

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 85-15445

Exam Date: June 14, 2012

1. Current Owner: RON BLEWETT
MELYNDA BLEWETT
19057 BUCHANAN RD
LEWISTON ID 83501
(208)746-4588
2. Accompanied by: Unaccompanied-Ron Blewett gave me permission to enter premises
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 SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SW1/4SW1/4 Sec. 17, Twp 34N, Rge 04W, B.M. NEZ PERCE County

GROUND WATER SW1/4SW1/4 Sec. 17, Twp 34N, Rge 04W, B.M. NEZ PERCE County

Method of Determination: GPS

2.

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	
34N	04W	17											5.8						5.8

Total Acres: 5.8

PLACE OF USE: STOCKWATER AND 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	
34N	04W	17											X						

Method of Determination: Field visit

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.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
D0017785	Unknown				
D0005967	Unknown				

D. FLOW MEASUREMENTS

1.

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

None-There was not an exposed line where I can obtain a measurement. The cooper pipe running from the well to the storage tank is only 1" in size which is impossible to obtain a polysonic measurement from. There was no direct discharge from the well so I physical measurement wasn't possible.

2. Measurements: I spoke with the right holder and he is not sure of the pump sizes of each well. He stated that the primary well has a capacity of 14 gpm and the secondary well can produce around 5 gpm. I have attached his statements that he made in email to this field report. There are a couple of methods that I can employ to verify his statement; pipe size conversion and horsepower equation. In addition, there is information written inside the pump house regarding the rate at which the storage tanks are filled.

E. FLOW CALCULATIONS

___x___ Additional Computation Sheets Attached

Measured Method: The back-up well is only used when the primary well is out of commission. The two wells are not used in conjunction so the capacity of the primary well is of concern only.

A). Stated diversion rate = 0.03 cfs

B). Pipe flow concerning a 1" pipe (see attached worksheet) = 0.03 cfs

C). The hp of the pump is unknown, I will back-calculate for the hp using the diversion rate of 0.03 cfs to see if it makes sense: Note that the psi is based on back pressure of 10 psi and lift of 7' (distance to top of the storage tank where the water is discharged)

$$8.8 \times \text{HP} \times 0.7/150 + (2.31 \times 13) = 0.03 \text{ cfs} \quad \text{HP} = 0.88$$

Based on the back-calculation the HP is either $\frac{3}{4}$ horse pump or 1 horse pump. If I re-calculate the hp equation I get the following:

$$8.8 \times \frac{3}{4} \times 0.7/150 + (2.31 \times 13) = 4.62/180 = \underline{0.025 \text{ or } 0.03 \text{ cfs}}$$

$$8.8 \times 1 \times 0.7/150 + (2.31 \times 13) = 6.16/180 = \underline{0.03 \text{ cfs}}$$

D). Finally the refill rate was recorded inside the pump house (see photos). Based on the photos, the diversion rate was recorded*:

$$450 \text{ gallons}/90 \text{ minutes} = 5 \text{ gpm or } \underline{0.01 \text{ cfs}}$$

$$150 \text{ gallons}/30 \text{ minutes} = 5 \text{ gpm}$$

*The conditions of this measurement are not known, the rate shouldn't be taken into account for the licensure of this permit. I conclude that the diversion rate of 0.03 cfs is reasonable and is the amount I recommend for the license.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: Pasture

$$V_{\text{I.R.}} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 5.8 \text{ acres} \times 3 \text{ af} = 17.4 \text{ af}$$

$$V_{\text{D.R.}} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \times 246 \times 1.9835 = 14.6 \text{ af}$$

$$V = \text{Smaller of } V_{\text{I.R.}} \text{ and } V_{\text{D.R.}} = 14.6 \text{ af}$$

2. Volume Calculations for Other Uses:

Domestic use: 1 home + 1 barn with two bathrooms + outbuilding with 1 bathroom = 0.6 af

Stockwater use: 20 cows/horses/mules = 12 gpd/animal yearly = 0.3 af

G. NARRATIVE/REMARKS/COMMENTS

There are two outbuildings in addition to the home under domestic use. The barn has two bathrooms and the other outbuilding has one restroom. The permit stated that there is only 1 home under the domestic use however adding the other outbuildings will not enlarge the domestic use beyond what they would be allowed under the 42-111 domestic exemption.

System Notes: There are two 3000 gallon storage tanks that have automatic shut-off valves at the 2500 gallon level. Once water is pumped up from the well, water is directly discharged into the top of the storage tank that is on the east side of the pump house. The two tanks are connected. A ½ horse pump then pumps water to the home, barn, and hydrants that are throughout the irrigated POU.

Note that I met with Mr. Blewett on 10/3/12 at his office in Lewiston to clarify the POU. Mr. Blewett drew an outline of the irrigated POU which I calculated to be 5.8 acres total. Mr. Blewett owns the entire POU at this time.

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>
IRRIGATION	03/15 to 11/15	0.030 CFS	14.6 AF
STOCKWATER	01/01 to 12/31	0.020 CFS	0.3 AF
DOMESTIC	01/01 to 12/31	0.030 CFS	0.6 AF
<u>Totals:</u>		0.030 CFS	15.5 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 ☐ Other

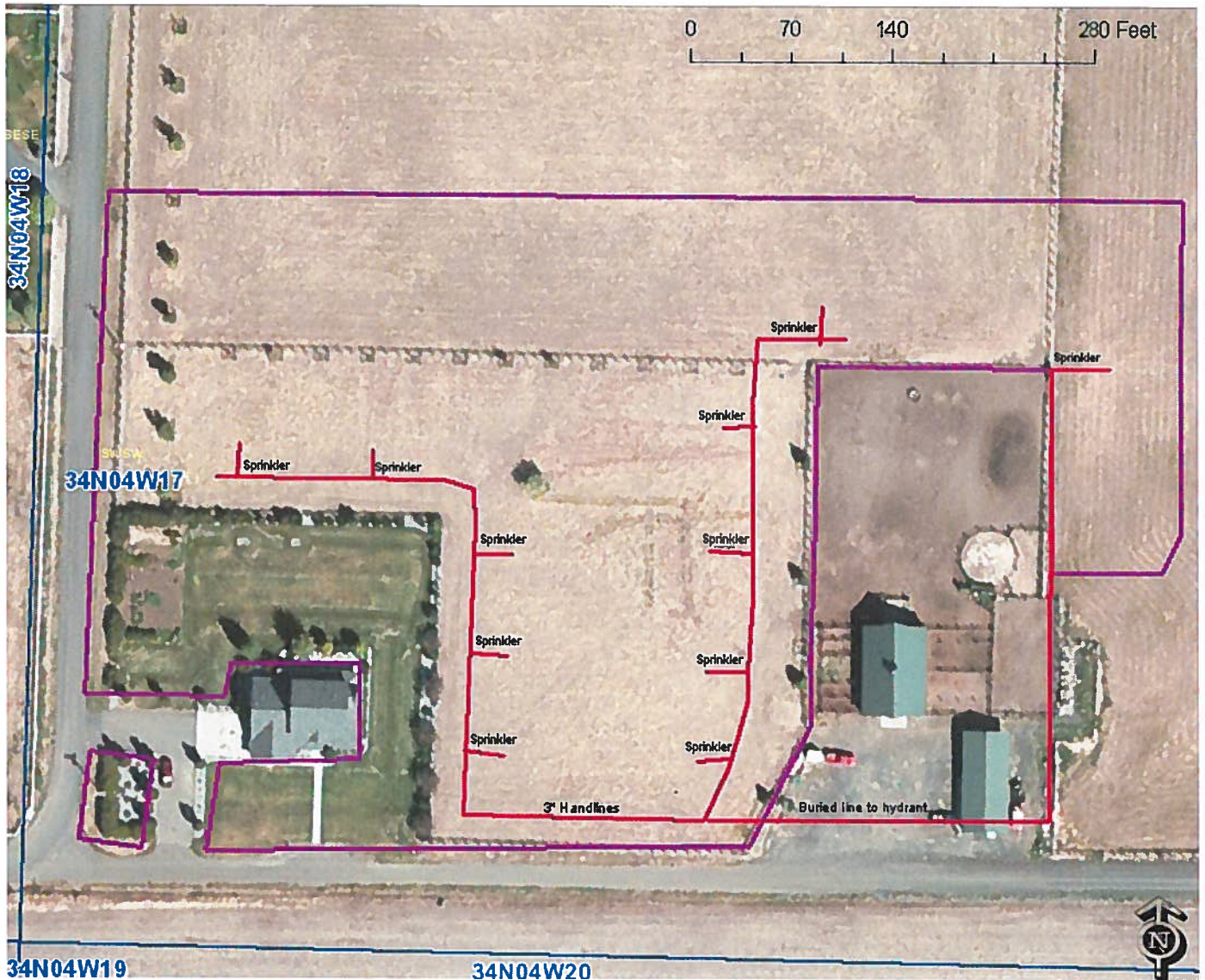
I. AUTHENTICATION

Field Examiner's Name Cheri Palmer Date 10/19/2012

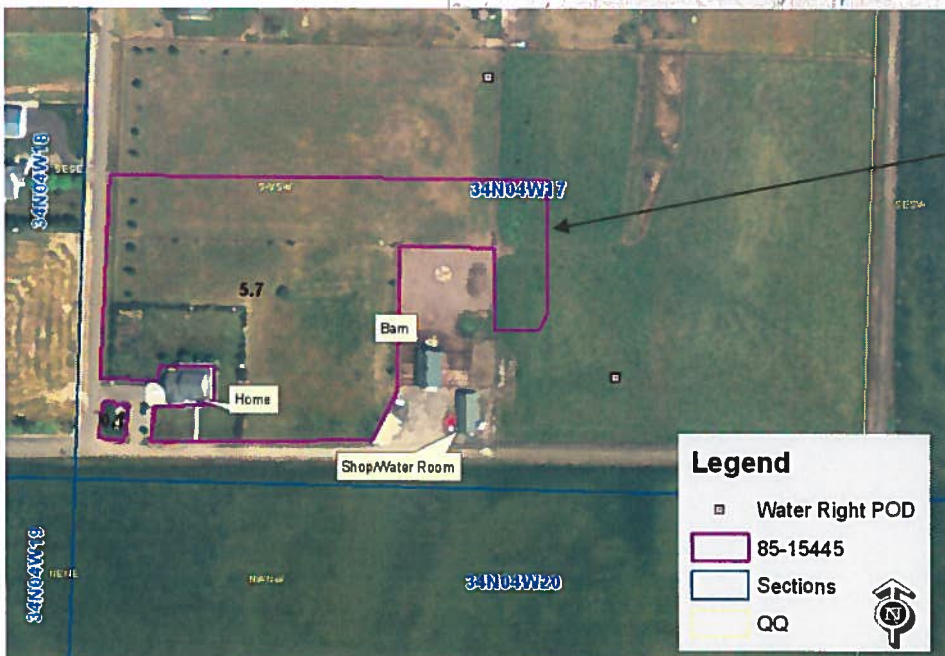
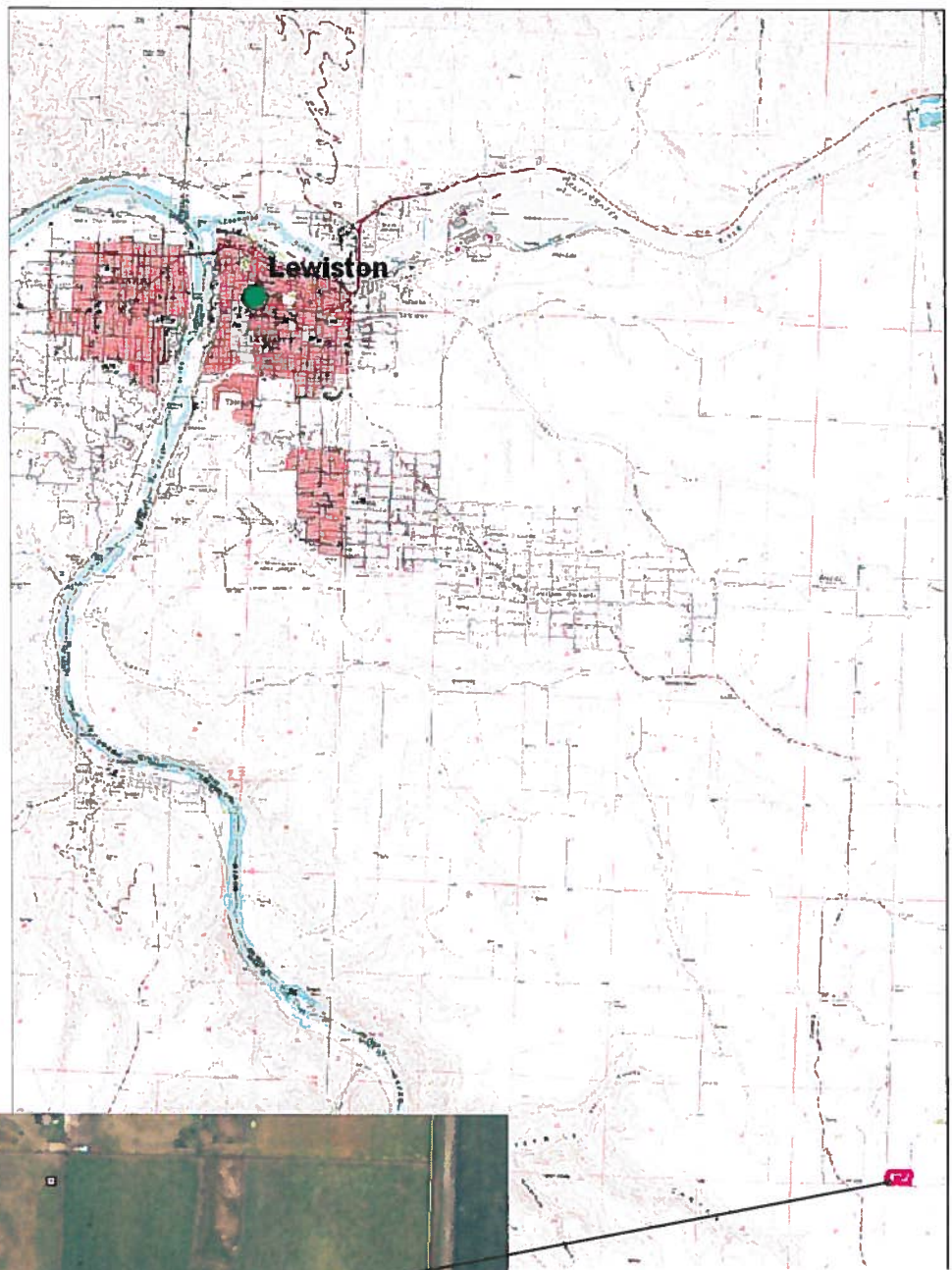
Reviewer _____ Date _____

Attachment #1 - Pumping Systems, Pipe flows worksheet
 Attachment #2 - Mr. Blewett's drawing of the POU
 Attachment #3 - 2 emails regarding the system from Mr. Blewett

Delivery System



Map/Aerial Imagery



Photos



Primary Well

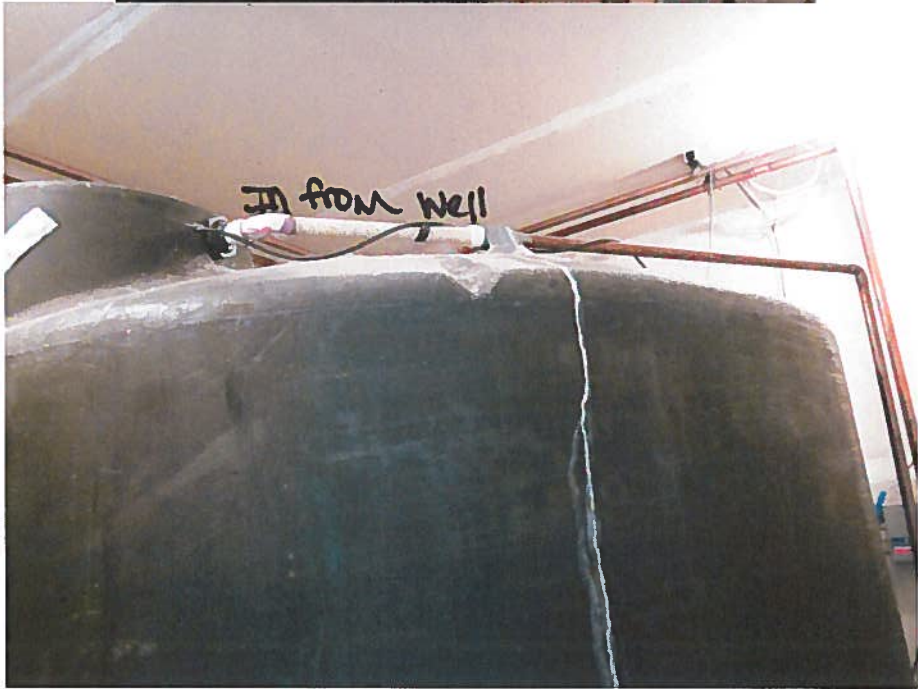


Back up Well



1/4 copper piping

In from well





Rediversion from
Storage via
1/2 hp pump



Owner's Information

Please fill in information and give this booklet to homeowner.
Warranty information is on page 2.

Model Number: C48M2DC11A1 Jet Assembly No. N/A

Serial Number: SF00

Dealer: Guardian Plumbing + Heat.

Dealer Phone No. 208-746-3087

Date of Purchase: 8-15-00 Installation: _____

GOULDS # 50785SL

Fiche du client

Remplir la fiche et donner le livret au propriétaire. Pour les conditions de garantie, voir page 10.

Numéro du modèle: _____ Numéro de l'éjecteur: _____

Numéro de modèle: _____

Détaillant: _____

No. de téléphone du détaillant: _____

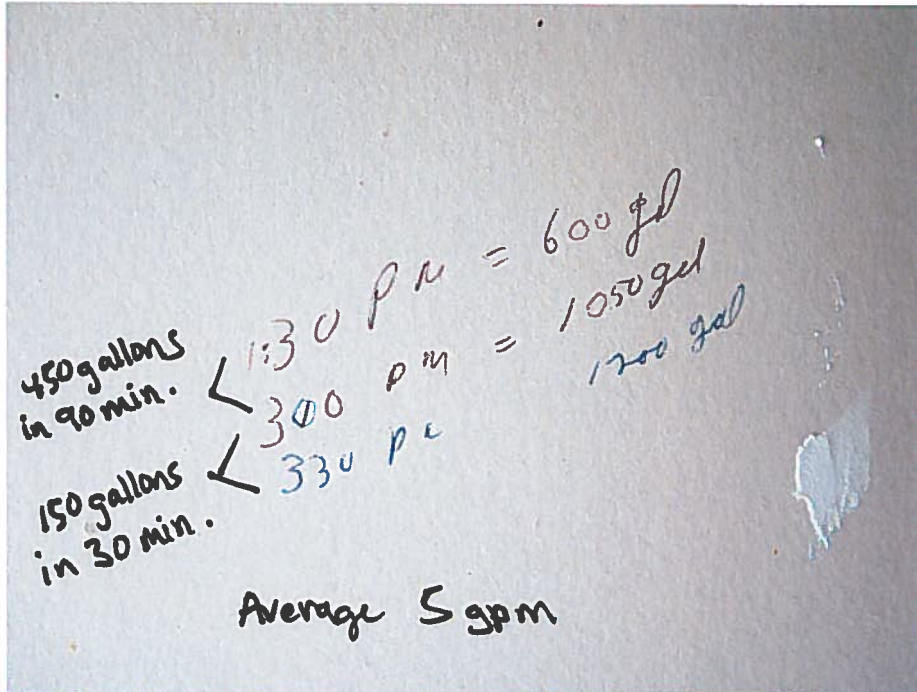
1/2 hp
Pump information

No information available
for pump in the well

9/23/00
Paul says

Put sprinkler @ 40 ft to
50 ft. If much
more pressure than that
open more & it
goes below 40 ft.
Then close her down
Sump. Gauge on blue
pump. [increase sprinkler as it
reduces water use]

System notes



Fill rate



Place of use
facing north

Place of use consists
of pasture grass.



Looking at field
on the east
portion of the
property.

This field is
dry farmed for
the most part.



Looking SW at
POV that is on
the west side of
the barn.

Note the handlines
along the fence.

At the time of the
exam, irrigation
of the POV had not
begun due to wet
spring.



water room/
Shop.



Domestic
pov ↓



Barn

PIPE FLOWS -- PUMPING SYSTEMS

[properly designed @ 5 ft. / sec.]

$$Q = 5 \pi r^2 \text{ (r in ft.)}$$

$$Q = 5 \pi R^2 \text{ (R in ft.)}$$

$$R = (\text{diameter}/12) / 2 \left(\frac{\text{dia}}{12} \right) \div 2$$

$$\pi = 3.1416$$

<u>PIPE DIAMETER(")</u>	<u>CFS (1/100)</u>	^(1/10) <u>MINER INCH</u>	^(1/10) <u>GALLONS/ MINUTE</u>
1	.03	1.5	13.5
2	.11	5.5	49.4
3	.25	12.5	112.2
4	.44	22.0	197.5
6	.98	49.0	439.8
8	1.74	87.0	780.9
10	2.73	136.5	1225.2
12	3.93	196.5	1763.8
14	5.34	267.0	2396.6
16	6.98	349.0	3132.6
18	8.83	441.5	3962.9
20	10.90	545.0	4891.9
22	13.19	659.5	5919.7
24	15.70	785.0	7046.2

THEORETICAL PSI's

Internal domestic	- 20 psi
Internal/external domestic	- 30 psi
Domestic w/ 5-10 acres	- 40 psi
Medium systems (up to 50 acres)	- 40 psi
Large pivots	- 60 psi

Attachment #1 85-15445

34N04W18

SWSW

34N04W17

SESW

NNW

34N04W20

NENW

Attachment #2

19

18

20

21

From: Ron Blewett [<mailto:ronblewett@idahoconstructionlawyers.com>]
Sent: Thursday, June 14, 2012 4:11 PM
To: Palmer, Cherie
Cc: lynn@idahoconstructionlawyers.com
Subject: Summary you requested

The water system works like this:

The primary well is the one to the east of the water room. A secondary well is to the north of the water room. We have not used the secondary well for some years, but did use it for domestic only for about a year. I wouldn't handle our irrigation demands and so we drilled the big well east of the barn.

Water comes from a submersible pump in the well into a 5000 gallon surge reservoir consisting of two large black tanks. If the water level goes down in the tanks the well pump automatically comes on.

The surge reservoirs feeds a Gould pump, which in turn feeds the large pressure tank in the water room.

The pressure tank services two 1.25 inch lines, one of which is dedicated to irrigation, and the other serves the house and the water troughs.

Let me know if I can help further.

Ron T. Blewett
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Attachment #3