

**DRILLER'S NOTEBOOK**

II

W 8231

**WELL RECORD**

DRILLER Charles Jacobs

ADDRESS Harlan, Ia

.....

OWNER Harlan Drilling Co

ADDRESS Harlan, Ia

.....

RETURN TO  
**IOWA GEOLOGICAL SURVEY**  
**IOWA CITY, IOWA**

## DRILLER'S NOTE

It is important that a driller's notebook, filled out as completely as possible, be sent to the Iowa Geological Survey at the completion of each hole. A number of drillers have found it convenient to string samples from a single well on a heavy wire and attach the log book to them. A hole has been punched in the log book for this purpose.

Sample sacks and log books will be furnished by the Geological Survey. A copy of the log book will be made and returned if desired by the driller.

## SUGGESTIONS TO DRILLERS

1. Samples should be taken from each bed passed through, and never more than 5 feet apart, even in the same bed.

2. Samples should not be washed, except to remove excess drilling mud, as washed samples may give a wrong idea of the character of the bed.

3. Fill out the label on each sample bag with the name of the well and the depth interval which the sample represents.

4. Make frequent use of the "Description" column to explain the material being drilled.

5. Note depth and thickness of all water-bearing layers.

6. Note the quality of the water from each layer: as hard, soft, salty, alkaline, or sulphur bearing.

7. Note height to which water from each layer rises in well, and give flow or capacity in gallons per minute.

8. Fossils, such as oyster, clam, and other shells, are important and should be placed in bags with the material with which they are found and carefully labeled as to the depth from which they were obtained.

9. If you do not understand what is wanted, or desire information on any point, write to the Iowa Geological Survey, Iowa City, Iowa.

10. Samples may be boxed and sent to IOWA GEOLOGICAL SURVEY, IOWA CITY, IOWA, EXPRESS COLLECT.

The Iowa Geological Survey desires to assist and cooperate with owners and drillers in every way possible, and will be glad to answer questions and assist in the solution of problems at any time.

PB-10825-SP

## WELL RECORD

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

Harlan in Skelly  
 (Nearest Town) (County)

in the ..... $\frac{1}{4}$ ..... $\frac{1}{4}$  Sec.....T.....R.....

Owner City of Harlan Well No. #2

Postoffice address Harlan, Ia

Contractor Harlan Drilling Co.

Address Harlan, Iowa

Driller Charles J. Jacobs

Well begun Dec 5, 1956;

completed Feb 24, 1957

Rig used—Cable, Rotary, Jet, or Rotary

Depth of well 1040'  
 (Feet)

Size of hole (note total amount of each size) 10"

to 450' - 8" 622' - 6" to 970'

Main water supply at 900'  
 (Feet below surface)

Final water head 250 below  
 (Feet above or below surface)

Is well pumped?.....

Yield .....  
 (Gallons per minute)

Water level when pumping.....

Position of well valley  
 (Upland, valley, side hill, etc.)

Date and Time	Water Level	SOURCE OF WATER		Production in Gallons per Minute	Pumping Level
		Depth	Type of Rock		

### 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

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

Is screen used? no Diameter..... (Inches)

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

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

Are packers or seals used?.....

Kind .....

Where used.....

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

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

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

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

Remarks on construction of well Hard drilling

**NOTE:** Water levels should be recorded at time of change AND at regular intervals; for example each morning before drilling starts or at the end of each 100 feet of drilling.

Sample No.	DEPTH		THICKNESS
	From	To	
	201	202	1'
	202	205	3'
	205	207	2'
	207	208	1'
	208	211	3'
	211	226	15'
	226	242	16'
	242	246	4'
	246	247	1'
	247	249	2'
	249	253	4'
	253	257	4'
	257	263	6'
	263	273	10'
	273	275	2'
	275	282	7'
	282	302	20'

DESCRIPTION OF BEDS	
KIND OF ROCK, COLOR, HARD OR SOFT, WATER, ETC.	
Limestone	(white)
Shale	(grey)
Shale	(grey)
Lime	(white)
Shale	grey
Lime + shale	streaks
Shale	DK. grey
Lime	grey
Shale	LT. grey
Lime	white
Shale	
Lime + shale	streaks
Lime	
Shale	
Lime	
Lime + (shale) (most)	(1/4)
Lime + shale	streaks

Sample No.	DEPTH		THICKNESS
	From	To	
	302	355	53'
	355	359	4'
	359	362	3'
	362	363	1'
	363	364	1'
	364	382	18'
	382	385	3'
	382	392	8'
	392	401	9'
	401	402	1'
	402	422	20'
	422	470	48'
	470	513	43'
	513	533	20'
	533	553	20'
	553	573	20'
	573	620	47'

DESCRIPTION OF BEDS	
KIND OF ROCK, COLOR, HARD OR SOFT, WATER, ETC.	
Shale	Rainbow
Lime	
Lime + shale	streaks
Shale	
Lime	
Shale	
Shale	
Lime	
Shale	
Lime	
Shale	
Lime	
Shale	Red
Shale	Rainbow
Shale	white + grey
Shale	red-white + grey
Shale	grey
Shale	white + grey
Shale	grey



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

W 8231


Location:  
Town: HARLAN (NE) (SW) : County SHELBY  
sec. \_\_\_\_\_ T. 79 N., R. 38 W. \_\_\_\_\_ Twp.

Well name and number \_\_\_\_\_

Owner CITY OF HARLAN #2 Address \_\_\_\_\_

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

Contractor HARLAN DRIG. CO. Address HARLAN, IOWA.

Drillers CHARLES JACOBS

Drilling dates DEC. 5, 1956 - JAN. 24, 1957

Well data:  
Altitudes: Drilling curb \_\_\_\_\_ feet; Land surface 1181.5 feet

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

Topographic position VALLEY

Total depth: Reported 1040 feet, Measured \_\_\_\_\_ feet

Drilling method ROTARY

Hole and casing data 10" To 450'  
8" To 622'  
6" To 972'

Original depth to water 250 above ft. below \_\_\_\_\_ Date \_\_\_\_\_

Source of data \_\_\_\_\_

Sources of water: Principal 972

Others \_\_\_\_\_

Production Data

Date \_\_\_\_\_  
 Static water level 250 \_\_\_\_\_  
 Measuring point \_\_\_\_\_  
 Pumping water level \_\_\_\_\_  
 Yield (g. p. m.) \_\_\_\_\_  
 Duration of pumping \_\_\_\_\_  
 Specific capacity \_\_\_\_\_

Pump Data

Type pump \_\_\_\_\_ Column diameter and length \_\_\_\_\_  
 Cylinder or bowls diameter and length \_\_\_\_\_  
 Suction pipe \_\_\_\_\_ Airline \_\_\_\_\_  
 Power \_\_\_\_\_ Production \_\_\_\_\_ g. p. m. for \_\_\_\_\_ hours per day  
 Use of water \_\_\_\_\_

Dissolved constituents and properties (in parts per million except as indicated)

Date sampled \_\_\_\_\_  
 Sampled by \_\_\_\_\_  
 Silica (SiO<sub>2</sub>) \_\_\_\_\_  
 Iron (Fe) \_\_\_\_\_  
 Manganese (Mn) \_\_\_\_\_  
 Calcium (Ca) \_\_\_\_\_  
 Magnesium (Mg) \_\_\_\_\_  
 Potassium (K) \_\_\_\_\_  
 Sodium (Na) \_\_\_\_\_  
 Carbonate (CO<sub>3</sub>) \_\_\_\_\_  
 Bicarbonate (HCO<sub>3</sub>) \_\_\_\_\_  
 Sulfate (SO<sub>4</sub>) \_\_\_\_\_  
 Chloride (Cl) \_\_\_\_\_  
 Fluoride (F) \_\_\_\_\_  
 Nitrate (NO<sub>3</sub>) \_\_\_\_\_  
 Dissolved solids \_\_\_\_\_  
 Hardness (as CaCO<sub>3</sub>) \_\_\_\_\_  
     Total \_\_\_\_\_  
     Grains per gallon \_\_\_\_\_  
     Noncarbonate \_\_\_\_\_  
 Alkalinity (as CaCO<sub>3</sub>) \_\_\_\_\_  
 pH \_\_\_\_\_  
 Specific conductance \_\_\_\_\_  
     (micromhos at 25°C) \_\_\_\_\_  
 Temperature (°F) \_\_\_\_\_  
 Analysis No. \_\_\_\_\_

Laboratory Data

Well No. W 8231 Sample range 355-1040 No. of samples 130  
 No. of dupls. and cond. 0 *In sufficient sample for duplicate.* Washed range 880-1040  
 Samples prepared by POW Date 3/29/57  
 Logged by Northrup Date May 1957  
 Correlations by \_\_\_\_\_ Date \_\_\_\_\_





UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey  
Water Resources Division

Local Well No. 079-38W-198A

Aquifer Code(s) MIRG MIRH

Owner's Name HARLAN CITY WELL #2 (1957)

W Number 08231

Water Quality  
(ppm)

Card Q

State: IOWA 1 2 1 9 County: SHELBY 3 4 8 3 Town: HARLAN, IOWA

Well No. Latitude 4 1 3 8 4 0 N Longitude 0 9 5 1 9 0 0 Seq. No. 1 Date M D Y 0 9 1 4 6 0

Sampling Depth 1 0 4 0 Type 1 Kx10<sup>6</sup> 2 2 4 0 pH 8.1 Temp. °F 6 4

SiO<sub>2</sub> 1 0 Ca 3 4 Mg 1 6 Na 4 4 2 K 1 2

HCO<sub>3</sub> 3 8 4 CO<sub>3</sub> 5 SO<sub>4</sub> 6 3 3 Cl 1 1 0 1 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 8.8 NO<sub>3</sub> 1.8 PO<sub>4</sub>     B     Al     Fe 2.4

Mn     Cu     Pb     Zn    

Determined     Solids     Hardness     Non-Carb.    

Color     No. R

Card S

Duplicate Columns 1-25 from Card Q

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

RSC     ABS            

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

No. S  
80

Recorded by: D. AARONSON

Punched by:     Date:    

Published:

UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey  
Water Resources Division

Local Well No. 079-38W-19BA

Aquifer Code(s) MIKG MIKH

Water Quality  
(ppm)

Owner's Name HARLAN CITY WELL #2 (1957)

W Number 08231

Card Q

State: IOWA 1 2 19 County: SHELBY 3 4 83 Town: HARLAN, IOWA

Well No. Latitude 413840N Longitude 0951900 Seq. No. 1 Date M D Y 060557

Sampling Depth 1040 Type 1 Kx10<sup>6</sup> 2170 pH 8.1 Temp. °F 68

SiO<sub>2</sub> 11 Ca 27 Mg 15 Na 486 K 14

HCO<sub>3</sub> 381 CO<sub>3</sub> 14 SO<sub>4</sub> 649 Cl 110 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 10 NO<sub>3</sub> 4 PO<sub>4</sub>  B  Al  Fe 16

Mn 05 Cu  Pb  Zn

Solids  Hardness

Determined 1510 Calc.  Ca, Mg 128 Non-Carb. 0

Color  No. R

Card S

Duplicate Columns 1-25 from Card Q

Br  I  Alk. as CaCO<sub>3</sub> 336 Free CO<sub>2</sub>  SAR

RSC  ABS

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

No. S  
80

Recorded by: D. AARONSON

Punched by: T Date: 1/21

Published: \_\_\_\_\_