

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-12641
Exam Date: 04/16/2024

1. Current Owner:
HIGHLANDS PARK HOMEOWNERS ASSN PO BOX 133 HOPE ID 83836-0133
2. Accompanied by: Frank Roberts and Mark Haigh
Phone No: 208-699-2712
Address: 333 Deerhaven Dr, Hope ID 83836 (Frank) and 273 Deerhaven Dr, Hope ID 83836 (Mark)
Relationship to permit Holder: HOA President (Frank) and HOA member (Mark)

3. **SOURCE:**
GROUND WATER

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
96-4416	Domestic	Lake Pend Oreille	Statutory Claim
96-9458	Irrigation, Fire Protection	Lake Pend Oreille	License with Notice of Claim filed in the CFRBA

Comments: Statutory Claim 96-4416 contemplates domestic use diverting from Lake Pend Oreille with a bulk POU that overlaps this Permit's domestic POU. The statutory claim hasn't been validated by IDWR staff and at the time of licensing recommendation a Notice of Claim has not been submitted. Additionally, backfile information identifies the domestic use is associated with Lots 9 & 10, Hoppers Subdivision which is located to the North of Highlands Park Subdivision. There is no concern for overlap between the two rights.

Licensed WR 96-9458 authorizes diversion using lake water for irrigation and fire protection uses associated with Lots 1A & 2A, Highlands Park Subdivision. A Notice of Claim has been submitted by the water right holder, but since the water system is separate from this Permit's groundwater source and irrigation/fire protection are different beneficial use than the domestic beneficial use accounted for under Permit 96-12641, there is no overlapping water right concerns between 96-9458 & 96-12641.

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

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER L6 (SE¼ SW¼), Sec. 2, Twp 56N, Rge 01E, B.M. BONNER County
GROUND WATER L6 (SE¼ SW¼), Sec. 2, Twp 56N, Rge 01E, B.M. BONNER County

Method of Determination: GPS. PODs are located at -116°18.2166, 48°13.6142 well 96-95-N-0210 and -116°18.1937, 48°13.5378 well 96-95-N-0302.

PLACE OF USE: DOMESTIC

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	01E	2									X L4		X L5	X L6					

Method of Determination: Beneficial use field examination, Bonner County GIS maps, 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 Model No.	Pump Make	Pump Serial No. or Discharge Size
96-95-N-0210	Franklin Electric	2	2823018310	Franklin Electric	Pump FPS4400
96-95-N-0302	Franklin Electric	2	2823018110	Franklin Electric	Pump FPS4400

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flowmeter	Flanged Velocity style	Recordall Badger Meter	25			
Flowmeter	Flanged Velocity style	Recordall Badger Meter	25			

2. Measurements: I recorded multiple 1-minute timed flow measurements from each of the two groundwater well main water pipeline(s) which flow directly into the community storage reservoir; each well's pipeline, labeled LOW (96-95-N-0210) and HIGH (96-95-N-0302) were actively pumping to refill the reservoir during the examination. Total diversion rate for both wells equal 18.33 gpm or **0.04 cfs** considering department rounding standards.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: 2ea flowmeters installed on diverting system. I computed theoretical pump equations which support the flow rates I observed during the beneficial use exam and have been attached as support documentation.

- Well 96-95-N-0210 = 10.0 gpm
- Well 96-95-N-0302 = 8.33 gpm
- Maximum diversion rate = 18.33 gpm or 0.04 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A; ½ acre irrigation per home assigned to the domestic beneficial use recommended for licensing this permit.

2. Volume Calculations for Other Uses: Domestic annual volume & Maximum diversion volume =

- 7 constructed residences + 6 stub-in parcels = 13 service connections for domestic use and 13 x 1.2 af per home with ½ acre irrigation = **15.6 af**

G. NARRATIVE/REMARKS/COMMENTS

Beneficial use field exam performed on 4/16/2024 with Robert Franks – Highlands Park HOA President and Mark Haigh – HOA member, showed two groundwater wells diverting water for domestic purposes.

- At the well POD located at the entrance to the community drive, known as the "LOW" well for the subdivision, well 96-95-N-0210 has a 2 HP Franklin Electric pump & motor that diverts water up hill to the 16,000+ gal community reservoir. The pump motor relay control panel is located on an electric tree situated alongside the well head.
- The second well POD located between Lots 6 & 9, known as the "HIGH" well for the subdivision, well 96-95-N-0302 also has a 2 HP Franklin Electric pump & motor diverting water to the co-located reservoir and pump station. The pump motor relay control panel is located within the pump station for this well.

The Pump station consists of water conveyance system components including metal inflow pipes from each well (low/high) with badger Recordall flow meters installed on each water main discharging groundwater directly into the community reservoir. From the concrete reservoir a single water main line is conveyed to each service connection by means of a 5 HP centrifugal Sta Rite pump & Baldor Reliance pump motor. A volumetric style Read-o-Matic flowmeter is installed from the reservoir used to record volume data. There are pressure tanks installed maintaining system pressure at 45-50 PSI.

During the exam I observed the water system actively pumping to re-fill the reservoir from the system's morning peak water demands. I observed several 1-minute flow measurements that demonstrate the LOW well with pump has a capacity of 10.0 gpm and the HIGH well with pump has a capacity of 8.33 gpm. The combined diversion rate of 18.3 gpm or **0.04 cfs** is recommended for licensing purposes. During licensing review, I documented theoretical pump equations for each well that support the physical flow measurements demonstrating the water system diverting capacity of 0.04 cfs. The permit authorized development diverting up to 0.17 cfs but the applicant is limited by pumping performance observed during the field exam toward my licensing recommendation.

I walked the domestic POU with Mr. Haigh, which consists of 14 parcels; 1 of which is a double parcel serving 1 home (Lots 1A & 2A) with a single service connecting. The applicant's water system serves 4 – year-round residences, 3 – seasonal residences, and 6 – parcel stub-ins for undeveloped lots. While the total home(s) served exceeds the 9-home threshold typical for IDEQ regulatory oversight, based on the small population density served year-round, and less than 25 people in a 90-day period, the system is currently not regulated by IDEQ. I removed condition 106 based on this information received from Mr. Roberts. I used field maps to sketch out the domestic POU and evaluated Bonner County tax parcel maps along with ArcMap aerial imagery to assign the POU shape. The annual volume recommended for licensing the domestic use and Maximum diversion volume equals 13 service connections x 1.2 af per home (stub-ins included) = **15.6 af**.

The ArcMap aerial imagery has a notable shift/drift in comparison to the tax parcel layer. I've recommended the domestic POU shape assigning each parcel as designated by the parcel layer which places some parcel intersecting with roadways and visually not consistent with the map image. All the parcels' Lots 1A, 2A, and 3-14 with the exception of Lot 14 are 0.8 acres or smaller in size. The buildable portion of Lot 14 is approximately 0.8 acres in size. As a result, while the POU is represented with shift/drift, the size for a home and up to ½ acre irrigation is accurately represented for each of the 13 service connections. I validated the stub-ins using a Garmin GPS to accurately depict their location(s). In the Field Exam map product used to detail the water system I've illustrated stub-ins, which may illustrate being outside the POU layer designation for some lots but are accurate spatially using GPS and are within their respective survey designated parcel boundaries.

During licensing review, I made changes to the following conditions:

- I removed 046, as the applicant has complied with the applicable well construction rules.
- I removed condition 106 as the applicant's system isn't regulated by IDEQ.
- I revised condition X04 describing 13 homes for domestic use vice the 14 homes authorized for development.
- I replaced condition 070 with a text version of 187 that describes that the irrigation occurring under this domestic use shall not exceed ½ acre per home. This was necessary as 070 quantifies the ½ acre per platted subdivision lot, but the domestic use occurring in Lots 1A & 2A serve 1 home and each parcel isn't authorized ½ acre as developed.
- All other conditions on the permit shall be carried forward to the license.

Overlapping water right concerns were discussed on PG1 of this report. Aside from 96-4416 & 96-9458 which don't constitute any overlap concerns, there are no additional concerns toward licensing Permit 96-12641.

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>
DOMESTIC	01/01 to 12/31	0.04 CFS	15.6 AF

Totals: 0.04 CFS 15.6 AF

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 *[Signature]* Date 4/18/2024
 Reviewer *[Signature]* Date 2/4/2025

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-12641

This map depicts the DOMESTIC system diagram

01E

56N



56N

01E

- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters
- Point of Diversion
- Stub-In Service Connection

0 0.05 0.1 0.2 Miles



THEORETICAL PUMPING EQUATION(S) FOR WR# 96-12641

Theoretical Pumping Equation was developed to support flowmeter measurments during the beneficial use field examination. Pump is estimated to lift 590 ft, and running at 45 psi.						
<u>PUMP EQUATION</u>						
WATER RIGHT No. 96-12641						
96-95-N-0210		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	2	694.0816	0.8	590	45
Q = 0.020 cfs 9.1 gpm						

Theoretical Pumping Equation was developed to support flowmeter measurments during the beneficial use field examination. Pump is estimated to lift 185 ft, and running at 45 psi.					
<u>PUMP EQUATION</u>					
WATER RIGHT No. 96-92641					
96-95-N-0302	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = HP*8.8*Eff/H	2	795.0816	0.8	691	45
Q = 0.018 cfs 8.0 gpm					

9.1 GPM + 8.0 GPM = 17.1 GPM or 0.04 CFS based on Department rounding standards.

Two theoretic pump equations support flowmeter measurements taken on site during the 4/16/2024 field exam. Two wells pump performance equals 10 gpm (96-95-N-0210) + 8.33 gpm (96-95-N-0302) = **18.33 gpm** or **0.04 cfs** considering Department rounding standards.

Bates, Luke

From: Highlands Park <highlandspark2020@gmail.com>
Sent: Monday, March 18, 2024 7:57 PM
To: Bates, Luke
Subject: Re: IDWR 96-12641 - field exam
Attachments: highlands Water and Wells.pdf

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Here is a document about the wells

On Mon, Mar 18, 2024 at 9:58 AM Bates, Luke <Luke.Bates@idwr.idaho.gov> wrote:

Mr. Frank Roberts,

Thank you for speaking with me this morning to schedule a beneficial use field examination for permit 96-12641.

I have locked down Tuesday April 16th at approximately 11:30 a.m. I don't foresee the exam taking more than 1.5 hrs to complete.

At your convenience, please do email me the well log and/or well pump data you identified during our discussion.

Thank you,

Luke Bates

Sr. Water Resource Agent

Northern Region

P: 208-762-2817



**HIGHLANDS RESIDENTIAL WATER SYSTEM
WELL INFORMATION**

— **WELL #1: Adjacent to North Road**

Location: SW/NE/SW Sec. 2; 56N; 1E (Gov't Lot 4)

Permit #: 96-95-N-0210; Department of Water Resources

Drilling Approval: Gary Gafne, DEQ, August 23, 1995

Conditions on adjacent road design outlined.

Drill Date: 8/11-12, 1995

Well Depth: 605 ft

Capacity as Tested: Test Date; 8/20, 1995 Hours Pumped; 4

Sustained Yield 9+ gpm @ 450 ft of drawdown

Recovery to 20 ft static in 62 minutes.

Certified Test Data: Yes

Water Quality: PH: 8 Hardness: 7 Iron: .05 ppm

Other required water sampling forthcoming as required.

Distance to existing septic field: 400 feet

to proposed field: 500 feet

to existing septic tank: 500 feet

to future septic tanks: 250 feet

Well Lot Dimension: 50 Foot Radius

Well Lot Ownership: Riffe Family Trust (fee simple) to be under ownership of Highlands Home Owners Association when PUD platted.

— **WELL #2: Top of Hill**

Location: NW/SE/SW/Sec. 2; 56N; 1E (Gov't Lot 6)

Permit #: 96-95-N-0302; Department of Water Resources

Drilling Approval: Mike Nelson; PHD August 1995.

Drill Date: September⁹ 22-27, 1995

Well Depth: 706 feet

Capacity as Tested: Test Date; 10/6/95 Hours Pumped; 9

Sustained Yield; 8 gpm @ 500 ft of drawdown

Recovery to 100 ft static in 75 minutes.

Certified Test Data: Yes

Water Quality: PH: 7.5 Hardness: 8 Iron: .05

Other required water sampling forthcoming as required.

Distance to existing septic Field: 400 feet

to proposed septic field: 250 feet

to septic tank: 450 feet

to future septic tanks: 100 feet

Well Lot Dimension: 50 Foot Radius

Well Lot Ownership: Norman Riffe (fee simple) to be under ownership of Highlands Home Owners Association when PUD platted.

FORWARD WHITE COPY TO WATER RESOURCES

RECEIVED

Form 238-7

3/95

DEC 05 1995

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Office Use Only

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 1/4 1/4

Lat: : : Long: : :

1. DRILLING PERMIT NO. 96-95 - N-0302 -

Other IDWR No. _____

2. OWNER:

Name Norman RiffeAddress 1300 Red Fir RdCity Hope State ID Zip 83836

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N

W E S

Twp. 56 North ☒ or South ☐
 Rge. 2 East ☒ or West ☐
 Sec. 2 1/4 SW 1/4 SW 1/4
 Gov't Lot _____ County Bonner
 Lat: : : Long: : :
 Address of Well Site Lutton Lake Lots
 City _____

(Give at least name of road + Distance to Road or Landmark)

Lt. 6 Blk. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
bentonite	0	18	5		overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) _____Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	18	250	steel	☒	☐	☐	☐
4	-6	706	160	PVC	☐	☒	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method saw
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
300	320	1/8x4			PVC	☐	☒
400	420					☐	☐
500	520					☐	☐
600	620					☐	☐
680	700					☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

140 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: _____

SW SW 2 56N 2E

FORWARD WHITE COPY TO WATER RESOURCES

11. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
5 1/2		700	1hr

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water
				Y N
8	0	1	top soil	
	1	18	blue shale	
6	18	90	blue shale	
	90	92	soft blue shale	
	92	130	firm blue shale	
	130	137	soft blue shale	
	137	140	soft blue shale	
	140	180	firm blue shale	
	180	186	soft broken blue shale	X
	186	230	firm blue shale	
	230	243	firm blue shale	
	243	245	soft blue shale	
	245	298	firm blue shale	
	298	305	soft blue, some white shale	X
	305	360	firm blue shale	
	360	363	soft blue shale	
	363	405	firm blue shale	
	405	415	soft blue shale	X
	415	450	firm blue shale	
	450	456	soft blue shale	
	456	493	firm blueshale	
	493	495	soft blue shale	X
	495	530	firm blue shale	
	530	535	soft blue shale	
	535	575	firm blue shale	
	575	583	soft blue shale	X
	583	608	firm blue shale	
	608	620	softer blue, some white shale	
	620	660	firm blue shale	
	660	665	soft blue shale	X
	665	690	firm blue shale	
	690	693	soft blue shale	
	693	706	firm blue shale	

Completed Depth 706 (Measurable)Date: Started 9-22-95 Completed 9-27-95

13. DRILLER'S CERTIFICATION

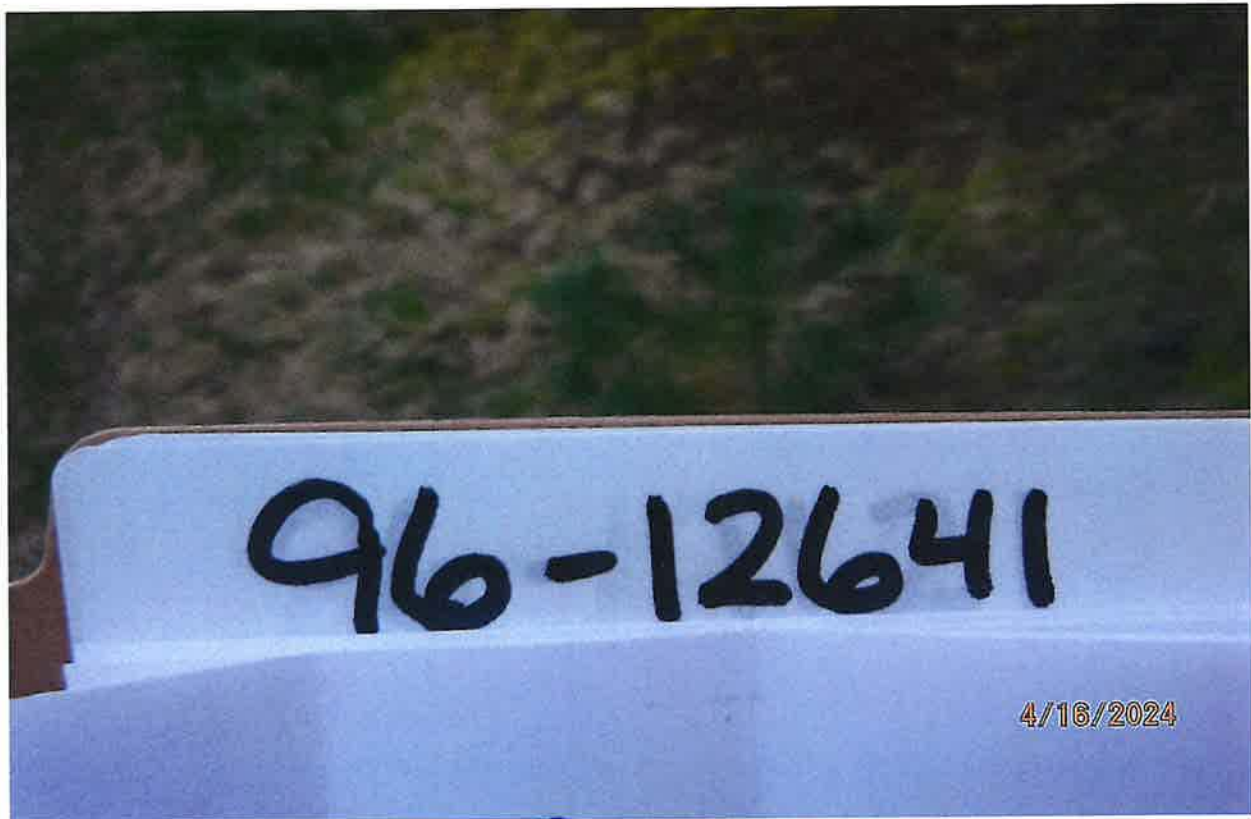
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Bronson Water Wells Firm No. 360Firm Official ND Bronson Date 9-29-95

and

Supervisor or Operator Cliff Bronson Date _____

(Sign once if Firm Official & Operator)



BENEFICIAL USE FIELD EXAM DATE 4/16/2024



POD – GROUNDWATER WELL (LOWER WELL) 96-95-N-0210



WELL 96-95-N-0210 ELECTRIC CONTROL PANEL – CO-LOCATED WITH WELL



2 HP FRANKLIN ELECTRIC PUMP MOTOR INSTALLED IN WELL 96-95-N-0210



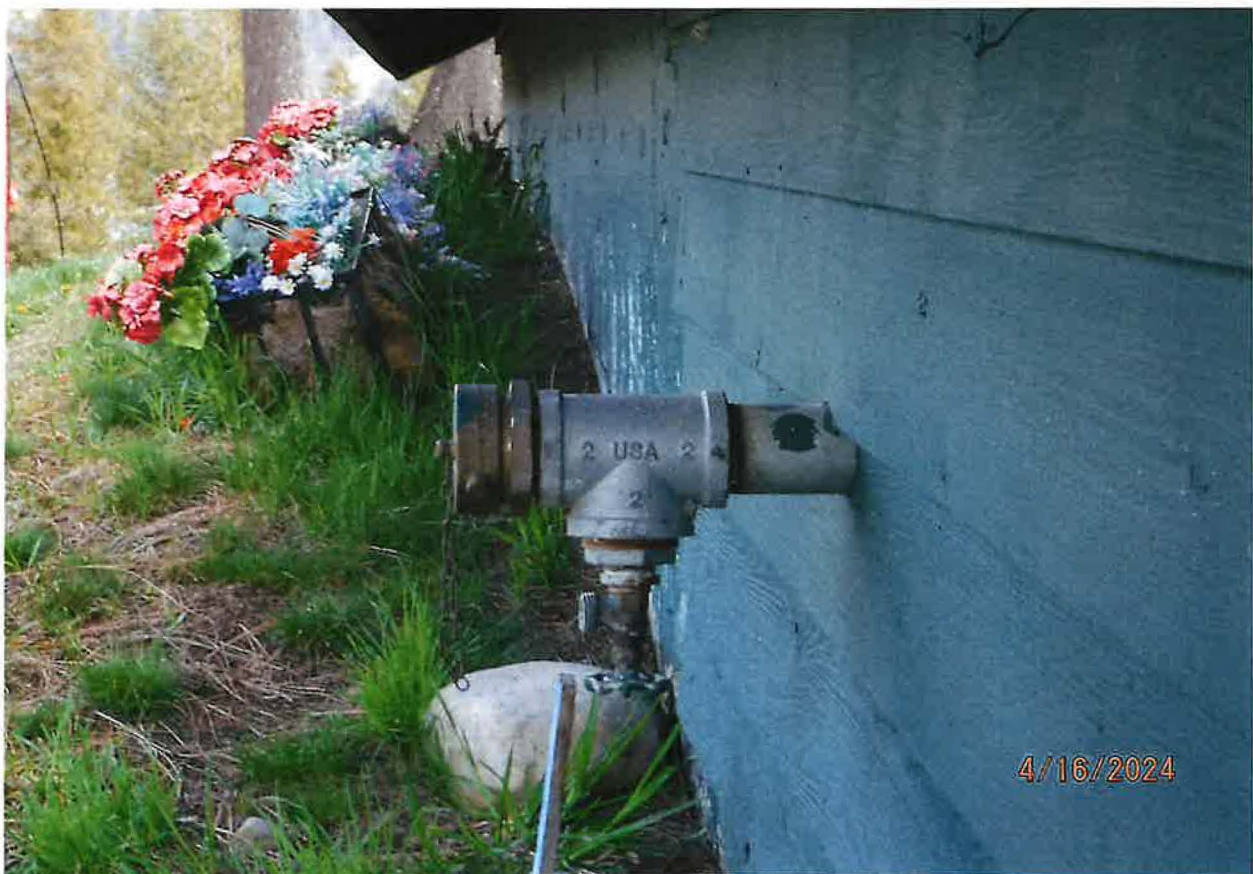
POD – GROUNDWATER WELL (HIGH) 96-95-N-0302



FRANKLIN ELECTRIC 2 HP PUMP MOTOR INSTALLED IN WELL 96-95-N-0302 (RELAY CONTROL PANEL LOCATED IN PUMP STATION – CO-LOCATED WITH 'HIGH' WELL)



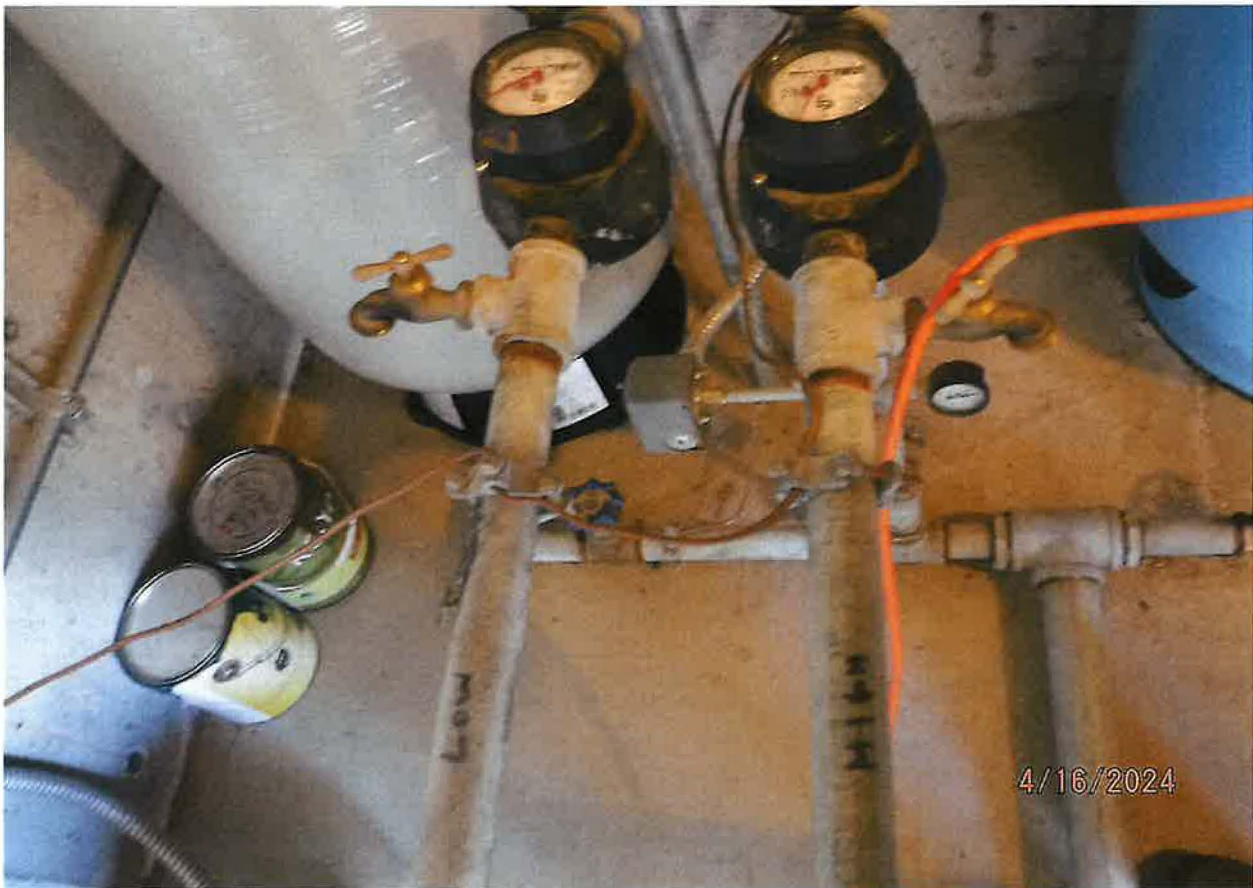
PUMP STATION & 16,000+ GALLON COMMUNITY STORAGE RESERVOIR



2" FIRE HOSE ATTACHMENT & BLOWOUT STEM PIPE FOR WATER SYSTEM FROM RESERVOIR



WATER CONVEYANCE SYSTEM – TOP PIPES 1EA FROM RESPECTIVE WELL WITH FLOW METERS TO STORAGE (LEFT CENTER OF IMAGE) AND 1EA PIPE TO 5 HP CENTRIFUGAL PIPE WITH FLOW METER FROM STORAGE RESERVOIR



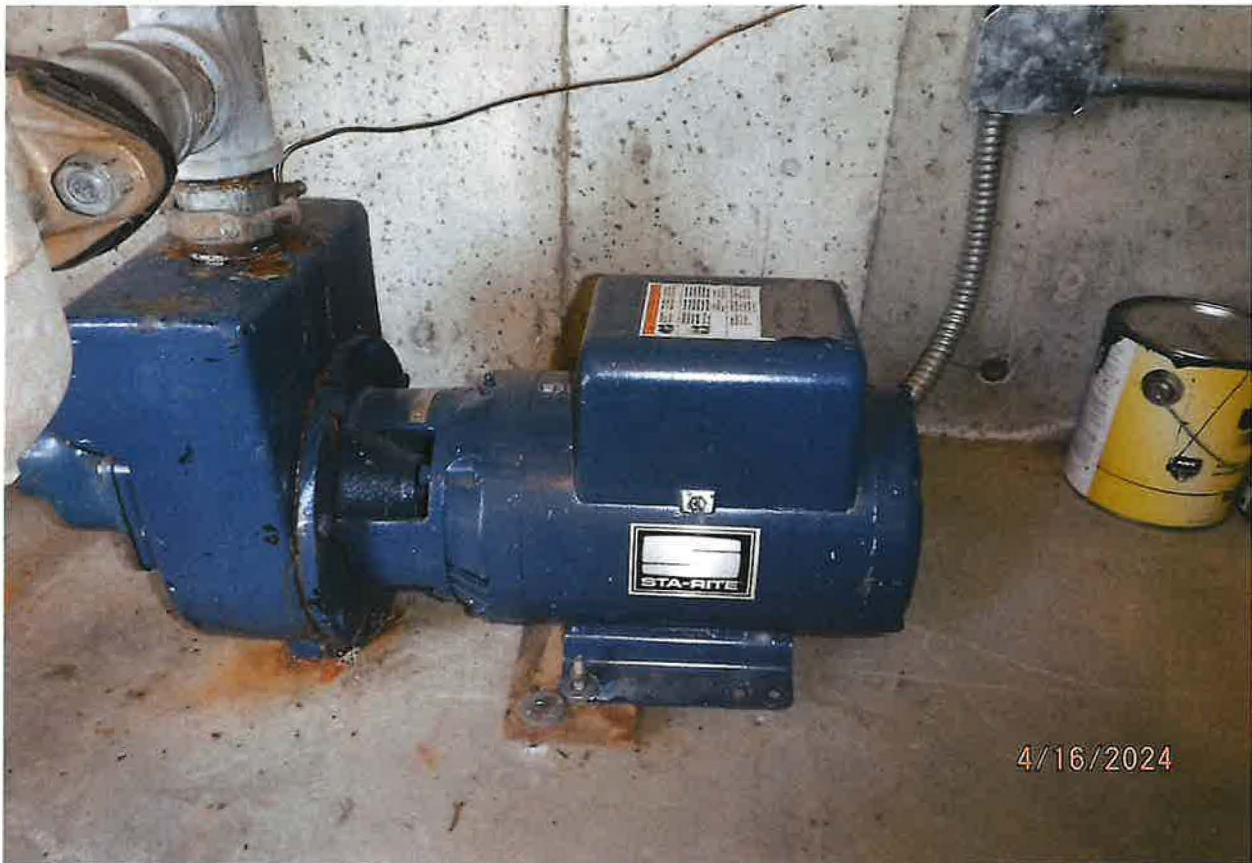
LOW WELL & HIGH WELL WITH FLOWMETERS INSTALLED – INFLOW FROM WELL TO STORAGE



RECORDALL MODEL 25 FLANGED VELOCITY STYLE FLOW METERS – USED TO CAPTURE INSTANTANEOUS FLOW DURING BENEFICIAL USE FIELD EXAM.



READ-O-MATIC MODEL 120 FLANGED VELOCITY STYLE FLOW METER – USED TO RECORD VOLUMETRIC DATA FROM THE COMMUNITY STORAGE RESERVOIR



STA-RITE PUMP WITH 5 HP BALDOR-RELIANCE CENTRIFUGAL PUMP USED TO SERVE COMMUNITY SYSTEM FROM THE STORAGE RESERVOIR





DOMESTIC POU – LOT 9, HIGHLANDS SUBDIVISION – PARCEL RP021530000090A





DOMESTIC POU – LOT 6, HIGHLANDS SUBDIVISION – PARCEL RP021530000060A

CO-LOCATED WITH PUMP STATION



DOMESTIC POU (STUB-IN) – LOT 5, HIGHLANDS SUBDIVISION – PARCEL RP021530000050A



DOMESTIC POU – LOT 10, HIGHLANDS SUBDIVISION – PARCEL RP021530000100A



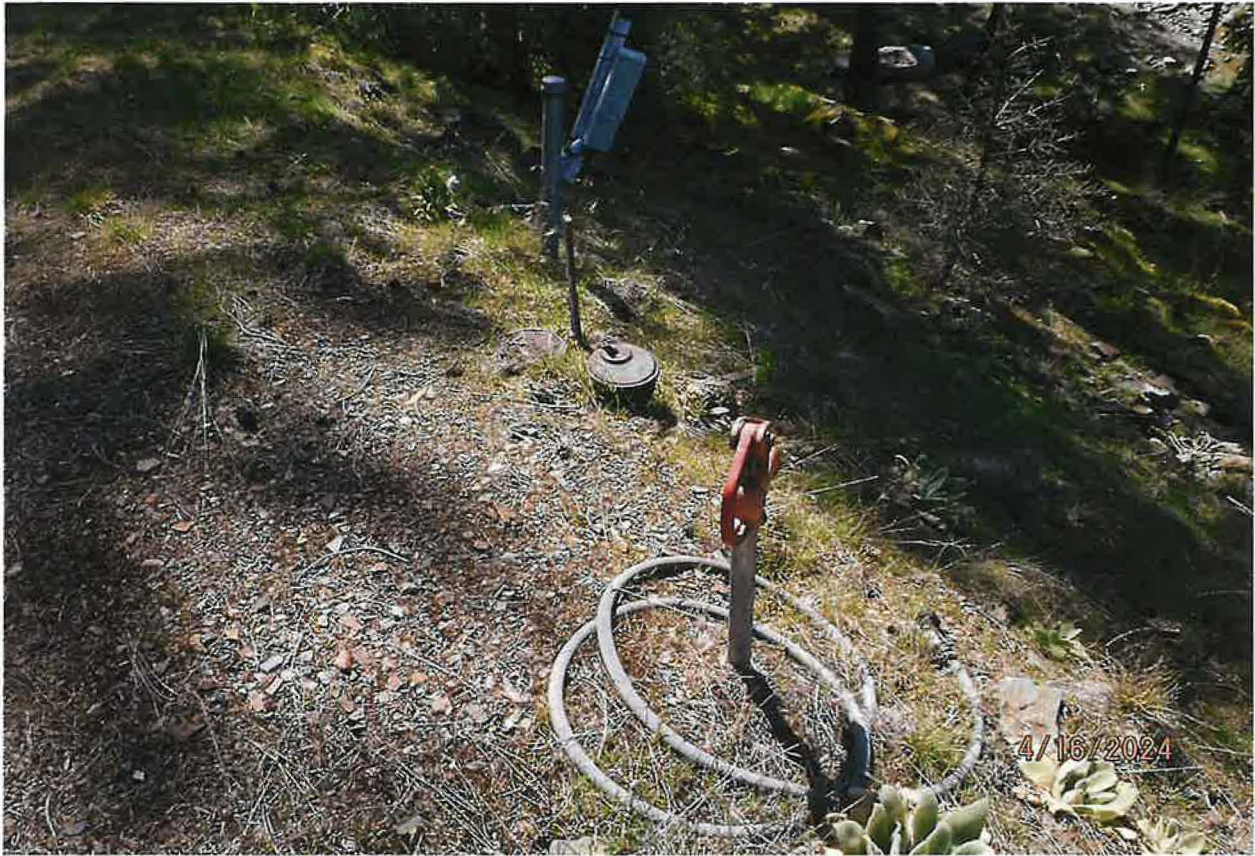
DOMESTIC POU (STUB-IN) – LOT 11, HIGHLANDS SUBDIVISION – PARCEL RP021530000110A



DOMESTIC POU – LOT 12, HIGHLANDS SUBDIVISION – PARCEL RP021530000120A



DOMESTIC POU – LOT 13, HIGHLANDS SUBDIVISION – PARCEL RP021530000130A



DOMESTIC POU (STUB-IN) – LOT 14, HIGHLANDS SUBDIVISION – PARCEL RP021530000140A



DOMESTIC POU – LOT 1A & LOT 2A, HIGHLANDS SUBDIVISION – PARCEL RP0215300001A0A & RP0215300002A0A. TWO LOTS WITH A SINGLE WATER SYSTEM SERVICE CONNECTION



DOMESTIC POU – LOT 3, HIGHLANDS SUBDIVISION – PARCEL RP021530000030A



DOMESTIC POU (STUB-IN) – LOT 4, HIGHLANDS SUBDIVISION – PARCEL RP021530000040A



DOMESTIC POU (STUB-IN) – LOT 7, HIGHLANDS SUBDIVISION – PARCEL RP021530000070A



DOMESTIC POU (STUB-IN) – LOT 8, HIGHLANDS SUBDIVISION – PARCEL RP021530000080A

LOTS 7 & 8 STUB IN VALVES ARE CO-LOCATED WITH EACH OTHER ALONG THE PROPERTY BOUNDARY BETWEEN THE TWO LOTS.