

**PUMPING TEST
SOLON, IOWA, WELL NO. 2
OCTOBER 19-20, 1960**

A pumping test was conducted on the Solon Town Well No. 2 on October 19-20, 1960, by Hoeg and Ames. The Geological Survey cooperated in taking water-level measurements and obtaining discharge data.

The well was pumped for a total of 24 hours: the first 6 hours and the last 2-1/2 hours at 200 g. p. m. and the remaining 15-1/2 hours at 392 g. p. m. In 6 hours at 200 g. p. m. the drawdown was 70.31' giving a specific capacity of 2.85 g. p. m. /ft. At the end of 15-1/2 hours of pumping, 392 g. p. m. the drawdown was 165.70', hence a specific capacity of 2.36 g. p. m. /ft. Approximately 24 hours after pumping was stopped, the water level was 72.06' which is 8.95' from the original static level of 63.11'. Negligible drawdown in original, incomplete well indicates that cementing has effectively sealed off the overlying aquifer.

Pumping and water-level records will prove valuable and should be kept.

**TABLE I
PUMPING TEST, WELL NO. 2
SOLON, IOWA
OCTOBER 19-20, 1960**

Location: SW NE NW sec. 25 T. 81 N., R. 6 W.

Total Depth: 481'

Elevation: 787' above sea level

Contractor: Hoeg & Ames

Date Drilled: September 15 - October 17, 1960

Hole Size: 19" hole to 179'9"; 12" hole to 481'

Casing Data: 27' of 20" OD; 176'9" of 12" ID, *cemented in with 476 sacks of cement*

Static Water Level: 63.11' (steel tape) below top of casing which is 2.2' above land surface datum.

Test Pump: Turbine powered by gas engine with direct drive: setting at 255'.

Aquifer: Silurian

Measurements: Airline and tape.

Observers: L. L. Steele and R. E. Hansen

TABLE II
PUMPING TEST, WELL NO. 2
SOLON, IOWA
OCTOBER 19-20, 1960

<u>TIME</u> <u>(hr. -min.)</u>	<u>DEPTH TO</u> <u>WATER (ft.)</u>	<u>DRAWDOWN</u> <u>(ft.)</u>	<u>G.P.M.</u>	<u>REMARKS</u>
8:15 a.m.	63.11	Static water level		SWL=63.45 (Elec. line)
8:30 0				pump on
1				
2				
3	107.33	44.22		
4				
5	112.20	49.09		Drawdown figured from
6				SWL 63.11' measured
7	114.90	51.79		by steel tape
8				
9				
10	118.05	54.94	200	
13	119.95	56.84		
15	120.45	57.34		
18	121.55	58.44		
20	122.28	59.17		
22	122.75	59.64		
24	123.25	60.14		
26	123.50	60.39		
28	123.88	60.77		
9:00 30	124.28	61.17		
35	125.20	62.09		
40	125.85	62.74		
45	126.33	63.22		
50	126.90	63.79		
55	127.65	64.54		
60	127.92	64.81	200	
70	128.58	65.47		
80	129.28	66.17		
10:00 90	129.85	66.74		
100	130.20	67.09		
120	130.78	67.67		
135	130.85	67.74		
11:00 150	131.36	68.25		
165	131.21	68.10	196	
180	131.11	68.00		
195	131.30	68.19		
12:00 210-	131.54	68.43		
noon				
225	131.79	68.68		
240	132.03	68.92		
255	132.12	69.01		

TABLE II (CONTINUED)

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<u>TIME</u> <u>(hr. -min.)</u>	<u>DEPTH TO</u> <u>WATER (ft.)</u>	<u>DRAWDOWN</u> <u>(ft.)</u>	<u>G. P. M.</u>	<u>REMARKS</u>
1:00 270	132.49	69.38		
285	132.50	69.39		
300	132.75	69.64	196	
315	133.20	70.09		53°F.
2:00 330	133.32	70.21		
345	133.52	70.41		
2:30 360	133.42	70.31		pumping increased
363	207.45	144.34		
366	218.97	156.86	392	
369	228.25	165.14		
372	233.70	170.59		
375	229.55	166.44		
380	232.27	169.16		
385	228.90	165.79		
3:00 390	226.40	163.29		
405	229.40	166.29		
420	229.25	166.14		
4:00 450	229.15	166.04		
4:30	229.08	165.63		
5:00	229.10	165.65		Drawdown figured from SWL 63.45 measured by electric line
5:30	229.09	165.64	392	
6:00	228.90	165.45		
6:30	229.12	165.67		
7:00	229.15	165.70	392	
7:30	229.10	165.65		
8:00	229.07	165.62		
8:30	229.00	165.55	392	
9:00	229.14	165.69		
9:30	229.00	165.55		
10:00	229.25	165.80		
10:30	229.00	165.55		
11:00	229.10	165.65		
11:30	229.18	165.73		
12:00	229.15	165.70		
midnight				
12:30	229.12	165.67		
1:00	229.04	165.59		
1:30	229.10	165.65		
2:00	229.17	165.72	392	
2:30	229.09	165.64		
3:00	229.06	165.61		
3:30	229.22	165.77		
4:00	229.12	165.67		
4:30	229.16	165.71		
5:00	229.21	165.76		water clear
5:30	229.18	165.73		
6:00	229.15	165.70	392	pumping decreased

TABLE II (CONTINUED)

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<u>TIME</u> <u>(hr. - min.)</u>	<u>DEPTH TO</u> <u>WATER (ft.)</u>	<u>DRAWDOWN</u> <u>(ft.)</u>	<u>G. P. M.</u>	<u>REMARKS</u>
6:15	169.45	106.00		
6:20	167.70	104.25		
6:25	166.85	103.40		
6:30	166.60	103.15	200	
6:35	166.00	102.55		
6:40	165.80	102.35		
6:45	165.37	101.92		
6:50	165.10	101.65		
6:55	164.90	101.45		
7:00	164.70	101.25		
7:15	164.50	101.05	210	
7:30	164.30	100.85		
7:45	163.90	100.45		
8:00	163.25	99.80		
8:15	163.10	99.65		collected water sample
8:30	162.80	99.35		pump shut off
		Recovery		October 20, 1960
8:32	2	110.00		
	4	107.50		
	6	106.00		
	8	104.80		
	10	103.15		
	12	102.60		
	14	101.70		
	16	100.85		
	18	100.00		
	20	99.40		
	25	98.08		
9:00	30	97.08		
	35	96.30		
	40	95.45		
	45	94.70		
	50	94.12		
	60	93.08		
	70	92.25		
	80	91.46		
10:00	90	90.74		pulled electric line
	105	89.43		(pulling pump-steel
	120	89.70		(tape hung up
	125	90.48		
	135	87.96		steel tape measurements
	150	87.28		"
12:00	210	85.35		"
1:50	320	82.23		"
8:00 a. m.	72.06			"
10/21/60				

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

14 GAL = 1"
File No. { Washington _____
District _____

SOLON - 10-19-60

MP = 2.2 ALSO ELEC LINE 63.45

TIME	MIN	HELD	WET	W/L	D/D	GPM								
8:15	0			63.11										
8:30	1/2													
	3			107.33	44.22									
	4													
	5	115-2.80												
	6													
	7	115.00	-.10	114.90	51.79									
	8													
	9													
8:40	10	115.00	3.05	118.05	54.94	200								
	13	120.00	-.05	119.95	56.84									
	15	120.00	+0.45	120.45	57.34									
	18	120.00	+1.55	121.55	58.44									
	20		+2.28	122.28	59.17									
	22	120.00	2.75	122.75	59.64									
	24	125.00	-1.75	123.25	60.14									
	26		-1.50	123.50	60.89									
	28		-1.12	123.88	60.77									
9:00	30	125.00	-0.72	124.28	61.18									
	35		+0.20	125.20	62.09									
	40		+0.85	125.85	62.74									
	45		+1.33	126.33	63.22									
	50		1.90	126.90	63.79									
	55		2.65	127.65	64.54	14 1/2"								
9:30	60		2.92	127.92	64.81	200								
	70	130	-1.42	128.58	65.47									
	80		-0.72	129.28	66.17									
10:00	90	130	-.05	129.85	66.74									
10:10	100	130	4.20	130.20	67.09									
10:30	120	130	+78	130.78	67.67									
10:45	135		+85	130.85	67.74									

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

File No. { Washington District

So Lon 10-19-60

Table with columns: TIME, HELD, WET, W/L, D-D, GPM. Contains handwritten data entries from 11:00 to 4:00, including values for HELD, WET, W/L, D-D, and GPM. Includes notes like 'EL. = 787' and 'pumping increased'.

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 UNITED STATES
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 GEOLOGICAL SURVEY

File No. { Washington _____
 District _____

SOLON CITY WELL

20 Oct 60

					-RECOVERY- OCT. 20, 1960			
TIME	MIN	HOLD	WET	W/L ELECTRIC LINE	d/d		STEEL TAP	TIME
8:32				110.00				
4				107.50				
6				106.00				
8				104.80				
8:40				103.15				
2				102.60				
4				101.70				
6				100.85				
8				100.00				A+A
8:50				99.40				
55		100	1.92	98.08				Green
9:00	30			97.08				
9:05	35		3.70	96.30				
9:10	40			95.45				
9:15	45			94.70				
9:20	50			94.12				
9:30	60	95.	1.92	93.08				
9:40	70			92.25				
9:50	80			91.46				
10:00	90			90.74				
							STEEL TAP	
10:15	105			89.72				
10:30	120			89.43		10:20		pulling pump
10:35	125			89.70		10:30		- TAP PROBABLY HUNG UP
10:45	135	91.00	.52	90.48				- TAP PROBABLY HUNG UP - READING PROBABLY NOT CORRECT
10:55	145	91.50	3.04	87.96				
11:00	150	90.00	2.72	87.28				
12:00	210	90.00	4.65	85.35				
1:50	320	84.00	1.77	82.23				

UNITED STATES
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 GEOLOGICAL SURVEY

 File No. { Washington _____
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Solon

10-19-60

Orig. hole

TIME MIN	HOSE	Wet	WL'	Dl'						
	20.00	5.32	14.68	STATIC						MP = .45' a/d
11	17.00	2.29	14.71	.03						170' deep - tools in bit
20	16.00	1.29	14.71	.03						
9 ³⁰ 1 hr	16.00	1.25	14.75	.07						20.00
2 hr	"	1.23	14.77	.09						5.32 SWL
3 hr	"	1.19	14.81	.13						
4 hr		1.19		.13						
13 ³⁰ 5 hr		1.19		.13						
2 hr	17.00	2.14	14.86	.18						stopped up pumping
	17.00	2.02	14.98							
<p>This is hole on Dev. \approx 50' from pumping well in which Nolans tools are stuck</p>										