

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9814
Exam Date: 08/14/2023

1. Current Owner:
MICHELE WILSON 758 MEADOWOOD RD SANDPOINT ID 83864-4953 AND
MIKE J HAYDEN 758 MEADOWOOD RD SANDPOINT ID 83864-4953
2. Accompanied by: Brian Domke
Phone No: 208-610-9853
Address: PO Box 711 Sagle, ID 83860
Relationship to permit Holder: Applicant's representative.

3. **SOURCE:**
UNNAMED STREAM

Tributary
GOLD CREEK

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
96-9814	Unnamed Stream	Irrigation	Notice of Claim filed in CFRBA based on Permit.

Comments: Applicants filed a Notice of Claim, No. 96-9814, based on the current permit. The priority date for the claim is the same as the permit = 7/6/2020. While the claim likely will be recommended as this permit is licensed, I have added condition 928 that stipulates if the claim is decreed as claimed this permit shall be reduced to negate any redundancy between the two rights. A second Notice of Claim, No. 96-13007, was filed by the applicants but the status indicates the claim has been withdrawn. 96-13007 associates with a groundwater well for domestic use, which is a separate use that does not result in concern for overlap between the two water systems.

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

Water Right No.	Source	Purpose of Use	Basis
96-9814	Unnamed Stream	Irrigation	Notice of Claim filed in CFRBA based on Permit.

Comments: Due to the claim and permit having the same water right number, I have not included condition F06 for licensing purposes due to the duplicity in WR number.

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

UNNAMED STREAM SE¼ NW¼, Sec. 32, Twp 59N, Rge 01E, B.M. BONNER County

Method of Determination: GPS; POD is located at -116°21.9567, 48°25.5125.

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	
59N	01E	32								2.0									2.0

Total Acres: 2.0

Method of Determination: Beneficial use field examination 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 Part No.	Pump Make	Pump Serial No. or Discharge Size
Centrifugal Pump	Leeson Electric	3	U6K34DC35A		Single phase, 60 Hz, 3450 rpm pump

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 buried PVC pipe to shop is less than 2" diameter. The diverting pump pushes water directly to a 1,500-gal molded storage tank with graduated lines that enabled a time-based fill measurement to be accomplished. I observed 100 gal filled in 73 seconds, which equates to 82 gpm +/- 10 gpm deviation based on in-tank waves during filling.

E. FLOW CALCULATIONS

Measured Method:

- Graduated marked tank filled and timed to determine a flow measurement. 73 seconds to fill 100 gallons equals (60 sec per min x 100 gal) / 73 sec = 82.2 gpm.
- The water system installer had marked the tank with fill times using a sharpie marker that illustrates it takes 21 minutes to fill the 1,500-gal tank. 1,500-gal / 21 min = 71.4 gpm. This is relatively close to the measurement above considering a +/- 10-gal deviation used to account for waves within the tank during filling. 71.4 gpm = 0.16 cfs

The Department standard diversion rate authorized for 2.0 ac = **0.06 cfs** based on 0.03 cfs per acre.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.0 \text{ ac} \times 3.0 \text{ afa} = 6.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.06 \text{ cfs} \times 214\text{-days} \times 1.9835 = 25.5 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 6.0 \text{ af}$$

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.

G. NARRATIVE/REMARKS/COMMENTS

Beneficial use field exam conducted on 8/14/2023 with the applicant's representative, Brian Domke, showed unnamed stream water being diverted for irrigation purposes. At the POD, a screened flexible intake pipe routes to a 3 Hp Leeson Electric single phase centrifugal pump. A flexible discharge pipe connects to buried PVC pipes which route approximately 300 feet East to a covered car port that houses water system conveyance components. I was unable to take flow measurements from the POD due to inadequate pipe requirements.

Water inflows from the diverting works to a 1,500 gal graduated molded storage tank prior to distribution to the irrigation system. I took a timed fill measurement which derived 100 gallons took 73 seconds to fill. There were waves inside the tank due to the fill process which made evaluating the measurement caused need for deviation to be added to the resulting flow rate. 100 gal in 73 seconds equals 82 gpm and I've assessed a +/- 10 gpm deviation. In addition to the physical timed measurement the water system installation contractor was present for the field exam to operate the system. At time of installation, the tank was timed to fill with resulting values of 1,500 gal in 21 minutes, which equals 71.4 gpm. This value is comparable to the physical timed measurement I calculated considering deviation and I believe the contractors fill rate is more accurate as the tank was full at conclusion of their measurement. 71.4 gpm equals 0.16 cfs, which is significantly larger than the permit approved diversion rate of 0.12 cfs.

Irrigation acreage observed at time of field exam equals 2.0 acres. The department standard diversion rate for small scale irrigation (less than 5.0 ac) is 0.03 cfs per acre. I'm only able to recommend up to the department standard and have recommended an annual & maximum diversion rate of **0.06 cfs** for licensing purposes. The applicant's contractor stated the pump was oversized to gain head pressure, and manual lever actuated ball valves are installed on the intake pipe prior to entering the 1,500-gal storage tank. The ball valve can be adjusted to restrict inflow to the tank to meet the 0.06 cfs (27 gpm) flow rate that is recommended for licensing. This enables the applicants to mitigate enlargement by diversion rate concerns I have for the current water system. I note the pump was oversized as the applicants work in the future to apply for additional water rights for added irrigation on the south pasture not covered by this right at time of licensing review.

The conveyance system incorporates a 1 Hp Red Lion centrifugal pump to irrigation from the 1,500 gal 24-hr impoundment tank. There are buried PVC pipe runs routed throughout the irrigation POU, which were drawn out on field maps during the exam with assistance from the system installer. Short pipe runs route to irrigation risers with hose bib connections along two fenced orchard plots on the northern portion of the irrigation POU. A long pipe run routes south and then east along the southern portion of the irrigation POU with riser pipes to hose splitters being used to irrigation with tripod sprinklers for lawn, orchard trees, garden, greenhouse growing (only within the irrigation season of use), and pastures for stock feed.

During the exam it was identified the applicants had been out of town for much of the current season but had actively irrigated in the 2020 – 2021 irrigation season of use. I used field maps to sketch out the irrigation POU during the exam, and during licensing review ArcMap aerial imagery was used to accurately trace out the POU consisting of 2.0 acres irrigation. Active irrigation was set up and watering the southeast corner of the irrigation POU at my request to illustrate the furthest distance from the POD can be watered using the system. The annual volume for 2.0 ac irrigation equals 6.0 af but as the system uses a surface water source there is no annual or maximum diversion volume applied to the face of the license. The applicant is limited to 0.03 cfs and 3.0 afa per acre for irrigation of the POU as designated by condition R66 on the license.

All conditions on the permit have been carried forward to licensing. Additionally, I've added condition X59 to describe the POD being in a named subdivision: parcel RP RP049010000010A, Lot 1 Dearmin Meadows Subdivision. Condition 928

was added based on the Notice of Claim No. 96-9814 submitted by the applicant as discussed above on PG1. Aside from the applicant's claim filed on the active permit there are no overlapping concerns for this water right. The claim if decreed will enable the applicants to secure a court decree vice the current recommendation for licensing and subsequent license approval.

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	0.06 CFS

Totals: 0.06 CFS

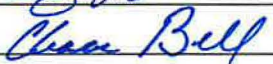
2. Recommended Amendments

☐ 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 -

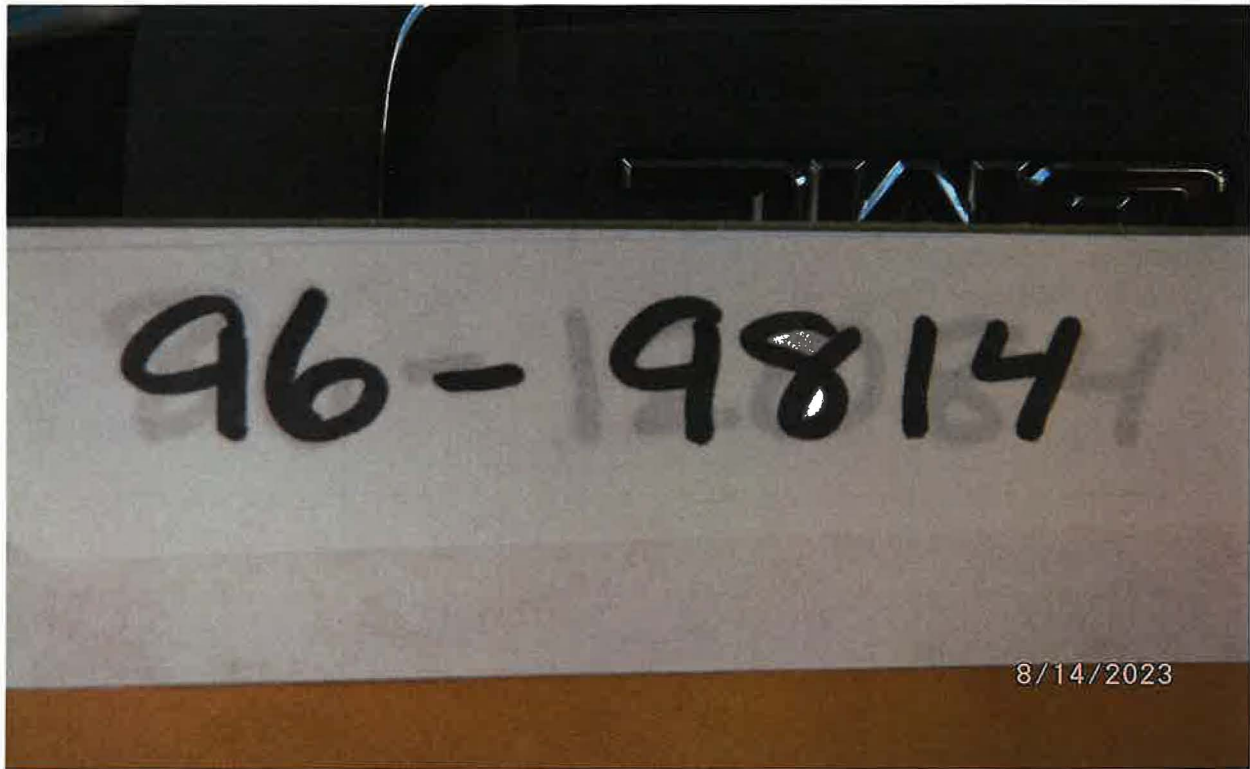
Field Examiner's Name  Date 11/29/2023

Reviewer  Date 5/24/24

This map depicts the IRRIGATION system diagram.

01E





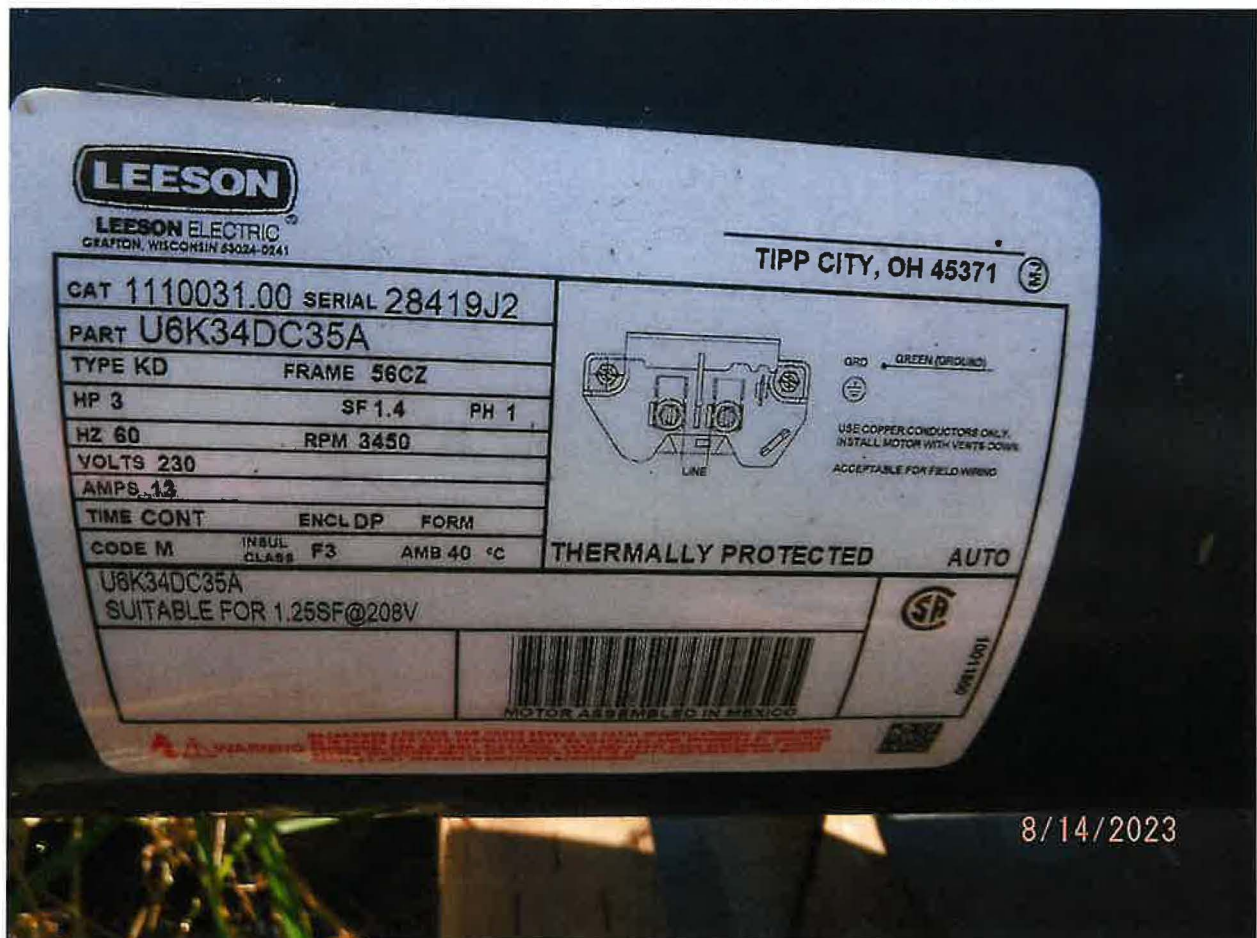
BENEFICIAL USE FIELD EXAMINATION DATE 8/14/2023



POD – SCREENED FLEXIBLE INTAKE HOSE LOCATED IN CREEK



DIVERTING WORKS – 3 HP LEESON ELECTRIC TRANSFER PUMP





BURIED PIPELINE TO SHOP (GRASS TRAIL) WITH PART OF IRRIGATION POU (HOOP STRUCTURES)



CONVEYANCE SYSTEM FOR IRRIGATION INCORPORATES BURIED PVC PIP AND BALL VALVES TO REGULATE FLOW AT EACH IRRIGATION ZONE



1,500 GAL STORAGE TANK WITH 1 HP RED LION TRANSFER PUMP TO IRRIGATION SYSTEM



INFLOW BLACK PIPE FROM CREEK DIVERSION TO TANK – BALL VALVE TO REGULATE FLOW



1 HP RED LINE TRANSFER PUMP WITH PRESSURE POT USED AS DISTRIBUTION PUMP FOR IRRIGATION SYSTEM





IRRIGATION POU – PIPELINE LOCATED IN FIELD SECTION SOUTHERN PORTION OF POU



IRRIGATION POU – RISER PIPES TO HOSE AND SPRINKLER ATTACHEMENTS LOCATED AT INTERVAL ALONG IRRIGATION TRUNK LINE(S)



IRRIGATION POU – MULTIPLE HOSE TO TRIPOD SPRINKLERS ALONG SOUTHERN EXTENT OF POU



IRRIGATION POU – GRASS FENCED IN FIELD ALONG SOUTHERN EXTENT OF POU



IRRIGATION POU – GREEN HOUSE USED ONLY DURING IRRIGATION SEASON OF USE GROW PERIOD





EXAMPLE – IRRIGATION POU WATER CONVEYANCE SYSTEM – RISER PIPES WITH THREE HOSE BIBS





IRRIGATION POU



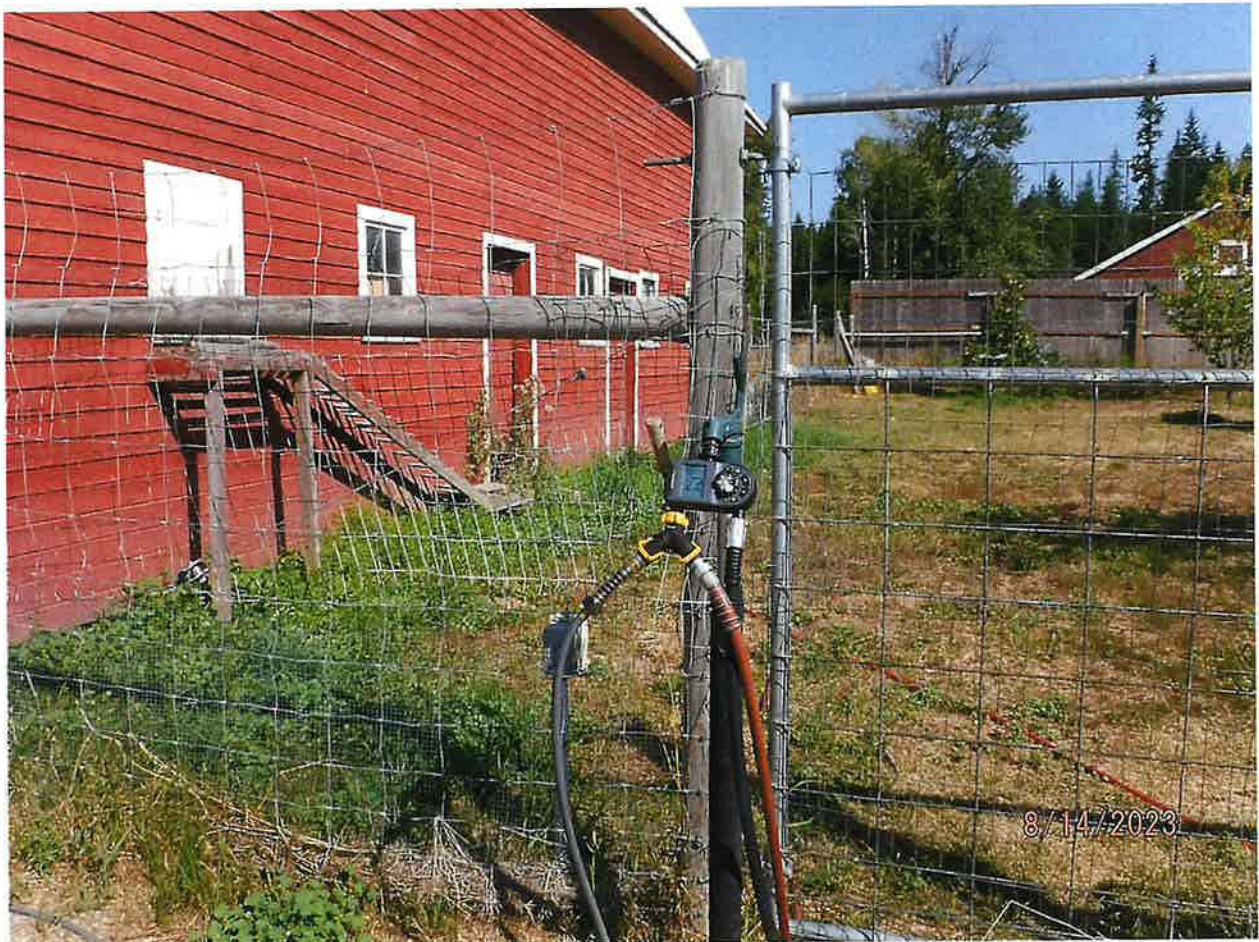


IRRIGATION POU





IRRIGATION POU – ORCHARD TREE AREA





IRRIGATION POU



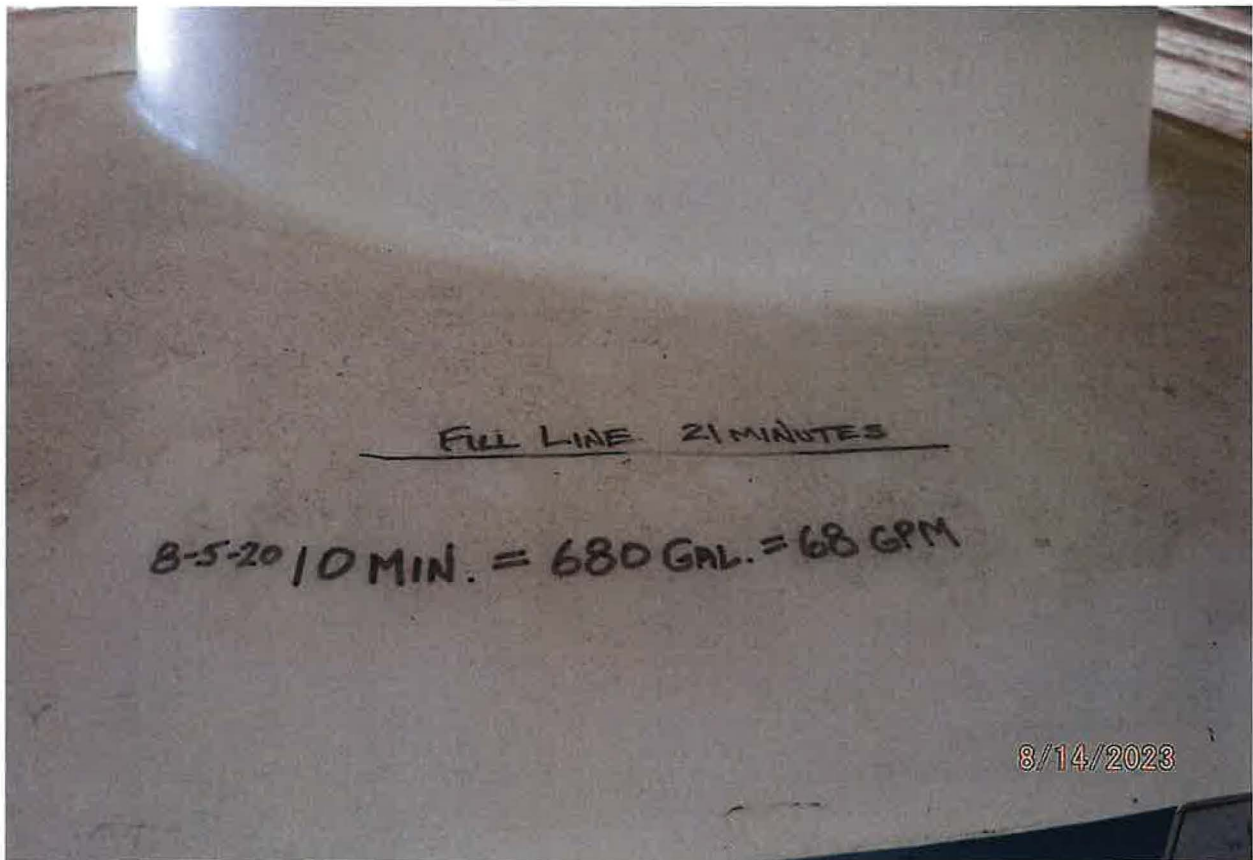


IRRIGATION POU – LAWN SPACE NOT ACTIVELY IRRIGATED DUE TO EXTENDED ABSENCE FROM PROPERTY THIS YEAR; LAWN SPACE WAS IRRIGATED DURING DEVELOPMENT PERIOD OF PERMIT.





IRRIGATION POU – SPRINKLER RISERS TO IMPACT SPRINKLER HEADS – NW CORNER OF POU



APPLICANT'S CONTRACTOR PROVIDED PUMP TESTS USING THE 3 HP PUMP.

TO REACH FULL LINE = 21 MN; 1,500 GAL / 21 MIN = 71.4 GPM.