

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

W-1574

RECORD OF WELL

Location:

Town: Sioux City ( N E )  
( S W ): County Woodbury  
CEL NE-NW-SE sec. 25 T 88 N., R. 48 W. Woodbury Twp.

	25	

Well name and number Sioux City Airbase #2

Owner \_\_\_\_\_ Address \_\_\_\_\_

Tenant \_\_\_\_\_ Address \_\_\_\_\_

Contractor H. Rasmussen Address \_\_\_\_\_

Drillers H. Rasmussen

Drilling dates May - June 1942

Well data:

Elevations: Drilling curb 1092 feet; Land surface 1091.2 feet

Determined by \_\_\_\_\_

Topographic position Missouri River flat

Total depth: Reported 250 feet, Measured \_\_\_\_\_ feet

Drilling method \_\_\_\_\_

Hole and casing data GRAVEL Pack - 16-inch hole

207' of 16-inch casing +3' to 204'

10' 5" of 10" WW pipe from 193' 7" to 204'

20' 10" of Everdur (100 slot) screen from 204' to 224'

Pea size gravel around screen

Original depth to water 127 ft. <sup>above</sup> below curb Date \_\_\_\_\_

Original elevation of water level 1065 ft.; Source of data \_\_\_\_\_

Sources of water: Principal Dakota 200-24; Others \_\_\_\_\_

Production data:

Date \_\_\_\_\_

Static depth to water 18.5 Measuring point top of 1 1/2" pipe 3' above floor  
Pumping level 154' at 600 g.p.m.

Specific capacity \_\_\_\_\_ g.p.m. per ft. drawdown; Temperature 57 °F.

Pump data: Type pump Turbine Column Dia. \_\_\_\_\_ Length 180  
Cylinder or bowls: Dia. \_\_\_\_\_ Length \_\_\_\_\_ Suction pipe \_\_\_\_\_

Power 75 h.p. electric Airline \_\_\_\_\_

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

Use of water Public drinking - industrial

WATER ANALYSES (in parts per million)

Date samples	<u>Oct. 2, 1942</u>	_____	_____
Sampled by	<u>K.E. Anderson</u>	_____	_____
Total solids	<u>824</u>	_____	_____
Insoluble matter	<u>17.0</u>	_____	_____
Alkalinity (Meo)	<u>332.0</u>	_____	_____
Alkalinity (Phn)	<u>0.0</u>	_____	_____
pH	<u>7.2</u>	_____	_____
Fe <sub>2</sub> O <sub>3</sub> + Mn <sub>2</sub> O <sub>3</sub> + Al <sub>2</sub> O <sub>3</sub>	<u>10.0</u>	_____	_____
Alkali as sodium	<u>34.2</u>	_____	_____
Calcium	<u>165.8</u>	_____	_____
Magnesium	<u>36.0</u>	_____	_____
Iron (unfiltered)	<u>0.6</u>	_____	_____
Manganese	<u>0.2</u>	_____	_____
Nitrate	<u>1.3</u>	_____	_____
Fluoride	<u>0.5</u>	_____	_____
Chloride	<u>18.0</u>	_____	_____
Sulfate	<u>285.2</u>	_____	_____
Bicarbonate	<u>405.0</u>	_____	_____
Hardness (ppm)	<u>563</u>	_____	_____
Hardness (gpg)	<u>32.9</u>	_____	_____

Remarks \_\_\_\_\_

Laboratory data:

Sample storage location \_\_\_\_\_

Sample range 0-250 No. spls. 51 No. dupls. & cond. 51 fair

Spls. prepared by Anderson Washed range \_\_\_\_\_ by \_\_\_\_\_

Driller's log and cond. Yes good

Insoluble residues: Prepared by \_\_\_\_\_ Studied by \_\_\_\_\_ Strip log \_\_\_\_\_

Microscopic study 0-250 DAD strip log June 26, 1942 DAD

Gen. log \_\_\_\_\_ Correl. by D.A. Davis

00  
10  
20  
30  
40  
50  
60  
70  
80  
90  
00

silt, pale brn, argil. calc.

clay, pale drb brn, silty, calc

sd. f, v. silty, v. argil

sd. 2-2 5% 1-1/2 0% 1/2-1/4 40% 1/4-1/8 30, 1/8-1/16 15%  
15% clay

sd. 2-1 5% 1-1/2 30% 1/2-1/4 3.5% 1/4-1/8 25% 1/8-1/16 5%

sd. 1-1/2 25% 1/2-1/4 50%, 1/4-1/8 25%

sd 1-1/2 20% 1/2-1/4 50% 1/4-1/8 25. 1/8 1/16 5

sd 1/2 10% 1/2-1/4 55% 1/4-1/8 30% 1/8-1/16 5%

sd 1-1/2 5% 1/2-1/4 60% 1/4-1/8 30% 1/8-1/16 5%

sd. a.a

Gul & gnules 60% 1/2 20% 1/2-1/4 20%

Gul & " 60% 1-1/2 20% 1/2-1/4 20%  
25% clay, gray

Gul & gnules 40% 1-1/2 10% 1/2-1/4 15%,  
35% clay, gray

Gul. f-crse

Gul. f. 10% sdy clay

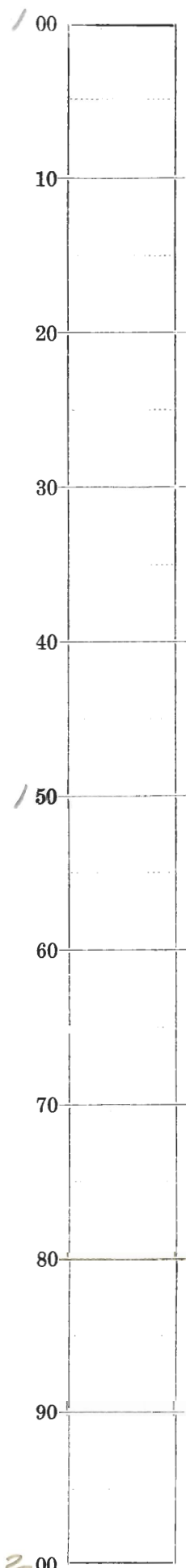
sd. 2-1 30% 1-1/2 25% 1/2-1/4 30% 1/4-1/8 15%  
0% clay

sd. 2-1 25% 1-1/2 40% , 1/2-1/4 25% 1/4-1/8 10%

Gul. 10% 2-1 25% , 1-1/2 30% 1/2-1/4 25% 1/4-1/8 10%

sd. 2-1 25% 1-1/2 40% 1/2-1/4 25% 1/4-1/8 10%

a.a



sd. 2-1 25% 1-1/2 40% 1/2-1/4 25% 1/4-1/8 10%

sd. 2-1 30% 1-1/2 40% 1/2-1/4 25% 1/4 1/8 5%

Small amt clay  
sh, red mottled w. pale gray

sh, pale gray streaked w. pale brown & yell. silty

sh, pale gray, v. silty, micae. Firmly cemented in part w. dolom.

sh, pale gray v. silty, micae, sl. dolom in part

sh, pale gray, v. silty micae, sl. dolom in part

" "

" " " " " "

Tr. sid. conc,

"

" " in part

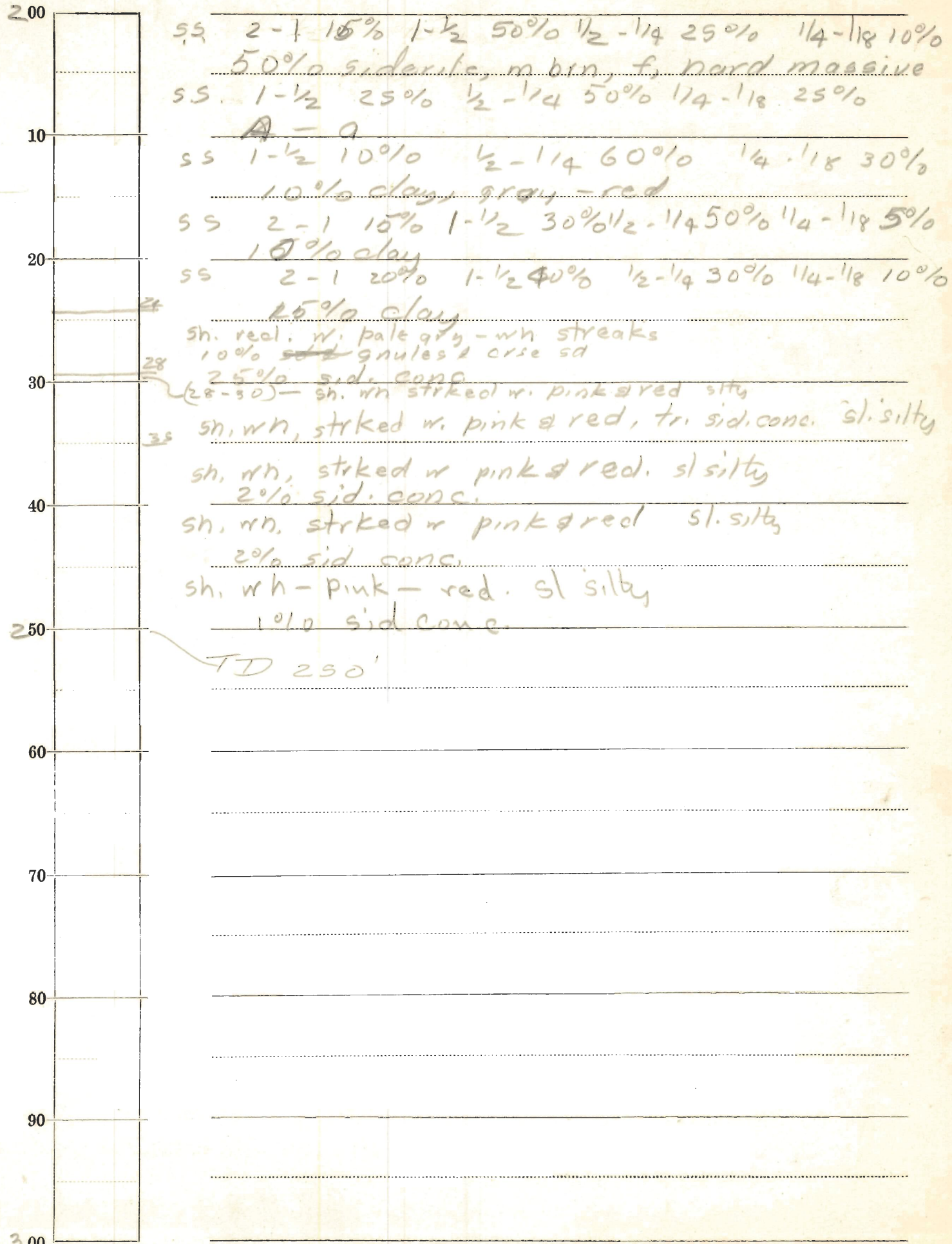
" " " " " "

sl. dolom  
caved sd & gvl. (?)

" micae sl. dolom  
caved sd & gvl. (?)

sl. dolom  
caved sd & gvl.

" " " " sl. silty



ss 2-1-15% 1-1/2 50% 1/2-1/4 25% 1/4-1/8 10%  
 50% siderite, m brn, f, hard massive  
 ss 1-1/2 25% 1/2-1/4 50% 1/4-1/8 25%  
 A-a  
 ss 1-1/2 10% 1/2-1/4 60% 1/4-1/8 30%  
 10% clay, gray-red  
 ss 2-1 15% 1-1/2 30% 1/2-1/4 50% 1/4-1/8 5%  
 15% clay  
 ss 2-1 20% 1-1/2 40% 1/2-1/4 30% 1/4-1/8 10%  
 25% clay  
 sh. red. w. pale gray-wh streaks  
 10% siderite & coarse sd  
 25% sid. conc  
 (28-30) - sh. wh. streaked w. pink & red silty  
 35 sh. wh. streaked w. pink & red, tr. sid. conc. sl. silty  
 sh. wh. streaked w. pink & red. sl silty  
 2% sid. conc.  
 sh. wh. streaked w. pink & red sl. silty  
 2% sid. conc.  
 sh. wh - pink - red. sl silty  
 1% sid. conc.

TD 230'

IOWA GEOLOGICAL SURVEY  
Water Well Data Sheet

Survey Number **W-1574**

Town Sergeant Bluff County Woodbury T. 88 N., R. 48 W.

Name Sioux City Air Base #2 Location CEL-NE 1/4-NW 1/4 SE 1/4, Sec. 25

Contractor Howard Rasmussen Driller H. Rasmussen Use Public-Industrial  
Drilling

Construction Drilled Drilling Dates May-June 1942 Depth \_\_\_\_\_

Topog. Missouri River Flat Curb Elev. 1091.2 (Ground) Ref. \_\_\_\_\_ Total Depth 250'

Final above

Static below Pumping Draw \_\_\_\_\_ Time \_\_\_\_\_

Level curb Level \_\_\_\_\_ down \_\_\_\_\_ gpm \_\_\_\_\_ pumped \_\_\_\_\_ Date \_\_\_\_\_

Depth to \_\_\_\_\_ Calc. g/ft. \_\_\_\_\_ Prin. \_\_\_\_\_

bot. pump \_\_\_\_\_ ft. with \_\_\_\_\_ ft. suction pipe. drawdown \_\_\_\_\_ Prod. \_\_\_\_\_

Producing \_\_\_\_\_

Horizons \_\_\_\_\_

Water levels and pumping tests on various horizons during drilling:

Depth Range	Stat. Level	Pump Level	Draw down	gpm.	Temp.	Producing horizons	Producing formations	Formations cased out

Additional information \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Data

Sample range 0-250' Number samples 51 Number Duplicates 51 Cond. Fair

Log Yes No, Cond. Good Boxed Anderson Range 0-250' Date June 24, 1942

Remarks Cut No 214 for Gulf - Harris

Microscopic Study Range \_\_\_\_\_ Strip Log \_\_\_\_\_ Gen. Log \_\_\_\_\_ Blue Print \_\_\_\_\_ Samples Washed \_\_\_\_\_  
Insol. Res. Study Range \_\_\_\_\_ Strip Log \_\_\_\_\_ Gen. Log \_\_\_\_\_ Insol. Res. Prepared \_\_\_\_\_ Well Corel. \_\_\_\_\_

IOWA GEOLOGICAL SURVEY  
Generalized Log Based on Detailed  
Description of Drill Cuttings

Name of Well Sioux City Air Base No. 2 Survey No. W- 1574  
 Location Q/E.L. NE $\frac{1}{4}$  NW $\frac{1}{4}$  SE $\frac{1}{4}$  sec. 25, T. 88 N., R. 48 W., Woodbury County  
 Drilled by Howard Rasmussen, Sioux City, Iowa  
 Total Depth 250 ft. Curb Elevation 1091.2 ft. Static Level 18.5 ft.  
 Pumping Test \_\_\_\_\_ Hours \_\_\_\_\_ Min; Gal. per min. 600 Drawdown 135.5 ft. in \_\_\_\_\_ min.  
 Casing Data 207' of 16" casing from +3' to 204'. 10'5" of 10" casing lap up in to  
16" casing from 204'. 20' of 10" 100-slot Everdur screen from 204' to 224'.

No.	Rock Unit	Description of Formations	Thick.	From (feet)	To
<b>PLEISTOCENE SYSTEM</b>					
<b>Alluvium</b>					
1.	Silt, pale brown, argillaceous, calcareous		5	0	5
2.	Clay, pale drabish brown, silty, calcareous		5	5	10
3.	Sand, fine-grained, very silty, very argillaceous		5	10	15
4.	Sand, medium- to fine-grained (2-1 mm. 5%, 1- $\frac{1}{2}$ mm. 10%-30%, $\frac{1}{2}$ - $\frac{1}{4}$ mm. 35%-40%, 1/4-1/8 mm. 25%-30%, 1/8-1/16 mm. 5%-15%)		10	15	25
5.	Sand, chiefly medium-grained (1- $\frac{1}{2}$ mm. 5%-25%, $\frac{1}{2}$ - $\frac{1}{4}$ mm. 50%-60%, 1/4-1/8 mm. 25%-30%, 1/8-1/16 0-5%)		25	25	50
6.	Gravel, granules, and sand, (16-2 mm. 60%, 2 - 1/2 mm. 20%, 1/2-1/4 mm. 20%). Clay, 25% to 35% in lower 10 feet, grey		15	50	65
7.	Gravel, fine- to coarse-grained. Clay 10%, sandy in lower 5 feet.		10	65	75
8.	Sand, chiefly coarse-grained (2-1 mm. 25%-30%, 1-1/2 mm. 25-40%, 1/2-1/4 mm. 25%, 1/4-1/8 mm. 5%-15%)		35	75	110

Notes: cc to Mr. L. A. Peter, Buell and Winter Eng. Co., Sioux City, July 8, 1942.  
 Mr. Howard Rasmussen, Sioux City, July 8, 1942.

Survey No. 1574

<u>Description</u>	<u>Thick.</u>	<u>From</u> (feet)	<u>To</u>
CRETACEOUS SYSTEM			
Dakota formation			
9. Shale, red, mottled with pale gray	5	110	115
10. Shale, pale gray streaked with pale brown and yellow, silty	5	115	120
11. Shale, pale gray, very silty, micaceous, firmly cemented in part with dolomite	5	120	125
12. Shale, pale gray, very silty, micaceous, slightly dolomitic. Trace of siderite concretions 155 to 160 feet	75	125	200
13. Siderite, medium brown, fine-grained, hard, massive. Sandstone 50%, chiefly coarse grained (2-1 mm. 15%, 1-1/2 mm. 50%, 1/2-1/4 mm. 25%, 1/4-1/8 mm. 10%)	5	200	205
14. Sandstone, chiefly medium-grained (1-1/2 mm. 10%-25%, 1/2-1/4 mm. 50%-60%, 1/4-1/8 mm. 25%-30%) Clay 10%, in lower 5 feet, gray to red	10	205	215
15. Sandstone, medium- to coarse-grained, (2-1 mm. 15%-20%, 1-1/2 mm. 30%-40%, 1/2-1/4 mm. 30%-50%, 1/4-1/8 mm. 5%-10%). Clay, 10%-15%	9	215	224
16. Shale, red, with white to pale gray streaks. Siderite concretions 25%. Granules and coarse sand 10%	4	224	228
17. Shale, white streaked with pink and red, slightly silty. Trace to 2% siderite concretions	22	228	250
Total depth			250

NOTES

The Cretaceous shale above the sandstone member is uniform in color and texture throughout most of its thickness, differing in this uniformity and in color from the same shale in the Air Base well No. 1.

The top of the sandstone member is marked by fine-grained hard, massive siderite, in contrast with the concretionary siderite in well No. 1. This sandstone member is considerably thinner than the sandstones in the Sergeant Bluff city well and the Air Base well No. 1. This thinning occurs at both the top and bottom of the sandstone. The No. 2 well is farthest west of the three, suggesting that the sandstone thins in a westerly direction in this locality. In general the sandstone in well No. 2 is coarser grained than the sandstone in well No. 1.



Well No. 2

Driller's log:

0 - 20	top soil
20 - 75	fine gray sand
75 - 108	coarse gravel (pea to hen eggs) some fine sand
108 - 112	red shale
112 - 142	yellow clay
142 - 200	Brown and white shale
200 - 224	Dakota sandstone (clean sand no breaks)
224 - 250	red shale

Casing:

207' 16" 3' stickup - bottom at 204'  
10' 5" 10 W.W. pipe lap up into 16" from 204'  
20' 10" Everdur screen, 100 slot from 204' to 224' (4' sandstone shut by 16")

(Present screen and casing, gravel packed pea gravel. This set up not yet tested.)

Pump test - open hole in Dakota sandstone  
Static water level = 18.5'  
Pumping water level = 154' } drawdown = 135.5'  
Hole caved under this test.

- 2 Pump test perforated pipe 5/8", 4" centers from 204 - 220'  
Static water level, 18.5' } drawdown = 135.5 feet at 600 g.p.m.  
Pumping water level, 154' }  
Then screened and gravel packed as described above, not yet tested.

Measurement of water level from top of 16" pipe which is 3' above land surface.

135

30  
10  
40

V

C  
O  
P  
Y

Subject: Results of partial analysis of sample of water  
from Sioux City Air Base, Well No. 1, received  
May 21, 1942.

Parts per Million  
(Mg. per liter)

Total Hardness, By Calculation, expressed as Calcium Carbonate (CaCO <sub>3</sub> ) - - - -	603.
Alkalinity (Methyl Orange), expressed as Calcium Carbonate (CaCO <sub>3</sub> ) - - - -	366.
Total Iron (Fe) - - - - -	1.6
Calcium (Ca) - - - - -	159.
Magnesium (Mg) - - - - -	49.
Chloride (Cl) - - - - -	16.
Sulphate (SO <sub>4</sub> ) - - - - -	303.
Color - - - - -	None
Turbidity - - - - -	60.
Hydrogen Ion Concentration (pH) -	7.2

C  
O  
P  
Y

Subject: Results of partial analysis of sample of water  
from Sioux City Air Base, Well No. 2, received  
July 17, 1942.

Parts per Million  
(Mg. per liter)

Total Hardness, by Calculation, expressed as	
Calcium Carbonate (CaCO <sub>3</sub> ) - - -	580.
Alkalinity (Methyl Orange), expressed as	
Calcium Carbonate (CaCO <sub>3</sub> ) - - -	361.
Total Iron (Fe) - - - - -	1.2
Calcium (Ca) - - - - -	165.
Magnesium (Mg) - - - - -	40.
Chloride (Cl) - - - - -	15.
Sulphate (SO <sub>4</sub> ) - - - - -	290.
Color - - - - -	None
Turbidity - - - - -	30.
Hydrogen Ion Concentration (pH) -	7.4

UNITED STATES DEPARTMENT OF THE INTERIOR  
 Geological Survey  
 Water Resources Division

Ca 166

903  
 KDD  
 088-48W-25DBAA

W-1574

Water Quality  
 (ppm)

Card Q

State: OWA 16 County: WOODBURY 97 Town: SERGEANT BLUFF

Well No. Latitude 422415N Longitude 0962224 Seq. No. 1 Date M 1 D 0 Y 242

Sampling Depth 250 Type 1 Kx10<sup>6</sup>      pH 72 Temp. °F 59

SiO<sub>2</sub>      Ca  1658 Mg  36   Na   39   K      Source No.     

HCO<sub>3</sub>      CO<sub>3</sub>      SO<sub>4</sub>      Cl                    

Card R

Duplicate Columns 1-25 from Card Q

F      NO<sub>3</sub>      PO<sub>4</sub>      B      Al      Fe     

Mn      Cu      Pb      Zn     

Determined      Solids      Ca, Mg      Hardness Non-Carb.     

Color    No. R

Card S

Duplicate Columns 1-25 from Card Q

Br      I      Alk. as CaCO<sub>3</sub>      Free CO<sub>2</sub>      SAR     

RSC      ABS          

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

Verified PMJ

Punched PMJ

No. S  
 80

Recorded by: D. AARONSON

Punched by: \_\_\_\_\_ Date: \_\_\_\_\_

Published:

Sioux City Air Base No 2  
Groundwater files

August 10, 1942

Mr. L. A. Peter  
Chief, Water Division  
Buell & Winter Engineering Co.  
Sioux City Air Base  
Sioux City, Iowa

Dear Mr. Peter:

Mr. W. E. Hale of the U. S. Geological Survey has just transmitted to me your letter of July 30, concerning the No. 2 well at the Sioux City Air Base.

The information will be useful to us and we appreciate your cooperation and courtesy in furnishing it.

Very truly yours,

H. G. Hershey

HGH:B

Groundwater  
file.

**BUELL & WINTER ENGINEERING CO.**  
AND  
**WILLIAM BEUTTLER**  
ARCHITECT - ENGINEER

TELEPHONE 8-0621

**SIOUX CITY AIR BASE**  
SIOUX CITY, IOWA

July 30, 1942

U. S. Geological Survey  
Geology Annex  
Iowa City, Iowa

Attention: Mr. Wm. E. Hale

Gentlemen:

In answer to your request for test data on Well #2 at the Sioux City Air Base, Sioux City, Iowa, we advise as follows:

After this well had been cleaned and before beginning the test as called for by the specifications, the static water level stood at 28 ft. below the top of the casing. The well was tested for approximately 18 hours at an average rate of 650 gallons per minute and throughout the entire test the water remained clear. The pump at this time was set at 189 ft., this being from the top of the casing to the bottom of the tail pipe. After the 18-hour test was completed, the pump was speeded up so that a discharge of 785 gallons per minute was obtained. At this point the pump broke suction. This was indicated by the surging of the discharge, but the fact that no complete stoppage of water was experienced would indicate that at this rate of pumping, the flow of water through the strata is constant.

On the stoppage of the pump, the rate of recovery was timed and it was found that the water level rose in the casing at the following rates:

- 100 ft. in 3 minutes - 15 seconds
- 110 ft. in 4 minutes - 30 seconds
- 130 ft. in 7 minutes - 10 seconds
- 138 ft. in 10 minutes - 10 seconds
- 150 ft. in 38 minutes .
- 155 ft. in 53 minutes -

July 30, 1942

The pump was then operated at a discharge of 600 gallons per minute and the test was run at this rate for 2 hours with an operating water level of 158 ft. below the top of the casing. This procedure was repeated at 500 gallons per minute with a draw-down to 141 ft. below the top of the casing.

It was recommended that the order for the pump for this well be placed, having a discharge capacity of 600 gallons per minute against a total head of 320 feet.

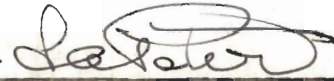
We are enclosing herewith one copy each of the chemical analysis for the two wells which have been drilled at this base. No bacteriological analysis has yet been obtained due to the fact that the system has not as yet been sterilized.

If there is any further information which we can furnish you, we trust that you will feel entirely free to call for the same.

Yours very truly,

BUELL & WINTER ENGINEERING CO.  
and WILLIAM BEUTTNER

By



L. A. Peter  
Chief, Water Division

LAP/ac

Talked to Ken Wahl about this information. He said use production for the open hole. Also he said that the perforated pipe was first to see if the screen was feasible. So the perm. esg. is as stated at the top with the screen.

WRD Exp. (04)  
Aug. 1964

U. S. DEPARTMENT OF THE INTERIOR  
Water Resources Division Well Schedule Form  
MASTER CARD

Verified PMJ  
Geological Survey

Recorded by: TWENTY E  
Source of data: FALTS  
Date: 6/25/65  
Map County: BARKER  
Scale: 1:62,360

State: IOWA County: WOODBURY  
Latitude: 42 29 15 N Longitude: 0 7 6 2 2 4 W  
Local well number: 088448W250828  
Local use: 01574  
Owner or name: U.S. AIR FORCE  
Address: SERGEANT BLVD 7A  
City: SIOUX CITY IA 50070  
Other number: W-1574

Ownership: County, City, Corp or Co, Private, State Agency, Water Dist  
Use of well: (A) Air cond., Comm, Dewatering, Fire, Dow, Irr, Ind, F, S, Stock, Wash, Unused  
Use of well: (B) Anode, Drain, Seismic, Obs, Oil-gas, Recharge, Spring, Test, Unused, Withdraw, Waste, Destroyed  
Data available: Well data: 1  
Freq. W/L meas.: INVENTORY  
Hyd. lab. data:  
Qual. water data: TYPE: COMPLETE  
Freq. sampling: ORIGINAL  
Aperture cards: YES

WELL-DESCRIPTION CARD  
Same as on master card: Depth well: 250 ft  
Depth casing: 209 ft  
Type: STEEL  
Finish: concrete, steel, open  
Method: air bored, cable, dip, jet, air reverse trenching, driven, wash, other  
Date drilled: JUNE 1942  
Driller: EASBROSSEAL WELL CO SIOUX CITY IA  
Power: diesel, circ. gas, gasoline, hand, gas, wind, h.p.

Alt. 150 ft  
Water level: 18.5 ft above MP  
Date: 3/15/64  
Drawdown: 13.6 ft  
Quality of water data: Iron 0.6 ppm  
SP-Conduct: 54 K x 10<sup>6</sup> ppm  
Temp: 54 F  
Altitude: 1091 ft  
Water level: 18.5 ft above MP  
Date: 3/15/64  
Drawdown: 13.6 ft  
Quality of water data: Iron 0.6 ppm  
SP-Conduct: 54 K x 10<sup>6</sup> ppm  
Temp: 54 F

Taste, color, etc.



Well No. 2. WELL LOG

FARM NO. \_\_\_\_\_ DATE May 24 1942  
OWNER SIOUX CITY OIL Base  
ADDRESS SIOUX CITY Ia.  
LOCAT'N OF WELL SARGENT BLUFF  
STYLE 16" cased 224'

SIZE	DEPTH	STYLE OF PIPE
16"	20'	WW PIPE.
10"	10.6"	TOP OF SCREEN
9 1/2"		LINE 189' OF 3/8" PIPE.

CYLINDER \_\_\_\_\_  
PUMP TEX 6 in.  
SCREEN 26, 18 in.  
WATER LEVEL 10" X 20' EVERYDAY 100 SLIP  
CAPACITY 200 GAL PER MIN.  
STYLE POWER \_\_\_\_\_

REMARKS 16" Hole Drilled Through Sandstone - 10" screen set and 20 size gravel placed around screen (1d bar.)  
DRILLER \_\_\_\_\_

088-48 West 2nd

Well Number 42 24 15 3096 22 3  
HYDROGEOLOGIC CARD

NAME AS ON WATER CARD \_\_\_\_\_ Physiographic Province: CENTRAL IOWA Section: DISSECTED TILL

Release: Missouri Substrate: \_\_\_\_\_

Top of well site: local depression, flat surface, hilltop, hillside, terrace, valley flat

MAJOR AQUIFER: CRETACEOUS Lower KILLBUCK DAKOTA SANDSTONE  
 system SANDSTONE aquifer formation, group

Lithology: FINE Length of well open to: 20 ft. Drilling: MAGNITE ft. Diameter: 30 ft.

MINOR AQUIFER: \_\_\_\_\_ system \_\_\_\_\_ aquifer formation, group

Hydrology: \_\_\_\_\_ system \_\_\_\_\_ aquifer formation, group

Depth to consolidated rock: \_\_\_\_\_ ft. Source of data: SCOPE 214 ft.

Depth to baseament: \_\_\_\_\_ ft. Source of data: \_\_\_\_\_ ft.

Surface material: ALLODIPLOM Infiltration characteristics: POOR

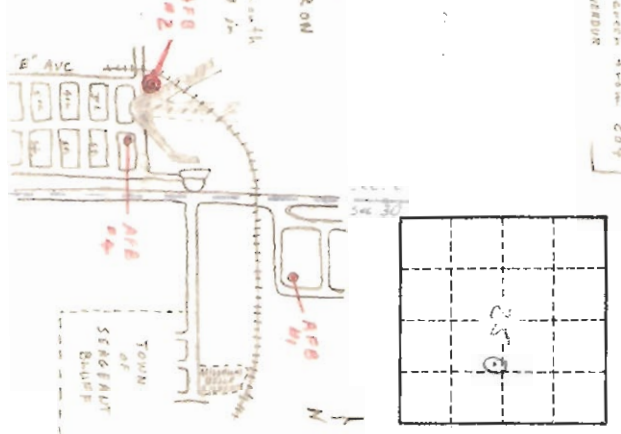
Efficiency: \_\_\_\_\_ Storage: \_\_\_\_\_

Coefficients: \_\_\_\_\_

Yield: \_\_\_\_\_ gal/ft<sup>2</sup> Specific capacity: 9.9 gal/ft<sup>2</sup>; Number of geologic cards: \_\_\_\_\_

28310/6:  
16" casing 0-204'  
10" casing = 194-229'  
PUMP TEST: Pump set at 189'  
1.8 hours at 650 gpm - water clear  
→ at 785 gpm - breaks surface  
When pump was stopped, the water level in the following wells:  
100' in 3.71"  
110' in 3.80"  
130' in 7.10"  
138' in 7.70"  
150' in 28 minutes  
155' in 33 minutes

Water in situation is well in IRON



9-185--July 1935  
Revised

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
WATER RESOURCES BRANCH

WELL SCHEDULE

Date June 23, 19 42 Field No. 2

Record by TWR AND WEH Office No. \_\_\_\_\_

Source of data obs and driller

1. Location: State Iowa County Woodbury

Map NE 1/4 SE 1/4 sec. 24 T 88 N. R. 48 W

2. Owner: U.S. Army Air Base Address Sioux City

Tenant \_\_\_\_\_ Address \_\_\_\_\_

Driller H. Rasmussen Address \_\_\_\_\_

3. Topography Flood plain of Missouri R.

T. C. Is 1094.9  
4. Elevation \_\_\_\_\_ ft. above sea level

5. Type: Dug, drilled, driven, bored, jetted June 9 42

6. Depth: Rept. \_\_\_\_\_ ft. Meas. \_\_\_\_\_ ft.

7. Casing: Diam. \_\_\_\_\_ in. to \_\_\_\_\_ in. Type \_\_\_\_\_

Depth \_\_\_\_\_ ft. Finish Gravel pack & screen

8. Chief Aquifer Dakota sandstone From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Others \_\_\_\_\_

9. Water level \_\_\_\_\_ ft. Meas. \_\_\_\_\_ ft. 19 \_\_\_\_\_ above  
\_\_\_\_\_ below

10. Pump: Type 2 stage 12" Fairbanks Morse, set at 180 feet  
which is \_\_\_\_\_ ft. below surface

Power: Kind \_\_\_\_\_ Horsepower \_\_\_\_\_

11. Yield: Flow \_\_\_\_\_ G. M. Pump 750 G. M. Meas. Rept. Est. \_\_\_\_\_ G. M.

Drawdown \_\_\_\_\_ ft. after \_\_\_\_\_ hours pumping \_\_\_\_\_

12. Use: Dom., Stock, PS., RR., Ind., Irr., Obs.

Adequacy, permanence \_\_\_\_\_

13. Quality \_\_\_\_\_ Temp \_\_\_\_\_ °F.

Taste, odor, color \_\_\_\_\_ Sample Yes \_\_\_\_\_ No \_\_\_\_\_

Unfit for \_\_\_\_\_

14. Remarks: (Log, Analyses, etc.) \_\_\_\_\_

