

RESULTS OF PRODUCTION TEST MADE ON MASON CITY WELL NO. 12

Mason City, Iowa

November 7-20, 1947

Results of Production Test Made on Mason City Well No. 12 Nov. 7-20, 1947

WELL: Mason City Well No. 12.
LOCATION: NE¼ SE¼ NE¼ Sec. 16, T. 96 N., R. 20 W.
CITY: City of Mason City.
CONTRACTOR: Layne-Bostrom Company, Inc., Ames, Iowa.
SITUATION: Drilling curb, top of 20-inch pipe 1165.4 feet above sea level and about 1.5 feet above land surface.
DRILLERS: Don Simpson and Jerehl Black.
DRILLING DATES: Started 7/2/47
PUMPING DATES: 1947 feet.
CASING AND HOLE DATA: 10 feet of 30-inch casing from 0 feet to 10 feet. 145 feet of 20-inch pipe from 0 feet to 145 feet, cemented in 26-inch hole. 22 feet of 18-inch pipe from 793 feet to 815 feet. 147.5 feet of 14-inch pipe from 732 feet to 879.5 feet. Open 14-inch hole from 879 feet to 1377 feet.
PRINCIPAL AVAILERS: Not known.
TEST PUMP: Turbine, setting 301 feet with 20 feet of suction pipe. Powered by 150 hp. electric motor.
DISCHARGE MEASUREMENTS: Discharge rate obtained with 7-inch orifice in 10-inch casing.
TEMPERATURE MEASUREMENTS: Water temperature measurements made at end of 23.5 feet of 10-inch discharge pipe.
WATER LEVEL MEASUREMENTS: Depth to water measurements were referred to hole in pump base 1.1 feet above top of 20-inch pipe.
REMARKS: Well No. 12 is located 263 feet south of well No. 11. Well No. 11 has not been pumped since Sept. 3, 1947. No other wells are located within .5 mile of the city well field.

Date	Depth to Water (Feet)	Discharge Orifice (Inches)	G.P.M.	Temp. of P.P.M.	Chloride P.P.M.	Remarks
Nov. 7						
1:03 pm	197.6					Start introducing 1000 gallons HCl in 1168 feet of 2-inch pipe. All acid in. Flushed out partially with water.
3:10						
3:55						
5:35	201.15					
5:55	200.97					
6:05	200.85					
6:25	200.75					
7:24	200.15					
7:48	200.6					
8:05	200.7					
8:12	200.74					
8:17						
8:21	296.0					Pumping started.
8:34						
8:44	294.55					Water level in orifice tube fluctuating
8:50	295.32					
8:55						
9:03						
9:01	297.20					Such gas in water. Discharge rate fluctuating.
9:06	205.0					
9:12	210.0					
9:13						
9:16	203.8					
9:27	204.8					
9:50	201.1					
10:15	198.35					
10:21	197.98					

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Date	Depth		Remarks
	to Water (feet)	to Water 2" Tube	
Nov. 7			
10:36 pm	197-30		
11:04	197-39		
Nov. 8			
7:39 am	195-40		Spent day attempting to pump water, assuming pump was air locked. Finally decided pump had broken.
7:46	195-38		
1:20 pm	193-14		
1:23	192-23		
5:22	192-00		
5:29	191-95		
5:57	191-90		
Nov. 9			
9:05 am	191-80	192-02	
9:07	191-80		
9:10	191-78		
9:17			
9:23			

Flushed out 2-inch acid line with fresh water. Referred point for acid line is top of coupling, .19-foot above pump base.

Water level in 2-inch tube apparently .03-foot lower than water level in 20-inch pipe.

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Date	Depth		Discharge Office Inches	G.P.M.	Temp. Op.	Chloride P.P.M.	Remarks
	to Water (feet)	to Water (feet)					
Nov. 17							
5:11 pm	183-85						
5:18	183-85						
6:27	183-82						
6:32	183-82						
6:53							
6:26			21	360±			Pumping started. Pumping stopped, motor heating.
Nov. 19							
7:01	192-0						
9:15 am	189-0						
2:02 pm	188-66						
2:21	188-64						
2:23							
2:27	293-0	17±		890±			
2:30	297-5	11±		710			Pumping started.
2:32	300						
2:33	297-5	11±		710			Water cloudy.
2:40	300-6	9±		660±			
2:49	302-25	9±		660±			
2:54	302-7	9±					Water pinkish, rusty.
3:00	303-1	9±					Water rusty color.
3:10	304-0	9±		660			Water slightly milky.
							Water slightly milky, contains some silt.
3:20	304-65	9±		650			Water slightly milky, contains some silt.
3:30	305-3	9		640			Water almost clear.
3:45	305-6	9		640			Water clear, trace sand.
3:50	305-82	9		640			Water clear, trace sand.
4:00	306-2	9		640			
4:05							
4:15							
4:18	287	12		730±			Pumping stopped to surge.
4:20	289-5	11±		710			Pumping started.
4:25	290	11					
4:30	290-6	10-3/4		700±			
4:35	291-2						
4:37							
4:40	305-3	17±		870±			Pumping rate increased.
4:45	307-1	17±		870			
4:50	307-7						
4:55	314-4	18±					
4:58							
5:09							
5:15	309	24±		1033			Put down to surge 5 times.
5:20	312-8	24		1022			Pumping resumed.
5:25	314-7	24		1022			Water milky, contains sand and shale particles.

Date	Depth to Water (feet)	Orifice Inches	Discharge G.P.M.	Temp. of	Chloride P.P.M.	Remarks
Nov. 19						
5:33 pm	315.5	24	1022	50+	6+	
5:42	316.6	23½	1012	50+	6+	
5:49	316.9	23½	1012	50+	6+	Water slightly cloudy, some sand.
6:00	317.4	23½	1012	50+	6+	
6:10	318.0	23½	1006	50+	6+	
6:20	317.8	23	1001	50+	6+	
6:25						Shut down to surge.
6:43						Pumping resumed.
6:45	297.7	22	990	50+	6+	
6:50	305	23-3/4	1017	50+	6+	Water slightly cloudy, trace sand.
7:00	297.6	23½	1012	50+	6+	
7:10	308.5	23½	1006	50+	6+	Water slightly cloudy, trace sand.
7:20	308.9	23½	1006	50+	6+	Water slightly cloudy, trace sand.
7:30	308.9	23	1001	50	6+	Water slightly milky.
7:41	309.05	23	1001	50	6+	Water slightly milky.
7:50	309.25	23	1000½	50	6+	Water slightly milky, some sand and shale.
8:05		22-3/4	995½	50	6+	Water slightly milky.
8:10	308.9	22½	990	50	6+	Water slightly milky.
9:08	308.35	21-3/4	975	50	6+	Water slightly milky.
9:12		24	1022	50	10+	Increase discharge rate.
9:14	313.9	23-3/4	1017	50	10+	
9:24	316.0	23-3/4	1017	50	10+	
9:27	316.65	24	1022	50	10+	
9:31						Water almost clear.
9:40		25½	1059	50	10+	Pumping stopped to surge well.
9:45	308.7	24	1022	50	10+	Pumping resumed.
9:50	313.6	23½	1012	50	10+	
10:00	316.5	23½	1006	50	10+	Water milky.
10:15	317.9	23	1001	50	10+	
10:30	317.9	23	1001	50	10+	
10:45	317.9	24½	1033	50	10+	
10:50	317.4	25	1033	50	10+	
11:00	317.9	25	1043	50	10+	Air temperature 37°. Water clear, trace sand.
11:10	317.3	24½	1033	50+	10+	
11:20	317.2	24½	1033	50+	10+	
11:30	317.5	24½	1033	50+	10+	Water clear, trace of sand.
11:42	317.6	24½	1033	50+	10+	Water clear, trace of sand.
Nov. 20						
12:00 am	317.8	24½	1033	50	10+	Water clear, trace of sand.
12:30	317.7	24½	1033	50	10+	Water slightly cloudy, trace of sand.
12:40	317.9	24½	1033	50	10+	
1:00	318.0	24½	1033	50	10+	
1:30	318.6	24½	1033	50	10+	Water clear, trace sand.

Date	Depth to Water (feet)	Orifice Inches	Discharge G.P.M.	Temp. of	Chloride P.P.M.	Remarks
Nov. 20						
2:00 am	317.8	24½	1027	50+	9+	Water clear, trace sand.
2:30	317.85	24½	1027	50+	9+	
2:45	318.0	24	1022	50+	9+	Discharge rate decreased slightly.
2:50	315.0	22-3/4	995	50+	9+	
2:55	315.0	23	1021	50+	9+	
3:00	314.5	23-	1000½	50+	9+	Water clear, trace of sand.
3:47	314.4	22½	990	50+	9+	Shut down for surging.
3:48						Pumping resumed.
3:57	296.55	24	1022	50+	9+	
9:05	308.6	25	1043	50+	9+	
9:10	311.70	25	1038	50+	9+	
9:14	312.70	24-3/4	1038	50+	9+	
9:22	314.0	25½	1051	50	10+	Discharge rate increased.
9:26	315.2	25	1043	50	10+	Discharge rate increased.
9:30	315.8	25	1043	50	10+	Discharge rate increased.
9:32	318.0	26½	1069	50	10+	Discharge rate increased.
9:35	318.1	26½	1069	50	10+	
9:43	319.0	25-3/4	1062½	50	10+	
9:50	319.2	26	1066	50	10+	
9:56	320.4	26½	1074	50	10+	
10:00	320.5	26	1064	50	10+	
10:10	320.55	26	1064	50	10+	
10:15	320.2	26	1064	50	10+	
10:25	320.6	26	1064	50	10+	
10:55	320.6	25½	1059	50+	9+	Water clear, mere trace of sand.
11:30	320.2	25½	1059	50+	9+	Water sample collected.
11:45	320.55	25½	1059	50+	9+	Pumping stopped.
12:00 pm	320.57	25½	1059	50+	9+	Recovery measurements.
12:15	320.57	25½	1059	50+	9+	
12:30	320.55	25½	1059	50+	9+	
12:45	320.6	25½	1059	50+	9+	
1:00	320.6	25½	1059	50+	9+	
1:12	225.					
1:12	224.					
1:14	226.					
1:15	225.5					
1:16	224.7					
1:17	223.9					
1:18	223.18					
1:19	222.15					
1:20	221.82					
1:21	221.31					
1:22	220.8					
1:23	220.2					
1:24						

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Date	Depth to Water (feet)	Discharge Orifice Inches	Temp. of G.P.W.	Chloride P.P.M.	Remarks
Nov. 20					
1:25 pm	219.82				
1:30	218.1				
1:35	216.62				
1:40	215.45				
1:45	214.60				
1:50	213.70				
1:55	213.02				
2:00	212.42				
2:05	211.82				
2:10	211.37				
2:15	210.90				
2:20	210.47				
2:25	210.05				
2:30	209.73				

Results of Pumping Test Made on Mason City Well No. 12 November 4-5, 1947.

Time	Depth		Discharge		Temp. °F.	Remarks
	To Water (feet)	Orifice Inches	G.P.M.	Inches		
3:00 pm	299.2	16	840			
3:10	299.4	16	840			Water clearing.
3:22	299.8	16	840			
3:31	299.9	16	840			Water milky.
3:40	299.9	16	840			
3:50	299.6	16	840			
4:00	299.7	16	840			
4:07						
4:13						
4:20	305	20	940			Pumping stopped to surge 3 times. Pumping resumed.
4:25						Pumping rate increased.
4:28	307	19	910+			
4:40	308.2	19	910+			Stopped pump for surging. Pumping resumed.
4:50						
4:54	300.9	18	890+			
5:03	307.6	17	855+			
5:10	308.8	17	855+			
5:20	309.5	17	865+			
5:30	309.5	17	865+			
5:40	309.5	17	865+			Water milky.
5:52	309.6	17+	870+			Water milky, some shale chips.
6:00	309.5					
6:15	309.3	17+	870+			
6:30	309.2	17+	870+			
6:45	309.2	17+	870+			Slight H ₂ S odor.
7:00	309.2	17+	870+			
7:15	309.3	17+	870+			
7:30	309.3	17+	870+			Water fairly clear.
7:45	309.2	17+	870			
8:00	309.2	17+	870			
8:15	309.2	17+	870			
8:45	309.2	17+	870			
9:15	309.1	16+	850			
10:45	309.1	16+	850			Water fairly clear, few dark grains 1st per qt.
10:45	307.85	16+	850			
11:20	308.25	16+			51.5	
11:40	309.2					
11:46						Shut down to surge.
11:49	216.0					Start, high point lowered somewhat.
11:50						Stop pumping. High point lowered somewhat.
11:52	210					Start pumping. High point lowered somewhat.
11:52:30						Stop pumping.
11:54						Start pumping.
11:54:30						Stop pumping.

Results of Pumping Test Made on Mason City Well No. 12 November 4-5, 1947.

Time	Depth		Discharge		Temp. °F.	Remarks
	To Water (feet)	Orifice Inches	G.P.M.	Inches		
11:56 pm						
11:56:30						Start pumping.
12:00 am	214.8					Stop pumping.
Nov. 5						
12:01	216.7					
12:02	217.18					
12:03	217.18					
12:04	216.98					
12:05	216.68					
12:06	216.40					
12:07	216.15					
12:08	215.9					
12:09	215.6					
12:10	215.25					
12:11	215.1					
12:20	213.6					
12:21	213.3					
12:22						
12:24	288					Pumping started.
12:26	298					
12:28	301.8					Water more cloudy than before surging.
12:31	304.					
12:37	306.0	17+	375			Water clearer. Slight H ₂ S odor.
12:43	307.1					
12:47	307.55	17	865		51.5	
12:55						Increasing production by opening valve on discharge side.
12:58	316.8					
1:00	315.75					
1:05	316.0					
1:07	316.35					
1:11	316.72					
1:15	316.75					Water fairly clear.
1:20	317.15					
1:27	317.53					
1:32	318.88					
1:45	313.55					
2:01	313.55					
2:15	313.80					
2:30	313.60					
3:00	314.0					
3:22	314.3					
7:07	313.2					
7:15	313.05				51.5	
7:52	312.87					Water clear, trace of fine sand.
8:15	312.6					
8:45	312.7					
9:15	312.6					Water clear.

Results of Pumping Test Made on Mason City Well No. 12 November 4-5, 1947

Time	Depth		Discharge G.P.H.	Temp. C/F.	Remarks
	To Water (feet)	Orifice Inches			
9:30 am	312.5	18 1/2	898	51.3	
10:05					
10:12	312.5	18		46	Water sample, trace fine sand and shale. Temp. air in bldg. near discharge pipe.
10:21	312.30				
10:36	312.30	18	887		
10:55	312.60	18 1/2			
11:13	312.65	18 1/2	887	51.5	Water sample taken. Pump shut off.
11:11					
11:12	218				
11:13	221.85				
11:14	221.63				
11:15	224.75				
11:16	224.25				
11:17	223.60				
11:18	222.90				
11:19	222.25				
11:20	221.66				
11:21	221.11				
11:22	220.62				
11:23	220.12				
11:24	219.70				
11:25	219.33				
11:26	218.95				
11:27	218.59				
11:28	218.16				
11:29	217.95				
11:30	217.62				
11:31	217.32				
11:36	216.05				
11:41	214.94				
11:46	214.10				
11:51	213.33				
11:56	212.65				
12:01 pm	212.12				
12:06	211.63				
12:11	211.20				
12:16	210.80				
12:21	210.45				
12:26	210.11				
12:31	209.83				
12:36	209.55				
12:41	209.28				
12:46	209.04				
12:51	208.88				
1:01 1/2	208.40				

Recovery measurements.

Results of Pumping Test Made on Mason City Well No. 12 November 4-5, 1947

Time	Depth		Discharge G.P.H.	Temp. C/F.	Remarks
	To Water (feet)	Orifice Inches			
1:16 pm	207.90				
1:31	207.48				
1:46	207.15				
2:01	206.84				
2:11	206.64				
2:26	206.38				
2:49	206.11				
3:05	205.79				
Nov. 6					
10:00 am	200.97				
4:00 pm	199.37				
Nov. 7					
10:30 am	197.97				

RESULTS OF PUMPING TEST MADE ON MASON CITY WELL NO. 12

AFTER DYNAMITING JORDAN SANDSTONE FROM 1235 TO 1265 FEET

Mason City, Iowa

April 23-27, 1948

NAME: Mason City Well No. 12.

LOCATION: NE 1/4 SEC. 16, T. 96 N., R. 20 W.

OWNER: City of Mason City.

CONTRACTOR: Layne-Western Company, Inc., Ames, Iowa.

ELEVATION: Top of 20-inch pipe 1165.4 feet above sea level and about 1.5 feet above land-surface.

DRILLERS: Don Simpson and Jewell Black.

DRILLING DATES: Started 7/2/47.

TOTAL DEPTH: 1577 feet.

PRESENT DEPTH: 1538.5 feet.

CASING AND HOLE DATA: 10 feet of 30-inch curbing from 0 feet to 10 feet. 1.75 feet of 20-inch pipe from 0 feet to 1.75 feet, cemented in 26-inch hole.

22 feet of 18-inch pipe from 793 feet to 815 feet.

1.75 feet of 14-inch pipe from 772 feet to 879.5 feet. Open 12 1/2-inch hole from 879 feet to bottom.

TEST PUMP: Turbine, setting 360 feet with 70 feet of suction pipe. Powered by 150 hp. electric motor.

TEMPERATURE MEASUREMENTS: Water temperature measurements made at end of 23.5 feet of 10-inch discharge pipe.

WATER LEVEL MEASUREMENTS: Depth to water measurements were referred to top of 20-inch casing.

NOTES: Well No. 12 is located 263 feet south of Well No. 11. Well No. 11 has not been pumped since Sept. 3, 1947. No other wells are located within .5 mile of the city well field.

Results of Production Test Made on Mason City Well No. 12 After Dynamiting

Date	Depth to Water (feet)	Discharge Orifice (Inches)	Discharge G.P.W.	Temp. of P.	Remarks
Apr. 23					
3:35 pm	175.7				
4:01	175.7				
4:02	318.6	31 1/2	1167		Pump on
4:07	324.1	30 1/2	1148		Water very dirty
4:08	330.0	28 1/2	1109		Pumping much white sand
4:09	332.6				
4:11		24-3/4	1038		Water very dirty
4:12	335.4				
4:18	334.6				
4:20		23	1001		
4:22	328.5				
4:25	328.3	22 1/2	985	50	Water very dirty, much sand
4:35	326.15				Pump off to adjust Impellers
4:38					Recovery measurements
4:41	231.6				
4:43	227.1				
4:45	223.9				
4:47	221.6				
4:49	219.9				
4:51	218.3				
4:53	216.5				
4:55	215.3				
4:57	214.4				
5:01	273.9				Pump on
5:02	280				
5:03	300				
5:06	307.2	41 1/2	1334		
5:07					
5:08		41	1326		
5:11	311.2				
5:15					
5:20	312.5	39 1/2	1304	50	Pumping much sand, dirty gray
5:21	312.9	39-3/4	1308		
5:28	312.6	39-3/4	1308	51	
5:38	312.6	41	1326		
5:47	315.5				
5:50		41 1/2	1330		
5:55	315.3				
5:58	313.0	41 1/2	1334	51	Water clearing, light gray
6:01	313.0	42	1341		
6:13	312.1				
6:15	313.25	41-3/4	1338		
6:27	311.9	41 1/2	1334		
6:38	313.4	41-3/4	1338		
6:50	311.6	41-3/4	1338		Water clearing, light gray
7:05	310.4	40 1/2	1319		
7:20	309.7	40 1/2	1319		
7:35	310.7	40-3/4	1323		Water clearing, light gray
7:47	311.1	41	1326		

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Date	Depth to Water (feet)	Orifice Inches	Discharge G.P.M.	Temp. of	Remarks
Apr. 23 8:22 pm	311.3	41	1326		Water clearings, some sand
8:28	312.0	41	1326		
8:30					
8:35					Pump off to surge well
8:37 1/2					Pump on
8:38					Pump off
8:40					Pump on
8:40 1/2					Pump off
8:43					Pump on
8:44					Pump off
8:44 1/2					Pump on
8:45 1/2					Pump off
8:47 1/2					Pump on
9:06	301.8	44 1/2	1379		Cloudy sand
9:06	305.1	44	1371		
9:06	306.0	42 1/2	1349		
9:16	307.7	42 1/2	1345		
9:21		43 1/2	1364		
9:22	307.9	43 1/2	1364		
9:33					
9:33	309.1	43 1/2	1364		
9:41					
9:43	310.6	43 1/2	1364		
9:55	308.7	42 1/2	1345		
10:14	309.8	42 1/2	1349		
10:33	310.0	42 3/4	1353		
10:45	309.8	42 1/2	1349		
11:00	309.9	42 1/2	1345		
11:15	311.1	42 1/2	1345		
11:30	311.8	42 3/4	1353		
11:45	313.2	44 1/2	1379		
12:00 am	314.0	44 1/2	1379		
Apr. 24 12:15 am	310.6	42 1/2	1345		Water clear, light sand
12:30	307.9	42	1341		Water clear, light sand
12:45	308.6	42 1/2	1349		Water clear, light sand
1:00	309.4	42	1341		Water clear, light sand
1:15	309.5	42 1/2	1345		Water clear, light sand
1:30	310.5	43	1356		Water clear, light sand
1:40	310.8	43 1/2	1360		Water clear, light sand
1:47	308.8	43 1/2	1360		Water clear, light sand
1:56	307.7	43 1/2	1364		Water clear, light sand
2:07	307.7	43	1356		Water clear, light sand
2:15	309.4	43	1356		Water clear, light sand
2:22	308.2	42 1/2	1345		Water clear, light sand
2:30	307.6	42 1/2	1349		Water clear, light sand

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Date	Depth to Water (feet)	Orifice Inches	Discharge G.P.M.	Temp. of	Remarks
Apr. 24 2:35 am	307.4	42-3/4	1353		Water clear, light sand
2:40	307.9	42 1/2	1349		Water clear, light sand
2:55	308.5	42 1/2	1349		Water clear, light sand
3:00	308.7	42-3/4	1353		Water clear, light sand
3:20	308.7	42 1/2	1345		Water clear, light sand
3:30	308.8	42 1/2	1349		Water clear, light sand
3:45	308.8	42 1/2	1338		Water clear, light sand
4:00	308.4	41-3/4	1338		Water clear, light sand
4:10	308.7	41 1/2	1334		Water clear, light sand
4:22	308.2	42 1/2	1349		Water clear, light sand
4:27	308.2	41-3/4	1338		Water clear, light sand
4:35	308.7	42	1341		Water clear, light sand
4:45	308.4	42 1/2	1341		Water clear, light sand
4:55	308.2	42 1/2	1349		Water clear, light sand
5:06	308.2	42 1/2	1349		Water clear, light sand
5:18	308.4	42 1/2	1349		Water clear, light sand
5:25	308.6	43 1/2	1364		Water clear, light sand
5:30	308.6	43 1/2	1364		Water clear, light sand
5:45	307.7	43 1/2	1360		Water clear, light sand
5:54	308.6	43	1356		Water clear, light sand
6:00	308.6	42-3/4	1353		Water clear, light sand
6:10	308.6	42 1/2	1349		Water clear, light sand
6:20	308.5	42 1/2	1349		Water clear, light sand
6:30	308.7	42 1/2	1349		Water clear, light sand
6:45	308.6	42-3/4	1349		Water clear, light sand
7:00	308.5	42 1/2	1345		Water clear, light sand
7:15	308.6	43 1/2	1364		Water clear, light sand
7:20	307.8	43 1/2	1360		Water clear, light sand
7:30	307.7	43 1/2	1364		Water clear, light sand
7:40	307.2	42 1/2	1349		Water clear, light sand
7:55	308.7	42-3/4	1353		Water clear, light sand
8:00	308.5	42 1/2	1349		Water clear, light sand
8:15	308.3	42-3/4	1353		Water clear, light sand
8:30	308.2	42 1/2	1345		Water clear, light sand
8:45	308.4	42	1341		Water clear, light sand
9:00	308.6	43 1/2	1364		Water clear, light sand
9:15	308.7	43	1356		Water clear, light sand
9:27	312.7	43	1356		Water clear, light sand
9:37	312.4	41 1/2	1330		Water clear, light sand
9:55	309.6	40 1/2	1319		Water clear, light sand
10:10	308.2	42-3/4	1353		Water clear, light sand
10:30	307.8	43	1356		Water clear, light sand
10:45	308.7	43	1356		Water clear, light sand
11:05	311.8	42-3/4	1353		Water clear, light sand

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Date	Depth to Water (feet)	Discharge Orifice Inches	G.P.M.	Temp. of P.	Remarks
Apr. 24					
11:10 am	292.3	43-3/4	1368		Pump off to surge
11:13	301.8	43	1356		Water fairly clear, some sand
11:14	302.8	42 1/2	1345		
11:16	303.6	42 1/2	1345		
11:18	305.2	42 1/2	1345		
11:20	305.4	42	1341		Water fairly clear, some sand
11:21	306.6	42	1341		
11:22	307.1	43	1356		
11:23	307.2	42 3/4	1353		
11:24	307.8	43	1356		
11:26	307.9	43	1356		
11:30	307.2	43	1356		
11:37	307.8	43	1356		
11:42	307.9	43	1356		
11:46	308.4	43	1356		
11:53	308.6	43 1/2	1360		
12:05 pm	308.6	43 1/2	1364		
12:20	307.2	42 1/2	1345		
12:35	307.0	43	1356		
12:50	307.1	42 1/2	1349		
1:00	308.3	42 1/2	1353		
1:15	307.8	42-3/4	1353		
1:45	308.4	43	1356		
2:00	308.6	43 1/2	1360		
2:15	308.6	43 1/2	1364		
2:30	307.2	42 1/2	1345		
2:45	307.0	43	1356		
3:00	307.1	43	1356		
3:15	307.1	42 1/2	1345		
3:30	306.9	42 1/2	1349		
3:45	308.3	42 1/2	1349		
4:00	307.5	42-3/4	1353		
4:20	307.3	42-3/4	1353		
4:33	307.3	42-3/4	1353		
4:45	307.0	42-3/4	1353		
5:00	306.9	42 1/2	1349		
5:16	307.5	43	1356		
5:34	307.7	43 1/2	1360		
5:54	309.4	44	1371		
6:10	308.9	43 1/2	1364		
6:27	308.4	43	1356		
6:50	307.7	43	1356		
7:05	307.6	43	1356		
7:18	307.1	42-3/4	1353		
7:34	307.1	42-3/4	1353		
7:50	309.0	43-3/4	1368		
8:05	309.5	44	1371		
8:20	307.5	42 1/2	1349		
8:40	308.0	43	1356		
8:55	307.9	43	1356		

April 23, 1948

Date	Depth to Water (feet)	Discharge Orifice Inches	G.P.M.	Temp. of P.	Remarks
Apr. 24					
9:10	307.8	43	1356		
9:25	307.6	42 1/2	1349		
9:42	307.6	42 1/2	1349		
10:00	307.9	42 1/2	1349		
10:15	307.5	42 1/2	1349		
10:30	307.6	42 1/2	1349		
10:45	307.5	42 1/2	1349		
11:00	307.5	42-3/4	1353		
11:15	309.2	43-3/4	1368		
11:30	308.7	43 1/2	1364		
11:45	308.1	42	1341		
12:00 am	307.6	42 1/2	1349		
Apr. 25					
12:15 am	306.5	42	1341		
12:25	307.8	42 1/2	1345		
12:40	307.8	42 1/2	1345		
1:00	307.4	42 1/2	1349		
1:15	307.5	43	1356		
1:30	307.6	42-3/4	1353		
1:45	307.6	43	1356		
2:00	307.6	43	1356		
2:15	307.5	42-3/4	1353		
2:30	306.9	42-3/4	1353		
2:45	306.4	42-3/4	1353		
3:00	306.3	42	1341		
3:15	307.5	42 1/2	1349		
3:30	306.8	42 1/2	1345		
3:45	307.4	42 1/2	1349		
4:00	307.3	42 1/2	1349		
4:15	307.3	42 1/2	1349		
4:30	307.2	42 1/2	1349		
4:45	307.6	42 1/2	1349		
5:00	307.5	42-3/4	1353		
5:15	307.5	43	1356		
5:30	307.5	42 1/2	1349		
5:45	307.5	42 1/2	1349		
6:00	308.2	43 1/2	1360		
6:15	308.1	43 1/2	1360		
6:30	308.4	43 1/2	1364		
6:45	308.6	43-3/4	1368		
7:00	307.9	42 1/2	1345		
7:15	307.6	42 1/2	1349		
7:30	306.9	42 1/2	1349		
7:40	307.0	42 1/2	1349		
7:50	307.0	42-3/4	1352		
8:00	370.0	42 1/2	1345		
8:15	306.2	42	1341		
8:30	306.0	42 1/2	1345		
8:45	306.9	43 1/2	1360		

Date	Depth		Discharge G.P.M.	Temp. °F.	Remarks
	Water (feet)	Orifice Inches			
Apr. 25					
9:00 am	307.6	40-3/4	1322		
9:15	305.4	41	1326		
9:30	307.3	44	1371		
9:45	308.0	44 1/2	1375		
10:00	307.9	44	1371		
10:15	307.9	43 1/2	1364		
10:30	307.8	43-3/4	1368		
10:45	308.1	43 1/2	1364		
11:00	308.1	42 1/2	1349		
11:15	307.0	42 1/2	1345		
11:30	306.6	42 1/2	1349		
11:45	306.7	42-3/4	1353	52	Water clear, trace sand
12:00 pm	306.6	42 1/2	1349		
12:15	306.7	42 1/2	1349		
12:30	306.6	42 1/2	1349		
12:45	306.5	42 1/2	1349		
1:00	306.6	42 1/2	1349		
1:15	306.5	42 1/2	1349		
1:30	306.6	42-3/4	1353		
1:45	306.5	42 1/2	1349		
2:00	306.6	42 1/2	1349		
2:15	306.5	42 1/2	1349		
2:30	306.5	42 1/2	1349		
2:45	306.4	42-3/4	1353		
3:00	306.5	43 1/2	1364		
3:15	306.5	43 1/2	1364		
3:30	306.5	42 1/2	1349		
3:45	306.5	42 1/2	1349		
4:00	271.0	27-3/4	1099		Shut valve 45# press
4:05	268.6	27-3/4	1099		
4:11	268.6	27-3/4	1099		
4:25	261.9	27-3/4	1099		
4:26					Opened valve wide open
4:28	277.7	44	1371		
4:41	288.8				
4:47	308.7	43-3/4	1368		Trace sand, clear
5:30	307.0	43 1/2	1363		Straighten out line
5:45	306.6	42 1/2	1349		Trace sand, clear
6:00	306.3	43	1356		
6:15	306.6	42-3/4	1353		Trace sand, clear
6:30	306.6	42-3/4	1353		
6:45	306.5	42-3/4	1353		Trace sand, clear
7:00	307.0	43 1/2	1360		Trace sand, clear
7:15	307.1	43 1/2	1360		Trace sand, clear
7:45	307.1	43 1/2	1364		
8:00	306.3	42 1/2	1349		Trace sand, clear

Date	Depth		Discharge G.P.M.	Temp. °F.	Remarks
	Water (feet)	Orifice Inches			
Apr. 25					
8:15 pm	306.3	42 1/2	1349		Trace sand, clear
8:30	306.3	42 1/2	1349		Trace sand, clear
8:53	306.6	42-3/4	1353		Trace sand, clear
9:10	306.6	42-3/4	1353		Trace sand, clear
9:25	306.7	43	1356		Trace sand, clear
9:40	306.9	43	1356		Trace sand, clear
9:55	307.0	43 1/2	1360		Trace sand, clear
10:17	307.1	43 1/2	1364		Trace sand, clear
10:35	306.8	42 1/2	1349		Trace sand, clear
10:52	306.5	42-3/4	1353		Trace sand, clear
11:10	306.7	43-3/4	1368		Trace sand, clear
11:28	306.9	43	1356		Trace sand, clear
11:46	305.9	42 1/2	1345		Trace sand, clear
12:00 am	306.1	43	1356		
Apr. 26					
12:15 am	307.1	43 1/2	1360		Trace sand, clear
12:33	307.3	43 1/2	1360		Trace sand, clear
12:53	307.8	43	1356		Trace sand, clear
1:15	307.6	43	1356		Trace sand, clear
1:30	307.7	43 1/2	1360		Trace sand, clear
1:45	307.9	43 1/2	1356		Trace sand, clear
2:00	307.4	43	1356		Trace sand, clear
2:15	307.4	43	1356		Trace sand, clear
2:30	307.4	43	1356		Trace sand, clear
2:45	307.4	43	1356		Trace sand, clear
3:00	307.4	43	1356		Trace sand, clear
3:15	307.4	43	1356		Trace sand, clear
3:30	307.4	43	1356		Trace sand, clear
3:45	306.7	43	1356		Trace sand, clear
4:00	307.8	43	1356		Trace sand, clear
4:15	307.4	43	1356		
4:30	307.8	43	1356		
4:45	307.7	43	1356		Trace sand, clear
5:00	307.7	43	1356		Trace sand, clear
5:15	307.7	43	1356		
5:30	307.7	43	1356		
5:45	307.6	43	1356		Trace sand, clear
6:00	307.7	43	1356		
6:15	307.2	43	1356		Water clear
6:30	307.4	43	1356		Water clear
6:45	307.6	43	1356		Water clear
7:00	307.6	43	1356		
7:15	307.4	43	1356		Water clear

Date	Depth to Water (feet)	Discharge Orifice Inches	G.P.W.	Temp. of F.	Remarks
Apr. 26	7:30 am 307.2	43	1356		
	7:45 307.3	43	1356		
	8:00 307.8	43	1356		
	8:15 307.4	43 1/4	1364		
	8:30 307.6	43 3/4	1371		
	8:45 307.5	43 1/2	1364		
	9:00 307.0	43	1356		
	9:15 306.6	42-3/4	1353		
	9:30 305.7	41 1/4	1334		
	9:45 306.1	41 1/4	1330		
	9:51 291.6	26 1/2	1069		Closed valve to 45#/in ² pressure equal to about 100 foot head
	9:53 291.1	27	1084		
	10:00 289.1	27	1084		
	10:05 287.9	27	1084		
	10:16 287.3	27	1084		
	10:30 287.3	27 1/2	1094		
	10:45 297.0	27 1/2	1094		
	10:57 286.9	27 1/2	1094		

H. O sample for analysis
Water clear, trace fine
sand
Pump off
Recovery measurements

10:59	240				
10:59 1/2	238.9				
11:01	237.9				
11:02	236.3				
11:03	234.7				
11:04	234.0				
11:05	232.6				
11:07	232.0				
11:08	231.3				
11:09	230.9				
11:10	228.9				
11:12	227.6				
11:20	226.0				
11:25	225.6				
11:30	225.0				
11:35	224.3				
11:40	223.8				
11:45	222.3				
11:50	223.0				
11:55	222.5				
12:00	221.8				
12:15	220.8				
12:30	220.4				
12:45	219.2				
1:15	218.7				
1:30	218.1				
1:45					

Date	Depth to Water (feet)	Discharge Orifice Inches	G.P.W.	Temp. of F.	Remarks
Apr. 26	2:00 pm 218.0				
	2:15 217.7				
	2:30 217.7				
	2:45 217.5				
	3:00 217.0				
	3:15 216.9				
	3:30 216.4				
	3:45 216.4				
	4:00 216.2				
Apr. 27	7:50 am 212.8				
	8:15 212.7				
	8:30 212.7				