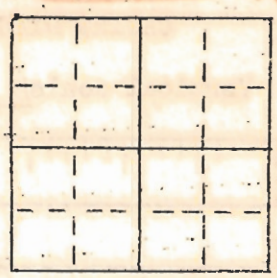
15' Bagley Road
41-50-34 N-094-18-36-01
081-30W-11 BDDA
7/81 field located by [illegible]

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

~~W-3705~~ W-3704

RECORD OF WELL



Location: SW part of town

Town: Jamaica (N E / S W): County Guthrie E.

NW sec. 11 T 81 N., R. 30 W. Twp.

Well name and number Jamaica Town Well

Owner ↗ Address

Tenant Address

Contractor Thorpe Well Co. Address DM

Drillers Ed Atcheson

Drilling dates Dec 24, 1948 - Jan 14, 1949

Well data:

Elevations: Drilling curb feet; Land surface feet

Determined by

Topographic position

Total depth: Reported 153 feet, Measured feet

Drilling method Cable Tool

Hole and casing data Gravel pack
142' of 10" pipe from +2 to 140'
12½' of 6" screen attached to 5' of 5" I.D. pipe
(136' to 153')

Original depth to water 58 ft. ~~above~~ below Date

Original elevation of water level ft.; Source of data

Sources of water: Principal ; Others

Production data: Date _____

Static depth to water 58 Measuring point _____
Pumping level 62 at 120 g.p.m.

Specific capacity _____ g.p.m. per ft. drawdown; Temperature _____ °F.

Pump data: Type pump _____ Column Dia. _____ Length _____
Cylinder or bowls: Dia. _____ Length _____ Suction pipe _____

Power _____ Airline _____

Estimated rate of production: _____ g.p.m. for _____ hrs. a day

Use of water _____

WATER ANALYSES (in parts per million)

Date samples				
Sampled by				
Total solids				
Insoluble matter				
Alkalinity (Meo)				
Alkalinity (Phn)				
pH				
Fe_2O_3+ Mn_2O_3+Al_2O_3				
Alkali as sodium				
Calcium				
Magnesium				
Iron (unfiltered)				
Manganese				
Nitrate				
Fluoride				
Chloride				
Sulfate				
Bicarbonate				
Hardness (ppm)				
Hardness (gpg)				

Remarks _____

Laboratory data: Sample storage location CE1-3

Sample range 0'-152 No. spls. 9 No. dupls. & cond. 9 C

Spls. prepared by JCC Washed range. — by —

Driller's log and cond. _____

Insoluble residues: Prepared by _____ Studied by _____ Strip log _____

Microscopic study _____ strip log _____

Gen. log _____ Correl. by _____ Petre

W-3705
W-3704

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa

Well Log Record

Owner of well Town of Owasa County _____

Tenant _____ Town _____

Location SW part of town sec. ____, T. ____ N., R. ____ E. W. _____ Twp.

Curb elevation _____ ft. Present depth _____ ft. final depth _____ ft.

Static level: (Depth to water above below curb) _____ ft. Pumping level 62 ft. at _____ g.m.

Contractor Thorpe Well Co Atchison Date drilled 1-8 to 1-14-49

Description*	FEET			Description*	FEET		
	Thick	From	To		Thick	From	To
Blk dirt							
yell clay			21				
Blue clay							
sd & gvl (some water)		35	38				
Blue clay		38	135				
" (w/ water)		135	139				
sand & gvl (water)		139	15				

*Abbreviate descriptions: use one line for each formation.

Remarks on water zones and casings Gravel packed w/10" pipe from +2 to 140
(17'-153) 12' of 6" screen & Hack. w/ 5" ID pipe

Temperature: Air _____ °F., Water _____ °F. at _____ A.M. P.M. _____ 19__

Record obtained from _____ Recorded by _____

Guthrie Co
Jamaica
Ia.

October 21, 1948

Mr. Bruce F. Towne
Town Clerk
Jamaica, Iowa

Dear Mr. Towne:

We have your letter with regard to ground-water possibilities for the town of Jamaica in the northeast corner of Guthrie County. A forecast of the geologic section and general ground-water conditions in that area has been assembled for you. All data was taken from the open files of the Geological Survey.

The elevation of the land surface at the C.M. St.P. & P. R.R. station in Jamaica is 1042 feet above sea level. The depth figures given in this report are referred to that elevation.

Glacial drift composed mainly of blue clay containing sand, gravel, pebbles, boulders, and rock fragments covers the bedrock of this area from about 80 to 100 feet. Beds of sand and gravel occur within and at the base of the drift. At Herndon it is reported that 35 feet of sand and gravel were encountered at the base of the drift. From our records it would appear that deeper sands and gravels occur south of Jamaica. A testing program to determine the location, size and extent of these sand and gravel deposits as well as their water-bearing characteristics should be undertaken before abandoning the possibility of obtaining water from such a source.

If these glacial deposits do not yield the amount of water you require, it will be necessary to drill deeper into the underlying Pennsylvanian or Mississippian systems. The section to be expected beneath Jamaica is as follows:

Formation and Description	Thickness (feet)	From (feet)	To (feet)
Pleistocene system			
Glacial drift (mixture of clay, sand, pebbles, and boulders)	90±	0	90±
Pennsylvanian system			
Cherokee group (mainly shale, some sandstone, thin limestone and coal)	115	90	205
Mississippian system			
Warsaw formation (dolomite and limestone, cherty)	120	205	325
Keokuk-Burlington formations (dolomite and limestone, cherty)	55	325	380
Gilmore City formation (oolitic limestone)	20	380	400
Hampton formation (limestone and dolomite)	145	400	545
Maple Mill formation (chiefly shale)		545	

The Pennsylvanian rocks include some sandstone layers from which a fair supply may be obtained. But these layers are comparatively scarce and often pass laterally into impervious beds. This makes it difficult to predict whether wells drilled into the Pennsylvanian sandstones will be successful.

Some water can be expected from the limestone formations of the Mississippian system, although it might be rather hard water due to the calcium and magnesium content of these rocks. The present town well was completed in the Hampton formation at a total depth of 525 feet. The original recovery was 15 gallons per minute. The static water level was 78 feet and the drawdown 222 feet. For a town of the size of Jamaica (population approximately 300, 1940 census) a well producing about 20 gallons per minute should be adequate if there are no industrial firms with a large demand for water.

In summary, it will probably be best to drill a number of shallow test holes to the base of the glacial drift before attempting a deep well. If your testing program proves unsuccessful you can then drill into bedrock some distance from the present well.

We will be interested in hearing of developments at Jamaica. If you drill, we would appreciate receiving a set of samples of the cuttings taken at five-foot intervals as these will constitute a valuable addition to our information of that area. Also, we would like to know the name of the contractor on this job so that we may supply him with log books and sample sacks. If you have any questions on this report or if we can be of further service to you please feel free to write or call us.

Very truly yours,

H. G. Hershey

HGH:PJH:AEH

Mayor:
G. R. Clark
Clerk:
Bruce F. Towne
Treasurer:
Ivar Towne
Assessor:
J. C. Cornes
Marshall:
Robert Merchant

Town of Jamaica

"We Have It Or Can Get It For You"

Jamaica, Iowa

Oct 6 - 1948

Councilmen;
Merle Summers
W. J. Hall
E. H. Ballard
John Crabb
Bernard Ellis

DCT 7 1948

Dr. H. G. Hershey, Director
State Geological Survey,
Iowa City, Iowa.

Dear Sir! —

We are about to dig some test holes for a new well. Will you please send us a ground water forecast.

Yours Resp.

Bruce F. Towne, Clerk