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## THE DEEP WATER-WELL AT BRIGHTON

J. M. LINDLY

The town of Brighton is situated in the southwestern part of Washington County, Iowa, and according to the census of 1920 it has a population of 1,014. During the year 1919, the town installed water works and a sewer system with six miles of ditches and a disposal plant. The supply of water was from a well about sixty feet deep. This well failed to yield a sufficient supply of water, and resort was had to the well at the canning factory. This arrangement was not altogether satisfactory, particularly during the canning season when it, too, failed to yield a sufficient supply. Finally it was decided to drill a deep well.

This deep water well was drilled during the fall of 1923 by Mr. Floyd Alspach of Nowata, Oklahoma, drilling contractor. The well is 1815 feet deep and was completed December 7, 1923.

The log of the well is as follows:

	FEET	TOTAL FEET	REMARKS
Clay .....	30	30	
Blue mud.....	7	37	
Quicksand .....	23	60	
Sandy mud.....	30	90	
Blue mud.....	7	97	
Lime .....	23	120	
Sand .....	3	123	Water
Shale .....	2	125	
Lime .....	2	127	
Shale .....	38	165	
Blue mud.....	15	180	
White shale.....	35	215	
Gray lime.....	15	230	
Lime, soft.....	120	350	
Blue shale.....	15	365	
Soft sand.....	6	371	Water
Blue shale.....	14	385	
Brown shale.....	15	400	
White shale.....	200	600	
Brown shale.....	5	605	
White shale.....	50	655	
Broken lime.....	20	675	Water
White shale.....	27	702	
White lime.....	73	775	
White sand.....	7	782	Water
Brown lime.....	18	800	
White lime.....	65	865	
Brown lime.....	15	880	

	FEET	TOTAL FEET	REMARKS
Gray lime.....	15	895	
Gray lime.....	10	905	
Red mud.....	5	910	
Blue shale.....	20	930	
Brown shale.....	75	1005	
Brown lime.....	10	1015	
Gray lime.....	25	1040	
Brown lime.....	60	1100	
Gray lime.....	90	1190	
Brown lime.....	26	1216	Hard
Red lime.....	6	1222	
Blue shale.....	2	1224	
Red lime.....	5	1229	
Gray lime.....	31	1260	
Gray sand.....	5	1265	Water
Lime.....	6	1271	
Blue shale.....	16	1287	
St. Peter sand....	35	1322	Water
Gray lime.....	153	1475	
Sand.....	7	1482	
Brown lime.....	18	1500	
White sand.....	30	1530	Water
Sand lime.....	20	1550	
Sand.....	100	1650	Water
White lime.....	15	1665	
White sand.....	20	1685	Water
Sand and lime....	100	1785	
Brown lime.....	30	1815	

"Hole finished in brown lime very hard; had four foot crevice at 1798 with water. Twelve inch casing set at 97 feet, 8 inch casing from top to 209 feet with swedged nipple from 8 inch to 6 inch and 6 inch casing set at 1492 feet. Has anchor packer set at 1240 feet and steel shoe on bottom of pipe set in limestone. Twelve inch casing is 50 lb. pipe, 8 inch casing is 24 lb. pipe, 6 inch casing 17 lb. pipe. Brass cylinder was set at 209 feet in swedged nipple at bottom of 8 inch pipe.

"There were two samples saved every ten feet, one for the town of Brighton and one for the State Geological Department.

"The water raised within 90 feet of the surface."

It has been reported by those who have lived there and used the water, that it is what would be called "soft water." Brighton is only about a mile and a half from the Skunk River. Whether its proximity to the river would indicate any connection between the well and the river is doubtful. The St. Peter sand was reached at 1287 feet and was 35 feet thick. At Winfield, about twenty-five miles east of Brighton, the St. Peter sand was found at a depth of 1143 feet, with a thickness of 37 feet. Although the thickness of the St. Peter sand is about the same at the two places, there is a difference of 144 feet in the depth from the surface of the ground. This shows that the St. Peter sand lies at a much lower level at Brighton than at Winfield. In other words, the

St. Peter sand at Brighton lies in a valley or depression as compared with its altitude at Winfield.

The St. Peter sandstone was found at Burlington at a depth of nearly 1000 feet; at Mt. Pleasant, which is about twenty-eight miles west of Burlington, at a depth of 1100 feet; at Winfield, thirty-four miles northwest of Burlington, at a depth of 1143 feet, and at Brighton, twenty-five miles west of Winfield, at a depth of 1287 feet.

WINFIELD.