National water well Association
MEMBER

Phone 515 473-2707

HOEG & AMES, Inc.

WELL CONTRACTORS WELL SUPPLIES

* * *

LINCOLN, IOWA
50602

RECORD OF WELL

Owner Town of Walker, Iowa.

Address Walker, Iowa.

Tenant

Address

Location In the Town of Walker, Iowa, in Linn County.

Started the Well March 29, 1965.

Finished the Well August 2, 1965.

Total Depth 1525 feet Size of Well 8"

Static Water Level 38.5 ft.

Draw-down 151 feet, pumping 150 Gal. P.M.

See pipe record at bottom of page.

____ feet of ____ inch pipe installed

____ feet of ____ inch casing installed

Driller Ervol Fink, for Hoeg & Ames, Inc.

Remarks

FORMATION

See Page 2.

CASING RECORD.

12" casing from +2' to - 37'7"
8" casing from +2' to - 259'
6" casing from -426' to -680'
5" casing from -882' to -1045'.

Water level checked Aug. 5, 1965 — stood at 95.5 ft.

water well association
MEMBER
Phone 515 473-2707

HOEG & AMES, Inc.
WELL CONTRACTORS WELL SUPPLIES
* * *
LINCOLN, IOWA
50602

Survey Copy

WELL RECORD

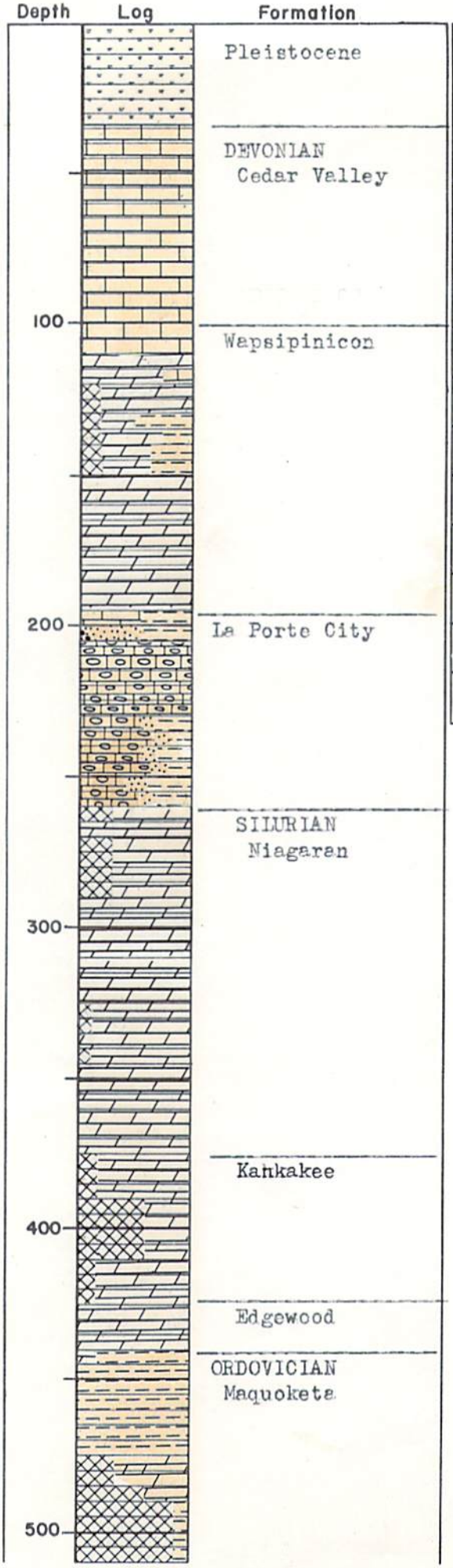
WALKER, IOWA, * TOWN WELL #2.

Page 2.

Driller's Log of Formations.

0'	to	4'	-	Fill dirt.
4'	to	30'	-	Sandy Clay
30'	to	45'	-	Grey limestone, broken.
45'	to	80'	-	Yellow Limestone.
80'	to	85'	-	Brown Limestone.
85'	to	115'	-	Grey Limestone with Shale bands.
115'	to	130'	-	Hard Brown Limestone.
130'	to	140'	-	Rock & Shale.
140'	to	150'	-	Grey Shale.
150'	to	165'	-	Grey Limestone.
165'	to	195'	-	Brown Limestone
195'	to	200'	-	Shale.
200'	to	260'	-	Rock with Shale streaks.
260'	to	350'	-	Good Grey Rock.
350'	to	425'	-	Brown Limestone & Dolomite.
425'	to	445'	-	Grey Limestone.
445'	to	580'	-	Grey Limestone & Shale.
580'	to	670'	-	Brown Limestone - some Shale.
670'	to	900'	-	Grey Limestone - hard.
900'	to	970'	-	Grey Limestone - some Shale.
970'	to	980'	-	Brown Limestone - some Shale.
980'	to	987'	-	Light Shale.
987'	to	1020'	-	St. Peter Sandstone - hard.
1020'	to	1427'	-	White Dolomite - hard. Sandy in some spots.
1427'	to	1520'	-	Jordan Sandstone.
1520'	to	1525'	-	Dolomite.

Total Depth - 1525 feet.

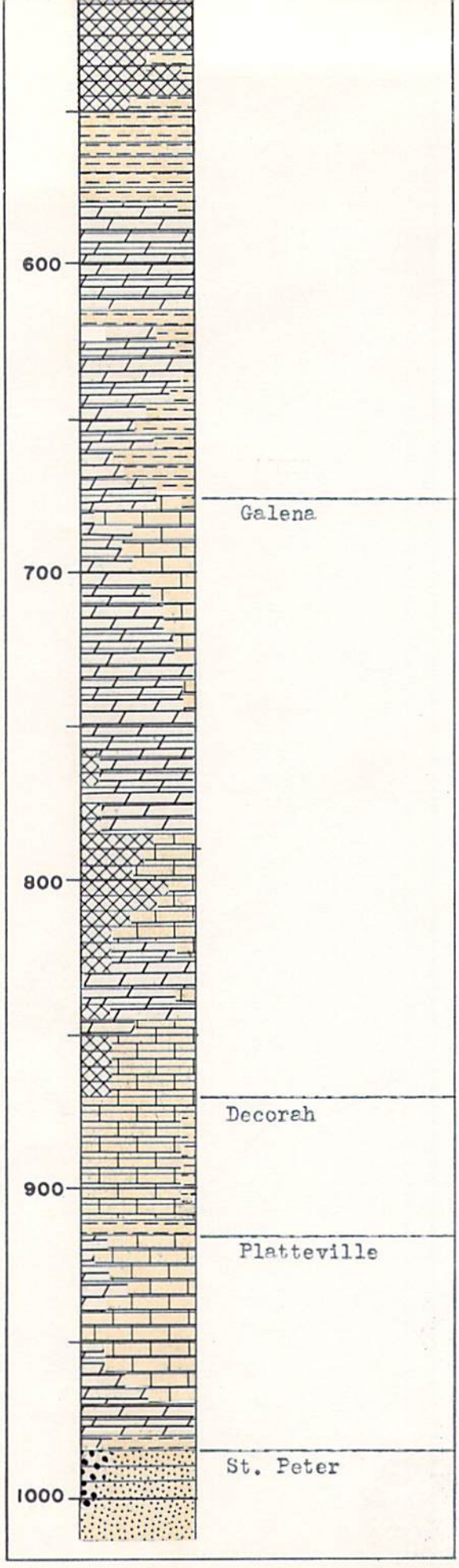


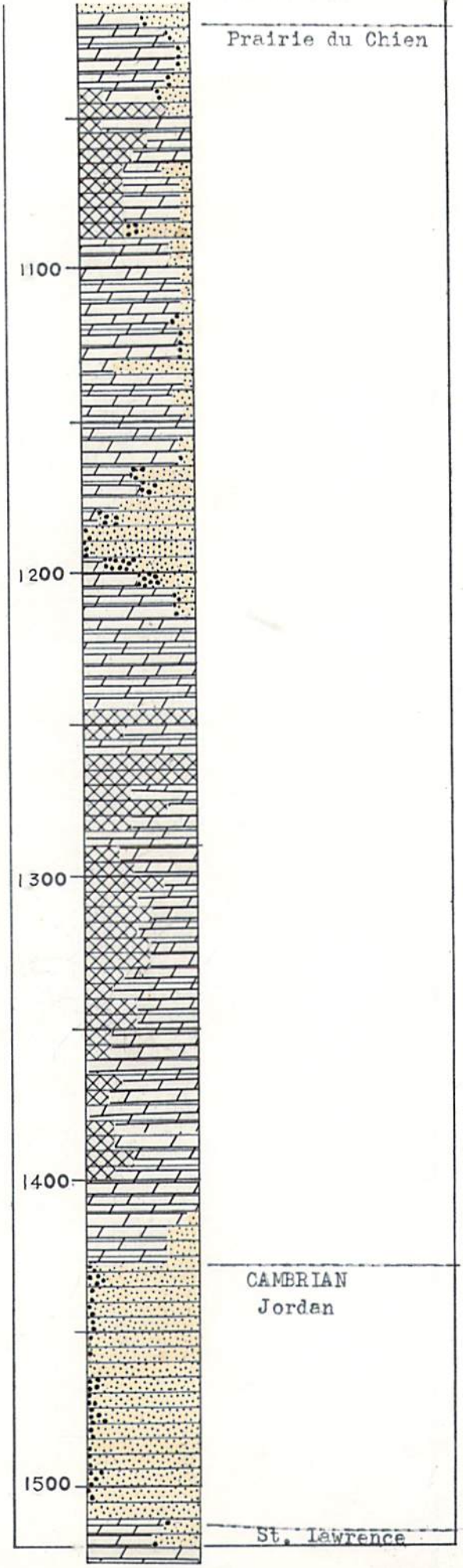
IOWA GEOLOGICAL SURVEY
In Cooperation with
U. S. GEOLOGICAL SURVEY
Iowa City, Iowa

Name Walker City Well #3	**State** Iowa
Town Walker **County** Linn	**Loc.** SE SW NE
Contractor Hoeg & Ames, Inc. **Driller**	**Sec.** 4
Drilling Dates March 29 - Aug. 4, 1965	**T.** 86 **N,, R.** 8W.
Casing Record 259' of 8" casing	
240' of 6¼" liner 426-680'	
163' of 5" liner 882-1045'	
S.W.L. 38.5 **G.P.M.** 215 **D.D.** 180	
95.5 (9-5-65) (9-5-65) 123	
Remarks	**Elev.** 902' ±
	T.D. 1525'
Logged By Northup 1965	**I.G.S. No.** W-17349

Explanation of Colors

- Drift
- Sand & Gravel
- Shale
- Sandstone
- Limestone
- Dolomite
- Cherty Dolomite
- Cherty Limestone
- N+S No Samples


600
700
800
900
1000
Galena
Decorah
Platteville
St. Peter


Prairie du Chien
1100
1200
1300
1400
CAMBRIAN
Jordan
1500
St. Lawrence

GROUND-WATER CONDITIONS AT WALKER, IOWA

The following commentary represents an interpretation of the available hydrologic information in the files of the investigations of the Iowa and U. S. Geological Survey.

The town of Walker, (1960 population 584) is located in the headwater area of the little valley of East Blue Creek on the Iowan drift plain in the northwestern corner of Linn County. Most of the town is built in the SE¼ sec. 4, T. 86N., R. 8W. The following is a generalized log of the formations encountered in the existing town well No. 2 (1951) 350 feet deep, and additional anticipated strata down to the top of the Maquoketa Shale (all depths are referred to a starting elevation of approximately 906 feet above sea level):

Formation	Thickness(ft.)	Depth Range(ft.)
Quaternary System		
Pleistocene Series (sand and clay)	40	0-40
Devonian System		
Cedar Valley Formation (limestone and minor shale)	75	40-115
Wapsipinicon Formation (limestone and dolomite, some shale, minor chert at base)	82	115-197
Silurian System		
Niagaran Series (dolomite with considerable chert in upper part)	153	197-350
Additional anticipated strata -		
Niagaran-Alexandrian Series (dolomite, some chert)	105±	350-455±
Ordovician System		
Maquoketa Shale		455±-

A higher or lower drilling site will modify all these depth figures in proportion to the difference between the elevation of the old and new wells.

The existing well derives its supply from the Silurian cherty dolomite and in part from the overlying Devonian rocks. The original production test delivered 40 gallons a minute with only 10.5 feet of drawdown from a static head of 36.8 feet. This rate was maintained for 25 hours with no further drawdown. It would seem that much larger supplies could be obtained merely by increasing the pumping rate. Mineral analysis indicates the water to be of acceptable quality for drinking. Several other communities in the surrounding area derive their water from the Silurian rocks. In general, the best results are obtained at wells penetrating the full Silurian section down to the top of the Maquoketa Shale. Acidizing the water zones might appreciably increase the initial yield if necessary. The new well should be located as far as possible from the existing well or any other large capacity well drawing on the Silurian rocks in this vicinity to minimize the interference effects.

Additional water zones probably will occur in the underlying rocks for many hundreds of feet below. However, most data indicate that sufficient water can be found in the Silurian aquifer.

On this basis, it may be assumed that a new well at Walker penetrating as far as the top of the Maquoketa Shale at about 455 feet will solve their water needs for the foreseeable future. Casing should be set and cemented from the surface for some distance into the top of the Devonian limestones. It might also be advisable to place liner pipe opposite the Kenwood Shale in the middle of the Wapsipinicon Formation.

Formation	Thickness (ft.)	Depth Range (ft.)
Ordovician System		
Maquoketa Shale (mostly shales, with some argillaceous limestone and dolomite near middle and at the base)	260	455-715
Galena Formation (limestone and/or dolomite)	220	715-935
Decorah-Platteville Formations (limestone, dolomite, with some shale-Glenwood Shale at base)	90	935-1025
St. Peter Sandstone	45	1025-1070
Prairie du Chien Formation		1070-