

U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by D. AARONSON Source of data FILE Date 11/5/65 Map FT. DODGE QUAD 1:62,500

State IOWA 16 County (or town) HUMBOLDT 46

Latitude: 42 43 17 N Longitude: 09 41 20 5 Sequential number: 1

Lat-long accuracy: 2 91 28 E Sec 6 NE SW 5

Local well number: 09128W06CCAAA Other number: W-3222

Local use: 03222 4 B C I T Y 2 Owner or name: DAKOTA CITY, #2

Owner or name: DAKOTA CITY, IA Address: DAKOTA CITY, IA

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

Use of water: (A) Air cond, Comm, Dewatering, Fire, Dom, Irr, Ind, P S, Stock, Instit, Unused P

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

DATA AVAILABLE: Well data 1 Freq. W/L meas.: INVENTORY 0 Field aquifer char. 72

Hyd. lab. data: 73

Qual. water data; type: COMPLETE 74

Freq. sampling: INTERMITTENT I Pumpage inventory: yes 75 no, period: 76

Aperture cards: 77

Log data: GEOLOGIST LOG G 78 79

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 1025' 10" ft 102 6 Meas. 6

Depth cased: 222 ft 220 Casing type: STEEL ; Diam. 8 in 8

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

Method: (A) air bored, (B) cable, (C) dug, (D) hyd jetted, (H) air reverse, (I) trenching, (J) driven, (K) drive, (L) rot., (M) percussive, (N) rotary, (O) wash, (P) other (Z) 32

Date Drilled: JUNE 1948 94 8 Pump intake setting: 100 ft 100

Driller: NORTHWESTERN DRUG CO. (LAMES & J. OLESON) DAKOTA CITY, IA

Lift (A) air, (B) bucket, (C) cent, jet, (D) multiple, (E) (cent.), (F) multiple, (G) (turb.), (H) none, (I) piston, (J) rot, (K) submerg, (L) turb, (M) other (Z) D

Power (type): (A) diesel, (B) elec, (C) gas, (D) gasoline, (E) hand, (F) gas, (G) wind, (H) P. 41 Trans. or meter no. 40

Descrip. MP LSD ft above 1130 below 1130 lsd, Alt. MP 1130

Alt. LSD: 1130 1130 Accuracy: ALTIMETER 7

Water Level 72 ft above 72 MP; Ft below 72 lsd Accuracy: DRILLER'S LOG 3

Date meas: JUNE 1948 6 4 8 Yield: 212 gpm 212 Method determined 4

Drawdown: 3.2 ft 3 Accuracy: 3 Pumping period 3 1/2 hrs 4

QUALITY OF WATER DATA: Iron 0.2 0 Sulfate 307 7 Chloride 7.5 0 Hard. 566 8

Sp. Conduct 1055 K x 10 5 Temp. 5 Date sampled 8/4/55 8 5 5

Taste, color, etc. 77 79

091-28W-06CCAAA

Well Number 42 43 17 N 094 12 05

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD Physiographic Province: CENTRAL LOWLAND 12 Section: WESTERN

LAKE B Drainage Basin: DES MOINES 25 B Subbasin: 26

Topo of well site: (D) local depression, (F) flat surface, (H) hilltop, (I) hillside, (J) terrace, (K) valley flat, (L) upland H

MAJOR AQUIFER: ORDOVICIAN MIDDLE 02 GALENA FM. M6

Lithology: CHERTY DOLOMITE QD Origin: MARINE G Aquifer Thickness: 955 ft 955

Length of well open to: 70 ft 70 Depth to top of: 955 ft 955

MINOR AQUIFER: DEVONIAN MIDDLE D2 CEDAR VALLEY FM MC

Lithology: FINE DOLOMITE 2D Origin: MARINE G Aquifer Thickness: 285 ft 285

Length of well open to: 285 ft 285 Depth to top of: 525 ft 525

Intervals Screened: NONE

Depth to consolidated rock: 115 ft 115 Source of data: WELL CUTTING C

Depth to basement: 65 ft 65 Source of data: 69

Surficial material: SANDY TILL BT Infiltration characteristics: POOR 72 9

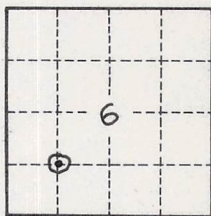
Coefficient Trans: 73 73 Coefficient Storage: 76 78

Coefficient Perm: 66.2 gpm/ft; Number of geologic cards: 79

CASING:

130' OF 10" PIPE FROM 2' ABOVE SURFACE TO 128' (SUPPOSED TO HAVE BEEN REMOVED AFTER WELL WAS COMPLETED).

220' OF 8" PIPE FROM LAND SURFACE TO 220'.



Phone No. - (515) 265-8134

Manchester, Iowa (319) 927-2640

Please:

Call Ken Chudzinski at DEQ

- Ask him for the following info on Dakota City
- 1) How much water do they use each year?
 - 2) " " " " " " " " day?
 - 3) How many wells do they have and depth?

Our records indicate only one well 1025 feet deep pumping at about 150 gpm.

Paul
⇒ Monday he is on vacation, he will be back on Monday.

⇒ Region 2 → Mason City
(515) 424-4073

Dakota City is in region 2 ask in Mason City office

Average yearly = $60,000 \times 365 =$

1 & 2) Average 60,000 gpd Max 90,000 gpd on h. + day

3) 2 wells

N1

168 ft deep: Cap 80-90 gpm

N2

1025 ft deep: Cap 150 gpm

Has Iron removal, zeolite softener, chlorine gas
A little short & demand is exactly or a little more than supply. So they are restricting water use.

like a statue

I heard that some
American girls kiss them
and they would not move
statue

It is a great tourist
attraction
in London

Royalty is a business

Did you see the change of
guards

Humboldt

April 15, 1959

Mr. J. E. Martin
Martin Well Company
Humboldt, Iowa

Dear Mr. Martin:

We are replying to your postal card of April 14 concerning information on the Dakota City deep municipal well.

The pertinent data on the construction and production of this well and a mineral analysis of the water are summarized on the accompanying sheets.

We trust this is the information you wished. If you have any questions remaining or if we can be of further help in this matter, please let me know.

Very truly yours,

H. G. Hershey

PJH:mc
Enclosures

2
Name: Dakota City municipal well No. 2

Location: NW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 6, T.91N., R.28W., Humboldt County, Iowa

Owner: City of Dakota City

Contractor: Northwestern Drilling Co., Dakota City, Iowa

Drillers: Leroy Ames and James Oleson

Drilling dates: February 15 to May 18, 1948

Elevation: Approximately 1130 feet above sea level

Depth: 1025 feet 10 inches

Casing and hole data: 130 feet of 10-inch pipe from 2 feet above surface to 128 feet (This pipe was to be pulled when well was completed)
220 feet of 8-inch pipe from 0-to 220 feet.

Production data: Original static water level 72 feet below land surface (reported by driller). A pumping test of about $3\frac{1}{2}$ hours duration produced 198 to 212 g.p.m. at a pumping water level of 77.2 feet. In 1955 the pump discharge was reported to be 100 g.p.m.

IOWA GEOLOGICAL SURVEY
TABULATION OF WATER ANALYSIS
(Dissolved constituents in parts per million)

Town - Well No Owner	Date of coll.	Leptn (ft.)	Geol. source of	Liss. solids	Fe	Mn	Ca	Mg	K	Na	CO ₃	HCO ₃	SO ₄	Cl	F	NO ₃	Hardness cal. as CaCO ₃ tot	carb	non carb	pH	Cond
Dakota City No. 2 (1948)	8/55	1025	Miss. Devonian Galem	736	0.2	0.03	123	63	8.2	17	-	339	307	7.5	0.9	0	566	273	293	7.8	1055

NOTES:

$<$ = less than

W

DDO 15 1959
Dear Sirs:

C)
April, 14, 1959.

I would like to get
all the information I can
about the city well of
Dakota city, it is the
deep well Le Roy Ames
drilled several years ago.
I would like to know
about the depth, size of
hole, quantity, etc.

Very Truly Yours.

J E Martin

Humboldt Co.

June 14, 1948

Mr. Leroy Ames
Humboldt,
Iowa

Dear Mr. Ames:

Enclosed are two copies of a report on the mineral analysis of water from the 1025'10" City of Dakota City Well No. 2 as shown by a sample collected by Mr. J. B. Cooper on May 18, 1948.

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

Very truly yours,

H. G. Hershey

HGH:AEH
ENCS.

Office copy.

2 copies sent to Leroy Ames

Reimbursed 6.

RESULTS OF PRODUCTION TEST MADE ON

DAKOTA CITY WELL NO. 2

Dakota City, Iowa

May 18, 1948

NAME: Dakota City Well No. 2.

LOCATION: NW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 6, T. 91 N., R. 28 W.

OWNER: City of Dakota City.

CONTRACTOR: Northwestern Drilling Co., Dakota City, Iowa.

DRILLERS: Leroy Ames and James Oleson.

DRILLING DATES: February 15 to May 18, 1948.

ELEVATION: Approximately 1130 feet above sea level.

TOTAL DEPTH: 1025 feet 10 inches.

CASING AND HOLE DATA: 130 feet of 10-inch pipe from 2 feet above surface to 128 feet. (This pipe is to be pulled when well is completed.) 220 feet of 8-inch pipe from 0 feet to 220 feet.

TEST PUMP: Turbine, 110 feet of 4-inch column, 7.5 feet of 6-inch bowls, 10 feet of suction pipe. Powered with belt-driven motor.

TEMPERATURE MEASUREMENTS: Water temperature measurements made at end of 20 feet of 4-inch discharge pipe.

WATER LEVEL MEASUREMENTS: Depth to water measurements were referred to top of 10-inch casing 2 feet above ground surface.

DISCHARGE MEASUREMENTS: Discharge from pump was measured by diverting flow into a 260 gallon tank and timing in one-half minute intervals.

REMARKS: Reported static water level as measured by driller was 72 feet below land surface. Production test started about 8:00 A.M., May 18, 1948.

Time	Depth to Water (feet)	<u>Discharge</u>		Temp. ° F.	Remarks
		Tenths of Inches	G.P.M.		
May 18					
10:20 am				53	
10:25	78				
10:55		7	191.8		
11:18	77	7.5	205.50		
11:30	77				Pump off to adjust impellers.
11:35	74.8				H ₂ S odor.
11:38		7.75	212		Water cloudy, milky.
11:45	77				
11:55		7.75	212		
11:57	77				
12:45 pm	77				
1:10	77	7	191.8		
2:00	77	7.25	198.6		
2:15	77.1				
2:25		7.25	198.6		
2:30				53	Water sample for analysis.
2:33	77.1				
2:50	77.2				
3:00		7.25	198.6		
3:03	77.2				
3:04					Pump off.
3:05	75				Recovery measurements.
3:06	75				
3:10	74.7				
3:15	74.6				
3:20	74.5				

UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey
Water Resources DivisionLocal Well No. 091-28W-06 CCAAAquifer Code(s) 02MG DZMCWater Quality
(ppm)Owner's Name DAKOTA CITY #2 (1948)W Number 03222

Card Q

State: IOWA 1 9 County: HUMBOLDT 4 6 Town: DAKOTA CITY, IOWA

Well No. 4 2 4 3 1 7 N 0 9 4 1 2 0 5 Seq. No. 1 Date 0 7 2 1 5 9

Sampling Depth 1 0 2 6 Type 1 Kx10⁶ 9 1 0 pH 7 4 Temp. °F 5 2

SiO₂ 1 4 1 Ca 1 0 9 1 0 Mg 5 1 1 Na 1 5 1 K 5 6

HCO₃ 3 6 8 CO₃ 0 SO₄ 2 0 0 1 0 Cl 8 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 6 NO₃ 4 PO₄ 3 5 B 3 6 Al 3 2

Mn 0 5 Cu 5 0 Pb 5 3 Zn 5 7

Determined 6 1 7 Solids 6 4 6 9 Ca, Mg 4 8 2 Hardness Non-Carb. 1 8 0

Color 8 9 No. R

Card S

Duplicate Columns 1-25 from Card Q

Br 3 0 2 I 3 0 2 Alk. as CaCO₃ 3 0 2 Free CO₂ 3 6 3 SAR 3 9 4

RSC 4 2 4 ABS 4 5 7 4 8 5 0

Alpha (pc/l) 5 5 7 Beta (pc/l) 5 8 6 0 Ra (pc/l) 5 6 1 6 3 U (ug/l) 6 4 6 6

No. S
80Recorded by: D. AARONSONPunched by: T Date: 10

Published: _____

UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey
Water Resources DivisionLocal Well No. 091-28W-06 CCAAAquifer Code(s) 02MG DZMCWater Quality
(ppm)Owner's Name DAKOTA CITY #2 (1948)W Number 03222

Card Q

State: IOWA 19 County: HUMBOLDT 46 Town: DAKOTA CITY, IA.

Well No. 424317N 0941205 Seq. No. 1 Date 05/18/48

Sampling Depth 1026 Type 1 Kx10⁸ pH 7.8 Temp. °F 53

SiO₂ Ca 121 Mg 56 Na + K 34 K C

HCO₃ 351 CO₃ 0 SO₄ 282 Cl 8.0 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 8 NO₃ 0 PO₄ B Al Fe 0

Mn 0 Cu Pb Zn

Determined 716 Solids Calc. Ca, Mg 533 Hardness Non-Carb. 245

Color No. R

Card S

Duplicate Columns 1-25 from Card Q

Br I Alk. as CaCO₃ 288 Free CO₂ SAR

RSC ABS

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

No. S
80Recorded by: D. ARONSONPunched by: T Date: 1/11Published:

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

W-3222

RECORD OF WELL

Location:

Town: Dakota City (NE)
(SW): County Humboldt
C/SW sec. 6 T 91 N., R. 28 W. Twp.

Well name and number Town of Dakota City (1948)

Owner Town of Dakota City Address _____

Tenant _____ Address _____

Contractor Le Roy Ames Address Humboldt

Drillers Le Roy Ames & James Olsson

Drilling dates Started 2-15 to 5-18-48

Well data:

Elevations: Drilling curb _____ feet; Land surface 1130 feet

Determined by Topog Map

Topographic position Upland

Total depth: Reported 1025'-10 feet; Measured _____ feet

Drilling method _____

Hole and casing date 10" casing 0' to 130'; 8" casing lapped into 10" and set at 220'

Original depth to water 72 ft. ^{above} S.S. Date _____

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

Sources of water: Principal _____; Others _____

CASING DIAGRAM

LOG

Vertical scale

0-130 - Drift

130-220 - sh + rock bands

220-400 - Good rock

400-405 - Shale

405-840 good rock

Production data:

Date

May 18, 1948

Static depth to water

72

Measuring point

Land Surface

Pumping level

77.2'

at

198.6

g.p.m.

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

May 18, 1948

Sampled by

J.B. Cooper
(Dissolved)

Total solids

716

Insoluble matter

8.

Alkalinity (Meq)

288

Alkalinity (Phm)

None

pH

7.8 Fe_2O_3 - Mn_2O_3 - Al_2O_3 2.

Alkali as sodium

34.4

Calcium

121.2

Magnesium

56.

Iron (unfiltered)

(Dissolved)
0.

Manganese

None

Nitrate

None

Fluoride

0.8

Chloride

8.0

Sulfate

281.9

Bicarbonate

351.4

Hardness (ppm)

533.

Hardness (gpg)

32.1

Remarks

Laboratory data:

Sample storage location

CD1-9, 10; CD2-1

Sample range

0-1005

No. spls.

201

No. dupls. & cond.

199 Fair-Good

Spls. prepared by

RKS & WJB

Washed range

120-1005

by

RKS & WJB

Driller's log and cond.

None

Insoluble residues: Prepared by

Studied by

Strip log

Microscopic study

0-1005

strip log

7-1-48

Gen. log

Correl. by

R. Wehner

REMARKS

[The page contains faint, illegible markings and bleed-through from the reverse side.]

Block 10 Archie Stoddard
- Sept 33 - 2nd South

WELL RECORD

Ralph Schulze N. Mayor N
E E

Well is located.....miles S and.....miles S from
W W

Dakota City in Humboldt,
(Nearest Town) (County)

in the 1/4 1/4 Sec. T. R.

Owner City (Archie Stoddard) Well No. 2

Postoffice address

Contractor Leroy Ames

Address Dakota City

Driller Leroy Ames

Well begun Feb, 1948;

completed June, 1948

Rig used—Cable, Rotary, Jet, or

Depth of well 1025'
(Feet)

Size of hole (note total amount of each size)

Main water supply at

(Feet below surface)

Final water head 50'
(Feet above or below surface)

Is well pumped?

Yield 112
(Gallons per minute)

Water level when pumping 80'

Position of well

(Upland, valley, side hill, etc.)

RECORD OF PERMANENT CASING

Size Pipe	Amount of Pipe	Depth to Bottom of Pipe	Depth to Top of Pipe	Type* and Weight of Pipe	DIAGRAM OF WELL
4 1/2" x 6"					

*As cast, wrought iron, steel, concrete, etc.

Is screen used?..... Diameter.....
(Inches)

Length..... Depth to bottom.....
(Feet)

Depth to top..... Slot size.....

Are packers or seals used?.....

Kind

Where used.....

Kind of pump..... Dia.....
(Inches)

Capacity of pump..... 100'
(g.p.m.)

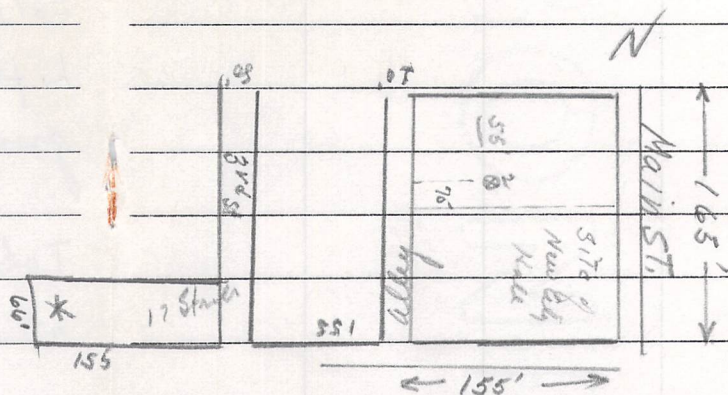
Power used.....
(Kind and amount)

Depth to bottom of pump line..... 100'..... feet,
including feet tailpiece.

Remarks on construction of well.....
.....

[illegible]

DESCRIPTION OF BEDS	
KIND OF ROCK, COLOR, HARD OR SOFT, WATER, ETC.	



No. 2 located 50'± from Main St
" 55'± " N prop line

Do not want to locate anywhere else - Schuller

No 1 well located in same
blg 18' north of No 2
depth 168'. drilled in 1918.
jump 40' G.P.M.