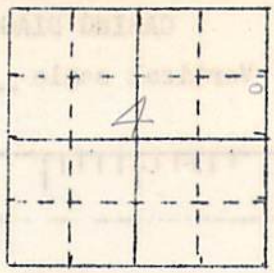
W-1067

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

RECORD OF WELL



Location:

Town: Colesburg (N E S W); County Delaware E.

NE SE NE sec. 4 T. 90 N., R. 3 W. Colony Twp.

Well name and number Colesburg Town Well #1

Owner Town of Colesburg Address _____

Tenant _____ Address _____

_____

Contractor Vasnes Address Dubuque

Drillers _____

Drilling dates June 19 to October 30, 1939

Well data:

Elevations: Drilling curb 1140 feet; Land surface _____ feet

_____

_____

Determined by _____

Topographic position _____

Total depth: Reported 822 feet, Measured _____ feet

_____

Drilling method _____

Hole and casing data 12½" hole 0-73', 8" hole 73'-822'
(Give amount, size, kind, and depth of all casing; type and
74' of 8" grouted; 227'5" of 5" with packer from 235'-462'
position of seals and packers; cementing; how finished--perforated pipe, screen,
gravel pack, open hole, etc.)

_____

_____

_____

Original depth to water 181 ft. ~~above~~ below _____ Date _____

Original elevation of water level 959 ft.; Source of data Howard Green

_____

Sources of water: Principal St. Peter; Others _____

_____

Production data: Date Oct 1939

Static depth to water 181 Measuring point

Pumping level 480 at 15.5 g.p.m.

Specific capacity g.p.m. per ft. drawdown; Temperature 52 °F.

Pump data; Type pump Lift & force Column Dia. Length 500

Cylinder or bowls: Dia. Length Suction pipe 10

Power Airline

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

Use of water

WATER ANALYSES (in parts per million)

Date sampled	April 10, 1945			
Sampled by	W.H. Stephenson			
Total solids	404			
Insoluble matter	16.0			
Alkalinity (Meo)	252.0			
Alkalinity (Phn)	0.0			
pH	7.4			
Fe_2O_3+ Mn_2O_3+Al_2O_3	5.0			
Alkali as sodium	18.4			
Calcium	84.0			
Magnesium	31.8			
Iron (unfiltered)	0.8			
Manganese	Tr.			
Nitrate	40.0			
Fluoride	0.2			
Chloride	26.0			
Sulfate	39.4			
Bicarbonate	315.5			
Hardness (ppm)	337			
Hardness (gpg)	19.7			

Remarks

Laboratory data: Sample storage location

Sample range 0-820 No. spls. 163 No. dupls. & cond. 163 good

Spls. prepared by Summerfield Washed range by

Driller's log and cond. yes good

Insoluble residues: Prepared by Studied by Strip log

Microscopic study ✓ strip log ✓

Gen. log Correl. by Elias, Anderson & Heathman

CITY WELL

COLESBURG, IOWA

DATE STARTED - 6-19-39

DATE COMPLETED - 10-30-39

DEPTH- 822'

DIAMETER- 73' of 12½" - 8" to bottom

CASING- 74' of 8" grouted; 227'5" of 5" with packer

STRATA RECORD

Depth From	To	Thickness	Description of Beds
Top	15	15	No Record
15	44	29	Some flint; clay falling in
44	53	9	Red clay and flint
53	55	2	Lime, gray, very hard
55	64	9	Niagara Lime
64	75	11	Lime and flint
75	85	10	Limestone, gray
85	90	5	Limestone, gray; some flint
90	110	20	Limestone, gray
110	130	20	Limestone, light brown
130	135	5	Limestone, brown and white
135	150	15	Lime, brown; white rock
150	165	15	Limestone, brown
165	185	20	Limestone, grayish brown
185	200	15	Limestone, brown
200	210	10	Limestone, brown, hard
210	225	15	Limestone, gray, hard
225	240	15	Limestone, gray
240	242	2	Limestone, and blue shale
242	257	15	Shale, blue
257	369	112	Shale
369	372	3	Shale and blue rock
372	380	8	Blue rock
380	390	10	Gray rock
390	414	24	Shale
414	417	3	Shale and blue rock
417	424	7	Blue rock
424	441	17	Shale
441	447	6	Shale, brown
447	460	13	Blue rock
460	470	10	Gray rock
470	495	25	Platteville Lime
495	670	175	Limestone
670	676	6	Blue rock
676	694	18	Blue rock, hard
694	710	16	Blue rock
710	715	5	Shale
715	761	46	Blue rock

STRATA RECORD CON'T

From	To	Thickness	Description of Beds
	Depth		
761	770	9	Shale
770	807	37	Sandstone
807	815	8	Sand and lime
815	817	2	Lime
817	822	5	Sandstone

STATIC WATER LEVELS

From	To	Level
Top	200	Dry
200	225	187'
225	242	190
242	372	200
372	555	186
555	741	190
741	763	194
763	771	192
771	780½	198
780½	790	200
790	800	199
800	801	191
801	812½	190
812½	817½	205
817½	819	196
819	822	182

Drilled by -

C. W. Varner
905 Dubuque Bldg.,
Dubuque, Iowa.

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa
Generalized Well Log
Based on Examination of Drill Cuttings

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Name of Well Colesburg City Well #1 Survey No. W. 1067

Location NE¼ SE¼ NE¼ Sec. 4, T. 90 N., R. 3 W. County Delaware

Total depth 822 ft. Drilled by Varner Well Co. Date 1939

Curb elevation 1140 ft. Static level 181 ft.; Drawdown 299 ft. at 15 g.p.m.

Casing and hole size record

Description of Formation	Thickness	Depth in feet From	To
Pleistocene System			
(Loess and pebbly clay)	40	0	40
Silurian System			
Dolomite with heavy chert beds at top	202	40	242
Ordovician System			
Maquoketa formation			
Brainard (dolomitic shale)	128	242	370
Ft. Atkinson (dolomite and chert)	30	370	400
Elgin (dolomitic shale)	50	400	450
Galena formation			
Dubuque (dolomite and limestone)	35	450	485
Stewartville (dolomite and limestone)	78	485	563
Prosser (dolomite, limestone and chert)	107	563	670
Decorah formation			
(limestone and shale)	46	670	716
Platteville formation			
McGregor (limestone)	28	716	744
Pecatonica (dolomite)	18	744	762
Glenwood (shale)	8	762	770
St. Peter formation (sandstone)	52	770	822 T. D.

COLESBURG TEST
COLESBURG, IOWA

Date - Sept. 13, 1939

Pump placed to a depth of 281'
Static Level - 200'
Airline - Out of order
Started pumping just to see if we had any volume of water and to pump out mud.

Started pumping at 36 Min. & 40 Sec. after 10 A.M.
Flow at start 22 gal. per min. - gradually dropped

At 51 Min. & 45 Sec. after 10 to 11 o'clock - 8 Min. & 15 Sec.
Pumped 55 gal.

Stopped at 11:09

Started at 30 Min. & 15 Sec. after 11 o'clock to 33 Min. & 10 Sec. after 11 o'clock - 2 Min. & 55 Sec.
Pumped 60 gal.

Waited 15 Minutes

From 52 Min. & 30 Sec. after 11 o'clock to 54 Min. & 50 Sec. after 11 o'clock - 2 Min. & 20 Sec.
Pumped 50 gal.

From 58 Min. after 11 o'clock to 40 Min. & 50 Sec. aft 12 o'clock - 46 Min. & 50 Sec.
Pumped 110 gal.

C. W. Varner
905 Dubuque Bldg.,
Dubuque, Iowa.

IOWA GEOLOGICAL SURVEY
Water Analysis Comparison

Town _____ County: _____ Location _____ Sec. _____ T. _____ N., R. _____ E. W.

Owner _____ Contractor: _____ Date Started: _____

	1	2	3	4	5	6
Well Number or Location	Colesburg City #1	Colesburg Creamery	Elkader			
Depth of Sample						
Formation Source	St. Peter	Silurian	Jordan			
Water Level Below Curb	181	50	8			
How Sampled						
Sampled by						
Date Sampled	4/10/45	5/4/45	9/13/44			
Total Solids	404	397	345			
Dissolved Solids						
Insoluble Matter	16.0	6.0	2.5			
Alkalinity (MeO)	257.0	262.0	259.0			
Nitrite (NO_2)						
Nitrate (NO_3)	9.0	7.2	0.30			
Sodium (Na) & Potassium (K)*	18.4	17.2	5.7			
Calcium (Ca)	84.0	77.2	70.8			
Magnesium (Mg)	31.8	31.5	35.5			
Iron (Fe)						
Iron (Unfiltered)**	0.8	0.3	Trace			
Manganese (Mn)	Trace	0.00	0.00			
Aluminum (Al)						
Fluorine (F)	0.2	0.1	0.5			
Chlorine (Cl)	26.0	22.5	3.0			
Sulphates (SO_4)	39.4	27.4	61.7			
Bicarbonates (HCO_3)	313.5	319.6	316.0			
Phosphates (PO_4)						
Borates (BO_3)						
Calculated Hardness***	337.	323	323			
Water Lab. Number						

*Na and K not separated, calculated as Sodium (Na): **Includes iron precipitated or flocculated after sample collected: ***Calculated as $CaCO_3$.

Completed Depth _____ ft.; Final Static Water Level _____ ft.; Production _____ GPM; Draw-down _____ ft., at _____ GPM; Gallons per foot draw-down _____. Date Completed _____ 194..

Remarks: _____