

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 94-9429
Exam Date: 07/26/2022

1. Current Owner:
LAZY TEACUP RANCH LLC 5259 OLD RIVER RD KINGSTON ID 83839
2. Accompanied by: Richard Reed
Phone No: 208-682-4291
Address: Same as above
Relationship to permit Holder: Permit Holder

3. **SOURCE:**
COEUR D ALENE RIVER

Tributary
COEUR D ALENE LAKE

Method of Determination: Arcmap and DRG.

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:**

COEUR D ALENE RIVER L12 (SE¼ SW¼), Sec. 4, Twp 49N, Rge 02E, B.M. SHOSHONE County
COEUR D ALENE RIVER L12 (SE¼ SW¼), Sec. 4, Twp 49N, Rge 02E, B.M. SHOSHONE County

Method of Determination: GPS; Stockwater POD is located at -116°12.943 44°37.093; Irrigation POD is located at -116°12.929 44°37.105; both diversion points are in close proximity to one another.

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	
49N	02E	4											0.8 L12	1.8 L12					2.6

Total Acres: 2.6

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	
49N	02E	4											X L12	X L12					

Method of Determination: Beneficial use field examination & ArcMap aerial imagery.

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 Model No. or Discharge Size
Stockwater Pump	Franklin Electric	½	21B140404448J	U.S. Motors	C55JXGZZ-3899; 5/8 inch garden hose discharge
Irrigation Pump	NIDEC Motor	10	UJ10C1K21M	AMT	4805-95; 2" Discharge

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
5 gal bucket (Stockwater Pump)						
Flowmeter (Irrigation Pump)	Totalizing multi-jet water meter	PRMFiltration	WM200PVX	22M-005366	2 inch	Purchased new by applicant fall 2022.

2. Measurements: Applicant used two different pumps for separate beneficial uses. 5-Gal bucket measurement performed on the ½ hp stockwater pump resulted in a flow rate of 9.75 gpm or 0.02 cfs considering department rounding standards. The applicant had installed a flowmeter on the irrigation pump diverting system, and multiple one minute time periods were used to derive an average flow rate of 33.5 gpm or 0.08 cfs considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method:

- Stockwater pump: 5-Gal bucket measurement = 5 gal / 30.78 sec x 60 sec/min = 9.75 gpm = 0.02 cfs.
- Irrigation pump: system installed flowmeter: test 1: 1 min = 33.0 gpm; test 2: 1 min = 34.0 gpm; test 3: 1 min = approx 33.5 gpm. A stopwatch was used to time the "X1" dial for a 1-minute period counting revolutions and ending numeric value. Average of three measurements = approx 33.5 gpm or 0.08 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.6 \text{ ac} \times 3.0 \text{ afa} = 7.8 \text{ af}$$

$$V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.08 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 34.0 \text{ af}$$

$$V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} = 7.8 \text{ af}$$

2. Volume Calculations for Other Uses:

- This right uses as surface water source and does not receive an irrigation annual diversion volume nor maximum diversion volume assigned to the face of the water right license.
- Stockwater annual volume = 20 head cattle x 12 gpd x 365 days = 87,600 gal annually / 325,850 gal per acre-feet = 0.3 af, considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

An initial beneficial use field examination conducted on 7/26/2022 with the applicant, Richard Reed, showed Coeur D'Alene River water being diverted for irrigation and stockwater uses. The applicant has developed two separate PODs, one for stockwater & one for irrigation. Both systems incorporate flexible intake pipes with screens installed routing to pumps.

- The Stockwater diverting system incorporates a ½ HP U.S. Motors jet pump paired with ½ HP Franklin Electric pump motor. The system has a 5/8-inch garden hose adapter discharge to garden hoses routed to stock tanks. As the system is low flow, I performed a single 5-Gal bucket measurement from the end of the hose run where tanks are filled, resulting in 9.75 gpm or 0.02 cfs considering department rounding standards. **0.02 cfs** was permit approved for stockwater use and shall be carried forward to licensing the stockwater beneficial use diversion rate.
- The Irrigation diverting system incorporates a 10 HP NIDEC Motor pump motor paired with AMT pump discharging to a 2-inch pvc pipe to two ball valves coupled to a 5-inch irrigation main truck pipeline. On 7/26/2022 I took flow measurements using the department's GE PT900 ultrasonic flowmeter with diversion rate equaling 79.5 gpm or 0.18 cfs. This diversion rate was excessively high compared to the 3.0 acres authorized for irrigation under this permit. I explained the diversion rate issue to Mr. Reed, and we worked on methods of reducing the flow rate to reduce flow rates to no more than the authorized rate for the total of 2.6 acres pasture area observed at time of initial field exam.
- The applicant worked with his pump company in pursuit of modifying his current pumping system, but the applicant's irrigation season ended prior to a follow-up site visit to capture flow measurements. In the spring of 2023, Mr. Reed and I had multiple phone conversations and once the irrigation system was operational, I scheduled to conduct a follow-up exam. On 7/18/2023 I performed a follow-up exam and noted the following changes:
 - A second ball valve was added to the diverting works which Mr. Reed stated enables him to reduce flow of his 10 HP pump.
 - A PRMFiltration multi-jet water meter (flowmeter) was installed in-line prior to where the 2-inch discharge pipe coupled to the 5-inch aluminum main trunk line.
 - PSI gauges were added to allow a visual aid for the system's operating pressure.
 - Impact sprinkler nozzles were changed from 7ea 3/16-inch and 1ea 3/32-inch to 8ea new 5/32-inch nozzles.
- Changes to the applicant's system enable Mr. Reed to dial down the flow rate to achieve 40 psi operating pressure and a flow rate of 33.5 gpm with 7 sprinklers in use & approximately 37.5 gpm with 8 sprinklers in use. I used the applicant's flowmeter for three individually taken 1-minute measurements resulting in 33.0 gpm, 34.0 gpm, & 33.5 gpm which derive an average diversion rate of 33.5 gpm or 0.08 cfs considering department rounding standards. This is comparable to the sprinkler manufacturers specification for 7ea 5/32-inch nozzles, @ 40 PSI, with flow rate of 5 gpm per sprinkler or 35 gpm total as a theoretic flow rate. The department's flow rate range for 0.08 cfs taking rounding standards into account equate to 33.66-to-38.14 gpm. As Mr. Reed's system uses a total of 8 sprinklers maximum, so long as he maintains the 40 PSI operating pressure, he will conform to the **0.08 cfs** diversion rate for irrigation beneficial use recommended for licensing this right.
- The maximum diversion rate recommended for licensing purposes equals the sum of both beneficial uses, and $0.02 \text{ cfs} + 0.08 \text{ cfs} = 0.10 \text{ cfs}$. As Mr. Reed has two separate pump systems from the same source, and each beneficial use is limited to their respective diversion rate as illustrated on the face of the license.

The stockwater POU and irrigation POU are the same pastureland located on the applicant's property. Stockwater by garden hose to multiple portable stock tanks was observed. The applicant keeps 20 head of cattle, with several breeding stock and several calves that are sent to butcher yearly. The stockwater annual volume for 20 head of cattle equals **0.3 af** considering department rounding standards.

The POU was sketched out on field maps during the initial field exam in 2022, and during licensing review ArcMap aerial imagery was used to accurately trace out irrigation acreage equaling 2.6 acres. The irrigation annual volume for 2.6 acres = **7.8 af** which is recommended for licensing purposes. The irrigation season of use authorizes irrigation from 4/1 to 10/31. The applicant acknowledges he typically doesn't have to start irrigating until May and ends by October, but I am recommending the department standard season of use for licensing purposes. The irrigation beneficial use diverts surface water from a river, resulting in no maximum diversion volume assigned to the face of the license. The volume(s) are designated as annual volume limitations on the license.

Conditions 26A & X02 were removed from the permit during licensing review. All other conditions on the permit shall be carried forward to licensing. There are no overlap concerns between water rights associated with this 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	04/01 to 10/31	0.08 CFS	7.8 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.3 AF

Totals: 0.10 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 -

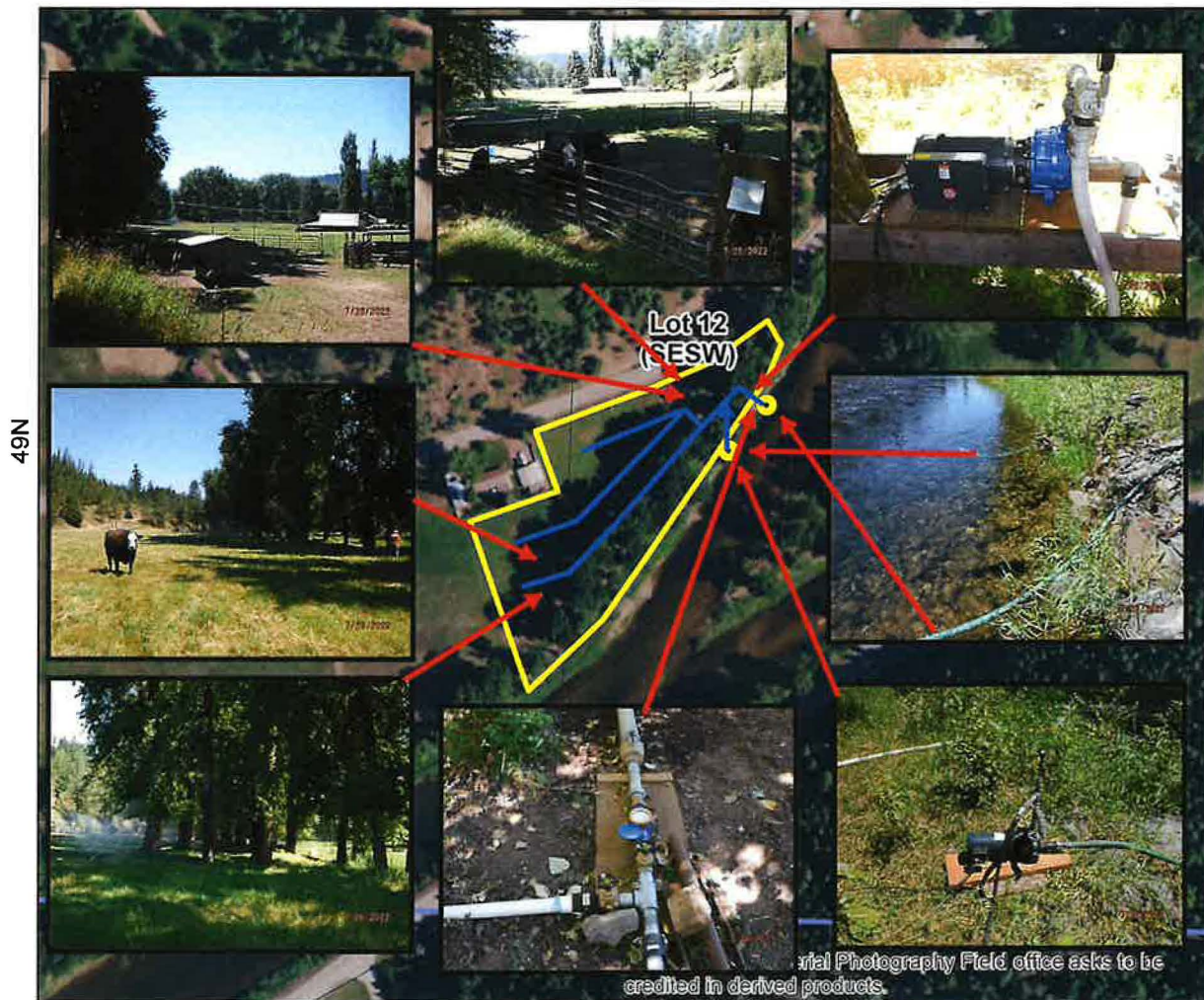
Field Examiner's Name F. D. D. Date 7/19/2023

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
94-9429

IRRIGATION & STOCKWATER system diagram.

02E



0 0.035 0.07 0.14 Miles

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



Multi-Jet Water Meters

Brass Water Meters for indicating flow totalization of water. Designed for long service life and maintenance-free operation, even under harsh conditions.

Features:

- All Meters have Hydrocarbon Resistant Seals and will not be damaged by dissolved amounts of free product
- Sealed Dry Dial for Clear Readings
- Internal Strainer to Protect Meter from Particulate Damage

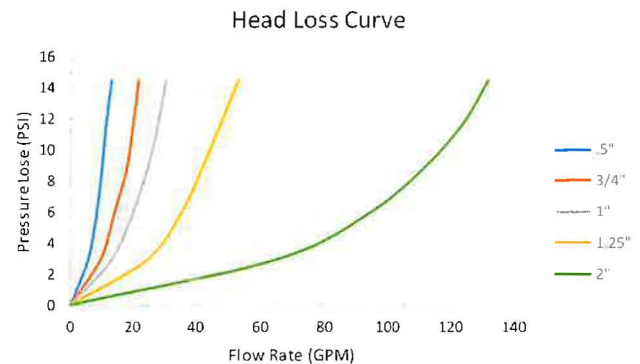
Specifications:

- Class: B
- Accuracy: Transitional Flow: $\pm 5\%$
Nominal Flow: $\pm 2\%$
- Maximum Water Temperature: 104°F
- Maximum Water Pressure: 150 psi
- Mounting Orientation:
1/2" and 3/4" Horizontal or Vertical
1" to 2" Horizontal Mounting

Materials:

- Body: Brass, polyethylene
- Couplings: Brass
- Measuring Chamber: Polyethylene
- Paint: Epoxy Coated
- Seal: Viton

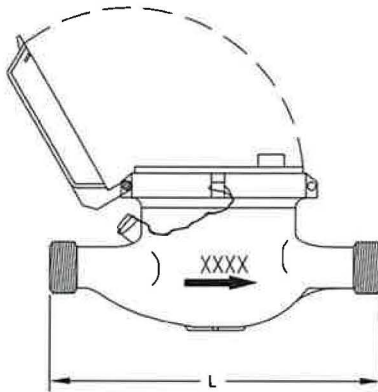
Contains lead, not for use with potable water



PRM Part Number: Description

- WM050VX— 1/2" NPT multi-jet water meter
- WM075VX— 3/4" NPT multi-jet water meter
- WM100VX— 1" NPT multi-jet water meter
- WM125VX— 1-1/4" NPT multi-jet water meter
- WM150VX— 1-1/2" NPT multi-jet water meter
- WM200VX— 2" NPT multi-jet water meter

Multi-Jet Water Meters (No Pulse Output)



Materials:

Body: Brass, polyethylene

Couplings: Brass

Measuring Chamber: Polyethylene

Paint: Epoxy Coated

Seal: Black: Buna-N, White: HDPE

Mounting Orientation:

1/2" and 3/4" Horizontal or Vertical

1"-4" Horizontal

Not for use with Potable Water

						Max. Flow	Nom. Flow Range
Part #:	Size:	Length (in)	Length with NPT adapters	Height (in)	Weight (lbs.)	Gallons Per Minute	
WM050VX	1/2" NPT	7	10.5	4.75	3	10	1-10
WM075VX	3/4" NPT	8	12	4.75	3.5	20	1-20
WM100VX	1" NPT	10.5	14.5	4.5	5.5	30	2-30
WM125VX	1-1/4" NPT	10.5	15.5	5	8	50	3-50
WM150VX	1-1/2" NPT	12	18	6.5	12	75	4-75
WM200VX	2" NPT	12	18	6.5	14	130	5-130

Information in this drawing is provided for reference only.

(888-TREAT-IT) • www.prmfiltration.com • sales@prmfiltration.com

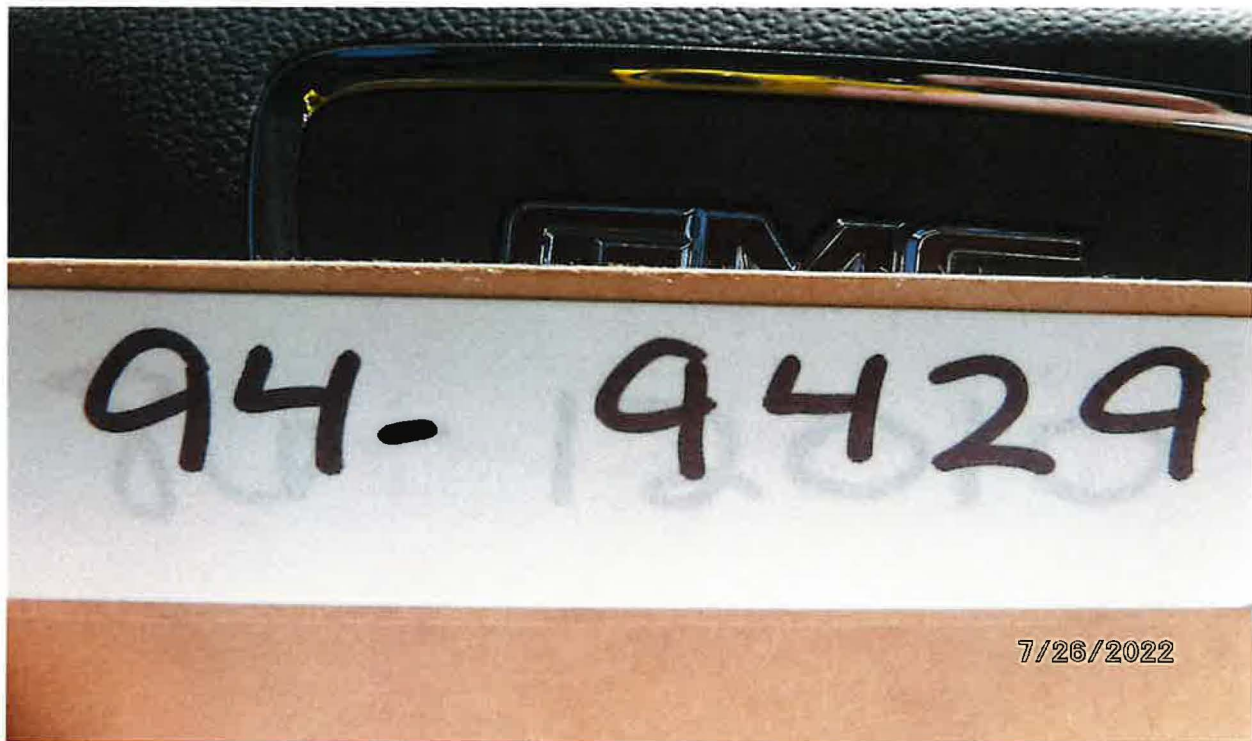
Flow Measurement for permit 94-9429				
7/26/2022	Velocity ft/s	Volume Gallons/min	Fwd Totalizer Fwd Gallons	Error
11:40:00	1.3874	80.9153	640.227	Error:0
11:41:00	1.3491	78.6801	718.907	Error:0
11:42:00	1.3309	77.6176	796.525	Error:0
11:43:00	1.3596	79.2926	875.817	Error:0
11:44:00	1.3886	80.9846	956.802	Error:0
11:45:00	1.3445	78.4138	1035.216	Error:0
11:46:00	1.3622	79.4452	1114.661	Error:0
11:47:00	1.3598	79.3035	1193.964	Error:0
11:48:00	1.387	80.8905	1274.855	Error:0
11:49:00	1.3823	80.6206	1355.476	Error:0
11:50:00	1.3584	79.2232	1434.699	Error:0
Average Velocity	1.36			
Max Velocity	1.3886			
Min Velocity	1.3309			
Average GPM	79.6			
Max GPM	81.0			
Min GPM	77.6			
Beginning Reading		640.227		
Ending Reading		1434.699		
Difference in Readings		794.472		
Difference / 10 readings		79.447	GPM	
Conversion from GPM to CFS (/448.83)		0.177	CFS	
Measurement taken with 2" pump discharge to 5" irrigation main trunk to 3" hand line; 7ea 3/16" nozzles & 1ea 3/32" nozzles in operation at 60 PSI				

SUPERSEDED

→ 7/18/2023 L. Bates

Applicant Installed Flow meter on system.
Measurements taken 7/18/2023 take place of
this reading from 2022.

JB
7/18/23



INITIAL BENEFICIAL USE FIELD EXAMINATION DATE 7/26/2022



STOCKWATER POD – ½ HP U.S. MOTORS JET PUMP WITH SCREENED INTAKE IN RIVER



½ HP PUMP DIVERTING WITH TWO GARDEN HOSES TO STOCKWATER POU



FRANKLIN ELECTRIC ½ HP PUMP MOTOR PAIRED WITH U.S. MOTORS JET PUMP AT POD



STOCKWATER POU





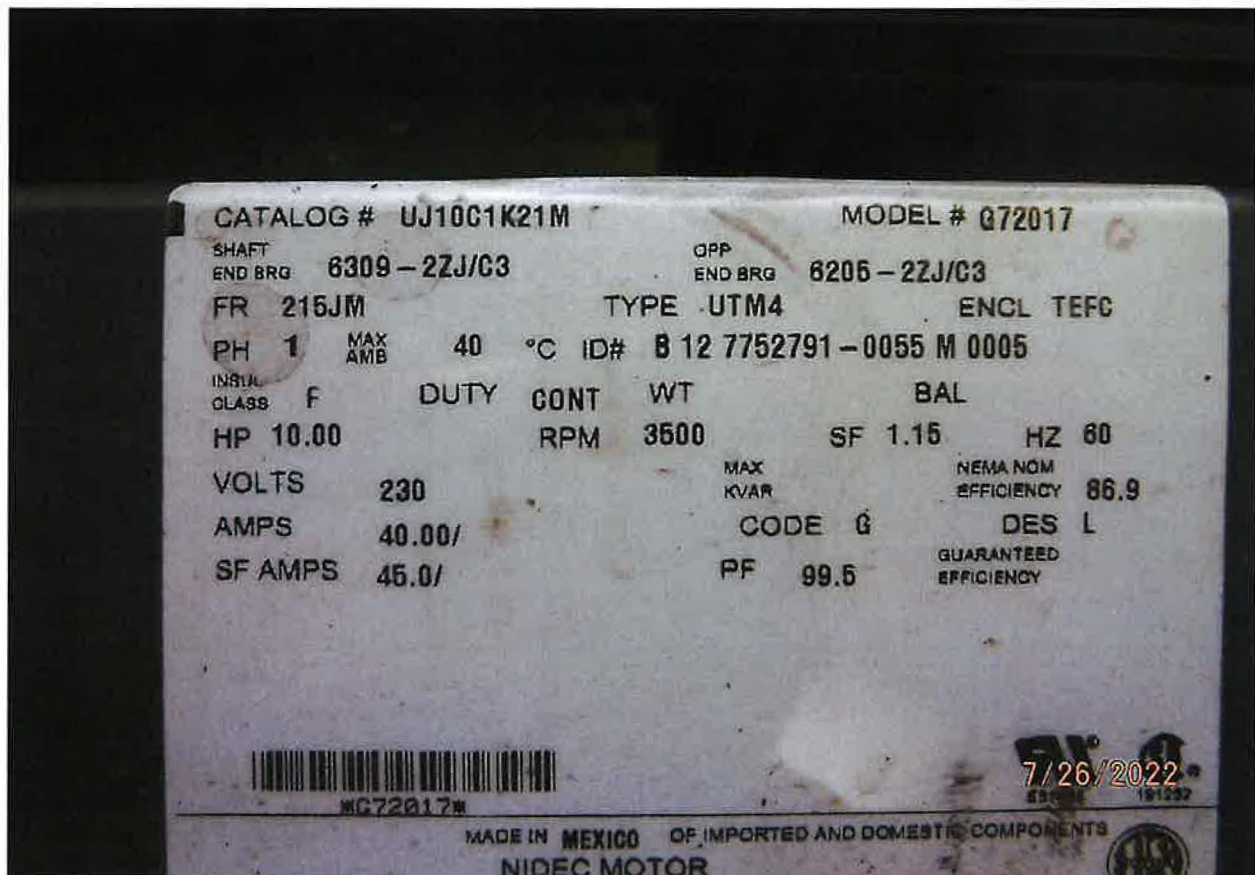
IRRIGATION POD (FRONT OF FRAME) & STOCKWATER POD (BACKGROUND OF FRAME)



BOTH POD PIPES HAVE A SCREEN INSTALLED ON THE INTAKE IN RIVER



IRRIGATION DIVERSION WORKS – 10 HP CENTREFUGAL PUMP

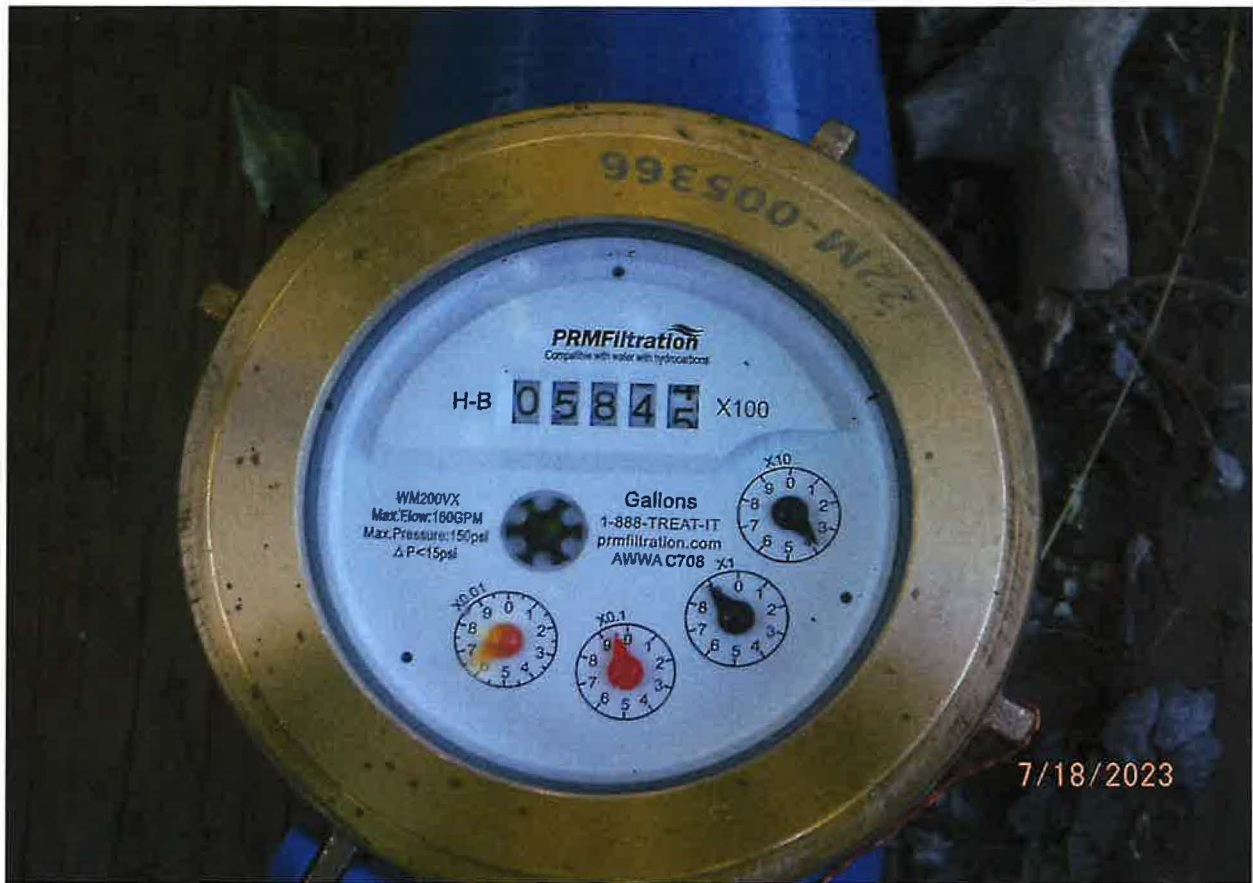




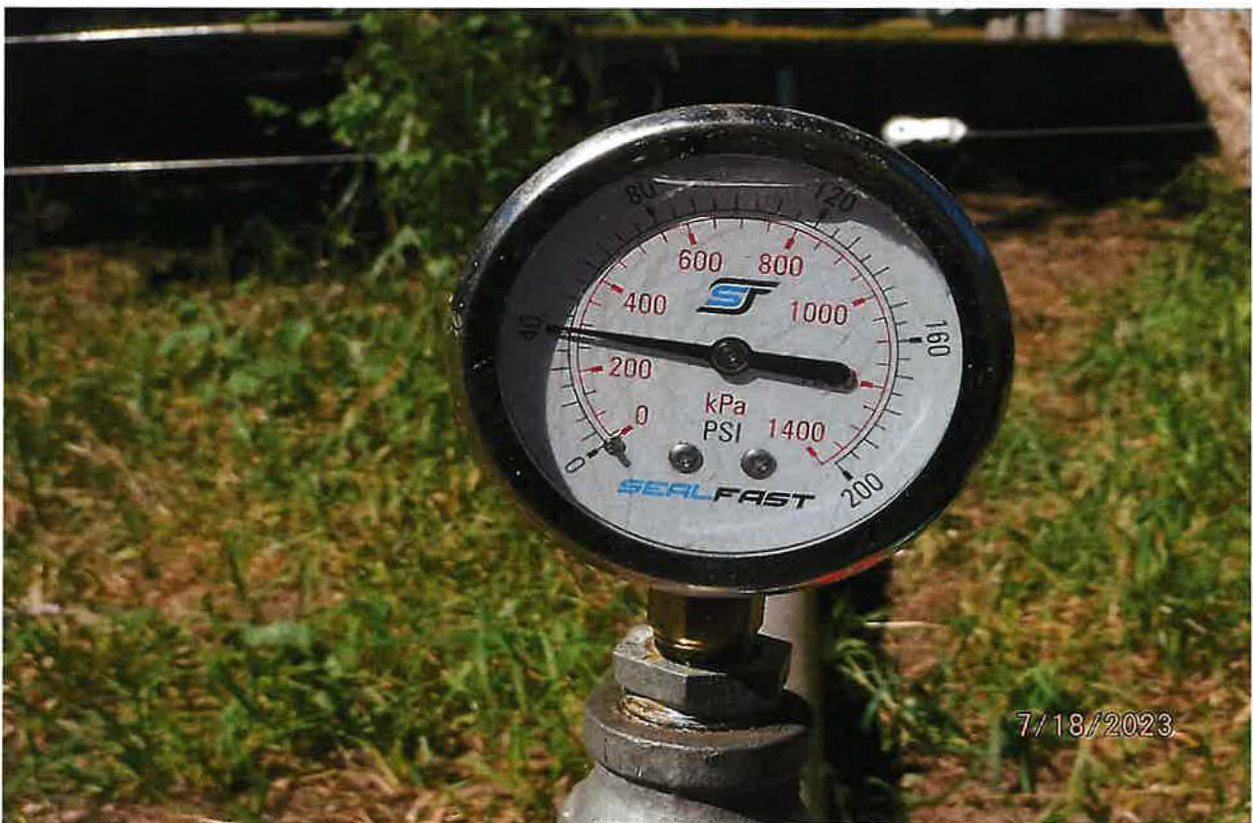
AMT PUMP MODEL 4805-95



DIVERTING WORKS INCLUDE 2" PUMP DISCHARGE TO 5" IRRIGATION MAIN TRUNK TO 3" HAND LINE



PRMFILTRATION FLOW METER INSTALLED; 2ND FIELD EXAM DATE 7/18/2023



40 PSI OPERATING PRESSURE



IRRIGATION POU – BY HAND LINE WITH 5/32ND NOZZLE IMPACT SPRINKLERS



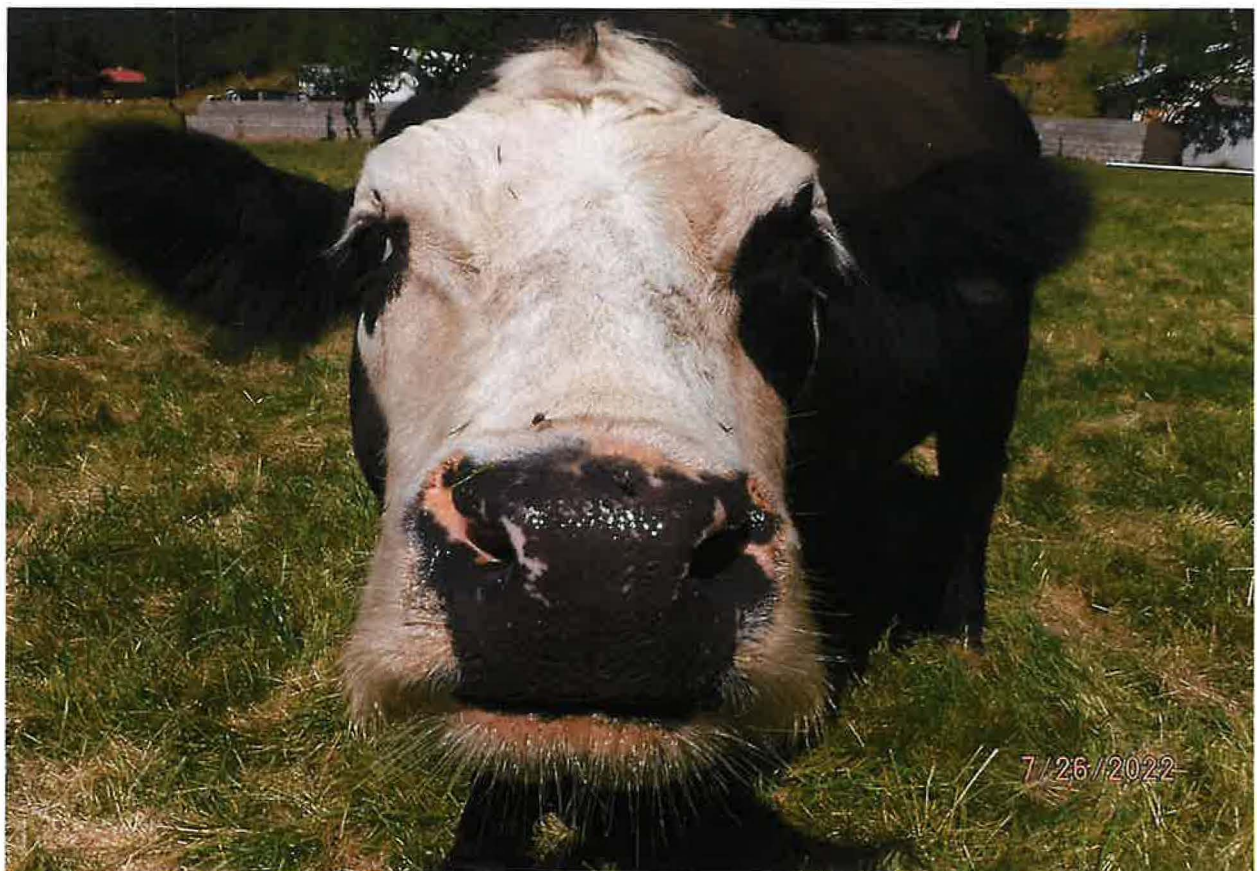


IRRIGATION POU





IRRIGATION POU



IRRIGATION FOR STOCK FEED IN PASTURE