

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington -----
District -----

Water levels in Well No 3, Duponts "Cellophane" Plant Clinton town

[illegible]

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GPO 6-9333

Water levels in Well No. 3. Deposits "Collephantina" Plant Clinton, lower

[illegible]

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
GEOLOGY ANNEX
IOWA CITY

Results of Pumping test conducted
on
DuPont's "Cellophane" Plant Well 3
Clinton, Iowa
July 20-22, 1946

Name: DuPont's "Cellophane" Plant Well 3.

Location: NE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 22, T. 81 N. R. 6 E. Clinton County.

Elevation: Drilling curb, 588.1 feet above sea level.

Owner: E. I. DuPont de Nemours and Company.

Contractor: Varner Well Drilling Company.

Drillers: Mel Reedy, Al Gehring, Rudy, Elmore.

Drilling dates: Started March, 1946. Finished July, 1946.

Depth: 1951 feet below drilling curb.

Casing and hole data:

30'8" of 24-inch pipe from 0 to 30'8" set into rock.
260' of 20-inch pipe from 0' to 260' with shoe and inside collar attached.
at bottom. Set in 23-inch hole to 210 feet and in 19-inch hole to 260'.
Pipe cemented in from 260 feet to surface.
(139'3" of 16-inch pipe to be placed in 19-inch hole and suspended from
collar on 20-inch pipe. Liner will extend from 260 to 399 feet.)
312 feet of open 19-inch hole from 399 to 711 feet.
79'7" of 16-inch pipe set in 19-inch hole from 711 to 791 feet.
Open 15 $\frac{1}{2}$ -inch hole from 791 to 1951 feet.

Chief aquifers: Cambrian sandstones and dolomite.

Test Pump: Turbine, setting about 170 feet. Powered by 200 h.p. motor.

Water level measurements: Reference point during test was pump base, 588.60 feet above sea level.

Discharge measurements: Discharge rate was obtained by use of 8 $\frac{1}{2}$ -inch orifice in Standard 10-inch pipe.

Temperature measurements: The temperature of the water was determined at end of 50 feet of 10-inch pipe plus 7 feet of 24-inch pipe.

Note: Well 2 was pumped at the rate of between 1500 and 2000 gallons per minute during the entire test. Wells 1 and 4 were idle during the test.

Results of Pumping test on DuPont's "Cellophane" Plant Well 3, Clinton, Iowa.
July 20-22, 1946

Time CST	Depth to water (feet)	Discharge Orifice Pressure	GPH	Temp. °F.	Remarks
July 20					
4:49 pm	62.45				Pumping started.
4:50					
4:54	76.11				
4:56	72.47				
4:59	77.71				
5:03	76.52				
5:05	73.09	26"	1835.	67½	Water slightly cloudy.
5:07	73.05				
5:10	72.68				
5:12	72.63	24"	1760.	64½	
5:17	72.33	22"	1685.		Water dirty white.
5:20	72.22				
5:25	72.08				
5:32	80.79				
5:34	80.93	46"	2440.	63	Water dirty.
5:36	80.77				
5:40	80.58	46"	2440.	63	Water dirty.
5:47	80.73				
5:50	80.60				
5:55	80.59				
5:58		46"	2440	62	Water dirty.
6:01	80.67				
6:10	80.86				
6:15	81.31				
6:20	81.43				
6:25	81.47				
6:28		47"	2470.	62	Water clearing.
6:30	81.57				
6:43	81.94				
6:51	82.01	47"	2470.	62	Water clearing.
6:59	82.19				
7:11	82.45				
7:30	82.77	47	2470.	62	Water almost clear.
8:00	83.11				
8:03		47½"	2480.	62	Water fairly clear.
8:20	83.31				
8:50	83.73				
9:17	83.96	48	2490.	62	Water almost clear - some sand.
9:46	84.35	47 3/4	2485.	62	Water dirty gray - some sand.
9:55	84.35				
10:02	84.40				
10:24	84.62				
10:30		47 3/4	2485.	62	Water almost clear - some sand.
11:49	85.35	48	2490.		Water almost clear - some sand.
July 21					
1:02 am	86.01	48½"	2500.		
2:04	86.35	48½"	2505.		
3:04	86.92	49½"	2530.		
4:02	87.37	49½"	2530.		
5:48	87.64	49 3/4	2535.		
6:04	88.10	49 3/4	2535.		
6:55	88.00	49½"	2530.	62	Water clear - few cuttings.

Results of Pumping test on DuPont's "Cellophane" Plant Well 3, Clinton, Iowa.
July 20-22, 1946

Time CST	Depth to water (feet)	Discharge		Temp. °F.	Remarks
		Orifice Pressure	GPM		
July 21					
7:52 am	88.36	49½	2530.	62	Water clear - few cuttings.
8:32	88.72	49½	2530.	62	Water clear - few cuttings.
9:14	88.77				
9:33	88.87				
10:12	88.97				
10:20		49 3/4	2535.	62	Water clear - few cuttings.
11:27	89.26				
1:05 pm	89.43	49 3/4	2535.	62	Water clear - few cuttings.
2:34	89.62	49½	2530.	62	
3:19	89.92	49½	2530.		
4:15	90.12				
5:44	90.44				
5:57	90.40	49 3/4*	2535.	62	Water clear - few cuttings.
6:45	90.61	49 3/4*	2535.	62	Water clear - few cuttings.
9:45	91.23	49 3/4*	2535.	62	Water clear - some sand.
10:00	91.23	49 3/4	2535.	62	Water clear - some sand.
10:50	91.24	49 3/4	2535.	62	Water clear - trace of sand.
11:07					Increase discharge rate.
11:08	92.05				
11:09	93.91	59"	2770.	62	
11:11	94.10	59"	2770.		
11:12					Decrease discharge rate.
11:13	91.69				
11:14	91.56				
11:15	91.50				
11:20	91.54				
11:25	91.42	50"	2545.		
11:33	91.42				
July 22					
12:06 am	91.45	50"	2545.		
1:03	91.40	50"	2545.		
2:03	91.73	50 3/4	2570.		
2:41	91.90	50½"	2560.		
3:42	92.00	50 3/4	2570.		
4:00	91.95	50 3/4	2570.	62	Water clear - trace of sand.
4:16	92.01	50½	2560.		Water sample collected.
4:25					Pumping stopped.
4:26	77.73				Recovery measurements.
4:27	76.81				
4:28	76.69				
4:29	76.61				
4:31	76.29				
4:34	75.97				
4:36	75.83				
4:38	75.73				
4:40	75.55				
4:42	75.42				
4:44	75.32				
4:46	75.20				
4:48	75.09				
4:51	74.93				

Results of Pumping test on DuPont's "Callophane" Plant Well 3, Clinton, Iowa.
July 20-22, 1946

Time CST	Depth to water (feet)	<u>Discharge</u>		Temp. °F.	Remarks
		Orifice Pressure	GPM		
July 22					
4:54 am	74.80				
4:57	74.67				
5:00	74.54				
5:05	74.37				
5:10	74.20				
5:15	74.04				
5:20	73.86				
5:25	73.71				
5:30	73.58				
5:35	73.48				
5:40	73.36				
5:45	73.21				
5:50	73.09				
5:55	72.97				
6:00	72.88				
6:10	72.70				
6:20	72.48				
6:30	72.33				
6:59	71.81				
7:17	71.55				
7:30	71.47				
7:32	71.45				
7:45	71.28				
7:48	71.26				
8:00	71.14				
8:17	70.92				
8:19	70.90				
8:30	70.82				
8:58	70.47				
9:16	70.65				
10:21	69.81				
12:47 pm	68.79				
1:25	68.41				
1:47	68.36				
2:27	68.14				
3:25	67.86				
3:45	67.84				

WATER LEVEL MEASUREMENTS MADE ON DUPONT'S "CELLOPHANE" PLANT
Well 2 in connection with Pumping Test on Well 3 Clinton, Iowa
July 20-22, 1946

Time CST	Depth to Water (feet)	Discharge GPM	Remarks
July 20			
4:50 pm			Pumping started at Well 3.
6:45	88.31	2050.	
6:50	85.06	1850.	
7:20	85.97	1875.	
7:25	86.35	1900.	
8:12	87.85	1950.	
8:57	85.90	1700.	
10:16	85.14	1700.	
10:42	89.61	2000.	
July 21			
12:14 am	89.84	1950.	
12:19	87.57	1825.	
1:10	88.71	1875.	
3:16	86.35	1750.	
4:58	89.50	1875.	
6:42	87.96	1700.	
7:08	87.88	1725.	
7:20	87.70	1700.	
7:25	90.18	1850.	
7:57	90.27	1850.	
8:25	90.26	1850.	
8:54	90.46	1850.	
9:07	88.28	1700.	
9:55	90.75	1850.	
11:03	88.52	1700.	
11:12	88.77	1720.	
11:22	91.20	1850.	
1:10 pm	88.93	1700.	
1:15	90.99	1850.	
1:17	91.10	1850.	
2:30	88.61	1660.	
3:23	92.40	1900.	
4:40	89.91	1750.	
4:43	91.89	1860.	
6:02	90.04	1725.	
9:40	93.09	1900.	
10:09	92.44	1850.	
July 22			
12:18 am	91.72	1800.	
12:30	89.47	1650.	
2:12	91.82	1800.	
2:16	91.99	1800.	
2:27	88.32	1610.	
4:09	91.54	1770.	
4:25	88.16		
4:28	87.64		
4:33	90.20	1750.	
4:35	90.51	1760.	
4:37	90.52	1750.	
4:39	90.16	1750.	

Pumping stopped at Well 3.

WATER LEVEL MEASUREMENTS MADE ON DUPONT'S "CELLOPHANE" PLANT
Well 2 in connection with Pumping Test on Well 3 Clinton, Iowa
July 20-22, 1946

Time CST	Depth to Water (feet)	Discharge GPM	Remarks
July 22			
4:41 am	90.10	1750.	
4:43	90.20	1760.	
4:45	89.48	1650.	
4:48	86.23	1500.	
4:51	86.13	1500.	
4:54	86.30	1525.	
4:57	85.86	1500.	
4:59	85.76	1500.	
5:05	89.40	1750	
5:10	89.32	1775	
5:15	85.74	1500.	
5:20	85.59	1550	
5:35	89.73	1800	
5:52	85.83	1575	
6:05	89.04	1800	
6:20	85.77	1630	
6:50	85.66	1600	
7:32	90.15	2000	
8:25	90.15	1925	
8:27	90.44	1950	
8:40	87.05	1725	
8:55	90.53	1950	
9:39	86.77	1750	
10:28	88.52	1900	
12:18 pm	86.76	1725	
1:33	83.12	1625	
2:19	83.92	1675	
3:14	88.07	1950	
4:10	87.06	1900	