

Clinton Co.

Drillers' Log--DeWitt City Well No. 5

Contractor: Thorpe Well Co., Des Moines
Drillers: Bergeson and Lynn
Drilling Dates: April-July 1948
Location: NW-SE-SW-18-81-4E-DeWitt Twp.-Clinton Co.
Elevation: Estimated 690 ft.

Casing: 20-in set at 40 feet
12-in set at 505 feet
12-in cemented inside 20-in casing and 19-in hole with 557 sax cement

Hole: 12-in open hole from 505 to 1270 ft.
10-in open hole from 1270 to 1421 ft (total depth)

Log

	Black soil	0 to 3	Shale, blue green	800 to 810	- Glenwood Sh.
	Brown sandy clay	3 to 5	Sandstone, gray	810 to 825	} St. Peter
Plast.	Gray sandy clay	5 to 9	Sandstone, white	825 to 830	
	Red sandy clay	9 to 12	Sandstone, white water	830 to 880	}
	Red sand and gravel	12 to 15	Limestone, hard white	880 to 885	
	Gray sandy clay	15 to 18	Limestone, soft white	885 to 915	}
Silurian	Yellow limestone	18 to 240	Limestone, white	915 to 930	
	Shale and gray limestone	240 to 245	Bimestone, pink	930 to 940	}
	Shale	245 to 250	Limestone, white	940 to 950	
	Shale and limestone	250 to 255	Limestone, pink	950 to 955	} W.R.
	Shale, blue	255 to 260	Limestone, white	955 to 960	
Maquoketa	Shale and limestone	260 to 325	Limestone, pink	960 to 965	}
	Shale	325 to 385	Limestone, white	965 to 980	
	Shale, gray	385 to 425	Limestone, brown	980 to 1010	}
	Shale, limy	425 to 440	Limestone, sandy white	1010 to 1085	
	Shale, brown	440 to 455	Limestone, white	1085 to 1105	} Root.V.
	Shale, brown limy	455 to 475	Limestone, sandy white	1105 to 1155	
	Limestone, gray	475 to 495	Limestone, darker	1155 to 1160	}
Galena	Limestone, gray brown	495 to 505	Limestone, white	1160 to 1185	
	Limestone, white	505 to 590	Limestone, sandy white	1185 to 1210	}
Pross?	Limestone, white, harder	590 to 615	Limestone, hard white	1210 to 1220	
	Limestone, white	615 to 705	Limestone, hard sharp white	1220 to 1240	} Oneota
	Limestone, brown	705 to 715	Chat, sharp, water	1240 to 1255	
	Shale, light blue	715 to 717	Limestone, sharp white	1255 to 1270	}
	Limestone, brown	717 to 720	Limestone, hard, no grit	1270 to 1280	
Dec. Platt.	Limestone and shale	720 to 725	Limestone, sandy	1280 to 1295	}
	Limestone	725 to 745	Limestone, no grit	1295 to 1305	
	Limestone, hard white	745 to 755	Samples washed away	1305 to 1310	}
	Limestone, hard gray	755 to 795	Very little sample	1310 to 1315	
	Limestone, sandy	795 to 800	Limestone, sandy	1315 to 1340	} Jordan?
			Samples washed away	1340 to 1350	

Very little sample	1350 to 1355	- Jord.
Limestone, brown	1355 to 1390	} St. Law
Limestone, white	1390 to 1410	
Limestone, brown hard	1410 to 1421	T.D.

Static water levels (by driller)

Water seep at 31'--water level 27 ft.

<u>Depth</u>	<u>Water Level</u>
65	27
75	27
155	27
665	162 (first water found below casing point at 505')
705	177
745 745	162
850	146
895	137
995	140
1190	139
1250	135
1265	134.5
1285	133.5--same to total depth.

In each case, the depth in feet represents the beginning of a new water level. (i.e.: from 745 to 850 feet the water level was 162 feet, at which point it rose to 146 feet)

K.E.A.

7/14/48

(from drillers original log books)

Production data:

Date 9-10 July 48

Static depth to water 131.5' Measuring point to top of 12" casing
Pumping level _____ at _____ g.p.m.

204'6" 400'

Specific capacity _____ g.p.m. per ft. drawdown; Temperature 64 °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 ₂ O ₃ -Mn ₂ O ₃ -Al ₂ O ₃	_____	_____	_____	_____
Alkali as sodium	_____	_____	_____	_____
Calcium	_____	_____	_____	_____
Magnesium	_____	_____	_____	_____
Iron (unfiltered)	_____	_____	_____	_____
Manganese	_____	_____	_____	_____
Nitrate	_____	_____	_____	_____
Fluoride	_____	_____	_____	_____
Chloride	_____	_____	_____	_____
Sulfate	_____	_____	_____	_____
Bicarbonate	_____	_____	_____	_____
Hardness (ppm)	_____	_____	_____	_____
Hardness (SPG)	_____	_____	_____	_____
Remarks	_____			

Laboratory data: _____ Sample storage location CD9-457

Sample range 0-1921 No. spls. 288 No. dupls. & cond. 286 Fair-Good

Spls. prepared by RKS & EMR Washed range 18-1921 by EMR & RKS

Driller's log and cond. Yes Good

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

Microscopic study Huntley strip log _____

Gen. log _____ Correl. by June 1948

coded

WA# 3376

STATE HYGIENIC LABORATORY, DES MOINES BRANCH
WATER LABORATORY DIVISION
MINERAL ANALYSIS

LAB. NO. 192
MINERAL NO. 2356
9/15/60 19

TOWN Des Moines COUNTY Clinton IOWA GEOLOGICAL SURVEY
OWNER OF SUPPLY City of Des Moines
COLLECTOR'S NAME Mr. E. Levens - Water Supt. SEP 21 1960
DATE COLLECTED 7/22/60 DATE RECEIVED 7/25/60
REPORT TO: NAME Division of Public Health Engineering
ADDRESS State Department of Health

FIELD DATA

SOURCE: WELL NAME, NUMBER, POINT OF COLLECTION, DEPTH, CONSTRUCTION DATE, ETC.,
No. 5 (at Second St. & 8th Ave.) at Pump House 1421 ft. 1940

WELL PUMPED _____ HRS. AT _____ GPM. DATE OF PREVIOUS SAMPLE None
WAS SAMPLE FREE OF TURBIDITY WHEN COLLECTED Yes
TEMPERATURE 62°F ALKALINITY (ppm CaCO₃) P _____ T 310 PH 8.5
IS A POLYPHOSPHATE BEING USED? Yes. We are also feeding sodium hydroxide and chlorine.
Iron (ppmFe) 0.5

LABORATORY ANALYSIS
(PARTS PER MILLION)

SPECIFIC CONDUCTANCE K AT 25°C 96.7 x 10⁵. TURBIDITY _____
DISSOLVED SOLIDS 565 SOLUBLE IRON (Fe) 0.14
TOTAL SOLIDS 565 SILICA (SiO₂) 2.4 TOTAL IRON (Fe) 0.14
ALKALINITY (ppm CaCO₃) P 30.0 T 304 PH 8.8 DATE 7/25/60

POSITIVE IONS

K⁺ 14.9
Na⁺ 126
Ca⁺⁺ 52.1
Mg⁺⁺ 24.7
Mn⁺⁺ <0.05
Al⁺⁺⁺ _____

NEGATIVE IONS

NO₃ - asN 0.3
F⁻ 1.15
Cl⁻ 89
SO₄ -- 82.5
HCO₃ - 298
CO₃ -- 36.1

HARDNESS AS CaCO₃ 235 ppm 13.1 gpg _____

ANALYST Wyan, Grand
rk

R. L. MORRIS
PRINCIPAL CHEMIST