

WED Exp. (GW)
Aug. 1964

Punch FCH
Verified

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U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

COUNTY HWY

Record by D. AARONSON Source of data FILE Date 6/18/65 Map 1:63,360

State IOWA County CHEROKEE Sequential number 1

Latitude: 42° 45' 07" N Longitude: 095° 32' 28" W

Lat-long accuracy: 2 sec 40 sec 26 sec 5 sec

Local well number: 09240W26C6d Other number: W-12538

Local use: INST Owner or name: STATE OF IOWA Address: CHEROKEE, IOWA

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist 5

Use of water: (A) Air cond, (C) Comm, Dewatering, Fire, Dom, Irr, Ind, P S, Stock, (T) Instic, (U) Unused 7

Use of well: (A) Anode, Drain, Seismic, Obs, Oil-gas, Recharge, Spring, Test, Unused, Withdraw, Waste, Destroyed W

DATA AVAILABLE: Well data 3 Freq. W/L meas.: INVENTORY Field aquifer char. 2

Hyd. lab. data: 6

Qual. water data; type: COMPLETE

Freq. sampling: 1 REG. Pumpage inventory: yes 1 no, period: 7

Aperture cards: 7

Log data: GEOLOGIST LOG.

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 212 ft Meas. 212 ft

Depth casing: 212 ft Casing type: 212 ft

Finish: (C) porous gravel w. gravel w. horiz. open (P) perf., screen, sd. pt., shored, open (S) concrete, (perfor.) (L) gallery, end, (T) other

Method: (A) air bored, cable, dug, jetted, air reverse trenching, driven, drive (S) rot, rot, percussion, rotary, other

Date Drilled: NOV. 1960 Pump intake setting: 9.60 ft

Driller: LAYNE WESTERN CO. OMAHA, NEBRASKA

Lift: (A) air, bucket, cent, jet, multiple, multiple, (N) pump, piston, set, submers, other (S) Deep (T) Shallow 1

Power: (type): diesel, elec, gas, gasoline, hand, gas, wind, H.P. 5 Trans. or meter no. 5

Descrip. MP: LSD 0 ft above LSD, Alt. MP: 1194

Alt. LSD: 1194 ft Accuracy: ALTIMETER

Water Level: 44 ft Accuracy: REPORTED

Date: 4/10 Time: 4:35 Method: 1

Drawdown: 27 ft Accuracy: REPT Pumping period: 1 hrs

QUALITY OF WATER DATA: Iron: 5 Sulfate: 25 Chloride: 7 Hard: 8

Sp. Conduct: 110 Date sampled: 12 JAN. 1970

Taste, color, etc.:

92-40W-2666d

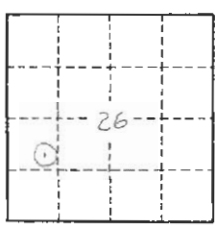
Well Number 42,45,07 (N) 09532,28

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD
 Physiographic Province: CENTRAL LOWLAND 1:2 Section: WESTERN
 LAKE [B] Drainage Basin: LITTLE SINK 3:6: C Subbasin: []
 Topo of well site: (D) (F) (H) (S) (T) (V) [V]
 local depression, flat surface, hilltop, hillside, terrace, valley flat, []
 MAJOR AQUIFER: CRETACEOUS LOWER K:1 DAKOTA SANDSTONE D:1
 system series aquifer, formation, group
 Lithology: FINE SANDSTONE 2:4 Origin: MARINE 6: Aquifer Thickness: 110? ft
 Length of well open to: ft Depth to top of: 100 ft 1:0:0
 MINOR AQUIFER: system series aquifer, formation, group
 Lithology: Origin: Aquifer Thickness: ft
 Length of well open to: ft Depth to top of: ft
 Intervals Screened:
 Depth to consolidated rock: 100 ft 1:0:0 Source of data: WELL CUTTINGS: C
 Depth to basement: ft Source of data: []
 Surficial material: SILTY TILL 7:1 Infiltration characteristics: POOR 9:4
 Coefficient Trans: spd/ft Coefficient Storage: []
 Coefficient Perm: spd/ft² Spec cap: 18.3 gpm/ft; Number of geologic card: []

CASING:

NO INFORMATION



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

W12538

Location:

Town: CHEROKEE (NE)
(SW) County CHEROKEE
(E)
SE NW SW sec. 26 T. 92 N., R. 40 (W) Twp.

Well name and number

Owner STATE OF IOWA #4 Address MENTAL HEALTH, INST
(1960)

Tenant Address

Contractor LAYNE - WESTERN CO. Address OMAHA, NEBR.

Drillers

Drilling dates Nov. 1960

Well data:

Altitudes: Drilling curb feet; Land surface 1194 feet

Determined by altimeter (LLS)

Topographic position

Total depth: Reported 212 feet; Measured feet

Drilling method ROTARY

Hole and casing data

Original depth to water 44' above
ft. below Date

Source of data

Sources of water: Principal _____

Others _____

PRODUCTION DATA

Date _____

Static water level 44

Pumping water level 71

Yield (g. p. m.) 495

Measuring point _____

Duration of pumping _____

Specific capacity _____

LABORATORY DATA

Well No. W12538 Sample range 0 - 2/5 No. of samples 43

No. of dupls. and cond. 43 fair Washed range _____

Samples prepared by Campbell Date 11/30/60

Logged by NORTHUP Date 12/7/60

Correlations by _____ Date 12/7/60

UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey
Water Resources DivisionLocal Well No. 092-40W-26 CBDAquifer Code(s) KID1Water Quality
(ppm)Owner's Name MENTAL HEALTH INST. #4W Number 12538

Card Q

State: IOVA 19 County: CHEROKEE 18 Town: CHEROKEE, IOVA

Well No. 424507N 0953228 Seq. No. 1 Date 011270

Latitude Longitude

Sampling Depth 212 Type 1 Kx10⁶ 1100 pH 7.1 Temp. 110

SiO₂ 25 Ca 150 Mg 34 Na 51 K 67

HCO₃ 362 CO₃ 0 SO₄ 330 Cl 2 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 8 NO₃ 5 PO₄ 33 B 36 Al 39 Fe 16

Mn 29 Cu 50 Pb 53 Zn 55

Solids 52 Hardness 515

Determined 752 Calc. 64 Ca, Mg 70 Non-Carb. 218

Color 78 No. R

Card S

Duplicate Columns 1-25 from Card Q

Br 26 I 29 Alk. as CaCO₃ 297 Free CO₂ 36 SAR 39

RSC 42 ABS 45 48 50

Alpha (pc/l) 55 Beta (pc/l) 58 Ra (pc/l) 61 U (ug/l) 64

No. S
80Recorded by: D. AARONSONPunched by: T Date: 11/12/70

Published: _____

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

092-40W-26 CBD

W-12538

Water Quality
(ppm)

KDD

Card Q

State: IOWA 16 County: CHEROKEE 18 Town: CHEROKEE 45

Well No. Latitude 424507N Longitude 0953228 Seq. No. 1 Date 112860

Sampling Depth 212 Type 1 Kx10⁶ 969 pH 7.55 Temp. °F 52

SiO₂ 251 Ca 138 Mg 312 Na 401 K 62

HCO₃ 368 CO₃ 0 SO₄ 258 Cl 20 Source No. 3Q

Card R

Duplicate Columns 1-25 from Card Q

F 0.8 NO₃ 13 PO₄ 1 B 1 Al 1 Fe 2.08

Mn 0.40 Cu 1 Pb 1 Zn 1

Solids 659 Cal. 1 Ca, Mg 473 Hardness 171

Determined 659 Color 1 No. R

Card S

Duplicate Columns 1-25 from Card Q

Br 1 I 1 Alk. as CaCO₃ 302 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

Verified PMJ

No. 5
80

Recorded by: D. AARONSON

Punched by: Punched FCH Date: 11/28/60

Published: PMJ

6W - Cherokee County

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November 30, 1960

Layne-Western Company
South Duff Street
Ames, Iowa

Gentlemen:

Enclosed is a report of the pumping test on the recently completed No. 4 well of the State Mental Health Institute, Cherokee.

If you have any questions concerning the report, please do not hesitate to let me hear from you.

Very truly yours,

H. G. Hershey

HGH/jsm
Enclosure

cc: State Mental Health Institute, Cherokee, Iowa

Mr. Wm. A. Robinson, Mt. Pleasant, Iowa

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PUMPING TEST
AT THE STATE MENTAL HEALTH INSTITUTE
CHEROKEE, IOWA
November 21, 1960

A pumping test was made of the new No. 4 well by personnel of the drilling contractor, Layne-Western, Ames, and the Iowa Geological Survey.

The well was pumped at an average of 495 g.p.m. for a period of 1 hour. The data obtained shows a drawdown of 27 feet from a static water level of 44 feet to a pumping level of 71 feet. This is a specific capacity of 18.3 g.p.m. per foot at a pumping rate of 495 g.p.m. Pumping the well at the rate of 700 g.p.m. gives a drawdown of 45 feet which lowers the specific capacity to 15.5 g.p.m. per foot of drawdown.

TABLE I
PUMPING TEST
AT THE STATE MENTAL HEALTH INSTITUTE
CHEROKEE, IOWA
November 21, 1960
Well No. 4

Location: SE $\frac{1}{4}$ - 27 - 92 - 40 N.

Total Depth: 212 feet.

Elevation: 1128 feet G.L. datum - Note: The curb elevation will be 1136 feet.

Contractor: Layne-Western Company, Ames, Iowa.

Date Drilled: Completed November, 1960.

Casing Record: 12-3/4" - B.E. 51 lbs. welded - 0' - 152'.
60' of 12-3/4" Layne-Bowler slotted No. 6 screen from
212' - 152'. 30" hole gravel packed from 212' to 30'.

Water Level: S.W.L. 44' below ground level.

Aquifer: Pleistocene.¹₀

Measurements: Water level measurements (Table No. 2) made with an air line. Discharge rate was determined by periodic measurements of the flow through an 8" x 6" orifice plate.

Pump: A Layne-Bowler electric turbine pump with a rated 800 g.p.m. capacity was set with suction at 130'. Bottom of air line at 126'.

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TABLE II
PUMPING TEST
AT THE STATE MENTAL HEALTH INSTITUTE
CHEROKEE, IOWA
November 21, 1960

Time (Min.)	Air Line Depth To Water	Drawdown (ft.)	G. P. M.	Temp F. Air	Temp F. Water	Remarks
0	44' SWL*			64°		Pump started at 12:00 p. *Checked with electric line.
1	66	22				
2	67	23				
3	68	24				
4	68	24				
5	68	24				
6	68	24				
7	69	25	495			
8	69	25				
9	69	25				
10	69	25				
12	69	25				
14	69	25				
16	69	25				
18	70	26				
20	70	26	495			
22	70	26				
26	70	26		64°	52°	
30	70	26				
35	70	26				
40	70	26				Water sample - clear No odor
45	71	27				
50	71	27				
55	71	27				
60	71	27	495			Increased rate of pump at 61 mins.
70	82	38	717			
80	83	39				
90	84	40				Rate change at 91 mins.
100	84	40	726		52°	
110	85	41	726			
120	85	41	720			
150	86	42	717	64°	52°	
180	86	42	726			
210	88	44	717			
240	88	44	700			
270	89	45	700			

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State Mental Health Institute, Cherokee, Table II

Time (Min.)	Air Line		G. P. M.	Temp F.		Remarks
	Depth To Water	Drawdown (ft.)		Air	Water	
300	83	39	609			
330	81	37	609	52°	52°	
360	79	35	609			
390	74	30	508			
420	68	24	408			
450	66	22	408	42°	52°	
480	66	22	408			Stopped pump. Recovery-
1	46					
2	45					
3	45					
4	47					Pump stopped running backwards.
5	47					
6	47					
7	46					
8	46					
9	46					
10	46					
12	46					
14	46					
16	46					
18	46					
20	46					
25	--					
30	46					
60	46					