

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-16526

Exam Date: 6/21/2016

1. Current Owner:
HOWARD RUDE 6426 MAPLEWOOD POST FALLS ID 83854 (208) 818-2101
2. Accompanied by: Howard Rude
3. **SOURCE:**
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point-of-diversion: None

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

GROUND WATER SW¼NW¼ Sec. 25, Twp 51N, Rge 05W, B.M. KOOTENAI County

Method of Determination: Maps and GPS. POD location at 47° 44.339, 116° 54.798 D0061957 (A0015435)

2.

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N	05W	25							X										

PLACE OF USE: STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N	05W	25							X										

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N	05W	25							13.0										13.0

Total Acres: 13

Method of Determination: Google Earth and Arc map.

3. Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X 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
D0061957	UNKNOWN	25			

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: RAIN BIRD SPRINKLER HEADS USED TO DETERMINE FLOW RATE FOR IRRIGATION.

16 SPRINKLERS WITH 5/32" HEAD

5/32" HEAD RUNNING AT 60 PSI CAN PRODUCE 5.47 GPM

16 HEADS X 5.47 GPM = 87.5 GPM OR 0.20 CFS

E. FLOW CALCULATIONS

Measured Method: SEE ATTACHED THEORETICAL PUMPING X Additional Computation Sheets Attached
EQUATION THAT SHOWS SYSTEM IS CAPABLE OF PRODUCING UP TO 151 GPM. LICENSE IS LIMITED TO 90 GPM OR 0.20 CFS.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 13.0 \text{ AC} \times 3.0 \text{ AF} = 39.0 \text{ AF}$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.20 \times 1.9835 \times 246 = 97.6 \text{ AF}$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 39.0 \text{ AF}$

2. Volume Calculations for Other Uses: DOMESTIC USE FOR 1 HOME = 0.6 AF

STOCKWATER FOR 50 HEAD OF CATTLE

50 HEAD X 12 GPD = 600 GPD

600 GPD X 365 DAYS = 219,000 GPY / 325,850 GAL/AF = 0.7 AF

G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant, Howard Rude, showed an 8 inch irrigation well. Mr. Rude said he installed a 25hp pump, but during exam I was unable to confirm this. Upon license review, I found the Danfoss VLT AQUA DRIVE was for a 25hp pump. Theoretical pumping equation estimates flow rate at 151 gpm. The pump can produce more water than what was applied for but will be limited to what was permitted. The 2nd way I verified the flow rate was by using the irrigation Mr. Rude was doing. He had 2 separate sections of irrigation going from 3 inch aluminum pipe. Because of the placement of the sprinkler heads, there was nowhere to perform flow measurement. I verified that the sprinkler heads were rain birds and head size was 5/32". Using the rain bird sheet I could determine the flow rate per sprinkler head was 5.47 gpm. Mr. Rude had 16 sprinklers going at the same time, 2 runs of 8 heads. 16 sprinklers x 5.47 gpm running at 60 psi is equal to 87.5 gpm.

Applicant had buried main line along east side of property. Every 100 feet there was a riser pipe that split into two hook ups for 3 inch irrigation lines. Applicant had also buried lines with risers for irrigation guns in places where main line would not reach. Applicant was renovating property by removing aging trees and remodeling the barn and home. There were no livestock present during exam due to construction, but license will show livestock use. There are no overlaps with any other applications, permits, licenses, claims, or recommendations.

License will issued with a diversion rate of 0.20 cfs. The irrigation of 13 acres will be given a diversion rate of 0.20 cfs with annual volume of 39.0 acre feet. Domestic use will be given diversion rate of 0.04 cfs with annual volume of 0.6 acre feet. Stockwater will be given diversion rate of 0.02 cfs with annual volume for 50 cattle of 0.7 acre feet. Diversion rate cannot exceed 0.20 cfs with an annual volume of 40.3 acre feet.

Have conditions of permit approval been met? ☒ Yes ☐ No**H. RECOMMENDATIONS****1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 to 12/31	0.04 CFS	0.6 AF
IRRIGATION	03/15 to 11/15	0.20 CFS	39.0 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.7 AF
<u>Totals:</u>		0.200 CFS	40.30 AF

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. AUTHENTICATIONField Examiner's Name Adam Friedman Date 3-17-2017Reviewer Morgan Case Date 3/24/2017

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-16526

DOMESTIC / SYSTEM DIAGRAM

05W



0 0.035 0.07 0.14 Miles

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



State of Idaho
Department of Water Resources
Attachment to Field Exam
95-16526

STOCKWATER / SYSTEM DIAGRAM

05W



0 0.035 0.07 0.14 Miles

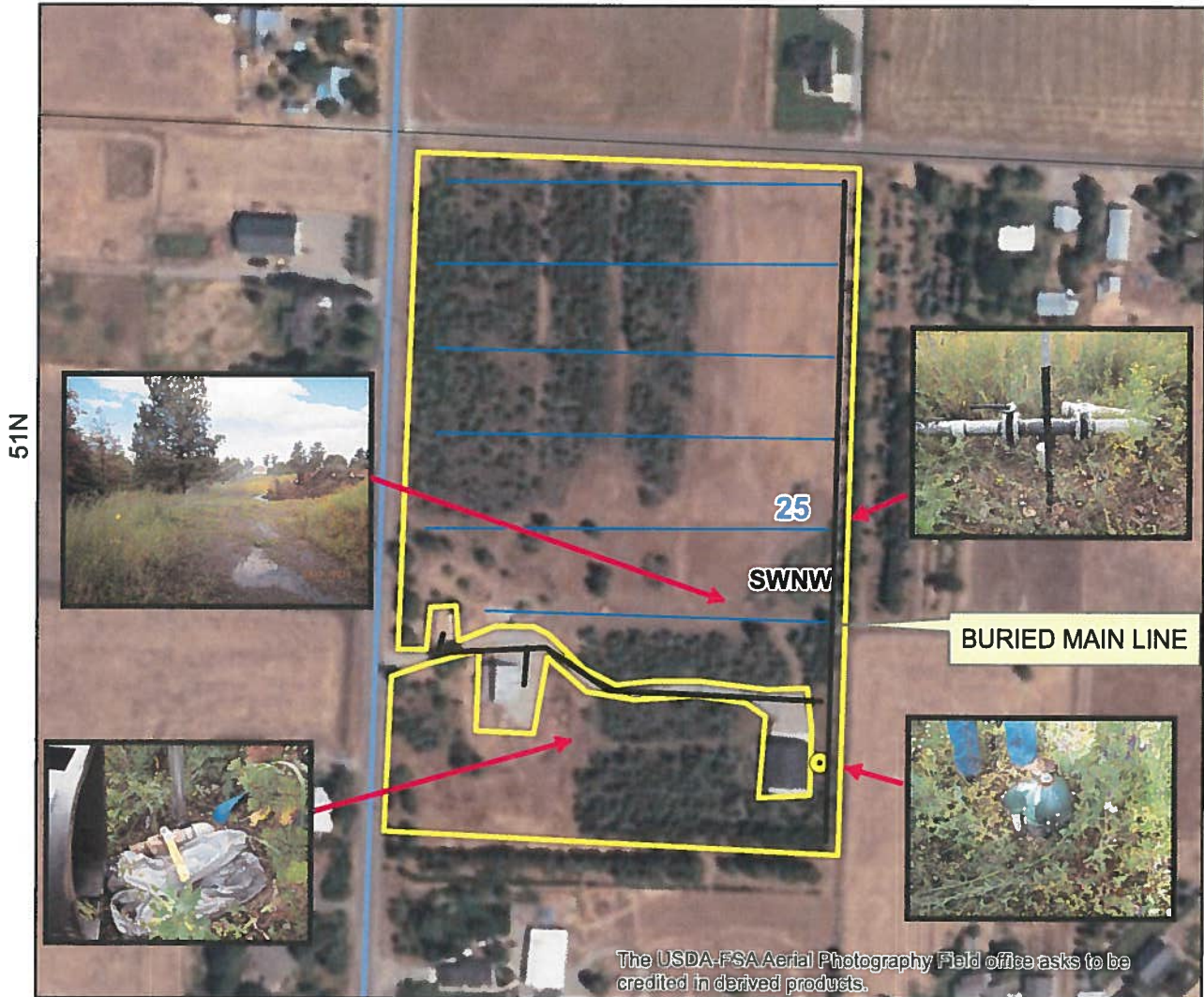
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections



State of Idaho
Department of Water Resources
Attachment to Field Exam
95-16526

IRRIGATION / SYSTEM DIAGRAM

05W



0 0.03 0.06 0.12 Miles

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



THEORETICAL PUMPING EQUATION FOR WATER RIGHT 95-16526

25HP PUMP IN WELL THAT IS RUNNING AT 60 PSI. IDWR WILL ASSUME PUMP IS SET AROUND 385 FEET.

PUMP EQUATIONS WATER RIGHT No. 95-16526						
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	$\frac{HP \cdot 8.8 \cdot \text{Eff}}{H}$	25	523.775 5	0.8	385	60
Q = 0.337 cfs 151.1 gpm						

APPLICANT HAD PUT IN AN OVERSIZED PUMP THAT CAN PRODUCE 151 GPM. LICENSE WILL BE LIMITED TO DIVERSION RATE OF PERMIT WHICH IS 0.20 CFS OR 90 GPM.



RAIN BIRD

PERFORMANCE DATA

20JH

20JH

1/2" Full Circle, Brass Impact Sprinkler

Bearing: 1/2" Male NPT, Brass
Trajectory Angle: 23°
Operating Range: 35-80 psi
Flow Rate: 2.0-5.47 GPM
Radius: 35-44 ft.

FEATURES

- Durable brass die-cast arm
- Stainless steel springs and fulcrum pin
- Chemically resistant Teflon™ washers
- Two-year warranty

BENEFITS

- Spoon drive arm runs on larger nozzles and higher pressures
- Corrosion and grit resistant
- Built to last

Straight Bore Nozzle (SBN-1) (Stream Height: 6 ft.)

PSI @ Nozzle	NOZZLE SIZE							
	7/64"		1/8"		9/64"		5/32"	
	Rad.	GPM	Rad.	GPM	Rad.	GPM	Rad.	GPM
35	38	2.05	38	2.68	39	3.39	39	4.19
40	38	2.19	39	2.86	40	3.62	39	4.47
45	39	2.32	39	3.03	40	3.84	40	4.73
50	39	2.45	39	3.20	40	4.05	40	5.00
55	39	2.57	40	3.35	40	4.24	40	5.23
60	39	2.68	40	3.50	41	4.43	41	5.47

Straight Bore Nozzle with Vane (SBN-1V) (Stream Height: 7 ft.)

PSI @ Nozzle	NOZZLE SIZE							
	7/64"		1/8"		9/64"		5/32"	
	Rad.	GPM	Rad.	GPM	Rad.	GPM	Rad.	GPM
35	38	2.05	39	2.68	41	3.39	42	4.19
40	39	2.19	40	2.86	41	3.62	42	4.47
45	39	2.32	40	3.03	42	3.84	42	4.73
50	40	2.45	41	3.20	42	4.05	43	5.00
55	40	2.57	41	3.35	43	4.24	43	5.23
60	40	2.68	41	3.50	43	4.43	44	5.47

Rain Flow Nozzle (RFN-1)

BASE PRESSURE PSI	RADIUS	
	2.0 GPM	2.5 GPM
30	35	37
40	36	38
50	-	38
60	-	38
70	-	39
80	-	39

PART NUMBERS AND ORDERING INFORMATION

Ordering Example

To order a 20JH sprinkler with a 7/64" Straight Bore Nozzle the part number would be:

MAKE YOUR SPRINKLER
CHOICE FROM CHART 1

A05841-

CHOOSE NOZZLE SIZE(S)
FROM CHART 2

07

ADD THEM TOGETHER TO
CREATE THE PART NUMBER

= A05841-07

Chart 1	PART NUMBER: FIRST HALF
SPRINKLER ONLY	
Sprinkler without Nozzle	A05840
SPRINKLER WITH SINGLE NOZZLE INSTALLED	
Sprinkler with SBN-1	A05841-
Sprinkler with LPN-1	A05842-
Sprinkler with RFN-1	A05843-
Sprinkler with SBN-1V	A05846-

Chart 2	PART NUMBER: SECOND HALF			
NOZZLE	7/64"	1/8"	9/64"	5/32"
Brass Straight Bore Nozzle (105780-) SBN-1	07	08	09	10
Brass Low Pressure Nozzle (104571-) LPN-1	07	08	09	-
Brass SBN-1 with Straightening Vane (106160-) SBN-1V	07	08	09	10
RAIN FLOW NOZZLE	2.0 GPM		2.5 GPM	
Brass Rain Flow Nozzle (111088-) RFN-1	02-00		02-50	

Bold nozzle size numbers denote the most common nozzle choices.



(/default.aspx)

[Account \(/account.aspx\)](/account.aspx)

[Register \(/createaccount.aspx\)](/createaccount.aspx)

[Login \(/signin.aspx\)](/signin.aspx)

[Motors, Starters & Drives \(VFD's\) \(/c-586-motors-starters-drives-vfds.aspx\)](/c-586-motors-starters-drives-vfds.aspx) → [Variable Frequency Drives \(/c-1545-variable-frequency-drives.aspx\)](/c-1545-variable-frequency-drives.aspx) → [Danfoss VFDs \(/c-1546-danfoss-vfds.aspx\)](/c-1546-danfoss-vfds.aspx) → Danfoss 131X7386 VLT Automation VT Drive VFD FC322 230V 25-HP



[View Larger Image](#)

Downloads

No current downloads for this product. Please call us at 888-532-2706 for more information.

Danfoss 131X7386 VLT Automation VT Drive VFD FC322 230V 25-HP

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0061957
Drilling Permit No. 871789
Water right or injection well # 95-16526

2. OWNER: _____
Name Howard Rude
Address 6426 Maplewood
City Post Falls State ID _____ Zip 83854

3. WELL LOCATION: Twp 51N North ☒ or South ☐ Rge. 5 East ☐ or West ☒
Sec 25 1/4 SW 1/4 NW 1/4

Gov't Lot _____ County **Kootenai**
 Lat **47** ° **44.352** (Deg and Decimal minutes)
 Long **116** ° **54.809** (Deg. and Decimal minutes)
 Address of Well Site **3350 W. Greens Ferry Rd**
 _____ City **Post Falls**
 (Give at least name of road + Distance to Road or Landmark)
 Lot _____ Blk _____ Sub Name _____

4. USE: ☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection
☐ Other

5. TYPE OF WORK:
☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other

6. DRILL METHOD:
☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
Bentonite Chips	0	18	700lbs	Temp. Casing

8. CASING/LINER:					Casing	Liner	Threaded	Welded
Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material				
8	+3	300	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 300'

9. PERFORATIONS/SCREENS:
 Perforations ☒ Y ☐ N Method Air Perforator
 Manufactured screen ☐ Y ☒ N Type _____
 Method of installation _____

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
280	300	1/4x1	20	6	Steel	.250

Length of Headpipe NA Length of Tailpipe NA
Packer ☐ Y ☒ N Type NA

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
NA				

11. FLOWING ARTESIAN:
Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____
Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:
 Depth first water encountered (ft) 225' Static water level (ft) 225'
 Water temp. (°F) _____ Bottom hole temp. (°F) _____
 Describe access port Steel Welded Cap

Well test:			Test method:			
Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Boiler	Air	Flowing artesian
300	200+gpm	240	☐	☐	☒	☐
			☐	☐	☐	☐

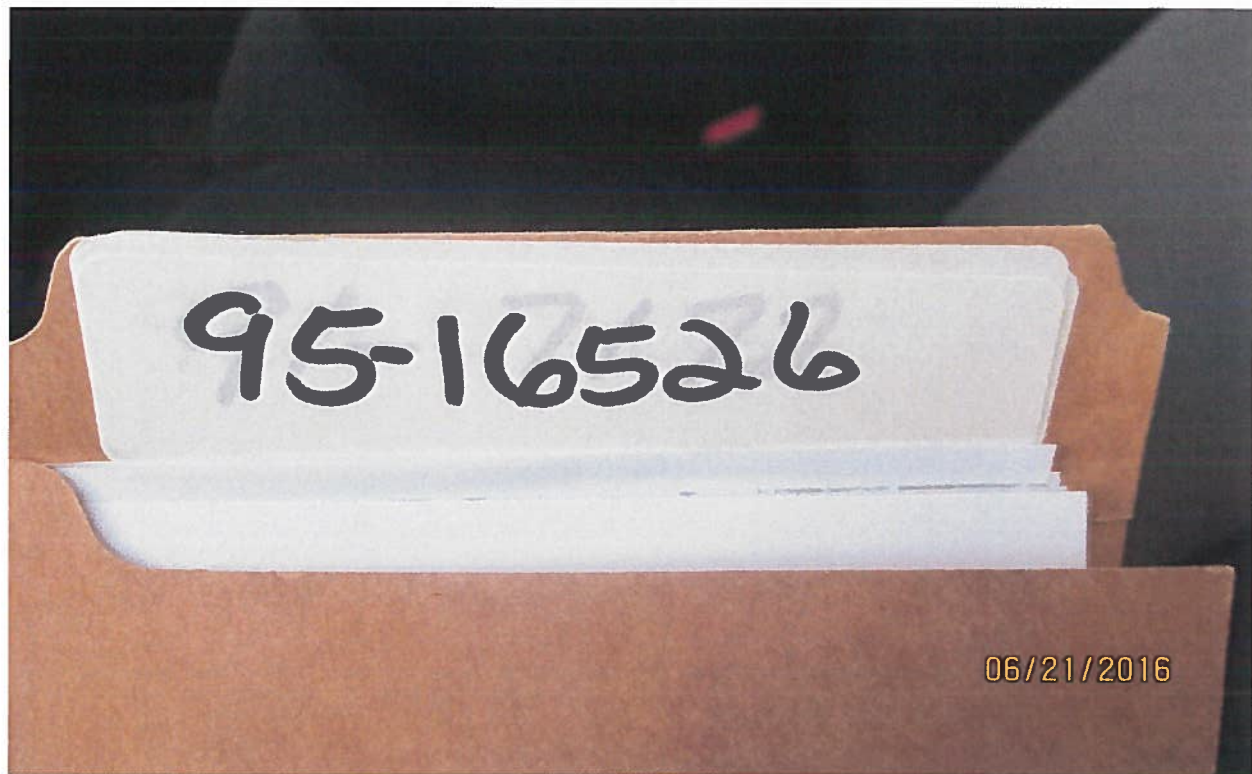
Water quality test or comments: _____

[illegible]

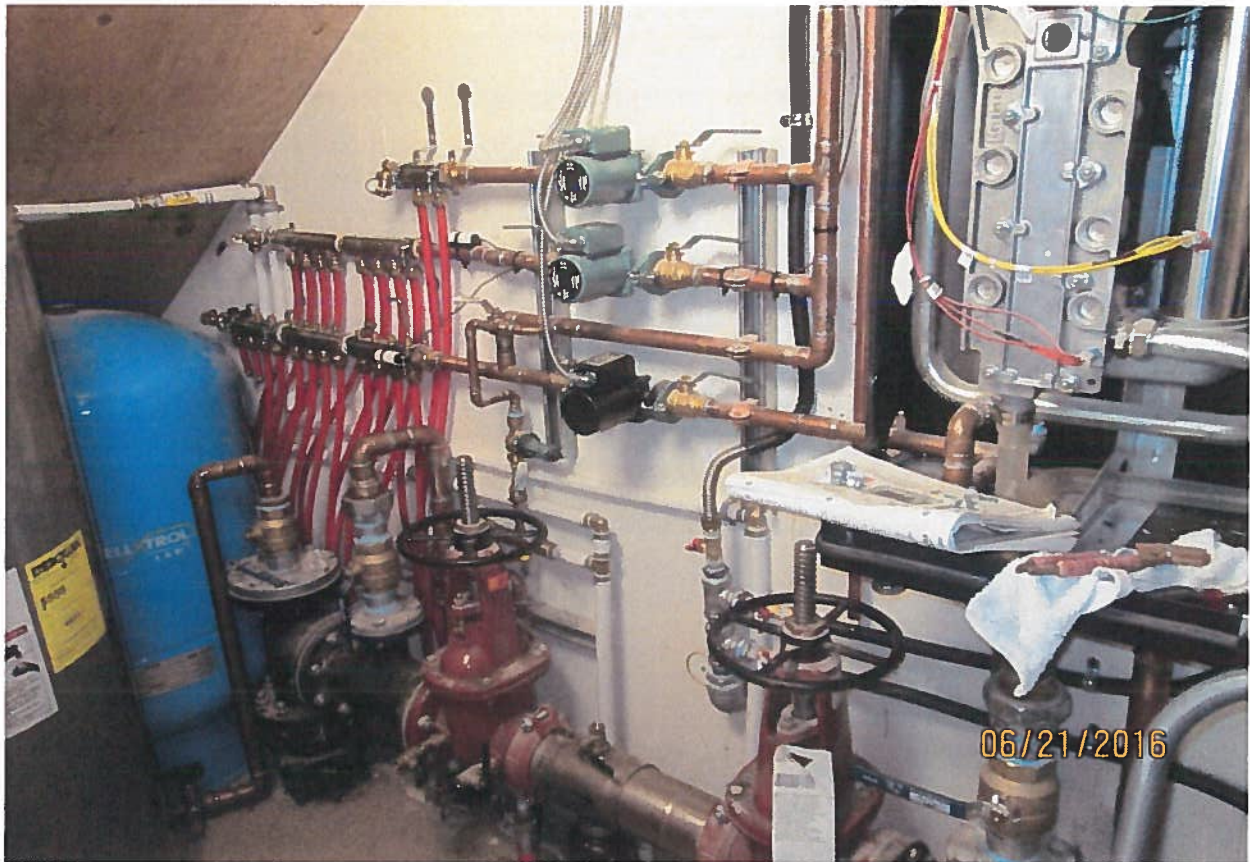
14. DRILLER'S CERTIFICATION:
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name	Horsley Drilling, Inc.	Co. No.	632
*Principal Driller	C. Mark Hardy	Date	May 14, 2014
*Driller	Steve C. Hardy	Date	May 14, 2014
*Operator II	Zach Hardy	Date	May 14, 2014
Operator I		Date	

* Signature of Principal Driller and rig operator are required



Well D0061957, given IDWR tag A0015435.



Inside pump room inside shop.



System running at 60 psi.



Danfoss VLT AQUA DRIVE tells us well has a 25hp pump. Applicant also said he put in 25hp pump.



Connection line for small irrigation gun or other irrigation method.



Buried main line with risers like this every 100 feet.



3 inch aluminum pipe with rain bird 5/32" heads. Running at 60 psi each head can produce 5.47 gpm.



Unable to perform measurement because irrigation sprinkler watered all the way to connection riser.



2 sections of 3 inch aluminum pipe running 8 heads each can produce 87.5 gpm or 0.20 cfs.



Tree farm.



Domestic for home. Applicant was rehabilitating property.



Barn was also getting remodeled.

