

WRD Exp. (GW)

Aug. 1964

Verified PMJ

U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by P.J. Horick Source of data Files Date 5/14/65 Map H. & T.

State Iowa County Osceola (or town) 72

Latitude: 43° 23' 50" N Longitude: 095° 45' 03" W Sequential number: 2

Lat-long accuracy: 2 T. 99 S. R. 42 Sec. 13 SW. SW NE. 5 PM

Local well number: 09942W13acc Other number: W-2273

Local use: 02273 CITY. Owner of name: SIDLEY CITY WELL 1946

Owner or name: SIDLEY Address: SIDLEY, IA

Ownership: (C) County, Fed Gov't (F) City, Corp or Co, Private, State Agency, Water Dist (M) (N) (P) (S) (W) M

Use of water: (A) Air cond, Comm, Dewatering, Fire, Dom, Irr, Ind, P S, Stock, Instit, Unused (C) (D) (F) (H) (I) (N) (P) (S) (T) (U) P

Use of well: (A) (D) (G) (O) (P) (R) (S) (T) (U) (W) (X) (Z) W

well: Anode, Drain, Seismic, Obs, Oil-gas, Recharge, Spring, Test, Unused, Withdraw, Waste, Destroyed

DATA AVAILABLE: Well data 1 Freq. W/L meas.: INVENTORY Field aquifer char. 0

Hyd. lab. data: COMPLETE

Qual. water data: type: INTERMITTENT Pumpage inventory: I yes 75 no, period: 76

Aperture cards: 77

Log data: GEOLOGIST LOG 78 79

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 749 ft 749 Meas. 6

Depth cased: 630 ft 0630 Casing type: STEEL Diam. 16 in 16

Finish: (C) porous gravel w. concrete, (F) gravel w. concrete, (G) gravel w. horiz. screen, (H) gravel w. horiz. screen, (I) gravel w. horiz. screen, (J) gravel w. horiz. screen, (K) gravel w. horiz. screen, (L) gravel w. horiz. screen, (M) gravel w. horiz. screen, (N) gravel w. horiz. screen, (O) gravel w. horiz. screen, (P) gravel w. horiz. screen, (Q) gravel w. horiz. screen, (R) gravel w. horiz. screen, (S) gravel w. horiz. screen, (T) gravel w. horiz. screen, (U) gravel w. horiz. screen, (V) gravel w. horiz. screen, (W) gravel w. horiz. screen, (X) gravel w. horiz. screen, (Y) gravel w. horiz. screen, (Z) gravel w. horiz. screen

Method: (A) air, (B) air, (C) air, (D) air, (E) air, (F) air, (G) air, (H) air, (I) air, (J) air, (K) air, (L) air, (M) air, (N) air, (O) air, (P) air, (Q) air, (R) air, (S) air, (T) air, (U) air, (V) air, (W) air, (X) air, (Y) air, (Z) air

Date Drilled: 1946 5:46 Pump intake setting: 36 fr 38

Driller: Layne Western Co., Ames, Iowa

Lift: (A) air, (B) air, (C) air, (D) air, (E) air, (F) air, (G) air, (H) air, (I) air, (J) air, (K) air, (L) air, (M) air, (N) air, (O) air, (P) air, (Q) air, (R) air, (S) air, (T) air, (U) air, (V) air, (W) air, (X) air, (Y) air, (Z) air

Power: (type): diesel, elec, gas, gasoline, hand, gas, wind, H.P. 41 Trans. or meter no. 40

Descrip. MP LSD above 1514 ft below 1514 Alt. MP 1514

Alt. LSD: 1514 1514 Accuracy: ALTIMETER 47

Water Level: 287 ft above 287 ft below 287 Accuracy: DRILLER'S LOG 52

Date: 1946 4:6 Yield: 565 gpm 565 Method determined 61

Drawdown: 34 ft 034 Accuracy: 6 Pumping period 12 hrs 012

QUALITY OF WATER DATA: Iron 1.14 ppm 5 Sulfate 1556 ppm 9 Chloride 31 ppm 2 Hard. 1540 ppm 9

Sp. Conduct 2910 K x 10⁶ 6 Temp. 52 °F 52 Date sampled 1-31-61 161

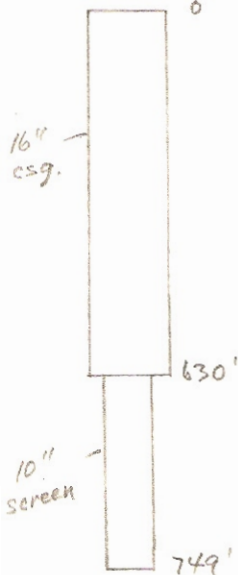
Taste, color, etc. 77 79

099-42W-13 acc

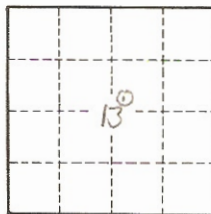
Well Number 43, 23, 50, 09, 45, 03, 2

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD
 Physiographic Province: CENTRAL LOWLAND 1:2 Section: WESTERN
 LAKE B Drainage Basin: BIG SIOUX 3:6 A Subbasin: 2:0
 Topo of well site: (D) local depression, (F) flat surface, (H) hilltop, (S) hillside, (T) terrace, (V) valley flat, 2:7
 MAJOR AQUIFER: Cretaceous, LOWER K:1 Dakota Sandstone D:1
 Lithology: MEDIUM SANDSTONE 3:V Origin: MARINE 6 Aquifer Thickness: 159 ft
 Length of well open to: 119 ft 3:8 Depth to top of: 590 ft 5:9
 MINOR AQUIFER: 4:4 4:5 Aquifer Thickness: 4:6 4:7
 Lithology: 4:8 4:9 Origin: 5:0
 Length of well open to: 5:4 5:5 Depth to top of: 5:7 5:8
 Intervals Screened: 630-7491
 Depth to consolidated rock: 369 ft 3:6 3:7 Source of data: WELL CUTTINGS 4:0 C
 Depth to basement: 4:5 4:6 Source of data: 4:7
 Surficial material: SANDY TILL 8:1 Infiltration characteristics: POOR 7:2 4
 Coefficient Trans: 7:3 7:4 Coefficient Storage: 7:5 7:6
 Perm: 7:7 7:8 gpd/ft²; Spec cap: 16.6 gpm/ft; Number of geologic cards: 7:9



Well reported to be 749' deep altho drilling cont'd to 757.3'



casing schedule -

16" csq set at 630' and cemented;
10" bronze screen set in 30" hole
and gravel packed

Data not complete

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

2273

RECORD OF WELL

Location:

Town: Sibley (NE)
(SW): County Osceola

SW SW NE sec. 13 T 99 N., R. 42 W. Twp.

Well name and number Sibley City well (1946)

Owner Sibley City Address _____

Tenant _____ Address _____

Contractor Layne Western Address Ames

Drillers Sculer

Drilling dates March - August 1946

Well data:

Elevations: Drilling curb _____ feet; Land surface 1508 feet

Determined by _____

Topographic position _____

Total depth: Reported 749 feet, Measured _____ feet

Drilling method rotary

Hole and casing data 12-inch pilot hole (to be reamed larger)

630' of 16" o.d. casing set at 630' cemented.

10" screen - 40' overlap inside.

Gravel packed.

Original depth to water _____ ft. below _____ above _____ Date _____

Original elevation of water level _____ ft.; Source of data _____

Sources of water: Principal 630' ; Others _____

CASING DIAGRAM

LOG

Vertical scale

RECORD OF WELL

Location:

County:

Section:

Well No.:

Date:

Well name and number:

Address:

Address:

Address:

Owner:

Drillers:

Drilling dates:

Well data:

600-630 shale streaks

715-730 shale, sandy, hard

730-749 pink sandstone

749-751 very rough

751-753 sandy shale, similar to 745-750

753-757.3 smooth but very hard

Date:

Feet below

Original depth to water

Source of data

Original elevation of water level

Others

Source of water: Principal

Production data:

Date July 17, 1946

Static depth to water 250.66

Measuring point land surface

Pumping level 284.66

at 565 g.p.m.

267.16

385

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	<u>Mar. 26, 1948</u>	_____	_____	_____
Sampled by	<u>J. B. Cooper</u>	_____	_____	_____
Total solids	<u>2863</u>	_____	_____	_____
Insoluble matter	<u>33</u>	_____	_____	_____
Alkalinity (Meo)	<u>334</u>	_____	_____	_____
Alkalinity (Phn)	<u>None</u>	_____	_____	_____
pH	<u>7.4</u>	_____	_____	_____
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	<u>13</u>	_____	_____	_____
Alkali as sodium	<u>247</u>	_____	_____	_____
Calcium	<u>400</u>	_____	_____	_____
Magnesium	<u>131</u>	_____	_____	_____
Iron (unfiltered)	<u>3.8</u>	_____	_____	_____
Manganese	<u>.27</u>	_____	_____	_____
Nitrate	<u>None</u>	_____	_____	_____
Fluoride	<u>1.2</u>	_____	_____	_____
Chloride	<u>25</u>	_____	_____	_____
Sulfate	<u>1601</u>	_____	_____	_____
Bicarbonate	<u>407</u>	_____	_____	_____
Hardness (ppm)	<u>1545</u>	_____	_____	_____
Hardness (gpg)	<u>90.3</u>	_____	_____	_____
Remarks	_____	_____	_____	_____

Laboratory data:

Sample storage location _____

Sample range 50-547 No. spls. 141 No. dupls. & cond. 141 Good

Spls. prepared by PJH + EJP Washed range 590-757 by PJH + EJP

Driller's log and cond. _____

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

Microscopic study 50-547 Harris strip log April 1946 SEH

Gen. log _____ Correl. by SE Harris

#2

OF WEST WELL

DRILLER'S LOG OF WELL FOR SIBLEY, IOWA

Pilot Hole Completed April 4, 1946

0	-	3	Top soil
3	-	7	Yellow clay
7	-	15	Sand and gravel
15	-	235	Sand and Clay
23	-	40	Blue muddy sand
40	-	44	Blue clay and rock
44	-	60	Sandy blue clay, small rocks
60	-	135	Blue clay with sand and gravel
135	-	145	Blue clay with sand and gravel
145	-	191	Blue clay and gravel
191	-	194	Loose sand and gravel
194	-	224	Sand, gravel, with clay streaks
224	-	238	Sand, gravel, with clay and shale showing
238	-	245	Softer blue clay. Some sand and gravel.
245	-	275	Blue clay. Some very hard spots
275	-	288	Blue clay. Hard.
288	-	290	Sandy blue clay
290	-	313	Blue clay
313	-	327	Blue clay with some gravel
327	-	330	Hard blue clay or shale
330	-	352	Blue clay
352	-	353	Blue clay. Boulders at 353'
353	-	369	Blue clay. Some small boulders.
369	-	383	Hard sand
383	-	393	Hard clay or shale
393	-	399	Hard sand. Trace of clay
399	-	407	Hard clay with sand streaks
407	-	420	Hard clay or shale with sand and boulders
420	-	426	Hard clay, sand, gravel, and boulders.
426	-	440	Blue clay, sandy streaks
440	-	452	Rock and clay
452	-	453	Rock
453	-	462	Gray shale. Rock streaks
462	-	471	Sandy shale
471	-	484	Shale
484	-	485	Sand. Hard.
485	-	490	Shale with sandy streaks
490	-	491	Rock
491	-		Shale
507	-		sandy shale
517	-		
518	-		Hard sandy shale

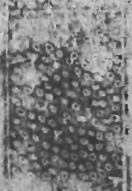
BRILLER'S LOG OF WELL FOR SIBLEY, IOWA.

525	-	529	Hard shale (Sandy)
529	-	530	Rock
530	-	553	Hard gray shale
553	-	556	Streaks of rock
556	-	559	Hard sandy shale
559	-	567	Hard sand with shale
567	-	580	Hard sandy shale with streaks of brown sand rock
580	-	597	Streaks of hard fine sand and shale
597	-	600	Shale
600	-	605	Hard sand rock and shale
605	-	624	Hard shale with sand
624	-	632	Sand; some shale
632	-	650	Clean sand. Thin hard streaks
650	-	676	Clean sand. Thin hard streaks
676	-	689	Hard blue shale
689	-	705	Clean sand. Hard streaks
705	-	715	Clean sand
715	-	717	Rock or shale
717	-	723	Hard sandy shale
723	-	725	Sand
725	-	730	Very hard sandy shale
730	-	749	Sand
749	-	752	Rock
752	-	757'3"	Rock

1120 285

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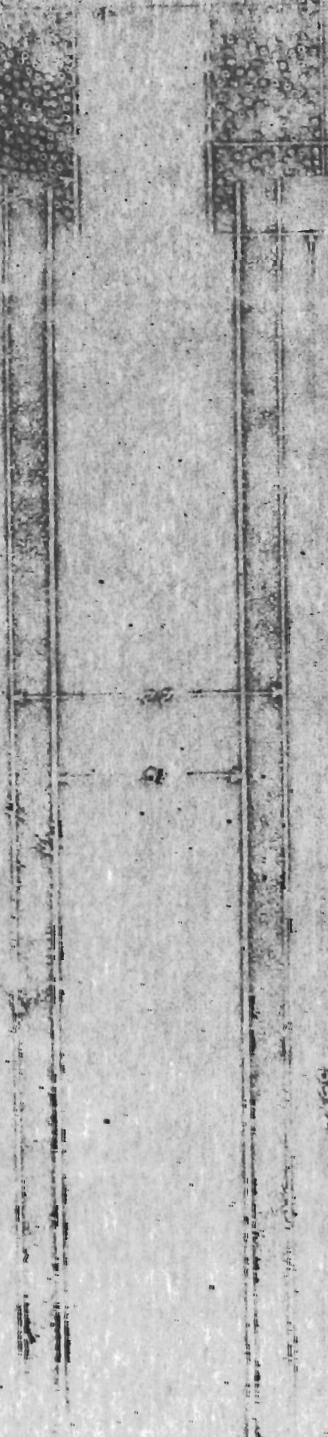
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Layne-Western Company, Inc.

Subject _____

Date _____

Byron,

The sand separator can be installed at any angle that you desire. It requires about 15 psi to operate, so if we set it in front of the aerator we would want to be sure that the pressure was adequate there.

There will be no change in the chemical quality of the water.

The separator is constructed of $\frac{3}{16}$ " mild steel.

[Signature]

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

099-42W-13A cc 2

KDD

Sibley city well (1946)
W-2273

Water Quality
(ppm)

Card Q

State: Iowa 16 County: Osceola 72 Town: Sibley

Well No. 432350N 0954503 Seq. No. 2 Date 050951

Sampling Depth 749 Type 1 Kx10⁶ 2910 pH 7.1 Temp. °F

SiO₂ Ca 394 Mg 114 Na 220 K

HCO₃ 37.8 CO₃ 0 SO₄ 152 Cl 33 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 84 NO₃ 00 PO₄ B Al Fe 22

Mn 30 Cu Pb Zn

Solids Ca, Mg 1460 Hardness 1150

Determined 2860 Calc. Non-Carb. 1150

Color No. R

Card S

Duplicate Columns 1-25 from Card Q

Br I Alk. as CaCO₃ 310 Free CO₂ SAR

RSC ABS

Alpha (pc/l) Beta (pc/l) Ra (pc/l) U (ug/l)

Verified PMJ

No. 5
80

Recorded by: P.J. Horick

Punched by: Date:

Published:

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources DivisionSibley city well (1946)
W-2273Water Quality
(ppm)

Card Q

State: Iowa 16 County: Osceola 72 Town: Sibley

Well No. 432350N 0954503 Seq. No. 2 Date 032648

Sampling Depth 749 Type 1 Kx10⁶ 2440 pH 7.4 Temp. °F 52

SiO₂ 400 Ca 400 Mg 131 Na 247 K C

HCO₃ 407 CO₃ 0 SO₄ 1600 Cl 35 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 1.2 NO₃ 10 PO₄ 1 B 1 Al 1 Fe 3.8

Mn 27 Cu 1 Pb 1 Zn 1

Solids 2860 Calc. 1550 Ca, Mg 1550 Hardness Non-Carb. 1210

Color 1 No. R

Card S

Duplicate Columns 1-25 from Card Q

Br 1 I 1 Alk. as CaCO₃ 334 Free CO₂ 1 SAR 1

RSC 1 ABS 1 1

Alpha (pc/l) 1 Beta (pc/l) 1 Ra (pc/l) 1 U (ug/l) 1

No. 5
80

Verified PMJ

Recorded by: P.J. HorickPunched by: Punched PMJ Date:

Published:

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

095-92W-13ACC.2
KDD

Sibley city well (1946)
W-2273

Water Quality
(ppm)

Card Q

State: Iowa 16 County: Osceola 72 Town: Sibley

Well No. 432335N 0954503 Seq. No. 2 Date 01/14/57

Sampling Depth 749 Type 1 Kx10⁶ 2870 pH 7.5 Temp. °F 50

SiO₂ 21 Ca 391 Mg 142 Na 214 K 18

HCO₃ 384 CO₃ 0 SO₄ 1600 Cl 36 Source No. 3 9

Card R

Duplicate Columns 1-25 from Card Q

F 83 NO₃ 12 PO₄ 1 B 1 Al 1 Fe 22

Mn 19 Cu 1 Pb 1 Zn 1

Solids 2870 Cal. 1570 Ca, Mg 1570 Hardness 1250

Determined 2870 Carb. 1250

Color 1 No. R

Card S

Duplicate Columns 1-25 from Card Q

Br 1 I 1 Alk. as CaCO₃ 315 Free CO₂ 1 SAR 1

RSC 1 ABS 1 1

Alpha (pc/l) 1 Beta (pc/l) 1 Ra (pc/l) 1 U (ug/l) 1

Verified PMJ

No. 5
80

Recorded by: P. J. Horick

Punched by: Punched FCH Date:

Published:

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Sibley city well (1946)
W-2273

Water Quality
(ppm)

Card Q

State: Iowa 16 County: Osceola 72 Town: Sibley

Well No. 432350N 0954503 Seq. No. 2 Date 013161

Latitude Longitude

Sampling Depth 749 Type 1 Kx10⁶ 2910 pH 7.2 Temp. °F

SiO₂ 22 Ca 392 Mg 136 Na 208 K 16

HCO₃ 405 CO₃ 0 SO₄ 1560 Cl 31 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 0.4 NO₃ 0.4 PO₄ B Al Fe 1.2 1.6

Mn 0.40 Cu Pb Zn

Solids 2880 Cal. Ca, Mg 1540 Hardness Non-Carb. 1210

Determined 2880 Color No. R

Card S

Duplicate Columns 1-25 from Card Q

Br I Alk. as CaCO₃ 332 Free CO₂ SAR

RSC ABS

Alpha (pc/l) Beta (pc/l) Ra (pc/l) U (ug/l)

No. 5
80

Recorded by: P. J. Horick

Verified PMJ
Punched FCH
Published: Date:

GROUND-WATER CONDITIONS AT SIBLEY, IOWA

The pertinent data and comments on the geology and ground-water conditions at Sibley, Iowa, are summarized in the following report. All information was obtained from the files of the State-Federal Geological Survey investigations.

The city of Sibley occurs on the terrace level of Otter Creek and the adjacent upland plain mantled by Peorian loess in the $S\frac{1}{2}$ $SE\frac{1}{4}$ sec. 12 and $N\frac{1}{2}$ sec. 13, T. 99 N., R. 42 W., Osceola County. Otter Creek runs along the south and west city limits. A generalized log of the deep city well drilled in 1946 to a depth of 757 feet is outlined below (all depth figures are referred to a starting elevation of 1514 feet above sea level):

<u>Formation</u>	<u>Thickness(ft)</u>	<u>Depth Range (ft)</u>
Quaternary system		
Pleistocene series (alluvial material including outwash sand and gravel, underlain by glacial till with interbedded sand layers)	395+	0-395+
Cretaceous system		
Undifferentiated shale, containing lignite beds	125	395+-520
Upper Dakota sandstone, contains much shale	70	520-590
Lower Dakota sandstone, some shale	159	590-749
Precambrian system		
Sioux(?) quartzitic sandstone	8	749-757

The present city water supply is derived from two deep wells producing from the Dakota sandstone at depths of 688 and 757 feet and perhaps one or two shallow wells producing from glacial sand. In past years water has been obtained from several levels in the glacial and Dakota aquifers. The city was also reported to have a 1000-foot well as late as 1952, but no sample record or water analysis are available from it.

In 1938 and before, many test wells were drilled in an attempt to find a shallow supply. The testing in 1938 was mainly in Otter Creek valley 1 to 2 miles south of Sibley. Although the complete details of this exploration are not available, it was reported that no promising water beds were encountered. It still might be possible to develop a good shallow water supply at Sibley, but further test drilling will be necessary to locate the most suitable sand formation. Water from the shallow sources appears to be the best available from the standpoint of quality.

Results of drilling in the deeper levels of the Pleistocene deposits indicate that a single well probably will have difficulty in obtaining more than 100 g. p. m. In 1938, a 293-foot city well produced 89 g. p. m. The original static water level was 123 feet and the pumping level at the end of this test 226 feet.

The well completed in 1941 for the Sibley Cooperative Creamery to a depth of 548 feet was reported to have pumped 60 g. p. m. with very little drawdown from a static water level of 300 feet. A properly constructed well might yield considerably more water from this source. Large quantities of water were obtained from the two city wells penetrating the lower part of the Dakota sandstone. During the pumping test conducted on the 712-foot city well in 1935, it was reported to produce 530 g. p. m. with 26 feet of drawdown from a static water level of 283 feet. The other deep well drilled in 1946 was tested at 565 g. p. m. with 34 feet of drawdown from a static water level of 287 feet. However, this water is highly mineralized which is the undesirable factor the city would like to avoid.

The Jordan sandstone and other Paleozoic strata encountered in counties to the east and south are thought to lense out on the Precambrian surface several miles southeast of this vicinity and will not be penetrated by wells.

Some water might be encountered in the Precambrian rocks. The Sioux quartzite in southwestern Minnesota yields small to moderate amounts of water in some places. Generally speaking, this formation will not yield appreciable amounts of water to wells except where large crevices are penetrated in drilling. Since this lower formation probably will be hydraulically connected with overlying Dakota sandstone, the water probably will also be highly mineralized and hard.

A separate sheet of water analyses from Sibley city wells is included with this report.

To sum up, the principal water beds in this vicinity are shallow sand and gravel in Otter Creek valley and the deep Dakota sandstone between 600 and 750 feet. The best quality water will be found in the shallow aquifers. Larger supplies are available from the lower Dakota sandstone, but the water is rather highly mineralized and hard for municipal use.

PJH 9/58

1946 - Pumping station building constructed and a pump for the new well was purchased. (Total cost including building, well and pump \$33,767.)

1947 - Extensions were added to the distribution system including 3,800 ft. of 8" C.I. pipe, 5410 ft. of asbestos-cement pipe and various valves and hydrants.

1949 - Repairs costing \$3855 were made on the water tank. They consisted of 324 linear ft. of welding, 1956 rivets welded, 1000 pits welded, 3 guy rods were replaced, and expansion joints were cleaned and repacked.

1953 - Cleaning, scaling and painting of water tank cost \$1850.

1955 - 7th Street extensions to distribution system, \$7000.

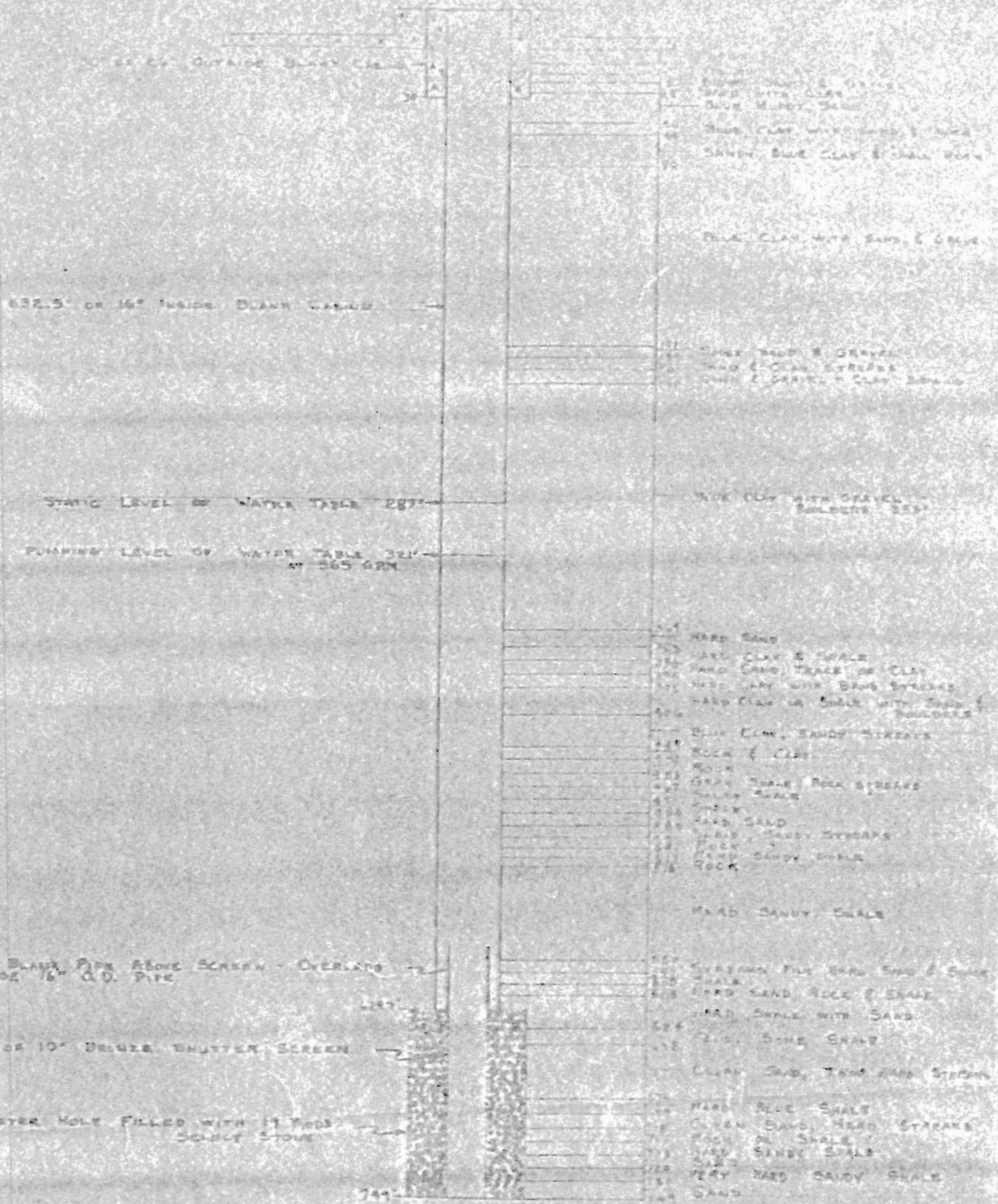
IV. GENERAL DESCRIPTION OF THE SYSTEM

The present source of water for the City of Sibley is from two wells. Both wells are located near the municipal power plant. Well number 1, the west well, is the only reliable source. Water is pumped from this well at approximately 560 GPM. (pumping tests 6-29-59). There is no treatment other than chlorination. The water is pumped from the well and into the system by the same pump. Page 22 shows a well log of this well.

Well number 2, formerly used as a standby source, has pumped sand in quantities great enough to plug lines at the creamery. Before the difficulties with pumping sand, the well had to be pumped approximately one-half hour before it cleared up enough for pumping into the system. No facilities are provided for chlorinating water from this well.

At present the city is served by a network of mains varying in size from 4 to 8 inches. Most of these pipes are cast iron; however, the piping to the west of the Chicago, St. Paul, Minneapolis & Omaha Railroad is mostly cement-asbestos pipe. There are several 1" copper and 2" cast iron pipes from larger mains to house connections.

*From Preliminary Report on Proposed
Waterworks Improvements for Sibley, Iowa
1959*



LOG OF CITY WELL No. 1 SIBLEY, IOWA

DAVID GRANT, ROBERT E. STEVENS
ENGINEERS - ARCHITECTS

*6 W
Oreola Co*

February 19, 1960

Mr. E. C. Teal
Varner Well & Pump Company
P. O. Box 237
Dubuque, Iowa

Dear Mr. Teal:

Regarding the information you requested by telephone on February 17 we have gathered the following data.

The well that was drilled at Sibley in 1946 penetrated clean, coarse Dakota sandstone from 600 to 749 feet. We ran the following sieve analysis on it with these results:

<u>Depth</u>	<u>Sieve Size (mesh)</u>	<u>% Retained</u>
600 to 605	32	13
	60	48
	115	32
	pan	7
		<u>100</u>
625 to 630	32	10
	60	25
	115	54
	pan	11
		<u>100</u>
650 to 655	32	4
	60	84
	115	7
	pan	5
		<u>100</u>
675 to 680	32	34
	60	57
	115	8
	pan	1
		<u>100</u>

Mr. E. C. Teal

2

February 19, 1960

<u>Depth</u>	<u>Sieve Size (mesh)</u>	<u>% Retained</u>
700 to 705	32	30
	60	64
	115	5
	pan	1
		<u>100</u>
725 to 730	32	40
	60	39
	115	12
	pan	9
		<u>100</u>

For a more general sampling of the Dakota sandstone, we refer you to the mechanical analysis made on 26 samples taken over a rather wide geographic area. These analysis are shown in the Iowa Geological Survey Annual Report, vol. 35 pg. 239. They show that over a wide area, from 50 to 70% of the Dakota sand passes the 1/8 mm. screen and is retained on the 1/16 mm. The coarsest particles in these samples are about 1/2 mm.

If we can be of further service, please do not hesitate to call on us.

Yours very truly,

H. G. Hershey

FHD:jj

TABLE OF SIZES

Mesh	Width Opening Inches	Width Opening Millimeters	Slot No.
32	.0195	.500	20
60	.0097	.250	9
115	.0049	.125 (1/8)	5
250	.0024	.062 (1/16)	2

Osculato

February 19, 1960

TO: H. G. Hershey
FROM: Fred H. Dorheim
RE: Telephone call from Mr. E. C. Teal of Varner Well
& Pump Co. and resulting letter, attached.
DATE: February 17, 1960

Mr. Teal called and asked about the size gradation on the Dakota sand in the Sibley area. I talked to him and told him it would take a little time to gather the information but that we would write him.

Russ and I looked for information on the area relative to size of grain and, failing to find any, ran the mechanical analysis listed in the attached letter. We also referred him to I.G.S. vol. 35 where there are mechanical analysis on the Dakota ss. listed.

Oscula
(folder)

August 22, 1946

Mr. R. W. Brooks
Layne-Western Company
Ames, Iowa

Dear Mr. Brooks:

Thank you very much for your letter of August 20 containing additional information on your well at Sibley. I am looking forward to our next meeting when we can talk about this well at a little more length. I expect to be away from Iowa City for the next two weeks, but possibly we can get together after that time.

Very truly yours,

H. G. Hershey

HGH:BN

LAYNE-WESTERN COMPANY

WATER SUPPLY CONTRACTORS

WELL WATER SUPPLIES AND
PUMP EQUIPMENT FOR
MUNICIPALITIES
INDUSTRIES
RAILROADS
MINES AND IRRIGATION

Affiliated With
LAYNE & BOWLER, INC.
LAYNE WELLS AND LAYNE PUMPS
P. O. BOX 882
304½ MAIN STREET

321 1946

FACTORIES:
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

20 August 1946

Dr. H. G. Hershey
Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Dear Dr. Hershey:

Following is some additional information on the well at Sibley, Iowa, for your records:

16" casing was set and cemented to a depth of 630'.

A 30" hole was drilled from 630' to 749' and 10" bronze screen set in the 30" hole and gravel packed.

The well was tested with a turbine pump and the static water level before and after testing was 287'.

Yours very truly,

LAYNE-WESTERN COMPANY

R. W. Brooks

R. W. BROOKS

RWB:EJS

Circle
—

August 13, 1946

Mr. R. W. Brooks
Layne-Western Company
P.O. Box 662
Ames, Iowa

Dear Mr. Brooks:

Upon receipt of your letter of August 8 we looked into our record of the Sibley well and find that we lack the size of hole; lengths and sizes of casings; length, size and openings of screen; amount of gravel used; type and setting of pump used; and the water levels before and after pumping.

We will be glad to have any of this information that you feel free to send us, and I appreciate your thoughtfulness in offering to fill the gaps in our records.

Very truly yours,

H. G. Hershey

HGH:LIH

LAYNE-WESTERN COMPANY

WATER SUPPLY CONTRACTORS

WELL WATER SUPPLIES AND
PUMP EQUIPMENT FOR
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FACTORIES:
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

August 8, 1946

Dr. H. G. Hershey
Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Dear Dr. Hershey:

In re: SIBLEY, IOWA.

Work on the above well has now been completed. The well was tested at a maximum capacity of 565 G.P.M. and showed a drawdown of 34 feet. At 385 G.P.M. the drawdown was 16 feet 6 inches, and at 280 ~~feet~~ ^{GPM} it was 17 feet. No trace of sand was found at any time during the pumping period.

I am not sure how complete your information is on this installation. Will you please check it and let me know what you would like to have regarding it.

Yours very truly,

LAYNE-WESTERN COMPANY

R. W. Brooks

R. W. BROOKS

RWB:EJS

LAYNE-WESTERN COMPANY

APR 11 1946

WATER SUPPLY CONTRACTORS

WELL WATER SUPPLIES AND
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FACTORIES:
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

April 10, 1946

Dr. H. G. Hershey
Iowa Geological Survey
Geology Annex Building
Iowa City, Iowa

Dear Dr. Hershey:

We are attaching hereto a copy of the Driller's
Log on the Sibley, Iowa, well.

Yours very truly,

LAYNE-WESTERN COMPANY


R. W. BROOKS

RWB:EJS
Encl.

April 11, 1946

Mr. R. W. Brooks
Layne-Western Company
P. O. Box 662
Ames, Iowa

Dear Mr. Brooks:

Thank you very much for your letter of April 10, and for the driller's log of the Sibley well which was enclosed with it.

I hope things are going well in your present operations at Sibley. I will appreciate it if you will let me know how far you have progressed.

Very truly yours,

H. G. Hershey

HGH:BN

LAYNE-WESTERN COMPANY

WATER SUPPLY CONTRACTORS

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APR 12 1946

FACTORIES :
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

April 12 - 1946

Dr. H. G. Hershey
Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Dear Dr. Hershey:

As of April 10th the 22" hole at Sibley had been
reamed to a depth of 104'.

Very truly yours,

LAYNE-WESTERN COMPANY


R. W. BROOKS

RWB:EJS

Stan,
Please note.
or

LAYNE-WESTERN COMPANY

WATER SUPPLY CONTRACTORS

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MUNICIPALITIES
INDUSTRIES
RAILROADS
MINES AND IRRIGATION

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Osceola

FACTORIES:
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

17 July 1946

JUL 18 1946

Dr. H. G. Hershey
Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Dear Dr. Hershey:

The well at Sibley has now been completed and we expect to test it some time next week. If you would like to have someone present at this test, would you please let me know by return mail and I will give you as much notice as possible as to when we will be ready to start pumping.

Yours very truly,

LAYNE-WESTERN COMPANY

R W Brooks

R. W. BROOKS

RWB:EJS

Ames

File GW

July 18, 1946

Mr. R. W. Brooks
Layne-Western Company
Ames, Iowa

Dear Mr. Brooks:

I appreciate very much having your letter of July 17 concerning the pumping test at Sibley.

Our work schedule is such that I am not sure that we can get a man to Sibley next week. I should like very much to do so and will make every effort to get a man there if you will give me as much advance notice as possible.

In the event that I am not in direct contact with you I should like to take this opportunity to wish you the best of luck on the test.

Very truly yours,

H. G. Hershey

HGH:BH

LAYNE-WESTERN COMPANY

WATER SUPPLY CONTRACTORS

WELL WATER SUPPLIES AND
PUMP EQUIPMENT FOR
MUNICIPALITIES
INDUSTRIES
RAILROADS
MINES AND IRRIGATION

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403 *Ende* 5 1946
FACTORIES:
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

3 August 1946

Dr. H. G. Hershey
Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Dear Dr. Hershey:

File G.W. Sibley

I am in receipt of your letter of August 1st advising that you will not be able to have anyone present for the pumping test at Sibley. I am sorry that we could not give you more notice on this. I was out of contact with the job for two or three days and wired you on receipt of our driller's report indicating that they would be ready to start pumping Thursday.

They pumped for about four hours on Thursday, shut down for the night and started again Friday morning. They won't be able to run this pump later than nine p.m. in the evening, so probably 12 or 13 hours continuous pumping at any one time is all that they will be able to do. As yet I do not have any information on the capacity and drawdown conditions.

Yours very truly,

LAYNE-WESTERN COMPANY

R. W. Brooks
R. W. BROOKS

RWB:EJS

Corrala. 6W

August 1, 1946

Mr. R. W. Brooks
Layne-Western Company
P. O. Box 662
Ames, Iowa

Dear Mr. Brooks:

Thank you very much for your telegram regarding the pumping test at Sibley. Unfortunately our car and personnel situation is such that we cannot get a man there. I hope we have better luck next time.

Very truly yours,

H. G. Hershey

HGR:LIH

Brooks Layne Western · Sibley
15

749 bottom red ss

751 v rough similar

751-753 sdy sh

753-757.3 smooth but v. hrd - last spl

715-30 sh sdy hrd

730-749 pink ss

600-632 shale streaks

400s coarser

from Brooks April 6, 1946

March 12, 1953

Mr. George Neal
Waterworks Superintendent
Sibley, Iowa

Well dug 1945?
#2

Dear Sir:

Following up on your telephone conversation of today with our Mr. M. S. Munson, we are happy to supply the following information regarding your well.

We are certain that when the well was completed, a blueprint detailing the construction was forwarded to the city. We do not have any additional copies of the blueprint but if you feel you would like to have a copy, we will arrange to have one made up. The actual construction is as follows.

A 22" hole was drilled from ground level to the depth of 629' 8" with rotary type drilling equipment. 16", 3/8" wall steel casing was then set in the drilled hole and pressure cemented in place to encase the casing in a wall of concrete from top to bottom. A 30" hole was then underreamed through the Dakota sandstone formation from the bottom of the 16" casing to a total depth of 749' below ground level. 115' of 10" bronze shutter screen with 40' of 10" steel pipe attached to the top was then set in the center of the 30" drilled hole. The annular space around the 10" screen within the 30" drilled hole was filled with a gravel to form a gravel pack around the screen. A 10" steel pipe attached to the top of the screen overlaps 35' up into the 16" casing. You will find a log of the formations encountered enclosed with this letter.

Upon completion of the well, the static water level stood 287' below ground level and pumping at the rate of 565 GPM the water was ~~lower~~ lowered to a depth of 321' or a 34' drawdown. This water had a hardness of 70 grains per gallon and iron content of about 0.25 parts per million.

The pump installed in this well was designed to deliver 750 GPM against a total dynamic head of 460' (332' lift in the well plus 55 PSI at the pump discharge). You will find a record of this pump enclosed.

You are now experiencing a falling off in capacity of this pump and we wish to report that during the test pumping on the well there never seemed to be any sand pumped and hence, we would not expect that there would be too much wear in the pump bowl. However, we know that the quality of this water is quite hard and quite a tendency to corrode the pumps. You will note that the pumping level is about 330' below ground level and this pump is equipped with 360' of column pipe. Hence

there is 30' of this column pipe emersed in water at all times.

We would rather expect that what has happened is that several holes have been eaten in the pump column below this 30' mark.

To repair this pump, it can be pulled from the well and if you can get along without the pump for several days, it can be left out of the well until the necessary parts to repair the pump can be obtained and when these are on hand the pump can be reinstalled. On the other hand, if you cannot get along without the pump for a very long period of time, you could order what is anticipated in the way of repair parts and when these are on hand, the pump could be pulled, the new parts installed and the pump reinstalled.

If you were going to handle it in this way, we would recommend that you buy 35' of column pipe, complete with couplings for the bottom of the pump, 10' of suction pipe and all new rubber bearings for the line shaft. We would expect some pitting to have occurred in the line shaft and we would recommend that you have several lengths of this line shaft on hand for possible use. These repair parts are priced as follows:

8" column pipe complete with coupling 10' long \$103.40 e.a.

8" column pipe complete with coupling 5' long \$85.80 ea.

Rubber line shaft bearings \$5.78 ea.

8" suction pipe 10' long \$56.00 ea.

1 11/16" line shaft 10' long \$44.00 ea.

1 11/16" line shaft 5' long \$36.30 ea.

This material is F.O.B. Memphis, Tennessee.

We would furnish the necessary men and equipment required to pull and service this pump on our regular repair order basis. You will find a copy of our form ~~WB1100~~ outlining the charges for this work enclosed. Our installing engineer and 2 helpers would be required and any additional labor you could furnish would aid in speeding the job. For your information, this pump weighs approximately 20,000 pounds. We would estimate that approximately 5 days time would be required to pull the pump and reinstall it.

We would not recommend that you delay pulling this pump too long because if the column pipe in the pump has deteriorated to the point where holes are eaten in this pipe, the pump may break and in two at any time and fall into the well. Serious damage could result to the well and undoubtedly the pump bowl itself would be badly damaged, if this should occur and this necessitate unnecessary expense.

If we can be of additional service to you in this matter, please feel free to contact us.

Very truly yours,
LAYNE WESTERN COMPANY

LAYNE-WESTERN COMPANY

This sheet is to be filled in and mailed to office upon completion of well
City of Sibley, Iowa August 20, 1946

Name of Job

Date

Well No. 1

F. J. Sallee

Drillers name

1. Is there a plug in well - 4" Baker float shoe welded in steel plate.

2. Thickness of plug _____ inches.

3. Log of Well: ON SEPARATE SHEET.

4. Depth of Well (Ground level to top of plug) 749 Feet.

5. Size and lengths of material left in well:

115 feet of 10" shutter screen (#6 openings)

41 Feet of 10" Blank pipe above screen overlaps 36'8" inside 16" O.D. pipe.

632'6" of 16" O.D. inside blank casing Extends 2'10" above ground.

30 feet of 24" outside blank casing.

6. Amount of gravel used in well 19 yards (Estimated) size 1/12" to 1/8"

7. Work on well began February 7, 1946.

8. Well was completed August 12, 1946

9. Number of working days 156

10. Test of well:

Power used - Gas engine 115 HP.

Duration of test - 8 hours

G.P.M. pumped - 565

Standing water level - 287 feet

Pumping water level - 321 feet - From ground level

Drawdown - 34 feet

11. Pump No. _____ was installed in this well by _____

Installer's name

12. Remarks - Well was underreamed to 30" hole from 632' to 749'.

LAYNE * WESTER COMPANY

August 17, 1946

Invoice No. I-636

Final invoice on Well Contract.

Well completed August 6, 1946. Total Depth 749'.

629' 8" of 22" hole with 16" casing set and cemented.:

629' 8" @ \$32.00 per foot

20,149.33

119' 4" of 30" hole and furnishing and placing gravel.:

119' 4" @ \$25.00 per foot

2,983.33

115' of 10" overture bronze screen:

115' @ \$29.00 per foot

3,335.00

For handling and operating test pump:

70 hours @ \$7.00 per hour

190.00

Total Contract

26,957.66

Less, amount paid
to date

23,813.40

TOTAL DUE:

3,144.26

**IOWA PRESS
CLIPPING BUREAU**

Des Moines, Iowa

**Gazette Tribune
Sibley, Iowa**

JUL 18 1940

DRILLING OF NEW WELL FOR SIBLEY IS COMPLETED JULY 14

**Quality and Quantity of Water
Found Not Known Until Tests
Have Been Made.**

Drilling of the new well for the city of Sibley by the Layne-Western Company of Ames was completed Saturday when the screen was set and the gravel pack put around it. The work was not completed until 2:30 Sunday morning.

Work on the well was started the first part of February. As soon as a test pump may be sent here the well will be pumped to clear up the water and then a test as to quality and quantity of water will be made.

Use of this well is still some time in the future as a pump must be bought and installed, a pump house built and the mains extended to connect this well with the present water system.

The well as developed is approximately 745 feet deep. It is cased to a depth of 630 feet with a 16 inch casing. This was sealed in place with cement, which was pumped to the bottom of the casing and forced up the outside of the casing. 1,202 sacks of cement were used.

A 10 inch screen which is 115 feet long was set in the water bearing sand after this had been under reamed to a diameter of 30 inches. The gravel was placed around this screen to help hold back the sand when the well is pumped.

**IOWA PRESS
CLIPPING BUREAU**

Des Moines, Iowa

**Gazette Tribune
Sibley, Iowa**

JUL 17 1940

Well Under Reamed To Depth Of 725 Feet

Under reaming of the new well which is being developed for the City of Sibley by the Layne-Western Company has reached a depth of 725 feet. The under reaming started at 630 feet. It will form a hole 30 inches in diameter.

The well will be under reamed to a depth of 748 feet if possible. Five feet of hard shale will soon be encountered and if no difficulty is experienced in going through this strata it probably will be possible to continue to the bottom of the sand.

After this is completed the screen will be set and gravel placed around it to hold back the sand when the well is pumped. Use of the well is still a long way off as it takes from 6 months to a year to obtain delivery on a pump. The size needed cannot be determined until the well has been completed and tested.

**IOWA PRESS
CLIPPING BUREAU**

Des Moines, Iowa

Gazette Tribune
Sibley, Iowa

GW.
Sibley

JUN 13 1946

632 Of Casing Is Placed In New Well Tuesday

Six hundred and thirty-two feet of 16 inch casing was placed in the new well being developed for the City of Sibley Tuesday by the Layne-Western Company. The hole in which the casing was placed is 22 inches in diameter.

This casing will be cemented the entire distance to fill the space between the walls of the well and the casing. Workmen who specialize in this work are expected to do this the last of the week.

Starting at 7 o'clock in the morning, Clarence Ver Steeg and a welder from Sioux City worked in shifts until the 31 pieces of pipe had been welded together. Each section was lowered into the hole after the welding. The work was completed about 1 a. m.

After the casing is cemented into place the well will be underreamed through the water bearing sand to form a hole 36 inches in diameter. There will be about 120 feet of underreaming. An equal footage of screen will be placed in the well and gravel placed outside the screen to hold back the sand.

IOWA PRESS
CLIPPING BUREAU
Des Moines, Iowa

Mail
Sheldon, Iowa

File Sibley
G-W

APR 17 1946

Sibley's New Deep Well to Cost \$40,000 at 749 Foot Depth

A decision to develop a well to the depth of 749 feet was made by the Sibley City council after report from the State Geologist were considered. Every indication is that the well will provide a very adequate volume of water but of about the same quality as is found in the present deep well.

In drilling the well, sand rock and shale were encountered at a depth of 600 feet. At 630 feet clean sand was found which is believed to be Dakota Sandstone. This continued to 675 feet with a streak of hard blue shale for 13 feet. Then more sand was found to 715 feet.

Here a hard sandy shale was encountered and then a different type of sand which the State Geologist believes is probably reworked quartzite which will probably produce some water. This formation continued to 749 feet. Below this depth drilling became very difficult and hard until a depth of 757 feet was reached when the drilling was discontinued. Samples of the formation indicated that quartzite was encountered.

The Layne-Western Company is now enlarging or reaming out the 12 inch pilot hole to a 22 inch hole. After this is reamed to a depth of 630 feet a 16 inch casing will be set and cemented in place for the entire length.

One hundred twenty feet of ten inch screen has been ordered to be used in the water bearing sands. This part of the well will be under reamed to make the pocket larger and packed with gravel.

After the casing has been cemented in the well, a test will be run to determine the size of pump which should be placed in the well.

Considering the amount of water bearing sand that has been encountered, it is believed that a pump of from 750 to 1,000 gallons per minute may be used on the well without an excessive draw-down or causing the well to pump sand.

Estimated cost of developing the well together with the pump, construction of a well house and main connections is \$40,000 or more.

Sibley G. T.

C. W. Proffert Sells

IOWA PRESS
CLIPPING BUREAU

Des Moines, Iowa

Gazette Tribune
Sibley, Iowa

File Sibley
GW
APR 11 1946

WILL DEVELOP A DEEP WELL AT THE 749 FOOT DEPTH

After Striking Quartzite, Council Decides to Screen 120 Feet of Water Bearing Formations.

A decision to develop a well to the depth of 749 feet was made by the City council last week after report from the State Geologist were considered. Every indication is that the well will provide a very adequate volume of water but of about the same quality as is found in the present deep well.

In drilling deeper an exceedingly hard formation was encountered which is believed to be quartzite. Consequently the possibilities of going deeper in an effort to find a more favorable vein of water have been exhausted.

Following the recommendation of R. W. Brooks, of the Layne-Western Company, the Council has instructed the well company to prepare 120 of bronze screen for the well. It is believed this will provide a large quantity of water and the well, after being gravel packed will be free from pumping sand.

In drilling the well, sand rock and shale were encountered at a depth of 600 feet. At 630 feet clean sand was found which is believed to be Dakota Sandstone. This continued to 676 feet with a streak of hard blue shale for 13 feet. Then more sand was found to 715 feet.

Here a hard sandy shale was encountered and then a different type of sand which the State Geologist believes is probably re-worked quartzite which will probably produce some water. This formation continued to 749 feet. Below this depth drilling became very difficult and hard until a depth of 757 feet was reached when the drilling was discontinued. Samples of the formation indicated that quartzite was encountered.

The Layne-Western Company is now enlarging or reaming out the 12 inch pilot hole to a 22 inch hole. After this is reamed to a depth of 630 feet a 16 inch casing will be set and cemented in place for the entire length.

One hundred twenty feet of ten inch screen has been ordered to be used in the water bearing sands. This part of the well will be underreamed to make the pocket larger and packed with gravel.

After the casing has been cemented in the well, a test will be run to determine the size of pump which should be placed in the well.

Considering the amount of water bearing sand that has been encountered, it is believed that a pump of from 750 to 1,000 gallons per minute may be used on the well without an excessive draw-down or causing the well to pump sand.

Estimated cost of developing the well together with the pump, construction of a well house and main connections is \$40,000 or more.

Ocean

IOWA PRESS
CLIPPING BUREAU
Des Moines, Iowa

Gazette Tribune
Sibley, Iowa

FEB 21 1946

START DRILLING TUESDAY ON NEW WELL FOR SIBLEY

Twelve Inch Pilot Hole Will
Be Drilled 700 Feet Or
Deeper.

Drilling operations on a new well for Sibley were started Tuesday about noon by the Layne-Western Company who have the contract to develop the well. F. J. Sallee is in charge of the work.

An eight inch pilot hole was drilled 45 feet Tuesday afternoon. This hole will be reamed out large enough to accomodate a 12 inch drill and collar. This is the size the company expects to drill the pilot hole.

Rapid progress may be made by the rotary drilling methods if difficulties and delays such as rocks, boulders and exceedingly hard formations are not encountered. Baring such difficulties, the Layne-Western Company hopes to be able to drill the 12 inch pilot hole to a depth of 700 to 1,000 feet in ten days to two weeks.

At the present time one shift will handle the operations. As soon as another driller is available to be sent here, two shifts will be used with the drilling continuing for 16 hours each day.

IOWA PRESS
CLIPPING BUREAU
Des Moines, Iowa

Gazette Tribune
Sibley, Iowa

NOV 29 1945

sibley

WELL CONTRACT IS AWARDED TO THE LAYNE-WESTERN CO.

**Rotary Drilling Will Be Used;
Contract Price for 700 Foot
Hole is \$23,750.**

Contract for the drilling and developing of a 700 foot deep well for the City of Sibley was awarded to the Layne-Western Company of Ames, at an adjourned meeting of the council Tuesday evening. The contract price was \$23,750.00.

The well will be drilled on the property owned by Sibley west of the cooling tower. The rotary drilling method will be used. The hole will be 22 inches in diameter for 600 feet with a 16 inch casing cemented for this entire length.

Through the water bearing sand, which it is believed will be Dakota sandstone, the hole will be 30 inches in diameter with a 10 inch screen set in a gravel pack.

The council decided to eliminate the drilling of a test hole, the cost of which would have been \$4,750. A pilot hole is used for rotary drilling, to give a log of all of the strata and formations to be encountered in drilling the main hole.

Estimated depth of the well in the specifications is 700 feet. If the council should decide to explore to a greater depth, it will be possible to have the pilot hole drilled to a greater depth, depending on the formations encountered.

Such an attempt to find a more desirable water bearing sand will be entirely experimental. In this immediate area there is not any records of wells below the 700 foot level.

IOWA PRESS
CLIPPING BUREAU
Des Moines, Iowa

Mail
Sheldon, Iowa

SEP 12 1945

Sibley to Drill Another New Well

Sealed bids for the drilling and development of a new deep well for the city of Sibley was received by the council Monday, September 10. No estimate of the cost has been made by Leon L. Schoel of Spencer, engineer.

The well will be drilled on the property owned by the city of Sibley west of the cooling tower. The

house on this location was sold and has been moved.

According to the specifications, a test hole is to be drilled starting with a temporary line of not less than 12 inch pipe and reducing the size of the temporary pipe wherever necessary. In no event will the test hole be less than six inches in diameter at the bottom of the lower strata of the Dakota Sandstone.

Bids were taken on two sizes of holes for the well, and the council to determine the size and type of

IOWA PRESS
CLIPPING BUREAU

Des Moines, Iowa

Gazette
Sibley, Iowa

FEB 7 1946

Drilling Equipment For Well Arrives

Equipment for the Lane Western Company started arriving in Sibley Saturday. This is the concern which will drill a new well for the city of Sibley.

The well will be drilled west of the cooling tower for the Sibley Municipal Electric Plant. It is expected that a week to 10 days will be required to set up the equipment so that drilling operations may be started. Unfavorable weather conditions may somewhat extend this time.

At Worthington and Hull a short distance below the Dakota sandstone granite is encountered which makes drilling deeper impractical. About the same distance south of Sibley it is possible to drill to considerable greater depth before striking granite.

The decision of the council on exploring to a greater depth does not need to be made until after the pilot hole has been completed.

A. L. Sharbondy, A. A. Schlich, George Lister and S. W. Tillotson voted to award the contract to the Layne-Western Co. Wayne Hunt voted no. The Thorpe Well Company of Des Moines was the only other bidder.

~~Sibley~~~~Crown - 1420 Sept 1948~~~~3-26-48~~~~Worked Sibley, Mineral Survey, 8 Shallow
Drillings, East town & W. W.~~

Sibley

3-26-48

How dry were.

Elev. 1514' by hand level from
C&T Sta. C15085

Loc. SW SW NE Sec. 13 T99N R42W

Took 1420 Barometer @ 5100 PM

Temp. 52° -
Air 40 -1420 August - Del Norte
Crested - Del Norte.Are going to set new pump down -
Pressure about 70 SPW -

JUL 19 1948

Sibley Iowa.

July 17, 1946.

Contractor, Langer Weiten.
Owner, City of Sibley.
Driller, Jallie

Total Depth - 749

Water bearing horzont. - 630' on.
(with sandy gravel).

Type of casing

6.30' 1 1/2" of O.D. set at 630' cemented.
10" screen - 40' overlap inside.

Gravel packed.

STATIC Water level - Land surface Station

294.00	Helm.
43.33	adit.
<u>250.66</u>	Depth to water.

Pumping test to be held pending - arrival
of Pumps & proper electrical installation.
When City board can promise probably
after 11 PM to 7:00 PM.

Palatka Brackets has samples.

D.H. Bantley.

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN
UNION

1201

A. N. WILLIAMS, CHAIRMAN OF THE BOARD

JOSEPH L. EGAN

(13)

SYMBOLS

DL = Day Letter

NL = Night Letter

LC = Deferred Cable

NLT = Cable Night Letter

Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

MRM33 10=AMES IOWA 1 909A

1946 AUG 1 AM 9 15

IOWA GEOLOGICAL SURVEY=

GEOLOGY BLDG ANNEX BLDG SX=

THEY SHOULD BE READY TO PUMP SIBLEY WELL SOMETIME TODAY=
R W BROOK.

9 AUG 1 1946

AUG 1 1946

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE