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DIVISION OF WATER RESOURCES

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GROUND-WATER RESOURCES OF NORTHWESTERN INDIANA

Preliminary Report: Jasper County

Prepared by the

GEOLOGICAL SURVEY

UNITED STATES DEPARTMENT OF THE INTERIOR

In cooperation with the

DIVISION OF WATER RESOURCES

INDIANA DEPARTMENT OF CONSERVATION

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Donald E. Foltz, Director

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BY

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ABSTRACT

Jasper County, in northwestern Indiana, has an area of about 562 square miles. Glaciofluvial sand and gravel of Pleistocene age is the chief source of ground water in the northern third and the south-central part of the county. Wells that tap this source generally are less than 100 feet deep and yield as much as 500 gpm (gallons per minute). The dolomitic limestone and dolomite of Silurian and Devonian age are used extensively in the southern two-thirds of the county. Wells that tap these sources generally are less than 250 feet deep and yield as much as 1,000 gpm. Water from the rocks of Silurian, Devonian, and Pleistocene age varies somewhat in chemical quality. Field chemical analyses show that the hardness of water from rocks of Silurian and Devonian Age generally is greater than 100 and less than 350 ppm (parts per million). The hardness of water from rocks of Pleistocene age generally is greater than 120 and less than 350 ppm.

This preliminary report contains tabulated records of about 440 wells and test holes giving information about well construction, water level, condition of occurrence, and characteristics of water-bearing material; selected logs for about 70 wells and test holes giving driller's description of material penetrated and authors' interpretation of their geologic age; results of about 310 field chemical analyses giving hardness of water and the bicarbonate, chloride, iron, and sulfate contents; and water levels in 6 observation wells indicating the magnitude of short-term and long-term water-level fluctuations in the consolidated and unconsolidated rocks. These basic data include much of the material to be used in an interpretive report on the ground-water resources and geology of the area.

A base map of Jasper County shows the location of each well or test hole listed in this report. Additional maps show the availability of ground water in the county and the areal distribution of hardness of water from the consolidated rocks of Silurian and Devonian age and the unconsolidated rocks of Pleistocene age.

INTRODUCTION

Purpose and Scope

An investigation of the ground-water resources and geology of 10 counties in northwestern Indiana has been in progress since June 1954. This investigation is being made by the U. S. Geological Survey in cooperation with the Division of Water Resources, Indiana Department of Conservation, as a part of a broad program of these agencies to inventory and evaluate the ground-water resources of Indiana.

This report is the ninth of a series of preliminary reports to be published on the ground-water resources and geology of northwestern Indiana. The purpose of the report is to make the basic data collected during the investigation available to the public and to provide a preliminary evaluation of the ground-water conditions and geology as an aid to development of ground-water resources. A more detailed and comprehensive analysis is in progress and will be published in an interpretive report on the ground-water resources and geology of the area.

The investigation was made under the immediate supervision of C. M. Roberts, district geologist for Indiana.

Location and Areal Extent

Jasper County is in the northwestern part of Indiana (fig. 1). The county is roughly rectangular and includes about 562 square miles. It is bounded on the north by Lake and Porter Counties, on the south by Benton and White Counties, on the west by Newton County, and on the east by Pulaski and Starke Counties.

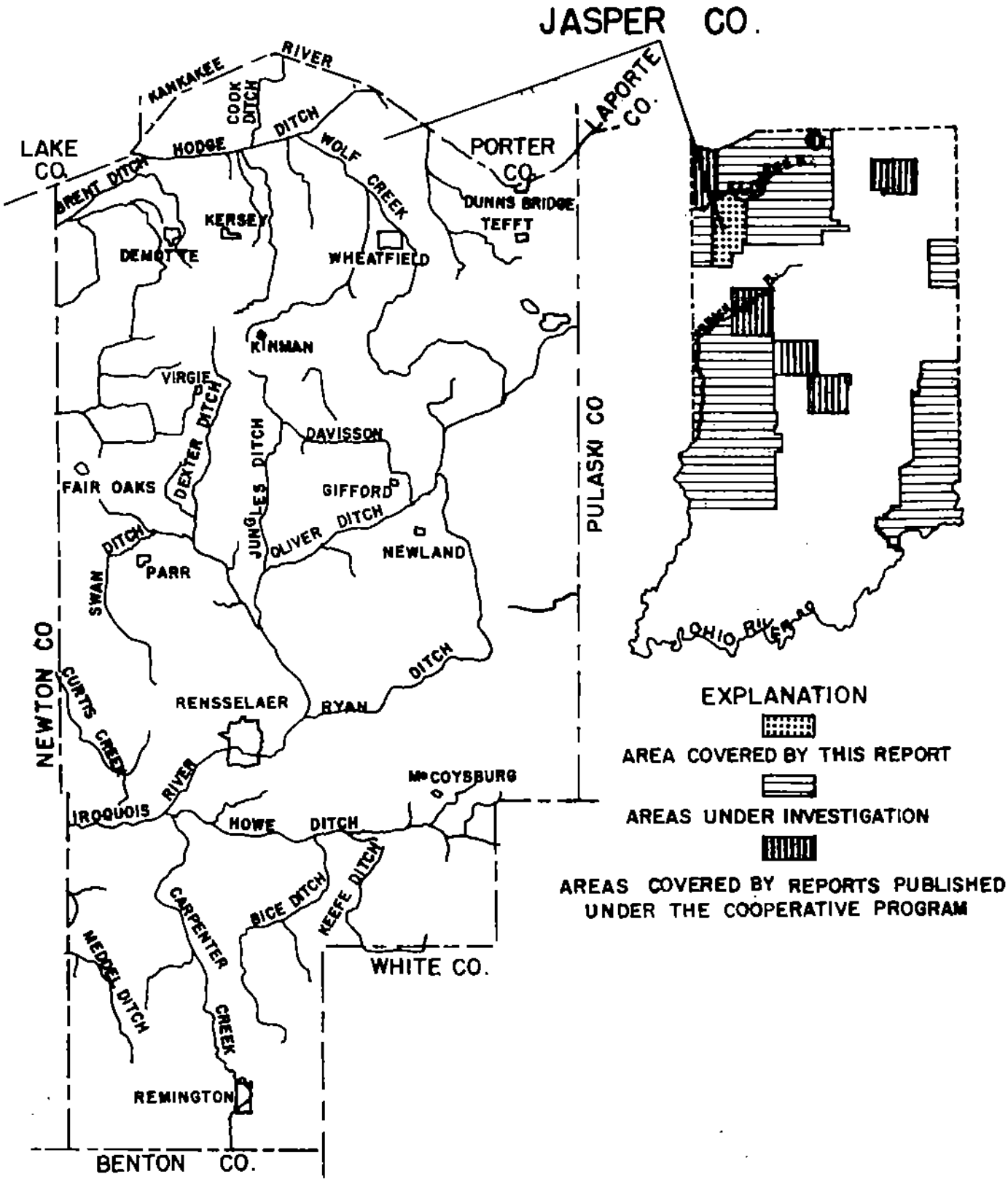

FIGURE I. --Map of Indiana, showing area covered by this report, areas under investigation, and areas covered by reports published under the cooperative program.

Well-Numbering System

A numbering system is used to locate and identify the wells and test holes in this report. The number that is assigned each well or test hole indicates its location according to the official rectangular public-land survey. For example, in the number for well 29/5W-13R1, the numbers preceding the hyphen indicate that the well is in T. 29 N., R. 5 W. The first number after the hyphen indicates the section in which the well is located. Each quarter-quarter section (40-acre tract) within a section is assigned a letter symbol as shown on figure 2. Within the quarter-quarter section the wells and test holes are numbered consecutively. Therefore, well 13R1 is the first well listed in SE¼SE¼ sec. 13, T. 29 N., R. 5 W.

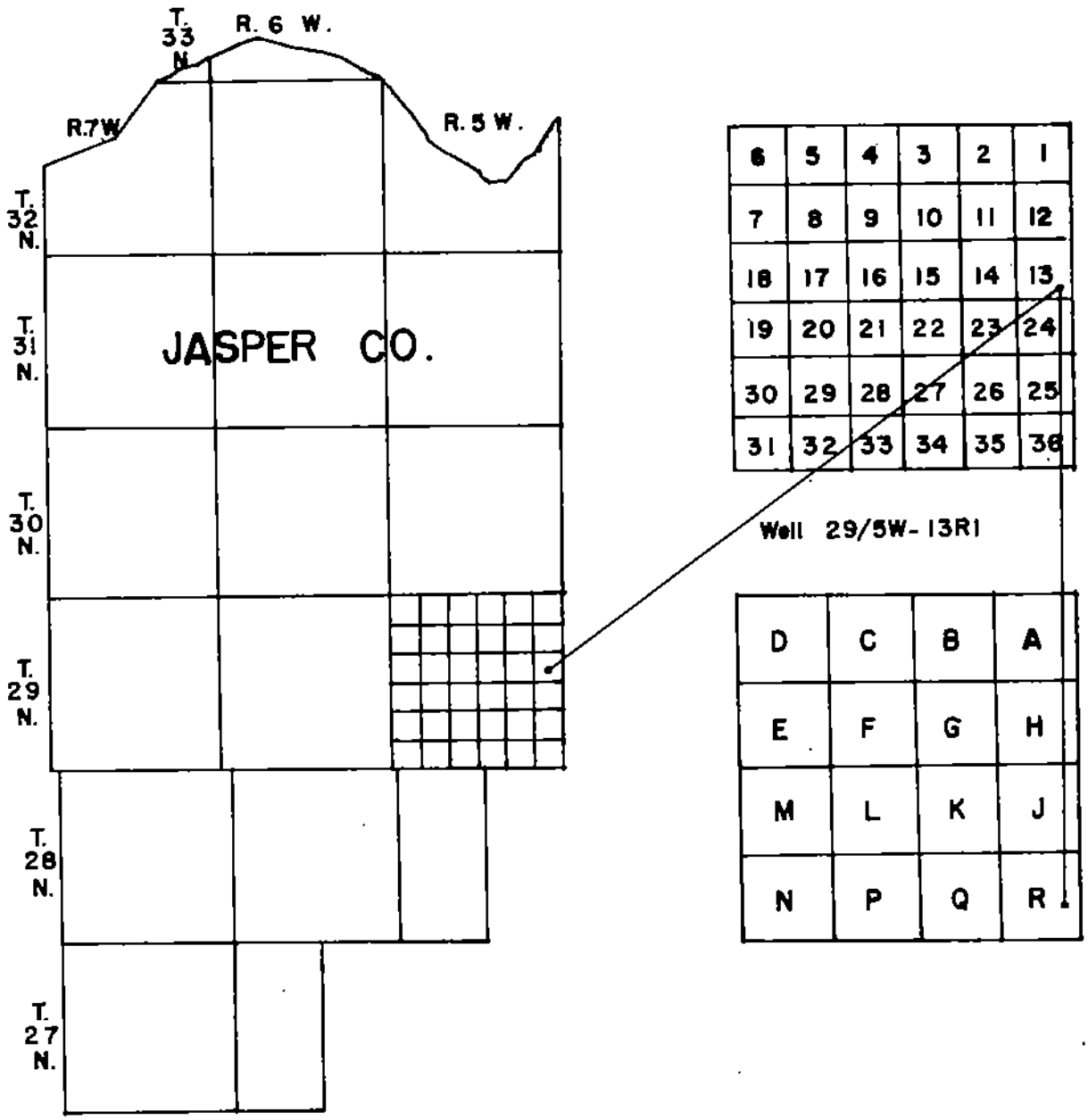

FIGURE 2.-- Sketch showing well-numbering system

Acknowledgments

The authors thank all persons who contributed time, information, and assistance during the collection, tabulation, and processing of data for this report. R. J. Vig, formerly of the Geological Survey, and H. C. Kost of the Indiana Department of Conservation assisted in processing the data in the field. Well drillers, whose names are listed in the table of well records, furnished information summarized in tables 3 and 4.

The authors also thank the following government agencies which provided information for the report: Divisions of Oil and Gas, Water Resources, and the Geological Survey, Indiana Department of Conservation and Indiana State Board of Health.

DATA COLLECTION AND PROCESSING

The well data were collected principally from drillers, water-works superintendents, and owners. The well records obtained from the drillers were of two types--written records and reports from memory. Tentative driller's locations were checked against the property records in the County Courthouse to verify the location, to locate the property, and to obtain the name of the current property owner. The locations of wells were checked further in the field if major discrepancies existed between the reported location and the property record in the plat books, if the location given could not be verified from county records, or if the verified location was not sufficiently accurate to be used.

Planimetric maps were prepared for the areas not covered by standard 7½ minute quadrangle maps of the U. S. Geological Survey so that wells and test holes could be accurately located in the field. These maps were compiled with a vertical sketchmaster from aerial photographs using the horizontal control shown on published Army Map Service maps which were photographically enlarged to scale 1:31,680.

Plate 1 shows the location of water wells and test holes and test holes drilled for purposes other than water supply. Most of these locations are shown to the nearest 10 acres. The basic data for these wells and test holes are summarized in table 3. In addition, selected driller's logs of wells and test holes are given in table 4.

Samples of water were collected at the time well sites were visited. These water samples were analyzed in the field office for hardness of water and alkalinity (expressed as bicarbonate) and chloride and sulfate contents by standard titration methods. The iron content of the water was determined at the well site immediately after the sample was collected. A visual method was used to determine the iron concentration in parts per million by matching the color of the treated sample to that of a liquid-color standard having a known iron concentration. The results of the field chemical analyses (table 5) were used to select sites for collecting larger water samples for more comprehensive chemical analyses by the laboratory of the U. S. Geological Survey.

Observation wells were established prior to and during the investigation in order to obtain relative changes in storage in the ground-water reservoir. Table 6 contains the water-level data collected from these wells. The observation wells were chosen so as to obtain water-level information from artesian and water-table aquifers. Wherever possible, the wells were established at sites where the factors affecting the water levels in the aquifer were due chiefly to natural causes.

GENERAL GEOLOGY AND SOURCES OF GROUND WATER

The oldest known consolidated rocks underlying Jasper County are of Cambrian and Ordovician age. These rocks consist of dolomite, dolomitic limestone, sandstone, shale, and siltstone. The rocks of Cambrian and Ordovician age are not used as a source of water because they generally lie more than 1,300 and 650 feet respectively below the surface and the water they contain is probably highly mineralized.

The rocks of Ordovician age are overlain by dolomitic limestone, shale, and dolomite of Middle Silurian age. These rocks are utilized extensively in the west-central part of the county as a source of water for domestic, stock, and public supplies. Wells that tap this aquifer are generally less than 150 feet deep and yield as much as 600 gpm (gallons per minute). Much of the material of Silurian age listed in table 3 as limestone or limestone? is either dolomitic limestone or dolomite.

The rocks of Silurian age are overlain by dolomitic limestone and dolomite of Middle Devonian age. These rocks underlie blue-black bituminous shale of Devonian age (Logan, 1932) or Devonian and Mississippian age (Patton, 1956). The dolomitic limestone of Middle Devonian age is used extensively in the southern part of the county for domestic, stock, and public supplies. Wells that tap this aquifer are generally less than 250 feet deep and yield as much as 1,100 gpm. The shale of Devonian and Mississippian(?) age is used as a source of water locally in the southwestern part of the county and wells that tap this source yield from less than 1 to 10 gpm.

The shale of Devonian and Mississippian(?) age is overlain by limestone, shale, and sandstone of Mississippian age. These rocks are used as a source of water in a small area in the extreme southwestern part of the county.

The bedrock is overlain by unconsolidated glacial drift of Pleistocene age. The drift forms several topographic features in the county (Leverett and Taylor, 1915, pl. 6; Wayne, 1958) such as the Marsailles moraine in the south-central part; the ground moraine in the southwestern and central parts; the glaciolacustrine plains in the southwestern part; and the sand-covered glaciofluvial plains in the northern and southeastern part.

The unconsolidated rocks of Pleistocene age range in thickness from less than 10 to more than 100 feet. The rocks consist chiefly of clayey till, glaciofluvial sand and gravel, some glaciolacustrine clay and silt, and some wind-blown sand. The glaciofluvial sand and gravel is the chief source of ground water in the northern third and the central part of the southern half of the county. Wells that tap this aquifer are generally less than 100 feet deep and yield as much as 500 gpm.

The unconsolidated rocks of Pleistocene age are overlain locally by thin alluvium, wind-blown sand, and organically rich sand, silt, and clay of Recent age. The deposits of Recent age are generally too thin to be a source of ground water.

Plate 2 shows the availability of ground water in the consolidated and unconsolidated rocks underlying the county. Plate 3 shows the areal distribution of hardness of water from the rocks of Silurian age. Table 1 indicates the significance of the various constituents and properties of the water that are listed in table 5.

The water from the rocks of Silurian age is moderately hard to very hard. The hardness is generally greater than 150 and less than 300 ppm (parts per million). The range in concentration of selected constituents and properties is summarized in the table below. This table shows the minimum, mode, and maximum concentrations of various constituents and properties of water from rocks of Silurian age.

Constituent or property	Minimum (ppm)	Mode (ppm)	Maximum (ppm)
Iron (Fe)	<0.1	---	2.5
Bicarbonate (HCO_3)	224	326	498
Sulfate (SO_4)	<5	15	360
Chloride (Cl)	<4	7	72
Hardness as $CaCO_3$	84	191	524

Table 1.--Significance of selected dissolved mineral constituents and properties of ground water [a/]

Constituent or property	Significance
Iron (Fe)	Oxidizes to reddish-brown sediment upon exposure to air. More than about 0.3 ppm stains laundry and utensils reddish-brown. More than 0.5 to 1.0 ppm imparts objectionable taste to water. Larger quantities favor growth of iron bacteria. Objectionable for food processing, textile processing, beverages, ice manufacturing, brewing, and other purposes.
Bicarbonate (HCO_3)	Bicarbonate in conjunction with carbonate (CO_3) produces alkalinity. Bicarbonate of calcium and magnesium decomposes in steam boilers and hot water facilities to form scale and release corrosive carbon-dioxide gas.
Sulfate (SO_4)	Sulfate in water containing calcium forms hard scale in steam boilers. In large amounts sulfate in combination with other ions gives bitter taste to water. Some calcium sulfate is considered beneficial in the brewing process.

a/ Adapted in part from Palmquist and Hall (1961), p. 34-36.

Table 1.--Continued

Chloride (Cl)----------	Gives salty taste to drinking water when present in large amounts in combination with sodium. Increases the corrosiveness of water when present in large amounts.
Hardness as $CaCO_3$ (Calcium and magnesium)----	Hard water increases amount of soap needed to make lather. Forms scale in boilers, water heaters, and pipes. Leaves curdy film on bathtubs and other fixtures and on materials washed in the water.

Plate 4 shows the areal distribution of hardness of water from the rocks of Devonian age. The water is soft to very hard. The hardness is generally greater than 100 and less than 350 ppm. The range in concentration of selected constituents and properties from this source is summarized in the table below.

Constituent or property	Minimum (ppm)	Mode (ppm)	Maximum (ppm)
Iron (Fe)----------	<0.1	---	7.5
Bicarbonate (HCO_3)------	127	291	844
Sulfate (SO_4)----------	<5	14	180
Chloride (Cl)----------	<2	9	88
Hardness as $CaCO_3$-------	60	283	520

Plate 5 shows the areal distribution of hardness of water from the rocks of Pleistocene age. The water is soft to very hard. The hardness is generally greater than 120 and less than 350 ppm. The range in concentration of selected constituents and properties is summarized below.

Constituent or property	Minimum (ppm)	Mode (ppm)	Maximum (ppm)
Iron (Fe)----------	<0.1	---	>7.5
Bicarbonate (HCO_3)------	68	166	512
Sulfate (SO_4)----------	<5	64	265
Chloride (Cl)----------	<4	7	64
Hardness as $CaCO_3$-------	32	169	484

CONFINED AND UNCONFINED CONDITIONS

Ground water occurs in the consolidated and unconsolidated rocks of Jasper County under confined (artesian) conditions or under unconfined (water-table) conditions. Under confined conditions the aquifer (water-yielding material) is overlain directly by relatively impervious material, and the water will rise

above the level at which it is encountered in the aquifer. Under confined conditions the aquifer is overlain directly by permeable unsaturated material and the water will not rise above the level at which it is encountered.

TYPES OF WELLS

Drilled, driven, and jetted wells are the principal types of water wells used in Jasper County. Most water wells 3-inches or more in diameter are constructed by the cable-tool or percussion method. Where the water-bearing material is sand and gravel, the well is generally finished with a well screen set in the aquifer below the bottom of the well casing. (See Rosenshein and Cosner, 1956, p. 6, for a detailed description of a well screen.) A modification of this type of well, the gravel-packed well, has a gravel lining inserted between the well screen and the water-bearing material. Where the water-bearing material is consolidated rock, the well casing is generally driven a short distance into the rock, and the well is finished as an open hole. However, a few wells drilled in shale have been finished with a screen and a gravel pack in order to prevent the shale from caving into the hole after completion of the well.

Water wells less than 3-inches in diameter are constructed in unconsolidated material by driving or jetting. The driven well consists of a small-diameter pipe having a drive point attached to the end, which is driven into shallow water-bearing material. The jetted well is constructed by forcing water under pressure out of a hollow-rod or small-diameter drill pipe that is fitted with a jetting bit. As the material is washed out of the hole ahead of the casing, the casing is driven down into the hole. After the water-bearing material is penetrated the well is generally finished with a well-point screen set in the water-bearing material below the bottom of the casing. Table 2 relates the grain-size in inches and millimeters to the slot and the gauze size of screens commonly used in water wells.

Table 2.--Grain size and equivalent screen openings

Grain size: After Wentworth (1922). Slot size: In thousandths (0.001) of an inch.
Equivalent screen openings: From commercial catalogs for water-well supplies. Gauze size: Number of wire strands per lineal inch.

Material	Grain size		Equivalent screen opening	
	Inches	Millimeters	Slot size	Gauze size
Gravel	>0.08	>2	>80	- - - -
Very coarse sand	.04 - .08	1 -2	40 - 80	<20
Coarse sand	.02 - .04	.50 -1	20 - 40	40 - 20
Medium sand	.01 - .02	.25 - .50	10 - 20	60 - 40
Fine sand	.005 - .01	.125 - .25	6 - 10	90 - 60
Very fine sand	.002 - .005	.062 - .125	- - - -	- - - -
Silt	.00015- .002	.004 - .062	- - - -	- - - -
Clay	<.00015	<.004		

SUMMARY

Preliminary evaluation of the basic data shows that adequate quantities of ground water are available in most of the county for domestic, stock, and locally for public and some types of industrial supplies from the rocks of Silurian, Devonian, and Pleistocene Age. The rocks of Silurian and Devonian Age are the chief source of water in the southern two-thirds of the county and the rocks of Pleistocene Age in the northern third.

The chemical quality of water from the rocks of Silurian, Devonian, and Pleistocene Age varies. The water from the rocks of Silurian Age is moderately hard to very hard. The water from the rocks of Devonian and Pleistocene Age is soft to very hard.

RECORDS

The records of about 440 wells and test holes are given in table 3. The table contains information about well construction, water levels, yields and drawdowns, conditions of occurrence, thickness and characteristics of water-bearing materials, type of pump, and other data. The altitude of the land surface at wells and test holes was interpolated from topographic maps.

Table 4 contains the selected logs of about 70 wells and test holes. This table gives the driller's description of the material encountered, pertinent remarks with regard to the material, and authors' interpretation of the geologic age of the material.

The results of about 310 partial chemical analyses of water are given in table 5. The analyses were determined in the field office of the Geological Survey. This table gives information about geologic source, temperature, concentration in parts per million of iron, bicarbonate, sulfate, chloride, and hardness (calcium, magnesium) of water. The U. S. Public Health Service standards for drinking water are given in the table headnotes for iron and manganese together, sulfate, and chloride. No official standards have been established for hardness of water. However, water with respect to hardness is generally classified (Lamar, 1942, p. 25-26) as follows: 0-60 ppm soft; 61-120 ppm moderately hard; 121-200 ppm hard; more than 200 ppm very hard.

Table 6 contains the records of six observation wells of which three were established during the investigation and three prior to the investigation. The water levels in the observation wells were obtained either by recording gages installed on the well or by manual measurements made with an engineer's steel tape graduated to a hundredth of a foot. The water levels are in feet below land-surface datum. Daily highest water levels are given for the observation wells equipped with recording gages, and periodic water levels are given for the observation wells measured manually. Factors affecting the water levels in the observation wells are also indicated. For additional water levels see water supply papers listed under U. S. Geological Survey in selected bibliography. The location of the observation wells is shown on plate 1.

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Table 3.--Records of wells and test holes in Jasper County, Indiana

Well: See text for description of well-numbering system.
Altitude: Altitude of land-surface datum from topographic map.
Type of well: Dn, driven; Du, dug; Dr, drilled; J, jetted.
Finish: Gp, gravel pack; Oo, open end; Oh, open hole; S, screen dia, diameter in inches; g, gauze size; pp, perforated pipe; sl, slot size.
Character: D, drift; Do, dolomite; G, gravel; Ls, limestone; Sd, sand; Sh, shale; Ss, sandstone.
Geologic Age: D, Devonian; M, Mississippian; Pl, Pleistocene; S, Silurian.

Condition of occurrence: C, confined; U, unconfined; see text for definition.
Water level: In feet below land-surface datum on date of completion of well, except where otherwise noted.
Use: D, domestic; Du, destroyed; I, industrial; Ir, irrigation; N, not used; O, observation; P, public supply; S, stock; T, test.
Type of pump and horsepower: C, centrifugal; J, jet; L, lift; P, pitcher; S, submersible; T, turbine; numeral indicates rated horsepower of electric motor.
Remarks: Ca, field chemical analysis in table 5; dd, drawdown; E, electric log available; G, gamma ray log available; gpm, gallons per minute; L, log of well in table 4.

Well	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone: Depth to top (feet)	Water-bearing zone: Thickness (feet)	Water-bearing zone: Character	Water-bearing zone: Geologic age	Water-bearing zone: Conditions of occurrence	Water level (feet)	Use	Type of pump and horsepower	Remarks
27/6W- 4J1	G. Stein	G. Kanter	Spring 1941	700	Dr	65	4	Oh	----	-------	Sh	D,M	C	6	D,S	L	Ca.
5P1	M. Albert	Hofstetter Bros.	9-13-56	702	Dr	205	4	Oh	135	70	Ls	D	C	30	D,S	--------	Dd 60 ft pumping 5 gpm; bedrock at 19 ft; Ca, L.
5Q1	M. Carlile	----do----------	8-11-57	702	Dr	94	4	Oh	12	81	Sh	D,M	C	8	D,S	--------	Yield 1 gpm; bedrock at 12 ft; shale overlain by 12 ft clay; Ca.
8J1	A. Lake, Sr.	----do----------	8- 3-57	710	Dr	115	4	Oh	14	101	Sh	D,M	C	---	D	J	Yield 1 gpm; bedrock at 14 ft; shale overlain by 14 ft dirt; Ca.
9A1	R. Taylor	----do----------	About 1958	706	Dr	160	6	Oh	----	-------	Sh?	D,M	----	---	D	L	Ca.
16Q1	D. Hicks	----do----------	--------	722	Dr	42	6	Oh	14	28	Sh	D,M	C	---	---	--------	Flowed 1 gpm; bedrock at 14 ft; waterbearing zone near top of shale.
18D1	M. Vanderwall	----------	--------	724	Dr	95	3	Oa	----	-------	G	Pl	----	20	D,S	Ll/3	Ca.
19P1	Town of Remington	----------	About 1897	732	Dr	1,205	---	----------	----	-------	Ls	---	C	---	D	--------	Bedrock at 5 ft; originally drilled as oil test; used by town as standby for water supply.
21R1	H. James	----------	--------	736	Dr	80	5	Oh	----	-------	Sh?	D,M	----	---	D,S	S	Ca.
28A1	Trustees, St. Pierre Estate	----------	About 1919	734	Dr	120	4	Oh	----	-------	Ls?	D	----	---	D	J	Water has moderate odor hydrogen sulfide gas; Ca.
30G1	L. Spalding	----------	--------	728	Du	14	48	----------	----	-------	D	Pl	U	---	N	--------	Formerly observation well Jasper 2; water level measured 0.87 ft below lsd, 5-24-44.
30G2	A. Miller	Hofstetter Bros.	12-56	728	Dr	38	4	S; 2ft, 40sl	35	3	Sd,G	Pl	C	12	D	J1/2	Dd 12 ft pumping 20 gpm; Ca, L.
30H1	F. L. Lough	----do----------	5- 1-57	732	Dr	37	2½	S; 40sl	34	3	Sd,G	Pl	C	12	D	--------	Dd 8 ft pumping 35 gpm; Ca, L.
30H2	Virginia-Carolina Chemical Corp.	----do----------	--------	732	Dr	257	6	Oh	----	-------	Ls	D	C	30	I	S1	Water has strong odor hydrogen sulfide gas; Ca.
30X1	Town of Remington	Layne-Northern Co., Inc.	9-11-56	727	Dr	48	20	Gp; S; 10ft, 80sl, dia 12	35	13	Sd,G	Pl	C	1	P	--------	Dd 16 ft after 1.5 hr pumping 300 gpm; see log well 30L2.
30L1	----do----------	----do----------	8-22-56	730	Dr	65	6	----------	----	-------	Sd,G	Pl	C	1	T	--------	L.
30L2	----do----------	----do----------	8-20-56	730	Dr	40	28	Gp; S; 10ft, 80sl, dia 12	32	11	Sd,G	Pl	C	2	P	--------	Dd 20.5 ft after 8 hr pumping 200 gpm; L.
31N1	Fairview Hatchery	Hofstetter Bros.	10-41	742	Dr	192	4	Oh	189	3	Ls	D	C	26	1	--------	Yield 5 gpm; bedrock at 22 ft; water has strong odor hydrogen sulfide gas; see log well 31P1; Ca.
31P1	----do----------	----do----------	7-53	738	Dr	202	6	Oh	189	13	Ls	D	C	26	N	--------	Dd 84 ft bailing 9 gpm; bedrock at 23 ft; water has strong odor hydrogen sulfide gas; L.
32D1	E. Bahler	Layne-Northern Co., Inc.	1-26-57	728	Dr	27	12	----------	9	7	Ls	M	C	8	T	--------	Bedrock at 9 ft; see log well 32D2.

27/6W-32B2	E. Bahler	Hofstetter Bros.	6-56	748	Dr	80	6	Oh	8	72	Ls,Sh	D,M	C	---	N	--------	Yield 2 gpm; bedrock at 8 ft: L.
32B3	----do----------	----do----------	--------	748	Dr	200	6	Oh	----	------	Ls?	D	C	---	S	S	Water has odor hydrogen sulfide gas: Ca.
27/7W- 1H1	A. Dluzak	A. Potts	About 1940	805	Dr	130	4	Oh	----	------	Ls?	D	C	15	S	L	Ca.
4E1	J. Noronda	Hofstetter Bros.	Summer 1959	673	Dr	57	12	Cp; S; 22ft, dia 4	29	28	Sh	D,M	C	10	D,S	J	Dd 15 ft after 10 hr pumping 1 gpm; bedrock at 29 ft; Ca, L
5C1	W. Johnson	----do----------	6- 2-56	670	Dr	40	---	----------	----	------	------	---	----	---	T	--------	No water reported; clay overlain by 10 ft sand.
5C2	----do----------	----------	--------	670	Dr	179	4	Oh	----	------	Ls	D	C	---	D,S	--------	Water has odor hydrogen sulfide gas; Ca.
6B1	Mennonite Church	Hofstetter Bros.	Fall 1959	682	Dr	200	4	Oh	160	40	Ls	D	C	20	P	--------	Dd 50 ft after 3 hr bailing 4 gpm; bedrock at 36 ft; L.
7C1	L. Souligne	Hofstetter Bros.	Spring 1960	677	Dr	170	4	Oh	142	28	Ls	D	C	30	S	--------	Dd 30 ft after 5 hr pumping 7 gpm; bedrock at 26 ft; Ca, L.
8D1	G. Green	D. Denton	10- 1-59	680	Dr	200	4	Oh	165	35	Ls	D	C	65	N	--------	Little drawdown reported after 2 hr pumping 15 gpm; bedrock at 38 ft; water has odor hydrogen sulfide gas; L.
8N1	J. Noronda	Hofstetter Bros.	5-12-58	693	Dr	40	12	Oh	----	------	Sh	D,M	----	---	D	J1/2	Ca.
12D1	C. Lueterhand	----do----------	10- 7-57	696	Dr	133	---	Oh	105	28	Ls	D	C	35	N	L	Dd 20 ft pumping 7 gpm; bedrock at 21 ft; L.
13F1	Town of Remington	Layne-Northern Co., Inc.	7-20-47	723	Dr	100	6	----------	----	------	Ss	M	C	8	T	--------	See log well 13Q4.
13Q1	----do----------	----do----------	10-17-47	732	Dr	135	12	Oh	19	117	Ss,Ls	M	U	19	P	--------	Dd 17 ft after 8 hr pumping 570 gpm; bedrock at 2 ft.
13Q2	----do----------	----do----------	10- 2-47	725	Dr	154	12	Oh	14	140	Ss	M	U	14	P	--------	Dd 48.5 ft pumping 300 gpm; bedrock at 2 ft.
13Q3	----do----------	----do----------	8-18-47	732	Dr	135	6	----------	15	117	Ss	M	U	15	T	--------	Dd 8 ft pumping 35 gpm: bedrock at 3 ft; see log well 13Q4.
13Q4	----do----------	----do----------	8- 5-47	725	Dr	125	6	----------	14	111	Ss	M	U	14	T	--------	Bedrock at 3 ft; L.
15H1	R. Graff	Hofstetter Bros.	6- 6-58	734	Dr	39	6	Oh	----	------	Ls,Sh?	D,M	----	---	D,S	--------	Bedrock at 11 ft; Ca, L.
16H1	G. Sommer	----------	--------	704	Dr	200	3	Oh	----	------	Ls?	M	C	70	D,S	J1/4	Yield 2 gpm; bedrock at about 19 ft; cannot pump well at fast rate; Ca.
17E1	G. Alberts	Hofstetter Bros.	Summer 1960	702	Dr	130	7	Oh	18	112	Sh	D,M	C	15	S	J	Dd 45 ft after 3 hr pumping 10 gpm; bedrock at 18 ft; shale overlain by 18 ft sand and clay; Ca.
18H1	M. A. Webber	----do----------	7-30-58	717	Dr	52	4	Oh	----	------	Ls,Sh?	D,M	----	---	D	--------	Yield 7 gpm; bedrock at 12 ft; Ca, L.
21H1	C. Handcock	----do----------	9-29-56	728	Dr	242	6	Oh	200	42	Ls	D	C	85	D,S	--------	Dd 40 ft pumping 7 gpm; bedrock at 13 ft; water has odor hydrogen sulfide gas: Ca, L.
22F1	H. R. Wilhelm	----------	1949	733	Dr	40	4	Oh	18	22	Sh,Ls?	D,M	C	10	S	L	Yield about 5 gpm; bedrock at 18 ft: well supplies 300 head of livestock; black shale and limestone (?) overlain by 18 ft clay.
24B1	Town of Remington	Layne-Northern Co., Inc.	4-13-40	700	Dr	102	12-10	Oh	19	85	Ss	M	U	10	P	T10	Dd 61 ft after 8 hr pumping 135 gpm; bedrock at 4 ft; L.
24G1	Town of Remington	----do----------	7-14-47	730	Dr	120	6	----------	117	3	Ls	D	----	---	T	--------	Bedrock at 12 ft; L.
24G2	----do----------	----do----------	7-23-47	715	Dr	30	6	----------	8	8	Ss	M	U	8	T	--------	Bedrock at 8 ft; L.
25A1	Crystal Dairy	----do----------	6-18-47	734	Dr	132	10	Oh	----	------	Ls?	D	C	21	N	--------	Dd 41 ft pumping 30 gpm; bedrock at 13 ft; formerly observation well Jasper 6; water level measured 29.91 ft below lsd, 9-26-60; E, G, L.
25B1	Town of Remington	----do----------	2- 8-40	737	Dr	180	---	Oh	----	------	Ls	D	C	64	Du	--------	Bedrock at 14 ft; water reported to have hydrogen sulfide gas; L.
25C1	Von Tobel Lumber Company	Hofstetter Bros.	12-55	737	Dr	165	4	Oh	130	26	Ls	D	C	30	D,P	J3/4	Dd 50 ft pumping 10 gpm; bedrock at 11 ft; same well log 25B1; Ca.
25J1	Town of Remington	Layne-Northern Co., Inc.	6-28-56	727	Dr	53	6	----------	----	------	------	---	----	---	T	--------	L.
28C1	D. Lueterhand	----------	--------	740	Dr	35	4	Oh	----	------	Ls?	M?	C	14	S	L	Bedrock at 5 ft; Ca.
29K1	E. Wilson	----------	--------	740	Dr	205	4	Oh	----	------	Ls	D	C	---	D,S	SJ	Ca.
30C1	B. and H. Davidson	Hofstetter Bros.	6-23-58	727	Dr	95	4	Oh	12	83	Ls	M?	C	10	D,S	L1/2	Dd 20 ft pumping 6 gpm; bedrock at 12 ft; layers of limestone overlain by 12 ft clay; Ca.

Table 3.--Records of wells and test holes in Jasper County--Continued

Well	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone: Depth to top (feet)	Water-bearing zone: Thickness (feet)	Water-bearing zone: Character	Water-bearing zone: Geologic age	Water-bearing zone: Conditions of occurrence	Water level (feet)	Use	Type of pump and horsepower	Remarks
27/7W-31Q1	H. Smith	----------	--------	772	Dr	32	3	Oh	----	------	Sh	MP	----	---	D,S	L	Ca.
32A1	D. Price	----------	--------	751	Dr	187	4	Oh	----	------	Ls?	D	----	---	D,S	J	Ca.
34P1	B. Crowe	----------	--------	755	Dr	-----	4	Oh	----	------	Ls?	---	----	10	D,S	J1/3	Ca.
35R1	C. J. Buck	C. Coy	About 1950	740	Dr	40	4	S; 2ft	----	------	G	Pl	----	9	D,S	J1/3	Ca.
28/5W-4M1	C. D. Jordan	R. Elb	1950	668	Dr	25	4	Oh	18	7	Ls	D	C	11	D,S	C	Bedrock at 18 ft; limestone overlain by 18 ft clay with thin sand lenses; water has odor hydrogen sulfide gas; Ca.
8N1	E. Gilmore	O. J. Titus	Spring 1951	670	Dr	45	4	Oh	----	------	Ls	D	C	8	S	P	Bedrock at about 16 ft; Ca.
9N1	----do----------	----------	--------	666	Dr	46	4	Oh	----	------	Ls	D	C	8	S	L	Bedrock at about 16 ft; water has faint odor hydrogen sulfide gas; Ca.
16G1	T. A. Spencer	N. S. Spencer and C. Fatland	6-18-25	678	Dr	947	---	----------	----	------	Ls	---	----	---	---	--------	Oil test; bedrock at 6 ft; see Logan (1931, p. 374).
17H1	E. Gilmore	Hofstetter Bros.	--------	672	Dr	40	4	Oh	----	------	Ls	D	C	---	D,S	L1/3	Ca.
19F1	D. D. Dean	A. Potts	1938	695	Dr	45	4	Oh	17	18	Ls	D	----	---	D	--------	
20D1	R. Johnson	----------	--------	681	Dr	60	4	Oh	----	------	Ls?	D	C	7	D	L1/4	Ca.
29Q1	Overmyer Farms	----------	--------	682	Dr	80	3	Oh	----	------	Ls?	D	----	---	D	J1/2	Water has moderate odor hydrogen sulfide gas; turns cooking utensils black; Ca.
28/6W-1G1	C. Bledsoe	Hofstetter Bros.	3-11-55	670	Dr	25	4	Oh	14	11	Ls	D	C	6	D	--------	Dd 15 ft pumping 30 gpm; bedrock at 14 ft; limestone overlain by 14 ft sand and clay; Ca.
1Q1	----do----------	Hofstetter Bros.	Before 1957	667	Dr	31	4	Oh	----	------	Ls	D	C	---	D,S	J	Ca.
2N1	G. Crockett	R. Elb	About 1949	675	Dr	45	4	Oh	8	37	Ls	D	C	6	D,S	J	Bedrock at 8 ft; Ca.
7P1	E. Bornstaeger	----------	About 1952	659	Du	16	1¼	S	----	------	Sd	Pl	----	4	D	J	Ca.
8L1	C. Dunlap	----------	--------	661	Dr	110	4	Oh	----	------	Ls	D	C	7	D,S	J1/2	
8N1	E. Jacks	----------	1959	662	Du	20	1¼	S	----	------	Sd	Pl	----	---	D	L	Ca.
11N1	F. Feldhaus	----------	--------	675	Dr	30	4	S	----	------	Sd,G	Pl	----	---	D	J1/3	Ca.
14M1	R. Culp	Hofstetter Bros.	1949	666	Dr	50	---	Oh	12	38	Ls	D	----	---	N	L	Yield 10 gpm; bedrock at 12 ft.
16Q1	R. Smith	----do----------	Summer 1959	673	Dr	59	4	S; 2ft, 50sl, dia 4	57	1	G,Sd	Pl	C	16	D	J	Dd 9 ft after 8 hr pumping 25 gpm; Ca. L.
19D1	C. Griffin	----------	About 1952	673	Du	25	1¼	S; 3ft, 90g	17	8	Sd	Pl	U	17	D	L1/4	Ca.
20N1	L. Holtkamp	----------	--------	681	Dr	38	4	----------	----	------	Sd	Pl	----	---	D	J	Ca.
22C1	Mr. Bonnor	N. S. Spencer and C. Fatland	1923	658	Dr	943	---	----------	----	------	Ls	----	----	---	---	--------	Oil test; bedrock at 3 ft; see Logan (1931, p. 374).
23H1	R. Culp	Hofstetter Bros.	3- 4-55	675	Dr	52	4	Oh	48	4	Sh	D,M	C	10	S	L	Dd 15 ft pumping 8 gpm; bedrock at 48 ft; Ca, L.
24C1	R. Steinmetz	----------	Summer 1959	676	Du	17	1¼	S	----	------	G	Pl	----	---	D	J	Ca.
25J1	E. F. Cotton	----------	--------	690	Du	30	48	----------	----	------	Sd?	Pl	----	---	D	L	Ca.
25J2	----do----------	----------	--------	690	Dr	100	4	Oh	----	------	Ls?	D	----	---	S	L1/2	Water has strong odor hydrogen sulfide gas; Ca.
27R1	R. Parks	----------	--------	687	Du	20	36	----------	----	------	G,Sd	Pl	----	---	D	L	Ca.
28H1	D. Putt	Hofstetter Bros.	12-12-58	677	Dr	40	6	Oh	25	15	Sh	D,M	C	10	D	J1/2	Yield 1 gpm; bedrock at 25 ft; Ca, L.
28N1	A. Newton	----do----------	--------	679	Dr	180	4	Oh	108	52	Ls	D	C	15	D	--------	Bedrock at 25 ft; limestone overlain by 80 ft shale; water has slight odor hydrogen sulfide gas; Ca.
29H1	H. May	----do----------	5- 3-58	672	Dr	50	6	----------	----	------	------	---	----	---	T	--------	No water reported; bedrock at 19 ft; shale overlain by 19 ft clay.

28/8W-29H2	----do----------	----do----------	6-56	672	Dr	20	16-12	Oh	----	------	Sh	D,M	C	5	D	-------	Ca.
29Q1	O. Morehouse	----do----------	Winter 1900	680	Dr	50	6	Oh	22	28	Sh	D,M	C	6	D	J	Dd 25 ft bailing 1 gpm; bedrock at 22 ft; Ca, L.
31J1	A. Alberts	----do----------	2- 8-56	682	Dr	133	4	Oh	92	41	Sl	D	C	8	D	-------	Dd 72 ft pumping 5 gpm; bedrock at 16 ft; Ca, L.
28/7W- 1A1	C. Huhn	E. H. Wingate	4- 7-61	658	Dr	115	4	Oh	28	87	Ls	D	C	20	D	J	Dd 7 ft after 3 hr pumping 15 gpm; bedrock at 28 ft; limestone overlain by 28 ft clay; water has slight odor hydrogen sulfide gas; Ca.
1C1	L. Houston	Hofstetter Bros.	Summer 1950	658	Dr	34	4	S; 4ft, Bsl, dia 4	30	4	Sd	Pl	C	8	D	-------	Dd 22 ft after 4 hr pumping 5 gpm; fine sand overlain by 30 ft yellow sandy clay; Ca.
3A1	C. Nagel	----------	--------	648	Dr	87	4	Oh	----	------	Ls	D	----	---	D	J	Ca.
5B1	O. Waymire	R. Eib	9-15-59	652	Dr	102	4	Oo	----	------	G	Pl	C	12	D,S	-------	Yield 10 gpm; Ca.
7J1	J. Scoby	Hofstetter Bros.	11- 2-57	650	Dr	99	4	S; 40sl	85	14	Sd	Pl	C	8	D	-------	Dd 12 ft pumping 20 gpm; Ca, L.
8E1	J. Nagel	----------	--------	651	Dr	45	4	Oo	----	------	Sd,G	Pl	C	7	D	L1/4	Ca.
9L1	C. Kaufman	Noahier and Denton	5- 7-56	662	Dr	160	4	Oh	120	40	Ls	D	C	25	Sd	S	Dd 65 ft pumping 5 gpm; bedrock at 70 ft; water has strong odor hydrogen sulfide gas; Ca, L.
9Q1	R. G. Baldwin	----do----------	1-16-58	662	Dr	150	4	Oh	110	40	Ls	D	C	20	D,S	J3/4	Dd 20 ft after 1 hr pumping 10 gpm; bedrock at 70 ft; water has moderate odor hydrogen sulfide gas; Ca, L.
10E1	P. Laird	----------	About 1910	661	Dr	50	4	S	----	------	Sd,G	Pl	C	17	D,S	J	Ca.
11F1	C. W. Illff	A. Potts	6-32	652	Dr	48	4	Oo	40	2	G	Pl	----	8	D	-------	Gravel overlain by 40 ft clay.
12F1	H. Hoover	----------	About 1911	652	Dr	172	4	Oh	----	------	Ls	D	C	6	D,S	J1/2	Ca.
19P1	L. Miller	----------	--------	662	Dr	100	4	Oh	----	------	Ls?	D	----	16	D,S	L1/2	Ca.
20P1	R. Lee	Hofstetter Bros.	Spring 1951	667	Dr	73	4	S	----	------	Sd	Pl	----	20	D,S	J1/2	Ca.
21R1	G. Cook	R. Eib	About 1944	666	Dr	236	4	Oh	----	------	Ls	D	C	40	D	J	Ca.
22F1	V. Michael	----------	--------	667	--	65	2½	----------	----	------	Sd	Pl	----	---	D,S	L1/4	Ca.
23L1	W. Ward	W. Morrse	About 1946	666	Dr	200	4	Oh	----	------	Ls	D	C	---	D,S	L1/4	Water has odor hydrogen sulfide gas; Ca.
25C1	R. Firzlaff	Hofstetter Bros.	6-29-57	670	Dr	280	4	Oh	130	150	Ls	D	C	---	D,S	J1/2	Yield 2 gpm; water-bearing zone at 150 ft; Ca, L.
26F1	D. Waymire	----do----------	Fall 1959	668	Dr	40	12	S; 10ft, dia 4	----	------	G	Pl	C	12	D	-------	Dd 10 ft after 4 hr pumping 5 gpm.
26F2	----do----------	----do----------	Summer 1959	668	Dr	38	4	----------	----	------	-------	---	----	---	T	-------	Blue gravelly clay overlain by 12 ft yellow sand.
26F3	----do----------	----do----------	Summer 1959	668	Dr	100	4	----------	----	------	-------	---	----	---	T	-------	Bedrock at 75 ft; L.
29Q1	C. Antcliff	----------	--------	671	Dr	88	3	Oh	----	------	Sh?	D,M	----	---	D,S	L	Ca.
31P1	D. Peterson	----------	--------	676	Dr	187	3	Oh	----	------	Sh	D,M	----	---	D	L1/2	Ca.
32N1	A. Laird	Hofstetter Bros.	8-15-57	665	Dr	65	---	Oh	38	27	Sh	D,M	----	---	N	-------	Bedrock at 38 ft; see log well 32N2.
32N2	----do----------	----do----------	9- 7-57	665	Dr	84	---	Oh	38	40	Sh	D,M	----	---	N	-------	Bedrock at 38 ft; L.
32N3	----do----------	----do----------	10-57	665	Dr	50	12	Gp; S; pp	----	------	Sh	D,M	C	---	D,S	S	Yield 10 gpm; well gravel packed and screen set to prevent shale from caving into hole; Ca.
32R1	R. Zarse	----do----------	3-30-56	672	Dr	45	12	Gp; S; pp	30	15	Sh	D,M	C	---	D	-------	Bedrock at 30 ft; see log well 32N2; Ca.
34J1	R. Woehring	----------	--------	676	Dr	-----	4	Oh	----	------	Sh	D,M	C	15	D,S	J1	Ca.
36P1	Mr. Garvin	C. Griffith	Before 1900	688	Dr	108	4	Oh	----	------	Sh	D,M	C	---	D	J3/4	Ca.
36P2	----do----------	----do----------	Before 1900	680	Dr	70	4	Oh	----	------	Sh?	D,M	C	---	S	F	Water has odor hydrogen sulfide gas; Ca.
29/5W- 4C1	W. E. Rose	----------	--------	660	Dr	940	12	----------	----	------	-------	---	----	16	---	-------	Oil test.
4G1	----do----------	----------	1920	675	Dr	15	3	----------	----	------	Ls	D	----	---	---	-------	Flowed; bedrock at 15 ft.
4L1	----do----------	Danoke and White	1920	700	Dr	40	3	Oo	----	------	Ls	D	----	20	D,S	J1/3	Ca.
6L1	A. Davison	A. Potts	1940	730	Dr	95	4	Oh	80	15	Ls	S	----	---	D,S	J	Ca.
11B1	L. D. Wuothrich	----------	--------	685	Dr	42	4	Oh	----	------	Ls	D	----	6	D,S	J	Ca.
12C1	R. Wuothrich	O. J. Titus	1957	685	Dr	35	4	Oh	15	20	Ls	D	----	---	S	J	Well 20 ft deep at house; bedrock at 15 ft.
13R1	R. Kruger	----------	--------	680	Dr	20	4	Oh	----	------	Ls	D?	C	4	D,S	L	Water has odor hydrogen sulfide gas; Ca.
14E1	J. W. Smith	----------	About 1943	688	Dr	23	3	----------	----	------	Ls	D	----	---	D,S	J	Do.

Table 3.--Records of wells and test holes in Jasper County--Continued

Well	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone: Depth to top (feet)	Water-bearing zone: Thickness (feet)	Water-bearing zone: Character	Water-bearing zone: Geologic age	Water-bearing zone: Conditions of occurrence	Water level (feet)	Use	Type of pump and horsepower	Remarks
29/5W-16H1	J. A. Richardson	----------	About 1904	690	Dr	33	3	Oh	----	------	Ls	D	C	12	D	J1/3	Water has gas; Ca.
21D1	V. Elijah	----------	--------	692	Dr	18	---	Oh	----	------	Ls	D	----	---	D,S	J	Ca.
25K1	M. and G. Rosendahl	Hofstetter Bros.	7-26-51	696	Dr	88	6	Oh	15	73	Ls	D?	C	12	D	J1/2	Bedrock at 15 ft; water has slight odor hydrogen sulfide gas; Ca.
26B1	D. Stewart	----------	--------	690	Dr	30	4	Oh	----	------	Ls	D	----	---	S	L1/2	Ca.
26C1	----do----------	----------	--------	690	Dr	30	4	Oh	----	------	Ls	D	C	11	D,S	J1/3	Ca.
27E1	S. Cook	Hofstetter Bros.	7- 9-58	690	Dr	72	4	Oh	18	54	Ls	D	C	7	D	J1/3	Dd 23 ft pumping 5 gpm; bedrock at 18 ft; limestone overlain by 18 ft sand and clay; Ca.
27M1	G. Sias	----do----------	10- 3-59	690	Dr	34	4	Oh	21	13	Ls	D	C	7	D	J	Dd 18 ft after 5 hr pumping 20 gpm; Ca, L.
29F1	K. Haskell	----------	About 1910	691	Dr	60	4	Oh	----	------	Ls	D	C	15	D	J	Ca.
31Q1	C. Molino	----------	--------	680	Dr	34	4	----------	----	------	Ls	D	----	---	D,S	J	Ca.
32Q1	J. L. Herr	----------	1918	675	Dr	34	4	Oh	12	22	Ls	D	U	14	D,S	L	Bedrock at 12 ft; Ca.
33D1	Mr. Taylor	R. Eib	1954	686	Dr	68	4	Oh	15	53	Ls	D	----	6	D,S	--------	Bedrock at 15 ft; limestone overlain by 15 ft fine sand.
33D2	----do----------	----do----------	9-54	683	Dr	28	4	Oh	8	20	Ls	D	U	8	D,S	--------	Yield 8 gpm; bedrock at 8 ft; limestone overlain by soil and sandy clay; Ca.
34P1	J. Cook	Mr. Hill	1922	678	Dr	26	4	Oh	----	------	Ls	D	----	---	D,S	J	Bedrock at about 7 ft; Ca.
35K1	C. McDonald	----------	About 1950	687	Dr	84	3	Oh	37	47	Ls	D	----	---	S	L	Bedrock at 37 ft.
35P1	Jasper County Highway Department	----------	--------	685	Dr	13	4	Oh	----	------	Ls	D	U	---	N	--------	Formerly observation well Jasper 1; water level measured 8.07 below lsd, 10-18-35.
29/6W- 2K1	Trustees, Markley Township	A. Potts	1921	732	Dr	165	3	Oh	----	------	Ls	S	C	---	P	L	
2J1	E. Markley	----------	About 1900	737	Dr	175	3	Oh	----	------	Ls	S	C	---	D,S	L1/2	Ca.
3G1	F. Waymire	----------	--------	734	Dr	118	3	Oh	----	------	Ls	S	----	55	D,S	J	Ca.
4J1	C. Haysorth	Hofstetter Bros.	12- 6-57	721	Dr	123	4	Oh	96	27	Sh	D,M	C	35	D	--------	Dd 45 ft pumping 5 gpm; bedrock at 96 ft; water has slight odor hydrogen sulfide gas; Ca, L.
4M1	D. DeWees	A. Potts	1940	703	Dr	144	4	Oh	100	44	Ls	S	C	---	N	--------	
5D1	J. R. Shook	----------	--------	668	Dr	87	---	Oh	----	------	Ls?	S	----	---	D,S	L1/3	Ca.
7P1	M. Carter	R. Hayden	8-61	705	Dr	145	---	Oh	132	13	Ls	S	C	---	D	--------	Bedrock at 132 ft; Ca, L.
8P1	R. D. Ansler	R. Eib	About 1956	688	Dr	96	4	Oh	----	------	Ls	S	----	---	D,S	J	Bedrock at 36 ft; Ca.
9N1	C. H. Mills	Hofstetter Bros.	8- 9-58	695	Dr	107	4	Oh	64	43	Ls	S	C	40	D,S	--------	Dd 20 ft pumping 15 gpm; bedrock at 64 ft; limestone overlain by 64 ft clay; water has odor hydrogen sulfide gas; Ca.
10P1	J. Brannon	----------	Before 1914	685	Dr	85	4	Oh	----	------	Ls	S	C	---	S	L	Ca.
13P1	L. Harrington	----------	--------	676	Dr	18	4	Oh	----	------	Ls	S	----	---	D,S	L1/4	Ca.
14D1	W. Potts, Jr.	A. Potts	1938	680	Dr	59	4	Oh	45	14	Ls	S	----	---	D,S	J1/3	Water has slight odor hydrogen sulfide gas; Ca.
14Q1	J. Parkison	R. Eib	1954	666	Dr	27	4	Oh	12	15	Ls	S	U	12	D	--------	Bedrock at 11 ft; Ca.
21C1	J. Garland	----------	--------	683	Dr	200	4	Oh	----	------	Ls	S	C	0	D,S	J1/2	Ca.
23Q1	Mrs. Kruger	Hofstetter Bros.	Fall 1959	676	Dr	20	4	Oh	8	12	Ls	S?	U	8	D,S	--------	Dd 1 ft after 10 hr pumping 8 gpm; bedrock at 8 ft; limestone overlain by 6 ft clay; Ca.

30/2W-24F1	G. Boutabaugh	J. Masters	10-25-60	708	J	78	2	S; 3½ft, 12sl, dia 1½	70	8	G	Pl	C	32	D	--------	Yield 10 gpm; L.
24F2	K. DePoy	D. Henderson	2-21-61	708	J	75	2	S; 3ft, 10sl, dia 1½	65	10	Sd	Pl	C	36	D	J	Yield 10 gpm; Ca, L.
25A1	W. and M. E. Doty	G. Crist	9-19-59	697	J	33	2½	S; 3½ft, 40g, dia 1½	29	4	G	Pl	C	22	D	--------	Yield 10 gpm; L.
26A1	G. Ortman	Fisher Bros. Well Drilling Co.	8- 3-57	697	Dr	240	4	Ok	228	12	Ls	D	C	24	D,S	J3/4	Yield 18 gpm; bedrock at 228 ft: Ca, L.
27A1	M. E. Ecra	D. Henderson	3-28-61	707	J	44	2	S; 3ft, 10sl, dia 1½	41	3	Sd	Pl	C	10	D,S	--------	Yield 10 gpm; Ca, L.
27E1	J. J. Krucek	Indiana-Michigan Water Development Co.	3- 8-57	697	Dr	95	12	S; 20 ft, dia 10	70	25	Sd,G	Pl	C	12	Ir	--------	Dd 57 ft pumping 820 gpm; screen, upper 5 ft 20 sl, lower 15 ft 40 sl; L.
29L1	S. Gast	D. Henderson	5- 7-61	698	J	74	2	S; 3ft, 10sl, dia 1½	-----	-------	G	Pl	C	10	D	--------	Yield 12 gpm; L.
31F1	G. Poor	———————	1960	704	Dn	28	1½	S; 3½ft	-----	-------	Sd	Pl	U	25	D,S	L	Ca.
34K1	R. O'Connor	Fisher Bros. Well Drilling Co.	11-56	688	Dr	189	4	Ok	-----	-------	G?	Pl	C	8	D,S	--------	Yield 25 gpm; Ca.
35A1	G. A. Lebo	——do———	8-14-60	692	J	44	2½	S; 3ft, 60g, dia 1½	30	14	G	Pl	C	21	D	--------	Yield 12 gpm; gravel overlain by 30 ft blue clay; Ca.
35E1	O. Lowery	J. Masters	———	689	Dn	30	1½	----do----------	-----	-------	Sd	Pl	----	11	D,S	L	Yield 6 gpm; Ca.
35L1	O. C. Keller	D. Henderson	1939	675	Dr	155	4	Ok	150	3	G	Pl	C	2	D,S	J1/3	Yield 17 gpm; L.
30/3W-3B1	H. M. Hays	———————	About 1938	704	Dn	28	1½	S	-----	-------	Sd,G	Pl	----	20	D	J	Ca.
6H1	H. Hahn	———————	1955	690	Dn	23	1½	S; 3ft, 60g	-----	-------	G	Pl	C	---	D	J1/3	Flows: Ca.
6P1	H. Holbrook	———————	———	682	---	-----	---	----------	-----	-------	Sd	Pl	----	---	D	--------	Spring issuing from sand at contact with underlying clay; discharge estimated 2 gpm; 7-10-58; Ca.
8C1	F. Shaffer	G. Crist	4-30-55	695	J	73	2	S; 3ft, 60g	60	13	Sd,G	Pl	C	12	S	J	Sand and gravel overlain by blue clay; Ca.
9A1	L. Lan	———————	About 1955	705	Dn	23	1½	S	-----	-------	Sd	Pl	---	---	D	J	Well at barn 23 ft deep; Ca.
12J1	E. J. Johnston	———————	———	704	J	45	2	Ok	-----	-------	Sd	Pl	---	8	D	J1/3	Ca.
14A1	A. C. Olson	———————	1951	704	Dr	60	3	S	-----	-------	Sd	Pl	---	---	D	C1/3	Ca.
14A2	——do———	———————	1943	705	Dn	13	1½	S; 3ft	-----	-------	Sd	Pl	U	---	S	L	Ca.
16A1	D. Abbott	C. Hadd	7-60	700	Dn	17	1½	S	-----	-------	Sd	Pl	U	15	D,S	J	Ca.
16Q1	C. Earhart	———————	About 1951	698	Dn	23	1½	S; 3ft, 80g	14	9	Sd	Pl	U	14	D	L	Ca.
17M1	K. Gast	———————	———	707	Dr	80	4	S	-----	-------	Sd	Pl	C	---	D,S	J3/4	Ca.
22C1	A. Taff	Rochester Well and Pump Co.	3-25-52	703	J	109	2	S; 3ft	-----	-------	G	Pl	C	8	D	J	Ca.
22E1	J. W. Fritz	———————	About 1921	700	J	107	2	S	-----	-------	G	Pl	C	---	D,S	L	Ca.
25L1	O. H. Crawford	———————	1941	697	Dn	64	1½	S; 3ft, 60g	-----	-------	G	Pl	---	4	S	J	
25L2	——do———	———————	———	696	Dn	18	1½	----do----------	-----	-------	G	Pl	U	4	D	J	Ca.
28F1	E. Stoll	———————	———	700	Dn	19	1½	----do----------	16	3	Sd	Pl	U	16	D,S	J	Ca.
31D1	W. Kopka	———————	———	694	Dr	100	4	S	-----	-------	Sd	Pl	C	12	D,S	J	Ca.
32B1	R. Bokloff	———————	1959	702	Dn	26	1½	S; 3ft	-----	-------	Sd	Pl	---	16	D	J1/2	Ca.
34B1	K. E. Stotler	———————	———	698	Dn	30	1½	S	-----	-------	Sd	Pl	---	---	D,S	L	Ca.
35B1	C. Gingel	———————	———	696	Dn	16	1½	S; 3½ft	-----	-------	Sd	Pl	U	8	D	J1/3	Ca.
30/4W-1B1	P. Cupak	———————	Spring 1960	694	Dn	15	1½	S; 3ft, 90g	-----	-------	Sd	Pl	U	---	D	J1/3	Ca.
3V1	O. R. Clark	———————	Summer 1960	686	Dn	———	1½	S; 3ft	-----	-------	Sd	Pl	----	---	D,S	L	Ca.
3X1	J. Nichols	J. Nichols	———	695	J	60	2	Ok	-----	-------	Sh?	D,M	C	11	D,S	L1/3	Ca.
3X2	——do———	——do———	1910	695	Dr	124	6	Ok	120	4	Ls	D	C	18	S	L	Bedrock at 80 ft; water contains hydrogen sulfide gas; Ca.
5A1	Town of Emmaryville	———————	1928	686	Dr	72	6	S	-----	-------	G	Pl	----	---	P	T16	
5N1	——do———	———————	1948	686	Dr	———	8	Ok	-----	-------	Ls	D	C	---	P	T15	Water contains hydrogen sulfide gas.
6M1	C. Wiremma	J. Nichols	About 1946	694	Dr	100	3	Ok	-----	-------	G	Pl	C	14	D	C	Ca.
7P1	A. Kendrick	———————	1951	712	Dn	27	1½	S; 7ft	-----	-------	Sd	Pl	----	---	D	L1/2	Ca
9C1	O. Carling	J. Nichols	———	692	Dr	124	3	Ok	92	32	Ls	D	C	---	S	P	Bedrock at 90 ft; limestone overlain by 2 ft shale.
11M1	G. Nelson	———————	———	678	Dn	18	1½	S; 3ft	-----	-------	Sd	Pl	U	---	D	J1/2	Well at barn 16 ft deep; Ca.
16K1	J. Getz	———————	———	685	J	60	2	----------	-----	-------	Sd	Pl	C	10	D,S	J	Ca.
16M1	W. McGee	Hofstetter Bros.	Winter 1960	683	Dr	90	4	Ok	84	6	Ls	D	C	10	D,S	J	Dd 15 ft after 20 hr pumping 8 gpm; Ca, L.
22Q1	W. Fox	———————	———	681	---	93	---	----------	-----	-------	Sd	Pl	----	13	D,S	J1/2	Ca.
24K1	P. Holtzin	O. J. Titus	About 1956	685	Dr	100	4	S	-----	-------	G	Pl	C	---	D	J1/3	Ca.
28D1	W. Hartos	———————	———	681	Dr	80	3	----------	-----	-------	Sd	Pl	----	15	D,S	J1 1/2	Ca.
30B1	L. Carpenter	———————	———	687	Dr	80	3	----------	-----	-------	Ls?	D?	----	25	S	L	Ca.
31E1	E. Ballber	———————	———	686	Dr	30	3	----------	-----	-------	Sd	Pl	----	10	S	J1/3	Ca.
32Z1	H. Lemma	———————	———	676	Dr	90	4	----------	-----	-------	Ls	S	C	--	D,S	C1/2	Flows; water contains hydrogen sulfide gas; Ca.
34A1	K. Carling	Hofstetter Bros.	1- 6-56	681	Dr	73	4	Ok	65	8	Ls	S	C	10	D,S	--------	Dd 5 ft pumping 30 gpm; bedrock at 65 ft: limestone overlain by 65 ft clay; Ca.
35Q1	J. Kreusler	H. H. Wimmato	1-25-57	670	Dr	75	4	S; 3ft. dia 24	-----	-------	Sd,G	Pl	C	6	D	--------	Ca.

Table 3.--Records of wells and test holes in Jasper County--Continued

Well	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone: Depth to top (feet)	Water-bearing zone: Thickness (feet)	Water-bearing zone: Character	Water-bearing zone: Geologic age	Water-bearing zone: Conditions of occurrence	Water level (feet)	Use	Type of pump and horsepower	Remarks
29/7W-36K1	St. Joseph's	Layne-Northern Co., Inc.	9-25-53	883	Dr	50	10	Gp; S; 10ft, dia 9	11	39	Sd,G	Pl	U	11	P	--------	Dd 13 ft after 2.5 hr pumping 270 gpm; L.
30/6W- 2A1	R. Buckley	A. Potts	1940	717	Dr	160	4	Qo	158	2	G	Pl	C	---	D,S	J1/2	Ca.
2D1	V. Henshman	----------	--------	702	Dr	65	4	Qo	----	------	Sh	D,M	C	10	D,S	J	Ca.
4P1	C. and M. Dobson	Jasper County Enterprises, Inc.	12-20-50	685	Dr	108	8-5	----------	104	4	Do,Ls	D	----	---	---	--------	Gds test; L.
4R1	L. Nichols	A. Potts	1951	687	Dr	88	4	Oh	73	15	Ls	D	C	---	D	--------	Bedrock at 73 ft; Ca.
6Q1	E. Peregrine	----do----------	1937	684	Dr	86	4	Oh	65	21	Ls	D	C	---	D	--------	Water has odor hydrogen sulfide gas.
9L1	W. Gehring Inc.	J. P. Miller Artesian Well Co.	8-15-48	685	Dr	200	10	Oh	103	157	Ls	D	C	30	Ir	T60	Yield 1100 gpm; bedrock at 103 ft; water has strong odor hydrogen sulfide gas; Ca, L.
9L2	----do----------	----do----------	11-30-48	688	Dr	105	6	Gp; S; 10ft	85	20	Sd,G	Pl	C	14	F	--------	L.
11N1	R. Freshour	O. J. Titus	About 1950	694	Dr	102	4	----------	----	------	G	Pl	C	---	D,S	J	Ca.
12E1	H. Berger	----------	--------	705	J	104	2	----------	----	------	Sh?	D,M	C	40	D,S	J1/4	Ca.
10A1	A. Gumz	J. P. Miller Artesian Well Co.	4-13-48	680	Dr	315	16	Oh	95	220	Ls	D,S	C	4	Ir	T	L.
17L1	W. Gehring Inc.	----do----------	About 1947	680	Dr	300	10	Oh	----	------	Ls	D	C	---	O	--------	Observation well Jasper 4; water level measured 9.67 ft below lsd, 7-5-50.
18B1	----do----------	A. Potts	3-48	686	Dr	98	4	Oh	80	18	Ls	D	C	---	N	--------	Bedrock at 80 ft.
19J1	L. Kornisk	R. Elb	About 1945	685	Dr	102	4	Qu	----	------	Ls	D?	C	5	D,S	J3	Ca.
19Q1	W. Gehring Inc.	J. P. Miller Artesian Well Co.	5-24-48	681	Dr	280	12	Oh	----	------	Sd,G, Ls	S,Pl	C	8	Ir	T	Dd 38 ft after 4 hr pumping 1,000 gpm; bedrock at 98 ft; L.
21N1	B. Odom	----------	--------	692	Do	16	1½	S	----	------	Sd	Pl	U	---	D	J	Ca.
22Q1	J. Corbett	----------	--------	693	J	170	2	Qo	----	------	Ls	D	C	---	D,S	--------	
23G1	Trustees, Gillam Township	----------	--------	725	Dr	110	4	S; 3ft, 60g, dia 2½	----	------	Sd,G	Pl	C	13	P	--------	Dd 50 ft pumping 15 gpm; Ca.
26C1	L. Logan	Hofstotter Bros.	8- 2-58	711	Dr	101	4	----------	99	2	G,Sd	Pl	C	45	D	--------	Dd 5 ft pumping 15 gpm; Ca, L.
26P1	T. Logan	----do----------	1949	710	Dr	98	---	----------	94	4	Sd	Pl	C	45	D	--------	Dd 15 ft pumping 15 gpm; sand overlain by 94 ft clay.
28M1	H. Corbin	----------	--------	690	Dr	104	4	----------	----	------	Ls	D	C	---	D,S	J	Water has odor hydrogen sulfide gas; Ca.
29N1	R. Saltwell	----------	1918	692	Dr	107	3	Oh	----	------	Ls	D	C	18	D,S	L1/3	Do.
34L1	S. E. Lowry	E. H. Wingate	11-24-59	702	Dr	130	4	Oh	100	30	Ls	D	C	40	D,S	--------	Bedrock at 72 ft; water has odor hydrogen sulfide gas; Ca, L.
35C1	V. Stevens	Hofstotter Bros.	Winter 1950	702	Dr	115	4	Oh	66	49	Ls	D	C	25	D	J	Dd 25 ft after 6 hr pumping 7 gpm; bedrock at 66 ft; Ca, L.
30/6W- 1D1	Mr. Rosenkranz	A. Potts	1949	685	Dr	71	4	Oh	69	2	Ls	D	C	---	D	--------	Bedrock at 69 ft.
1Q1	A. Snyder	----do----------	1942	686	Dr	73	4	Oh	65	8	Ls	D	C	---	N	P	Bedrock at 65 ft; Ca.
1Q2	----do----------	----do----------	1945	686	Dr	77	4	Oh	63	14	Ls	D	C	---	N	--------	Bedrock at 63 ft.
1R1	J. Brown	----do----------	1948	685	Dr	90	4	Oh	56	34	Ls	D	C	---	D	--------	Bedrock at 56 ft; water has odor hydrogen sulfide gas; Ca.
1R2	----do----------	----do----------	1955	688	Dr	74	4	Oh	62	12	Ls	D	C	---	S	--------	Bedrock at 62 ft.
2P1	J. Davis	----do----------	1950	687	Dr	67	4	Oh	57	10	Ls	D	C	---	D	--------	Bedrock at 57 ft; Ca.
2Q1	D. Lakin	----do----------	1953	695	Dr	52	4	Qo	----	------	G	Pl	--	---	D,S	--------	
4C1	Trustees, Chamberlain Estate	----do----------	1935	690	Dr	96	4	Oh	70	20	Ls	S	C	---	D	--------	Bedrock at 70 ft; water has odor hydrogen sulfide gas; Ca.
4R1	F. Chapman	A. Potts	1935	696	Dr	84	4	Oh	80	24	Ls	S	C	---	N	--------	Water has odor hydrogen sulfide gas.

30/6W- 5G1	A. Childress	----------	--------	692	Dr	113	---	Oh	----	------	Ls	S	C	10	D,S	J1/3	Ca.
6Q1	G. Tannal	A. Potts	1953	692	Dr	82	4	Oh	79	3	Ls	S	C	---	D	--------	Bedrock at 79 ft; Ca.
7P1	M. Comer	----do----------	1942	700	Dr	84	4	Oh	67	17	Ls	S	C	---	D	J	Bd 1 ft pumping 6 gpm; bedrock at 67 ft; Ca.
8Q1	G. Fleming	Hofstetter Bros.	8-52	700	Dr	33	4	S; 3ft	20	13	G	Pl	C	12	D,S	J	Ca.
9A1	F. Howard	A. Potts	1954	691	Dr	30	4	Oo	----	------	G	Pl	C	---	D	J	Ca.
12A1	T. Hancock	----do----------	1953	683	Dr	55	4	Oh	51	4	Ls	D	C	---	D	--------	Bedrock at 51 ft.
12B1	Mr. Snyder	----do----------	1948	683	Dr	54	4	Oh	50	5	Ls	D	C	---	D	--------	Bedrock at 50 ft.
12D1	E. Risner	----do----------	1945	686	Dr	117	4	Oh	59	5	Ls	D	C	---	D	--------	Bedrock at 59 ft.
13H1	Mr. Drake	----do----------	1942	685	Dr	126	---	Oh	77	40	Ls	DT	C	---	D	--------	Bedrock at 77 ft.
13M1	S. Jordan	----------							----	------	Ls	S	C	---	---	--------	Water has odor hydrogen sulfide gas; Ca.
14R1	State Bank of Ronsmulner	----------	1945	685	Dr	3,330	---	----------	----	------	------	---	----	---	---	--------	Oil test; L.
14R2	T. Arnett	A. Potts	1918	695	Dr	100	4	Oo	----	------	Ls	S	----	---	D	--------	Bedrock at 100 ft; Ca.
15E1	V. Torbett	R. Elb	About 1945	695	Dr	100	4	----------	----	------	Ls	S	----	---	D,S	J1/2	Ca.
16D1	F. L. Ritter	----------	1940	706	Dn	34	2	S	----	------	Sd,G	Pl	C	---	D	--------	Ca.
16Q1	C. Torbett	R. Elb	About 1940	703	Dr	151	4	----------	----	------	Ls	S	C	---	D,S	J	Ca.
18Q1	M. Schultz, Sr.	----------	--------	693	Dr	80	4	Oh	----	------	Ls	S	C	15	D	J	Ca.
20J1	H. Lakin	A. Potts	1939	692	Dr	101	4	Oo	----	------	G	Pl	C	---	D	--------	Ca.
22P1	H. M. Arnold	C. J. Titus	About 1955	695	Dr	128	4	----------	----	------	Ls	S	C	---	D,S	J1/2	Ca.
23N1	C. Clapp	A. Potts	1953	688	Dr	115	4	Oo	----	------	G	Pl	C	10	D	J	Ca.
24N1	F. Markin	----do----------	1935	686	Dr	140	4	Oh	118	31	Ls	S	C	9	S	--------	Bedrock at 118 ft.
29J1	L. Price	----------	--------	695	J	60	2	----------	----	------	Ls	S	C	28	D,S	J1/2	Ca.
29J2	----do----------	R. Elb	About 1945	693	Dr	64	4	----------	----	------	Ls	S	C	12	D,S	J1/3	
30D1	L. Myers	A. Potts	1938	692	Dr	164	4	Oh	142	22	Ls	S	C	---	D	--------	Bedrock at 142 ft; limestone overlain by about 60 ft very fine sand; Ca.
30L1	W. Hurley	----do----------	1934	678	Dr	158	4	Oh	122	36	Ls	S	C	---	D,S	--------	Bedrock at 122 ft; Ca.
32N1	R. Pullins	----do----------	1938	672	Dr	91	4	Oo	90	4	G	Pl	C	17	S	--------	Water has odor hydrogen sulfide gas; Ca.
33A1	R. Elb	----------	1939	705	Dr	85	5	Oh	----	------	Ls	S	C	---	D,S	--------	Ca.
35C1	E. McFadden	R. Elb	About 1955	703	Dr	124	4	Oh	----	------	Ls	S	C	20	D,S	J1/2	Ca.
36J1	E. L. Campbell	----------	About 1950	694	Dr	160	4	----------	----	------	Ls	S	C	---	D,S	J	Ca.
30/7W- 1B1	R. Kohlhagen	D. J. Lewis and Sons	7-56	686	Dr	53	---	----------	----	------	Sd	Pl	----	6	Ir	--------	Yield 150 gpm; bedrock at 42 ft; nue log well 1K1.
1K1	----do----------	----do----------	7-56	690	Dr	598	---	----------	----	------	Ls	S,D	C	7	Ir	T	Dd 125 ft pumping 550 gpm; L.
3R1	D. Mitchell	----------	--------	692	Dn	15	1½	S	----	------	Sd	Pl	U	---	D	--------	Ca.
5M1	Trustees, Union Township	A. Potts	1939	700	Dr	142	4	Oh	74	68	Ls	S	C	---	P	--------	Yield 15 gpm; bedrock at 74 ft.
6E1	Fair Oaks Farms	----------	--------	698	Dn	20	1½	S	----	------	Sd	Pl	U	---	S	J1/3	Sand 0-20- ft.
6N1	----do----------	----------	--------	683	Dn	20	1½	S	----	------	Sd	Pl	U	---	S	J1/3	Sand 0-20- ft; Ca.
7C1	----do----------	----------	--------	690	Dn	20	1½	S	----	------	Sd	Pl	U	---	S	J1/3	Sand 0-20 ft.
7E1	----do----------	----------	--------	685	Dn	20	1½	S	----	------	Sd	Pl	U	---	S	J1/3	Do.
7M1	----do----------	----------	--------	679	Dn	20	1½	S	----	------	Sd	Pl	U	---	S	J1/3	Sand 0-20 ft; Ca.
9D1	L. Warne	----------	Fall 1954	695	Dn	20	1½	S	----	------	Sd	Pl	----	---	D	J	Ca.
12N1	K. Schultz	----------	--------	690	Dn	30	1½	S	----	------	Sd	Pl	----	---	D,S	L	Ca.
13R1	M. Schultz, Jr.	----------	--------	681	Dr	80	4	Oh	----	------	Ls	S	C	5	D	C	Water has slight odor hydrogen sulfide gas; Ca.
15L1	H. Mattocks	----------	--------	695	Dn	12	1½	S; 3ft	----	------	Sd	Pl	U	---	D	J1/3	Ca.
18C1	Fair Oaks Farms	----------	--------	682	Dn	20	1½	S	----	------	Sd	Pl	U	---	S	J1/3	Sand 0-20 ft.
20R1	P. Andy	----------	1956	684	Dn	11	1½	S; 3ft	----	------	Sd	Pl	U	---	D	J1/3	Ca.
20R2	F. Thompson	A. Potts	1938	684	Dr	100	4	Oh	67	13	Ls	S	C	---	S	--------	Bedrock at 87 ft.
21R1	L. L. McCurtain	----do----------	1937	686	Dr	109	4	Oh	82	27	Ls	S	C	---	D	--------	Bedrock at 82 ft; water has odor hydrogen sulfide gas.
21R2	L. Myers	----do----------	1934	693	Dr	111	4	Oh	79	32	Ls	S	C	---	D	--------	Bedrock at 79 ft; water has odor hydrogen sulfide gas; Ca.
22N1	G. Boll	----do----------	1938	699	Dr	104	4	Oh	81	23	Ls	S	C	---	D	--------	Bedrock at 81 ft; water has slight odor hydrogen sulfide gas; Ca.
22N2	J. Longstretch	----do----------	1940	701	Dr	98	4	Oh	71	27	Ls	S	C	---	D	--------	Bedrock at 71 ft.
22N3	L. Longstretch	----do----------	8-36	701	Dr	104	4	Oh	72	32	Ls	S	C	---	D	--------	Bedrock at 72 ft.
22N4	Trustees, Union Township	----do----------	1939	692	Dr	115	4	Oh	82	33	Ls	S	C	---	P	Ll 1/2	Bedrock at 82 ft; water has strong odor hydrogen sulfide gas; Ca.
24D1	T. E. Cooper	----------	About 1910	685	Dr	90	3	Oh	----	------	Ls	S	C	18	D,S	L	Water has slight odor hydrogen sulfide gas; Ca.

Table 3.--Records of wells and test holes in Jasper County--Continued

Well	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone: Depth to top (feet)	Water-bearing zone: Thickness (feet)	Water-bearing zone: Character	Water-bearing zone: Geologic age	Water-bearing zone: Conditions of occurrence	Water level (feet)	Use	Type of pump and horsepower	Remarks
30/7W-25D1	P. Hordeman	A. Potts	1941	687	Dr	163	4	Oh	74	88	Ls	S	C	----	D	---------	Bedrock at 74 ft.
25J1	A. Davidson	----------	----------	663	Dr	1,101	---	----------	---	-------	----------	---	---	---	---	---------	Oil test; L.
28Q1	W. Todd	A. Potts	1943	692	Dr	82	4	Oo	---	-------	G?	Pl?	---	12	D,S	J1/2	Water has odor hydrogen sulfide gas; Ca.
28A1	Mrs. Schraeg	----do----------	11-28-32	695	Dr	118	4	Oh	87	31	Ls	S	C	---	D	---------	
28A2	H. E. Brunton	----------	---------	690	Dr	30	4	----------	---	-------	Sd,G	Pl	C	---	---	---------	Formerly observation well Jasper 3; sand and gravel overlain by yellow clay; water level measured 9.40 ft below land, 6-10-48.
29Q1	J. Kosta	A. Potts	1938	680	Dr	111	4	Oh	92	19	Ls	S	C	---	D	---------	
32M1	F. Zickmund	R. Elb	1957	693	Dr	92	4	Oh	---	-------	Ls	S	C	12	D,S	J1/3	Water has moderate odor hydrogen sulfide gas; Ca.
32Q1	T. Prohosky	A. Potts	1950	693	Dr	94	4	Oo	---	-------	G	Pl	C	---	N	-------	
35D1	D. E. Grow	----do----------	1932	686	Dr	130	4	Oh	87	43	Ls	D	C	---	S	L	Water reported to have odor hydrogen sulfide gas.
35R1	C. Kellner	----do----------	1937	691	Dr	155	4	Oh	107	48	Ls	D	C	---	D	---------	Ca.
31/5W- 4N1	A. Walker	----------	1941	704	Dn	14	1½	S; 3ft	---	-------	Sd	Pl	U	---	D	P	Ca.
7R1	O. J. Turat	----------	0-47	699	Dn	12	1½	----do----------	---	-------	Sd	Pl	U	10	D	J	Ca.
8H1	C. M. Mauck	----------	1954	692	Dn	22	1½	----do----------	---	-------	Sd	Pl	U	16	D	C1/J	Ca.
13C1	State of Indiana	----------	Spring 1961	697	Dn	18	1½	----do----------	---	-------	Sd	Pl	U	---	P	J2	Ca.
15E1	H. C. Doerberg	----------	1948	695	Dn	24	1¼	----do----------	---	-------	Sd	Pl	---	---	D	L	Ca.
16G1	Cain and Hughes	Oak Ridge Oil Co.	11-11-48	692	Dr	989	---	----------	---	-------	----------	---	---	---	---	---------	Oil test; bedrock at 64 ft; L.
16R1	W. Drosher	----------	1956	702	Dn	20	1½	S; 3ft	---	-------	Sd	Pl	U	21	D	J1/2	Ca.
21N1	E. Hornbaan	----------	About 1958	695	Dn	38	1¼	S	---	-------	G,Sd	Pl	---	---	D,S	J	Ca.
22N1	R. Schultz	J. L. Cowan	11-14-52	685	Dr	985	8¼ 7	----------	---	-------	----------	---	---	---	---	---------	Oil test; bedrock at 68 ft; L.
24D1	R. Ballard	C. A. Davis	3- 4-52	691	Dr	1,020	8- 4½	----------	---	-------	Ls	D	---	---	--	---------	Oil test; water-bearing limestone from 110-124 ft.
26J1	S. Lykins	Mr. Nichols	About 1938	692	J	108	2	S	---	-------	Sd	Pl	C	---	D	J1/2	Ca.
27D1	W. Clawson	----------	About 1938	687	--	60	2	----------	---	-------	Sh?	D,M	---	---	D;S	J	Ca.
27E1	C. Backer	A. Potts	1954	687	Dr	47	4	----------	---	-------	Sh?	D,M	---	---	N	---------	
28F1	H. A. Nelson	B and B Oil Co.	8-26-38	692	Dr	128	4	Oh	---	-------	----------	---	---	---	---	---------	Oil test; bedrock at 50 ft; L.
28P1	O. and M. Woodruff	United Development Co.	10-28-38	685	Dr	570	---	----------	---	-------	Ls	D	---	---	---	---------	Oil test.
28P2	H. Stone	----------	About 1957	680	Dn	12	1¼	S	---	-------	G,Sd	Pl	U	3	D,S	P	Ca.
29D1	R. Florence	----------	About 1955	690	Dn	18	1½	S	---	------	Sd,G	Pl	U	---	D,S	J	Ca.
30N1	G. Callaway	A. Potts	1944	689	Dr	88	4	Oh	66	20	Ls	D	C	---	D	---------	Bedrock at 66 ft.
30N2	A. Keller	----do----------	1949	688	Dr	83	4	Oh	67	16	Ls	D	C	---	D	---------	Bedrock at 67 ft.
31F1	W. Teesley	----do----------	1938	686	Dr	113	4	Oh	69	44	Ls	D	C	---	D	---------	Bedrock at 69 ft.
31F2	----do----------	----do----------	1942	680	Dr	78	4	Oh	60	16	Ls	D	C	---	D	---------	Bedrock at 60 ft.
31L1	J. Richie	----do----------	1944	688	Dr	147	4	Oh	59	88	Ls	D	C	---	N	---------	Bedrock at 50 ft.
32F1	O. Marshman	----------	---------	690	Dr	-------	--	Oh	---	-------	Ls	S?, D	C	---	D,S	L	Originally drilled as oil test; Ca.
33G1	J. Kruk	----------	---------	692	J	55	2	S	---	-------	Sd	Pl	---	---	D	P	Ca.
33K1	G. Salrin	H. W. Kimo	7-20-51	689	Dr	126	--	----------	---	-------	Sd	Pl	---	---	Do	---------	Oil test; bedrock at 62 ft; L.
33P1	W. Horshman	----do----------	7-20-51	690	Dr	158	8¼- 5	----------	---	-------	-------	---	---	---	---	---------	Oil test; water-bearing sand from 0-30 ft and 45-80 ft; water-bearing shale from 122-130 ft and 140-148 ft.
31/6W- 2E1	Mr. Schultz	----------	---------	679	Dr	667	12	Oh	68	591	Ls	S,D	C	---	S	---------	Flows; water level measured 2 ft above land, 3-12-58; bedrock at 68 ft; see Logan (1931, p. 375); Ca, L.

31/8W- 5D1	A. Kaplan	----------	--------	684	Dn	20	1½	S	---	------	Sd	Pl	----	----	D	L	Ca.
5P1	A. Hoffman	----------	--------	682	Dn	20	1½	S; 3ft	---	------	Sd	Pl	----	----	D	L1/3	Ca.
11Q1	I. Baldwin	----------	--------	693	Dn	28	1½	S	---	------	Sd	Pl	----	----	D	L	Ca.
13R1	L. Stewart	Westville Well Co.	1954	688	Dr	32	0	S; 15ft, dia 6	5	25	Sd	Pl	U	5	Ir	C	
15D1	H. Postma	----------	--------	682	Dn	25	1½	S	---	------	Sd	Pl	----	----	D	L	Ca.
16M1	M. Vander Nolon	E. H. Wingate	9-12-00	694	Dr	48	4	S; 20ft, 18sl, dia 3½	7	41	Sd	Pl	U	7	Ir	--------	Yield 220 gpm; sand from 0-48 ft.
16N1	L. Myers	----------	Spring 1947	697	Dn	24	1½	S; 5ft	---	------	Sd	Pl	U	----	D	L1/4	Ca.
17D1	J. Polizzotto	----------	--------	692	Dn	25	1½	S; 4ft	---	------	Sd	Pl	----	----	D	J1/4	Ca.
17E1	F. Jungels	----------	Spring 1960	693	Dn	10	1½	S	---	------	Sd	Pl	U	----	D	C1/3	Ca.
19H1	J. Hoffman	Gunke's Well and Pump Co.	1945	693	Dr	48	2	S; 4ft, dia 1½	---	------	G	Pl	C	----	D,S	C1/2	Ca.
19R2	A. Hoffman	R. Eib	1954	693	Dr	65	4	S	---	------	G	Pl	C	----	D	C	Ca.
20J1	J. E. Middlecamp	----------	About 1950	697	Dn	30	1½	S; 4ft	---	------	Sd	Pl	U	----	D	L1	Ca.
21J1	W. Gehring Inc.	J. P. Miller Artesian Well Co.	1940	683	Dr	260	18	Oh	103	157	Ls	S	C	5	N	--------	Dd 137 ft pumping 200 gpm; bedrock at 103 ft; L.
24R1	Mr. Glover	A. Potts	1942	684	Dr	84	4	Oh	67	17	Ls	D	C	----	D	--------	Bedrock at 67 ft.
25A1	J. Wynkoop	----do----------	1943	686	Dr	84	4	Oh	63	21	Ls	D	C	----	D	J	Bedrock at 63 ft; water has odor hydrogen sulfide gas; Ca.
25A2	----do----------	----do----------	1939	690	Dr	84	4	Oh	67	28	Ls	D	C	----	S	L	Bedrock at 67 ft; Ca.
28A1	G. Meyer	----------	About 1957	694	Dn	40	1½	S; 3ft, 80g	----	------	Sd	Pl	U	----	D	J	Ca.
27D1	W. Gehring Inc.	J. P. Miller Artesian Well Co.	6-10-40	686	Dr	260	10	Oh	70	190	Sd,G, Ls	D, Pl	C	10	Ir	T30	Bedrock at 78 ft; L.
27D2	----do----------	----do----------	8- 2-48	680	Dr	280	10	Oh	90	190	Ls	D	C	7	Ir	T60	Dd 20 ft after 3.5 hr pumping 700 gpm; bedrock at 86 ft; L.
30E1	C. Crawford	----------	1950	691	Dn	20	1½	S	----	------	Sd	Pl	U	----	D	L1/4	Ca.
31L1	R. E. Davis	----------	Spring 1953	691	Dn	23	1½	S	----	------	Sd	Pl	----	----	D	L1/4	Ca.
32D1	J. Sytsma	----------	--------	695	Dn	19	1½	S	----	------	Sd	Pl	U	8	D	L1/3	Ca
33C1	J. M. Jungel	----------	Summer 1959	697	Dn	30	1½	S; 3ft	----	------	Sd	Pl	----	----	D	L	Ca.
35G1	W. Gehring Inc.	J. P. Miller Artesian Well Co.	1-10-49	680	Dr	280	18	Oh	78	202	Ls	S,D	C	7	Ir	T75	Bedrock at 78 ft; L.
35G2	----do----------	----do----------	7-15-52	680	Dr	280	16	Oh	69	211	Ls	S,D	C	2	Ir	T65	Bedrock at 69 ft; L.
35J1	----do----------	----do----------	5-20-46	687	Dr	310	12	Oh	72	238	Ls	S,D	C	10	I	--------	Bedrock at 72 ft; water has odor hydrogen sulfide gas; L.
35J2	----do----------	A. Potts	1930	687	Dr	93	4	Oh	75	18	Ls	D	C	----	N	--------	Bedrock at 75 ft.
36J1	D. Wyncoop	----do----------	10-14-58	691	Dr	100	4	Oh	70	30	Ls	D	C	11	D,S	L	Bedrock at 70 ft; water has odor hydrogen sulfide gas; Ca, L.
31/7W- 1D1	J. Takacs	----------	9-56	682	Dn	23	1½	S; 3ft	----	------	Sd	Pl	----	----	D	L	Ca.
3A1	P. Walstrah	----------	Spring 1953	672	Dn	20	1½	S; 3ft	----	------	Sd	Pl	U	4	D	C1/2	Ca
4D1	S. Hamstra	J. Bonstra	Spring 1961	677	Dr	52	4	S; 7ft	----	------	Sd,G	Pl	----	----	D	J1/3	Ca.
5N1	G. C. Hamstra	----do----------	5-61	692	J	35	2	S	----	------	Sd	Pl	----	----	D	J	Ca.
7N1	A. R. Eck	----------	About 1956	692	Dn	14	1½	S; 3½ft	----	------	Sd	Pl	U	----	D	L	Ca.
8E1	G. W. Hamstra	----------	About 1955	687	Dn	24	1½	S; 4ft	----	------	Sd	Pl	U	12	D	J1/3	Ca.
9F1	Mike's Pheasant Ranch	----------	--------	688	Dn	25	1½	S; 3ft	----	------	Sd	Pl	----	----	D,S	J	Ca.
11A1	A. Chicki	----------	--------	694	Dn	21	1½	----do----------	----	------	Sd	Pl	----	----	D	J	Ca.
11F1	E. Graefon	----------	Spring 1946	689	Dn	40	1½	----do----------	----	------	Sd	Pl	----	----	D	L1/3	Ca.
12A1	W. DeGraff	----------	1938	692	Dn	22	1½	S	----	------	Sd	Pl	----	----	D	C1/4	Ca.
12Q1	DeGraff Inc.	----------	Spring 1960	690	Dn	17	1½	S; 3ft	----	------	Sd	Pl	U	7	D	J1/3	
13R1	D. H. Odle, Sr.	----------	Fall 1949	692	Dn	20	1¼	S	----	------	Sd	Pl	----	----	D	C	Ca.
15D1	H. Peterson	----------	5-61	692	Dn	20	1½	S; 4ft	----	------	Sd	Pl	U	12	D	J1/4	Ca.
20N1	M. Hoffman	----------	6-60	690	Dn	18	1½	----do----------	----	------	Sd	Pl	U	11	D	L1/2	Ca.
21N1	D. Sipkema	----------	About 1950	695	Dn	33	1¼	S	----	------	Sd	Pl	----	----	D	L	Ca.
22N1	A. Brown	----------	--------	688	Dn	20	1½	S	----	------	Sd	Pl	----	----	D	J	Ca.
24N1	P. Richards	----------	Spring 1958	690	Dn	18	1½	S	----	------	Sd	Pl	U	----	D	---------	Ca.
26C1	W. DeGraff	----------	--------	691	Dn	12	1½	S	----	------	Sd	Pl	U	----	D	J	Ca.
29Q1	Trustees, Otis Estate	----------	Spring 1956	687	Dn	28	1½	S; 3ft	----	------	Sd	Pl	----	----	D	J1/3	Well 12 ft deep at barn; Ca.

Table 3.--Records of wells and test holes in Jasper County--Continued

Well	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone: Depth to top (feet)	Water-bearing zone: Thickness (feet)	Water-bearing zone: Character	Water-bearing zone: Geologic age	Water-bearing zone: Conditions of occurrence	Water level (feet)	Use	Type of pump and horsepower	Remarks
31/7W-32N1	Trustees, Otis Estate	----------	8-57	696	Dn	24	2	S; 4ft, 90g, dia 1¼	----	------	Sd	Pl	U	4	D	J1/2	Ca.
34R1	G. Hanford	----------	1944	698	Dn	25	1¼	S; 3ft	----	------	Sd	Pl	----	---	D	L1/3	Well 25 ft deep at barn; Ca.
35D1	C. Anderson	----------	--------	693	Dn	30	1¼	----do----------	----	------	Sd	Pl	----	---	D	L	Ca.
35R1	F. Chenver	----------	Spring 1949	690	Dn	16	1¼	----do----------	----	------	Sd	Pl	U	3	D,S	J1/3	Ca.
32/5W- 8Q1	W. Duerdorff	----------	About 1950	682	Dn	20	1¼	S	----	------	Sd	Pl	----	---	D	L	Ca.
14R1	C. Stalbaum	----------	1950	660	Dn	8	1¼	S; 3ft	----	------	Sd	Pl	U	---	D	J	Ca.
14N2	----do----------	----------	About 1920	667	Dr	170	4	Oh	----	------	Ls	D	C	---	N	L	Water has odor hydrogen sulfide gas.
14M1	S. Galovic	----------	6-60	666	Dn	15	1¼	S; 3ft	----	------	Sd	Pl	U	---	D	L1/3	Ca.
15J1	Mr. Dunn	----------	--------	662	Dr	-----	8	----------	----	------	Ls	S,D	C	---	N	--------	Flows; discharge estimated 1 gpm, 3-12-59; oil test; water has very strong odor hydrogen sulfide gas; Ca.
15R1	E. Jonson	----------	--------	663	Dn	12	1¼	S	----	------	Sd	Pl	U	---	D	L	Ca.
16Q1	Mr. Powers	----------	About 1956	664	Dn	17	1¼	S; 3ft	----	------	Sd	Pl	U	---	D	J1/2	Well 7 ft deep at barn; Ca.
19B1	F. C. Knight	Porter County Well Co.	1952	664	Dr	30	4	S; 10ft, 30ul	----	------	G	Pl	----	4	Ir	C	
22F1	J. Tenta	----------	Fall 1958	672	Dn	40	1¼	S; 3ft	----	------	Sd	Pl	----	---	D	L1/4	Ca.
26M1	K. Miller	----------	Spring 1955	687	Dn	15	1¼	S	----	------	Sd	Pl	U	---	D	J	Ca.
27R1	W. F. Holland	----------	8-58	678	Dn	14	1¼	S	----	------	Sd	Pl	U	---	D	J	Ca.
27R1	W. Peregrine	----------	About 1915	682	Dr	101	2	Oh	----	------	Sh?	D,H	C	---	N	--------	Has gas in well.
28J1	E. Jamieson	----------	1950	674	Dn	20	1¼	S; 3ft	----	------	Sd,G	Pl	----	---	D	L1/3	Ca.
30R1	A. Cowgill	----------	--------	676	Dn	18	1¼	S; 3½ft	----	------	Sd	Pl	U	---	S	J1/4	Ca.
30R2	----do----------	----------	Fall 1960	676	Dn	18	1¼	----do----------	----	------	Sd	Pl	U	---	D	J1/4	
34G1	J. W. Davis	----------	About 1923	692	Dr	85	4	----------	----	------	G	Pl	----	---	D	J1/2	Ca.
34J1	D. T. Allen	Clapsaddle and Harris	6- 5-40	699	Dr	1,130	10-5	----------	----	------	------	---	----	---	---	--------	Oil test; bedrock at 44 ft.
34J2	E. T. Biggs	----------	1927	695	Dr	441	---	----------	----	------	Sd,G	Pl	----	---	---	--------	Oil test; bedrock at 60 ft; see Logan (1931, p 374); L.
34N1	C. Gulbranson	----------	--------	697	Dn	18	1¼	S	----	------	Sd	Pl	U	---	D	L1/4	Ca.
35H1	C. Ostinski	----------	8-59	712	Dn	30	1¼	S; 3ft	----	------	Sd	Pl	----	---	D	J1/3	Ca.
32/6W- 1D1	H. Stewart	----------	1940	664	Dn	35	1¼	S	----	------	Sd,G	Pl	----	15	D	J1/2	Ca.
3M1	A. Misch	----------	1951	661	Dn	22	1¼	S	----	------	Sd	Pl	----	---	D	L	Ca.
6J1	C. Sampson	----------	About 1957	651	Dn	30	1¼	S	----	------	Sd	Pl	----	---	D	C1/3	
6J2	----do----------	Lowell Well and Pump Co.	1960	651	Dr	125	3	Oh	----	------	Ls	D	C	---	N	--------	Water not potable.
15K1	J. Smith	----------	About 1945	662	Dn	50	1¼	S	----	------	Sd	Pl	C	---	D	L1/2	Ca.
15K2	----do----------	----------	--------	662	Dn	20	1¼	S; 3ft	----	------	Sd	Pl	----	4	N	P	
16E1	N. Dearborn	----------	--------	680	Dn	10	1¼	S	----	------	Sd,G	Pl	U	10	D	J1/3	Ca.
17F1	J. Tynan	----------	5-59	656	Dn	18	1¼	S; 3ft	----	------	Sd	Pl	U	4	D	J1/4	
18R1	A. Misch	----------	1951	657	Dn	35	1¼	S; 4ft	----	------	Sd	Pl	----	---	D	J	Ca.
21D1	C. Dattinger	Layne-Northern Co., Inc.	3-11-60	657	Dr	38	6	----------	3	31	Sd,G	Pl	U	3	T	--------	Bedrock 34 ft; L.
21G1	C. Stalbaum	----------	Winter 1960	662	Dn	25	1¼	S; 3ft	----	------	Sd	Pl	----	---	D	C	Ca.
25K1	Trustees, Wheatfield Township	----------	--------	660	Dn	42	2	S; 5ft, 60g	----	------	Sd	Pl	U	18	P	TJ 1/2	Ca.
26Q1	W. Gaszeveld	Fitzgerald Well and Pump Co.	Spring 1957	662	J	31	2	S; 3ft, 60g	----	------	Sd,G	Pl	C	---	D	J	Ca.

32/6W-28L1	W. Sculley	----------	About 1940	672	Dn	18	1½	S	----	------	Sd,G	Pl	U	---	D	J1/2	Ca.
30L1	W. Coms	----------	--------	665	Dr	------	4	Oh	----	------	Ls	S	C	---	N	-------	Flows; discharge measured 10 gpm, 10-14-58; oil test; water level estimated 4 ft above lsd, 10-14-58; water has odor hydrogen sulfide gas; Ca.
30L2	Jasper County Farm Bureau Co-op	R. Elb	1957	666	Dr	42	6	Oh	----	------	Ls	S	C	---	I	L	Flows; water level estimated 2 ft above lsd, 4-15-59; water has slight odor hydrogen sulfide gas; Ca.
30L3	----do----------	----------	---------	665	Dn	20	1½	S; 3ft, 60g, dia 1¼	----	------	Sd	Pl	U	10	P	C1/3	Ca.
32A1	E. Hershman	----------	Summer 1958	677	Dn	21	1½	S; 3ft	----	------	Sd	Pl	----	8	D	J	Ca.
33N1	C. L. Lilley	----------	About 1946	684	Dn	30	1½	----do----------	----	------	Sd	Pl	----	---	D	J	Ca.
32/7W- 1P1	L. Swart	----------	Summer 1948	660	Dn	30	1½	----do----------	----	------	Sd	Pl	U	22	D	L1/3	Ca.
2R1	M. Hoffman	----------	--------	647	Dn	20	1½	S; 3ft	----	------	Sd	Pl	U	14	D	L1/3	Ca.
3A1	A. R. Johnson	R. Elb	Fall 1953	652	Dr	55	4	Oh	----	------	Ls	D	C	---	D	J1/4	Ca.
3Q1	W. Coms	----do----------	1949	647	Dr	70	4	Oh	----	------	Ls	D	----	---	N	-------	Has oil and gas in water.
3Q2	----do----------	----------	Spring 1959	647	Dn	12	1¼	S; 3ft	----	------	Sd	Pl	U	---	D	L	Ca.
11R1	J. Walstra, Sr.	----------	About 1940	652	Dn	25	1½	----do----------	----	------	Sd	Pl	----	---	D	L	Ca.
13Q1	H. Evans	Layne-Northern Co., Inc.	1955	652	Dr	44	12	S; 25 ft, 15sl, dia 10	6	41	Sd,G	Pl	U	6	Ir	-------	Dd 32 ft after 4 hr pumping 430 gpm; bedrock at 56 ft; coarse sand and gravel from 0-47 ft; sand and gravel underlain by 9 ft clay.
14R1	F. C. Moolenaar	----do----------	4- 5-57	650	Dr	40	12	S; 15ft	4	37	Sd,G	Pl	U	4	Ir	-------	Dd 25 ft after 1.5 hr pumping 500 gpm; Ca, L.
14R2	----do----------	R. Elb	1948	650	Dr	32	8	S; 8ft, 40sl	5	27	Sd,G	Pl	U	5	N	C	
15N1	A. F. Rockstroh	----------	Spring 1949	647	Dn	12	1¼	S; 3ft	----	------	Sd	Pl	U	4	D	J1/2	Well 8 ft deep at chicken house; Ca.
17N1	C. DeVries, Jr.	----------	About 1940	640	Dr	110	4	Oh	----	------	Ls	S	C	---	D	J	Water has moderate odor hydrogen sulfide gas; Ca.
18R1	J. Konovsky	----------	1935	645	Dr	85	----	Oh	----	------	Ls	S	C	---	D	C1/2	Do.
20J1	P. DeVries	----------	About 1935	652	Dr	90	4	Oh	----	------	Ls	S	C	---	D	L1/2	Water has odor hydrogen sulfide gas; Ca.
21L1	P. Dittner	Westville Well Co.	7-20-59	643	J	25	4	S; 10ft, 10sl, dia 3	3	22	Sd	Pl	U	3	Ir	C5	Brown and white sand overlain by 1 ft brown soft clay; Ca.
21M1	G. Jabaay	----------	Fall 1956	652	Dn	20	1½	S; 3½ft	----	------	Sd	Pl	U	10	D	L1/4	Ca.
22A1	S. J. Klugma	E. H. Wingate	2-22-61	647	Dr	64	6	S; 20ft, 30sl, dia 5½	44	20	G	Pl	C	5	Ir	T	Dd 15 ft after 4 hr pumping 225 gpm; L.
23R1	W. R. Kooy	----------	--------	653	Dn	15	1¼	S; 3ft, 60g	----	------	Sd	Pl	U	---	Ir	-------	
23N1	S. Swieringa	----------	Summer 1929	662	Dn	40	1¼	S	----	------	Sd	Pl	----	---	D	L	Ca.
24D1	H. Evans	----------	--------	666	Dn	15	1½	S; 3ft, 60g	----	------	Sd	Pl	U	---	S	J1/3	Ca.
25D1	D. Van Drunen	----------	1950	667	Dn	20	1½	S; 3ft	----	------	Sd	Pl	----	---	D	J	Ca.
25M1	J. Nola	----------	1955	669	Dn	17	1½	----do----------	----	------	Sd	Pl	U	10	Ir	C6	
26M1	A. Konosky	A. Potts	1933	668	Dr	95	4	Oh	81	14	Ls	S	C	---	D	-------	Bedrock at 81 ft.
27J1	S. DeKock	Lowell Well and Pump Co.	8-58	667	Dr	82	3	Oh	74	8	Ls	S	C	12	P	J3/4	Bedrock at 74 ft; water has odor hydrogen sulfide gas; Ca.
27J2	Trustees, Kenner Township	----------	--------	665	Dr	80	4	Oh	75	15	Ls	S	C	---	P	J1 1/2	Bedrock at 75 ft; water has odor hydrogen sulfide gas; Ca.
27R1	M. Boer	Demotte Plumbing Co.	1938	662	Dn	18	1½	S; 3ft, 60g	----	------	Sd	Pl	U	---	D	J	Ca.
27R2	O. Herring	----do----------	1959	662	Dn	18	1½	----do----------	----	------	Sd	Pl	U	---	D	J	Ca.
28N1	R. Nanninga	----------	1941	657	Dn	16	1½	S; 3ft	----	------	Sd	Pl	U	---	D	L1/4	Ca.
30H1	C. Sipkema	----------	5-61	652	Dn	15	1½	----do----------	----	------	Sd	Pl	U	11	D	J1/4	Ca.
31E1	J. Cozer	----------	4-61	658	Dn	13	1½	----do----------	----	------	Sd	Pl	U	---	D	J1/3	Ca.
33R1	M. Pruis	----------	About 1957	677	Dn	12	1½	----do----------	----	------	Sd	Pl	U	---	D	J1/3	Ca.
36C1	Mr. Eenigenburg	Westville Well Co.	--------	668	Dr	45	4	S; 20ft	5	40	Sd	Pl	U	5	Ir	-------	Yield 275 gpm; sand from 0-45 ft.
33/6W-29R1	O. Cavinder	----------	About 1945	655	Dn	15	1¼	S	----	------	Sd	Pl	U	---	D	C	Well 15 ft deep at barn; Ca.
31P1	A. Johnson	----------	Fall 1959	651	Dn	12	1½	S	----	------	Sd	Pl	U	---	D	J	Ca.
32P1	M. Sampson	----------	About 1952	662	Dn	20	1½	S	----	------	Sd	Pl	----	---	D	C	Ca.

Table 3.--Records of wells and test holes in Jasper County--Continued

Well	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone					Water level (feet)	Use	Type of pump and horsepower	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age	Conditions of occurrence				
33/6W-33N1	C. D. Schoon	A. Potts	1946	852	Dr	68	4	Oh	38	32	Ls	D	C	--	N	--------	Bedrock at 36 ft; water has bitter taste and is black as "ink".
33R1	C. W. Dagnal	----------	About 1954	857	Du	15	1¼	S	----	------	Sd,G	Pl	U	--	D	L1/4	Ca.
34Q1	H. Martin	----------	1960	854	Du	16	1¼	S; 3ft	----	------	Sd	Pl	U	--	D	J1/2	Ca.
33/7W-35R1	O. Johnson	K and D Well Service	5-20-60	852	J	40	4	S; 8ft, 13N1, dia J¼	30	11	Sd,G	Pl	C	6	Ir	J	Yield 50 gpm; bedrock at 41 ft; Ca, L.

Table 4.--Selected logs of wells and test holes in Jasper County, Indiana

Well [illegible]

Type of record: Driller's log. Altitude: 702 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand and yellow clay	19	19	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate, dark	86	105	Shale.
Shale, slaty, light	30	135	Fissile shale.
Devonian System:			
Middle Devonian Series:			
Limestone	70	205	

Well 27/6W-30G2

Type of record: Driller's log. Altitude: 728 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Dirt and clay	12	12	
Clay, gritty, and sand	23	35	
Sand and gravel	3	38	

Well 27/6W-30H1

Type of record: Driller's log. Altitude: 732 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Dirt and yellow clay	15	15	
Clay, gritty	15	30	
Clay and slate	4	34	Clay with gravel-sized shale fragments.
Sand and gravel	3	37	

Well 27/6W-30L1

Type of record: Driller's log. Altitude: 730 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Hardpan	4	4	
Clay, yellow, and boulders	7	11	
Clay, gray, and gravel	13	24	
Sand and gravel	5	29	
Clay, brown	5	34	
Sand and gravel	4	38	
Clay, brown	15	53	
Clay, brown, and gravel	12	65	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 27/6W-30L2

Type of record: Driller's log. Altitude: 730 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay	12	12	
Clay and gravel	7	19	
Gravel	3	22	
Clay and boulders	10	32	
Sand and gravel	11	43	

Well 27/6W-31P1

Type of record: Driller's log. Altitude: 738 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Dirt and clay	23	23	
Mississippian System:			
Lower Mississippian and Upper Devonian Series:			
Slate, light	45	70	Shale.
Slate, dark	119	189	Do.
Devonian System:			
Middle Devonian Series:			
Limestone	13	202	

Well 27/6W-32B2

Type of record: Driller's log. Altitude: 748 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay and sand	8	8	
Mississippian System:			
Lower Mississippian Series:			
Limestone	12	20	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale	60	80	

Well 27/7W-4E1

Type of record: Driller's log. Altitude: 673 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	6	6	
Clay, gritty, gray	12	18	
Sand, loose, clayey	7	25	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale	28	57	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 27/7W-6R1

Type of record: Driller's log. Altitude: 682 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	10	10	
Clay, gray	28	38	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale	122	160	
Devonian System:			
Middle Devonian Series:			
Limestone	40	200	

Well 27/7W-7C1

Type of record: Driller's log. Altitude: 677 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	10	10	
Clay, sandy, gray	16	26	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	104	130	Shale.
Limestone	2	132	
Slate	10	142	Shale.
Devonian System:			
Middle Devonian Series:			
Limestone	28	170	

Well 27/7W-8D1

Type of record: Driller's log. Altitude: 680 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, black	5	5	
Sand, yellow	20	25	
Clay, blue	7	32	
Sand	3	35	
Clay	3	38	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate, black	14	52	Shale.
Slate, gray	113	165	Do.
Devonian System:			
Middle Devonian Series:			
Limestone, brown	7	172	
Limestone, white	8	180	
Limestone, light-brown	13	193	
Limestone, gray to black	7	200	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 27/7W-12D1

Type of record: Driller's log. Altitude: 696 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	15	15	
Clay	6	21	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	84	105	Shale.
Devonian System:			
Middle Devonian Series:			
Limestone	28	133	

Well 27/7W-13Q4

Type of record: Driller's log. Altitude: 725 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Soil, sandy	3	3	
Mississippian System:			
Lower Mississippian Series:			
Sandstone, rotten	7	10	
Sandstone, hard, clean, tight	41	51	
Sandstone, soft, clean	5	56	
Sandstone, hard, clean	8	64	
Sandstone, soft, clean	2	66	
Sandstone, hard, tight	50	116	
Sandstone with blue shale	9	125	

Well 27/7W-15R1

Type of record: Driller's log. Altitude: 734 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay	11	11	
Mississippian System:			
Lower Mississippian Series:			
Limestone	10	21	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	29	50	Shale.

Well 27/7W-18R1

Type of record: Driller's log. Altitude: 717 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, gritty	12	12	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 27-7W-18R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Mississippian System:			
Lower Mississippian Series:			
Limestone in layers	23	35	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	17	52	Shale.

Well 27/7W-21H1

Type of record: Driller's log. Altitude: 726 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay	13	13	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Rock, yellow	20	33	Weathered limestone?
Shale, blue	17	50	
Slate, gray	125	175	Shale.
Slate, white	25	200	Do.
Devonian System:			
Middle Devonian Series:			
Limestone	42	242	

Well 27/7W-24B1

Type of record: Driller's log. Altitude: 700 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Soil and clay	4	4	
Mississippian System:			
Lower Mississippian Series:			
Sandrock	100	104	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale	3	107	

Well 27/7W-24G1

Type of record: Driller's log. Altitude: 730 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Top soil	1	1	
Clay, red	11	12	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, brown	77	89	
Shale, light-blue	28	117	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 27/7W-24G1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Devonian System:			
Middle Devonian? Series:			
Limestone, black	3	120	

Well 27/7W-24G2

Type of record: Driller's log. Altitude: 715 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Top soil	1	1	
Shale	3	4	Clay?
Sand	1	5	
Clay	3	8	
Mississippian System:			
Lower Mississippian Series:			
Sandstone with pebbles	5	13	
Sandstone	3	16	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, hard, blue	14	30	

Well 27/7W-25A1

Type of record: Driller's log. Altitude: 734 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Top soil	2	2	
Clay	11	13	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, soft, black	7	20	
Shale, medium, black	47	67	
Shale, hard, brown	30	97	
Shale, soft to hard, brown	15	112	
Soapstone	26	138	Shale and limestone?
Devonian and Silurian Systems:			
Limestone, hard	11	149	
Limestone, gray	19	168	
Limestone, hard	56	224	
Limestone, hard, white	60	284	
Limestone, hard, brown	32	316	
Shale and limestone	188	504	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 27/7W-25B1

Type of record: Driller's log. Altitude: 737 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Soil and clay	14	14	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, black	91	105	
Shale, blue	25	130	
Devonian System:			
Middle Devonian Series:			
Limestone, gray	35	165	
Rock, broken	1	166	Creviced limestone.
Limestone, gray	14	180	

Well 27/7W-25J1

Type of record: Driller's log. Altitude: 727 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Top soil	2	2	
Clay, yellow	17	19	
Clay, gray	31	50	
Silt, clay, and gravel	3	53	

Well 28/6W-16Q1

Type of record: Driller's log. Altitude: 673 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	22	22	
Clay, sandy, blue	35	57	
Gravel, coarse, and sand	1	58	
Clay, blue	1	59	

Well 28/6W-23H1

Type of record: Driller's log. Altitude: 675 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	15	15	
Clay, sandy, gray	20	35	
Clay with gravel and boulders	13	48	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	4	52	Shale.

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 28/6W-28H1

Type of record: Driller's log. Altitude: 677 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	15	15	
Clay, gritty	10	25	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, slaty	15	40	Fissile shale.

Well 28/6W-29Q1

Type of record: Driller's log. Altitude: 680 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	6	6	
Clay, gray	16	22	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale	28	50	

Well 28/6W-31J1

Type of record: Driller's log. Altitude: 682 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand and clay; yellow	16	16	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	76	92	Shale.
Devonian System:			
Middle Devonian Series:			
Limestone	41	133	

Well 28/7W-7J1

Type of record: Driller's log. Altitude: 650 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	20	20	
Clay and sand	60	80	
Clay, sandy	5	85	
Sand, fine	5	90	
Sand, coarse	9	99	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 28/7W-9L1

Type of record: Driller's log. Altitude: 662 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	15	15	
Clay, blue	50	65	
Sand, fine, gray	5	70	
Mississippian and Devonian System:			
Lower Mississippian and Upper Devonian Series:			
Shale	50	120	
Devonian System:			
Middle Devonian Series:			
Limestone, gray	40	160	

Well 28/7W-9Q1

Type of record: Driller's log. Altitude: 662 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Drift and sand	10	10	
Clay, blue	13	23	
Quicksand	4	27	
Hardpan	2	29	
Clay, blue	21	50	
Hardpan	8	58	
Gravel, dirty	1	59	
Clay	11	70	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, gray and black	40	110	
Devonian System:			
Middle Devonian Series:			
Lime, hard, black	5	115	
Dolomite, white	10	125	
Limestone, salt and pepper	25	150	

Well 28/7W-25C1

Type of record: Driller's log. Altitude: 670 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	5	5	
Clay, smooth	18	23	
Clay, gritty	15	38	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	92	130	Shale.
Devonian System:			
Middle Devonian Series:			
Limestone	150	280	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 28/7W-26F3

Type of record: Driller's log. Altitude: 668 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	16	16	
Clay, gravelly, blue	6	22	
Clay, gravelly, sandy	16	38	
Clay	37	75	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale	25	100	

Well 28/7W-32N2

Type of record: Driller's log. Altitude: 665 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	18	18	
Clay, gritty	20	38	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	46	84	Shale.

Well 29/5W-27M1

Type of record: Driller's log. Altitude: 690 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	15	15	
Clay, sandy, gray	6	21	
Devonian System:			
Middle Devonian Series:			
Limestone	13	34	

Well 29/6W-4J1

Type of record: Driller's log. Altitude: 721 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Dirt and sand	20	20	
Clay, gray	76	96	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	27	123	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 29/6W-7P1

Type of record: Driller's log. Altitude: 705 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow	25	25	
Clay, blue	93	118	
Clay, gray	7	125	
Sand and gravel	1	126	
Clay, brown	6	132	
Silurian System:			
Middle Silurian Series:			
Limestone	13	145	Dolomitic limestone or dolomite.

Well 29/6W-30E1

Type of record: Driller's log. Altitude: 651 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay	4	4	
Silurian System:			
Middle Silurian Series:			
Lime, broken	8	12	Dolomitic limestone or dolomite.
Lime, coarse, gray	138	150	Do.
Lime, medium, gray	15	165	Do.
Lime, coarse, gray	85	250	Do.
Lime, brown	60	310	Do.
Lime, white	130	440	Do.
Lime, brown	36	476	Do.
Lime, hard, dark-gray	44	520	Do.
Lime, very hard, brown	33	553	Do.

Well 29/7W-8R2

Type of record: Driller's log. Altitude: 704 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay	112	112	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale	10	122	
Devonian System:			
Middle Devonian Series:			
Limestone	20	142	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 29/7W-36H1

Type of record: Driller's log. Altitude: 663 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil	3	3	
Clay, red	3	6	
Clay, sandy	3	9	
Sand	2	11	
Clay	5	16	
Sand and clay	12	28	
Gravel, coarse	6	34	Limestone at 34 feet.

Well 29/7W-36J1

Type of record: Driller's log. Altitude: 662 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil	1	1	
Gravel, red	4	5	
Sand and clay; red	13	18	
Sand, clean	10	28	
Sand and gravel; clean	11	39	
Sand, clean	8	47	Limestone at 47 feet.

Well 29/7W-36J2

Type of record: Driller's log. Altitude: 665 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil	1	1	
Sand, red	8	9	
Clay, sandy, red	5	14	
Clay, soft, blue	15	29	
Sand, coarse, with clay	4	33	
Sand, coarse, with some gravel	6	39	
Sand, coarse, with clay	3	42	Limestone at 42 feet.

Well 29/7W-36J3

Type of record: Driller's log. Altitude: 663 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil	1	1	
Clay, sandy, red	14	15	
Sand, fine	9	24	
Sand and clay	2	26	
Gravel	3	29	Hard limestone at 29 feet.

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 29/7W-36K1

Type of record: Driller's log. Altitude: 663 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, sandy	10	10	
Sand, dirty	10	20	
Sand, white	20	40	
Sand and gravel	10	50	

Well 30/5W-4F1

Type of record: Driller's log. Altitude: 685 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Soil, black	3	3	
Clay, brown	13	16	
Clay, gray	26	42	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, blue	23	65	
Shale, brown	33	98	
Shale mixed with sand	6	104	
Devonian System:			
Middle Devonian Series:			
Limestone, dolomitic	2	106	
Dolomite	2	108	

Well 30/5W-9L1

Type of record: Driller's log. Altitude: 685 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand and muck	18	18	
Clay, blue	85	103	
Devonian System:			
Middle Devonian Series:			
Lime, blue	99	202	
Lime, brown	32	234	
Lime, broken, brown	14	248	
Lime, blue	12	260	

Well 30/5W-9L2

Type of record: Driller's log. Altitude: 688 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	8	8	
Clay, blue	22	30	
Clay, sandy, blue	15	45	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/5W-9L2--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, blue	25	70	
Clay, blue, with some fine sand	15	85	
Sand and gravel	20	105	

Well 30/5W-16A1

Type of record: Driller's log. Altitude: 680 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand and clay	25	25	
Clay, blue, and sand	25	50	
Sand and clay	35	85	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Lime and shale	10	95	
Devonian and Silurian Systems:			
Lime, gray	30	125	Dolomitic limestone or dolomite.
Lime, blue	155	280	Do.
Lime, hard, gray	12	292	Do.
Lime, gray and blue	18	310	Do.
Lime, brown	5	315	Do.

Well 30/5W-19Q1

Type of record: Driller's log. Altitude: 681 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Record missing	20	20	
Mud and sand	40	60	
Sand and gravel	20	80	
Gravel	18	98	
Silurian System:			
Middle Silurian Series:			
Lime, black	7	105	Dolomitic limestone or dolomite.
Lime, black and gray	30	135	Do.
Lime, hard, blue	20	155	Do.
Lime, brown	23	178	Do.
Lime, hard, gray	92	270	Do.
Lime, brown	10	280	Do.

Well 30/5W-26C1

Type of record: Driller's log. Altitude: 711 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, sandy	70	70	
Clay, smooth, blue	25	95	
Clay, sandy	4	99	
Gravel and sand	2	101	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/5W-34L1

Type of record: Driller's log. Altitude: 702 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay----------	72	72	
Mississippian and Devonian System:			
Lower Mississippian and Upper Devonian Series:			
Slate----------	28	100	Shale.
Devonian System:			
Middle Devonian Series:			
Stone----------	30	130	Limestone.

Well 30/5W-35C1

Type of record: Driller's log. Altitude: 702 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow----------	7	7	
Clay, gray----------	59	66	
Devonian System:			
Middle Devonian Series:			
Limestone----------	49	115	

Well 30/6W-14R1

Type of record: Sample study by G. F. Fix, 5-8-46. Altitude: 685 feet.

Quaternary System:			
Recent and Pleistocene Series:			
No sample----------	97	97	
Devonian and Silurian Systems:			
Dolomite, coarsely crystalline, pyritic, vuggy, brown to black--	8	105	
Dolomite, crystalline, nonporous, light-brown, with white to buff chert and tripoli----------	5	110	
Dolomite, sucrose, light-gray to buff, with abundant white rounded and frosted quartz sand-	5	115	
Dolomite, finely crystalline to coarsely sucrose, pyritic, vuggy, light-gray----------	25	140	
Dolomite, light-gray to white-----	55	195	
Dolomite, coarsely sucrose, vuggy, white----------	20	215	
Dolomite, finely crystalline, with trace of dolomitized fossils----------	10	225	
Dolomite, light to medium-gray----	15	240	
Dolomite, white to gray, with trace of buff----------	30	270	
Dolomite, medium-crystalline, very vuggy, medium to dark-gray-	100	370	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Devonian and Silurian Systems:			
Dolomite, crystalline, vuggy, light-buff, with abundant white chert and tripoli	33	403	
Dolomite, buff to gray-buff, with white and gray chert and tripoli-	47	450	
Dolomite, very vuggy, buff to gray-	40	490	
Dolomite, slightly vuggy, medium-gray	15	505	
Dolomite, crystalline, slightly vuggy, light-gray-white	35	540	
Dolomite, very vuggy, buff to gray-	50	590	
Dolomite, slightly vuggy, medium-gray	15	605	
Dolomite, crystalline, slightly vuggy, light-gray-white	35	640	
Dolomite, coarsely sucrose, buff to gray, with very abundant gray chert	20	660	
Dolomite, gray and buff, with chert	10	670	
Dolomite, finely crystalline, slightly vuggy, light-brown to gray-brown	40	710	
Ordovician System:			
Upper Ordovician Series:			
Record missing	30	740	
Shale, gray-green, interbedded with brown to gray-brown pyritic dense dolomite	10	750	
Record missing	45	795	
Dolomite, coarsely crystalline, vuggy, white mottled with gray	13	808	
Dolomite, crystalline, slightly vuggy, mottled gray to gray-brown	7	815	
Record missing	10	825	
Shale, hard, medium-gray	15	840	
Shale, dark-gray to green	50	890	
Shale, dark-gray to black	53	943	
Middle Ordovician Series:			
Dolomite, coarsely crystalline, pyritic, slightly vuggy, mottled light-to dark-brown	7	950	
Dolomite, less crystalline, non-porous, light-to dark-brown	25	975	
Record missing	25	1,000	
Dolomite, medium-to coarsely crystalline, slightly vuggy, medium-to dark-brown	12	1,012	
Dolomite, buff with dark-brown streaks	13	1,025	
Dolomite, brown	20	1,045	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician System:			
Middle Ordovician Series:			
Dolomite, buff with dark-brown streaks	20	1,065	
Record missing	160	1,225	
Limestone, lithographic, brown and buff, with very abundant buff to brown chalky sucrose dolomite	10	1,235	
Dolomite, medium-sucrose, buff	15	1,250	
Dolomite, finely crystalline to coarsely sucrose	10	1,260	
Dolomite, crystalline, brown, with fine to medium rounded and frosted grains of white sand and trace of gray to green argillaceous dolomite	10	1,270	
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Sandstone, fine to coarse, non-coherent, white, with rounded and frosted grains	30	1,300	
Sandstone with some buff argillaceous chalky dolomite	27	1,327	
Sandstone, fine to coarse, non-coherent, white, with rounded and frosted grains	33	1,360	
Dolomite, crystalline, slightly pyritic, light-buff to gray-white, with abundant white chert, some rounded and frosted grains of fine to medium sand, and green flaky metabentonite	30	1,390	
Dolomite with abundant rounded and frosted grains of fine to coarse sand, some chert, and white tripoli	30	1,420	
Dolomite with abundant, white opaque to translucent chert	15	1,435	
Record missing	15	1,450	
Dolomite, crystalline, pink to buff, with very abundant white clear quartz, white crystalline calcite, and abundant white opaque chert	20	1,470	
Dolomite and chert; white to buff, with abundant calcite and trace of sand and asphalt	30	1,500	
Dolomite, crystalline, buff, with 30 percent white mottled opaque chert, abundant oolitic chert, and siliceous calite	16	1,516	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Dolomite, darker, with less oolitic chert and siliceous calcite	12	1,528	
Dolomite, crystalline, buff to gray-buff, with some white chert, trace of brown chert, and sand	7	1,535	
Record missing	10	1,545	
Dolomite, crystalline, white to buff, with 20 percent white, gray, and brown opaque to sub-translucent chert, and trace of tripoli, clean quartz, and pink dolomite	10	1,555	
Dolomite, finely crystalline, white to buff, with some white, gray, and brown opaque to sub-translucent chert and trace of white to dark-red oolitic chert	5	1,560	
Dolomite, crystalline, white, with some white crystalline calcite	30	1,590	
Dolomite, finely crystalline, slightly vuggy	10	1,600	
Dolomite with 30 percent rounded and frosted to sub-angular grains of fine to coarse quartz-sand	20	1,620	
Dolomite, finely crystalline, slightly sandy, light-to medium-gray-buff, with trace of tar	30	1,650	
Dolomite, crystalline, white, with abundant white subtranslucent chert, abundant rounded and frosted grains of fine to medium sand, and trace of white oolitic chert	5	1,655	
Record missing	10	1,665	
Dolomite, crystalline, white, with 30 percent angular to rounded and frosted grains of fine to very fine sand, very abundant white opaque to sub-translucent chert, and trace of tar	10	1,675	
Dolomite with some sand and trace of chert	35	1,710	
Dolomite, white to light-gray, with abundant white crystalline calcite and clear angular grains of quartz-sand	20	1,730	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Dolomite, white	15	1,745	
Dolomite, crystalline, buff to light-gray, with trace of white chert	10	1,755	
Dolomite with white clear angular quartz	20	1,775	
Dolomite, argillaceous, chalky, yellow-buff	15	1,790	
Dolomite, chalky, buff, with some quartz	30	1,820	
Dolomite, crystalline, white, with trace of white chert and sand	25	1,845	
Dolomite, medium-buff, with trace of quartz	30	1,875	
Dolomite, light-to dark-buff,with some quartz and trace of tar	25	1,900	
Dolomite, light-buff, with some quartz and trace of tar	20	1,920	
Dolomite, crystalline, light-to medium-buff,with trace of quartz	30	1,950	
Dolomite, crystalline, mottled dark-gray-buff to black, with trace of slightly resinous dark-gray shale and trace of mottled chert	25	1,975	
Dolomite, crystalline, buff-gray	7	1,982	
Dolomite, crystalline resinous, mottled medium-to dark-gray and gray-buff	20	2,002	
Dolomite, finely crystalline, medium-gray-buff, with dark-gray argillaceous streaks	16	2,018	
Siltstone, very fine, gray, mottled with various shades of buff; with abundant granular glauconite and streaks of buff to gray silty dolomite	12	2,030	
Siltstone with dark-gray-buff resinous crystalline dolomite	6	2,036	
Siltstone, very fine, dolomitic, gray to gray-buff, with abundant granular glauconite, streaks of brown to gray-brown silty crystalline dolomite, and thin partings of gray hard micaceout shale	14	2,050	
Siltstone with streaks of very glauconitic siltstone and trace of tar	27	2,077	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Sandstone, fine to medium-coarse, non-coherent to very coherent, very glauconitic, white to gray, with rounded and frosted to sub-angular sand grains cemented with dolomite	3	2,080	
Sandstone coarser, with less dolomite	5	2,085	
Sandstone, non-coherent, with 75 percent clear subrounded to angular quartz, some gray to brown sandy dolomite, trace of glauconite, trace of dark-gray slaty shale, and tar	11	2,096	
Dolomite, crystalline, mottled brown and gray, with frosted rounded to sub-angular grains of fine to medium sand and thin streaks of green-gray flaky metabentonite	4	2,100	
Sandstone, mostly fine to very fine, non-coherent, white, with angular to subrounded grains of clear fine to very fine sand, 20 percent rounded and frosted grains of medium to coarse sand, and streaks of coherent fine to medium sand cemented with dolomite	5	2,105	
Sandstone, coarser, with some pyrite	7	2,112	
Dolomite, crystalline, mottled buff, brown, and gray, with white fine to medium sand and pyrite	5	2,117	
Sandstone, fine to medium, semi-coherent, with white clear angular to subrounded grains	8	2,125	
Sandstone, same as above, but coarser, non-coherent	5	2,130	
Sandstone, same as above, but mostly fine, with abundant rounded frosted grains of coarse sand and thin streaks of dark-brown and gray-brown sandy crystalline dolomite	8	2,138	
Sandstone, same as above, with more sandy dolomite, trace of white chert, and gray to green hard shale	12	2,150	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Sandstone, same as above, with trace of dolomite and shale-----	10	2,160	
Sandstone, fine to coarse, non-coherent, white with frosted rounded to subangular grains----	51	2,211	
Sandstone, coherent, white, with clear angular grains of uniform size, cemented with dolomite, and small concentrations of sandy crystalline dolomite-----	4	2,215	
Sandstone, same as above, speckled with darker rounded, frosted grains of fine sand, trace of tarry residue in lower part-----	11	2,226	
Sandstone, very fine, non-coherent, white, with angular grains------	5	2,231	
Sandstone, coarse, coherent, white to dark-gray and gray-brown, with thin streaks of dark-gray to black carbonaceous micaceous shale----------	9	2,240	
Dolomite, finely crystalline, mottled light-to very dark-gray, with very high concentration of white, clear silt; trace of dark-gray hard shale and small pieces of tar in lower 2 feet----------	12	2,252	
Record missing----------	13	2,265	
Dolomite, light-to very dark-gray, with very abundant light-brown-gray finely crystalline dolomite	3	2,268	
Siltstone, very hard, slightly micaceous, pinkish-gray-brown, with very abundant gray to green micaceous slaty hard shale and trace of glauconite---------	24	2,292	
Siltstone, same as above, very glauconitic----------	10	2,302	
Siltstone, same as above, with some dark-maroon-gray shale and less glauconite----------	15	2,317	
Siltstone, same as above, with 30 percent dark-maroon-gray to dark-gray shale and very little glauconite----------	28	2,345	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Siltstone, same as above, mottled and speckled dark-red and pink, with some glauconite and much less shale	12	2,357	
Siltstone, same as above, with 30 percent shale	33	2,390	
Siltstone, same as above, with some dark-brown to gray silty crystalline dolomite	21	2,411	
Siltstone, same as above, with 50 percent shale and thin streaks of silty dolomite	60	2,471	
Siltstone, glauconitic, gray, buff, and green, and dark-gray and dark-green hard shale; with streaks of gray, brown, and dull red slightly vuggy crystalline dolomite	16	2,487	
Siltstone, gray, buff, and green, and dark-maroon to gray shale; with trace of dolomite	9	2,496	
Siltstone, fine, coherent, white, green, and pink; with very abundant glauconite, white to buff crystalline dolomite, and some dark-gray to green hard shale	17	2,513	
Siltstone, same as above, with much more glauconite	5	2,518	
Siltstone, same as above, with much less glauconite, more dolomite, and no shale	36	2,554	
Siltstone, same as above, with very abundant glauconite	11	2,565	
Siltstone, light-gray to pink, with very abundant glauconite and trace of tar	33	2,598	
Siltstone, coarser, white to pink with small concentrations of buff-pink glauconitic crystalline sandy dolomite	20	2,618	
Sandstone, coherent, dolomitic, glauconitic, white to light-pink, with angular clear grains and some rounded frosted grains-	17	2,635	
Sandstone, very fine, non-coherent to slightly coherent, very slightly dolomitic and glauconitic, white to pink, with angular grains	20	2,655	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Sandstone, same as above, but more coherent and glauconitic---	12	2,667	
Sandstone, same as above, but non-coherent to very slightly coherent----------	15	2,682	
Siltstone, sandy, non-coherent, with some tar----------	16	2,698	
Sandstone, more coherent, dolomitic, glauconitic, argillaceous in part, gray, with some tar----	11	2,709	
Siltstone, coherent, very glauconitic, mottled gray, with very abundant dark-gray to dull maroon-gray hard shale----------	18	2,727	
Siltstone grading to angular to rounded frosted noncoherent to semi-coherent very fine sand; with very abundant glauconite and some shale----------	7	2,734	
Siltstone interbedded with sandstone; non-coherent to very coherent less glauconite--------	17	2,751	
Siltstone, coherent, with streaks of glauconite----------	58	2,809	
Siltstone, darker, shaly----------	5	2,814	
Siltstone with very abundant streaks of gray rounded frosted coherent fine sand----------	4	2,818	
Sandstone, fine to very fine, coherent to non-coherent, white to gray, with angular to partly rounded frosted grains, some dolomite, and dark-gray shale---	8	2,826	
Sandstone, same as above, with some medium to coarse sand and gray very coherent siltstone----	10	2,836	
Sandstone with very abundant rounded frosted grains of coarse sand interbedded with siltstone; argillaceous in part, slightly dolomitic with some dark-gray shale----------	17	2,853	
Sandstone, non-coherent, white, with angular to sub-rounded clear grains of fine to medium sand, some rounded frosted grains of coarse sand, and some iron-staining----------	12	2,865	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Sandstone, same as above, but mostly fine, slightly coherent in part	10	2,875	
Sandstone, non-coherent, with mostly sub-rounded to angular grains of fine to coarse sand	17	2,892	
Sandstone, same as above, with some very coarse sand	12	2,904	
Sandstone, same as above, mostly angular fine grains with some subangular medium to coarse grains	5	2,909	
Sandstone, same as above, but 50 percent medium to coarse	5	2,914	
Sandstone, pebbly, non-coherent white, with some subrounded to rounded frosted grains of medium to coarse sand and some iron-staining	7	2,921	
Sandstone, same as above, but fine to coarse, subangular	7	2,928	
Sandstone, same as above, but mostly fine	5	2,933	
Siltstone, hard, medium to dark-gray, with interbedded dark-gray slaty, slightly micaceous, shale	19	2,952	
Shale, silty, dark-gray, with 30 percent siltstone	19	2,971	
Sandstone, white, with subangular clear grains of fine sand	5	2,976	
Sandstone, same as above, interbedded with gray to pink siltstone; with some gray hard shale and trace of pyrite	7	2,983	
Sandstone, fine to coarse, non-coherent to slightly coherent, white, with angular clear grains	6	2,989	
Sandstone, same as above, with subangular grains and slight iron-stain	9	2,998	
Sandstone, same as above, but more coherent and some very coarse grains	7	3,005	
Sandstone, same as above, but non-coherent	15	3,020	
Sandstone, same as above, but mostly fine to medium	10	3,030	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Sandstone, same as above, with some pebbles	12	3,042	
Sandstone, same as above, with 20 percent medium to coarse sand	36	3,078	
Sandstone, mostly fine, with 30 percent medium to coarse sand; non-coherent, white to pink, with angular clear grains	13	3,091	
Sandstone, same as above, but mostly coarse	13	3,104	
Sandstone, same as above, but more coherent, with some pebbles	5	3,109	
Sandstone, same as above, but non-coherent, with streaks of very coarse to pebbly sand; slightly iron-stained	36	3,145	
Sandstone, same as above, but mostly fine	7	3,152	
Sandstone, same as above, but fine to very coarse, slightly coherent in part	12	3,164	
Sandstone, same as above, but mostly fine, with some medium to coarse sand	6	3,170	
Sandstone, same as above, but more coarse sand, pebbly, and slightly coherent in part	2	3,172	
Sandstone, same as above, but mostly fine to medium, non-coherent to slightly coherent	33	3,205	
Sandstone, same as above, with more coarse sand	7	3,212	
Sandstone, same as above, but fine to medium	3	3,215	
Sandstone, fine to medium, with angular grains and coarse to very coarse sand with rounded grains	21	3,236	
Sandstone, same as above, but mostly fine to medium	13	3,249	
Sandstone, same as above, but more pebbly	26	3,275	
Sandstone, same as above, but mostly fine to medium	33	3,308	
Sandstone, fine to coarse, very slightly arkosic, with some tar	3	3,311	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/6W-14R1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Ordovician and Cambrian Systems:			
Lower Ordovician and Upper Cambrian Series:			
Sandstone, with abundant grains of gneiss and mica schist and some heavy minerals	7	3,318	
Sandstone, mostly fine, with trace of gneiss and mica schist	7	3,325	
Sandstone, mostly fine to very fine, non-coherent, with angular clear grains	5	3,330	

Well 30/7W-1K1

Type of record: Driller's log. Altitude: 690 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand	40	40	
Clay	5	45	
Gravel	2	47	
Silurian System:			
Middle Silurian Series:			
Limestone	381	428	Dolomitic limestone or dolomite.
Shale, brown	40	468	
Lime, blue	32	500	Dolomitic limestone or dolomite.
Lime, gray	98	598	Do.

Well 30/7W-25J1

Type of record: Sample study by unknown person. Altitude: 663 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Drift	--	--	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, silty, calcareous, red to brown, with spores	--	85	
Shale, pyritic, light-gray with amber specks	5	90	
Devonian and Silurian Systems:			
Dolomite, crystalline, pyritic, buff to white, with some limestone	12	102	
Dolomite, light-brown mottled with white to gray, with some limestone	2	104	
Dolomite, pyritic, gray to brown, with translucent calcite and bryozoa	11	115	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 30/7W-25J1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Devonian and Silurian Systems:			
Dolomite, crystalline, pyritic, brown, with some limy streaks and chert	15	130	
Dolomite, very finely sucrose, white, with some limestone, gray shale, and bryozoa	5	135	
Dolomite, argillaceous, white to gray	30	165	
Dolomite, shaly at base	560	725	
Ordovician System:			
Upper Ordovician Series:			
Shale, gray, with some dolomite	6	731	
Dolomite, coarse, mottled, white	9	740	
Dolomite, coarse, white to buff, shaly at base, with some chert	30	770	
Shale, gray to brown	183	953	
Middle Ordovician Series:			
Dolomite, crystalline, coarse, light-buff to light-brown	148	1,101	

Well 31/5W-16G1

Type of record: Driller's log. Altitude: 692 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Drift	64	64	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, dark	11	75	
Devonian and Silurian Systems:			
Lime, black	25	100	Dolomitic limestone or dolomite.
Lime, black	583	683	Do.
Ordovician System:			
Upper Ordovician Series:			
Shale, blue	20	703	
Lime	59	762	
Shale	93	855	
Shale, light-brown	91	946	
Shale, gray	11	957	
Middle Ordovician Series:			
Limestone	32	989	

Well 31/5W-22N1

Type of record: Driller's log. Altitude: 685 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand and gravel	30	30	
Drift	38	68	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.
Well 31/5W-22N1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, red	7	75	
Shale, blue	20	95	
Devonian and Silurian Systems:			
Lime	14	109	Dolomitic limestone or dolomite.
Lime, sandy	5	114	Do.
Lime	91	205	Dolomitic limestone or dolomite.
Lime, broken, and shale	7	212	Do.
Lime	8	220	Do.
Lime, broken, and shale	10	230	Do.
Lime	42	272	Do.
Lime, broken, and shale	46	318	Do.
Shale and lime	17	335	
Limestone	10	345	Dolomitic limestone or dolomite.
Limestone, sandy	3	348	Do.
Limestone	12	360	Do.
Limestone, broken	25	385	Do.
Limestone	165	550	Do.
Limestone, white	45	595	Do.
Limestone, sandy, brown	10	605	Do.
Limestone	20	625	Do.
Limestone, white	4	629	Do.
Limestone, brown	8	637	Do.
Sand and broken limestone	1	638	
Ordovician System:			
Upper Ordovician Series:			
Shale, blue-green	12	650	
Shale	27	677	
Limestone	23	700	
Sand, brown	5	705	
Shale, gray	4	709	
Limestone, broken	16	725	
Shale	13	738	
Limestone	2	740	
Shale	8	748	
Limestone	2	750	
Shale	15	765	
Shale, gray	40	805	
Limestone, broken, and shale	10	815	
Shale, gray	75	890	
Shale, brown	41	931	
Middle Ordovician Series:			
Limestone, brown	23	954	
Sand	1	955	
Limestone, brown	5	960	
Limestone	25	985	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 31/5W-28F1

Type of record: Driller's log. Altitude: 692 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Dirt and gravel	50	50	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Slate	62	112	Shale.
Devonian System:			
Middle Devonian Series:			
Limestone	16	128	

Well 31/5W-33K1

Type of record: Driller's log. Altitude: 689 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand	62	62	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, blue	27	89	
Shale, brown	5	94	
Devonian System:			
Middle Devonian Series:			
Lime	32	126	

Well 31/6W-2E1

Type of record: Driller's log. Altitude: 679 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Soil, sandy, black	5	5	
Sand, white	10	15	
Gravel and sand	15	30	
Clay, sandy, yellow	10	40	
Clay, sandy, white	15	55	
Sand, blue	10	65	
Gravel and sand	3	68	
Devonian and Silurian Systems:			
Limestone, brown, with pyrite	40	108	Dolomitic limestone or dolomite.
Limestone, hard, white	40	148	Do.
Limestone, hard, brown	60	208	Do.
Sandstone, white	7	215	
Limestone	444	659	Dolomitic limestone or dolomite.
Ordovician System:			
Upper Ordovician Series:			
Shale, black	5	664	
Shale, white	3	667	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 31/6W-21J1

Type of record: Driller's log. Altitude: 683 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand and muck	18	18	
Gravel, hard	2	20	
Sand, fine	17	37	
Clay, blue	49	86	
Gravel	2	88	
Sand, gravel, and clay	15	103	
Silurian System:			
Middle Silurian Series:			
Lime, blue	92	195	Dolomitic limestone or dolomite.
Lime, brown	10	205	Do.
Lime, gray	55	260	Do.

Well 31/6W-27B1

Type of record: Driller's log. Altitude: 686 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow	25	25	
Sand and gravel	20	45	
Mud	10	55	
Clay, blue	15	70	
Sand and gravel	8	78	
Devonian System:			
Middle Devonian Series:			
Lime, blue	47	125	
Lime, sandy	80	205	
Lime, gray	55	260	

Well 31/6W-27B2

Type of record: Driller's log. Altitude: 686 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand and clay	40	40	
Clay and sand	28	68	
Clay	15	83	
Gravel	3	86	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, black	4	90	
Devonian System:			
Middle Devonian Series:			
Limestone, gray	85	175	
Lime, sandy	100	275	
Lime, gray	5	280	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 31/6W-35G1

Type of record: Driller's log. Altitude: 680 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil and sand	5	5	
Sand, yellow	23	28	
Clay, blue	22	50	
Clay, blue, and hardpan	15	65	
Clay, blue, with some gravel	13	78	
Devonian and Silurian Systems:			
Limestone, brown	12	90	Dolomitic limestone or dolomite.
Limestone, hard	5	95	Do.
Limestone, brown	10	105	Do.
Lime, hard, gray	35	140	Do.
Lime, blue	15	155	Do.
Lime, gray	30	185	Do.
Lime, blue	25	210	Do.
Lime, brown	15	225	Do.
Lime, hard, gray	10	235	Do.
Lime, gray	32	267	Do.
Lime, hard, gray	11	278	Do.
Lime, gray	2	280	Do.

Well 31/6W-35G2

Type of record: Driller's log. Altitude: 680 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, blue	30	30	
Sand and gravel	20	50	
Clay, blue, with some fine sand	19	69	
Devonian and Silurian Systems:			
Lime, brown	18	87	Dolomitic limestone or dolomite.
Lime, hard, brown	21	108	Do.
Lime, hard, gray	13	121	Do.
Lime, blue and gray	15	136	Do.
Lime, hard, gray	20	156	Do.
Lime, blue and gray	30	186	Do.
Lime, blue	29	215	Do.
Lime, hard, gray	3	218	Do.
Lime, hard, brown	55	273	Do.
Lime, gray and brown	7	280	Do.

Well 31/6W-35J1

Type of record: Driller's log. Altitude: 687 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Surface	5	5	
Sand, yellow	10	15	
Clay, blue, and hardpan	5	20	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 31/6W-35J1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, gray	10	30	
Clay, blue	42	72	
Devonian and Silurian Systems:			
Lime, broken	4	76	Dolomitic limestone or dolomite.
Lime, blue and gray	49	125	Do.
Lime, blue	100	225	Do.
Lime, gray	20	245	Do.
Lime, blue	20	265	Do.
Lime, gray	18	283	Do.
Lime, blue	27	310	Do.

Well 31/6W-36J1

Type of record: Driller's log. Altitude: 691 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, fine to medium, gray	4	4	
Till, clayey, hard, compact, with shale fragments	14	18	
Clay, blue-gray, with few gravel and pebbles	52	70	
Devonian System:			
Middle Devonian Series:			
Limestone	30	100	

Well 32/5W-34J2

Type of record: Driller's log. Altitude: 695 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand and gravel	60	60	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, blue	80	140	
Limestone	10	150	
Shale, black	150	300	
Devonian System:			
Middle Devonian Series:			
Limestone	141	441	

Well 32/6W-21D1

Type of record: Driller's log. Altitude: 657 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Dirt, black	1	1	
Sand, muddy, black	3	4	
Sand, muddy, fine	12	16	
Sand and gravel	5	21	

Table 4.--Selected logs of wells and test holes in Jasper County--Cont.

Well 32/6W-21D1--Cont.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, medium, brown----------	10	31	
Sand and gravel----------	3	34	
Mississippian and Devonian Systems:			
Lower Mississippian and Upper Devonian Series:			
Shale, black----------	4	38	

Well 32/7W-14R1

Type of record: Driller's log. Altitude: 650 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Top soil, sand, and clay----------	4	4	
Sand, fine----------	6	10	
Sand, medium, clean----------	20	30	
Sand with some fine gravel--------	7	37	
Sand, fine, tight----------	4	41	
Clay----------	1	42	

Well 32/7W-22A1

Type of record: Driller's log. Altitude: 647 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand----------	30	30	
Clay----------	14	44	
Gravel----------	20	64	

Well 33/7W-35R1

Type of record: Driller's log. Altitude: 652 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Soil, sandy, black----------	6	6	
Sand, yellow----------	22	28	
Clay, gray----------	2	30	
Sand, coarse, and gravel----------	11	41	Shale at 41 feet.

Table 5.--Field chemical analyses of water from wells in Jasper County, Indiana

(Results in parts per million. Analyses by U. S. Geological Survey)

Well: See text for description of well-numbering system.
Material: Do, dolomite; G, gravel; Ls, limestone; Sd, sand; Sh, shale.
Geologic Age: D, Devonian; M, Mississippian; Pl, Pleistocene; S, Silurian.

U. S. Public Health Service drinking-water standards: Iron (Fe) - 0.3 ppm for iron and manganese together; Sulfate (SO_4) - 250 ppm; Chloride (Cl) - 250 ppm.

Well	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Hardness as $CaCO_3$ (Calcium, magnesium)	Remarks
27/6W-4J1	Sh	D,M	6-29-61	57	0.4	351	40	16	224	
5P1	Ls	D	5-19-59	---	.2	278	120	48	336	
5Q1	Sh	D,M	5-11-60	57	1.0	649	205	84	704	
8J1	Sh	D,M	5-19-59	56	<.1	581	35	48	176	
9A1	Sh?	D,M	6-30-61	54	.5	415	45	8	260	
18D1	G	Pl	6-29-61	--	.1	161	180	36	256	
21R1	Sh?	D,M	6-30-61	--	.2	429	10	16	208	
28A1	Ls?	D	6-30-61	57	1.2	366	80	48	312	
30G2	Sd,G	Pl	5-19-59	55	1.0	468	<5	12	332	
30H1	Sd,G	Pl	6-29-61	--	1.0	468	5	4	316	
30H2	Ls	D	5- 8-59	56	.1	498	30	24	308	
30H2	Ls	D	6-29-61	57	<.1	498	45	20	264	
31N1	Ls	D	6-29-61	--	<.1	527	40	16	220	
32B3	Ls?	D	5-19-59	56	.5	586	85	40	296	
27/7W-1R1	Ls?	D	6-29-61	57	.3	356	75	52	316	
4E1	Sh	D,M	6-28-61	--	2.5	317	115	48	268	
5C2	Ls	D	4-14-59	50	.5	522	95	52	108	
7C1	Ls	D	6-28-61	--	<.1	610	100	68	60	
9N1	Sh	D,M	5-19-59	59	.2	478	75	40	392	

27/7W-15K1	Ls,Sh?	D,M	5-19-59	55	<0.1	420	155	24	508
16H1	Ls?	M	6-29-61	--	.1	508	20	16	112
17E1	Sh	D,M	6-29-61	58	<.1	854	5	12	16
18R1	Ls,Sh?	D,M	4-14-59	54	.1	229	355	124	744
21H1	Ls	D	5-19-59	59	.2	639	5	20	224
25C1	Ls	D	5-19-59	64	.2	439	5	4	292
28C1	Ls?	M?	6-29-61	52	<.1	405	90	16	280
29M1	Ls	D	6-29-61	--	<.1	434	25	20	140
27/7W-30G1	Ls	M?	4-14-59	53	.5	322	65	12	244
31Q1	Sh	M?	6-29-61	--	.2	429	25	12	236
32A1	Ls?	D	6-29-61	58	<.1	298	100	44	360
34P1	Ls?	----	6-29-61	--	.2	361	35	<4	220
35R1	G	P1	6-29-61	--	.2	483	75	8	356
28/5W- 4M1	Ls	D	6-26-61	54	<.1	376	45	8	288
8N1	Ls	D	6-28-61	52	2	259	15	<4	164
9N1	Ls	D	6-28-61	53	1.0	386	15	12	256
17H1	Ls	D	6-28-61	--	.3	220	10	<4	128
20B1	Ls?	D	6-28-61	59	1.5	234	40	4	172
29Q1	Ls	D	6-20-61	56	.2	708	15	8	236
28/6W- 1G1	Ls	D	5-04-59	50	---	434	40	8	368
1Q1	Ls	D	6-26-61	59	1.0	234	35	8	176
2M1	Ls	D	6-28-61	--	.1	371	85	16	284
7P1	Sd	P1	6-61	58	1.5	249	120	24	280
9H1	Sd	P1	6-28-61	--	.3	351	190	20	412
11N1	Sd,G	P1	6-28-61	--	.2	190	70	4	140
16Q1	G,Sd	P1	6-28-61	57	1.5	371	10	4	232
19D1	Sd	P1	6-29-61	--	.1	264	90	16	184
20N1	Sd	P1	6-29-61	56	.1	268	90	28	240
23H1	Sh	D,M	5-04-59	54	1.0	220	15	4	168
24C1	G	P1	6-28-61	--	<.1	151	60	4	136
25J1	Sd?	P1	6-20-61	59	.2	400	50	24	176
25J2	Ls?	D	6-20-61	59	.2	127	95	12	172
27R1	G,Sd	P1	6-20-61	56	.2	200	160	40	288
28H1	Sh	D,M	5-04-59	55	.5	298	15	8	164

Table 5.--Field chemical analyses of water from wells in Jasper County--Cont.

Well	Material	Geologic Age	Date of Collection	Temperature (F°)	Iron (Fe)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Hardness as $CaCO_3$ (Calcium, magnesium)	Remarks
28/6W-28N1	Ls	D	5-04-59	56	<.1	508	55	88	328	
29H2	Sh	D,M	5-04-59	--	<.1	410	75	32	436	
29Q1	Sh	D,M	6-28-61	--	.3	273	15	4	152	
31J1	Ls	D	5-04-59	--	<.1	439	20	44	304	
28/7W- 1A1	Ls	D	8-28-61	--	.5	268	40	8	216	
1C1	Sd	P1	8-28-61	57	<.1	234	80	8	220	
3A1	Ls	D	6-29-61	--	1.0	395	5	8	252	
5B1	G	P1	6-28-61	58	.3	327	15	<4	204	
7J1	Sd	P1	4-17-59	54	1.0	346	10	8	216	
8E1	Sd,G	P1	6-29-61	57	1.5	356	15	8	212	
9L1	Ls	D	7-18-57	57	.1	381	--	18	300	
9L1	Ls	D	6-28-61	--	<.1	425	45	16	260	
9Q1	Ls	D	3-12-58	55	<.1	405	--	<2	336	
10E1	Sd,G	P1	6-29-61	56	1.2	405	5	4	244	
12F1	Ls	D	6-29-61	58	1.0	298	10	16	188	
19P1	Ls?	D	6-29-61	59	<.1	493	50	48	116	
20P1	Sd	P1	6-29-61	--	1.5	317	5	<4	196	
21R1	Ls	D	6-29-61	--	1.5	556	5	<4	252	
22F1	Sd	P1	6-29-61	--	1.0	420	10	<4	248	
23L1	Ls	D	6-29-61	--	.2	488	10	8	144	
25C1	Ls	D	4-16-59	48	.6	761	10	16	76	
25C1	Ls	D	6-28-61	--	<.1	844	10	16	108	
29Q1	Sh?	D,M	6-29-61	--	.1	498	10	4	68	
31P1	Sh	D,M	6-29-61	--	.2	342	10	<4	104	
32N3	Sh	D,M	6-28-61	58	1.0	278	10	<4	136	
32R1	Sh	D,M	4-16-59	57	.8	254	10	8	148	

28/7W-32R1	Sh	D,M	6-28-61	55	0.5	283	15	12	160
34J1	Sh	D,M	6-29-61	--	.2	444	15	4	260
36P1	Sh	D,M	6-29-61	59	<.1	185	45	8	136
36P2	Sh?	D,M	6-29-61	57	<.1	293	25	12	136
29/5W- 4L1	Ls	D	6-28-61	56	.2	327	75	16	276
6L1	Ls	S	6-27-61	--	<.1	366	175	4	304
11B1	Ls	D	6-27-61	--	.7	273	120	24	324
13R1	Ls	D?	6-27-61	56	<.1	410	180	44	520
14E1	Ls	D	6-27-61	--	.1	293	65	32	284
16H1	Ls	D	6-28-61	59	.3	298	135	24	308
21D1	Ls	D	6-28-61	58	<.1	283	145	36	416
25K1	Ls	D?	1957	58	.8	281	---	20	304
25K1	Ls	D?	6-26-61	57	.1	312	30	8	236
26B1	Ls	D	6-27-61	52	<.1	283	100	28	320
26C1	Ls	D	6-27-61	--	<.1	288	145	28	312
27E1	Ls	D	4-16-59	53	.5	171	25	8	140
27M1	Ls	D	6-26-61	--	1.5	351	80	12	316
29F1	Ls	D	6-28-61	58	.1	293	115	16	320
31Q1	Ls	D	6-28-61	--	.1	332	80	12	276
32Q1	Ls	D	6-28-61	--	7.5	342	10	16	248
33D2	Ls	D	6-26-61	59	<.1	264	90	16	224
34P1	Ls	D	6-27-61	--	.1	268	25	12	196
29/6W- 2J1	Ls	S	6-28-61	57	.1	410	50	4	196
3G1	Ls	S	6-28-61	58	.1	366	30	4	220
4J1	Sh	D,M	4-16-59	52	.2	283	10	8	92
5D1	Ls?	S	6-29-61	--	.2	337	5	4	120
7P1	Ls	S	6-22-61	54	1.0	425	25	4	304
8P1	Ls	S	6-29-61	58	.2	420	15	4	220
9N1	Ls	S	5- 7-59	54	.2	488	20	4	328
10P1	Ls	S	6-29-61	53	<.1	346	90	12	264
13P1	Ls	S	6-28-61	--	.1	312	110	20	316
14B1	Ls	S	3-12-58	55	1.0	415	---	8	348
14Q1	Ls	S	6-28-61	54	1.0	264	115	24	292
21C1	Ls	S	6-29-61	56	<.1	327	20	8	216

Table 5.--Field chemical analyses of water from wells in Jasper County--Cont.

Well	Material	Geologic Age	Date of collection	Temperature (°F)	Iron (Fe)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Hardness as $CaCO_3$ (Calcium, magnesium)	Remarks
29/6W-23Q1	Ls	S?	6-27-61	--	0.3	337	100	32	340	
26F2	Ls	S?	4-16-59	57	.1	303	110	20	376	
26K1	Do,Ls	S	6-26-61	--	.1	498	175	72	524	
33E1	Sd,G	P1	6-28-61	--	.7	332	10	4	204	
34L1	Ls	D	4-16-59	58	.1	220	100	20	---	
35M1	Ls	D	6-28-61	--	.1	288	60	8	264	
29/7W- 5R1	Ls	D	6-28-61	--	<.1	327	15	4	88	
6G1	Ls	D	6-29-61	55	.1	298	15	4	104	
8R1	Ls	D	6-28-61	--	<.1	332	5	4	104	
8R2	Ls	D	6-28-61	--	<.1	322	5	4	100	
11A1	Ls	D	6-29-61	58	.8	381	10	4	200	
12D1	Ls?	S	6-29-61	--	.5	371	10	<4	168	
13M1	Sd,G	P1	4-16-59	56	.8	346	45	8	204	
14C1	Ls	D	6-29-61	54	.4	351	10	<4	116	
20B1	Ls	D	6-29-61	54	.3	473	20	4	280	
20D1	Ls	D	6-29-61	59	.4	493	10	<4	280	
22P1	Ls	D	6-29-61	59	.8	429	25	<4	260	
23Q1	Ls	D	5- 8-59	55	<.1	488	60	8	392	
26A1	Ls	D	6-28-61	--	.1	366	50	8	284	
27P1	Ls	D	6-29-61	--	.1	239	<5	4	104	
28C1	Sd	P1	6-29-61	--	2.0	512	120	8	472	
29F1	Sd	P1	5- 7-59	53	1.0	220	5	4	140	
29F1	Sd	P1	6-28-61	54	<.1	244	15	<4	140	
30/5W- 2A1	G	P1	7-17-57	59	.5	312	---	18	176	
2A1	G	P1	6-23-61	58	.5	361	50	4	168	
2D1	Sh	D,M	6-26-61	--	.3	376	5	8	96	
4R1	Ls	D	6-23-61	--	1.0	556	45	16	288	
9L1	Ls	D	6-26-61	54	1.0	337	60	36	156	
11N1	G	P1	6-26-61	59	.2	356	35	4	168	

30/5W-12E1	Sh?	D,M	6-26-61	--	.5	346	20	4	192
19J1	Ls	D?	6-26-61	--	.5	366	50	12	220
21M1	Sd	P1	6-26-61	57	.7	366	70	12	204
23G1	Sd,G	P1	6-22-61	--	.5	356	170	4	280
26C1	G,Sd	P1	4-15-59	54	.2	307	35	8	184
28M1	Ls	D	6-27-61	--	.1	303	55	16	180
29N1	Ls	D	6-27-61	--	<.1	298	25	4	108
34L1	Ls	D	6-22-61	--	<.1	449	105	<4	368
35C1	Ls	D	6-26-61	58	.3	371	65	4	260
30/6W- 1Q1	Ls	D	7-17-57	54	.1	283	---	28	208
1R1	Ls	D	6-27-61	58	<.1	366	25	8	200
2P1	Ls	D	7-17-57	59	.2	249	---	2	140
4C1	Ls	S	6-27-61	54	1.0	303	360	8	424
5G1	Ls	S	6-28-61	55	[illegible]	356	5	4	176
6Q1	Ls	S	7-17-57	--	.5	295	---	6	160
7P1	Ls	S	6-27-61	59	.5	332	10	8	140
8Q1	G	P1	6-28-61	--	.4	293	55	12	272
9A1	G	P1	6-27-61	53	1.0	312	5	<4	176
13M1	Ls	S	6-27-61	58	<.1	327	20	4	196
14R2	Ls	S	6-27-61	59	.1	332	45	4	212
15E1	Ls	S	6-27-61	--	<.1	327	10	<4	120
16D1	Sd,G	P1	6-27-61	--	.5	234	60	4	204
16Q1	Ls	S	6-27-61	53	1.0	322	15	4	188
18Q1	Ls	S	6-28-61	58	.4	366	75	8	248
20J1	G	P1	6-27-61	58	.5	327	10	4	160
22P1	Ls	S	6-27-61	--	<.1	322	10	<4	164
23N1	G	P1	6-61	--	.5	327	5	4	132
29J1	Ls	S	6-27-61	--	.1	356	5	4	140
30B1	Ls	S	7-17-57	--	1.5	327	---	14	244
30L1	Ls	S	6-27-61	--	1.0	381	30	12	228
33A1	Ls	S	6-27-61	--	.1	346	10	4	140
35C1	Ls	S	6-27-61	--	.1	361	10	4	84
36J1	Ls	S	6-27-61	--	<.1	366	<5	4	160
30/7W- 3R1	Sd	P1	6-28-61	--	.1	176	60	64	244

Table 5.--Field chemical analyses of water from wells in Jasper County--Cont.

Well	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Hardness as $CaCO_3$ (Calcium, magnesium)	Remarks
30/7W- 6N1	Sd	Pl	4-16-59	51	<.1	98	25	8	96	
7M1	Sd	Pl	4-16-59	51	1.0	137	65	8	164	
9D1	Sd	Pl	6-28-61	59	.4	239	105	12	248	
12N1	Sd	Pl	6-28-61	--	.7	312	155	20	384	
13R1	Ls	S	6-28-61	54	.5	327	65	8	292	
15L1	Sd	Pl	6-28-61	--	.2	224	95	4	208	
20R1	Sd	Pl	6-28-61	--	.2	317	110	24	364	
21R2	Ls	S	7-16-57	56	.3	305	---	4	204	
22N1	Ls	S	6-27-61	--	<.1	307	10	4	108	
22N4	Ls	S	4-16-59	58	.1	264	120	8	192	
24D1	Ls	S	6-28-61	56	.1	405	45	8	208	
26Q1	G?	Pl?	7-16-57	59	.1	300	---	6	116	
26Q1	G?	Pl?	6-26-61	58	<.1	351	25	4	104	
32M1	Ls	S	6-29-61	57	.1	312	40	4	232	
35R1	Ls	D	7-16-57	54	.8	315	---	10	164	
35R1	Ls	D	6-28-61	54	.5	366	10	4	156	
31/5W- 4N1	Sd	Pl	6-27-61	--	.5	107	25	4	32	
7R1	Sd	Pl	6-27-61	--	.1	268	65	40	248	
9H1	Sd	Pl	6-27-61	--	.1	132	40	4	92	
13C1	Sd	Pl	6-27-61	--	<.1	259	80	8	240	
15E1	Sd	Pl	6-27-61	--	<.1	117	65	8	128	
18R1	Sd	Pl	6-27-61	--	<.1	132	40	4	92	
21N1	G,Sd	Pl	6-27-61	--	5.0	68	70	4	72	
26J1	Sd	Pl	6-26-61	--	1.5	483	5	12	136	
27D1	Sh?	D,M	6-27-61	55	1.0	561	5	12	116	
28P2	G,Sd	Pl	6-27-61	--	.2	176	35	12	144	
29D1	Sd,G	Pl	6-27-61	--	<.1	151	55	4	128	
32F1	Ls	S?,D	6-27-61	52	.7	361	5	12	108	

31/5W-33G1	Sd	P1	6-27-61	52	.2	332	5	4	88
31/6W- 2E1	Ls	S,D	3-12-58	55	<.1	371	---	20	296
5D1	Sd	P1	6-22-61	54	.1	122	35	4	84
5P1	Sd	P1	6-22-61	54	.1	166	85	16	164
11Q1	Sd	P1	6-27-61	58	.1	303	80	48	288
15D1	Sd	P1	6-23-61	58	.4	234	115	24	208
16N1	Sd	P1	6-23-61	57	<.1	171	50	16	172
17D1	Sd	P1	6-22-61	--	.1	307	100	40	252
17H1	Sd	P1	6-23-61	--	<.1	166	100	24	208
19N1	G	P1	6-28-61	58	4.0	307	85	8	284
19H2	G	P1	6-28-61	56	4.0	293	110	16	304
20J1	Sd	P1	6-27-61	58	.1	132	55	32	180
25A1	Ls	D	6-22-61	58	<.1	312	150	4	232
25A2	Ls	D	3-12-58	53	<.1	[illegible]	---	4	296
26A1	Sd	P1	6-27-61	63	.1	88	90	<4	80
30E1	Sd	P1	6-27-61	56	<.1	176	65	16	236
31L1	Sd	P1	6-28-61	--	3.0	142	50	4	116
32B1	Sd	P1	6-27-61	--	<.1	142	55	4	116
33C1	Sd	P1	6-27-61	--	.2	127	40	8	116
36J1	Ls	D	4-15-59	51	.1	317	55	8	100
31/7W- 1D1	Sd	P1	6-22-61	55	.3	132	75	8	136
3A1	Sd	P1	6-23-61	57	.2	142	40	<4	100
4B1	Sd,G	P1	6-61	55	.5	181	70	4	144
5N1	Sd	P1	6-22-61	58	.1	268	90	20	376
7N1	Sd	P1	6-22-61	--	.1	98	30	12	100
8E1	Sd	P1	6-22-61	56	.1	176	75	20	232
9P1	Sd	P1	6-22-61	58	.1	137	45	4	100
11A1	Sd	P1	6-22-61	58	<.1	117	40	4	88
11P1	Sd	P1	6-22-61	59	1.0	220	40	12	172
12A1	Sd	P1	6-22-61	58	.1	132	90	16	172
13R1	Sd	P1	6-22-61	58	1.0	278	145	40	320
15B1	Sd	P1	6-22-61	--	<.1	190	140	44	260
20N1	Sd	P1	6-28-61	--	.5	317	[illegible]	44	308
21M1	Sd	P1	6-28-61	--	.1	181	85	24	148

Table 5.--Field chemical analyses of water from wells in Jasper County--Cont.

Well	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (fe)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Hardness as $CaCO_3$ (Calcium, magnesium)	Remarks
31/7W-22N1	Sd	Pl	6-27-61	56	0.2	161	40	4	128	
24N1	Sd	Pl	6-27-61	59	<.1	176	55	20	172	
26C1	Sd	Pl	6-28-61	55	.1	151	90	24	220	
29Q1	Sd	Pl	6-28-61	--	.2	278	195	32	368	
32N1	Sd	Pl	6-28-61	56	.1	249	85	36	324	
34R1	Sd	Pl	6-28-61	--	<.1	181	95	16	192	
35D1	Sd	Pl	6-28-61	59	.1	83	55	4	84	
35R1	Sd	Pl	6-28-61	--	.1	234	115	56	340	
32/5W- 8Q1	Sd	Pl	6-21-61	--	.1	190	105	12	216	
14H1	Sd	Pl	6-27-61	57	.4	264	150	32	296	
14M1	Sd	Pl	6-27-61	--	.3	195	90	16	216	
15J1	Ls	S,D	3-12-58	55	<.1	834	235	500	196	
15J1	Ls	S,D	6-21-61	58	<.1	688	150	456	144	
15R1	Sd	Pl	6-27-61	--	<.1	249	65	24	192	
16Q1	Sd	Pl	6-27-61	51	3.0	322	130	28	348	
22F1	Sd	Pl	6-27-61	56	.4	176	60	4	152	
26M1	Sd	Pl	6-27-61	--	4.0	268	140	16	336	
27H1	Sd	Pl	6-23-61	58	.3	259	115	12	284	
28J1	Sd,G	Pl	6-27-61	55	1.5	239	95	8	280	
30R1	Sd	Pl	6-23-61	57	2.0	239	90	20	248	
34G1	G	Pl	6-27-61	56	.1	317	5	4	108	
34M1	Sd	Pl	6-27-61	59	.5	176	65	8	164	
35H1	Sd	Pl	6-27-61	56	.5	181	30	4	132	
32/6W- 1D1	Sd,G	Pl	6-21-61	--	.1	171	60	20	140	
3M1	Sd	Pl	6-21-61	59	.1	205	75	12	204	
15K1	Sd	Pl	6-21-61	58	.5	181	55	8	140	
16E1	Sd,G	Pl	3-12-58	55	.5	181	---	12	220	
16E1	Sd,G	Pl	6-21-61	--	<.1	156	70	12	144	

32/6W-18R1	Sd	P1	6-21-61	58	2.0	234	100	8	240
21G1	Sd	P1	6-23-61	57	.5	200	110	16	212
25K1	Sd	P1	4-16-59	--	.1	181	75	12	288
26Q1	Sd,G	P1	6-23-61	59	4.0	264	170	28	356
28L1	Sd,G	P1	6-23-61	--	<.1	112	30	4	76
30L1	Ls	S	10-14-58	54	2.5	224	---	16	144
30L2	Ls	S	4-16-59	59	.5	278	5	8	212
30L2	Ls	S	6-21-61	54	<.1	288	10	4	184
30L3	Sd	P1	4-16-59	56	3.0	224	150	12	340
32A1	Sd	P1	6-23-61	58	.5	161	100	20	188
33N1	Sd	P1	6-23-61	--	<.1	117	35	<4	84
32/7W- 1P1	Sd	P1	6-20-61	56	.4	224	55	4	192
2R1	Sd	P1	6-21-61	--	1.5	268	160	36	332
3A1	Ls	D	6-21-61	--	1.0	454	5	28	156
3Q2	Sd	P1	6-21-61	--	1.5	317	225	28	472
11E1	Sd	P1	6-21-61	56	2.0	254	100	20	252
14R1	Sd,G	P1	4-15-59	53	3.0	166	80	12	212
14R1	Sd,G	P1	5-11-60	51	3.5	215	70	8	200
15N1	Sd	P1	6-21-61	--	.1	156	65	8	164
17N1	Ls	S	6-22-61	59	.1	390	15	12	224
18R1	Ls	S	6-22-61	59	.4	317	10	12	180
20J1	Ls	S	6-21-61	--	.1	400	15	12	252
21L1	Sd	P1	6-21-61	--	1.0	190	95	12	228
21M1	Sd	P1	6-21-61	58	.5	190	115	24	256
23N1	Sd	P1	6-21-61	57	.1	176	65	8	168
24D1	Sd	P1	4-15-59	53	3.0	93	105	16	168
25D1	Sd	P1	6-22-61	59	.2	195	45	4	124
27J1	Ls	S	4-15-59	57	[illegible]	303	20	20	208
27J2	Ls	S	4-15-59	56	.1	268	15	20	180
27R1	Sd	P1	4-15-59	58	4.0	112	80	16	188
27R2	Sd	P1	4-15-59	53	>7.5	83	85	16	152
28N1	Sd	P1	6-22-61	--	.2	234	115	16	240
30H1	Sd	P1	6-22-61	--	.1	137	10	8	176
31E1	Sd	P1	6-22-61	54	1.0	137	135	20	232
33R1	Sd	P1	6-22-61	--	.3	220	235	52	364

Table 5.--Field chemical analyses of water from wells in Jasper County--Cont.

Well	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Hardness as $CaCO_3$ (Calcium, magnesium)	Remarks
33/6W-29R1	Sd	Pl	6-21-61	58	1.0	220	150	20	280	
31P1	Sd	Pl	6-21-61	56	4.0	215	145	12	296	
32P1	Sd	Pl	6-21-61	56	.2	181	75	4	160	
33R1	Sd,G	Pl	6-21-61	65	<.1	137	55	8	124	
34Q1	Sd	Pl	6-21-61	56	4.0	381	160	44	408	
33/7W-35R1	Sd,G	Pl	6-21-61	--	5.0	400	265	4	484	