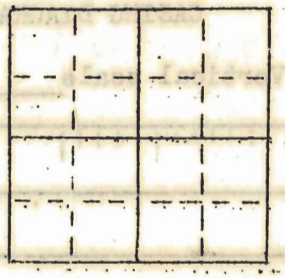
IOWA GEOLOGICAL SURVEY W-0875

In Cooperation with U. S. Geological Survey

RECORD OF WELL



Location:

Town: REDFIELD (N E / S W): County Dallas

SW - SW - NE sec. 4 T 78 N., R. 29 W. Union Twp.

Well name and number Redfield Town Well #1 (1938)

Owner _____ Address _____

Tenant _____ Address _____

Contractor Layne-Western Co. Address Omaha,

Drillers Ralph Dyas

Drilling dates 7/22/38 - 8/4/38

Well data:

Elevations: Drilling curb _____ feet; Land surface _____ feet

Determined by _____

Topographic position River - Flood plain

Total depth: Reported 42 feet, Measured _____ feet

Drilling method _____

Hole and casing data Gravel packed 18" x 42"

15' of 18" screen #4 shutter

40' of 18" casing

6" concrete plug at bottom

Original depth to water 30 ft. below ~~above~~ curb Date _____

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

Sources of water: Principal Sd & Gravel 35-42½ ; Others _____

Production data: Date

Static depth to water 30 Measuring point

Pumping level 30'6" at 65 g.p.m.

30'9" 100

31 150

31'3" 220

Specific capacity g.p.m. per ft. drawdown; Temperature 53 °F.

Pump data: Type pump Turbine Column Dia. Length

Cylinder or bowls: Dia. Length Suction pipe

Power Electric Airline

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

Use of water City supply

WATER ANALYSES (in parts per million)

Date samples	Nov. 2, 1943			
Sampled by	S.E. Harris			
Total solids	469			
Insoluble matter	15.5			
Alkalinity (Meo)	268.0			
Alkalinity (Phn)	0.0			
pH	7.2			
$Fe_2O_3 + Mn_2O_3 + Al_2O_3$	3.5			
Alkali as sodium	14.4			
Calcium	102.6			
Magnesium	28.1			
Iron (unfiltered)	1.4			
Manganese	0.20			
Nitrate	0.00			
Fluoride	0.0			
Chloride	7.0			
Sulfate	98.3			
Bicarbonate	327.0			
Hardness (ppm)	375			
Hardness (gpg)	21.9			

Remarks

Laboratory data: Sample storage location

Sample range 5-40 No. spls. 8 No. dupls. & cond.

Spls. prepared by Washed range by

Driller's log and cond. Yes good

Insoluble residues: Prepared by Studied by Strip log

Microscopic study strip log 10/22/52

Gen. log Correl. by NORTHUP

WATER LEVEL DATA

Measuring point _____

Date	Depth to water	Altitude	Remarks

REMARKS

Five test wells were drilled.

WELL INFORMATION
FOR
LAYNE-WESTERN CO.

Dallas Co

This sheet is to be filled in and mailed to office upon completion of well

City of Redfield, Iowa — Name of job — 8/4/38 — Date

Well No. 1 — Ralph Dyas — Driller's name

1. Is there a plug in well Yes
2. Thickness of plug 6 inches concrete
3. Log of Well:

	to	Formation		to	Formation
0	2	Black soil			
2	5	Silty sand			
5	19	Brown & Blue Clay			
19	30	Blue clay			
30	35	Blue clay narrow streaks of sand			
35	42'6"	Coarse sand & gravel & boulders, some coal			

4. Depth of well (ground level to top of plug) 42' feet
5. Size and lengths of material left in well:

15 feet of 18 inch shutter ~~concrete~~ screen #4

NONE by ____ by ____ shutter cone

40 feet of 18 inch inside blank casing

none feet of ____ inch outside blank casing

6. Amount of gravel used in well 6 yards
7. Work on well began 7/22/38 — Date
8. Well was completed 8/4/38 — Date
9. Number of working days 10
10. Test of well:

Power used Hoist engine

Duration of test 8 hours

g. p. m. pumped 65

From ground level { Standing water level 30 feet
Pumping water level 30 feet 6"

Drawdown 6" feet

11. Pump No. ____ was installed in this well by ____ — Installer's Name
12. Remarks: Further test data

100 GPM 9" drawdown

150 " 12" " "

220 " 15" " "

Layne - Western Co.
Redfield

Test #3

0 - 3	soil
3 - 20	Brown Clay
20 - 25	Blue "
25 - 28	Sandy "
28 - 30	Coarse packed sand
30 - 35	sand mixed blue clay
35 - 42	packed sand; gravel; boulders
42	On rock

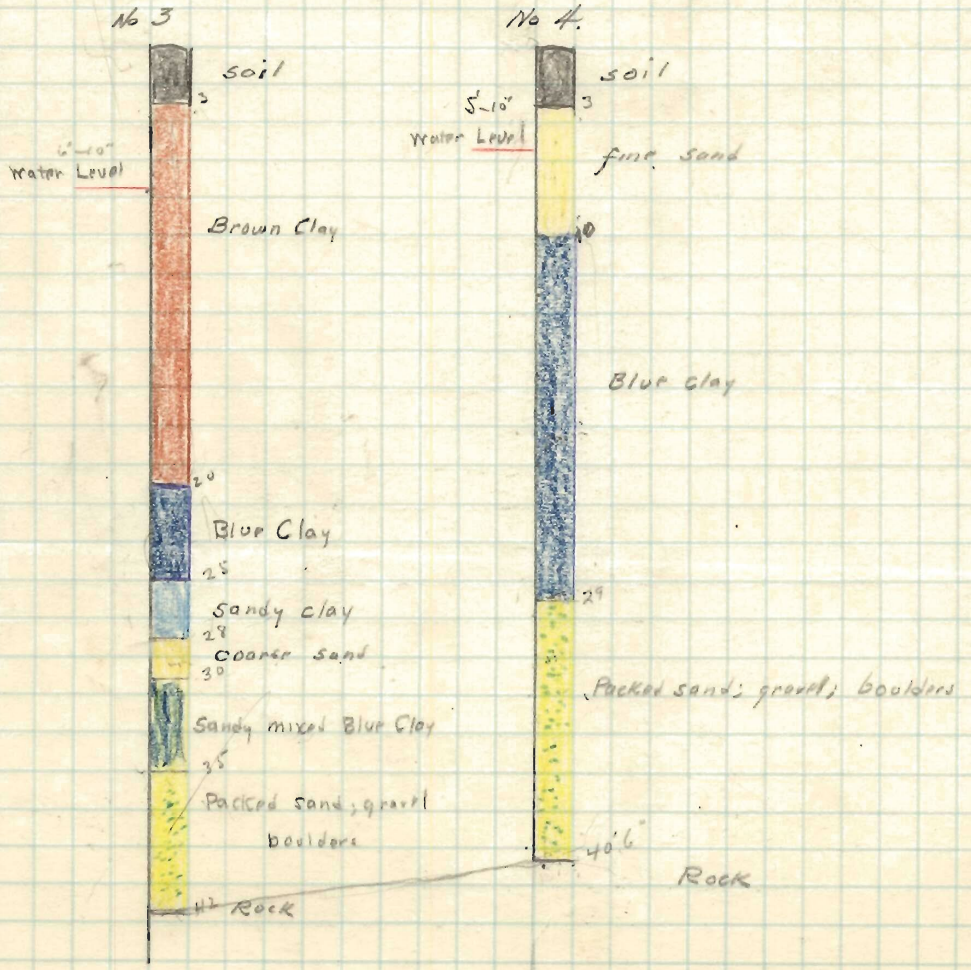
Static water level 6'-10"

Test #4

Goodwin Cornfield
S.E Redfield west of Highway 6 on Curve

0 - 3	soil
3 - 10	fine sand
10 - 29	blue clay
29 - 40'-6"	packed sand; gravel; boulders
40'-6"	On rock

Static water level 5'-10"



PHONE JACKSON 6544

LAYNE-WESTERN COMPANY

WATER SUPPLY CONTRACTORS

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

AFFILIATED WITH
LAYNE & BOWLER INC.
LAYNE SCREEN AND LAYNE PUMPS
807 WORLD-HERALD BUILDING
OMAHA, NEBR.

FACTORIES
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CAL.
BRANCHES AND REPRESENTATIVES
THROUGHOUT THE COUNTRY

June 27, 1938

Dr. H. G. Hershey
Ass't. State Geologist
Iowa Geological Survey
103 Geology Building
Iowa City, Iowa

Dear Dr. Hershey:

We wish to acknowledge and thank you for your letter concerning the water supply for the town of Redfield, Iowa.

We did some prospecting there last week and, as you predicted, we did not find anything very promising. We tried some prospect holes in the middle of Racoon Valley near their present city well, but did not find anything suitable for a supply for the town. We also tried some prospect holes south and east of the town which were somewhat better than those in the River Valley.

We plan to do some more prospecting before putting in any wells, but we believe with what we have found, we can get a supply sufficient for the needs of the town from two shallow wells. We will try some more prospecting, however, in hopes of obtaining a supply from one well.

We have taken samples of each one of these test holes and when we are through prospecting, we will see that these samples are sent to you so that you may study them and make a record of them for your files. Thank you again for the help and suggestions that you gave us on this work.

Yours very truly,

LAYNE-WESTERN COMPANY

R. W. Brooks

RWB:mw

R. W. Brooks

June 20, 1938

Mr. R. W. Brooks
Layne-Western Company
807 World-Herald Building
Omaha, Nebraska

Dear Mr. Brooks:

Your letter of June 11 regarding a shallow water supply for the city of Redfield, Iowa, was called to my attention immediately upon my return to the office. I visited Redfield during the past week and the following statements are based on field work and on information contained in our files.

The upland and upland-slope area around Redfield is covered by a thin mantle of glacial drift which gives no promise of yielding a sufficient supply of water for the needs of the town. In the valley of Middle Racoon River, however, approximately fifty feet of alluvium have been deposited which may yield a suitable supply of water from a properly constructed well. I would suggest at least one and not more than three test holes be drilled, starting on flat flood plane of the river up stream and at approximately the same elevation as the present city well. The test wells should be away from the slope leading to the upland.

The fact that the present city well is located in Middle Racoon Valley, would seem to indicate that the possibilities of obtaining sufficient water there is slight, but since this location would be the most economical from the standpoint of water main installation, it is suggested as the first area to be tested.

The second area in which test drilling is justifiable is on the broad plane southeast of Redfield. Apparently this is an old abandoned stream valley in which gravel can be expected, and in the event that unfaborable results are obtained in the valley of the Middle Racoon, I would suggest testing this second location. It has the disadvantage, of course, of being farther from town, but from a geological point of view, the second area appears to be the more promising.

Bed rock beneath the glacial drift and the alluvium is composed of shales, sandstones, and a few thin limestones of Pennsylvanian age. These coal-measure locations are poor water producers both as to quality and quantity, and I would advise stopping each test hole when bed rock is reached.

I hope you will instruct your driller to keep an accurate, detailed log and samples from each five-foot interval of drilling, or of each change of formation if the changes occur at less than five-foot intervals. Sample containers are being sent to Mr. Robert K. Goodman, mayor of Redfield, with the suggestion that he give them to your driller. If you will instruct the driller to send the samples and logs to us, we will study them and report our findings to you. The samples will form a basis for suggestions on additional test drilling.

If necessary, or if you desire it, I will be glad to meet you or one of your representatives at Redfield to go over the situation in the field. Since I have several short trips planned for the next few weeks, may I suggest that you give me as much advance notice as possible if a field conference is contemplated so that I can re-arrange my schedule.

Very truly yours,

H. G. Hershey

HGH:LM

'HONE JACKSON 6544

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LAYNE-WESTERN COMPANY

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BRANCHES AND REPRESENTATIVES
THROUGHOUT THE COUNTRY

June 11, 1938

Mr. H. G. Hershey
Ass't. State Geologist
103 Geology Building
Iowa City, Iowa

Dear Mr. Hershey:

We are planning to do some prospecting work at Redfield, Iowa to try and locate a water supply from some shallow wells.

We would appreciate any information that you could give us pertaining to the geological formations in Redfield and the immediate vicinity of Redfield, and also any location that you might recommend for obtaining a water supply from wells of this nature.

Yours very truly,

LAYNE-WESTERN COMPANY

R. W. Brooks

RWB:mw

R. W. Brooks