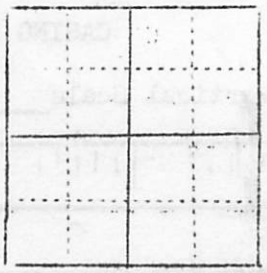
N 5443

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

RECORD OF WELL



Location:

Town: Hampton (N E / S W) :County Franklin

SW SE NW sec. 34 T 92 N.,R. 20 E. W. Twp.

Well name and number Hampton City Well (1952)

Owner City of Hampton Address

Tenant Address

Contractor Thorpe Well Co. Address Des Moines

Drillers Ed Agar

Drilling dates Aug. 1951 - June 1952

Well data:

Elevations: Drilling curb 1124 feet; Land surface feet

Determined by C.W. Lane

Topographic position

Total depth: Reported 1763 feet, Measured feet

Drilling method Rotary 0 to 83'; Cable tool

Hole and casing data 16" O.D. pipe from +1½" to 401' grouted top to 401'; 12" pipe from 378'7" to 798'3"; 10" pipe from 762'9" to 1255'8" cemented with 231 sacks from bottom to 1140' cemented with 100 sacks.

Original depth to water 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 _____ Measuring point _____
Pumping level _____ at _____ 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 CR 4-6, 4-7, 4-8, 4-9, 4-10
Sample range 0-1763 No. spls. 337 No. dupls. & Cond. 337 - Good
Spls. prepared by Staff Washed range 30-1763 by Staff 7/3/52
Driller's log and cond. _____
Insoluble residues: Prepared by _____ Studied by _____ Strip log _____
Microscopic study _____ strip log July 1952
Gen. log _____ Correl. by Northup

9-230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ________ / District ________

Hampton, Franklin Co. New Well — Pg 1

1958 Date	Time	Pump RPM	D/W in ft	GPM	Temp	Remarks
	No. 2 well off 2 hrs —					WL #3 177'
	" on 10 min					WL #3 179'
	" " 20 "					" " 181'
	" " 55 "					" " 184'
6-22	2:45					Start pump #2 off
	3:00	960	225	125		Water rusty
	3:15	960	226	140		Water cloudy
	3:30	960	224	140	52°?	Water muddy
	4:00	960	202	140		Water cloudy some sd.
	4:30	960	202	210		" " " "
	5:00	960	205	210		" " " "
	5:30	960	203	215		" " " "
	6:00	960	205	215		" " " "
	6:30	960	203	220		" " " "
	6:35					#2 started
	7:00	960	208	220		" " " "
	7:30	960	209	215		water clearing some sd
	8:00	960	210	215		" " less sd
	8:15					increased pump rate
	8:30	1000	223	275		clearing some sd
	9:00	1000	223	275		" " "
	9:05					#2 shut down
	9:30	1000	221	275		water clearing
	9:35					increased pumping rate
	10:00	1050	236	340		water cloudy some sd.
	10:30	1050	233	340		" " weir box 2/3 full of sd
	11:00	1050	233	340		water cloudy much sd
	11:30	1050	231	360		" " " "
	12:00	1050	231	360		" " " "
6-23	12:30	1050	231	360		" " " "
	1:00	1050	230	360		" " " "
	1:30	10150	230	360		" " " "

6 stage 10" pump 357' to top of bowls.
WL RDgs by air line
#3 well 23 ft higher than #2

9-230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

Pg 2

1952 Date	Time	Pump RPM	D/W ft	GPM	Temp	Remarks
6-27	2:00	1050	230	360		Water clearing some sd
	2:30	1050	230	360		" " " "
	3:00					Increased pumping rate
	3:00	1080	235	422		Water cloudy much sd
	3:30	1080	235	422		" " " "
	4:00	1080	235	422		" " " "
	4:30	1080	233	422		" " " "
	5:00	1080	233	422		" " " "
	5:30	1080	232	422		" " " "
	6:00	1080	232	422		" " " "
	6:30	1080	231	422		Water clearing
	7:00	1080	230	422		" "
	7:30	1080	230	422		Water cloudy much sd
	8:00	1080	230	454		" " " "
	8:30	1080	230	454		" " " "
	9:00	1080	230	454		" " " "
	9:30	1080	230	454		Water clearing
	9:25	Start pumping #1 at 250 gpm				
	9:45					Increased pumping rate
	10:00	1100	238	512.5		Water cloudy much sd
	10:30	1100	239	519.5		" " " "
	11:00	1100	238	519.5		" " " "
	11:30	1100	238	520		" " " "
	11:35	Well #1 shut down				
	12:00	1100	237	520		Pumping much sd
	12:30	1100	236	520		" " "
	1:00	1100	236	520		" " "
	1:30	1100	235	520		" " "
	2:00	1100	233	520		Little less sd
	2:10	Start well No 2 pumping 430 gpm				
	2:30	1100	236	520		Little less sd
	3:00	1100	237	520		" " "

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

Pg 3

1952 Date	June	Pump RPM	DW ft.	GPM	Time	Remarks
6-23	330	1000	237	500		Pumping sand
6-23	4:00	990	209	125		pumping Fine sand
	3:45					Began reducing pumping rate
6-23	4:30	990	205	150		
			Decreased Rate at 4:35 PM.			
	5:00		199	85		still pumping sand

Franklin

1

January 16, 1951

Mr. H. S. Smith
Stanley Engineering Company
Hershey Building
Muscatine, Iowa

Dear Mr. Smith:

In response to your letter of January 10 relative to the depth and thickness of formations in a proposed well for the city of Hampton, Iowa, we have assembled the following pertinent data from our files.

We find that the location of the deep Hampton city well No. 2 is in the southwest corner of the NE¼ SW¼ SE¼ NW¼ sec. 34, T. 92 N., R. 20 W., Franklin County, and that the elevation of this site is 1100.7 feet above sea level. A well drilled 500 feet away from the existing city well No. 2 and at the same elevation should encounter practically the same geologic section. The strata encountered in well No. 2 were as follows:

Formation and description	Thickness (ft.)	Depth (ft.) From	Depth (ft.) To
Pleistocene system			
Glacial material (probably sandy and pebbly yellow clay)	10	0	10
Mississippian system			
Hampton formation			
Siltstone	40	10	50
Dolomite	40	50	90
Devonian system			
Sheffield shale	40	90	130
Lime Creek formation (mostly dolomite in upper part, shale in lower)	160	130	290
Cedar Valley formation (limestone and dolomite)	310	290	600
Wapsipinicon formation (dolomite and limestone)			

Ordovician system				
Maquoketa formation				
Shale	50)			
Dolomite	50)	270	600	870
Shale	30)			
Dolomite and limestone, some chert	140)			
Galena formation (limestone)	240		870	1110
Decorah-Platteville formations (limestone and shale)	55		1110	1165
Glenwood sandstone and shale	15		1165	1180
St. Peter sandstone	56		1180	1236
Prairie du Chien formation				
Willow River member (sandy dolomite)	144		1236	1380
Root Valley member (dolomite and sandstone)	100		1380	1480
Oneota member (sandy dolomite)	160		1480	1640
Cambrian system				
Jordan sandstone	60		1640	1700 T.D.
Additional strata anticipated:				
Jordan sandstone	15		1700	1715
St. Lawrence dolomite	95		1715	1810
Franconia formation (dolomite and sandstone or siltstone in upper part, shale and dolomite in lower part)			1810	

We shall be very interested to hear of further developments on this project and shall be glad to assist you in any way we can. If you have any questions on these data, please feel free to write us.

Very truly yours,

H. G. Hershey

HGH:PJH:emh

Franklin

July 23, 1952

Mr. H. S. Smith
Stanley Engineering Company
Hershey Building
Muscatine, Iowa

Dear Mr. Smith:

Reference is made to your letter of July 21 concerning the fluoride content of the recently completed Hampton city well No. 3.

Herewith is a summary of the fluoride content of water from wells at Hampton, Iowa.

Hampton city well No. 1 (1900), 1709 feet deep

6/15/34	2.0 parts per million
4/19/49	1.8 parts per million

Hampton city well No. 2 (1926), 1700 feet deep

6/16/34	1.0 parts per million
12/10/42	0.0 parts per million
3/10/48	1.6 parts per million
6/23/52	1.8 parts per million

Hampton city well No. 3 (1952), 1763 feet deep

6/23/52	0.8 parts per million

It is difficult to predict whether any significant change will occur in the fluoride content of the water from city well No. 3. However, some slight variation may be expected to occur over a period of years as recorded in well No. 1 and well No. 2. The sample showing 0.0 parts per million from well No. 2 would appear to be in error. It is doubtful if an appreciable change in the fluoride content of these waters will occur unless the well casings develop leaks and upper waters gain entrance to the wells.

We hope this is the information you wished, and if we can be of further service in any way, please contact us.

Very truly yours,

H. G. Hershey

HGH:PJH:emh

JUL 22 1952

2

C. MAXWELL STANLEY
ARTHUR E. STANLEY
H. SIDWELL SMITH
SANFORD K. POSHOLT

STANLEY ENGINEERING COMPANY

HERSHEY BUILDING
MUSCATINE, IOWA

July 21, 1952

Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Gentlemen:

Hampton, Iowa

We are in receipt of your letter of July 18 with attached copies of recent mineral analyses from wells No. 2 and 3 at Hampton, Iowa.

We note that the fluoride content of the water from well No. 3 (the new well) is 0.8 ppm as compared to a content of 1.8 ppm in old well No. 2.

We would appreciate your advising whether, in your opinion, the lower fluoride content of the water from well No. 3 will continue or whether this might be expected to approach the level shown in well No. 2.

Yours very truly,

STANLEY ENGINEERING COMPANY

By H. S. Smith

HSS:bc:1314-C

Telephone
1900

PJH.

C. MAXWELL STANLEY
ARTHUR E. STANLEY
MARVIN O. KRUSE
H. SIDWELL SMITH

JAN 11 1951

STANLEY ENGINEERING COMPANY

HERSHEY BUILDING
MUSCATINE, IOWA

January 10, 1951

Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Gentlemen:

Hampton, Iowa

We are preparing plans and specifications for a new well at Hampton. It is intended to drill this well through the Jordan sandstone.

We would very much appreciate your forcast of the depth and thickness of formations which might be encountered in this well. The new well will be drilled approximately 500 feet from the existing well with the top of the well at the same elevation as the existing well.

Your courtesy in furnishing this information will be appreciated.

Yours very truly,

STANLEY ENGINEERING COMPANY

By H S Smith

HSS:wls:1314

Telephone
1900

Hampton (Franklin)

WATER SYSTEM NEAR COMPLETE

Crew Has Dynamited Well Three Times To Clean Out The Sand

BIG SUPPLY ASSURED

Must Clean Sand Out From Well And Lay More Water Main Yet

If residents on the east side of Hampton felt a couple of slight jars last Tuesday, it was due to two big charges of dynamite which were set off in the bottom of the new water well being drilled for the city by the Thorpe Well Company of Des Moines. The first charge set off contained 150 pounds of dynamite and shortly after that a 200 pound charge was set off. Another 150 pound charge had been used some time ago.

The purpose in blowing the well is to increase the "clear" cavity at the bottom, more than 1,700 feet below the surface of the ground, so that the fine white Jordan sand at that level will not be drawn into the city's water system when the well is put in operation. There is no question about there being plenty of water available at the site.

Now Baling Sand

The drilling crew is now engaged in baling out the quantities of sand loosened at the bottom of the well. Approximately seventy-five yards of the sand has been removed and it is estimated that there is about that much yet to be taken from the well. As soon as the necessary machinery is released from another job, the crew intends to start removing the sand with an air lift apparatus, which will bring the sand up much faster than can be done by baling.

When the well is completed, it will yield water at the rate of 600 gallons per minute, which is the amount now being delivered by the pump at the present well, thus exactly doubling the present pumping capacity when both wells are in operation. The new well has already been tested as high as 850 gallons per minute and it is expected that it will test 1,000 gallons per minute before it is put in use. In regular operation however, the pumps will draw 600 gallons per minute at each well.

Much Greater Storage

The second water storage tank recently completed has a capacity of 500,000 gallons and is now in use. The old tank stores 100,000 gallons.

Three blocks of water main must yet be laid and the M. & St. L. railroad tracks must be crossed just south of the Townsend & Merrill Lumber Company. The track crossing is a slow operation as a culvert must be forced underneath the tracks before the water main is put through.

After the well tests satisfactorily and the remaining mains are laid, it will only be necessary to install the pump, a meter pit, and do some additional concrete work for Hampton to have in operation a new system that should prove ample for its needs for years to come.

Test Pumping Shows Plentiful Water Supply From New Well

Test pumping from Hampton's new water well last Thursday produced 1,000 gallons a minute for a ten-hour stretch. Draw down—that is, level of water in the well—amounted to fifty feet when the 1,000-gallon per minute pumping first started and the level held steady at fifty feet down during the testing period.

Engineers employed by the city were pleased with the results of the test pumping. Hampton's water supply with the second well in operation, a new 500,000-gallon storage tank, and new mains should be abundant for many years to come.

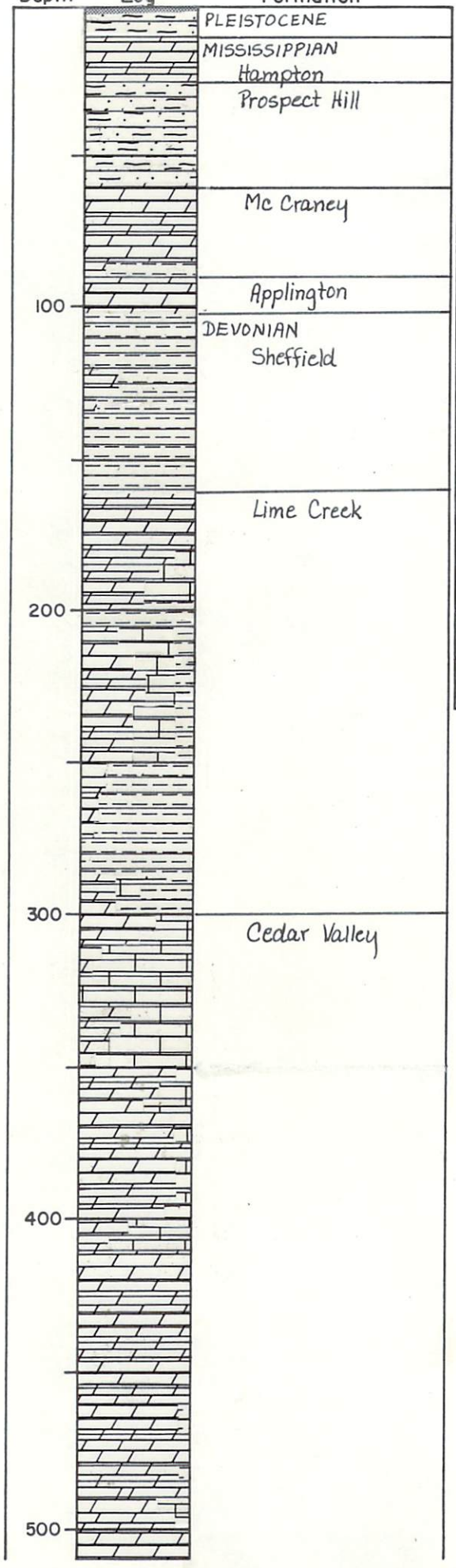
Pump To Be Installed

A permanent pump has yet to be installed at the new well and wiring, cement and fence work are yet to be completed. During routine operation it is expected that the pump will deliver about 600 gallons per minute. That is the amount also being delivered by the old well, but its pump was delivering near maximum capacity and was kept operating twenty-four hours a day this summer and fall in order to keep the water supply in the storage tanks at a safe level during this dry period.

City officials are breathing easier now that the new well is practically ready to operate. Hampton is using more than 800,000 gallons of water a day now and with only the one well in operation twenty-four hours a day, the maximum pumping capacity was about 840,000 gallons a day, not a large enough margin for comfort.

It was estimated that more than 400 yards of sand were removed after the drilling was completed.

92-20W-34 BOC

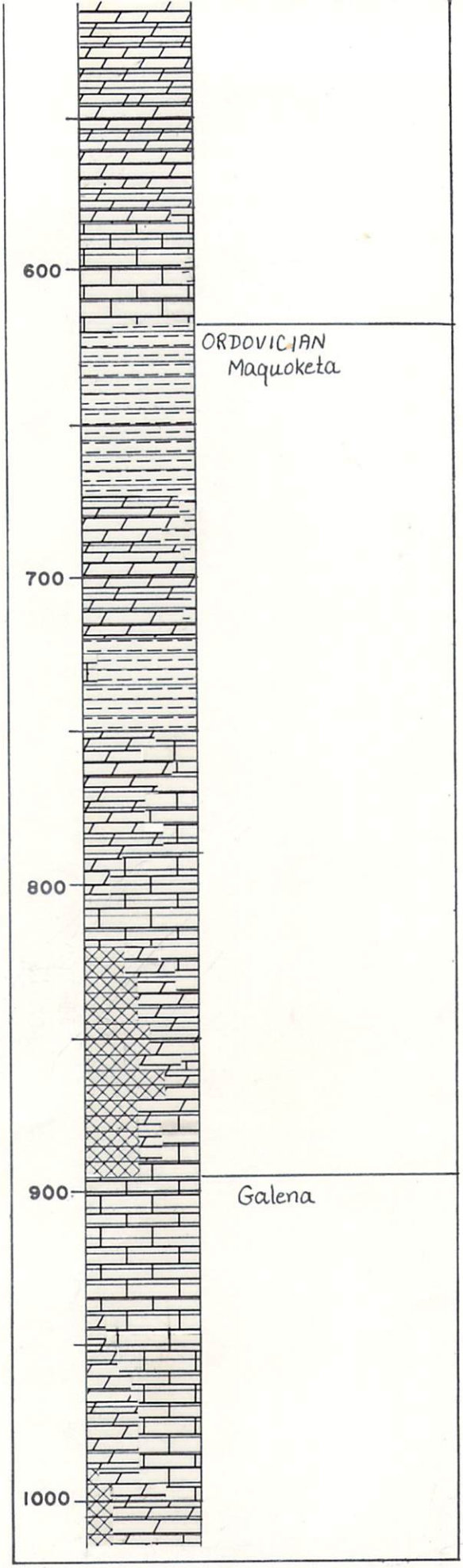


IOWA GEOLOGICAL SURVEY
In Cooperation with
U. S. GEOLOGICAL SURVEY
Iowa City, Iowa

Name: Hampton City Well #3	State: Iowa
Town: Hampton County: Franklin	Loc.: SW SE NW
Contractor: Thorpe Well Co.- Ed Eger Driller:	Sec. 34
Drilling Dates: Aug. 1951 – June 1952	T. 92 N., R. 20 W.
Casing Record: 16" OD pipe 1'6" to 401'	
12" pipe 378.7'- 788'3" - cemented 10" pipe 762'9" - 1255'8" - cemented	
S.W.L.: 177' G.P.M.: 520 D.D.: 59	
Remarks: Rotary 0-83- Rest cable tool	Elev.: 1124'
	T.D. 1763'
Logged By: Northup - July 1952	I.G.S. No. W-5443

Explanation of Colors

- Soil
- Loess, Silt on Siltstone
- Drift
- Sand & Gravel
- Shale
- Sandstone
- Limestone
- Dolomite
- Chert
- Gypsum or Anhydrite
- N S — No Samples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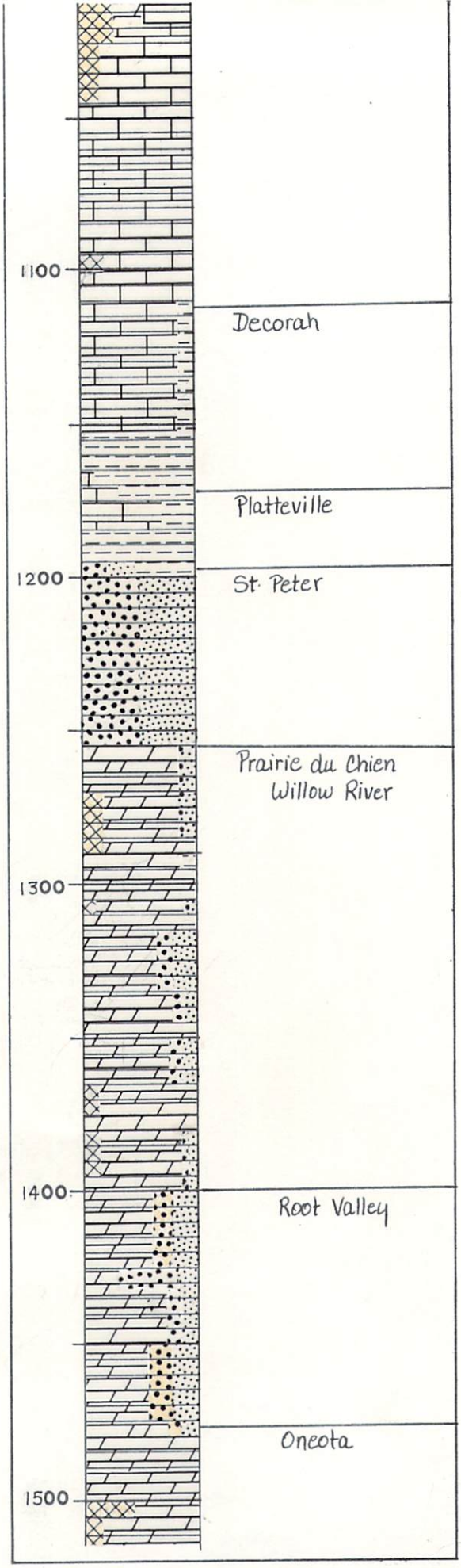
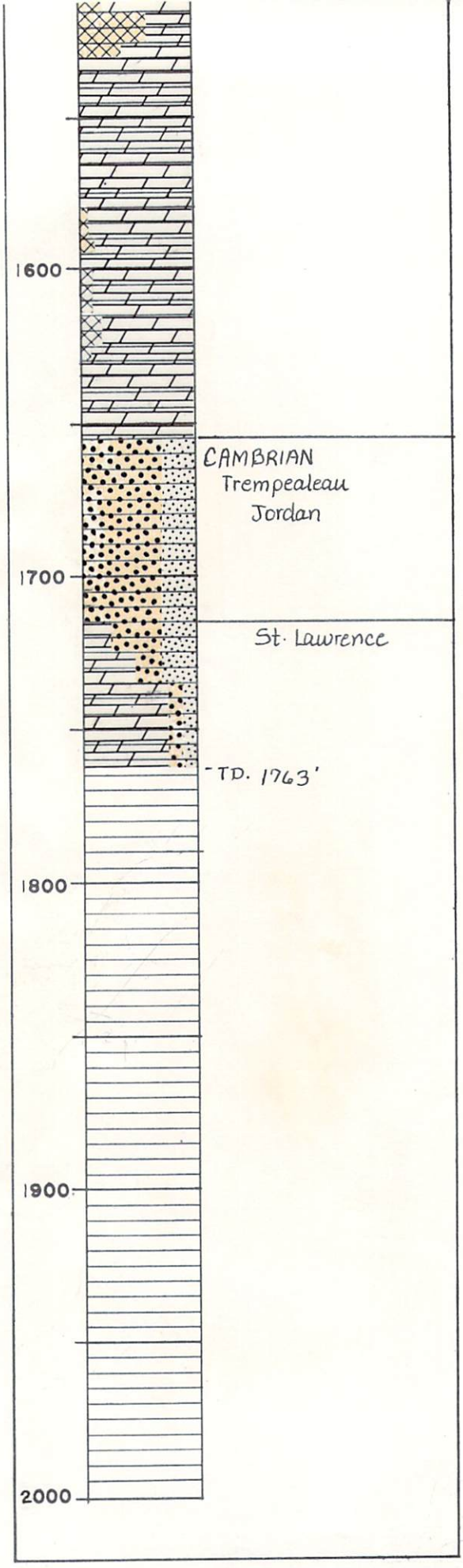
700
800
900
1000
ORDOVICIAN
Maquoketa
Galena


1100
1200
1300
1400
1500
Decorah
Platteville
St. Peter
Prairie du Chien
Willow River
Root Valley
Oneota


1600
1700
1800
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CAMBRIAN
Trempealeau
Jordan
St. Lawrence
TD. 1763'