Clinton City

CB 1

May 15, 1959

TO: Dr. H. G. Hershey
FROM: Russell Campbell
SUBJECT: Pumping test of the Wheatland City Well, 13 May 1959

Data collected during test pumping of the Wheatland City Well (W-10635) is listed below:

Depth 1235' (see water analysis 1940 (1179) 5/13/59)

Casing record:

155 feet of 18 inch surface casing set at 155 feet.
170 feet of 12 inch casing set at 170 feet, cemented in.
818 feet of 10 inch wrought iron casing set at 883 feet, with lead seal between 10 inch and 12 inch casing.
Open hole to bottom.

Location:

NE, SW, SW, NW, sec. 10, T. 81 N., R. 1 E., approximately 200 feet North of the existing well.

Elevation: 736 feet (altimeter)

Temporary pump data:

300 feet of 6 inch pipe
11 stage 8 inch bowl assembly
34 feet of 5 inch tail pipe
powered by gasoline engine
discharge through circular orifice weir at pump (6 feet of 6 inch pipe with 3 inch opening)
water level measurement by airline, weighted, with bottom at 300 feet.

Static water level at 8:50 was 170 feet below curb
Pump started at 9:14 (daylight saving time)
Results:

Time	Water level	Rate-gpm	Remarks
9:14 AM	234	96	water green colored
9:17	237	94	water clearing
9:21	240	94	water clear
9:30	242	96	
9:42	243	96	
10:00	243	96	
10:11	243.5	96	water cloudy, rate increased
10:14	251.5	120	
10:20	257	110	
10:30	258	110	water clear
10:51	258	110	air 57°, water 63° - water samples taken
11:05	258	110	
11:20	258	110	
11:23	273	145	rate increased, water cloudy
11:30	278	129	water clear

Time	water level	rate - gpm	Remarks
11:47	279	129	
12:05 P.M.	279	129	
12:20	290	150	rate increased, water cloudy
12:30	295	142	water clear, temp 63°
12:50	295	142	
1:05	295.5	140	
1:25	295.5	140	
2:00	295.5	140	
2:55	296.5	140	
4:12	297.5	140	
4:50	297.5	140	
5:05			rate increased, water below air line
5:15			water samples taken, temp. 63°

At this time I left to return to Iowa City, they planned to continue pumping until 7:00 or 8:00 p.m. at which time the pump would be stopped and the recovery would be recorded. Mr. Sindt (engineer) had an assistant on the job and he promised to forward the additional data to us.

The test results were rather disappointing. They had hoped to get 150 g.p.m. with little drawdown; however, pumping at 140 g.p.m. resulted in a drawdown of 130 feet. This may be more apparent than true as the bottom of the air line may not have been as deep as they thought. It was not attached to the pump column, but was weighted and suspended in the well. When the water level was indicated to be 297.5 feet below the curb (only $2\frac{1}{2}$ feet of line under water) an attempt was made to lower the line another 10 feet, however, this did not affect the gage. The line was then raised about 20 feet and there was still no affect on gage reading. The pumping rate was then increased and gage immediately indicated the bottom of the line was above water. Therefore, it seems that these pumping levels are at least 10 feet higher than indicated, possibly much more. There was no access for lowering a tape.

Prior to the test we had not received the lower 25 feet of samples. When these were examined they revealed that the hole did not go into the St. Lawrence but stopped in the Jordan. Dr. Brown then called Mr. Sindt and suggested that a better yield could be expected by drilling another 100 feet.

The following persons have asked for a copy of the log of the well and for the results of the mineral analysis of the water.

1. Mr. Howard T. Sindt, Romine, Sindt & Snow, Inc. Civil Engineers, 319 Union Arcade Bldg. Davenport, Iowa (Phone no. Davenport 3-1997)
2. Mr. Alfred Buchanan, City Clerk Office, Wheatland, Iowa.
3. Mr. L. F. Winslow, Route 1, Walcott, Iowa.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ____ District ____

3

Wheatland (Cedar County) City Jordan Well Pumping Test 8 January 1960

	Time	Elapsed Time (min)	Water Level	Draw Down	Pumping Rate (G/m)	Head in Tube (inch)		
A.M.	8:35	0	172	0	0			Static water level measured
	8:36							pump started
	8:37	1	184	12	288	20		1200 r/m
	8:42	6	184	12	295	21		
	8:48	12	187	15	310	23		1250 r/m
	9:00	24	187	15	310	23		water cloudy
	9:15	39	190	18	310	23		water clear
	9:45	69	187	15	315	23.5		
	9:55	79	187	15	353	30		increased pumping rate
	10:05	89	187	15	353	30		
	10:30	114	187	15	347	29		
	10:45	129	187	15	353	30		
	11:00	144	187	15	353	30		
	11:03	147			405	40		increased pumping rate
	11:05	149	190	18	405	40		
	11:10	154	190	18	405	40		
	11:20	164	192	20	405	40		
	11:30	174	192	20	405	40		
	11:45	189	192	20	405	40		
Noon	12:00	204	192	20	405	40		
P.M.	12:02	206			455	49		increased pumping rate
	12:05	209	195	23	450	49		
	12:10	214	195	23	450	49		
	12:20	224	195	23	450	49		
	12:30	234	195	23	450	49		
	12:45	249	195	23	450	49		
	1:00	264	196	24	450	49		Temp. 60°F
	1:02	266			500	60		increased pumping rate
	1:05	269	201	29	500	60		
	1:15	279	201	29	500	60		
	1:30	294	201	29	500	60		

Discharge Rate measured w/ circular orifice weir: 6" pipe, 4" opening
Water Level measured w/ airline set at 310'; direct-reading gage

U. S. GOVERNMENT PRINTING OFFICE 16—48721-1

9-230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

page 2 of 2 pages

File No. { Washington ____ 4
District ____

Wheatland (Cedar County) City Jordan well pumping test 8 January 1960

Time	Elapsed Time (min.)	Water Level	Draw Down	Pumping Rate (G/m)	Head in Tube (inch)							
1:45	309	202	30	500	60							
2:00	324	202	30	500	60							
2:15	339	202	30	500	60							
2:45	369	202	30	500	60							
3:00	384	202	30	500	60							
3:20	404	203	31	500	60							
3:40	424	203	31	500	60							
4:00	444	203	31	505±	61		Temp. 61½°F					
4:30	474	203	31	505±	61		collect water samples					
5:00	504	203	31	505±	61							
5:30	534	203	31	505±	61							
6:00	564	203	31	505±	61							
6:30	594	203	31	505±	61							
7:00	624	203	31	505±	61							
7:30	654	203	31	505±	61							
8:00	684	203	31	505±	61							
8:30	714	203	31	505±	61		pump stopped					
8:31	1	191					Recovery					
8:31:30	1.5	170										
8:32	2	172										
8:33	3	172										
8:34	4	172										
8:35	5	172										
8:40	10	172										
8:45	15	172										
8:50	20	172										
8:55	25	172										
9:00	30	172										

U. S. GOVERNMENT PRINTING OFFICE 16—48721-1

Clinton Co

June 24, 1960

/

TO: H. G. Hershey
FROM: Russell Campbell
RE: Pumping test of Wheatland City (Jordan) Well, January 8, 1960

Jan. The pumping test of the Wheatland City well was started 8:35 a.m. ~~xxxx~~ 8, 1960, under the direction of Ray Perry, inspector for Mr. Howard Sindt, Engineer. This test was by the step-drawdown method and continued for 12 hours until 8:30 p.m., at which time the pump was stopped and the recharge was measured. The enclosed data was recorded by Leon Steele and myself during the time we were present (9:30 a.m. to 4:30 p.m.), and by Mr. Perry during the remainder of the test. Water samples were collected for mineral and radiological analysis at 4:30 p.m.; after the well had pumped for 8 hours.

Data pertinent to the test and construction of the well are as follows:

Drilling dates; January 1959 --- January 1960
Contractor: L. F. Winslow
Elev. 736'; T.D. 1328'
Location: 300'± E of Ctr WL NW¼ sec. 10, T. 81 N., R. 1 E.,

Clinton Co.; just north of school

Casing data :

155' of 18" surface casing 0-155'
170' or 12" casing sealed with cement grout 0'-170'
818 of 10" casing 65'-883' sealed at top with lead seal
open hole 883' - 1328: T.D.

Pump data:

pump: gasoline powered centrifigual
310' of 6" pipe to top of bowls, no tail pipe
Water level measured by airline set at 310' with direct-reading gage.
Discharge measured by circular orifice weir constructed of 10' of 6" pipe connected directly to pump having 4" weir opening; controlled by motor speed.

At 9:00 p.m. after recovery was complete, a weir plate having a 5" opening was installed and the well was further pumped at a rate of 670 g.p.m with the following results:

Pumping test of Wheatland (continued)

Time	Water Level	Discharge (gpm)	
9:05	172(static)		pump started
9:13	238	670	
9:18	238	670	
9:23	238	670	
9:28	238	670	
9:30			pump stopped

Data collected by Mr. Perry after our departure was given to us by telephone by Mr. Sindt, Monday, January 11. The following persons have been promised copies of the well log and the results of the mineral analysis of the water:

Mr. Howard Sindt
Romine, Sindt & Snow, Inc
319 Union Arcade Bldg.
Davenport, Iowa

Mr. Alfred Buchanan
City Clerk
Wheatland, Iowa

Mr. L. F. Winslow
Walcott, Iowa

RBC

cc: Leon Steele