

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-23515
Exam Date: 7/31/2019

1. Current Owner:
AMELIA K ROBISON 3500 AMY LN MONTOUR ID 83617-5111 AND
C DENNIS ROBISON 3500 AMY LN MONTOUR ID 83617-5111
2. Accompanied by: Dennis Robison
Phone No: (208) 360-1919
Address: 3500 Amy Ln
Relationship to permit Holder: same

3. SOURCE:
GROUND WATER

Method of Determination: Permit application, ArcMap, aerial imagery, USGS topography, and field examination

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
65-58	Payette River	Irrigation	Decreed

Comments: Water right 65-58 belongs to the Montour Farmers Ditch Company but does not deliver water to property

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

Water Right No.	Source	Purpose of Use	Basis

Comments: None

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼ NW¼, Sec. 27, Twp 07N, Rge 01E, B.M. GEM County

Method of Determination: Field examination and ArcMap Public Land Survey System layer with aerial imagery and USGS topography.

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	
07N	01E	27								6.0									6.0

Total Acres: 6.0

Method of Determination:

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.
Y 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
Y 1:24,000 or greater.

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

Y 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
D0015579		5		Goulds 55GS 50-5	

D. FLOW MEASUREMENTS

1.

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

2. Measurements:

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method:

Theoretical calculation:

5 hp submersible pump set at 80 feet.

$$(8.8) \times (5 \text{ hp}) \times 0.70 / [(80) + (47 \times 2.31)] = 0.16 \text{ cfs or } 73.3 \text{ gpm}$$

Sprinkler system discharge by nozzle count.

$$13 \text{ sprinkler heads/line} \times 5.9 \text{ gpm/head} = 76.8 \text{ gpm/line or } 0.17 \text{ cfs/line}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 6 \text{ ac} \times 4.5 \text{ af/ac} = 27.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.12 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 63.07 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 27 \text{ af}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted on July 31, 2019 by water resource agent Allen Bradbury. Dennis Robison, the permit holder, accompanied the agent on the field exam. Current Gem County tax parcel data confirms C. Dennis and Amelia K. Robison to be the current owners of parcel number RPC87850010010, the property pertinent to the place of use (POU) and points of diversion (POD). Aerial imagery and ArcMap GIS tools were used to measure the acreage of property improved during the beneficial use development period, the POU is 6.0 acres. This acreage is 2.0 acres less than the original 8 acres on the permit due to clipping out the foot print of the house and driveway and the undeveloped hill sides to the north.

Groundwater is pumped from a well drilled in 2000 with well tag #D0015579. The well drillers report describes a well 111 feet deep. At the time of the exam, a 5 hp Goulds submersible pump, model 55GS50 with an Aquavar Solo 2 VFD pump controller were providing water to handlines. Documents provided by the Robisons indicated a pump set at 80 feet. The theoretical calculation base on a 5 hp pump set at 80 feet with 47 psi of pressure equals 0.16 cfs or 73.3 gpm. During the exam the digital display read a pressure of 47 psi while pumping to a 3-inch mainline running 11 rainbird heads with 5/32" nozzles. The permit holder said that he could run up to 13 nozzles without losing any pressure in his domestic system. Nozzle discharge for 5/32" nozzles at 47 psi is 4.99 gpm or for 11 heads is calculated at 54.9 gpm or 0.12 cfs. I am recommending the beneficial use standard rate of 0.12 cfs for irrigation which is in agreement with the observed rate of application during the field exam.

Overlap review found POU overlap but no POD overlap. The POU falls within the service area of Montour Farmers Ditch Company, water right #65-58, however the parcel does not receive any surface water delivery from the irrigation company. Therefore, this right has not been conditioned as a supplemental right. One other water right and one other permit fall within the same quarter-quarter but do not overlap the parcel.

The original proof due date was 5/1/2014, but an extension was granted until 3/1/2018. The permit holder filed a statement of completion for proof of beneficial use on 5/23/2017 for 0.2 cfs on 13 acres. An assignment of permit was received by the Department on 6/7/2018 which resulted in a split of the permit into 65-23515 (0.12 cfs for 8 acres) and 65-23775 (0.08 cfs for 5 acres). This field exam only covers the new split portion of 65-23515. According to the tax parcel information the total acreage is 7.1 acres for the new split parcel, which is now part of Robison Ranch Subdivision. Aerial imagery and ArcMap GIS tools were used to clip out the unirrigated areas occupied by the driveway, as well as the unirrigated hillside on north end of the property. This reduced the permitted POU from 8 acres to 6 acres. As a result, the measured acreage is the limiting factor for my recommendation. The POU has been modified to reflect the acres developed.

Condition 121 was replaced with condition 103 as per department standards. Condition 004 was removed the POD is located on the property. Condition 01M remains on license from the permit.

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>	<u>Annual Volume</u>
IRRIGATION	03/01 to 11/15	0.12 CFS	

Totals: 0.12 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 Allen Bradbury - Water Resource Agent, Senior

Field Examiner's Name Allen Bradbury Date 10/2/2019

Reviewer Parish Kelly Date 10-26-2019

Beneficial Use Field Report

System Design



Legend

- 65-23515_POU
- Robison Boundary
- Contours



0 0.01 0.02 0.04 Miles

Pumping Capacity

Goulds 5 HP submersible pump set @ 80 ft running at 47 psi.

Pump Equation: $(8.8) \times (5) \times (0.7) / (80 + (2.31 \times 47))$
 $Q = 0.16$ cfs or 73.3 gpm.

BU Standard (6.0 acres $\times$ 0.02 cfs/acre) = 0.12 cfs

BENEFICIAL USE FIELD REPORT CALCULATIONS

Permit #: 65-23515

Proof Due: 3/1/2014 **3/1/2018**

Owner: C Dennis Robison

Priority Date 8/15/2012

Flow Rate 0.00 to 0.20

Fee Rate 0.12

Exam Fee \$50.00

0.00 to 0.20	\$50.00	2.01 to 3.00	\$150.00
0.21 to 1.00	\$100.00	3.01 to 4.00	\$175.00
1.01 to 2.00	\$125.00	4.01 to 5.00	\$200.00

Proposed Well Use: Domestic

Drill Date: 9/5/2000

Well Depth: 111 ft

Pump Set: 80 ft

Permit Uses: Irrigation

	cfs	gpm
Application Rate	0.20	89.77
Permit Rate	0.12	53.86
Proof Report	0.12	53.86
Irrig. Only	0.12	53.86
Stockwater		0.00
Domestic		0.00

Acres Proposed:	13.0
Acres Permitted:	8.0
Acres Developed:	6.0

FLOW CALCULATIONS

Meter Type:

Meter Reading

gpm
0.000 cfs

Nozzle Size	5/32
Input # heads:	11
Input gpm/head	5.0
gpm/line	54.9
cfs/line	0.12

Theoretical Method

$$Q = \frac{(8.8) \times (HP) \times E}{TDH}$$

Est. Pump Set

minus 10' =

HP =	E =	H =	PSI =	Q =	Q =
5.0	70.0%	80	47	0.16	73.31
				cfs	gpm

$$TDH = [(LIFT) + (PSI \times 2.31)]$$

TDH =	Lift =	PSI =	2.31
188.6	80	47	2.31

HP = Total Brake Horsepower of pumping plant (including booster)

Eff. = Pumping plant efficiency (assume 70% or 0.70)

TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]

PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

Q = rate of flow in cubic feet per second,

Consumptive Use	4.5	Headgate Requirement	4.5	
Season of Use	3/1	11/15	=	260 days
Volume (VIR)	6.0	X	4.5	= 27.0 af
Volume (DR)	0.122	x	260	x 1.9835 = 63.07 af
BU Standard Rate	6.0	X	0.02	= 0.12 cfs
Rate/acre	0.122	/	6.0	= 0.020 cfs/acre
orig. Rate/acre	0.120	/	8.0	= 0.015 cfs/acre

V I.R. = (Acres Irrigated) x (Irrigation Requirement)

V D.R. = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835

V = Smaller of V I.R. and V D.R.

Recommendation Standards for diversion rate (choose most restrictive)

0.12 Permit Rate – the rate applied for

0.20 Fee Rate – the maximum rated paid for on the fee schedule.

0.12 Measured Value – the value measured in the field

0.16 Theoretical Rate - the rate calculated

0.12 Beneficial Use (BU) standard = x.x ac * 0.020 cfs/acre

Model 55GS

SELECTION CHART

Horsepower Range 1½ – 5, Recommended Range 20 – 80 GPM, 60 Hz, 3450 RPM

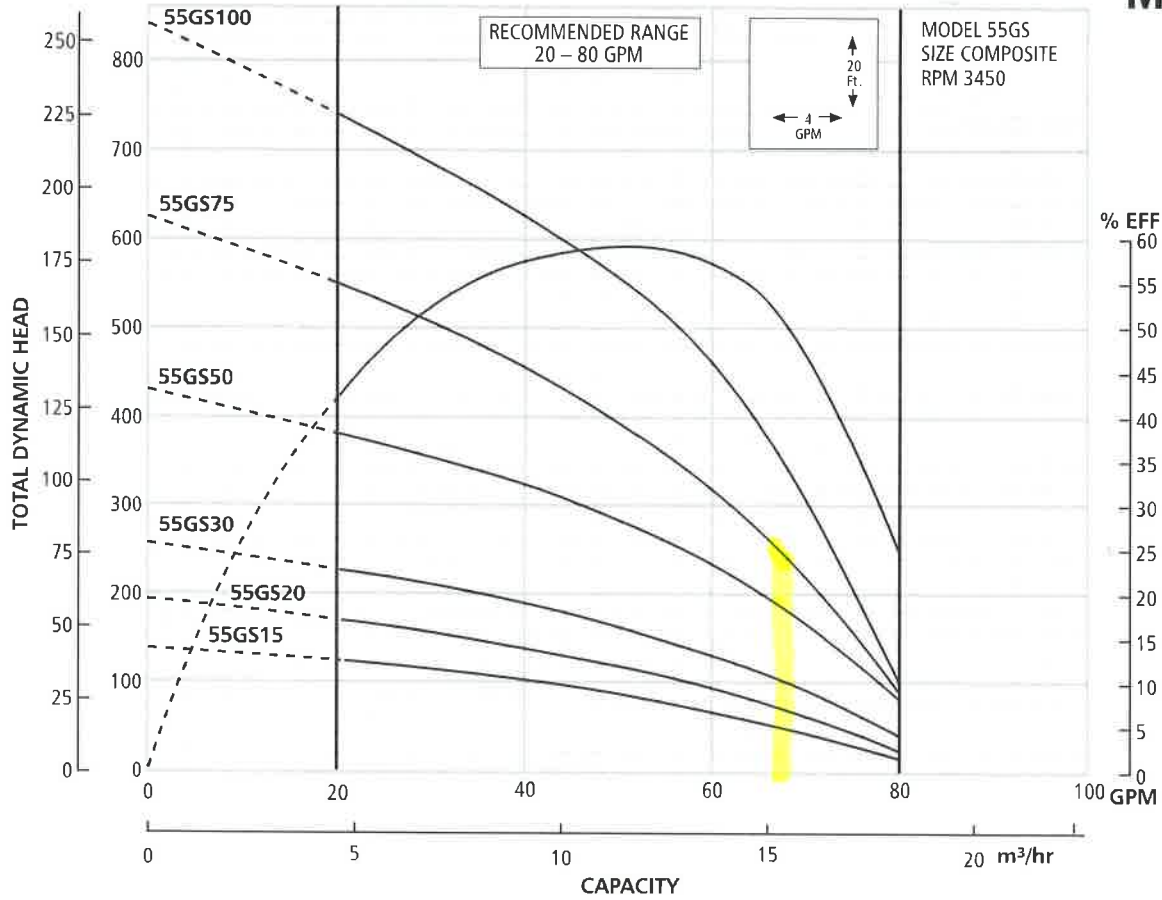
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																									
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	
55GS15	1½	0	78	71	64	54	42	24																				
		20	61	51	37																							
		30	49	35																								
		40	32																									
		50																										
		60																										
Shut-off PSI			52	43	35	26	17	9																				
55GS20	2	0		76	71	65	58	50	41	28																		
		20	69	63	56	48	37	24																				
		30	62	55	46	35	21																					
		40	54	45	34																							
		50	43	32																								
		60	29																									
Shut-off PSI			76	67	58	50	41	32	24	15																		
55GS30	3	0		80	76	72	68	63	58	52	44	35																
		20	75	71	67	62	56	49	42	32																		
		30	70	66	61	55	48	40	30																			
		40	65	60	54	47	39	28																				
		50	59	53	46	37	26																					
		60	52	45	36	25																						
Shut-off PSI			102	94	85	76	68	59	50	42	33	24																
55GS50	5	0				80	78	76	73	71	68	65	62	58	55	50	46	40	34	27								
		20		80	77	75	73	70	67	64	61	57	53	49	44	39	32	25										
		30	79	77	75	72	70	67	64	60	57	53	48	43	38	31	24											
		40	77	74	72	69	66	63	60	56	52	47	42	37	30	23												
		50	74	71	69	66	63	59	55	51	47	42	36	29	22													
		60	71	68	65	62	59	55	51	46	41	35	28	20														
Shut-off PSI			178	169	161	152	143	135	126	117	109	100	91	83	74	65	57	48	39	31								

Horsepower Range 7½ – 10, Recommended Range 20 – 80 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
			20	60	100	140	180	220	260	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860	900	940	980			
55GS75	7½	0			79	76	73	70	66	62	58	52	46	39	31	22														
		20		78	76	73	69	66	61	57	52	45	38	30	20															
		30	80	77	74	71	67	63	59	54	48	41	33	24																
		40	78	75	72	69	65	61	56	51	44	37	28																	
		50	76	73	70	67	63	58	53	47	40	32	23																	
		60	75	72	68	64	60	55	50	43	36	27																		
Shut-off PSI			261	243	226	209	191	174	157	139	122	105	88	70	53	36														
55GS100	10	0			80	78	76	75	73	71	68	66	63	60	56	51	47	41	35	28										
		20		80	78	76	74	73	70	68	65	62	59	55	51	46	40	33	26											
		30		79	77	75	73	71	69	67	64	61	57	53	48	42	36	29	22											
		40	79	78	76	74	72	70	68	65	62	59	55	50	45	39	32	25												
		50	78	77	75	73	71	69	66	63	60	56	52	47	42	35	28	21												
		60	77	76	74	72	70	67	65	61	58	54	49	44	38	31	24													
Shut-off PSI			353	336	319	301	284	267	250	232	215	198	180	163	146	128	111	94	76	59										

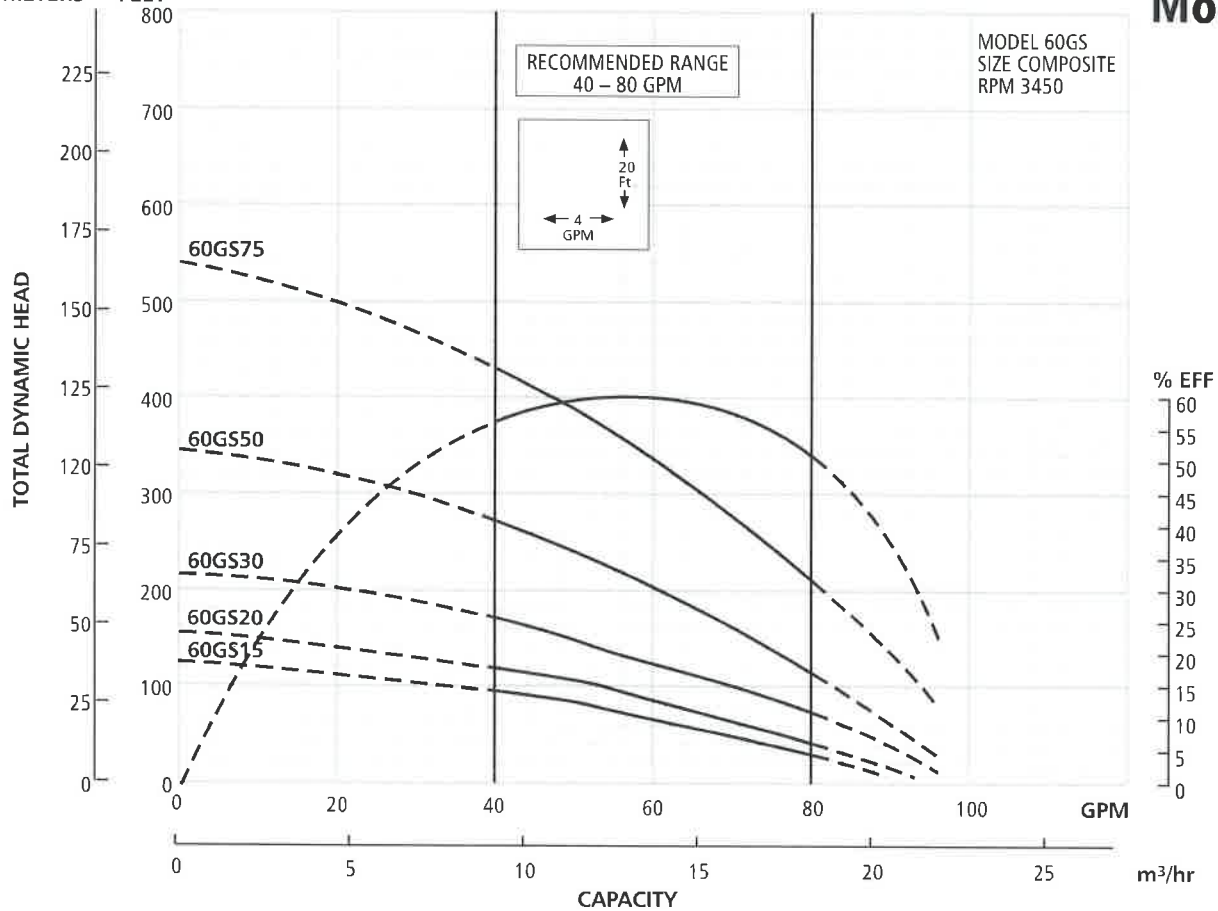
METERS FEET

Model 55GS



METERS FEET

Model 60GS



CLAYTON RUSSELL
RES: 365-5560



STATEMENT

3103 W. Idaho Blvd. • Emmett, Idaho 83617
Residential & Commercial Pump & Sprinkler Systems
Phone: 365-3266

Date 7-1-16

Dennis Robison

PLEASE DETACH AND RETURN WITH YOUR PAYMENT

QUAN.	DESCRIPTION	COST
1	2" Buclner Angle Valve	189.75
1	3/4" Buclner Angle Valve	72.24
10'	4" Sewer + Drain pipe	12.50
2	4" Torc Caps	13.90
1	1 1/4" Brass 90° el	17.81
1	1 1/4" Brass union	29.23
1	1 1/4" Brass male insert	15.59
2	1 1/4" Clamps	2.76
2	1 1/4" x 2 1/2" Brass Nipples	20.86
1	3/4 x 1/4 Brass Bushing	5.32
1	1/4 x 2 Brass Nipple	2.87
1	1/4 Brass Tee	5.59
1	Pressure gauge	10.00
9'	3/4 Flex	15.21
4	3/4 Flex Connectors	14.76
Total Materials		8201.84
Sales Tax		492.11
Total Labor		650.00
TOTAL		9343.95

Terms: All accounts due and payable upon receipt of invoice. A service charge of 1 3/4% per month (which is 21% annual percentage rate) will be charged on all past due accounts over 30 days. Extension subject to change.

MINIMUM SERVICE CHARGE: \$2.00

CLAYTON RUSSELL
RES: 365-5560



STATEMENT

3103 W. Idaho Blvd. • Emmett, Idaho 83617
Residential & Commercial Pump & Sprinkler Systems
Phone: 365-3266

Date 7-1-16

Dennis Robison

PLEASE DETACH AND RETURN WITH YOUR PAYMENT

821-0475

QUAN.	DESCRIPTION	COST
1	55G550 - 5 HP Goulds Pump	—
	with 5 HP Submersible motor	—
	and a B.F.-50 Drive	6574.00
80'	2" sch 120 Drop pipe	260.00
1	2" Check Valve	85.00
1	2" P.T.Ess adapter	350.00
90'	10/14 well wire	157.50
1	Splice kit	20.00
1	2 x 4 Brass Nipples	21.96
3	2" Brass Tees	150.36
1	2" Brass 90° el	36.20
2	2" x close Brass Nipples	26.90
3	2" x 2 1/2" Brass Nipples	40.35
2	2" x 3/4" Brass Bushings	40.26
2	3/4 x 2 Brass Nipples	10.98
Total Materials		
Sales Tax		
Total Labor		
TOTAL		

Terms: All accounts due and payable upon receipt of invoice. A service charge of 1 3/4% per month (which is 21% annual percentage rate) will be charged on all past due accounts over 30 days. Extension subject to change.

MINIMUM SERVICE CHARGE: \$2.00



Vallen
PUMP & EQUIPMENT
CORP. INC.
established 1945
Box 548
Emmett, ID 83617
Phone: 208-365-2972
1-800-248-2972
FAX 365-7431
After Hours: 208-365-4359

Name <i>Butch Coulter</i>			DATE: <i>Sept 6, 2000</i>
Phone #'s Home	Business <i>793-2241</i>	Cel. <i>223</i> <i>extension</i>	FAX <i>793-2488</i>
Billing Address			<i>Montour</i>
Work Site Address			<i>Montour</i>
Depth of Well <i>117'</i>			
Static Water Level <i>50'</i>			
Well screen, casing, liner <i>10ft liner bottom 10' PVC</i>			
Driller <i>SOS</i>			Date Drilled
Recommended setting <i>~ 70-80</i>			
Size of casing <i>6"</i>			
Desired gallons per minute <i>10-25</i>			
Maximum GPM estimated by Driller to be delivered <i>70</i>			
Elevation above well to house <i>0</i>			
Placement of tank: pit, garage, crawl space, <u>pump house</u> , mechanical room, basement			
Distance from well to house <i>10 ft</i> to pressure tank			to meter <i>~ 40 ft</i> <i>main house</i>
Power supply: Single or Three Phase <u>Power Company</u> , Generator			
Excavation to be done by: <i>Tom Cat field</i>			

Licensed pump installers are allowed to run wire from motor through controls, but not to power supply.

Submersible motors that we supply are generally 3-wire with ground.

We warrant our work and material for one year. A Five-year Insurance to cover motor and pump end can be obtained for an additional cost.

Payment is due at completion of job, or within 30 days of billing, unless other arrangements have been made.



Figure 1. Well tag #D0015579.



Figure 2. Well head with hose going to mainline.



Figure 3. Aquavar Solo 2 VFD pump controller, digital display showing 47 psi.



Figure 4. Pressure gage with analog gage showing about 46 psi.



Figure 5.
Mainline running
uphill from well.



Figure 6.
Mainline running
along property
boundary at
fenceline and
garden beds
irrigated with drip
lines.



Figure 7.
Handlines
irrigating pasture.



Figure 8. Looking
south towards
house and lawn
area.



Figure 9. Looking northeast towards house and lawn area.



Figure 10. Drip lines irrigating flower beds near house.



Figure 11.
Looking west at
spigot used to
irrigate area near
driveway.



Figure 12.
Looking south at
treeline on west
side of road that
is irrigated from
same well.



Figure 13.
Hillside just
northwest of house
not irrigated.



Figure 14. Area at
intersection of
Shaleroock Road
and Amy Lane
that is unirrigated.