

August 20, 2014

Town of St Paul  
105 S Conger St  
St Paul, In 47272  
Attn: Jerome Buening

Re: Well & High Service Pump Inspection Report

Jerome,

**Ortman Drilling & Water Services** is pleased to provide you with this report on the recently completed evaluation and video inspection of your wells and high service pumps.

### **High Service Pumps**

Both of these pumps were tested in this test cycle. These are identical pumps with a flow rating/design point of 200gpm @ 60psi.

Both pumps are currently producing approximately 140gpm at the design pressure.

The real condition of the pumps can only be determined by comparing run times from previous years to what you are currently seeing. If, when new, run times were significantly lower than what you see now, then we can presume that the pumps are either slightly plugged or worn.

If however, the run times when new are very close to current values than we can assume that they remain in good condition. I would suggest that you look back at old records to see if you have a comparison to make for run times and we can discuss sometime.

### **Well 1**

The static water level seems to be rather variable – possibly responsive to surface conditions in terms of rainfall since it has varies more than 3 feet in the past 4 years.

The design TDH on the pump is 175gpm @ 117'. Based on system operation and the limited amount of lift needed to get water to the plant, this pump may produce up to 250gpm at which time the pumping level will be very close to the pump or even breaking suction as it did on the last step during this test cycle.

The well itself has a reasonable specific capacity; however, at wide open it did break suction. This was with 18psi at the well head and based on system design it may only take an additional 10psi to feed the plant – this means that the pump may be breaking suction during the normal course of operation.

The motor seems to be showing no issues. Amp readings are in line with previous data.

We also installed 1" schedule 10 PVC in this well so that a new transducer could be installed. Wiring was run to the vault for connection in the original junction box.

## Well 2

The static water level is down 3' since the last testing in 2010 and down almost 5' since 2004. As with well 1 we do not know when this well was last run to supply the system. You should probably plan to check levels on a monthly basis just to be safe..

The TDH of the pump is based on information printed by previous contractor that the pump design is 200gpm @ 160'. The pump failed to produce 200gpm even at wwide open during this test. Based on this test, the pump is yielding approximately 138gpm at 160'TDH – this pump is off in production by 31%.

The motor seems to be operating as it should with amp readings similar to the last few tests.

### Recommendations:

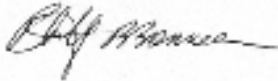
1. Look at past records for plant operation times and flow from High Service pumps to evaluate condition of the pumps.
2. Based on current conditions, you should probably consider a rehabilitation of well 1 as discussed in 2012; however, if you need time to build up assets, plan to restrict flow into the plant with a valve. This is not energy efficient but will allow you to produce water without causing undue problems in the well screen by drawing the water level too low.
3. The pump in well 2 is further off in production than observed in 2012 and should be considered for replacement – again, if you need time to save funds, consider throttling this well also.

While throttling discharge from a well is NOT a viable long term solution it can provide additional time to prepare for the cost. Just so that this is not done for too long a period there is not any additional harm done to the well. Utilizing this type of conservation for too long will allow the well to continue plugging or the pump to see additional wear so that the net effect is that repairs can become more costly.

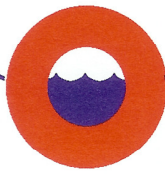
If you have any questions or need additional information, please call anytime.

Sincerely,

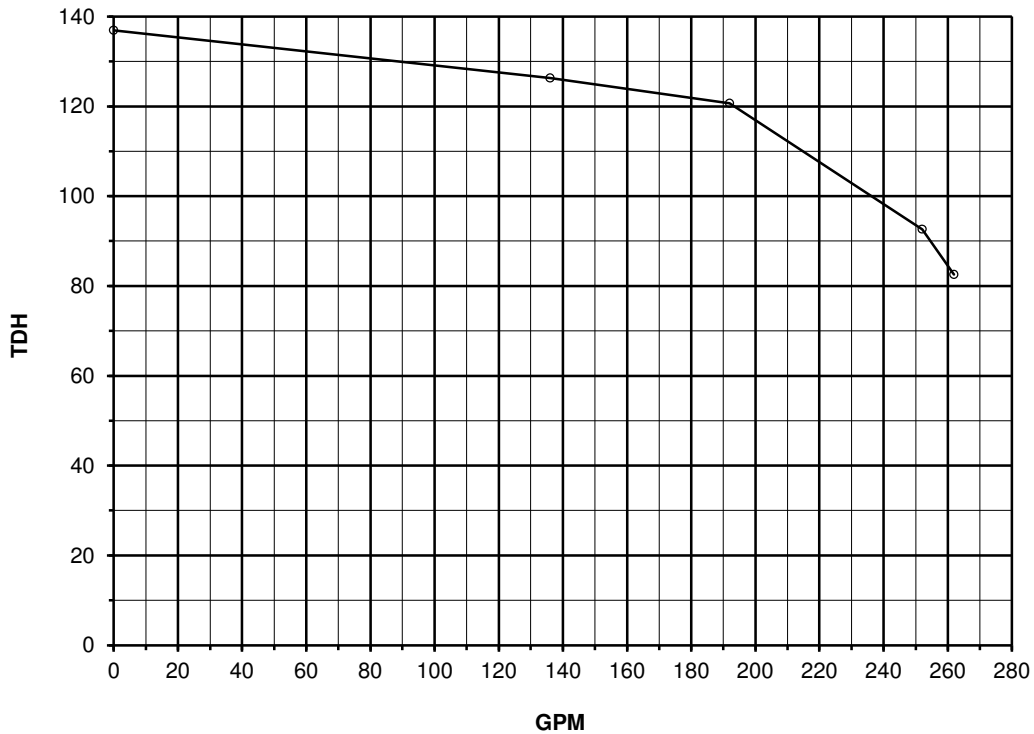
### **Ortman Drilling & Water Services**



**Phil Bonneau, L.P.G.  
Hydrogeologist**

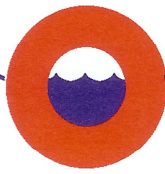


PROJECT	WELL	DATE	STATIC (FT)	FILE
St Paul, Indiana	1	07/31/14	16.83	St Paul Well 1 (073114) Step Test

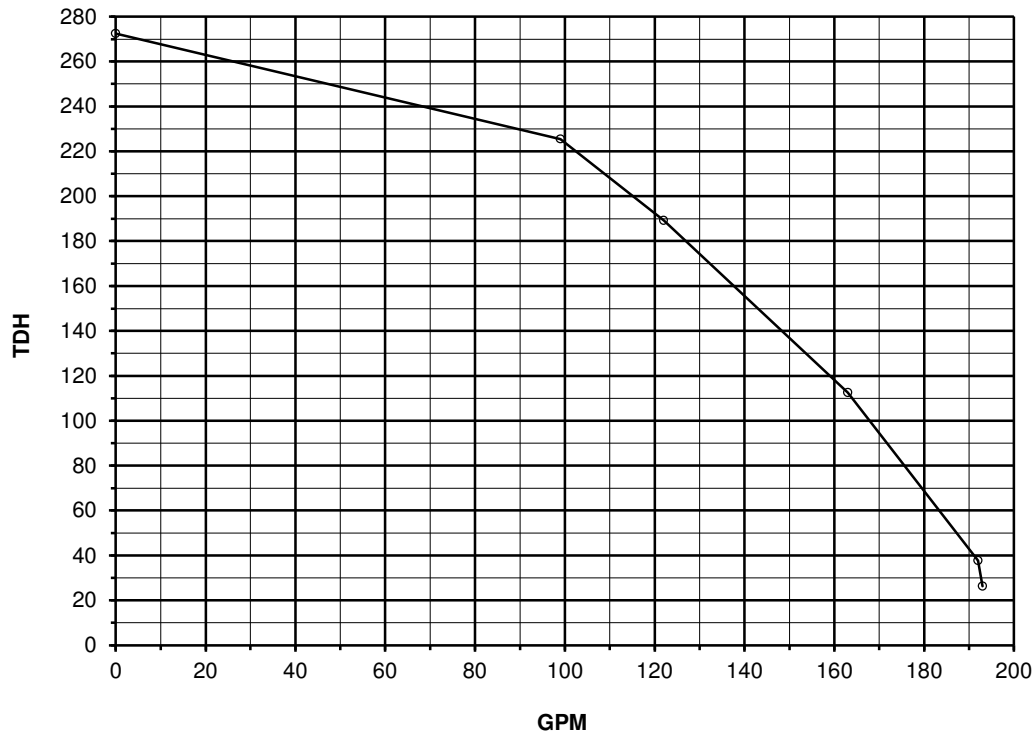


	GPM	DD (FT)	SC	PSI	TDH (FT)	AMPS
<b>Deadhead</b>	0			52	136.95	22, 21, 22
Step 1	136	12.42	10.95	42	126.27	24, 23, 25
Step 2	192	16.09	11.93	38	120.70	25, 24, 26
Step 3	252	22.67	11.12	23	92.63	26, 25, 27
Step 4	262	24.17	10.84	18	82.58	26, 25, 26
Step 5	Broke	Suction				





PROJECT	WELL	DATE	STATIC (FT)	FILE
St Paul, Indiana	2	07/31/14	18.42	St Paul Well 2 (073114) Step Test



	GPM	DD (FT)	SC	PSI	TDH (FT)	AMPS
<b>Deadhead</b>	0			110	272.52	24, 22, 21
Step 1	99	3.75	26.40	88	225.45	29, 26, 26
Step 2	122	4.58	26.64	72	189.32	30, 27, 27
Step 3	163	6.33	25.75	38	112.53	31, 28, 28
Step 4	192	7.75	24.77	5	37.72	30, 27, 27
Step 5	193	8.00	24.13	0	26.42	30, 27, 27

**ORTMAN DRILLING & WATER SERVICES  
WELL & PUMP MAINTENANCE INSPECTION REPORT**

OWNER St Paul, Indiana INSPECTION DATE / JOB # 31-Jul-14  
 ADDRESS \_\_\_\_\_ INSPECTED BY Tim B, Pat M  
 CONTACT Jerome Buening OFFICE 765-525-6343 FAX \_\_\_\_\_  
 CONTACT LOC WTP PLANT \_\_\_\_\_ CELL 812-593-0178

WELL NO./NAME 2 DIA 8" DEPTH 48' TYPE tubular YEAR DRILLED \_\_\_\_\_  
 WELL LOC by street, has vault for testing equipment  
 SCREEN \_\_\_\_\_ I.D. 8" LENGTH 10' DEPTH TO TOP 38'  
 PUMP HOUSE no DATES CLEANED 2004  
 PUMP MFG webtrol MODEL 1802T1004 IMPELLAR Open  Closed  Installed 2004  
 RATED CAPACITY 200 GPM @ 160 TDH SHUT-OFF PSI \_\_\_\_\_ OPERATING PSI \_\_\_\_\_  
 TOTAL SETTING 42' AIRLINE OR TUBE \_\_\_\_\_ PACKING X X RINGS \_\_\_\_\_  
 METER/BRAND \_\_\_\_\_ Size \_\_\_\_\_ Test Outlet Size \_\_\_\_\_ Type \_\_\_\_\_ DATES REPAIRED \_\_\_\_\_  
 MOTOR MFG. webtrol HP 10 RPM 3450 VOLTAGE 230 PHASE 3  
 LINE VOLTAGE \_\_\_\_\_ F.L. AMPS \_\_\_\_\_ NRR \_\_\_\_\_ DATES REPAIRED \_\_\_\_\_

NORM. OPERATING FLOW \_\_\_\_\_ PSI 12-13 MEG-OHM READINGS L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_  
 LINE VOLT L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_ ELECTRIC CONNECTIONS good  
 PRESSURE GAUGE 0-160 FLOW METER n/a  
 EXERCISE VALVES yes VALVES FULLY OPEN/SHUT open  
 CHECK VALVES HOLD n/a CONTROL VALVES FUNCTION n/a  
 NOISE, VIBRATION OR HEAT no LEAKS OR CRACKS no  
 REPACK & GREASE PUMP n/a CHANGE MOTOR OIL n/a QTS & GREASE \_\_\_\_\_  
 WATER COLOR OR ODOR no SAND CONTENT no

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

EQUIPMENT USED IN TESTING: 2each 2" 90, 2" x 6" nipple, 2 X 4 Bell, 4" valve assembly, 25' Hard, 4 X 2 1/2" orifice

	DATE	SWL	GPM	PWL	DD	PSI	TDH	AMPS	Spec Cap
ORIGINAL									
LAST CLEANING									
LAST TEST	9/26/12	20'	210	27' 3"	7' 3"	0	27	28/31/28	29
SHUT-OFF	7/31/2014	18.42				110	272.52	24, 22, 21	
STEP 1			99	22.17	3.75	88	225.45	29, 26, 26	26.4
STEP 2			122	23	4.58	72	189.32	30, 27, 27	26.64
STEP 3			163	24.75	6.33	38	112.53	31, 28, 28	25.75
STEP 4			192	26.17	7.75	5	37.72	30, 27, 27	24.77
OPEN			193	26.42	8	0	26.42	30, 27, 27	24.13