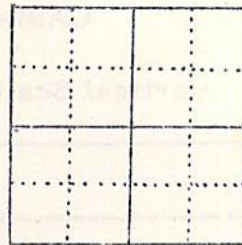


IOWA GEOLOGICAL SURVEY  
In Cooperation with U. S. Geological Survey

W. 6018

RECORD OF WELL



Location:

Town: Russell (NE)  
(SW) : County Lucas

NW SE NW sec. 6 T. 71 N., R. 20 W. Twp.

Well name and number Russell Town Test No. 1

Owner Town of Russell Address \_\_\_\_\_

Tenant \_\_\_\_\_ Address \_\_\_\_\_

Contractor Bruinekool Address \_\_\_\_\_

Drillers Art Bruinekool

Drilling dates May & June 1953

Well data:

Altitudes: Drilling curb \_\_\_\_\_ feet; Land surface 1034' feet

Determined by \_\_\_\_\_

Topographic position \_\_\_\_\_

Total depth: Reported 193 feet, Measured \_\_\_\_\_ feet

Drilling method \_\_\_\_\_

Hole and casing data Hole abandoned

Original depth to water 5-12' above  
ft. below 150 Date \_\_\_\_\_

Source of data Driller

Sources of water: Principal some in yellow clay shale

Others \_\_\_\_\_



Test Hole #1

### WELL RECORD

Well is located.....miles 

N	N
E	E
W	W

 and.....miles S from

..... in.....  
(Nearest Town) (County)

in the ..... $\frac{1}{4}$ ..... $\frac{1}{4}$  Sec.....T.....R.....

Owner..... Well No.....

Postoffice address .....

Contractor .....

Address .....

Driller .....

Well begun....., 19.....;

completed....., 19.....

Rig used—Cable, Rotary, Jet, or.....

Depth of well.....  
(Feet)

Size of hole (note total amount of each size).....

Main water supply at.....  
(Feet below surface)

Final water head.....  
(Feet above or below surface)

Is well pumped?.....

Yield .....

(Gallons per minute)

Water level when pumping.....

Position of well.....  
(Upland, valley, side hill, etc.)

Sample No.	DEPTH		THICKNESS
	From	To	
	0	5	
	5	10	
	10	15	
	15	20	
	20	25	
	25	30	
	30	35	
	35	40	
	40	45	
	45	50	
	50	55	
	55	60	
	60	65	
	65	70	
	70	75	
	75	80	
	80	85	

DESCRIPTION OF BEDS

KIND OF ROCK, COLOR, HARD OR SOFT, WATER, ETC.

Top soil  
Yellow clay

"

"

"

"

"

"

"

"

"

"

"

Blue clay

"

"

"

"

"

"

Sample No.	DEPTH		THICKNESS
	From	To	
	85	90	
	90	95	
	95	100	
	100	105	
	105	110	
	110	115	
	115	120	
	120	125	
	125	130	
	130	135	
	135	140	
	140	142	
	142	145	
	145	150	
	150	155	
	155	160	
	160	165	

## DESCRIPTION OF BEDS

KIND OF ROCK, COLOR, HARD OR SOFT, WATER, ETC.

11 11

11 6

4 V

11 V

A V

C V

V V

V V

1 V

V V

V 1

coarcted sand  
 Blue clay

coarcted sand  
 Blue clay  
 1 1



DESCRIPTION OF BEDS

KIND OF ROCK, COLOR, HARD OR SOFT, WATER, ETC.

shale

JUN -8 1954

# Brown Engineering Company

TELEPHONE 2-8141

REGISTERED

CONSULTING ENGINEERS

PROFESSIONAL ENGINEERS

K. R. BROWN    J. V. GEBUHR    G. C. HAVENS  
E. F. BEHRENS    C. L. WARDLOW    C. D. GIBBS  
L. B. ECKLES    M. T. McDONALD    G. DUNN  
E. S. BOUDINOT    J. S. VETERSNECK    M. D. ANDERSON  
G. P. PRICHETT    C. E. BENNETT

322-334 K P BUILDING  
DES MOINES 9, IOWA

January 7, 1954

Dr. H. G. Hershey  
Iowa Geological Survey  
University of Iowa  
Iowa City, Iowa

Dear Dr. Hershey:

Will you please send me the log on test hole No. 1 drilled by Art Bruinekool at Russell, Iowa. Mr. Murray had the record of the test holes drilled by Mr. Bruinekool.

As I recall that test hole water was encountered at about 40 feet and continued down to 100 feet. The material was sandy but was it sand or sandy clay? If it is sand with occasional streaks of clay a 10" casing and heavy gravel pack might make a well. But if the material is sandy clay it is very doubtful because the inflow probably would not be fast enough to assure a supply. All we want is 50 G.P.M.

Very truly yours,

BROWN ENGINEERING COMPANY

*E. S. Boudinot*  
E. S. Boudinot

ESB:hr

*Lucas*

January 12, 1954

Mr. E. S. Boudinot  
Brown Engineering Company  
322-334 K P Building  
Des Moines 9, Iowa

Dear Mr. Boudinot:

In response to your request of January 7, 1954, we are enclosing a copy of the log of the Russell Town Test Hole No. 1 drilled by Mr. Bruinekool last summer.

This material seems to be mostly sandy clay, and it is doubtful whether it would yield the desired 50 gallons a minute even with a heavy gravel packing.

If we can be of other service, please let me know.

Very truly yours,

H. G. Hershey

HGH:PJH:t  
Enclosure

JAN 14 1954

*Lucas*

January 13, 1954

Mr. Jim Park, President  
Commercial Club  
Russell, Iowa

Dear Mr. Park:

Since we last talked with you we have had another careful analysis made by the Iowa Geological Survey at Iowa City and this morning we have a letter from Dr. H. G. Hershey in which he sets out the log of material encountered in the drilling of test hole No. 1.

Hole No. 1 during the drilling picked up water at 40 feet and water was encountered on down to 100 feet. However, the material seems to be mostly sandy clay and it is doubtful whether it would yield the desired 50 gallons a minute even with a heavy gravel packing.

The in feed of the water encountered is definitely an unknown quantity. Therefore, there seems to be but one more chance and that would be to try a few test holes for water bearing gravel north of the last test hole drilled by Mr. Bruinekool.

Mr. Bruinekool in his letter of November 17, 1953, says, "I have reason to believe that there is a flow of water feeding in from the north". The reason for believing so is that he had some better sands and gravel in the last test hole that was drilled. Mr. Bruinekool believes there should be some more test holes drilled to the north and east of his last test hole.

Again stating that water is where you find it and finding it carries a large element of chance.

In the case of the Town of Russell this chance, if it proves successful, will solve the water supply for the Town. If the chance is unsuccessful there are only two things left to do.

First - A deep well to the Jordan sand stone (Ottumwa found a vast supply of water in the Jordan sand stone). An 8" cased well drilled and completed in to the Jordan would cost approximately \$40,000. This water would require no treatment.

C  
O  
P  
Y

Mr. Jim Park

January 13, 1954

Second - An impounded reservoir which requires the purchase of land, building the dam, water treatment plant, long line of water main to the Town and constant operation and maintenance cost. If the Town undertook the entire cost it would be approximately \$180,000.

C  
O  
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Y

The Soil Conservation is still planning to impound a small area of water. The dam is to be built as a flood control project and a flood control project is far from being considered a good and safe water supply proposition. There would be too much cost expended in the main 6" water line from lake to the Town and the water treatment plant to take the risk of ample supply always being available in a flood control project. These two parts of your water works system would cost more than a deep well, we believe. Dr. Hershey in his letter of November 19, 1953, states, "From the foregoing information it seems that an adequate supply of acceptable quality water might be found in the Jordan aquifer at Russell. At Ottumwa the Morrell Packing Company has a number of deep wells obtaining large quantities of water from the Jordan aquifer. Well No. 8 developed a natural flow. A pumping test produced 2650 gallons a minute with a draw down of 170 feet. In one of the wells the static head was only 5 feet below the surface of the ground."

However, it must be borne in mind that Russell is some 40 $\frac{1}{2}$  miles from Ottumwa and the physical character of the deep aquifer and the quality of their waters might be markedly different at Russell. Yet it is Dr. Hershey's opinion the Jordan at Russell will produce an ample water supply for the Town.

In conclusion, it is our belief that it would be well for the Commercial Club and the Town Council to pool their cash funds available for test well drilling and get Art Bruinekool to come over and make a final try for shallow water in gravel formation. If water is found but one well does not produce enough you could well afford to build two or three wells. If Bruinekool's final search for water fails to find it then we believe a general meeting of Commercial Club, Town Council, and interested business men meet and we will try and have Mr. Flores of Layne-Western Well Co. of Ames, Dr. H. G. Hershey of Iowa Geological Survey, Mr. Boone of Pittsburg-Des Moines Steel Co. there and see if a deep well has any chance of being worked out. It seems to us that the finances can be worked out if enough people will sign up to use the public water.

Let us know if you have Bruinekool drill.

Very truly yours,

BROWN ENGINEERING COMPANY

*E. S. Boudinot*  
E. S. Boudinot

ESB:hr

cc: Dr. Hershey