

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9709
Exam Date: 07/30/2024

1. Current Owner:
DARRELL MC KENNA PO BOX 21 LACELEDE ID 83841
2. Accompanied by: Darrell McKenna
Phone No: 832-212-1930
Address: Same as above
Relationship to permit Holder: Permit Holder

3. **SOURCE:**
PEND OREILLE 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 Overlap
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 L3 (NE¼ SE¼), Sec. 20, Twp 56N, Rge 03W, B.M. BONNER County

Method of Determination: GPS; POD is located at -116°16.5842, 48°11.1131.

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	
56N	03W	20													2.2 L3				2.2

Total Acres: 2.2

Method of Determination: Beneficial use 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
SUBMERSIBLE PUMP	CENTRIPRO	1	Unknown - AQUAVAR SOLO2 pump controller	GOULDS	2-INCH

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
FLOWMETER	VELOCITY	PRM	M19-000385	M19-000385	2-INCH	UNKOWN

2. Measurements: I timed one-minute intervals observing a PRM flanged velocity style flowmeter while one pressurized zone and one frost-free hydrant were actively irrigating; the resulting flow measurement equaled 32 gpm or **0.07 cfs** considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: water system installed flowmeter derived a flow rate of 32.0 gpm or 0.07 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.2 \text{ ac} \times 3.0 \text{ afa} = 6.6 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.07 \times 214 \times 1.9835 = 29.7 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 6.6 \text{ af}$$

2. Volume Calculations for Other Uses:

- The irrigation beneficial use from the Pend Oreille River water source is exempt from the volume reporting requirements in accordance with IDAPA 37.03.02, Section 035.

G. NARRATIVE/REMARKS/COMMENTS

I conducted a beneficial use field exam on 7/30/2024 with the Permit Holder, Darrell McKenna, which showed water being diverted from the Pend Oreille River for irrigation purposes. At the POD, diverting works include screened intake housing a Goulds 1 hp submersible pump hung off a dock. During the exam Mr. McKenna forwarded photographs of the diverting system at low pool water levels to fully illustrate the pumping system. A 2-inch pipeline routes along the dock until it reaches the shore and continues buried to a co-located pump shed. A flange mounted velocity style PRM brand flowmeter is installed in-line just before the shoreline. A Centripo Aquavar Solo 2 3AS30 model pump motor controller is located within the small pump station.

I took flow measurements using the PRM flowmeter and observed 32 gpm on average resulting in **0.07 cfs** considering department rounding standards, which I'm recommending for licensing purposes as the maximum diversion rate. The Permit authorized development of up to 12.0 acres with a corresponding diversion rate of 0.24 cfs. The observed irrigating acreage equals 2.2 acres with a large portion of the parcel not being actively watered by the irrigation system. The Permit Holder is limited by irrigation acreage for what I can recommend with $2.2 \text{ ac} \times 0.03 \text{ cfs per acre} = 0.07 \text{ cfs}$ considering

Department rounding standards, which is consistent with the flow measurements I observed during the exam with one sprinkler zone and one hose to tripod sprinkler actively irrigating.

During the exam Mr. McKenna and I walked the irrigation POU cataloging irrigation practices using field maps to sketch the extent of the water system. Irrigation practices incorporate 12 zones of pressurized rotary sprinklers with 8 hunter model heads per zone for lawn and landscape watering around the home and shop. Additionally, multiple frost-free hydrants are service connected to the main irrigation pipeline and hose to tripod sprinklers are used to water a large river frontage grass area and a buffer zone between parcels on the northern extent of the property. Photographs clearly illustrate the irrigation practices as well as observing active irrigation during the exam. Mr. McKenna provided water consumption data demonstrating the annual volume usage from 2019 through 2023, which I've added to the file for reference. Recorded volume reporting shows the irrigation practices don't exceed 3.0 afa as authorized, but as this system uses a surface water source there are no annual/maximum diversion rates applied to the face of the license. Condition R66 is recommending for licensing describing the 0.03 cfs diversion rate per acre and 3.0 afa per acre diversion volume limits.

There is a cased groundwater well on the property; I inquired about water usage from the well and Mr. McKenna asserts the well serves in-home use only, but the irrigation is preferred to be used by the surface water system to conserve well water. A claim has been filed in the Clark Fork Pend Oreille River Basin Adjudication, No. 96-10426 for domestic use, but as the two systems use different water sources and have separate conveyance systems there is no concern for overlap between the two Rights. There is a shallow ponding located between two shop structures in the Northwest region of the parcel and Mr. McKenna asserts this is a surface runoff water collection point in a field that isn't part of the irrigation POU and appears to be hydraulically connected to the river level to some extent. No water right filing is required for this runoff pond.

I've made the following conditions of approval changes and recommendations regarding licensing this Permit:

- Removed 26A – Permit Holder complied with the condition.
- Replaced R62 with R66 to accurately describe rate & volume allowances per acre for small scale irrigation of 5 acres or less vice the 12 acres applied for.
- Removed 01M – for this Permit the condition was required as it contemplated over 5 acres of irrigation; 2.2 acres have been developed for irrigation and a flowmeter is installed. 01M is not applicable to the water system as developed.
- Removed 227 – the POD diverts from the river upstream from Albeni Falls Dam and the minimum stream flow Right 96-8730 is only applicable to diversion downstream from the dam.
- All other conditions on the Permit are being carried forward to the license.

There are no overlapping water right concerns toward licensing 96-9709.

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	0.07 CFS

Totals: 0.07 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

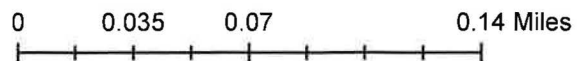
Luke Bates – Sr Water Resource Agent

Field Examiner's Name *F. A. Bates* Date *10/25/2024*

Reviewer *Chen Buf* Date *3/25/2025*

This map depicts the IRRIGATION system diagram.

03W



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96-9709

PERMIT HOLDER SUPPLIED PHOTOS (TAKEN OFF SEASON WITH ALBENI DAM NOT HOLDING
WATER IN THE PEND OREILLE RIVER)



SUBMERSIBLE PUMP ENCLOSED IN PVC PIPE WITH SCREEN



PUMP AND PIPELINE AFFIXED TO DOCK



2-INCH PIPELINE ROUTES BENEATH DOCK UNTIL SHORELINE WHERE IT IS BURIED TO
IRRIGATION SYSTEM



FLOWMETER INSTALLED AS PART OF DIVERTING WORKS

9:30

80

< Notes



Water Consumption dock West wing

2019--275,000 gals

2020--238,300 gals Oct 1st finish

2021 --June 2 start up. 2061 lake level. Ending on Sept 28th final meter reading 678200 Season consumption 439900 gals

2022--June 14 th lake level at 2061.

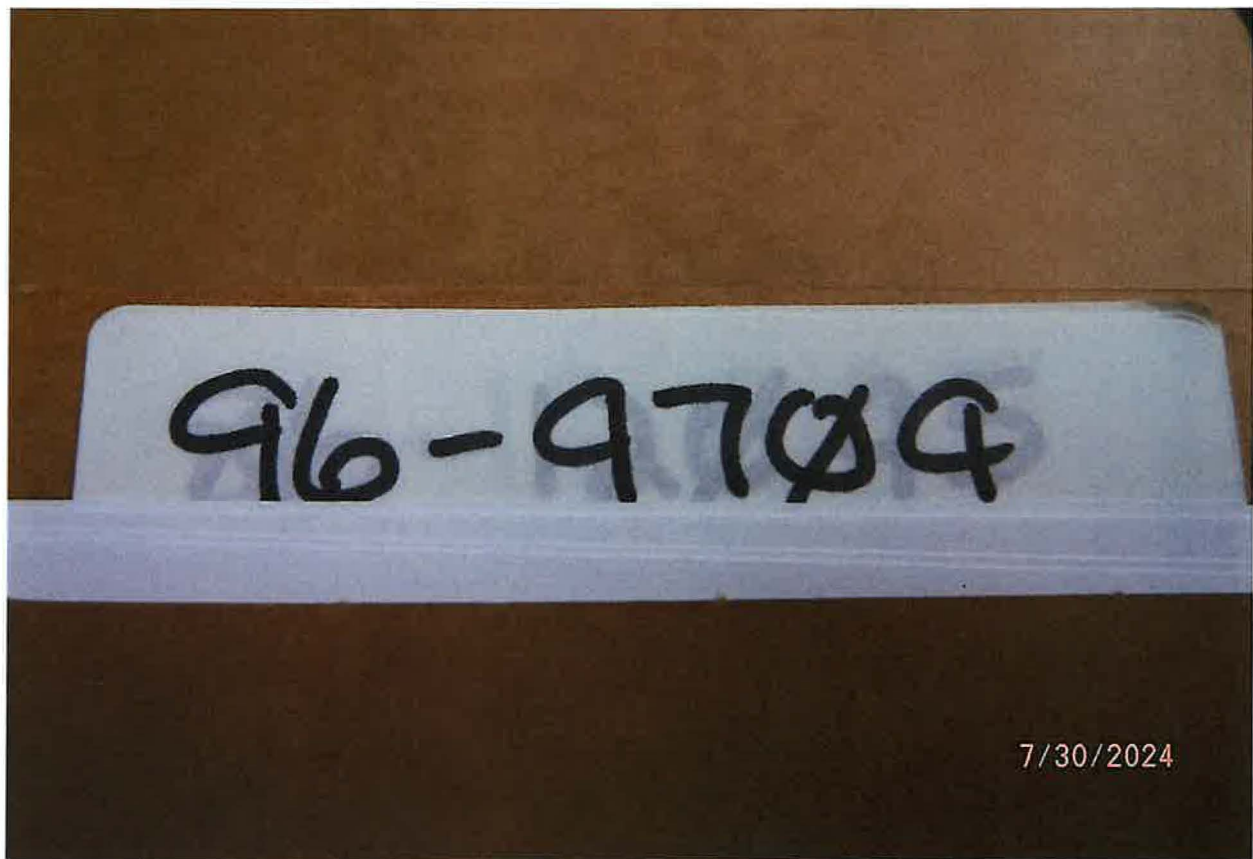
Not home to start pump. Started pump July 2nd. Started dropping Lake Level Sept 19th. Final meter reading 1006200-season consumption 328,000 gals Oct2, 2022.

2023--Lake level 2061 started pumping June 6th. Pump shut off Sept 21st. Final meter reading 1396100. 389,900 gals total for season.

2024--Start June 24, 2024.



PERMIT HOLDER TRACTED ANNUAL VOLUME THROUGHOUT THE PERMIT'S DEVELOPMENT PERIOD



BENEFICIAL USE FIELD EXAM DATE 7/30/2024



POD – SCREENED 1-HP GOULDS SUBMERSIBLE PUMP JACKETED IN 4-INCH PVC PIPE



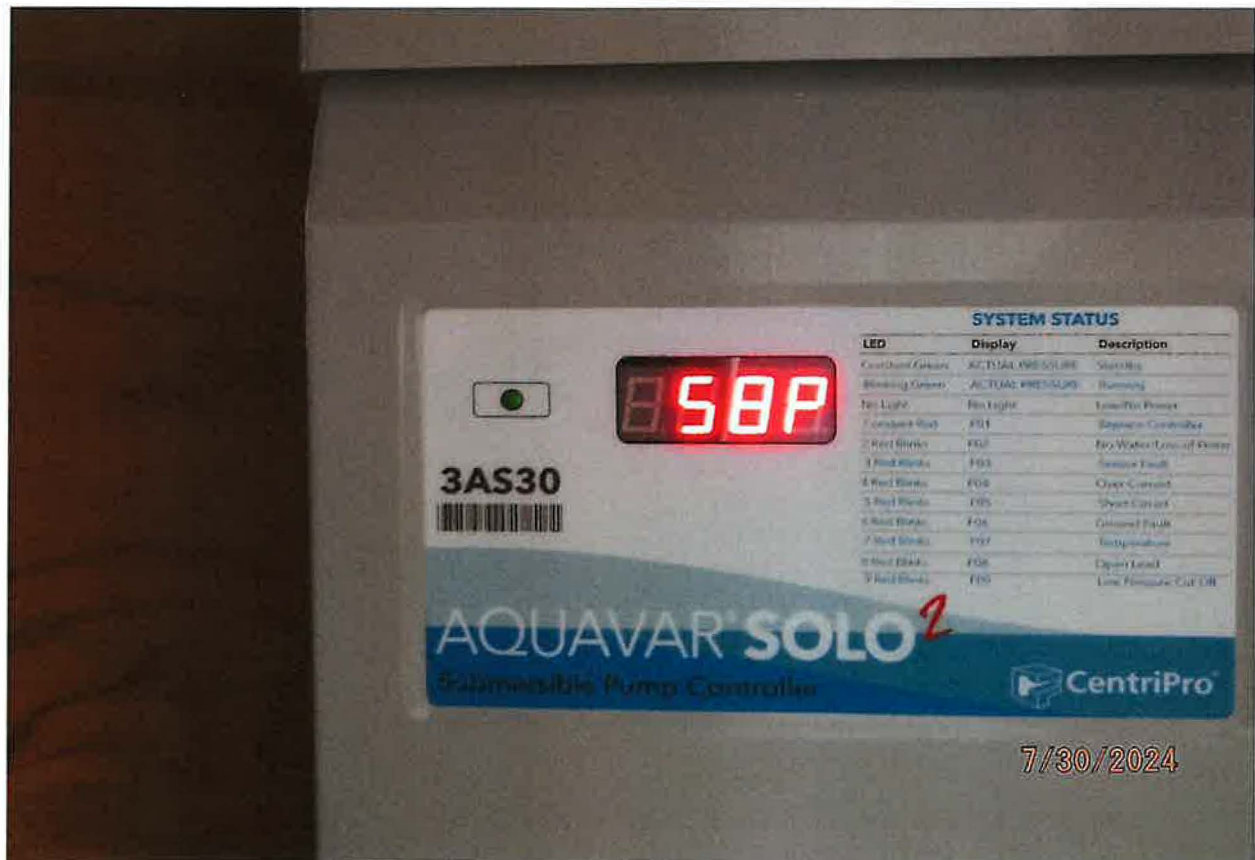
PRM - FLOWMETER INSTALLED IN-LINE BENEATH DOCK PRIOR TO SYSTEM'S PRESSURE POT



PRESSURE POT INSTALLED ON DIVERTING WORKS – LOCATED BENEATH DOCK AT SHORELINE



PUMP STATION & RED HANDLED FROST-FREE HYDRANT LOCATED BEACHFRONT IN THE IRRIGATION POU



DIVERTING WORKS – AQUAVAR SOLO2 MODEL 3AS30 PUMP MOTOR CONTROLLER; SYSTEM OPERATING AT 58 – 65 PSI



AMPED CONTROLS – CONTRACTOR WHO INSTALLED THE WATER SYSTEM; 1 HP PUMP



EMERGENCY SHUTOFF PANEL



IRRIGATION POU – LAWN SPACE ALONG RIVER, IRRIGATION BY HOSE & PORTABLE SPRINKLERS & PRESSURIZED SPRINKLERS





IRRIGATION POU – RIVER FRONT IRRIGATION



IRRIGATION POU – NOTABLE DIFFERENCE BETWEEN IRRIGATED ACREAGE AND NON-IRRIGATION ACREAGE



IRRIGATION POU





IRRIGATION POU





IRRIGATION POU

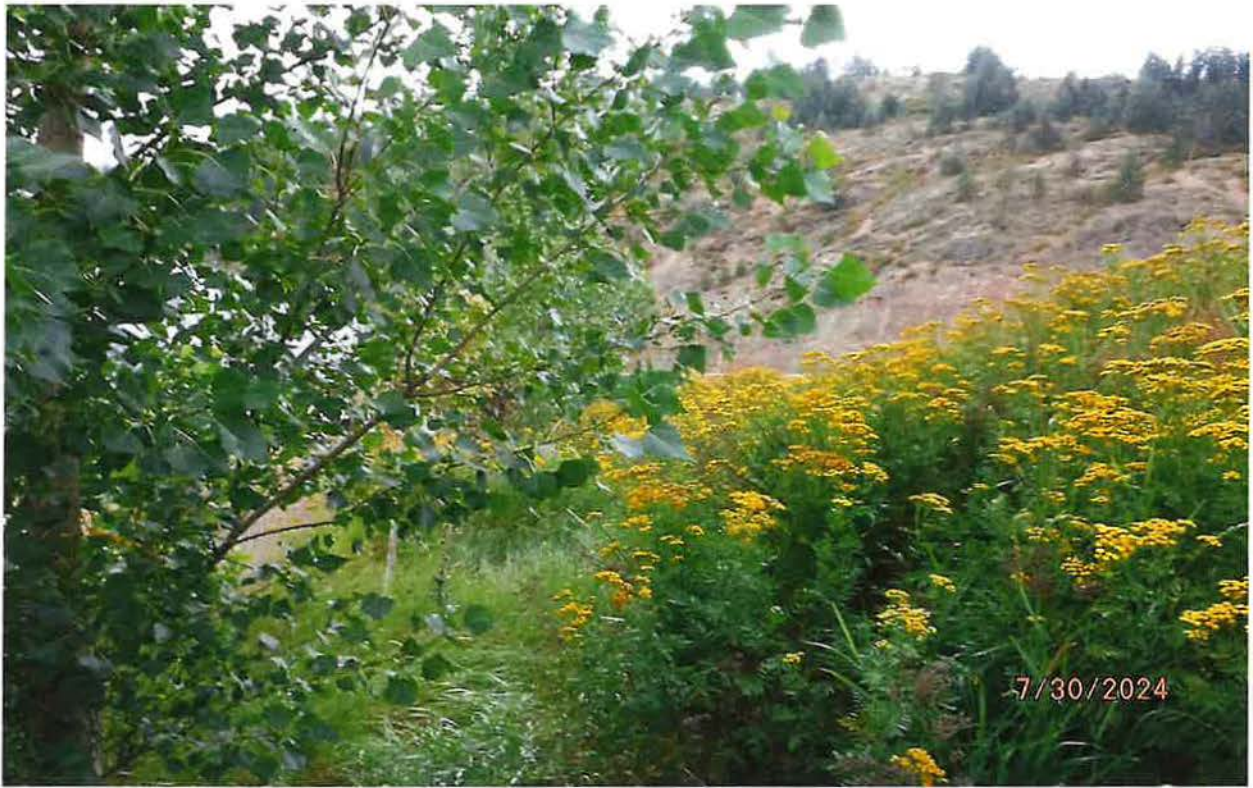




EXAMPLE – PRESSURIZED SPRINKLER – HUNTER BRAND



IRRIGATION POU – BAND OF TREES AND SHRUBS ALONG NORTHERN EXTENT OF POU; 4EA FROST-FREE
HYDRANTS TO SOAKER HOSE IRRIGATION



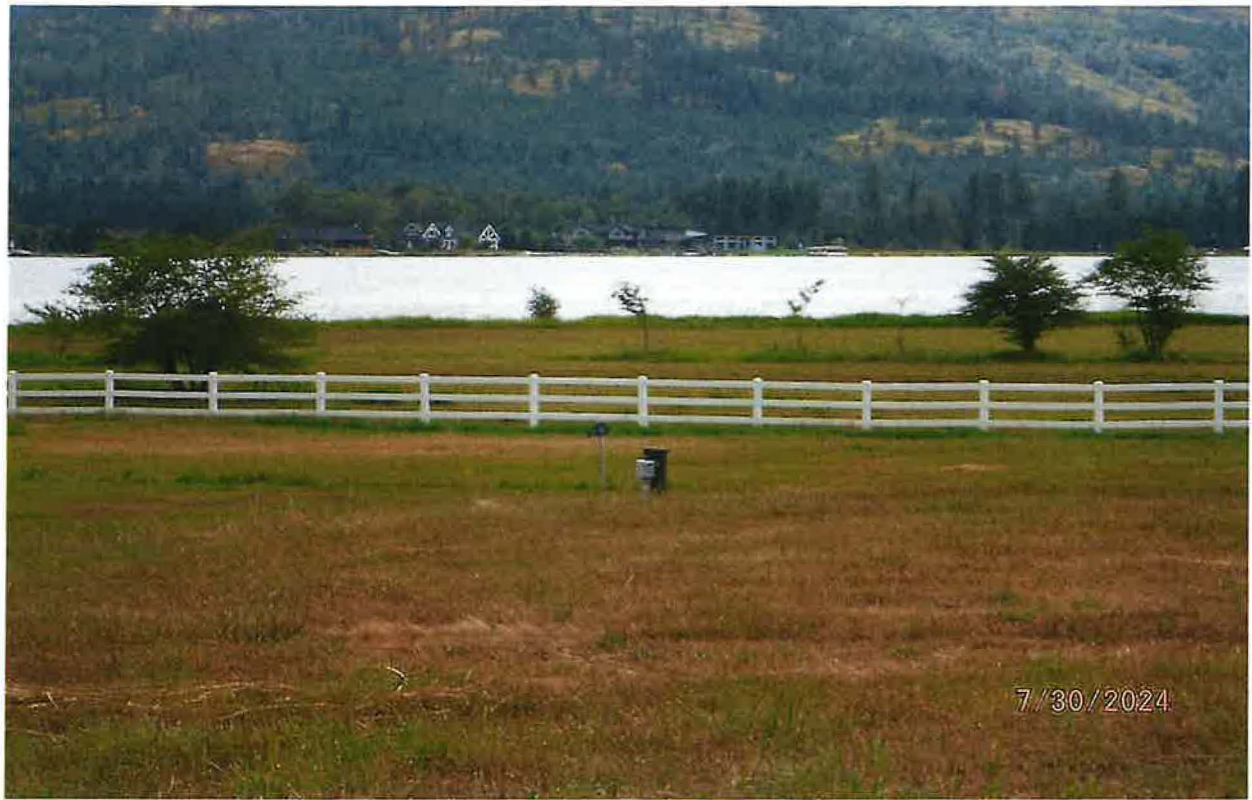
IRRIGATION POU





IRRIGATION POU





GROUNDWATER WELL LOCATED ON PARCEL SOUTH OF RESIDENCE; DEFERED DOMESTIC IN-HOME AND EXTERNAL WATER USING 'BLUE' HANDLED FROST-FREE HYDRANTS. THE GROUNDWATER SYSTEM IS SEPERATE FROM THE 'RED' HANDLED HYDRANT SURFACE WATER IRRIGATION SYSTEM.