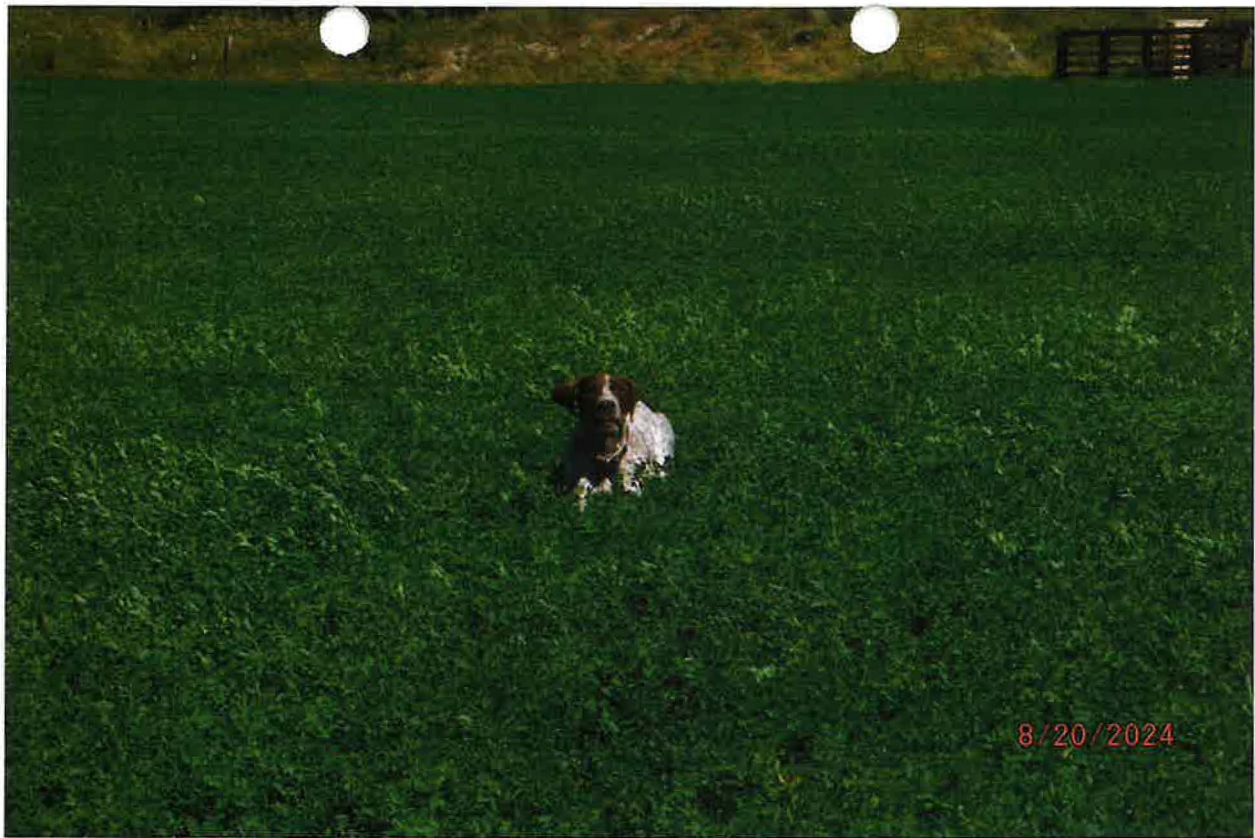




IRRIGATION POU – ALFALFA FIELD WATERED WITH 2-INCH ALUMINUM TO
IMPACT SPRINKLERS



PT900 FLOWMETER UTILIZED TO CONDUCT FLOW MEASUREMENTS DURING
FIELD EXAM



IRRIGATION POU



HAND LINE ROTATED THROUGHOUT IRRIGATION POU FOR FIELD, BUFFER ZONES, AND STOCKWATER GRAZING AREA OF POU



IRRIGATION POU



IRRIGATION POU – STOCK ANIMAL GRAZING PLOT



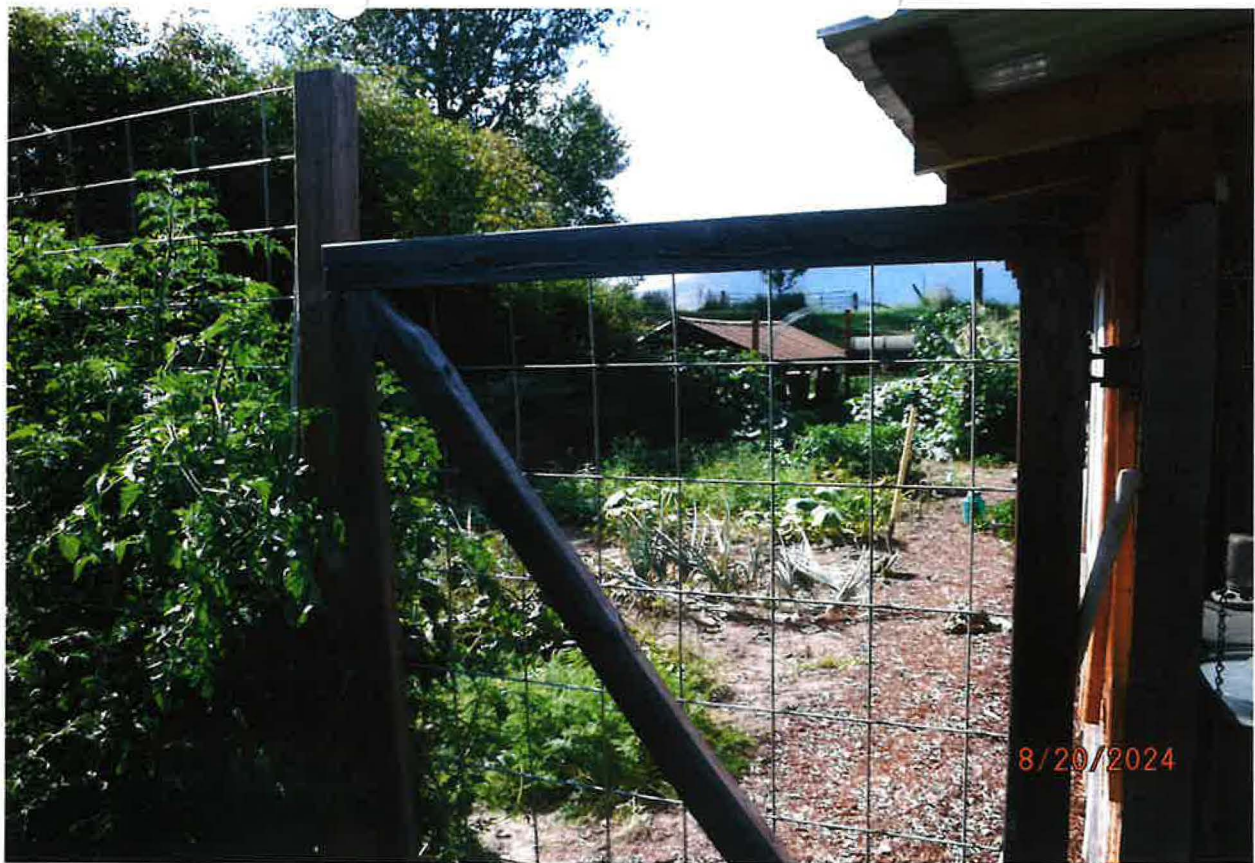
IRRIGATION POU – BIG GUN CONNECTED BY FLEXIBLE FIRE HOSE FOR
LAWN/LANDSCAPE/GARDEN WATERING





IRRIGATION POU





IRRIGATION POU – FENCED GARDEN



IRRIGATION POU