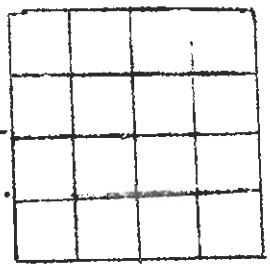
W14165

IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey
RECORD OF WELL

Location: ON EAST EDGE OF TOWN ALONG RAILROAD

Town: ALTA (NE) (SW) County BUENA VISTA (E)

NE SWNE sec. 26 T. 91 N., R. 38 (W) Twp.



Well name and number

Owner ALTA TOWN TEST (1963) Address ALTA, IOWA

Tenant Address

Contractor LAYNE-WESTERN CO. Address AMES, IOWA

Drillers

Drilling dates JAN. 1963 (1 Hole) COMPLETED AS A WELL SEPT. 20, 1963

Well data:
Altitudes: Drilling curb feet; Land surface 1507 feet

Determined by altimeter (Federal Base)

Topographic position

Total depth: Reported 530 feet; Measured feet

Drilling method ROTARY

Hole and casing data 5" TEST HOLE - REAMED OUT TO 12"
AND COMPLETED IN DAKOTA 9/20/63
SAME DEPTH AND LOCATION AS TEST HOLE

Original depth to water ft. above/below Date

Source of data

Sources of water: Principal DAKOTA

Others

PRODUCTION DATA

Date	
Static water level	325'
Pumping water level	359'
Yield (g.p.m.)	480
Measuring point	
Duration of pumping	
Specific capacity	

LABORATORY DATA T.L4-669

Well No. 114195 Sample range 0-530 No. of samples 99

No. of dupls. and cond. 99, Good Washed range ———

Samples prepared by R. L. JOHNSON Date 2/6/63

Logged by NORTHUP Date 2/6/63

Correlations by Date 2/6/63

Punched FCH

WRD Exp. (GM)
Aug. 1964 Verified PMJ

U. S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by R.W. COBLE Source of data FILES Date 6-21-65 Map 1:63,360 COUNTY HWY

State IOWA 16 County (or town) BUENA VISTA 11

Latitude: 42 40 19 N Longitude: 095 17 46 Sequential number: 1

Lat-long accuracy: 2 T 91 N, R 38 W, Sec 26, NE ¼, SW ¼, NE ¼ 5 B & M

Local well number: 091 38W 26aaa Other number: W-14/65

Local use: 141 65 63 Owner or name: CITY OF ALTA

Owner or name: ALTA IOWA Address: ALTA, IOWA

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

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

Use of well: (A) Anode, (D) Drain, (G) Seismic, (O) Obs, (Q) Oil-gas, (R) Recharge, (S) Spring, (T) Test, (U) Unused, (W) Withdraw, (X) Waste, (Z) Destroyed W

DATA AVAILABLE: Well data 3 Freq. W/L meas.: ORIGINAL 9 Yield aquifer char.

Hyd. lab. data:

Qual. water data; type: COMPLETE C

Freq. sampling: INVENTORY 0 Pumpage inventory: yes (no) period:

Aperture cards: yes

Log data: GEOLOGIC & ELECTRIC (RESIS. & POTENTIAL) E

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 530 ft 530 Meas. rept DRL LOG accuracy

Depth cased: (first perf.) ft Casing type: ; Diam. in

Finish: (C) porous concrete, (F) gravel w. (perf.), (G) gravel w. (screen), (H) horiz. gallery, (O) open end, (P) perf., screen, sd. pt., (S) shored, (T) open hole, (W) other (Z)

Method Drilled: (A) air rot, (B) bored, (C) cable, (D) dug, (H) hyd rot., (J) jetted, (P) air percussion, (R) reverse rotary, (T) trenching, (V) driven, (W) drive wash, other (Z) H

Date Drilled: Sept 1963 963 Pump intake setting: ft

Driller: LAYNE-WESTERN CO. name AMES, IOWA address

Lift (type): (A) air, (B) bucket, (C) cent, (J) jet, (L) multiple, (cent.) (M) multiple, (turb.) (N) none, (P) piston, (R) rot, submerg, (S) turb, (T) other (Z) Deep Shallow

Power (type): diesel, elec, gas, gasoline, hand, nat gas, wind; LPG H.P. Trans. or meter no.

Descrip. MP LAND SURFACE ft above below lsd, Alt. MP 1507

Alt. LSD: 1507 1507 Accuracy: (source) ALTIMETER

Water Level 325 ft above below MP; Ft above below lsd 325 Accuracy: DRL LOG

Date meas: 9/20/63 963 Yield: 480 gpm 480 Method determined

Drawdown: 34 ft 34 Accuracy: DRL LOG 3 Pumping period hrs

QUALITY OF WATER DATA: Iron 0.78 ppm 4 Sulfate 534 ppm 8 Chloride 30 ppm Hard. 810 ppm 8

Sp. Conduct 1580 K x 10^6 5 Temp. °F Date sampled FEB. 11, 1966 2 6 6

Taste, color, etc.

91-38W-26 aca

Well Number 42 d, 40 m, 19 s N S 095 d, 17 m, 46 s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD (1–19) Physiographic Province: CENTRAL LOWLANDS (20–21) Section: WEST

LAKE B (22) Drainage Basin: RACCOON (23–25) Subbasin: ____ (26)

Topo of well site: local depression, flat surface, hilltop, hillside, terrace, valley flat, ____ (27)
(D) (F) (H) (S) (T) (V)

MAJOR AQUIFER: PAHO (system), SP (series) (28–29) ____ aquifer, formation, group (30–31)

Lithology: ____ (32–33) Origin: ____ (34) Aquifer Thickness: ____ ft

(35–37) Length of well open to: ____ ft (38–40) Depth to top of: ____ ft (41–43)

MINOR AQUIFER: ____ (system), ____ (series) (44–45) ____ aquifer, formation, group (46–47)

Lithology: ____ (48–49) Origin: ____ (50) Aquifer Thickness: ____ ft

(51–53) Length of well open to: / ft (54–56) Depth to top of: ____ ft (57–59)

Intervals Screened: ____

Depth to consolidated rock: TILL ft (60–63) Source of data: SAMPLES (64)

Depth to basement: ____ ft (65–68) Source of data: ____ (69)

Surficial material: CALC. TILL (70–71) Infiltration characteristics: POOR (72)

Coefficient Trans: ____ gpd/ft (73–75) Coefficient Storage: ____ (76–78)

Coefficient Perm: ____ gpd/ft^2; Spec cap: 34 gpm/ft; Number of geologic cards: ____ (79)

GPO 844-225

Layne-Western Company
WATER WELL DRILLING
EXPLORATION BORINGS AND TEST SURVEYS
LAYNE TURBINE PUMPS

TELEPHONE CEDAR 2-3563

OFFICES
KANSAS CITY, MISSOURI
WICHITA, KANSAS
OMAHA, NEBRASKA
AMES, IOWA
AURORA, ILLINOIS
ST. LOUIS, MISSOURI
DENVER, COLORADO

SOUTH DUFF AVENUE
AMES, IOWA

February 5, 1963

Iowa Geological Survey
Geology Annex
Iowa City, Iowa

Gentlemen:

This is to confirm our telephone conversation of today at which time we requested the results of your examinations on the cuttings from the test hole at the proposed site of the new well at Alta, Iowa.

As per our conversation, enclosed herewith is one copy of the driller's log on this test hole.

Very truly yours,

LAYNE WESTERN COMPANY

Carl R. Larson

Carl R. Larson

CRL:rem

Enclosure

If possible, we would like to have a copy of the electric log which you reported as having been run.

We shall be interested on the outcome of this well, and please advise if we can be of further service.

Very truly yours,

H. G. Hershey

HGH/RCN
bjm

2

February 8, 1963

Mr. Carl R. Larson
Layne-Western Company
South Duff Avenue
Ames, Iowa

Dear Mr. Larson:

Since talking to you, we have had a chance to study the samples from the Alta town test. On the basis of the samples and the drillers log which you enclosed, we feel that the top of the Cretaceous is at about 410 feet. Unfortunately the samples in the lower patt of the hole are badly contaminated with recirculated material from the Pleistocene, so much so that it is impossible to identify anything as definitely Dakota. However the fact that there was water loss, resulting in partial loss of circulation, in several places and that soft drilling breaks were noted, strongly suggests that the Dakota Sandstone was penetrated. Also the depth corresponds favorably with the depth at which the Dakota occurs at Storm Lake and Rembrandt, a few miles away.

From the driller's log it would seem that thebest section to develop would be from 475 to 507 feet, where water loss from the drilling mud occurred, and higher in the section from 438 to 440 feet and 456 to 460, where sandstone was tentatively reported. However, there may be some interbedded shales, which might show up on the electric log, and which could be cased off. The base of the Pleistocene might also yield some water, as clean sand and gravel was found from 390 to 410 feet. However this seems to be pretty fine grained, so that it would seem best to test the Dakota first, and try to develop a well there.

To sum up, although no definite Dakota could be found in the samples, the driller's log together with your verbal report would indicate that the sandstone is present and was reached. To be certain it might be best to run a temporary string of casing now, if possible, and test the Dakota section, before reaming to a larger diameter.

GW Buena Vista Co.
Gen Data

M E M O

February 8, 1963

To: Dr. H. G. Hershey
From: Richard C. Northup
Re: Test well at Alta

The town of Alta in Buena Vista County is trying to develop a new water supply. Layne-Western has contracted the job and sent in samples from a test drilled on the east edge of town about a week ago. There was no covering letter at the time, but on Tuesday afternoon Carl Larson phoned and asked that we run the samples as soon as possible and give him a report. He advised that from the driller's log and report, a section of the Dakota sandstone was reached, as indicated by the way the formation drilled, and from the fact that there was some loss of circulation. Also an electric log was run, Mr. Larson says, which futther suggests the presence of the Dakota. I have now run the samples, but unfortunately the Dakota doesn't show up. Apparently the drilling mud was not kept at the proper weight and viscosity to insure representative sampling. However, I feel from what Mr. Larson reports that the Dakota was reached, and suggested that perhaps they should run a string of temporary casing and make some kind of a test now before reaming their present 5" hole to 12" as they plan for the final well. My letter to Mr. Larson will go out over your desk, and I hope clear up any uncertainties. I must admit that we are "flying blind" somewhat, but feel that the drillers and engineers on the job will know how to proceed. As you and Charles have been away, Walt Steinhilber kindly checked my letter to Mr. Larson, and we went over the matter briefly.

RCN/bjm

MEMORANDUM GO-144

TO: MR. _____ 196

FROM: MR. _____

SUBJECT: _____ OUR FILE:

YOUR FILE:

TD 530'

ALTA TOWN WELL NE 26-91N-38W

DRILLING MUD - CONTAINS DAKOTA TYPE SAND. - DIDN'T SHOW UP IN THE SAMPLES.

E. LOG - SD + CLY FROM @ 382-386'

AND SS. @ 410

403-410 - MAYBE SAND AND GRAVEL. - LAST CIRCULATION IN THE SAMPSON

LOCATION IS 1 BLK. EAST OF OLD WELL, BUT

CARL LARSON SAYS DOESN'T CORRELATE WITH THE OLD WELL

5" HOLE - EXPECT TO BEAN OUT AND COMPLETE 12"

ELEC LOG WAS RUN. SHOWS SS ALSO