

MEMO

TO: File 65-13961

FROM: CPadilla

DATE: August 16, 2010

RE: Licensing Review Memo

Time Line:

Application for Permit Received: 6/29/2000

Permit Approved: 10/1/2003

Proof of Beneficial Use Received: 9/23/2008

Field Exam Conducted: 7/19/2010

PD Summary: This permit will be licensed to include 2 wells as listed in the table below. There are a couple of rights that share Well #1. Note that wells #1 and #2 are interconnected as of the field exam that was conducted in 1996 for 65-13176.

Tag #	Location	Rights that Use PD	Uses
#1 A0018800 (Older/Primary Well)	SWSW Sec. 12	65-3886, 65-4488, & 65-13961	Domestic, Stock, Commercial
#2 A0018799	SWSW Sec. 12	65-13961	Stock, Commercial

Right	PD & Capacity ¹		Div. Rate	Volume	Uses	Priority
	#1	#2				
65-4448	x		0.04	1.2	Domestic	4/1/13
65-3886	x		0.04	1.9 (1.2 is added)	Domestic & Stock (0.7 af for cattle)	6/1/20
65-13961	x	x	0.14	33.6	Comm. & Stock	11/1/93
Total	0.08	0.06	0.14	36 afa		

There will be a combined limit added to the license to limit 65-3886, 65-4448, and 65-13961 to the diversion to 0.14 cfs since that is the total capacity of the system. There will also be a combined limit for the volume of 65-3886 and 65-13961. Since the stock under 65-3886 are accounted for under this license, the volume will be limited to 34.8 afa (33.6 afa which is the full stock volume for 65-13961 + 1.2 afa the domestic volume under 65-3886).

Additional POD Considerations

- I recommend that the right holder file a transfer to add Well #2 to rights 65-4448 and 65-3886 as they are diverted from both wells.

¹ The capacity is based on pump curves found in the Beneficial Use Field Report

- It was unclear whether 65-3886 and 65-4448 share a PD since there was some conflicting information in the field exam for 65-13176 where the system at Sandy Ave. was evaluated (this is mainly due to the confusion of the right holder). The claim file for 65-3886 included an overlap analysis for the PD and states that rights 65-3886 and 65-4448 share a PD (see attached report). In addition, #Well 2 wasn't constructed until 1973 and a site visit was conducted in 1972 by IDWR staff that recorded the POD for 65-3886 as being the well to the north of the brick house (Well #1). There is not a well log on file for Well #1. Therefore, the date the well was drilled is unknown but must be the well that was serving those senior rights.

POU Overlap Analysis: The place of use covers the dairy that is located off of 5888 Sandy Ave only. The operation at Silverleaf in Sec. 15 is covered by 65-5113 & 65-13176. Note that 65-22083 is diverted out of the pitcher pump in the NWSW of Sec. 12 and is for domestic use only. This right is not significant in the overlap analysis.

Type	WR #	Owner	Source	TRS	NESW	NWSW	SWSW	SESW
Right	65 13961	TERRY A JONES,	GROUND WATER	07N03W12	X	X	X	X
Right	65 4448	ROBERT B HAMILTON, MILDRED G HAMILTON,	GROUND WATER	07N03W12			X	
Right	65 3886	TERRY A JONES, KERMIT Q JONES,	GROUND WATER	07N03W12			X	
Right	65 22083	TERRY A JONES, KERMIT Q JONES,	GROUND WATER	07N03W12		X		

Conditioning

Comment	Water Permit Condition Report 65-13176
Doesn't carry to license	046 Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
Doesn't carry to license, confirmed that at the most 790 total cattle were present during the development period.	X02 Stockwater use is for 1300 dairy cattle.
	Use of water under this right may be affected by an agreement between the protestant and the right holder.
Becomes condition 103 at licensing	121 The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.
Confirmed this is an accurate description of the water use. Carry to license	Commercial use is for a dairy.
	Failure of the right holder to comply with any condition of approval is cause for the Director to void this permit.
Carry to license	01M After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to determine the amount of water diverted from power records and shall annually report the information to the Department.
Carry to license. There is a lagoon in place where the wastewater discharges.	WD8 The place of commercial use authorized by this approval includes land upon which wastewater may be applied for irrigation purposes to satisfy water quality requirements. Water diverted under this approval shall not be used for irrigation unless the water is first used in the dairy as authorized by this water right.

Doesn't carry to license	26A Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which permit holder had no control.
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Volume and Diversion Rate: Rate will be based on the total capacity of the system of 0.14 cfs and the volume is based on Volume Worksheet #2 in the Beneficial Use Field Report. The volume will be 33.6 afa.

Amendment Needed?: YES. The POD and POU will need to be amended.

DATE: 02/02/00
PAGE: 1

Stage: PERMIT

Place of use Legal Description for: STOCKWATER

Pou County: GEH

Conditions of Approval:

046 - Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code.

026 - Permit holder shall commence the excavation or construction of diverting works within one year of the date this permit is issued and shall proceed diligently until the project is complete.

Remarks: GEN Stockwater use is for 200 dairy cattle.

Misc: Water District Number: Field Exam Fee: R (Received)

Comments: **Date:** 08/05/1992 **User ID:** VAULT **Subject:** Lapse Notice Sent
Lapse Notice Sent

Date: 08/11/1992 User-ID: VAULT
Extension of Time Received Subject: Extension of Time Received

Date: 08/05/1993 User-ID: VAULT Subject: Lapse Notice Sent

ADJUDICATION DIVISION
REPORT OF EXAMINERS

Claim No. 65-3886

1. Name of Applicant: Howard Berge
2. Priority: 6-1-1920
3. Source of Water: Groundwater
4. Determine Purpose and Quantity of Water Found Used:

(Quantity) (Dom., Irr., Stk. water, etc.) (Mo.-Day) (Mo.-Day)
04 Use Dom. & Stock Period of Use From 1-1 To 12-31
10.9 Use Stock Period of Use From 1-1 To 12-31
 Use Period of Use From To

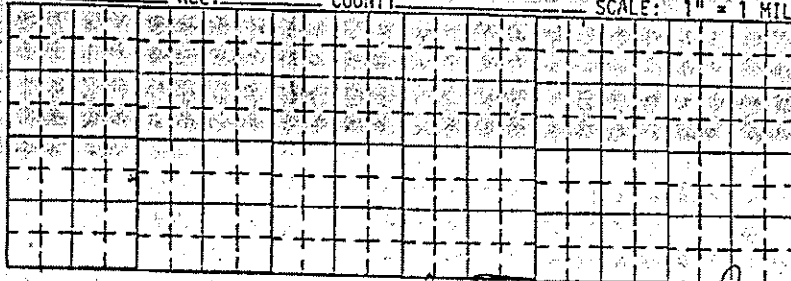
5. Location of Point of Diversion: SW SW of Section 12
 Twp. 7N, Rge. 3W County of Gem

6. Describe Diversion Works: Well pump

7. Describe Location of Use:

TWP	RGE	SEC	NE 1/4				NW 1/4				SW 1/4				SE 1/4				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
<u>7N</u>	<u>3W</u>	<u>12</u>											X						
<u>7N</u>	<u>3W</u>	<u>13</u>					X												

TWP. _____ RGE. _____ COUNTY _____ SCALE: 1" = 1 MILE



8. Purpose Other Than Irrigation: Domestic household with
much and outside use and stock
50 cattle

9. Remarks: Well located north of brick house
location of P.O.D. is SWSW sec 12 instead of
NWNW Sec 13

This examination was made on the 4 day of April, 1922

(Signed) Hubert Wayne
EXAMINER.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No:

65-13961

Exam Date:

7/19/2010

1. Current Owner: TERRY A JONES
5888 SANDY AVE
EMMETT ID 83617
(208)365-3707

2. Accompanied by: Terry, Andy Waldera (atty) and Clayton (pump guy)

3. **SOURCE**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: surface water from Emmett Irrigation Dist.
2. Other water rights with the same point of diversion: 65-3886 and 65-4448

C. DIVERSION AND DELIVERY SYSTEM

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

Well #1: GROUND WATER SW1/4SW1/4 Sec. 12, Twp 07N, Rge 03W, B.M. GEM County A0018800 (primary well)

Well #2: GROUND WATER SW1/4SW1/4 Sec. 12, Twp 07N, Rge 03W, B.M. GEM County A0018799 (secondary well)

Method of Determination: GPS, field inspection, and aerial imagery (2009)

2.

PLACE OF USE: STOCKWATER and COMMERCIAL

TwpRgeSec	NE				NW				SW				SE				
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
07N03W11													X			X	
07N03W12								X	X	X	X						
07N03W13					X												

Method of Determination: verified with Terry and Andy

3. ___x___ Delivery System Diagram Attached (required). Indicate all major components and distances between components. 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___ Photo of Diversion and System Attached

4.

Well or Diversion

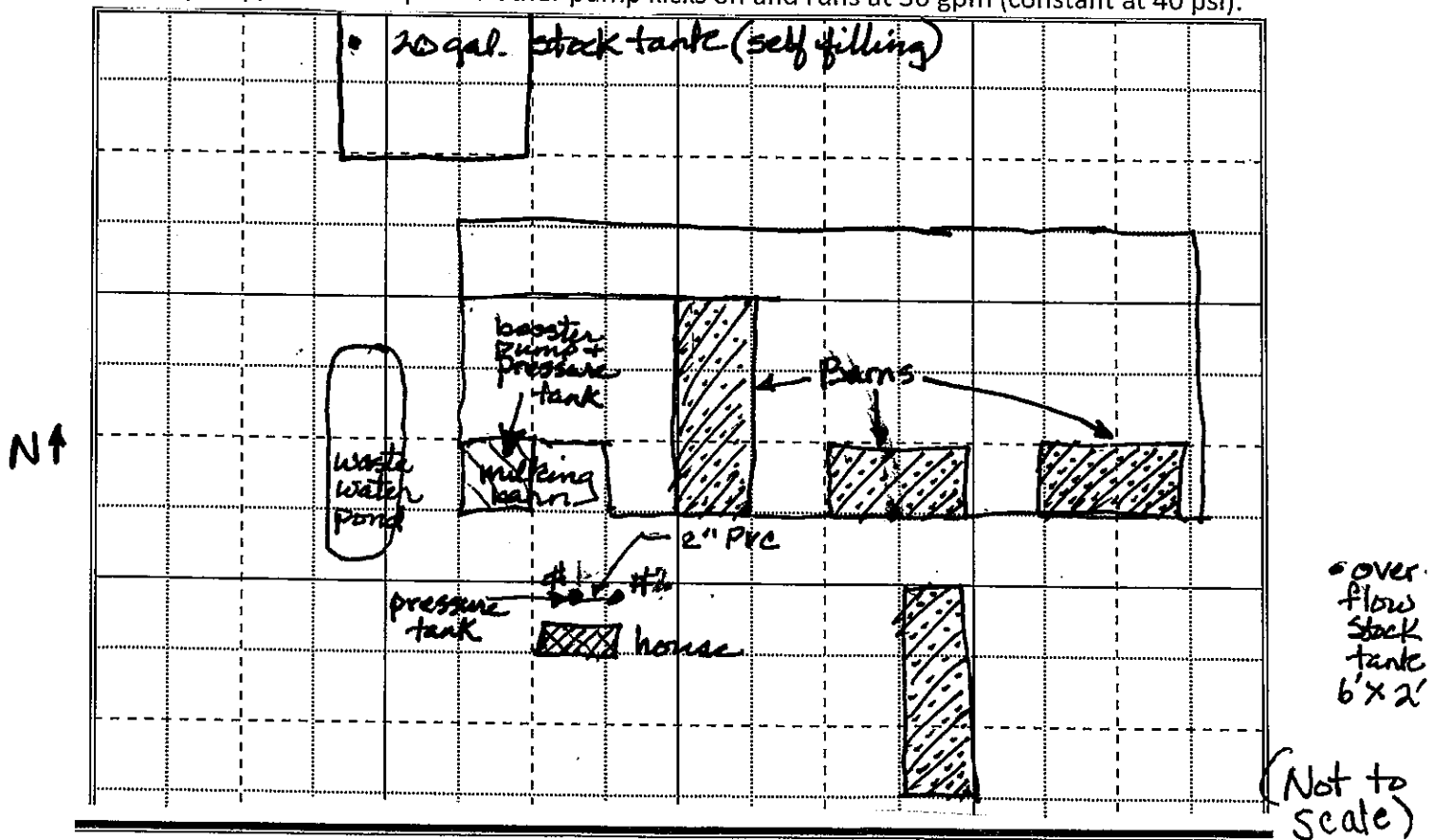
ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
A0018800	6" casing	1.5	33GS15	Goulds	2"
A0018799	6" casing	1.5	25GS15	Goulds	1.5"

D. FLOW MEASUREMENTS

1. **Measurement Equipment:** pump curves, theoretical, and pipe conversion measurements (no physical measurement possible)

2. Measurements: See the calculations in measurement section.

Additional information on system: Wells are tied together at the pit next to Well #2; PVC splits 3/4" to the house, 1 1/2" to barn and (2) 1 1/2" to feed lot stock tanks. In 2003, Clayton Russell conducted a 12hr pump test when the pumps were upgraded and measured Well #1 at 33 gpm and Well #2 at 25 gpm. At the field exam we found (3) 12'x12'x3' stock tanks; (6) 20 gallon tanks, (1) 6'x2' circular tank; (1) 120 gallon pressure tank in the milk house; and (1) 86 gallon pressure tank in the pit (next to Well #2). The static depth is 48' and the system runs at 60 psi variable pump, then at 40 psi the other pump kicks on and runs at 30 gpm (constant at 40 psi).



E. FLOW CALCULATIONS x Additional Computation Sheets Attached

Measured Method: Pump curves for 33GS and 25GS were evaluated in addition to the theoretical calculations, pipe conversion calculations, and pump test information. Here are the results:

Theoretical		Pump Curves		Pipe Conversion	Pump Test
Well #1	Well #2	Well #1	Well #2	Curve	
33GS15	25GS15	33GS15	25GS15	0.15	0.12
*0.0658	*0.0658	0.08	0.06		
0.14 cfs		0.14 cfs			

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: NA

2. Volume Calculations for Other Uses (pick the smaller of the two):

- Maximum volume the system is capable of producing= 0.14 cfs x 365 days x 1.9835 = 101.4 afa
- Volume estimates based on dairy and stockwater, see attached worksheets #1 and #2:
 - Commercial: 10982 gpd or 12.3 afa
 - Stockwater: 18980 gpd or 21.3 afa

Volume Total = **33.6 afa**

G. NARRATIVE/REMARKS/COMMENTS: There are two wells that are located to the north of the home known as 5888 Sandy Ave. The older well, located on the left-side, if you are facing the northern direction, is associated with domestic and stockwater right 65-3886 (50 range cattle, 0.7 af/0.02 cfs) and domestic right 65-4448.

I based the volume calculation on information from Terry regarding the height of the dairy operation. He said that his operation was at its' height in 2003 and topped out at 790 cattle. He also submitted other documents, invoices, statements that support the number of cattle.

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>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
STOCKWATER	01/01 to 12/31	0.140 CFS	33.60 AF
COMMERCIAL	01/01 to 12/31	0.140 CFS	33.60 AF
<u>Totals:</u>		0.140 CFS	33.60 AF

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

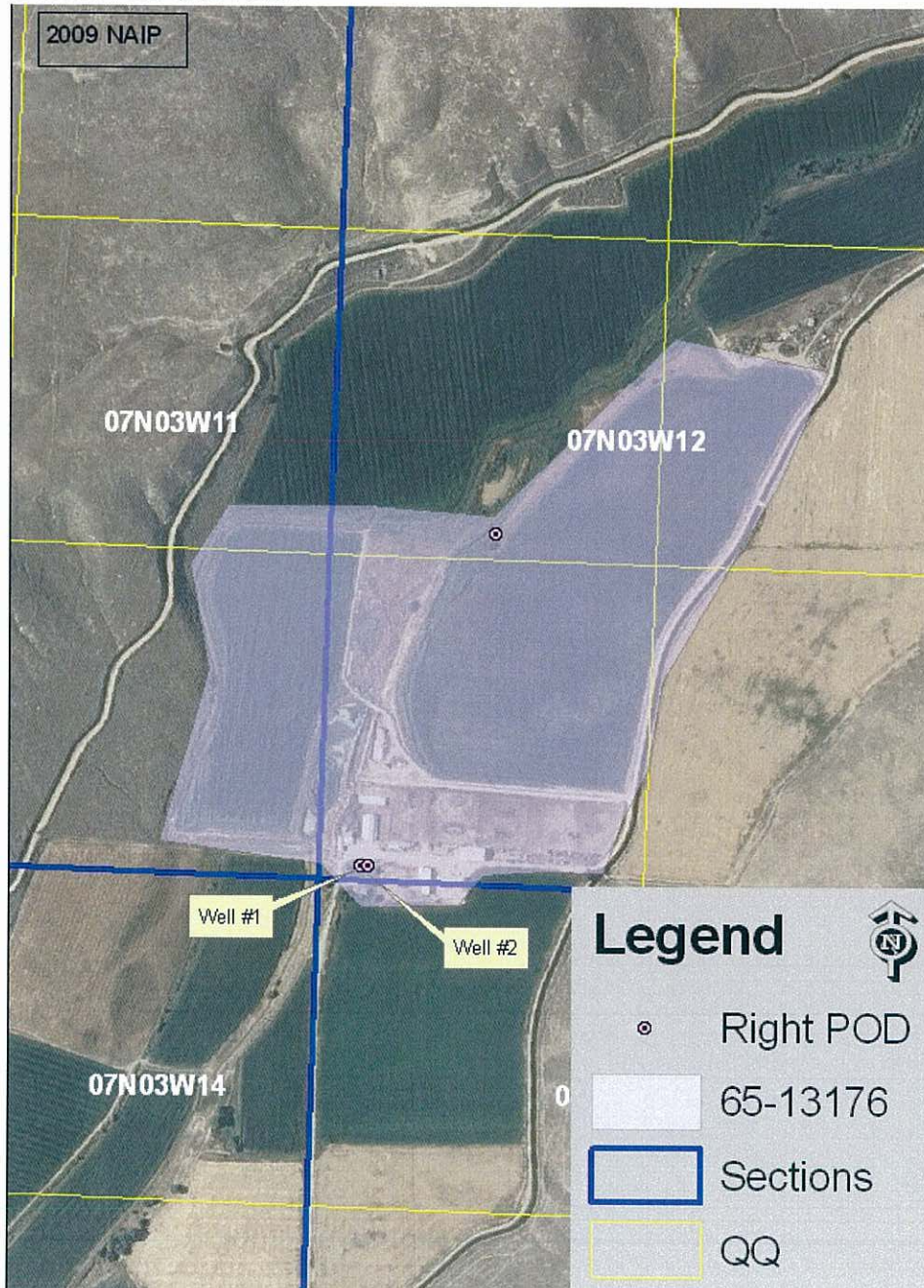
☐ Change P.U. as reflected above ☒ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name: Cherie Padilla and Sandy Hemenway Date: 8/16/10

Reviewer _____ Date _____

JPEG of POD and POU:



Pump Curves, Theoretical Measurements,
Pipe Conversions and Pump Test Data

- Clayton Russell (pumpman) 866-8019 ran a 2003 pumping test for 12 hrs: #1 33 gpm, #2 25 gpm
- The booster pump, located in the washer/dryer room (in the milking bar), is for the washing ~~barn~~ barn.
- Cows are individually hand washed, prior to milking.
- Waste water is run through the irrigation system, probably 2-3 days per year.

Measurement: (theoretical, pump curves, & pipe conversions)
+ pump test for 12 hrs. results

Theoretical

#1

$$\frac{(8.8) \times (1.5 \text{ Hp}) (.70)}{(2.31 \times 40 \text{ psi}) + 48'} = \frac{9.24}{140.4} = .06$$

#2

$$\frac{(8.8) \times (1.5 \text{ Hp}) (.70)}{(2.31 \times 40 \text{ psi}) + 48'} = .06 \text{ cfs}$$

Pipe Conversions

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

$$r = (\text{diameter}/12)/2$$

$$\pi = 3.1416$$

3/4" to house = .015

1 1/2" to barn = .06 cfs

(2) x 1 1/4" to feed
Let stock tanks
= .08 cfs

33 gpm x 0.00223 =
0.07359 cfs

25 gpm x 0.00223 =
0.05575

#1 + #2 = .12 cfs
maximum capacity

(both are tied in together
at the 86 gallon
pressure tank located
in the milking bar)

Max. capacity
of pipe, if
full = 0.15 cfs

0.07 + 0.05
= 0.12
cfs
capacity

PIPE FLOWS -- PUMPING SYSTEMS

[properly designed @ 5 ft. / sec.]

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

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

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

$$\pi = 3.1416$$

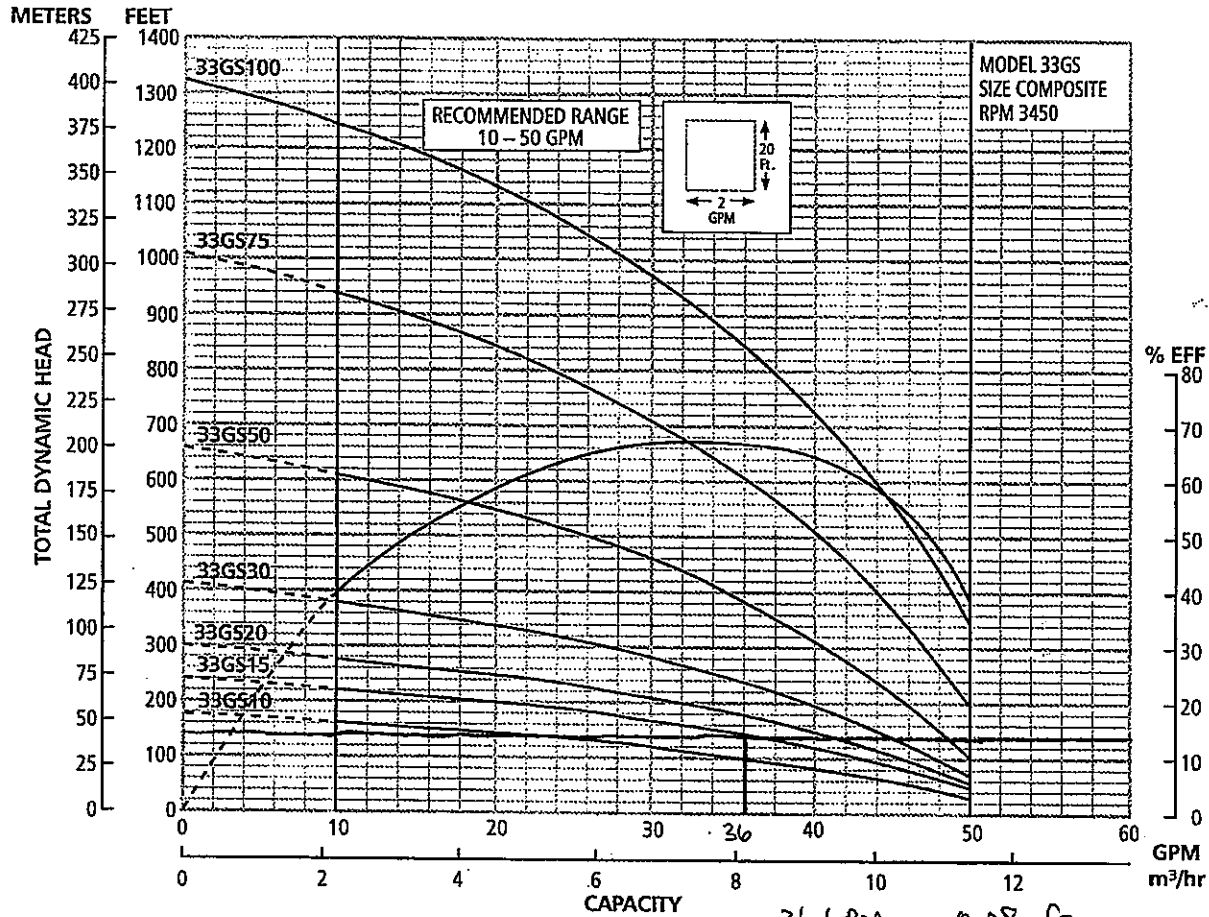
<u>PIPE DIAMETER(")</u>	<u>CFS (1/100)</u>	^(1/10) <u>MINER INCH</u>	^(1/10) <u>GALLONS/ MINUTE</u>
1	.03	1.5	13.5
2	.11	5.5	49.4
3	.25	12.5	112.2
4	.44	22.0	197.5
6	.98	49.0	439.8
8	1.74	87.0	780.9
10	2.73	136.5	1225.2
12	3.93	196.5	1763.8
14	5.34	267.0	2396.6
16	6.98	349.0	3132.6
18	8.83	441.5	3962.9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

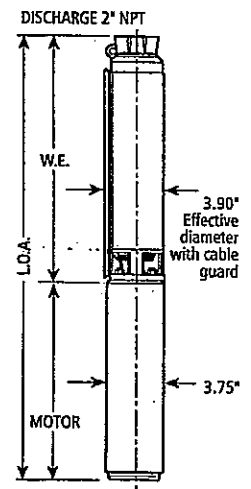
Model 33GS

GOULDS PUMPS



DIMENSIONS AND WEIGHTS

HP	Stages	W.E. Order No.	Motor Order No.	PH	Motor Volts	Motor Length	W.E. Length	L.O.A.②	W.E. and Motor Weight
1	6	33GS10	S06940	1	230	9.5	14.2	23.7	32
			S06978	3	200	11.8	14.2	26	32
			S06970		230				
			S06975		460				
1½	8	33GS15	S07940	1	230	13.6	16.6	30.2	37
			S07978	3	200	11.8	16.6	28.4	34
			S07970		230				
			S07975		460				
2	10	33GS20	S07979		575				
			S08940	1	230	15.1	19.1	34.2	40
			S08978	3	200	13.6	19.1	32.7	38
			S08970		230				
3	14	33GS30	S08975		460				
			S08979		575				
			S09940	1	230	19.1	24	43.1	54
			S09978	3	200	16.1	24	40.1	48
5	22	33GS50	S09970		230				
			S09975		460				
			S09979		575				
			S10940	1	230	28.2	35.2	63.4	83
7½	34	33GS75	S10978	3	200	22.2	35.2	57.4	68
			S10970		230				
			S10975		460				
			S10979		575				
10	44	33GS100	S119784	3	200	28.2	49.6	77.8	88
			S119704		230				
			S119754		460				
			S119794		575				
			S129724	3	460	30.4	61.9	92.3	100
			S129794		575				



NOTES:
For complete pump, order water end and motor.
① W.E. = water end or pump without motor.
② L.O.A. = length of assembly - complete pump - water end and motor.

$$TDH = (2.31 \times 40 \text{ psi}) + 48' = 140'$$

Model 33GS

SELECTION CHART

both 6" @ 75-80' deep

Horsepower Range 1 - 3, Recommended Range 10 - 50 GPM, 60 Hz, 3450 RPM

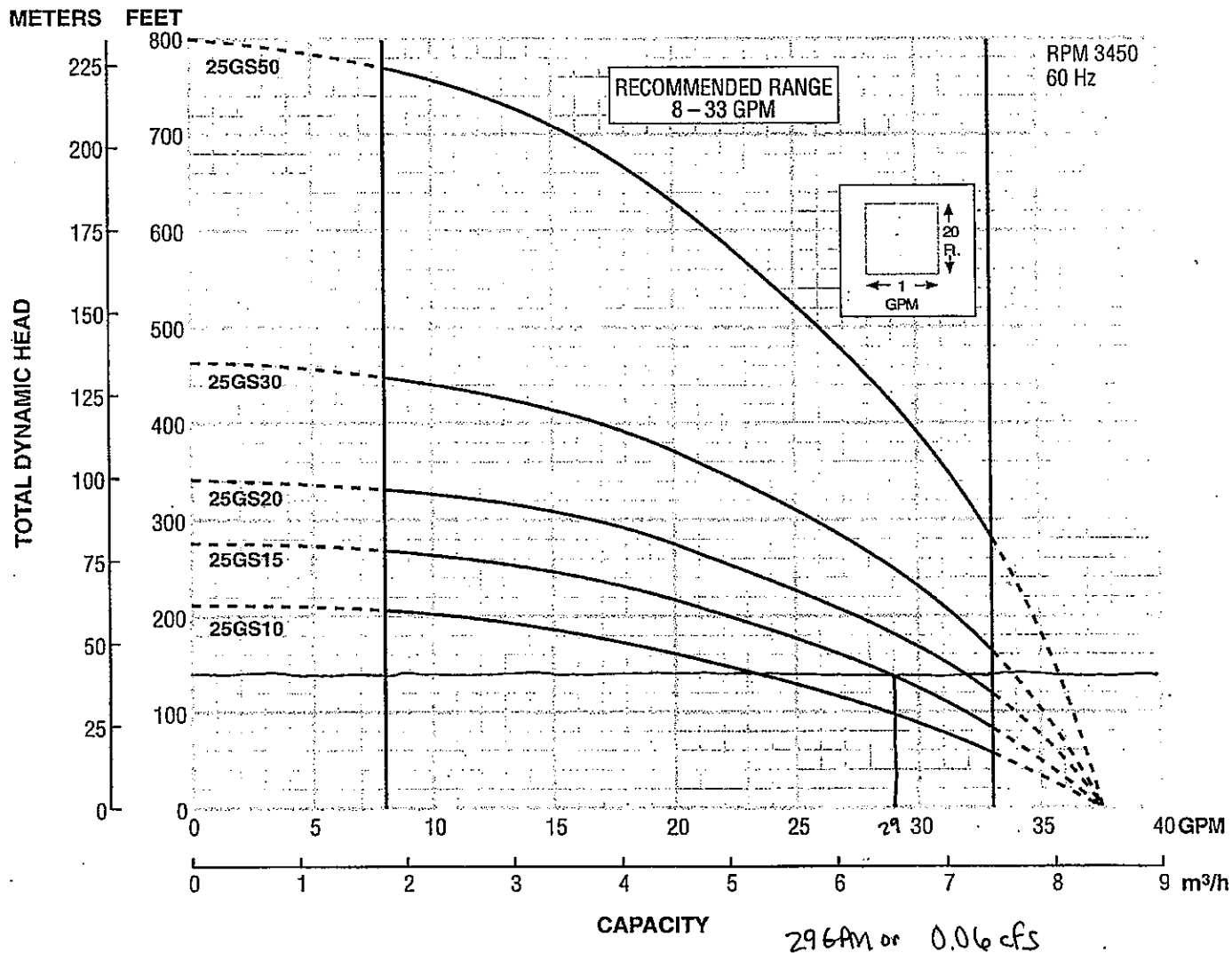
Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																											
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	520	560	600	
33GS10	1	0		48	45	41	36	30	22	11																				
		20	44	39	34	28	19																							
		30	39	33	27	17																								
		40	32	25	15																									
		50	24	14																										
		60	12																											
Shut-off PSI			67	58	50	41	32	24	15	6																				
33GS15	1½	0		50	48	46	43	40	37	32	26	19																		
		20	48	45	43	39	35	31	24	17																				
		30	45	42	39	35	30	23	15																					
		40	38	34	29	22	14																							
		50	33	28	21	12																								
		60	33	27	20	11																								
Shut-off PSI			95	86	78	69	60	52	43	34	26	17																		
33GS20	2	0			49	48	46	44	41	38	35	32	28	22																
		20	49	47	45	43	40	38	34	31	26	21	14																	
		30	47	45	42	40	37	34	30	25	20	13																		
		40	44	42	40	37	33	29	24	19	11																			
		50	42	39	36	33	29	24	18																					
		60	39	36	32	28	23	16																						
Shut-off PSI			121	112	103	95	86	77	69	60	51	43	34	26																
33GS30	3	0				49	48	46	45	43	41	40	38	35	33	31	28	24	20	15										
		20	50	49	47	46	44	43	41	39	37	35	32	30	27	23	19	13												
		30	49	47	46	44	42	41	39	37	34	32	29	26	22	18	12													
		40	47	45	44	42	40	38	36	34	32	29	25	22	17	11														
		50	45	44	42	40	38	36	34	31	28	25	21	16																
		60	43	42	40	38	36	33	31	28	24	20	15																	
Shut-off PSI			170	161	152	144	135	126	118	109	100	92	83	74	66	57	48	40	31	23										

Horsepower Range 5-10, Recommended Range 10 - 50 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																												
			50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350		
33GS50	5	0		50	48	46	44	41	38	35	31	27	20	11																	
		20	50	48	46	44	41	38	35	32	27	21	11																		
		30	49	47	45	43	40	37	34	30	25	17																			
		40	48	46	44	41	39	36	32	27	21	12																			
		50	47	45	43	40	37	34	30	25	18																				
		60	46	44	42	39	36	32	28	22	13																				
Shut-off PSI			264	242	220	199	177	156	134	112	91	69	47	26																	
33GS75	7½	0				50	48	47	46	44	42	40	38	36	33	31	27	23	19	14											
		20				50	49	47	46	44	42	41	38	36	34	31	28	24	19	14											
		30			50	49	48	46	45	43	42	40	37	35	32	29	26	22	17	12											
		40			50	49	47	46	44	43	41	39	36	34	31	28	24	20	15												
		50			49	48	47	45	43	42	40	38	35	33	30	26	22	17	12												
		60			50	49	47	46	44	43	41	39	37	34	31	28	24	20	15												
Shut-off PSI			415	393	371	350	328	306	285	263	241	220	198	176	155	133	111	90	68	47											
33GS100	10	0						50	49	49	48	47	46	44	43	42	40	38	36	34	31	28	24	21	17	14					
		20						50	50	49	48	47	46	44	43	42	40	38	36	34	31	28	25	21	18	14	10				
		30						50	49	48	47	46	45	44	42	41	39	37	35	33	30	27	23	20	16	12					
		40						50	50	49	48	47	46	45	43	42	40	38	36	34	31	28	25	21	18	14	10				
		50						50	49	48	47	46	45	44	43	41	39	37	35	33	30	27	23	20	16	12					
		60						50	50	49	48	47	46	45	43	42	40	39	37	34	32	29	25	22	18	14	10				
Shut-off PSI			550	528	506	485	463	441	420	398	377	355	333	312	290	268	247	225	203	182	160	138	117	95	73	52					

Model 25GS

GOULDS PUMPS, INC.

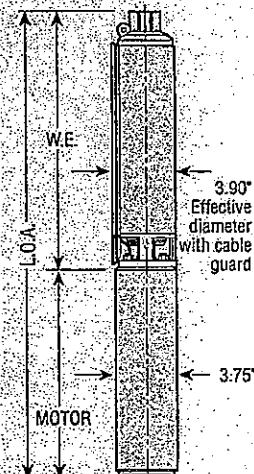


DIMENSIONS AND WEIGHTS

Model	HP	Phase	Stages	Length (inches)			Weight (lbs.)		
				W.E.②	Motor	L.O.A.③	W.E.	Motor	Total
25GS10412,22	1	1	7	12.7	11.8	24.5	7	23	30
25GS15412	1½	1	9	14.6	13.6	28.2	8	28	36
25GS15422	1½	1	9	14.6	15.1	29.7	8	31	39
25GS15432,34	1½	3	9	14.6	11.8	26.4	8	23	31
25GS20412	2	1	11	16.5	15.1	31.6	9	30	39
25GS20432,34	2	3	11	16.5	13.6	30.1	9	28	37
25GS30412	3	1	15	20.2	23.5	43.7	11	52	63
25GS30432,34	3	3	15	20.2	20.6	40.8	11	43	54
25GS50412	5	1	26	31.8	29.5	61.3	17	69	86
25GS50432,34	5	3	26	31.8	23.6	55.4	17	53	70

② W.E. = water end or pump without motor.

③ L.O.A. = length of assembly - complete pump - water end and motor.



TDH = 140'

SELECTION CHART

Horsepower Range 1 – 5, Recommended Range 8 – 33 GPM, 60 Hz, 3500 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	340	380	420	460	500	540	580	620	660	700	740	
25GS10	1	0			32.8	30.8	28.6	26.2	23.5	20.0	16.2	11.0																	
		20	31.8	30.0	27.5	25.2	22.0	19.0	15.0	8.0																			
		30	29.6	27.2	25.0	21.6	18.0	14.0																					
		40	27.1	24.9	21.5	17.9	13.9																						
		50	24.3	21.0	17.5	13.0																							
		60	20.0	16.2	11.0																								
Shut-off PSI			82	74	65	56	48	39	30	22	13	4																	
25GS15	1½	0				33.0	31.8	30.3	28.8	26.9	24.8	22.0	19.8	16.5	11.0														
		20		32.6	31.2	29.6	28.0	26.0	23.8	21.0	18.1	14.8	8.0																
		30	32.5	31.0	29.5	27.6	25.6	23.2	20.9	17.9	14.0																		
		40	30.9	29.4	27.5	25.5	23.1	20.8	17.7	13.6																			
		50	29.0	27.2	25.1	22.9	20.4	17.2	13.0																				
		60	26.9	24.8	22.0	19.8	16.5	11.0																					
Shut-off PSI			111	103	94	85	77	68	59	51	42	33	25	16	7														
25GS20	2	0					33.0	31.8	30.4	29.0	27.4	25.7	22.6	21.5	19.3	15.4													
		20				32.7	31.3	30.0	28.6	26.8	25.0	22.9	20.9	18.3	14.3	9.0													
		30			32.3	31.0	29.6	28.5	26.4	24.5	22.6	20.5	18.0	14.0	8.0														
		40			30.9	29.5	28.2	26.3	24.3	22.4	20.4	17.8	13.6	8.0															
		50		30.5	29.4	28.0	26.0	24.1	22.1	20.0	17.2	13.2																	
		60	30.4	29.0	27.4	25.7	22.6	21.5	19.3	15.4	12.2																		
Shut-off PSI			139	130	121	113	104	95	87	78	69	61	52	43	35	26	17												
25GS30	3	0						33.0	32.2	31.5	30.5	29.6	28.3	27.1	25.8	22.6	19.0	14.0											
		20					32.8	32.0	31.0	30.0	29.0	27.9	26.6	25.0	23.8	21.9	20.0	12.6											
		30				32.6	31.8	30.9	30.0	28.8	27.6	26.5	24.9	23.4	21.6	19.9	15.2	8.0											
		40			32.5	31.7	30.9	29.9	28.8	27.5	26.2	24.7	23.3	21.5	19.9	17.8	11.9												
		50		32.3	31.6	30.8	29.8	28.5	27.3	26.0	24.5	23.0	21.2	19.5	17.4	11.5													
		60	33.0	32.2	31.5	30.5	29.6	28.3	27.1	25.8	24.1	22.6	20.9	19.0	16.9	14.0	10.0												
Shut-off PSI			191	183	174	165	157	148	139	131	122	113	105	96	87	79	70	53	35	18									
25GS50	5	0												33.0	32.5	31.5	30.2	29.0	27.6	26.0	24.2	22.4	20.5	18.3	15.8	12.0			
		20												32.9	32.3	31.8	31.3	30.0	28.8	27.2	25.8	23.9	22.0	20.0	17.8	15.0	11.0		
		30											32.8	32.2	31.8	31.2	30.5	29.3	27.9	26.4	24.8	22.9	21.0	18.9	16.2	13.0	8.0		
		40										32.7	32.1	31.7	31.1	30.4	29.9	28.5	27.1	25.4	23.7	21.9	19.9	17.5	14.5	10.5			
		50								32.6	32.1	31.6	31.0	30.3	29.9	29.2	27.8	26.3	24.5	22.6	21.8	18.7	16.0	12.7					
		60						33.0	32.5	32.0	31.5	30.8	30.2	29.8	29.0	28.3	26.9	25.1	23.3	21.5	19.5	17.0	14.0	9.5					
Shut-off PSI								286	277	268	260	251	242	234	225	216	199	182	165	147	130	113	95	78	61	43	26		

Range

Well Inspection Forms
and
Well Logs

IDAHO DEPARTMENT OF WATER RESOURCES

WELL INSPECTION FORM

Tag# A0018800
Well#1

(no well report found)

65-3886
65-04448

1. DRILLING PERMIT NO: _____ OTHER APPLICABLE NO: _____
2. OWNER: Terry A. Jones & Kermit Jones Phone: (208) 365-3707
Address: 5888 Sandy Ave. Emmett, Id. 83617
3. WELL LOCATION: Twp 7N, Rge. 3W, Sec. 12, SW 1/4 SW 1.
County Gem (Provide sketch map and photo on reverse.)
4. DRILLER: existing Lic. No. _____
When Drilled? "
5. WELL CONSTRUCTION:
Casing Diameter 6 inches Water tight cap? ☒ Yes ☐ No Access Port: ☒ Yes ☐ No
Casing $\geq$ 12 inches above ground? ☒ Yes ☐ No - Describe _____
Depth of Casing unknown Method Drilled unknown
Condition of Well Casing: ☒ Good ☐ Fair ☐ Poor Describe _____
Control Valve? ☒ Yes ☐ No Pressure Gauge: ☒ Yes ☐ No
Condition of Piping and Valving good
Auger to a depth of _____ ft. Evidence of Annular Seal ☐ Yes ☐ No
Are there obvious construction problems that may be a source for contamination or waste of water?
☐ Yes ☒ No (Describe in Remarks and Attach Photo - On Reverse)
6. HYDROLOGIC INFORMATION: estimated from well near by
Depth to Static Water 41 ft. Water Temperature cold °F
Flowing Artesian ☐ Yes ☒ No Pressure: 60 (psi)
Water Sample Taken? ☐ Yes ☒ No If yes, describe purpose _____
Water Quality Measurements/Observations (Describe) _____
7. WELL USE:
☒ Domestic ☐ Irrigation ☒ Stock
☐ Test ☐ Municipal ☐ Industrial
☐ Abandoned ☐ Waste Disposal/Injection ☐ Not Used
☐ Other: _____

IDAHO DEPARTMENT OF WATER RESOURCES

WELL INSPECTION FORM

Tag # A0018799

Well #2

(under Howard Benge)

1. DRILLING PERMIT NO: none on well report OTHER APPLICABLE NO: _____

2. OWNER: Terry A. Jones for Kermit Jones Phone: (208) 365-3707
Address: 5888 Sandy Ave. Emmett, Id 83617

3. WELL LOCATION: Twp 7N, Rge. 3W, Sec. 12, SW 1/4 SW 1.
County Gem (Provide sketch map and photo on reverse.)

4. DRILLER: E.C. Driscoll Lic. No. 14
When Drilled? 12/5/73

5. WELL CONSTRUCTION:

Casing Diameter 6 inches Water tight cap? ☒ Yes ☐ No Access Port: ☒ Yes ☐ No
Casing > 12 inches above ground? ☒ Yes ☐ No - Describe _____
Depth of Casing 59 ft. Method Drilled _____
Condition of Well Casing: ☒ Good ☐ Fair ☐ Poor Describe _____
Control Valve? ☒ Yes ☐ No Pressure Gauge: ☒ Yes ☐ No
Condition of Piping and Valving good
Auger to a depth of — ft. Evidence of Annular Seal ☐ Yes ☐ No
Are there obvious construction problems that may be a source for contamination or waste of water?
☐ Yes ☒ No (Describe in Remarks and Attach Photo - On Reverse)

6. HYDROLOGIC INFORMATION:

Depth to Static Water 41 ft. Water Temperature cold °F
Flowing Artesian ☐ Yes ☒ No Pressure: 60 (psi)
Water Sample Taken? ☐ Yes ☒ No If yes, describe purpose _____
Water Quality Measurements/Observations (Describe) _____

7. WELL USE:

☒ Domestic ☐ Irrigation ☒ Stock
☐ Test ☐ Municipal ☐ Industrial
☐ Abandoned ☐ Waste Disposal/Injection ☐ Not Used
☐ Other: _____

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

WELL OWNER Harvard Beage

Address Route 11 Emmett

Driller's Permit No. _____

Driller's Name Harvard Beage

Driller's Address _____

Driller's Phone _____

Driller's License No. _____

Driller's State _____

Driller's City _____

Driller's Zip _____

Driller's Title _____

Driller's Employer _____

Driller's License State _____

Driller's License No. _____

Driller's License Expiration Date _____

Driller's License Category _____

Driller's License Class _____

Driller's License Grade _____

Driller's License Level _____

Driller's License Rank _____

Driller's License Title _____

Driller's License Position _____

Driller's License Department _____

Driller's License Division _____

Driller's License Bureau _____

Driller's License Office _____

Driller's License Station _____

Driller's License Unit _____

Driller's License Group _____

Driller's License Team _____

Driller's License Squad _____

WATER LEVEL

Static water level 41 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature 54 °F Quality Hard

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

WELL TEST DATA

☐ Pump ☒ Baller ☐ Other

Discharge G.P.M. 4 Draw Down 2 Hours Pumped 2

9. LITHOLOGIC LOG

Depth	Material	Water
From	To	Yes/No
0	4	Hard Pan
4	9	Brown Clay
9	18	Gravel
18	27	Gravel
27	35	Gravel
35	37	Sandy Clay
37	43	Sandy Clay
43	48	Sandy Clay
48	59	Sandy Clay
59	63	Sandy Clay
63	68	Sandy Clay
68	73	Sandy Clay
73	78	Sandy Clay
78	83	Sandy Clay
83	88	Sandy Clay
88	93	Sandy Clay
93	98	Sandy Clay
98	103	Sandy Clay
103	108	Sandy Clay
108	113	Sandy Clay
113	118	Sandy Clay
118	123	Sandy Clay
123	128	Sandy Clay
128	133	Sandy Clay
133	138	Sandy Clay
138	143	Sandy Clay
143	148	Sandy Clay
148	153	Sandy Clay
153	158	Sandy Clay
158	163	Sandy Clay
163	168	Sandy Clay
168	173	Sandy Clay
173	178	Sandy Clay
178	183	Sandy Clay
183	188	Sandy Clay
188	193	Sandy Clay
193	198	Sandy Clay
198	203	Sandy Clay
203	208	Sandy Clay
208	213	Sandy Clay
213	218	Sandy Clay
218	223	Sandy Clay
223	228	Sandy Clay
228	233	Sandy Clay
233	238	Sandy Clay
238	243	Sandy Clay
243	248	Sandy Clay
248	253	Sandy Clay
253	258	Sandy Clay
258	263	Sandy Clay
263	268	Sandy Clay
268	273	Sandy Clay
273	278	Sandy Clay
278	283	Sandy Clay
283	288	Sandy Clay
288	293	Sandy Clay
293	298	Sandy Clay
298	303	Sandy Clay
303	308	Sandy Clay
308	313	Sandy Clay
313	318	Sandy Clay
318	323	Sandy Clay
323	328	Sandy Clay
328	333	Sandy Clay
333	338	Sandy Clay
338	343	Sandy Clay
343	348	Sandy Clay
348	353	Sandy Clay
353	358	Sandy Clay
358	363	Sandy Clay
363	368	Sandy Clay
368	373	Sandy Clay
373	378	Sandy Clay
378	383	Sandy Clay
383	388	Sandy Clay
388	393	Sandy Clay
393	398	Sandy Clay
398	403	Sandy Clay
403	408	Sandy Clay
408	413	Sandy Clay
413	418	Sandy Clay
418	423	Sandy Clay
423	428	Sandy Clay
428	433	Sandy Clay
433	438	Sandy Clay
438	443	Sandy Clay
443	448	Sandy Clay
448	453	Sandy Clay
453	458	Sandy Clay
458	463	Sandy Clay
463	468	Sandy Clay
468	473	Sandy Clay
473	478	Sandy Clay
478	483	Sandy Clay
483	488	Sandy Clay
488	493	Sandy Clay
493	498	Sandy Clay
498	503	Sandy Clay
503	508	Sandy Clay
508	513	Sandy Clay
513	518	Sandy Clay
518	523	Sandy Clay
523	528	Sandy Clay
528	533	Sandy Clay
533	538	Sandy Clay
538	543	Sandy Clay
543	548	Sandy Clay
548	553	Sandy Clay
553	558	Sandy Clay
558	563	Sandy Clay
563	568	Sandy Clay
568	573	Sandy Clay
573	578	Sandy Clay
578	583	Sandy Clay
583	588	Sandy Clay
588	593	Sandy Clay
593	598	Sandy Clay
598	603	Sandy Clay
603	608	Sandy Clay
608	613	Sandy Clay
613	618	Sandy Clay
618	623	Sandy Clay
623	628	Sandy Clay
628	633	Sandy Clay
633	638	Sandy Clay
638	643	Sandy Clay
643	648	Sandy Clay
648	653	Sandy Clay
653	658	Sandy Clay
658	663	Sandy Clay
663	668	Sandy Clay
668	673	Sandy Clay
673	678	Sandy Clay
678	683	Sandy Clay
683	688	Sandy Clay
688	693	Sandy Clay
693	698	Sandy Clay
698	703	Sandy Clay
703	708	Sandy Clay
708	713	Sandy Clay
713	718	Sandy Clay
718	723	Sandy Clay
723	728	Sandy Clay
728	733	Sandy Clay
733	738	Sandy Clay
738	743	Sandy Clay
743	748	Sandy Clay
748	753	Sandy Clay
753	758	Sandy Clay
758	763	Sandy Clay
763	768	Sandy Clay
768	773	Sandy Clay
773	778	Sandy Clay
778	783	Sandy Clay
783	788	Sandy Clay
788	793	Sandy Clay
793	798	Sandy Clay
798	803	Sandy Clay
803	808	Sandy Clay
808	813	Sandy Clay
813	818	Sandy Clay
818	823	Sandy Clay
823	828	Sandy Clay
828	833	Sandy Clay
833	838	Sandy Clay
838	843	Sandy Clay
843	848	Sandy Clay
848	853	Sandy Clay
853	858	Sandy Clay
858	863	Sandy Clay
863	868	Sandy Clay
868	873	Sandy Clay
873	878	Sandy Clay
878	883	Sandy Clay
883	888	Sandy Clay
888	893	Sandy Clay
893	898	Sandy Clay
898	903	Sandy Clay
903	908	Sandy Clay
908	913	Sandy Clay
913	918	Sandy Clay
918	923	Sandy Clay
923	928	Sandy Clay
928	933	Sandy Clay
933	938	Sandy Clay
938	943	Sandy Clay
943	948	Sandy Clay
948	953	Sandy Clay
953	958	Sandy Clay
958	963	Sandy Clay
963	968	Sandy Clay
968	973	Sandy Clay
973	978	Sandy Clay
978	983	Sandy Clay
983	988	Sandy Clay
988	993	Sandy Clay
993	998	Sandy Clay
998	1003	Sandy Clay

10. LOCATION OF WELL

Attach map location must agree with written location.

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Driller's Signature E.C. Driscoll

Driller's or Firm's Name Driscoll

Number 14

Volume Worksheets
for
Commercial and Stockwater

Volume Worksheet #1

FILE NUMBER _____ File 65-13961
REVIEWER _____ Cpad/lla

DAIRIES: WATER USE WORKSHEET

THEORETICAL FLOW ESTIMATION WORKSHEET

REQUIRED DAIRY DATA

NUMBER OF MILKING CATTLE _____ 440
NUMBER OF DRY CATTLE _____ 80
NUMBER OF REPLACEMENT CATTLE: 0-2 MONTHS _____ 0
3-4 MONTHS _____ 0
5-8 MONTHS _____ 20
9-12 MONTHS _____ 60
13-15 MONTHS _____ 70
16-24 MONTHS _____ 120
ENTER 1 FOR MANUAL COW WASHING, 2 FOR AUTOMATIC, OR 3 IF
SPRINKLERS ARE USED TO FLUSH HOLDING PEN AND WASH COWS _____ 3
IF SPRINKLERS ARE USED: NUMBER OF SPRINKLERS IN HOLDING PEN _____ 10
NOZZLE DISCHARGE (USE 5.0 GPM IF UNKNOWN) _____ 5.00
OPERATION TIME OF SPRINKLERS (MIN/DAY) _____ 60
NUMBER OF MILKINGS PER DAY _____ 2
AVG. LBS. OF MILK PRODUCED PER DAY PER ANIMAL (IDAHO AVG IS 70 LBS.) _____ 50
HOURS PER DAY PUMP OPERATES FOR STOCKWATER USE _____ 8.0
HOURS PER DAY PUMP OPERATES FOR COMMERCIAL USE _____ 4.0
IS RECYCLED WATER USED TO FLUSH MILKHOUSE AND PARLOR FLOORS? _____ N
IS RECYCLED WATER USED TO WASH COWS? _____ N
IS A PLATE COOLER USED? _____ Y
IS RECYCLED WATER USED FOR PLATE COOLER? (IF NO PLATE COOLER,
LEAVE BLANK) _____ N
IF CORRAL MISTERS ARE USED: NUMBER OF MISTERS IN HOLDING PEN _____ 0
NOZZLE DISCHARGE (GPM) _____ 0.00
OPERATION TIME OF MISTERS (MIN/DAY) _____ 0
DAYS PER YEAR MISTERS ARE USED _____ 0

CALCULATIONS

DIVERSION RATE (CFS):

STOCKWATER
MILKING CATTLE (BASED ON MILK PRODUCTION) _____ 0.05
DRY CATTLE @17.0 GPD/HD _____ 0.01
REPLACEMENT CATTLE _____ 0.01
TOTAL _____ 0.07

COMMERCIAL
TOTAL _____ 0.08

TOTAL DIVERSION RATE _____ 0.15

DIVERSION VOLUME (AFA):

STOCKWATER
MILKING CATTLE _____ 11.0
DRY CATTLE _____ 1.2
REPLACEMENT CATTLE _____ 2.6
TOTAL _____ 14.8

COMMERCIAL
WASHING OF BULK TANK AND RELATED EQUIPMENT _____ 0.4
BACKFLUSH _____ 0.5
PARLOR/MILKHOUSE/HOLDING PEN CLEANUP _____ 2.0
CATTLE WASHING BASED UPON METHOD OF WASHING _____ 3.4
PLATE COOLER _____ 3.9
CORRAL MISTERS _____ 0.0
TOTAL _____ 9.8

TOTAL DIVERSION VOLUME _____ 24.6

CONSUMPTIVE USE VOLUME (AFA)(assuming 100% consumptive):

STOCKWATER _____ 14.8
COMMERCIAL _____ 9.8
TOTAL CONSUMPTIVE USE _____ 24.6

REQUIRED PUMP INFORMATION

	PUMP 1	PUMP 2	PUMP 3	PUMP 4	PUMP 5
PUMP HORSEPOWER (HP) _____	1.50	1.50	0.00	0.00	0.00
LIFT (FT) _____	48	48	0	0	0
DISCHARGE PRESSURE (PSI) _____	40	40	0	0	0
FRICTION LOSSES (FT) _____	0.0	0.0	0.0	0.0	0.0
HOURS PER DAY PUMP OPERATES _____	24.0	24.0	0.0	0.0	0.0

CALCULATIONS

	PUMP 1	PUMP 2	PUMP 3	PUMP 4	PUMP 5
THEORETICAL FLOW RATE (CFS) * _____	0.07	0.07	0.00	0.00	0.00
DIVERSION VOLUME (AFA) ** _____	47.6	47.6	0.0	0.0	0.0

* PUMP EFFICIENCY WAS ASSUMED TO BE 70%.
** DIVERSION VOLUME IS THE ABSOLUTE MAXIMUM VOLUME BASED ON THE
THEORETICAL FLOW RATE ASSUMING PUMP RUNS EVERY DAY OF THE YEAR.

EVALUATION OF EQUIVALENT IRRIGATED ACREAGE

IRRIGATION RIGHT (BEFORE CHANGE)

DIVERSION RATE _____	0.00 CFS
ACRES OF IRRIGATION _____	0.0 ACRES
DIVERSION VOLUME _____	0.0 AC-FT/AC
CONSUMPTIVE USE VOLUME _____	0.0 AC-FT/AC
IRRIGATION IS BEING CONVERTED FOR WHICH PORTION OF THE DAIRY OPERATION - STOCKWATER (S), COMMERCIAL (C), OR BOTH (B)? _____	
	B

CALCULATIONS

IRRIGATION DIVERSION RATE PER ACRE _____	#DIV/0! CFS/AC
REDUCTION OF IRRIGATION BASED ON DIVERSION RATE _____	#DIV/0! ACRES
REDUCTION OF IRRIGATION BASED ON DIVERSION VOLUME _____	#DIV/0! ACRES
REDUCTION OF IRRIGATION BASED ON CONSUMPTIVE USE _____	#DIV/0! ACRES

* Terry told me that his milking cows produce 50 lbs/day of milk. This is well under the standard of 72 lbs/day. If I run the worksheet using 72 lbs/day instead of 50 lbs/day I get 28.2 afa.

Volume Worksheet #2

Calculating Daily Fresh Water Needs for a Dairy Operation¹

Drinking Water Estimates (see Table 1 & Table 2)	Number	Estimated Use (gallons/individual per day)	Total Use (gallons per day)
Milking Cows	440	35	15,400
Dry Cows	80	14	1,120
Heifers	270	-	0
16-24 months	120	11	1,320
13-15 months	70	8	560
9-12 months	60	8	480
5-8 months	20	5	100
3-4 months			0
0-2 months			0
Total herd drinking water used A:			18,980

$$18,980 \text{ gpd} \times 365 \text{ days} / 325,850 = 21.3 \text{ afa}$$

Wash Pen Estimate (see Table 3)

1 - Sprinkler discharge per nozzle	5
2 - Number of nozzles	10
3 - Minutes per day used	60
Total wash pen water used B:	3,000 or 3.4 afa

Milk house & Parlor Estimate (see Table 4)

Water per operation	Gallons per day
Bulk tank	46
Pipeline	140
Backflush	220
Cleanup (Parlor, milk house and holding pen)	560
Cow prep	3 x 440 cows
Plate cooler (ignore if water recycled)	3,520
Total milk house and parlor water used C:	7,982 gpd or 8.9 afa

$$\begin{aligned} A: & 21.3 \text{ afa} \\ B: & 3.4 \text{ afa} \\ C: & 8.9 \text{ afa} \\ D: & 33.6 \text{ afa} \end{aligned}$$

Total Fresh Water Estimate (A + B + C) D: 33.6 afa Dairy and Stockwater uses per year

NOTES: Number of equipment and type and cattle was provided by Terry Jones on 7/19/10. The numbers reflect the height of the dairy operation in 2003, which is within the development period for this permit.

¹ Worksheet and tables originate from research done by Dean Falk, Ext. Anim. Specialist, U of I. Found online @ www.oneplan.org/stock/dairywater.asp

Table 1. Herd Makeup

Category	Number	% of Herd	Average Weight (lbs.)
Milking Cows	83	83	1400
Dry Cows	17	17	1550
Total Mature Cows	100		
Heifers			
16-24 months	42	38	1050
13-15 months	13	12	800
9-12 months	19	17	600
5-8 months	19	17	400
3-4 months	9	8	250
0-2 months	9	8	150
Total Replacements	111		

Back to [Water Needs](#)

Table 2. Water Intake for Dairy Cattle -- Gallons per Day

Weight (lb)	Milk (lb)	40° & below	60°	80°
(Lactating cows)				
1400	20 ²	12.0	14.5	17.9
	60 ²	22.0	26.1	24.7
	80 ²	27.0	31.9	38.7
	100 ²	32.0	37.7	45.7
(Dry cows)				
1400 ¹		9.7	12.0	16.2
1600 ¹		10.4	12.8	17.3
(Heifers)				
1200 ¹		8.7	10.8	14.5
800		6.3	7.9	10.6
400		3.7	4.6	6.1
200		2.0	2.5	3.3

¹Maintenance and pregnancy.²Maintenance and milk production.Back to [Water Needs](#)

Table 3. Nozzle discharge -- Gallons per Minute

	1/8" diameter	9/64" diameter	5/32" diameter	11/64" diameter	3/16" diameter
40 psi	2.96	3.74	4.61	5.54	6.64
45 psi	3.13	3.99	4.91	5.91	7.03
50 psi	3.30	4.18	5.15	6.19	7.41
55 psi	3.46	4.37	5.39	6.48	7.77

Back to [Water Needs](#)

Table 4. Standard Volumes of Milk house and Parlor Waste

Washing operation	Water volume
Bulk Tank	
- 450-2000 gallon	46 gallons/wash
- 3000-4000 gallon	78 gallons/wash
- 5000 + gallon	116 gallons/wash
- Silo tank	126 gallons/wash
Pipeline	
- Less than 16 parlor stalls	60 gallons/wash
- More than 16 parlor stalls	140 gallons/wash
Backflush	0.5 gal/cow/milking
Parlor/milk house/holding pen cleanup	400 - 900 gallons/wash
Cow prep	
- automatic	1-4 gal/wash/day
- manual	.25 - 5 gal/wash/day
Plate cooler (ignore if water is recycled)	8 gal/cow/day

Back to [Water Needs](#)

Photos of Diversion System
and
Place of Use for Right 65-13961



6"
casing
1½ Hp
2"
dischar
48' static
33 gpm
Goulds
33GS15
40 psi



1½ Hp,
1½"
dischar
48' static
25 gpm
Goulds
25GS15
40 psi
6"
Casing
next to
pit
containing
86
gallon
pressure
tank, &
where
both
wells
tie in.

65-13961

S. Hemenway



86
gallon
Well Man
1 1/2"
discharge
to Barn
3/4"
discharge
to house
(2) 1 1/4"
discharge
to feed lot
stock
tanks

07/19/2010



system
runs a
60 psi
variable
pump,
then a
40 psi
the other
pump
kicks on
& runs
at 30 gpi

07/19/2010

65-13961

S. Hemenway



House
located
south
of
wells



Barns

65-13961

S. Hemenway



(6)
20-
gallon
self
filling
stock
tanks



(3)
12' x 12' x
stock
tanks

65-13961

S. Hemenway



Livestock

07/19/2010



Barn:

07/19/2010

65-13961

S. Hernerway



Stock
yard,
Looking
SE to
NW

07/19/2010



(1)
6'x 2'
stock
tank
from
over
flow

07/19/2010

65-13461

S. Hemenway



Barn +
Livestock



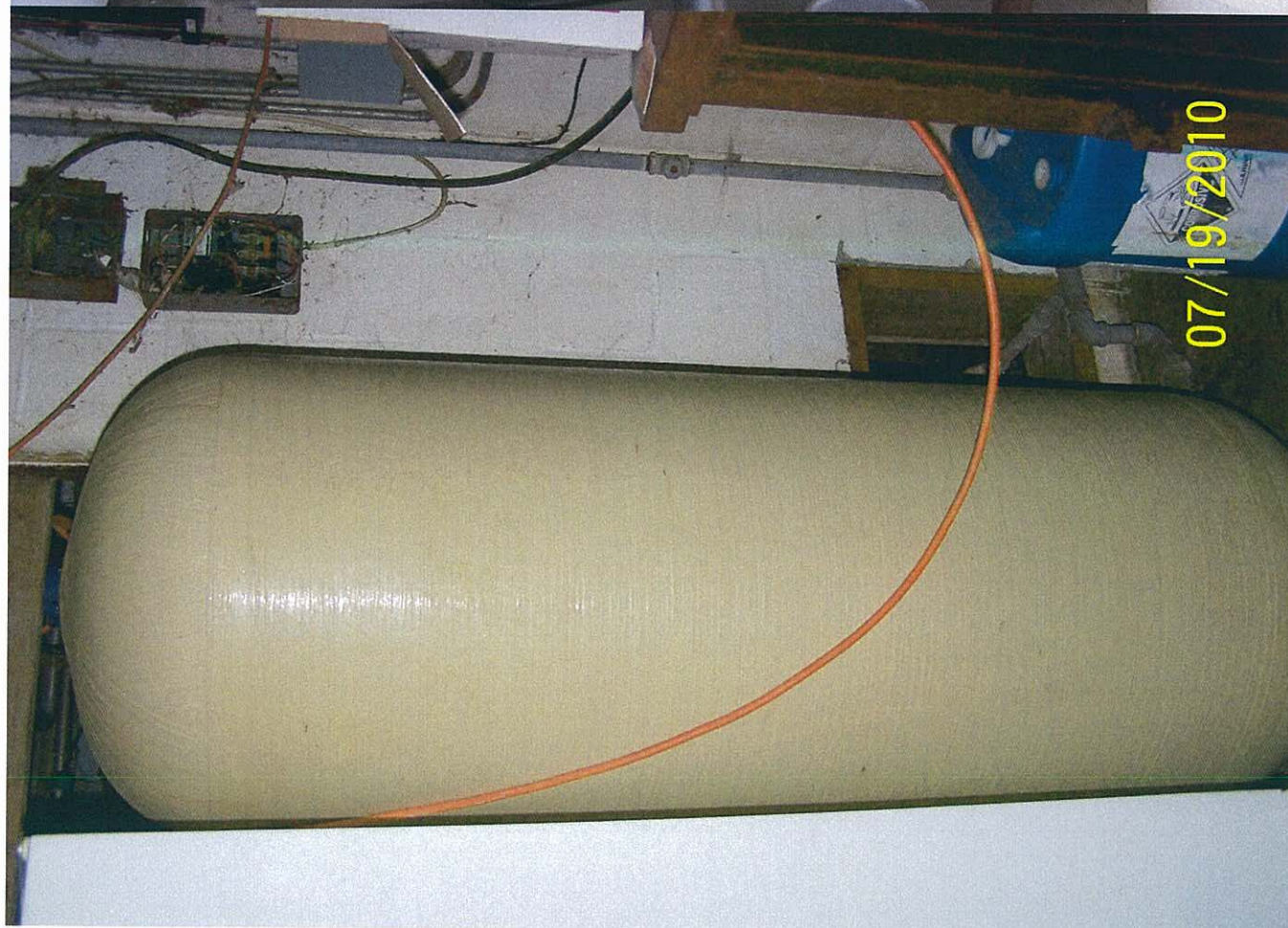
Milk
tanks
& cooler
located
at the
Milking
Barn -

65-13961

S. Hernenway



Milk
tank
inside
the
Milking
Barn



Well
Mate
120 gall
pressure
tank is
the
milking
barn



Milking
Barn
stalls

07/19/2010



Washer
Dryer
Room,
inside
the
Milking
Barn

Booster
pump
is for
the
milking
bar.

07/19/2010

65-13961

S. Hemenway



(1)
20 gallon
stock
tank
at
stock
yard
north
of
milking
barn
(Location
for 5-8
month
replacement
cattle)



Waste
water
Lagoon
pumped
off to
existing
irrigation
2-3 days
per year

65-13961

S. Hemerway