

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9768
Exam Date: 04/20/2021

1. Current Owner:
SCOTT DEMPSEY 500 SNUG HBR SANDPOINT ID 83864-6344 AND/OR
DAWN DEMPSEY 500 SNUG HBR SANDPOINT ID 83864-6344
2. Accompanied by: Scott and Dawn Dempsey
Phone No: 208-290-6703
Address: Same as above
Relationship to permit Holder: Permit holder(s)

3. **SOURCE:**
PEND OREILLE RIVER

Tributary
COLUMBIA RIVER

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
96-7816	PEND OREILLE RIVER	DOMESTIC	LICENSE

Comments: 96-7816 is a larger tract domestic license that uses water from the Pend Oreille River, which overlaps this right's POU. 96-7816 is not associated with the applicant's property, and there is no concern for overlap between rights.

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

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

PEND OREILLE RIVER L1 (SE¼ SE¼), Sec. 26, Twp 57N, Rge 03W, B.M. BONNER County

Method of Determination: GPS. POD is located at -116°39.394, 48°15.191.

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	
57N	03W	26																0.3 L1	0.3

Total Acres: 0.3

Method of Determination: Field exam and 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 Serial No. or Discharge Size
PUMP & INTAKE PIPE	FLOWTEC	1.5			

D. FLOW MEASUREMENTS

1.

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

2. Measurements: at time of exam, water in the Pend Oreille River was at a low level, and the applicant's irrigation system was not able to divert from the river (early spring season). As a result, a flow measurement was unable to be taken.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Flotec 1.5hp pump has a 14 GPM max capacity with the pump located 10 feet above the water intake elevation, operating at 45 PSI. The applicant uses K-Rain #2 nozzle pressurized sprinklers, with the largest zone in operation having 5ea sprinklers. At 40-45 PSI, each #2 nozzle has a flow rate of 2.2 GPM, which results in a diversion rate equal to 5ea sprinklers x 2.2 GPM per sprinkler = 11.0 GPM or **0.02 cfs**, considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.3 \text{ acres} \times 3.0 \text{ afa} = 0.9 \text{ af}$$

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

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 0.9 \text{ af}$$

2. Volume Calculations for Other Uses:

This is a surface water right; there will be no annual or maximum diversion volumes applied to this water right license.

G. NARRATIVE/REMARKS/COMMENTS

Field exam conducted on 4/20/2021 with applicant(s), Scott and Dawn Dempsey, showed water being diverted from the Pend Oreille River for irrigation purposes. At the POD, applicant has installed a Flotec 1.5hp pump which has a 14 GPM max capacity with the pump located 10 feet above the water intake elevation, operating at 45 PSI. The applicant uses K-Rain #2 nozzle pressurized sprinklers, with the largest zone in operation having 5ea sprinklers. At 40-45 PSI, each #2 nozzle has a flow rate of 2.2 GPM, which results in a diversion rate equal to 5ea sprinklers x 2.2 GPM per sprinkler = 11.0 GPM or **0.02 cfs**, considering department rounding standards which is recommended for licensing purposes.

During the exam, the irrigation POU was walked and photographs taken of lawn, planter beds, and small shrubs and trees. The irrigation POU was sketched out on field maps, and during licensing review the Arcmap aerial imagery was used to accurately trace out the POU, which equals 0.3 acres. The annual volume for irrigation equals 0.3 acres x 3.0 afa = 0.9 af, but as this water right's source is from surface water, no volume metrics are applied at time of licensing.

Condition R66 was replaced with condition X31, describing irrigation occurring that is less than 1.0 acre. All other conditions on the permit will be carried forward to licensing. Overlap concerns: 96-7816 is a larger tract domestic license that uses water from the Pend Oreille River, which overlaps this right's POU. 96-7816 is not associated with the applicant's property, and there is no concern for overlap between rights.

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>
IRRIGATION	04/01 to 10/31	0.02 CFS

Totals: 0.02 CFS

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 [Signature] Date 4/21/2021

Reviewer [Signature] Date 4/27/2021

State of Idaho
 Department of Water Resources
Attachment to Field Exam
 96-9768

IRRIGATION system diagram.

03W

57N



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

0 0.035 0.07 0.14 Miles



Flotec FP5172 Pump Sprinkler 1.5Hp



★★★★☆ 370 ratings

Was: ~~\$339.99~~ [Details](#)

Price: **\$259.98**

You Save: \$80.01 (24%)

Brand	Flotec
Color	Black
Material	Thermoplastic
Item Dimensions LxWxH	21.95 x 9.6 x 14.07 inches
Power Source	Corded Electric
Item Weight	1 Pounds
Maximum Flow Rate	67 Gallons Per Minute

- Self-priming, corrosion-resistant, high-capacity sprinkler pump
- Capable of operating up to 30 sprinkler heads; delivers 115/230 motor voltage and offers dual voltage capability
- Constructed of rugged, heavy-duty fiberglass-reinforced thermoplastic. Maximum water temperature: 140 °F (60 °C)
- Self-priming design permits use on automatic sprinkler systems as well as de-watering and water transfer. Maximum pressure : 47 psi
- Measures 6.0-by-8.0-by-9.0 inches (WxHxD); weighs 41.5 pounds; 1-year warranty
- Self-priming, corrosion-resistant, high-capacity sprinkler pump
- Capable of operating up to 30 sprinkler heads; delivers 115/230 motor voltage and offers dual voltage capability

Discharge Pressure PSI (kPa)	FP5172 - 1 / 1/2 HP			
	Height of Pump Above Water in Feet (Meter)			
	5' (1.5)	10' (3)	15' (4.6)	20' (6.1)
10 (69)	67 (2.54)	61 (23.1)	56 (21.2)	46 (17.4)
15 (103)	66 (2.50)	58 (22.0)	55 (20.8)	45 (17.0)
20 (138)	61 (2.31)	56 (21.2)	54 (20.4)	44 (16.6)
25 (172)	55 (2.08)	52 (19.7)	51 (19.3)	43 (16.3)
30 (207)	48 (1.81)	45 (17.0)	44 (16.6)	37 (14)
35 (241)	39 (1.41)	37 (14.0)	34 (12.9)	28 (10.6)
40 (276)	33 (1.25)	27 (10.2)	20 (7.6)	11 (4.2)
45 (310)	18 (6.8)	14 (5.3)	8 (3.0)	
50 (345)				

Pump Model	HP	Volts	Max Load Amp	Branch Fuse Rating- Amp	AWG Min. Wire Size (mm²)	Distance in Feet (Meters) From Motor to Supply				
						0 - 100 (0 - 30)	101 - 200 (31 - 61)	201 - 300 (62 - 91)	301 - 400 (91 - 122)	401 - 500 (123 - 152)
						AWG Wire Size (mm²)				
FPS172	1 - 1/2	115/230	19.9/9.9	20/15	10/14 (5.5/2)	10/14 (5.5/2)	8/14 (8.4/2)	6/12 (14/3)	4/10 (21/5.5)	4/10 (21/5.5)

* Dual element or Fuselron time delay fuses recommended for all motor circuits.

PERFORMANCE																		
MODEL/PC	HP	GPM	VOLT/6	DISTANCE OF PUMP ABOVE WATER	DISCHARGE PRESSURE (PSI)										NPT PIPE SIZE		CARTON DIMS. (IN INCHES)	WT. (LBS.)
					10	15	20	25	30	35	40	45	50	SUCTION	DISCH.			
FP5172 027315100718	1-1/2	67	730/115	5'	67	68	61	55	48	30	33	18	-	1-1/2"	1-1/2"	21.813 x 12.313 x 13.125 24/PALLET	34.1	
				10'	61	58	50	52	45	37	27	14	-					
				15'	50	55	54	51	44	34	20	8	-					
				20'	46	45	44	43	37	28	11	-	-					

14 GPM

5ea K-Rain #2 nozzle size sprinklers have 2.2gpm at 40 psi = $5 \times 2.2\text{gpm} = 11\text{gpm}$
= 0.02 cfs , considering department rounding standards.

Easy Arc Setting

Arc Selection 40° to Continuous 360°
Adjust From Left Start



Intelligent Flow
Technology®



- Reduces distance and flow rate proportionately
- Provides full on/off control

Performance Data

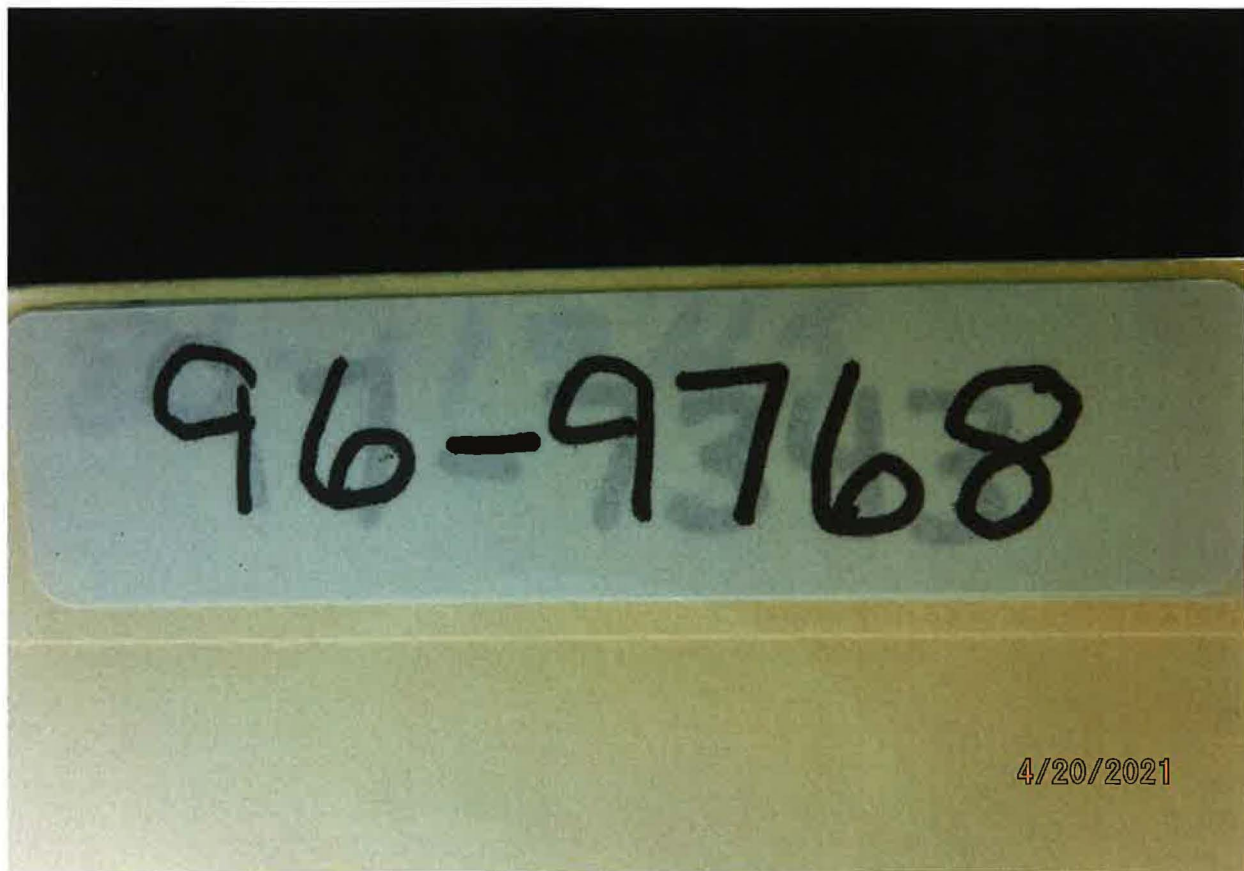
NOZZLE	PRESSURE			RADIUS		FLOW RATE			PRECIP in/hr		PRECIP mm/hr	
	PSI	kPa	Bars	Ft.	M.	GPM	L/M	M ³ /H	■	▲	■	▲
#1	30	207	2,1	30	10,1	1,2	4,5	0,3	0.21	0.25	5	6
	40	276	2,8	31	10,1	1,3	4,9	0,3	0.23	0.27	6	7
	50	345	3,4	31	10,1	1,5	5,7	0,3	0.27	0.31	7	8
	60	414	4,1	32	10,1	1,8	6,8	0,4	0.32	0.37	8	9
#1.5	30	207	2,1	36	11,0	1,5	5,7	0,3	0.22	0.26	6	6
	40	276	2,8	37	11,3	1,8	6,8	0,4	0.25	0.29	6	7
	50	345	3,4	37	11,3	2,0	7,6	0,5	0.28	0.32	7	8
	60	414	4,1	38	11,6	2,2	8,3	0,5	0.29	0.34	7	9
#2	30	207	2,1	35	10,7	1,8	6,8	0,4	0.28	0.33	7	8
	40	276	2,8	35	10,7	2,2	8,3	0,5	0.35	0.40	9	10
	50	345	3,4	36	11,0	2,6	9,8	0,6	0.39	0.45	10	11
	60	414	4,1	38	11,6	2,9	11,0	0,7	0.39	0.45	10	11
#2.5 Pre-installed	30	207	2,1	37	11,3	2,5	9,5	0,6	0.35	0.41	9	10
	40	276	2,8	38	11,6	3,0	11,4	0,7	0.40	0.46	10	12
	50	345	3,4	40	12,2	3,4	12,9	0,8	0.41	0.47	10	12
	60	414	4,1	40	12,2	3,8	14,4	0,9	0.46	0.53	12	13
#3	30	207	2,1	36	11,0	3,0	11,4	0,7	0.45	0.51	11	13
	40	276	2,8	37	11,3	3,4	12,9	0,8	0.48	0.55	12	14
	50	345	3,4	38	11,6	4,0	15,1	0,9	0.53	0.62	13	16
	60	414	4,1	41	12,5	4,4	16,7	1,0	0.50	0.58	13	15
#4	30	207	2,1	37	11,3	4,0	15,1	0,9	0.56	0.65	14	16
	40	276	2,8	39	11,9	4,5	17,0	1,0	0.57	0.66	14	17
	50	345	3,4	39	11,9	5,2	19,7	1,2	0.66	0.76	17	19
	60	414	4,1	40	12,2	5,6	21,2	1,3	0.67	0.78	17	20
#5	30	207	2,1	37	11,3	4,8	18,2	1,1	0.68	0.78	17	20
	40	276	2,8	38	11,6	5,6	21,2	1,3	0.75	0.86	19	22
	50	345	3,4	41	12,5	6,5	24,6	1,5	0.74	0.86	19	22
	60	414	4,1	43	13,1	7,2	27,3	1,6	0.75	0.87	19	22
#6	30	207	2,1	40	12,2	6,0	22,7	1,4	0.72	0.83	18	21
	40	276	2,8	41	12,5	6,8	25,7	1,5	0.78	0.90	20	23
	50	345	3,4	42	12,8	7,5	28,4	1,7	0.82	0.95	21	24
	60	414	4,1	44	13,4	8,4	31,8	1,9	0.84	0.96	21	24
#8	30	207	2,1	38	11,6	7,9	29,9	1,8	1.05	1.22	27	31
	40	276	2,8	44	13,4	9,2	34,8	2,1	0.92	1.06	23	27
	50	345	3,4	45	13,7	10,4	39,4	2,4	0.99	1.14	25	29
	60	414	4,1	46	14,0	11,1	42,0	2,5	1.01	1.17	26	30

Low Angle Performance Data

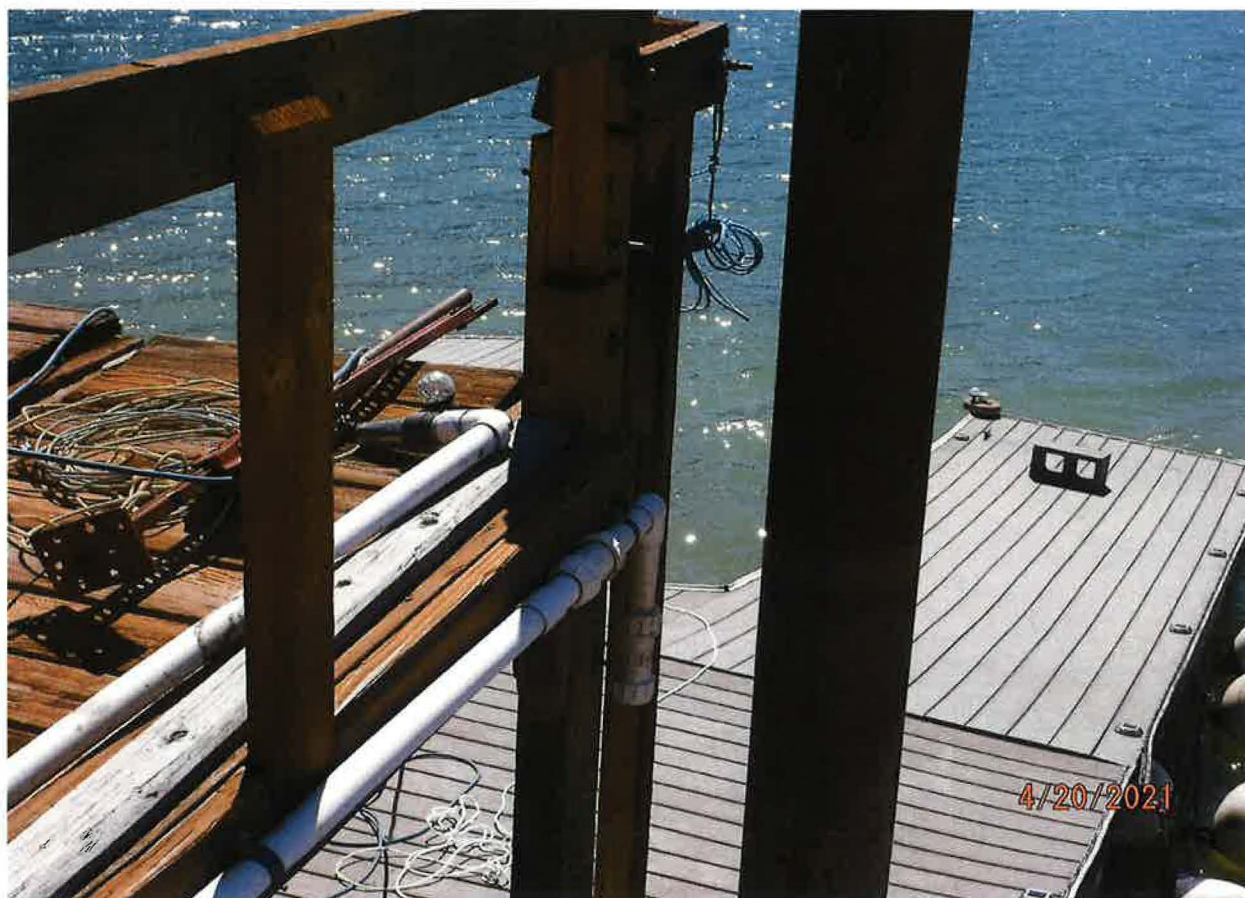
NOZZLE	PRESSURE			RADIUS		FLOW RATE			PRECIP in/hr		PRECIP mm/hr	
	PSI	kPa	Bars	Ft.	M.	GPM	L/M	M ³ /H	■	▲	■	▲
#1.0	30	207	2,1	26	7,9	1,1	4,2	0,2	0.31	0.36	8	9
	40	276	2,8	30	9,1	1,3	4,9	0,3	0.28	0.32	7	8
	50	345	3,4	30	9,1	1,4	5,3	0,3	0.30	0.35	8	9
	60	414	4,1	30	9,1	1,6	6,1	0,4	0.34	0.40	9	10
#1.5	30	207	2,1	27	8,2	1,4	5,3	0,3	0.37	0.43	9	11
	40	276	2,8	28	8,5	1,7	6,4	0,4	0.42	0.48	11	12
	50	345	3,4	31	9,4	1,9	7,2	0,4	0.38	0.44	10	11
	60	414	4,1	30	9,1	2,1	7,9	0,5	0.45	0.52	11	13
#2	30	207	2,1	30	9,1	2,1	7,9	0,5	0.45	0.52	11	13
	40	276	2,8	31	9,4	2,4	9,1	0,5	0.48	0.56	12	14
	50	345	3,4	33	10,1	2,8	10,6	0,6	0.50	0.57	12	14
	60	414	4,1	31	9,4	3,1	11,7	0,7	0.62	0.72	16	18
#3	30	207	2,1	32	9,8	3,0	11,4	0,7	0.56	0.65	14	16
	40	276	2,8	34	10,4	3,5	13,2	0,8	0.58	0.67	15	17
	50	345	3,4	35	10,7	3,9	14,8	0,9	0.61	0.71	15	18
	60	414	4,1	35	10,7	4,3	16,3	1,0	0.68	0.78	17	20

*All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.





FIELD EXAM DATE 4/20/2021



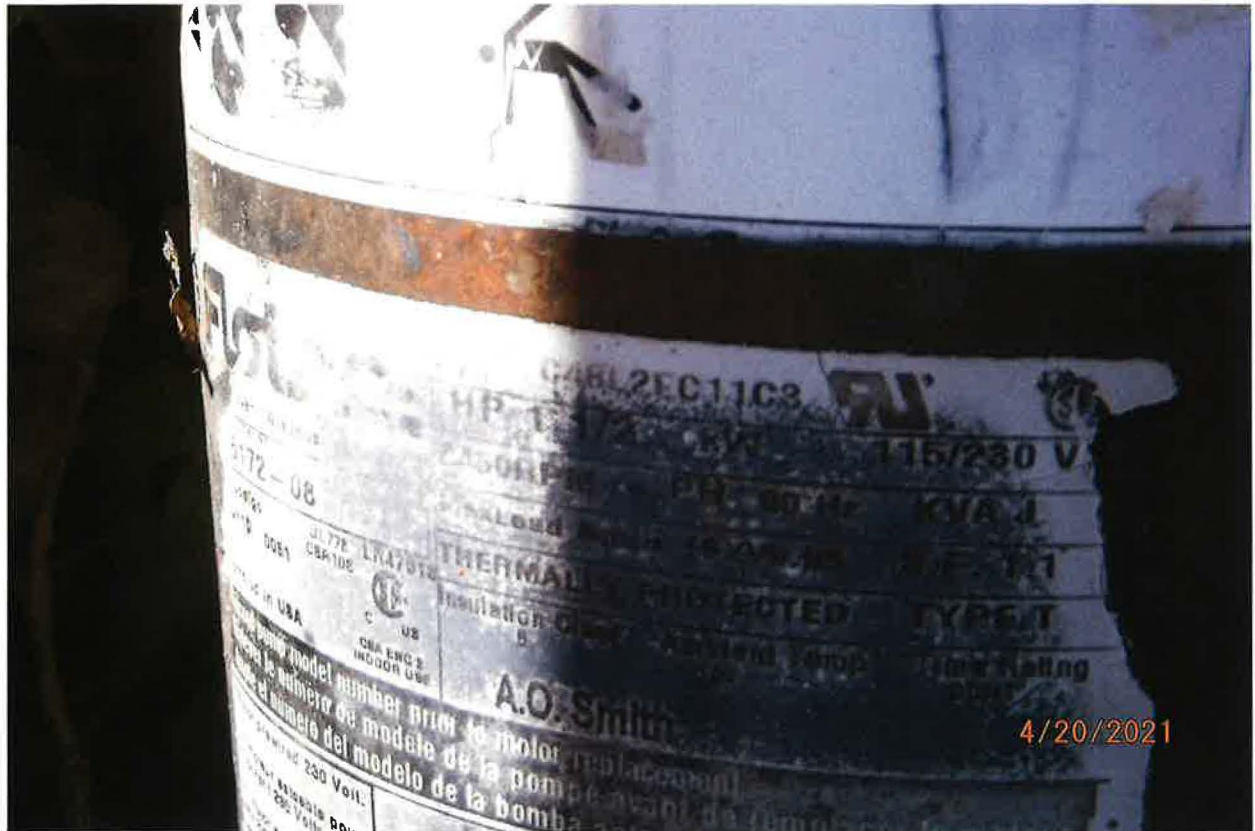
POD – INTAKE PIPE MOUNTED TO DOCK (RIVER LEVEL LOW)



SCREENED INTAKE PIPE AT POD



WATER SYSTEM WORKS – MULTIPLE ZONE STUBS AND 1.5 HP PUMP



1.5 HP FLOWTEC PUMP



IRRIGATION POU



IRRIGATION POU

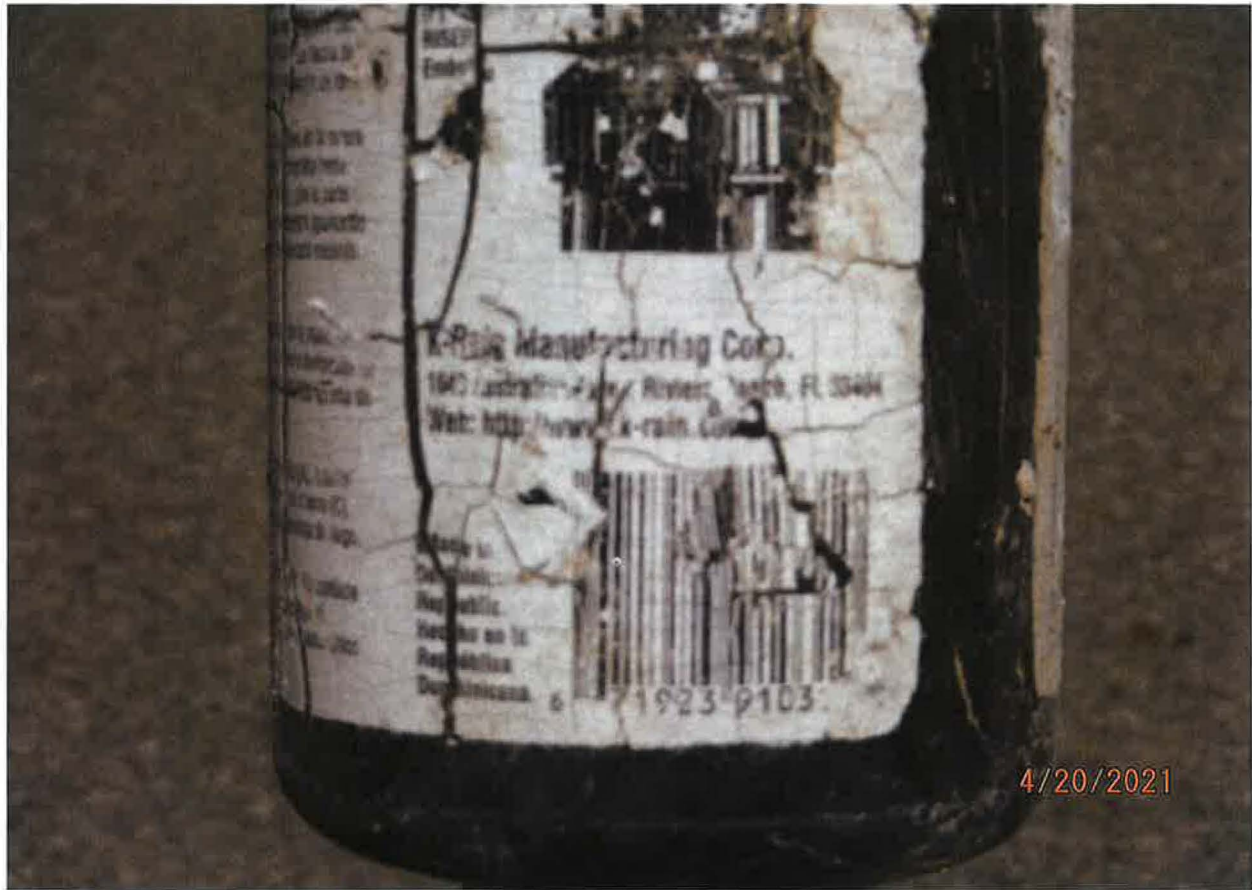


IRRIGATION POU – PRESSURIZED SPRINKLERS



PRESSURIZED SPRINKLERS USED AT POU





EXAMPLE – SPRINKLER HEADS FOR IRRIGATION SYSTEM

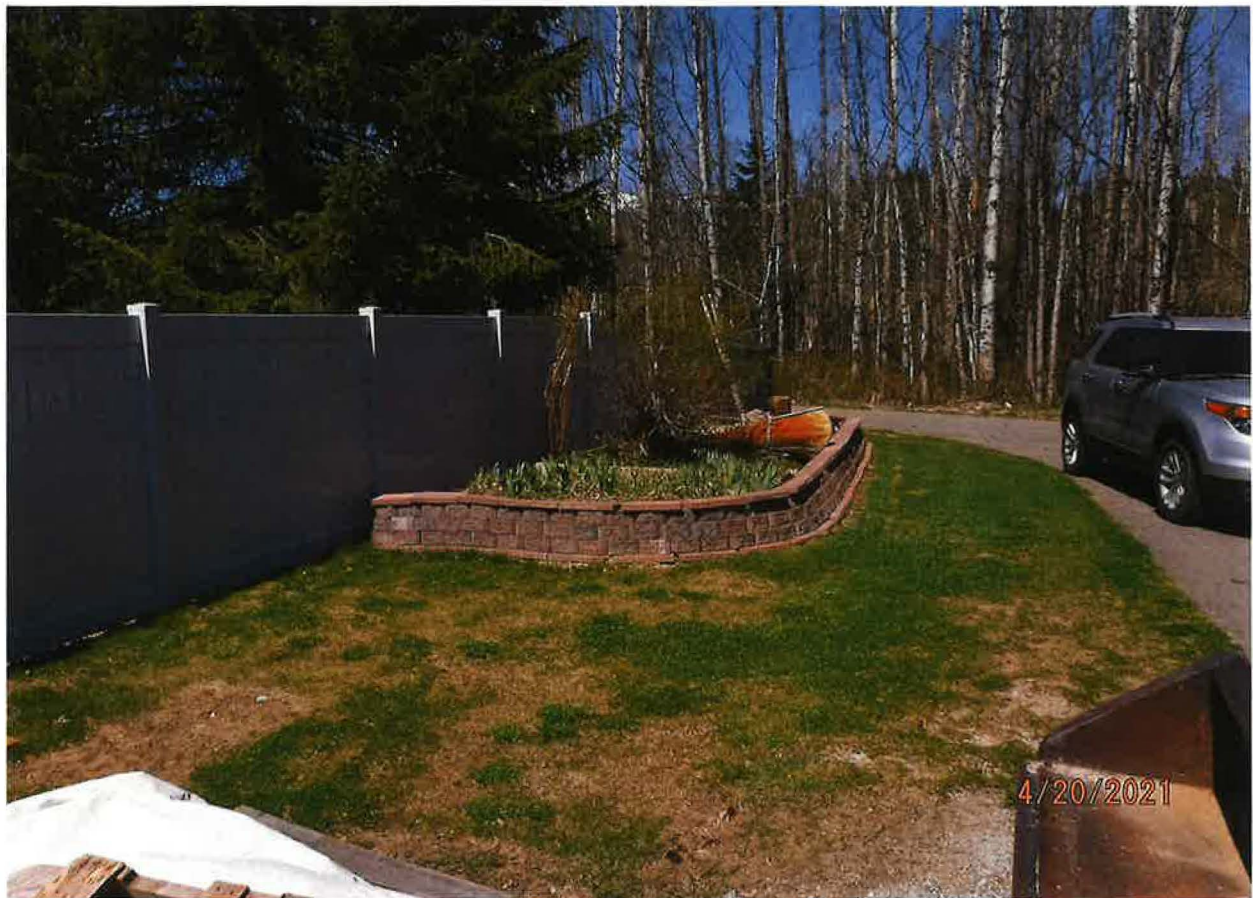


IRRIGATION POU



IRRIGATION POU





IRRIGATION POU



IRRIGATION SYSTEM CONTROL PANEL