

JUL 30 2004

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

Department of Water Resources
Southern Region

A. GENERAL INFORMATION

Permit No.: 45-13573

1. Owner: Evard LLC

Phone No.: _____

Current Address: c/o Reed Gibby, 576 S. 650 E., Burley, ID 83318

2. Accompanied by: Lee Gibby

Exam Date: 7/29/04

Address: _____ Phone No.: _____

Phone No.: _____

Relationship to Permit Holder: Nephew and manager of facility

3. Source: Groundwater _____ tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None

2. Other water rights with the same point of diversion: Upon reviewing the file, it appears that irrigation right 45-2723 is also

appurtenant to this well. There are two pumps in the well (see narrative).

C. DIVERSION AND DELIVERY SYSTEM

1. **Point(s) of Diversion:**

[illegible]

2. **Place(s) of Use:**

Indicate Method of Determination: _____

[illegible]

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ ditch size/ pipe i.d. as applicable.

See Attached Map

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use *(required)*.
☒ Aerial photo attached *(required for irrigation of 10+ acres)*.
☒ Photo of diversion and system attached.

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well pump	n/a	5	n/a	n/a	n/a

Note: Pump is a submersible unit. No plate on electrical panel or anywhere around well. Owner does not know make and model, but believes the motor is 5 HP. Flow measurement confirmed this.

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calibration
Portable ultrasonic		Fuji	Portaflow X		n/a	

2. Measurements: Discharge measured on 2" PVC inlet line to the pressure tank, under maximum flow conditions in
the facility: the pigs were awake and drinking, and normal barn washing was taking place. Maximum flow under
this condition was 50 gpm (see narrative).

E. NARRATIVE / REMARKS / COMMENTS

See attached narrative.

Have conditions of permit approval been met? ☐ Yes ☒ No No flow meter or other means of meas. as req'd by condition #4

F. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

Measured Method: Ultrasonic flowmeter measured rate is 0.11 cfs. Recommend this amount.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{n/a}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = \underline{n/a}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{n/a}$

2. Volume Calculations for Other Uses:

Annual volume requirement is 64.2 for stockwater and commercial facilities. See narrative for discussion of pig facility water requirements.

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
<u>Stockwater</u>	<u>1/1</u>	<u>12/31</u>	<u>0.11</u>	<u>64.2</u>
<u>Commercial</u>	<u>1/1</u>	<u>12/31</u>	<u>0.11</u>	<u>64.2</u>
TOTALS:			<u>0.11</u>	<u>64.2</u>

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 |

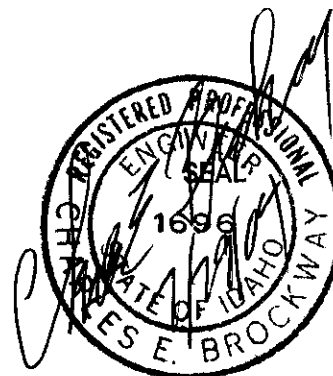
I. AUTHENTICATION

Field Examiner's Name: Charles G. Brockway

Date: 7/29/04

Reviewer: Charles E. Brockway

Date: 7/29/04



Narrative for Beneficial Use Examination Permit 45-13573 in the name of Evard LLC

C. G. Brockway and C. E. Brockway
July 29, 2004

This permit is for stockwater and commercial usage from a single well located as shown on the attached aerial map.

The well supplies water to a hog raising facility. Only grower / finisher pigs are housed in this facility. The facility houses a total of 18,750 grower-finisher animals. There are 10 barns buildings of varying size but approximately the same design. Hogs are located on a slotted floor over a concrete pit. The pits are flushed periodically, and the barns are washed down manually. The wash water enters the pit and provides the recharge of the pit. Drinking water for the animals is provided by "free-choice" drinking spigots.

There is one home and several shop buildings on the site. Water for these buildings is supplied by the View community water system.

The well is a 20-inch diameter hole with a steel casing at the surface, a steel plate over the top, and a short section of 6-inch casing welded on the steel plate and to the side of the hole. This 6-inch casing has a sanitary seal. There are two pumps in the well: a submersible pump for water right 45-13573, and a vertical turbine pump that is apparently for irrigation right 45-2723. The SRBA recommendation for 45-2723 shows this well as the point of diversion. A copy of a well drilling record is contained in the water right file for 45-2723 and is included with this report.

The stockwater/commercial well pump is a 5 HP submersible unit. There were no identification plates on the electrical panel or anywhere in the vicinity of the pump, so it was not possible to confirm the make/model of the pump and motor. The horsepower was provided by the owner, and agrees with the flow and pressure measured during the test assuming a 70% pump efficiency.

A Fuji Portaflow X sonic meter was used to measure the discharge from the well at the inlet to the pressure tank (see photo). The pipe was 2" PVC Schedule 40. The meter signal was strong and the reading was stable. The pressure switch was set to turn the pump on at 60 psi and off at 80 psi. Maximum water usage was occurring in the facility: the pigs were awake and drinking, and a wash-down was occurring according to standard practice. Under these conditions, the pump ran for approximately 1 minute to pressurize the tank, then shut off for about 10 to 20 seconds before kicking on again at 60 psi. This fast cycle indicates that the system was near maximum discharge.

The pump discharge varied during the cycle since the back pressure varied from 60 to 80 psi. The sonic meter took several seconds to equilibrate after the pump kicked on, so it was not possible to take a flow reading at 60 psi. At 70 psi, the flow was 45 gpm, and at 80 psi it was 40 gpm. Therefore, the estimated maximum discharge (at 60 psi) is 50 gpm (0.11 cfs).

Annual volume requirements were based on daily per-head drinking water usage. A literature review was made by Brockway Engineering in the course of the permit application. This data is attached to this report. The average water requirements from the various studies were used to determine annual volume: 2.3 gpd/head for grower-finishers and 3.1 gpd/head for boars.

Commercial water usage for wash-down and miscellaneous uses was estimated to be 0.75 gpd/head.

The attached spreadsheet was submitted with the original permit application and is still valid for this beneficial use exam. The total annual volume requirement is 64.2 acre-feet. The final recommendation is 0.11 cfs and 64.2 AFA.

It is also recommended, based on current IDWR policy, to remove condition #6 which lists the number of animals.

Water Requirements of Pigs in Various Growth Stages

Literature review by C. G. Brockway, P.E.

March 5, 2002

Growth Stage	Low				High				Mean		
	NCSU	PRDC	QDPI	DeKalb	NCSU	PRDC	Queen	DeKalb	Low	High	Average
Lactating sows	2.5	2.3	6.6	4	7	6.8	11.9	6.25	3.9	8.0	5.9
Pregnant sows	3	2	3.2	2	6	5.9	4	3.75	2.6	4.9	3.7
Boars	3	2	3.2	1.5	3	5.9	4	2.5	2.4	3.9	3.1
Nursery Pigs (up to 60 lb)	0.7	0.6	0.8	1	0.7	1.7	1.3	1.25	0.8	1.2	1.0
Grower Pigs (60-100 lb)	2	0.9	1.3	1.25	3	2.7	1.8	2	1.4	2.4	1.9
Finisher Pigs (100-250 lb)	3	1.1	1.8	1.5	5	3.3	3.2	2.5	1.9	3.5	2.7

NCSU = Almond, Glen (2002). *Water: Optimizing performance while reducing waste*. North Carolina State University.

PRDC = *Water Supply to Pigs*, Pig Research and Development Corporation

QDPI = Williams, Kev and M. J. Moore (2000). *Water requirements of pigs*. State of Queensland, Department of Primary Industries.

DeKalb = DeKalb Industries (swine facility consultant and developer)

WATER USAGE ESTIMATE - DECLO SITE #1

Evard LLC Swine Production Facilities

Brockway Engineering, PLLC
5-Mar-02

Location: SW1/4 NW1/4 Section 29, T. 11 S., R. 24 E.
Declo, Idaho

Description: 18,750 pigs, all grower-finisher animals

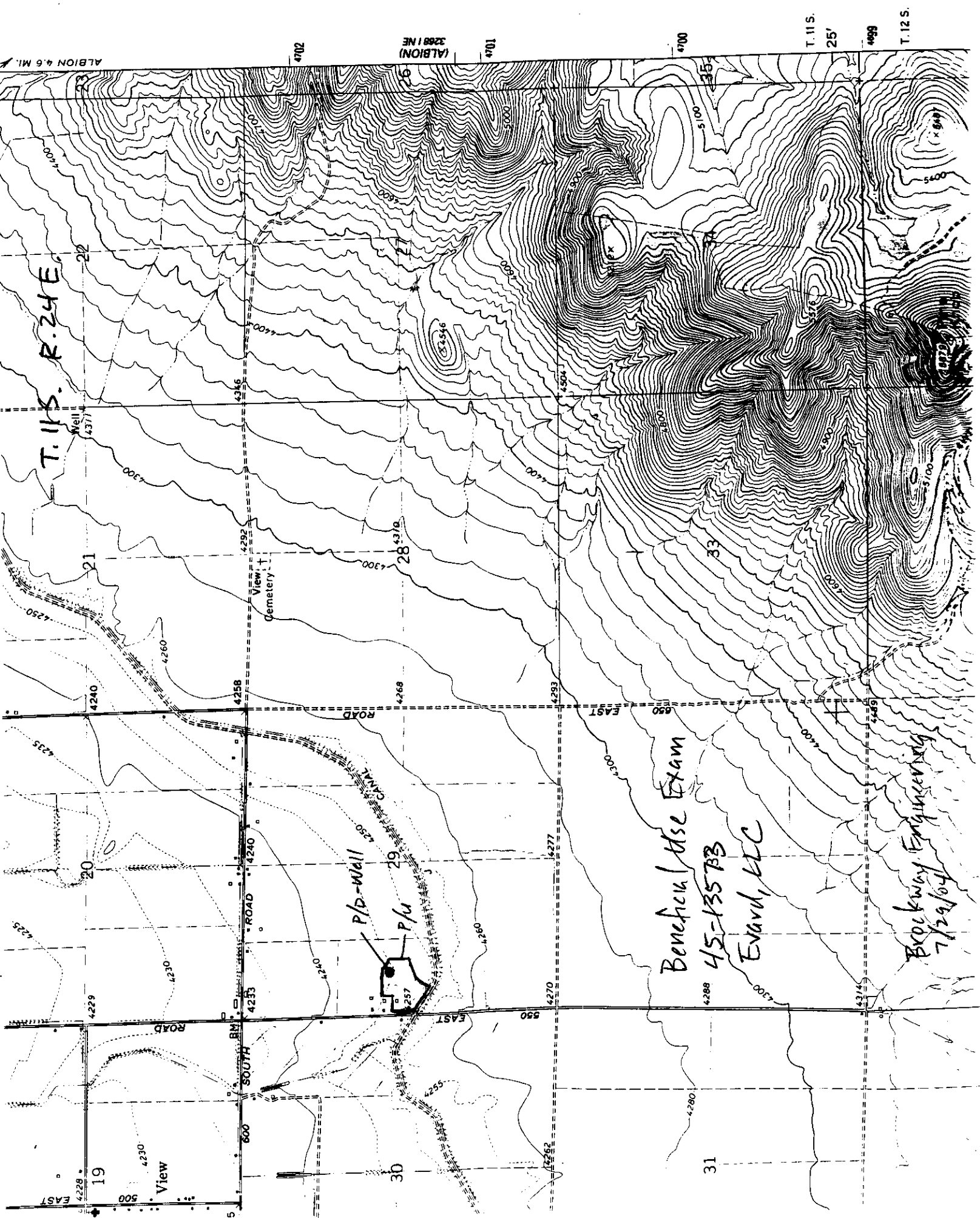
ANNUAL WATER USAGE

Assumes pigs receive minimal drinking water from feed

	No. Head	Gal/Hd	Gal/Day	
Lactating sows	0	5.9	0	
Pregnant sows	0	3.7	0	
Boars	50	3.1	157	
Nursery Pigs (up to 60 lb)	0	1.0	0	
Grower Pigs (60-100 lb)	0	1.9	0	
Finisher Pigs (100-250 lb)	0	2.7	0	
Grower-Finisher Pigs	18,750	2.3	43,125	
Total drinking water			43,282	gpd
Estimated commercial water usage	18750	0.75	14,063	gpd
TOTAL DRINKING + COMMERCIAL			57,344	gpd
			64.2	afa ~

DIVERSION RATE REQUIREMENT

Average daily withdrawal	57,344 gpd
Peaking factor	3.00
Peak withdrawal rate	119 gpm
	0.27 cfs



T. 11 S. R. 24 E.

Beneficial Use Exam
45-13573
Evard, LLC

Brockway Engineering
7/29/04

T. 11 S.
25'
4899
T. 12 S.

(ALBION)
3288 I NE

4702

4700

31

View

P/d-Wall

P/u

15

ROAD SOUTH

ROAD EAST

Demetery

View

Well

View

View

View

SW1/4 NW1/4
SECTION 29

T. 11 S.
R. 24 E.

P/D - WELL

MAINLINE TO BARNS

P/U - HOG RAISING FACILITY

NW1/4 SW1/4
SECTION 29

**SITE MAP FOR BENEFICIAL USE EXAMINATION
PERMIT 45-13573 IN THE NAME OF EVARD LLC**

2003 AERIAL PHOTO BASE

Brockway Engineering, PLLC
July 29, 2004



Photo 3: Panorama of facility from south boundary looking north

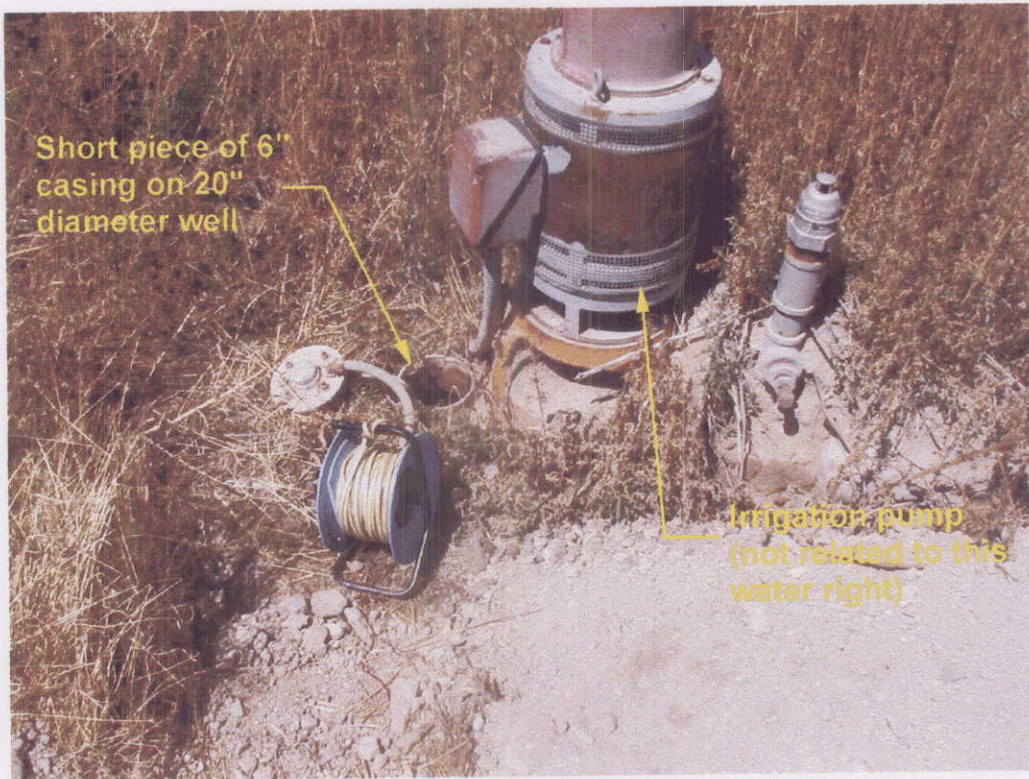


Photo 1: Well

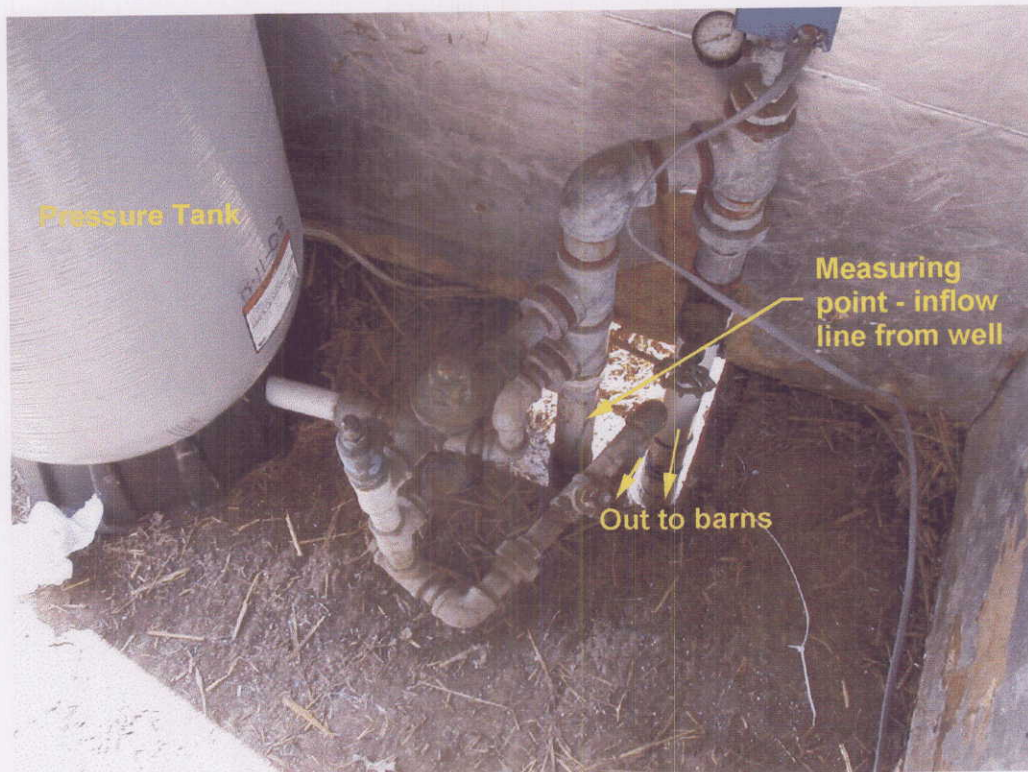


Photo 2: Piping at pressure tank and measuring point

Difference = $\frac{(\text{Subject} - \text{Test}) \times 100\%}{\text{Test}}$ = _____ % Calibration Multiplier = (Test / Subject) : _____