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GROUND-WATER RESOURCES OF NORTHWESTERN INDIANA

Preliminary Report: Marshall County

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GROUND-WATER RESOURCES OF NORTHWESTERN INDIANA

Preliminary Report: Marshall County

By J. S. Rosenshein and J. D. Hunn

ABSTRACT

Marshall County, in northwestern Indiana, has an area of about 450 square miles. Glaciofluvial sand and gravel of Pleistocene age is the chief source of ground water for domestic, stock, industrial, and public supplies. Wells that tap this source generally are less than 150 feet deep and yield from 5 to more than 1,000 gpm (gallons per minute). The underlying bedrock is not used as a source of ground water. However, the bedrock of Devonian and Devonian and Mississippian (?) age is a potential source of water, although quality and quantity available is uncertain. Field chemical analyses show that the hardness of water from the glaciofluvial sand and gravel generally is greater than 200 and less than 450 ppm (parts per million). In much of the county the concentration of iron exceeds maximum concentration recommended in the U. S. Public Health Service drinking-water standard for iron and manganese together. However, there are several small areas in the central and western part where this standard is not exceeded.

This preliminary report contains tabulated records of about 630 wells and test holes giving information about well construction, water level, condition of occurrence, and characteristics of water-bearing material; selected logs for about 330 wells and test holes giving driller's description of material penetrated and authors' interpretation of their geologic age; result of 232 field chemical analyses giving hardness of water and the bicarbonate, chloride, iron, and sulfate contents; and water levels in 4 observation wells indicating the magnitude of short-term and long-term water level fluctuations in the 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 Marshall County show 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 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 fifth 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

Marshall County is in the northwestern part of Indiana (fig. 1). The county is rectangular and includes about 450 square miles. It is bounded on the north by St. Joseph County, on the south by Fulton County, on the west by Starke and St. Joseph Counties, and on the east by Elkhart and Kosciusko Counties.

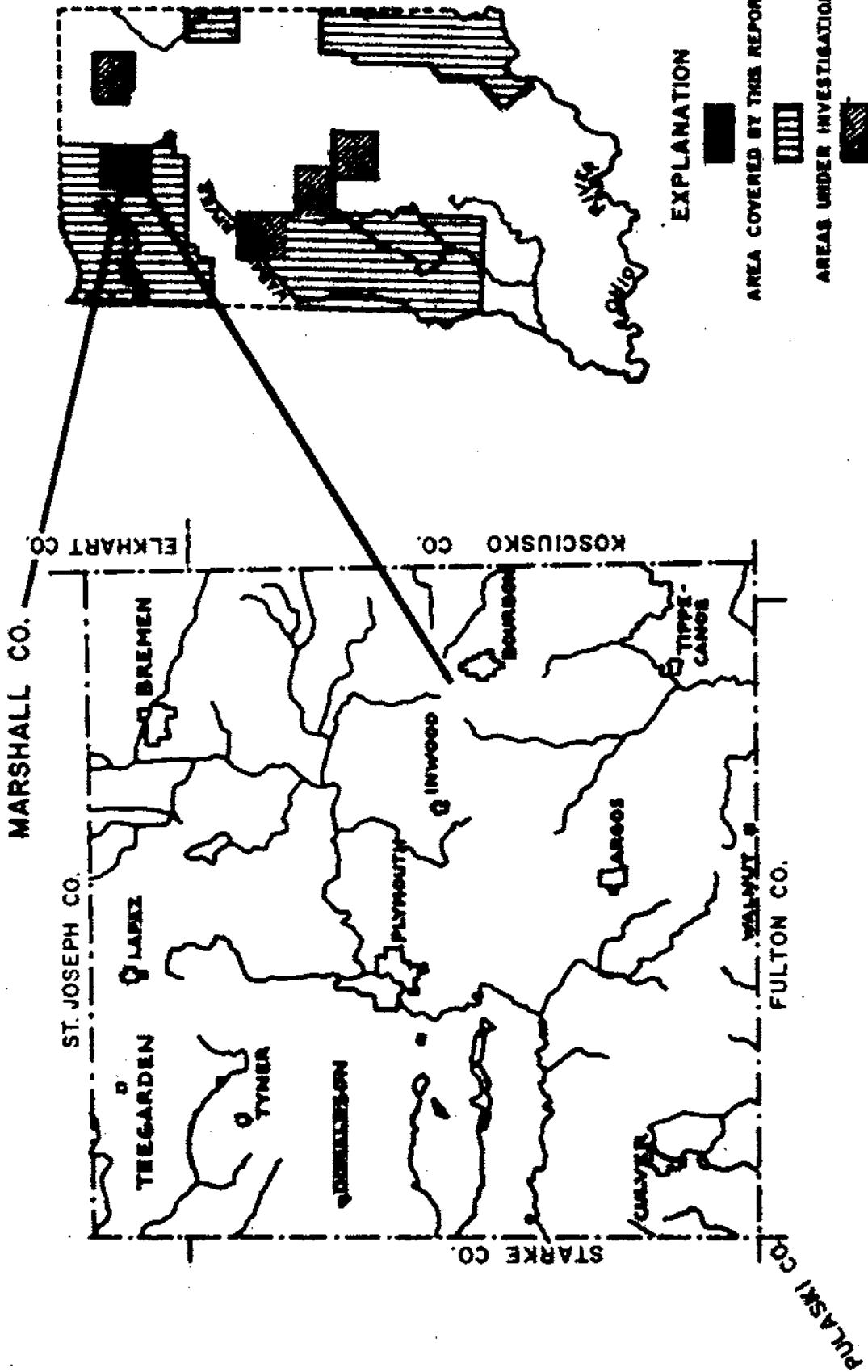


FIGURE 1.-- Map of Indiana, showing area covered by this report, areas under investigation, and areas covered by reports published under the cooperative program.

SEE PAGE 166 FOR LIST OF PUBLISHED REPORTS

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 32/3-35E1, the numbers preceding the hyphen indicate that the well is in T. 32 N., R. 3 E. 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 35E1 is the first well listed in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 35, T. 32 N., R. 3 E.

A narrow strip in the central part of the county is sub-divided into land grants. In this area the grid of the rectangular public-land survey has been projected through the grants and wells in this area numbered in accordance with the system used in the rectangular survey area.

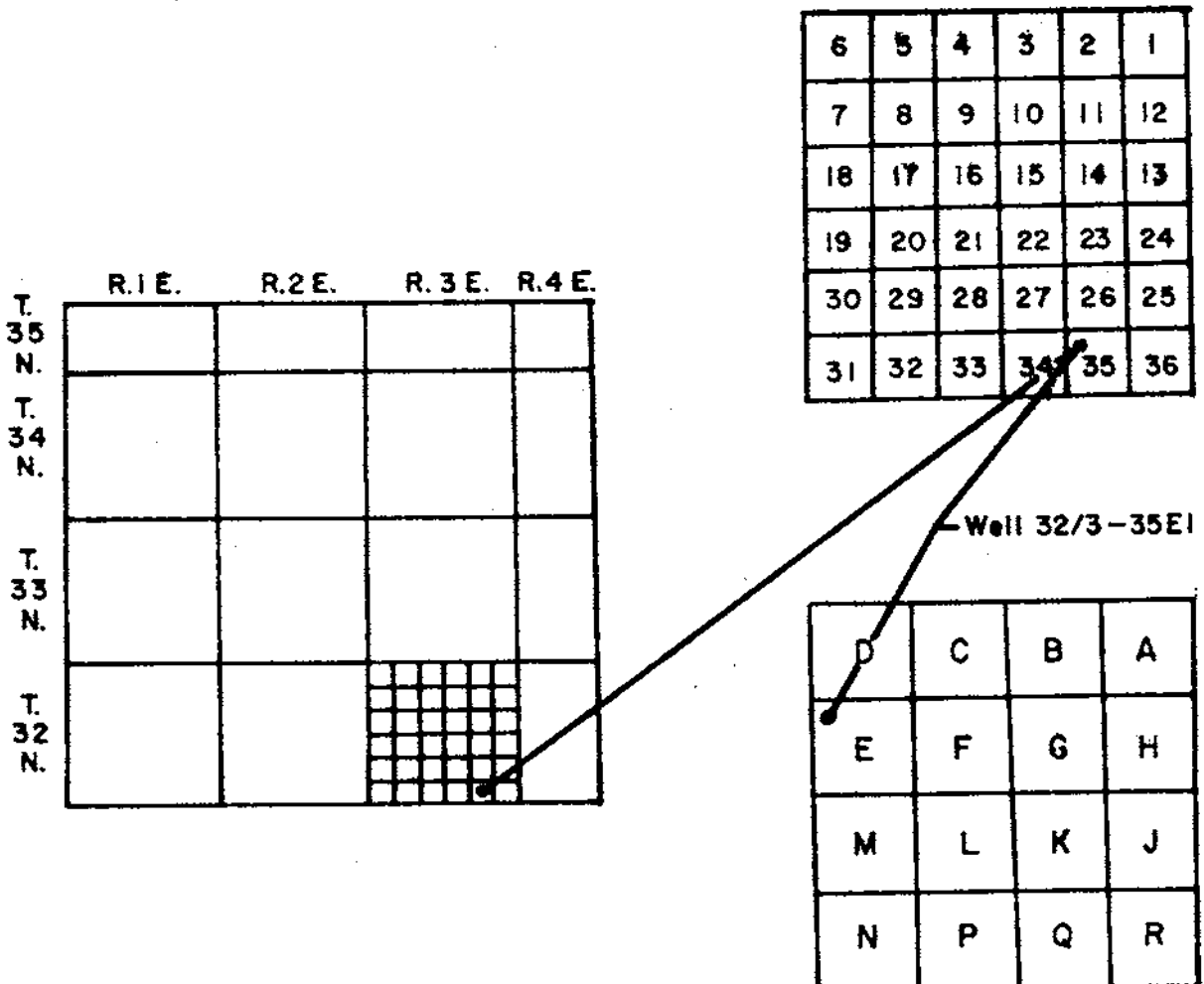


FIGURE 2.-- Sketch showing well-numbering system.

Acknowledgments

The authors thank all persons who contributed time, information, and assistance during the collection, tabulation, and processing of data for this report. W. J. Steen and J. M. Heckard 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 much of the 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 and Water Resources, Indiana Department of Conservation; Indiana Flood Control and Water Resources Commission; Indiana State Highway Department; Indiana State Board of Health; and U. S. Corps of Engineers.

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 location 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.

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 consisting of unconsolidated rocks. 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 Marshall County are of Ordovician age. These rocks consist of dolomite, dolomitic limestone, and shale and are overlain by dolomitic limestone, shale, and dolomite of Silurian age. The rocks of Ordovician and Silurian age are not used as a source of water in the county because these rocks generally lie more than 900 to 1,000 feet and 400 to 500 feet, respectively, below the surface, and the water they contain generally has a dissolved-solids content of more than 5,000 ppm (parts per million).

The rocks of Silurian age are overlain by dolomite and dolomitic limestone of Middle Devonian age. These rocks underlie blue-black bituminous shale of Devonian age (Logan, 1932) or Devonian and Mississippian age (Patton, 1956). The rocks of Devonian and Mississippian (?) age grade upward into shale of Mississippian age which is overlain locally by thin limestone. Although these limestones and shales of Devonian and Mississippian age are not used as a source of water in Marshall County, they are a potential source of water although the quality and quantity available is uncertain.

The bedrock is overlain by unconsolidated glacial drift of Pleistocene age. The drift forms several prominent topographic features in the county (Leverett and Taylor, 1915, pl. 6; Wayne, 1958) such as the Maxinkuckee moraine in the west-central part; the glaciofluvial plains and the ground moraine in the eastern part; and the sand-covered glaciofluvial plains and ridges in the western part.

The unconsolidated rocks of Pleistocene age range in thickness from about 100 to more than 250 feet. The rocks consist chiefly of glaciofluvial sand and gravel, clayey till, and some glaciolacustrine clay and silt. The glaciofluvial sand and gravel is locally more than 200 feet thick and is the chief source of ground water for domestic and stock, industrial, and public supplies. Wells that tap this aquifer are generally less than 150 feet deep and yield from 5 gpm (gallons per minute) to more than 1,000 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 too thin to be a source of ground water.

Plate 2 shows the availability of ground water in the unconsolidated rocks underlying the county. Plate 3 shows the areal distribution of hardness of water from the sand and gravel of Pleistocene age. The water is hard to very hard. The hardness is generally greater than 200 and less than 450 ppm. However, the hardness is less than 200 ppm in several small areas along the western edge of the county. In much of the county the iron content exceeds maximum concentration recommended in the U. S. Public Health Service drinking-water standard for iron and manganese together. In the central and western part of the county this standard is not exceeded by the iron concentration in several small areas.

The range in concentration of selected constituents and properties is summarized in the table below. This table shows the minimum, mode, and maximum

Constituent or property	Minimum (ppm)	Mode (ppm)	Maximum (ppm)
Iron (Fe)-----	< 0.1	1.2	7.5
Bicarbonate (HCO ₃)-----	122	364	586
Sulfate (SO ₄)-----	5	16	155
Hardness as CaCO ₃ -----	132	309	592

concentrations of various constituents and properties of water from sand and gravel of Pleistocene age. Table 1 indicates the significance of the various constituents and properties of the water that are listed in table 5.

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.
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.

CONFINED AND UNCONFINED CONDITIONS

Ground-water occurs in the consolidated and unconsolidated rocks of Marshall 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 unconfined conditions the aquifer is overlain directly by permeable unsaturated material, and the water will not rise above the level at which it is encountered.

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

TYPES OF WELLS

Drilled, driven, and jetted wells are the principal types of water used in Marshall County. Most water wells 3-inches or more in diameter are constructed by the cable-tool, or percussion, method, but a few wells have been drilled by the rotary and reverse-rotary methods. 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.

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.

Oil or gas test holes in Marshall County generally were drilled by the cable-tool method. The flood-control test holes were bored by a rig-mounted power auger. Structure test holes for foundations and bridges generally were drilled by the wash-boring method. Various methods were used in these types of test-hole drilling to recover samples of material penetrated, such as, driving a sampling tube into the material after specific intervals of boring or collecting samples from the bailer after specific intervals of cable-tool drilling.

Table 2.--Grain size and equivalent screen openings

Grain size: After Wentworth (1922).
Equivalent screen openings: From
commercial catalogs for water-well
supplies.

Slot size: In thousandths (0.001)
of an inch.
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 for domestic, stock, public, and industrial supplies from sand and gravel of Pleistocene age. The underlying bedrock is not used as a source of water. However, the rocks of Devonian and Mississippian (?) are a potential source of water, although quality and quantity available is uncertain.

The chemical quality of water from the rocks of Pleistocene age varies. The water is generally hard to very hard. In several small areas along the western edge of the county the hardness of water is less than 200 ppm. Although the iron content exceeds the U. S. Public Health Service drinking-water standards for iron and manganese together in much of the county, there are several areas in the central and western part in which this standard is not exceeded.

RECORDS

The records of about 630 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 all wells and most test borings, was interpolated from topographic maps. Altitudes of some borings were leveled by the State agency for whom the borings were made.

Table 4 contains the selected logs of about 330 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 232 partial chemical analyses of water are given in table 5. Of this number 231 analyses were determined in the field office of the Geological Survey, and one was determined by a commercial laboratory. 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 four observation wells of which three were established during the investigation and one prior to the investigation. The water levels in the observation wells were measured 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 except where otherwise noted. Daily water levels are given for the observation wells equipped with recording gages for which the records have not been previously published. Previously published records are summarized, and only selected measurements are tabulated in the table. (See water-supply papers listed under U. S. Geological Survey in selected bibliography.) Periodic water levels are given for the observation wells measured manually. Factors affecting the water levels in the observation wells are also indicated. The location of the observation wells is shown on plate 1.

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

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				
32/1-101	C. Grover	R. Price	5-24-60	785	J	34	2	S; 3ft, 12sl, dia 1 1/2	12	22	Sd,G	P1	U	12	D		Yield 20 gpm; sand and gravel overlain by 10 ft sand and gravel mixed with yellow clay; Ca.
101	Estate, O. Grossman		10-16-59	780	Dn	28	1 1/2	S; 3ft, 60g, dia 1 1/2			Sd,G	P1		13	D	J	Yield 17 gpm; Ca.
241	F. Kovacs		3-1-52	770	J	116	2	S; 3ft, 60g	100	16	Sd,G	P1	C	8	N		Yield 17 gpm; Ca.
311	G. Snapp		1951	785	J	39	2	do	30	9	Sd,G	P1	C	22	D,S	J	Yield 17 gpm; Ca.
481	J. Haiser	E. W. Schroeder	7-18-56	775	J	48	2	S; 3ft, 60g, dia 1 1/2	25	23	G	P1	U	25	P		Yield 8 gpm; Ca, L.
482	H. Sheppard	Kennedy's Well Service	9-19-60	775	J	57	2	do			Sd,G	P1		29	P		Yield 15 gpm; Ca, L.
481	W. Lake	R. Price	8-10-55	780	J	71	2	S; 3ft, 60g			Sd,G	P1		38	S	J1/2	Yield 17 gpm; Ca, L.
591	D. Overmyer	J. Payne	4-54	774	J	52	2	S; 3ft, 60g, dia 1 1/2	30	22	Sd	P1	C	28	D,S	J1/3	Coarse sand overlain by 30 ft yellow clay.
501	E. Overmyer	R. Price	4-5-50	787	J	57	2	S; 3ft, 60g	45	12	Sd,G	P1	U	45	S	L	Yield 16 gpm; sand and gravel from 0-57 ft.
601	R. Osborn	Oldfield Irrigation Well Co.		759	Dr	90					Sd,G	P1	U		T		Yield 350 gpm; L.
602			12-55	759	Dr	85	32-18	Gp; S	35	51	Sd,G	P1	U	35	Ir	T240	Dd 25 ft pumping 1,000 gpm; see log well 601.
791	G. Osborn	E. W. Schroeder	9-30-57	747	J	95	2	S; 3ft, 60g, dia 1 1/2		16	G	P1	C	22	D,S		Yield 10 gpm; Ca, L.
901	T. Penick		6-28-57	788	J	75	2 1/2	do	59	6	G	P1	C	30	D	J1/2	Yield 10 gpm; L.
1081	Culver Military Academy		12-27-55	777	J	96	2	do	90	6	G	P1	C	15	P		Ca, L.
1091	L. J. O'Mara	Kennedy's Well Service	8-11-55	813	J	96	2	S; 3 1/2 ft, 60g, dia 1 1/2	91	5	G,Sd	P1	C	48	D		Yield 15 gpm; L.
1201	M. C. Lindvall	McGrew Well Drilling Co.	12-16-55	815	J	122	2	S; 2 1/2 ft, 10sl	117	5	G	P1	C	47	D	J1/2	Fine sand and gravel overlain by 95 ft yellow clay; clay at 112 ft; Ca.
1391	H. Hinsmore	J. Payne	Spring 1953	840	J	112	2	S; 3ft, 60g, dia 1 1/2	95	17	Sd,G	P1	C	50	D,S	J1	Flowed 40 gpm.
1501	Culver Military Academy	McGrew Well Drilling Co.	1948	738	J	90	2	S; 3ft, p			G	P1	C		P		Flows.
1502		D. McFarlan		737	J	87	2	S			Sd,G	P1	C		P		Do.
1503		Mr. Wolverton		743	Dr	87	2	S			Sd,G	P1	C		P		Do.
1504				743	Dr	100	2	S			Sd,G	P1	C		P		Do.
1505		Wayne-Northern Co., Inc.	9-9-59	770	Dr	100	6	S; 10ft, 30sl	75	25	Sd,G	P1	C	27	Ac		Dd 2 ft after 3 hr pumping 50 gpm; L.
1506				770	Dr	100	6	S; 10ft, 30sl			Sd,G	P1	C		P		Flows.
1501	J. Cleveland	Kennedy's Well Service	7-30-59	790	J	126	2	S; 3 1/2 ft, 60g, dia 1 1/2			Sd	P1		48	P	J	Yield 15 gpm; Ca.
1501	Culver Military Academy			737	J	90	2	S			Sd,G	P1	C		P		Flows.
1502		D. McFarlan		745	Dr	67	6	do			Sd,G	P1	C		P	C15	Do.
1503		R. Price	6-18-57	743	Dr	70	2	S; 3 1/2 ft, 60g, dia 1 1/2			Sd,G	P1	C		P	Ac	Yield 17 gpm.
1501	H. Oberlin			770	J	70	2	S			Sd,G	P1	C	53	D	J3/4	Flows.
1601	Culver Military Academy			740	J	70	2	S			Sd,G	P1	C		P		Do.
1602		Wayne-Northern Co., Inc.		738	J	74	2	S; 15ft, 30sl	54	20	G,Sd	P1	C		P		Dd 8 ft after 3 hr pumping 310 gpm; Ca, L.
1603			9-2-59	730	Dr	74	2	S; 15ft, 30sl			G,Sd	P1	C	4	P		Yield 15 gpm; Ca, L.
1601	Col. Moore	Kennedy's Well Service	11-5-57	775	J	39	2	S; 3ft, 14sl, dia 1 1/2			G,Sd	P1	C	16	D	P	

Water level: In feet below land-surface datum on date of completion of well, except where otherwise noted.
 Use: Ac, air conditioning; D, domestic; De, destroyed; I, industrial; Ir, irrigation; N, not used; O, observation; P, public supply; R, railroad; S, stock; T, test.
 Type of pump and horsepower: C, centrifugal; J, jet; L, lift; P, pitcher; T, turbine; numeral indicates rated horsepower of electric motor.
 Remarks: Ca, field chemical analysis in table 5; Dd, drawdown; E, electric log available for inspection; G, gamma-ray log available for inspection; gpm, Gallons per minute; L, log of well in table 4; S, samples available for inspection.

Well: See text for description of well-numbering system.
 Altitude: Altitude of land-surface datum from topographic map except as noted in text, p. 9.
 Type of well: B, bored; Dr, driven; Du, dug; J, jetted.
 Finish: Gp, gravel pack; Os, open end; S, screen; dia, diameter in inches.
 Character: D, drilled; P, perforated pipe; sl, slot size.
 Geologic age: Pl, Pleistocene.
 Condition of occurrence: C, confined; U, unconfined; see text for definition.

Table 3.---Records of wells and test holes in Marshall County, Indiana---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				
32/1-1882	D. Foreman	Kennedy's Well Service	11-4-57	748 J	J	84	2	2 S; 3ft, 60 g, dia 1 1/4								Yield 15 gpm; L.
161A	Town of Culver	McGrew Well Drilling	1954	740 J	J	80	3	3; 2ft, 10s1								Flows; discharge about 1 gpm. Coarse sand overlain by 58 ft clay, Ca.
17A1	R. Easterly	Co.	8-1-59	765 J	J	45	2	3; 3ft, 60g, dia 1								Yield 6 gpm; gravel with some sand and clay overlain by 41 ft blue clay with sand and gravel; Ca.
17B1	T. Walker	Kennedy's Well Service	8-1-59	765 J	J	45	2	3; 3ft, 60g, dia 1								Gray gravel overlain by 51 ft blue clay; Ca.
17B2	W. Milbreath	R. Price	9-20-55	760 J	J	56	2	3; 3ft, 60g								Yield 20 gpm; medium to coarse sand and gravel overlain by 90 ft blue clay.
17D1	P. Shield	R. Price	9-13-55	757 J	J	97	2	do								Ca, L.
17E1	D. Overmyer	J. Payne	7-27-59	770 J	J	49	2	3; 3ft, 60g, dia 1 1/4								Yield 20 gpm; L.
17G1	G. Snyder	R. Price	5-4-60	767 J	J	99	2	do								Sand and gravel overlain by 35 ft muck and blue clay.
18A1	A. Dillon	J. Payne	10-56	747 J	J	45	2	do								Flows from pipe 3 ft below lsd; discharge measured 5 gpm.
18A2	State of Indiana		About 1932	735 J	J	50	2	do								7-24-57; for fish hatchery; water level at lsd, 7-24-57; Ca.
18A3	do		About 1932	735 J	J	34	2	do								Flows from pipe 3 ft below lsd; discharge measured 4 gpm, 7-24-57; for fish hatchery; water level at lsd, 7-24-57.
18A4	do		About 1932	735 J	J	33	2	do								Flows; discharge about 2 gpm, 7-24-57; for fish hatchery.
18A5	do		About 1932	735 J	J	33	2	do								Flows from pipe 3 ft below lsd; discharge about 2 gpm, 7-24-57; for fish hatchery; water level at lsd, 7-24-57.
18B1	do		1932	735 Du	Du	51	1 1/2	do								Flows; discharge about 5 gpm, 7-24-57; for fish hatchery.
18E2	do		1932	735 J	J	55	2	do								Flows from pipe 3 ft below lsd; discharge measured 10 gpm, 7-24-57; for fish hatchery; water level at lsd, 7-24-57.
18E3	do		1932	735 J	J	55	2	do								Flows; discharge measured 15 gpm, 7-24-57; for fish hatchery; water level measured 2.8 ft above lsd, 7-24-57; Ca.
20A1	Town of Culver		11-9-59	745 Dr	Dr	87	10	3; 3ft, 60g, dia 1 1/4								Have another well at this site.
20B1	Estate, C. Hawk	R. Price	11-9-59	747 J	J	44	2	3; 3ft, 60g, dia 1 1/4								Yield 20 gpm; Ca, L.
22B1	Mr. Griffith		About 1886	740 J	J	32	2	do								Flows; discharge measured 8 gpm, 8-18-57.
22H1	J. B. Vajin		1886	770 B	B	32		do								See Thompson and Lee (1886); L.
22B2	D. W. Marmon		July 1886	760 B	B	98		do								Do.
22B3	Mr. Stevens	R. Price	Summer 1956	750 J	J	68	2	3; 3ft, p								Flowed 25 gpm when drilled; discharge measured 3 gpm, 7-24-57; water level measured 11.3 ft above lsd, 7-24-57; Ca, L.
22H4	Mr. Robinson	J. Payne	Spring 1955	745 J	J	45	2	Oe								Flows; sand and gravel overlain by 20 ft clay.
22H5	Mr. Stevens		About 1916	747 J	J	45	2	S; p								Flows; discharge measured 8 gpm, 7-24-57.

Well No.	Owner	Date	Locality	Depth	Flow	Yield	Capacity	Notes
32/1-22R6	Mrs. Perkins							
22H7	S. J. Rosea	10-23-59	J. Payne	128	2	105	Sd, G	Flows; discharge measured 15 gpm, 8-15-57; water level measured 12 ft above lsd, 8-15-57.
22J1	C. R. Bradley	737	J. Payne	126	2	100	Sd, G	Flows 40 gpm; for novelty water wheel; Ca, L.
22J2	Maxinkuckee Country Club	About 1916	J. Davis	124	2		Sd, C	Flows; see log well 22H7.
22J3	A. Lathrop	11-16-59	J. Payne	120	2		Sd	Flows; discharge measured 8 gpm, 7-34-57; water level measured 13.3 ft above lsd, 8-15-57; Ca, L.
22J4	E. Baxter	11-20-59	J. Payne	114	2		Sd	Flowed 42 gpm; L.
22R1	Maxinkuckee Country Club	About 1923	J. Davis	130	4		Sd, G	Did 18 ft after 2 hr pumping 1,200 gpm; Ca, L, S.
22R2	R. Robinson	8-7-59	J. Payne	125	2	76	Sd, G	Yield 16 gpm; Ca, L.
22D1	J. Bigley	7-55	Oldfield Irrigation Well Co.	55	32-Gp; S	25	G, Sd	Yield 20 gpm; sand and gravel overlain by 125 ft yellow and blue clay; Ca.
22D2		8-15-55	do	111	32-Gp; S; 40ft	88	G, Sd	Yield 17 gpm; Ca.
22E1	D. Bigley	8-19-59	J. Payne	87	2	81	Sd	Flows; discharge measured 6 gpm, 7-26-57; water level measured 4.4 ft above lsd, 7-26-57; Ca.
22K1	W. C. Fisher	1-57	R. Price	147	2	125	Sd, G	Fine sand overlain by 55 ft yellow clay.
24L1	W. Kline	7-56	do	121	2		Sd, G	Sand and gravel overlain by 48 ft yellow clay; Ca.
25R1	B. Dille	9-20-60	do	40	2	25	Sd, G	Observation well Marshall 3; water level measured 10.22 ft below lsd, 11-11-57; sec log well 31K2.
27Q1	Dr. Norris	1930	do	50	2		Sd, G	Did 17 ft pumping 1,400 gpm; water level measured 9.53 ft below lsd, 7-23-57; Ca, L, S.
28R1	C. Adams	Spring 1953	J. Payne	66	2	55	Sd	Did 8 ft after 8 hr pumping 1,200 gpm; sand and fine gravel overlain by 10 ft red sand.
30R1	J. Newman	Spring 1958	do	68	3	48	Sd, G	Yield 40 gpm; L, Ca.
31K1	F. Banks	7-55	Oldfield Irrigation Well Co.	43	36-Gp; S; 20ft, P	10	Sd	Flows; discharge measured 10 gpm, 7-26-57; water level measured 4.4 ft above lsd, 7-26-57; Ca.
31K2		8-6-55	do	63	36-Gp; S; 20ft	10	Sd, G	Flows; discharge measured 6 gpm, 7-26-57; water level measured 5.5 ft above lsd, 7-26-57.
31N1	Purdue University Sand Experiment Farm	1955	do	57	32-Gp; S; P	12	Sd, G	Flowed 6 gpm; Ca.
34B1	H. Zeheer	8-24-59	R. Price	42	2	22	G, Sd	Yield 40 gpm; L.
34B2	C. Kline	12-15-59	do	139	2	14	Sd, G	Yield 15 gpm; L.
34C1	Mr. Carlsson	1932	do	43	2		Sd, G	Sand and gravel overlain by 35 ft clay.
34C2	R. Krauer	1950	Mr. Wolverton	60	2		Sd, G	Yield 17 gpm; Ca.
34C3	G. Wilson	10-4-54	Rochester Well and Pump Co.	54	2		Sd, G	Sand and gravel overlain by 12ft yellow clay.
34C4	E. J. Carlson	8-28-59	R. Price	37	2	18	Sd, G	Yield 20 gpm; Ca, L.
34C5	F. Kinkade	1-15-60	E. W. Schroeder	57	2	50	G	Coarse gravel overlain by 35 ft sand and gravel; Ca.
34D1	O. D. Campbell	4-23-56	Rochester Well and Pump Co.	44	2	36	Sd, G	Yield 20 gpm; L.
34D2	W. Kline	8-56	R. Price	138	2	128	Sd, G	Ca.
35G1		Summer 1952	do	110	2		Sd, G	Yield 20 gpm; Ca, L.
36D1	E. Martain	8-20-57	Kennedy's Well Service	83	2	35	Sd, G	Flows; yield 40 gpm; Ca, L. Gravel overlain by 44 ft blue clay with streaks of marl.
32/2-1J1	A. Price	1845	R. Price	50	2	15	Sd, G	
1M1	H. and R. Dickenson		do	138	2	120	Sd, G	
2A1	S. Clemens	4-28-60	do	125	2	50	Sd, G	
6B1	R. Fishburn	1957	do	29	2	12	Sd, G	
6Q1	L. LeLand	7-21-59	do	125	2		Sd, G	
7E1	E. Schultz	2-19-54	W. B. Johnson	60	3		G	
7F1		3-4-52	do	120	3		G	
7Q1	R. Blocker	11-10-58	R. Price	69	2	60	Sd, G	
9A1	J. Kaminski	7-14-59	do	83	2	40	Sd, G	
9B1	F. Buffing Trustees, Green Township	10-12-59	do	88	2	36	Sd, G	
9E1		9-54	do	54	2	44	G	

Table 2.--Records of wells and test holes in Marshall County, Indiana--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
									Thickness (feet)	Character	Geologic age	Conditions of occurrence				
32/2-1061	E. Wackizer	R. Price	1-56	780	J		2									
10K1	R. Wackizer		1955	778	J	70	2	S; 3ft, P								
10K2			12-18-59	795	J	83	2	S; 3ft, 12sl, dia 1 1/2								
11J1	J. Dorman		4-57	815	J	39	2	S; 3ft, 60g, dia 1 1/2								
12M1	Town of Argos	Indiana-Michigan Water	10-25-38	815	Dr	131	10	S; 20ft								
12M1	D. Berkeiser	R. Price	6-8-60	812	J	112	2	S; 3ft, 60g, dia 1 1/2								
14M1	D. Fishburn		2-28-56	827	J	37	2	S; 3ft, 60g								
15R1	G. Hess	Kennedy's Well Service	10-14-59	820	J	30	2	S; 3ft, 60g, dia 1 1/2								
17K1	C. L. Thompson	R. Price	8-56	790	J	80	2	S; 3ft, 60g								
20E1	E. Cowen		12-1-56	810	J	83	2	do								
22J1	J. Romig	R. Price		847	J	50	2	do								
22J2	C. Stener		5-52	852	J	120	2	do								
22K1	E. Umbaugh		11-53	827	J	150	2	do								
22N1	G. Parkhurst	Rochester Well and Pump Co.	10-29-56	846	J	75	2	S; 3ft, 10sl								
24R1	C. Bunch	R. Price	3-55	867	J	175	2	S; 3ft, 60g								
25D1	M. B. Hudson		4-27-60	850	J	216	2	S; 93 sd								
26R1	C. Deany		1954	847	J	198	2	S; 60g								
26M1	L. McGuff		8-56	852	J	123	2	S; 3ft, 60g								
27L1	H. Claybaugh		11-54	860	J	137	2	do								
30J1	N. Davis		6-19-57	792	J	42	2	S; 3ft, 60g, dia 1 1/2								
30P1	S. Savage		4-29-57	795	J	42	2	S; 3ft, 60g, dia 1 1/2								
31Q1	C. Gibbons		9-1-55	810	J	105	2	S; 60g								
32P1	C. Jacklin	Rochester Well and Pump Co.	7-3-57	815	J	61	2	S; 3ft, 50g, dia 1 1/2								
33M1	E. Russell	R. Price	10-53	815	J	91	2	S; 3ft, 60g								
32/3-1A1	C. Methency	G. Alexander	7-16-60	832	J	130	2	S; 3ft, dia 1								
2P1	F. Hutchinson	R. Price	12-29-59	797	J	66	2	S; 3ft, 12sl, dia 1 1/2								
5R1	Izaak Walton League	Layne-Northern Co., Inc.	1-20-49	785	Dr	105	10	S								
5E2		R. Price	6-55	777	J	97	2	S; 3ft, P								
5E3				777	J		2									
5E4				787	J		2									
7G1	O. Good	R. Price	7-8-59	807	J	39	2	S; 3ft, 60g, dia 1 1/2								
7Q1	H. Umbaugh		Spring 1954	819	J	160	2	S; 3ft, 60g								
9P1	E. Newberk	Rochester Well and	9-10-53	813	J	83	2	S; 3ft, dia 1 1/2								
11B1	E. Overmyer	R. Price	11-13-50	804	J	60	2	S; 3ft, 60g								
16D1	C. Phillips		2-8-55	805	J	84	2	do								

Well No.	Owner	Driller	Date	Depth	Flow	Yield	Pressure	Temp	Notes
32/3-21H1	A. Zentz	R. Price	3-54	812	J	150	2	2	140
22D1	C. Harley	McGrew Well Drilling Co.	6-57	782	Dr	178	2	2	97
22D2			10-10-57	782	Dr	101			
23R1	R. Drochner	R. Price	5-55	822	J	118	2	2	
23L1	W. Beck		1-28-60	810	J	225	2	2	
23L2			2-3-60	810	J	131	2	2	118
24R1	Nickel Plate Road	Layne-Northern Co., Inc.	12-24-42	775	Dr	102			12
28N1	C. Richardson	R. Price	1955	822	J	90	2	2	70
31D1	P. Fry	McGrew Well Drilling Co.	12-28-56	842	Dm	18	1 1/2	1 1/2	
31R1	W. Flynn			852	J	126	2	2	120
33R1	C. Wentzel	Rochester Well and Pump Co.	11-20-52	793	J	88	2	2	
34N1	F. Swihart	R. Price	2-18-60	793	J	88	2	2	33
34Q1	J. Hudson		3-13-57	790	J	75	2	2	68
34R1			7-56	807	J	48	2	2	40
35E1	E. Heck		3-8-57	817	J	105	2	2	
35P1	J. Rudolph	Rochester Well and Pump Co.	12-27-54	822	J	184	2	2	
36H1	L. Mullins	R. Price	7-20-60	777	J	52	2	2	40
36P1	F. Sanders			765	Dm		1 1/2	1 1/2	
32/4-5R1	H. Apple	R. Price	8-7-58	817	Dm	30	1 1/2	1 1/2	
7N1	J. Jennings		9-23-60	797	J	63	2	2	36
8F1	R. Fitts		11-54	831	J	140	2	2	
19P1	A. Tessel		9-1-59	781	J	49	2	2	
19K1	A. Swihart		6-12-57	782	J	42	2	2	35
19M1	C. Lewallen	Keeney's Well Service Co.	8-6-59	778	J	33	2	2	29
21J1	F. Kehoc		11-24-59	787	J	60	2	2	32
29J1	R. Ross	McGrew Well Drilling Co.	1956	795	J	41	2	2	38
29R1			7-24-59	797	J	35	2	2	31
32P1	C. Coty	R. Price	12-54	832	J	90	2	2	75
32R1	F. Nellans		12-54	817	J				
33/1-2N1	O. Conner	Keeney's Well Service	5-19-55	818	J	47	2	2	42
2N2	O. S. Gross	E. Brooker	6-6-56	818	J	45	2	2	35
3N1	P. Morelock	R. Price	9-17-59	820	J	113	2	2	70
3N2	Trustees, West Township	Indiana-Michigan Water Development Co.	9-28-58	777	Dr	63	4	4	50
3N3				776	J				
6C1	L. G. Holt	Keeney's Well Service	8-31-57	765	J	32	2	2	27
6J1	Convent Ancilla	J. P. Miller Artesian Well Co.		760	Dr	90	10	10	48
6J2			Fall 1958	760	Dr	64	10	10	
10A1	H. Ames	Keeney's Well Service	10-31-57	812	J	50	2	2	
10B1	G. Meize	R. Price	4-55	787	J	108	2	2	80
10D1	R. Morrill	Keeney's Well Service	10-15-57	785	J	43	2	2	38
10L1	C. Klapp	E. W. Schroeder	9-28-57	784	J	86	2	2	55
10L2	J. Manuel	Keeney's Well Service	10-15-59	790	J	31	2	2	
11H1	C. B. Landenuth		12-8-56	811	J	90	2	2	38
11K1	D. Hassler	R. Price	6-56	802	J	51	2	2	12
11R1	Mr. Pawak	Keeney's Well Service	11-27-59	812	J	68	2	2	62
12Q1	H. Groves	J. Payne	7-16-59	806	J	45	2	2	

Yield 20 gpm; Ca. L. No water reported; L. Ca. L.

Yield 20 gpm; Ca. L.

Yield 20 gpm; L. Temperature 52°F; L. Fine sand and gravel overlain by 70 ft blue and yellow clay; Ca.

Yield 13 gpm; L.

Yield 20 gpm; Ca. L. Flowed 7 gpm; L. Yield 17 gpm; sand and gravel overlain by 40 ft yellow and blue clay. Yield 20 gpm; Ca. L.

Yield 20 gpm; L. Flows about 1 gpm; Ca.

Yield 6 gpm; Ca. Yield 20 gpm; L. Yield 20 gpm; Ca. L. Yield 20 gpm; sand and gravel overlain by 18 ft sand; record missing from 0-28 ft; Ca.

Yield 15 gpm; L. Yield 12 gpm; L. Yield 10 gpm; Ca. L.

Yield 20 gpm; sand and fine to medium gravel overlain by about 75 ft blue clay mixed with gravel; Ca.

Yield 15 gpm; brown sand and gravel overlain by 42 ft yellow clay mixed with gravel and sand; blue clay at 47 ft. Yield 12 gpm; Ca. L.

Flowed 30 gpm; sand overlain by 50 ft clay; Ca. Flows; discharge measured 0.5 gpm, 6-18-57; water level measured 2.5 ft above lsd 6-18-57; Ca. Flows; discharge measured 1 gpm, 6-18-57; water level measured 1.5 ft above lsd, 6-18-57. Yield 15 gpm; Gravel overlain by 27 ft sand and clay; Ca. L.

Dd 25 ft after 11 hr pumping 400 gpm; see log well 6J1. Yield 15 gpm; Ca. L.

Yield 20 gpm; L. Yield 15 gpm; Ca. L. Yield 10 gpm; Ca. L. Yield 15 gpm; Ca. L. Do.

Sand and gravel from 0-51 ft. Yield 15 gpm; Ca. L.

Table 3.---Records of wells and test holes in Marshall County, Indiana---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				
3371-14H1 15H1	F. Massett G. Smith	Kennedy's Well Service Buffington and Payne	9-7-59 6-30-60	775 807	J J	47 51	2 2	S; 3ft., 60g. dia 1 1/2	15 11	G Sd	Pl Pl	C C	18 D	---	Flowed; yield 20 gpm; L. Yield 15 gpm; fine sand overlain by 40 ft yellow and blue clay	
16R1 22K1	D. Kucera T. Vermillion	Kennedy's Well Service ---do---	8-12-59 6-11-55	812 797	J J	64 41	2 2	do S; 3ft., 60g. dia 1 1/2	4 5	G, Sd G	Pl Pl	C C	45 30	---	Yield 14 gpm; Ca. L. Yield 15 gpm; coarse gray gravel overlain by 36 ft blue clay with some sand and gravel; Ca. Yield 5 gpm.	
23A1	W. Ruse	S. J. Garl Well Drilling Co.	7-15-59	780	Dn	24	1 1/2	S; 3ft., 60g. dia 1 1/2	---	Sd	Pl	---	13	---	Yield 6 gpm. Flows.	
23M2 23B2 23E1	H. Bollinger G. Smith	J. O. Redman S. J. Garl Well Drilling Co.	7-2-59 5-1-60	775 770	J Dn	57 45	1 1/2 1 1/2	S; 3ft., 80g. dia 1 1/2 S; 3ft., 60g. dia 1 1/2	---	Sd Sd	Pl Pl	C C	25 ---	---	---	
23B2 24H1 24E1 24E2 24E3	B. Spencer B. Huff D. L. Spencer M. Miller O. Yates	W. Schroeder R. Price Kennedy's Well Service ---do---	4-11-60 12-9-55 7-56 11-1-56 4-55	780 780 797 795	Dn J J J J	23 39 42 50 32	1 1/2 2 2 2 2	do S; 3ft., 60g. do S; 3ft., 7sl. dia 1 1/2 do S; 3ft., 60g. dia 1 1/2	19 19 6 6 8	Sd, G Sd, G Sd, G Sd, G Sd, G	Pl Pl Pl Pl Pl	C C C C C	12 28 28 32 32	---	L. Yield 15 gpm; L. Yield 15 gpm.	
25C1 25P1	W. Piper Indiana Flood Control and Water Resources Comm.	R. Price Corps of Engineers	9-55 7-11-56	811 752	J B	63 30	2 4 1/2	S; 3ft., 60g. ---	8 17	G Sd, G	Pl Pl	C U	35 13	D, S T	L.	
26Q1 26R1 29L1 29M1 29N1 29P1 29Q1 29R1 30L1	---do--- ---do--- ---do--- ---do--- ---do--- ---do--- ---do--- ---do--- F. Thomas and A. Weisberg	---do--- ---do--- ---do--- ---do--- ---do--- ---do--- ---do--- ---do--- V. and S. Oil Co.	7-10-56 7-10-56 7-6-58 7-7-58 7-6-56 7-6-56 7-7-56 7-7-56 2-15-49	750 750 737 736 745 740 742 730	B B B B B B B B Dr	30 30 30 30 30 30 30 1,417	4 1/2 4 1/2 4 1/2 4 1/2 4 1/2 4 1/2 4 1/2 8-5 1/2	---	19 26 23 23 14 14 14	Sd Sd, G Sd, G Sd, G Sd, G Sd, G Sd, G Sd, G	Pl Pl Pl Pl Pl Pl Pl Pl	U U U U U U U U	8 4 22 7 7 12 8	---	See log well 26R1. L. L. L. See log well 29L1. L. See log well 29L1. Oil test; bedrock at 116 ft. Sec log well 30Q2.	
30P1	Indiana Flood Control and Water Resources Comm.	Corps of Engineers	6-21-56	735	B	25	4 1/2	---	19	Sd	Pl	U	6	T	---	
30Q1 30Q2 30R1 31D1 31D2 32A1 32H1	---do--- ---do--- ---do--- ---do--- ---do--- ---do--- Mr. Prosser	---do--- ---do--- ---do--- ---do--- ---do--- ---do--- R. Price	6-21-56 7-6-56 7-6-56 6-21-56 7-7-56 7-51	730 742 733 747 732 742 767	B B B B B B J	25 30 25 25 30 40	4 1/2 4 1/2 4 1/2 4 1/2 4 1/2 2	---	21 15 4 ---	Sd Sd Sd, G Sd, G C, Sd Sd, G	Pl Pl Pl Pl Pl Pl	U U U U U U	4 15 6 ---	---	L. L. L. L. L. Yield 17 gpm; sand and gravel from 0-40 ft.; Ca. Sec log well 33F1.	
33A1	Indiana Flood Control and Water Resources Comm.	Corps of Engineers	7-9-56	742	B	30	4 1/2	---	15	Sd, G	Pl	U	8	T	---	
33F1 33G1 34A1	---do--- C. Crum Indiana Flood Control and Water Resources Comm.	---do--- Kennedy's Well Service Corps. of Engineers	7-7-56 4-17-56 7-9-56	742 757 747	B J B	30 44 30	4 1/2 2 4 1/2	---	22 25	Sd, G Sd	Pl Pl	U U	18 5	T, S T	---	
34B1 34D1 34G1 35A1 35C1 35D1 35F1 35K1	---do--- ---do--- ---do--- ---do--- ---do--- ---do--- ---do--- R. Behmer	---do--- ---do--- ---do--- ---do--- ---do--- ---do--- ---do--- Kennedy's Well Service	7-9-56 7-7-56 7-9-56 7-10-56 7-10-56 7-9-56 7-9-56 10-18-57	743 743 747 752 757 750 748 777	B B B B B B B J	30 30 30 30 30 30 30 35	4 1/2 4 1/2 4 1/2 4 1/2 4 1/2 4 1/2 2	---	27 18 15 6 21 22 16	G, Sd Sd Sd, G Sd, G Sd, G Sd, G Sd, G	Pl Pl Pl Pl Pl Pl Pl	U U U U U U C	3 12 6 12 12 18	T T T T T T D	See log well 34G1. Do. L. L. L. L. Yield 13 gpm; gravel overlain by 24 ft clay & sand; blue clay at 41 ft.; Ca.	

Well ID	Company	Engineers	Date	Well Type	Depth	Flow Rate	Pressure	Notes
33/1-36A1	Indiana Flood Control and Water Resources Comm.	Corps of Engineers	7-11-56	B	30	4 1/2	---	---
36C1	---	---	7-10-56	B	30	4 1/2	---	---
36D1	---	---	7-10-56	B	30	4 1/2	---	---
33/2-2N1	Marshall County Infirmary	Layne-Northern Co., Inc.	12-22-47	Dr	74	6	---	---
3B1	R. C. White	Kennedy's Well Service	4-21-50	J	61	2	---	---
3D1	R. Ollery	---	1-12-57	J	53	2	---	---
4D1	J. Hattery	---	7-2-56	J	22	2	---	---
4D2	Indiana Flood Control and Water Resources Comm.	Corps of Engineers	6-25-56	B	25	4 1/2	---	---
4E1	E. Bradley	Kennedy's Well Service	9-29-56	J	24	2	---	---
4E2	City of Plymouth	Moore Bros.	6-29	Dr	186	10	---	---
4E3	---	---	8-33	Dr	189	12	---	---
4E4	Indiana Flood Control and Water Resources Comm.	Corps of Engineers	6-25-56	B	25	4 1/2	---	---
4E5	---	---	6-25-56	B	25	4 1/2	---	---
4F1	---	---	6-25-56	B	25	4 1/2	---	---
4Q1	City of Plymouth	J. Payne	2-54	J	190	2	---	---
4Q2	---	Layne-Northern Co., Inc.	3-30-54	Dr	201	10-6	---	---
4Q3	---	---	4-28-54	Dr	217	8	---	---
4Q4	---	---	11-14-55	Dr	192	30	---	---
4R1	---	---	12-22-55	Dr	187	26	---	---
5C1	E. Galbreath	Kennedy's Well Service	2-2-57	J	40	2	---	---
5C1	Pennsylvania Railroad	Layne-Northern Co.	3-28-39	Dr	121	8	---	---
5E1	Schlusser Bros., Inc.	Indiana-Michigan Water Development Co.	1938	Dr	48	10	---	---
5E2	Plymouth Pilot News	Layne-Northern Co., Inc.	1-14-60	Dr	113	8	---	---
5E3	---	---	3-29-60	Dr	112	8	---	---
5J1	Indiana Flood Control and Water Resources Comm.	Corps of Engineers	6-25-56	B	25	4 1/2	---	---
5P1	---	---	10-18-56	B	30	4 1/2	---	---
5Q1	---	---	10-18-56	B	30	4 1/2	---	---
5R1	---	---	6-25-56	B	25	4 1/2	---	---
6H1	Allied Plating Co.	Buffington and Payne	4-20-50	Dr	123	4	---	---
6I2	J. Breeding	R. Brooker	9-7-55	J	74	2	---	---
7A1	Indiana Flood Control and Water Resources Comm.	Corps of Engineers	7-14-56	B	30	4 1/2	---	---
7J1	---	---	7-13-56	B	30	4 1/2	---	---
8C1	P. Merriman	J. Payne	7-13-56	B	30	4 1/2	---	---
9R1	W. E. Price	Striver Drilling Co.	12-2-59	Dr	70	2	---	---
9R1	City of Plymouth	Layne-Northern Co., Inc.	7-19-54	Dr	67	4	---	---
11L1	L. Sherwood	Kennedy's Well Service	1-5-54	Dr	203	10-6	---	---
12E1	F. Neidlinger	R. Price	6-12-56	J	80	2	---	---
16A1	E. Keiser	Kennedy's Well Service	3-57	J	90	2	---	---
16A2	H. Thomas	---	7-25-56	J	101	2	---	---
16B1	Mr. Heiflie	---	5-14-55	J	160	2	---	---
16B1	---	---	7-18-60	J	49	2	---	---

Table 3.--Records of wells and test holes in Marshall County, Indiana--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				
35/2-16P1	R. Skinner	S. J. Carl Well Drilling Co.	6-4-60	815	J	40	2	S; 3ft., 60g., dia 1 1/2		Sd, G	P1		22	S		Ca.
17M1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7-13-56	770	B	30	4 1/2							T		L
17M2	C. Beyler	Kennedy's Well Service	9-24-60	812	J	69	2	S; 3ft., 60g., dia 1 1/2	44	G, Sd	P1	U	44	D		Yield 20 gpm; L.
17N1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7-13-56	783	B	30	4 1/2		6	Sd, G	P1	U	6	T		L
18A1			7-13-56	766	B	30	4 1/2		12	Sd, G	P1	U	12	T		L
18H1			7-13-56	766	B	30	4 1/2		8	Sd	P1	U	8	T		Ca, L.
18P1	L. Greenlee	Buffington and Payne	9-29-60	812	J	66	2	S; 3ft., 60g., dia 1 1/2	59	Sd	P1	C	38	D		Ca, L.
18Q1	R. Greenlee	J. Payne	9-22-59	808	J	66	2	--do--	61	Sd	P1	C	42	D		Yield 15 gpm; coarse sand overlain by 61 ft. yellow clay; Ca.
19B1	D. Roabrig	R. Price	3-5-57	784	J	105	2	S; 3ft., 60g., dia 1 1/2	92	G, Sd	P1	C	10	D		Yield 20 gpm; L.
19C1	M. Miloserny	Kennedy's Well Service	9-2-57	787	J	40	2	S; 3ft., 10s1., dia 1 1/2	28	G	P1	U	28	D		Yield 15 gpm; gravel with some sand overlain by 6 ft. clay.
19D1	W. Ellinger	--do--	4-21-60	810	J	46	2	--do--		G, Sd	P1		35	D		Yield 15 gpm; Ca, L.
19E1	H. Beck	--do--	6-8-56	802	J	44	2	S; 3ft., 60g., dia 1 1/2	38	G, Sd	P1	C	32	D		Yield 13 gpm; Ca, L.
19F1	L. King	J. Payne	8-21-59	775	J	42	2	S; 3ft., 60g., dia 1 1/2	35	Sd	P1	C	8	D		Yield 15 gpm; fine sand overlain by 35 ft. yellow clay and stone; Ca.
19G1	G. Robertson	Kennedy's Well Service		792	J	39	2	S; 3ft., 60g., dia 1 1/2	22	G	P1	U	22	D		Yield 13 gpm; gravel overlain by 22 ft. clay and gravel.
19G2	C. Croy	--do--	5-4-55	782	J	93	2	--do--	75	Sd, G	P1	C	7	D		Yield 15 gpm; sand and gravel overlain by 75 ft. blue clay mixed with sand and gravel.
19H1	C. Schaffer	--do--	5-11-55	787	J	90	2	--do--		Sd, G	P1		12	D		Yield 15 gpm.
20D1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7-12-56	770	B	30	4 1/2			Sd, G	P1	U	9	T		L
20F1			7-12-56	765	B	30	4 1/2			Sd, G	P1	U		T		See log well 20P1.
20Q1			7-12-56	765	B	30	4 1/2			Sd, G	P1	U		T		Yield 15 gpm; clean gravel overlain by 40 ft. sand and clay; Ca.
21R1	C. Beringer	R. Price	1-51	805	J	46	2	S; 3ft., 60g		G	P1		25	S		Yield about 15 gpm; sand and gravel from 0-50 ft.; clay at 50 ft.
22R1	G. Stevens	--do--	Summer 1952	827	J	50	2	S; 60g	36	Sd, G	P1	U	38	S		Yield about 15 gpm; gravel overlain by clay.
22R2			5-54	827	J	90	2	S; 3ft., 60g	80	G	P1	C	5	S		Yield 8 gpm; Ca, L.
23H1	Plymouth Canning	Z. W. Schroeder	6-7-57	843	J	87	2	S; 3ft., 80g., dia 1 1/2	42	Sd	P1	U	42	P		Yield 20 gpm; Ca, L.
23J1	E. Haines	R. Price	10-28-60	850	J	146	2	S; 3ft., 60g., dia 1 1/2	58	Sd, G	P1	U	47	D		Yield 20 gpm; Ca, L.
26E1	H. Stoffel	--do--	9-53	854	J	120	2	S; 3ft., 60g., dia 1 1/2	58	Sd, G	P1	U	58	D		Yield 20 gpm; Ca, L.
26M1	Mr. Bottorff	--do--	5-50	872	J	150	2	S; 3ft., 60g	80	Sd, G	P1	U	80	D		Yield 20 gpm; L.
27C1	E. Rovin	Buffington and Payne	10-21-60	827	J	66	2	S; 3ft., 60g., dia 1 1/2	45	Sd, G	P1	C	36	D		Ca, L.
29B1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7-12-56	763	B	30	4 1/2		12	Sd, G	P1	U	12	T		L
29F1			7-12-56	760	B	30	4 1/2			Sd, G	P1	U		T		L
29M1			7-12-56	758	B	30	4 1/2		7	Sd	P1	U	7	T		Yield 15 gpm; Ca.
30N1	C. White	Kennedy's Well Service	5-16-55	774	J	72	2	S; 3ft., 60g., dia 1 1/2		Sd	P1	U	7	D, S		L
31A1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7-11-56	760	B	30	4 1/2			Sd, G	P1	U	8	T		L
31B1			7-11-56	759	B	30	4 1/2		6	Sd, G	P1	U	6	T		See log well 31C1.
31C1			7-11-56	760	B	30	4 1/2		6	Sd, G	P1	U	6	T		L
31D1			7-11-56	758	B	25	4 1/2		24	Sd	P1	U	5	T		L
33/3-5J1	R. Aldefer	Kennedy's Well Service	10-22-59	806	J	32	2	35 3ft., 60g., dia 1 1/2	28	G, Sd	P1	C	4	D		Yield 15 gpm; gray coarse gravel and sand overlain by 28 ft. blue clay; Ca.

33/3-7N1	E. Recco	8-25-59	832	J	66	2	S: 3ft, 60g, dia 1 1/2	60	6	Sd	Pl C	17	D	Yield 14 gpm; Ca, L.
7R1	Kennedy's Well Service	9-1-60	832	J	82	2	S: 3ft, 80g, dia 1 1/2	74	10	Sd	Pl C	38	D	Yield 17 gpm; Ca, L.
8R1	A. Carothers	5-20-57	840	J	64	2	do	60	4	Sd	Pl C	25	D	Yield 8 gpm; Ca, L.
8Q1	Kennedy's Well Service	7-4-56	840	J	42	2	S: 3 1/2 ft, 60g, dia 1 1/2	117	6	G, Sd	Pl C	18	D	Yield 15 gpm; L.
8Q2	R. Blue	10-24-56	840	J	123	2	do	117	6	G, Sd	Pl C	30	D	Yield 15 gpm; L.
10C1	Mt. Pleasant	5-1-57	842	J	170	2	do	117	6	Sd, G	Pl C	45	P	Yield 17 gpm.
10D1	V. Roshrig	10-20-60	841	J	140	2	S: 3ft, 12sl, dia 1 1/2	128	12	Sd, G	Pl C	40	D, S	Yield 20 gpm; Ca, L.
12M1	J. Herman and C. Rettinger	5-27-50	838	Dr	435	8-7	do	---	---	Sd, G	Pl C	---	---	Oil test; bedrock at 213 ft; L.
13P1	Kennedy's Well Service	10-16-59	845	J	26	2	S: 3ft, 10sl, dia 1 1/2	18	9	G, Sd	Pl C	9	D	Yield 17 gpm; Ca, L.
14C1	R. Eddies	6-24-60	850	J	146	2	S: 3ft, 60g, dia 1 1/2	130	25	Sd, G	Pl C	47	S	Yield 20 gpm; L.
16A1	H. Lemler	---	832	Dr	17	36	---	---	---	D	Pl U	---	---	Observation well Marshall 1; water level measured 3.82 ft below 1st, 5-20-48.
17C1	Trustees, Center Township	---	842	Dr	185	4	S	---	---	Sd	Pl	---	---	At Inwood School.
18E1	G. Wassong	6-54	929	J	126	2	S: 3ft, 60g	---	---	Sd, G	Pl C	23	D	Ca, L.
24A1	R. Hodges	7-29-59	848	J	29	2	S: 3ft, 60g, dia 1 1/2	25	4	Sd	Pl	---	---	Ca, L.
24K1	Orthopedic Equipment Co.	9-8-47	844	Dr	190	7	S: 15ft, 15sl, dia 6	---	---	Sd, G	Pl C	38	I	Yield 85 gpm; Ca, L.
24K2	---	10-6-59	843	Dr	202	6	S: 20ft, 15sl, dia 4 1/2	---	---	Sd, G	Pl C	38	I	Little dd after 2 hr pumping 250 gpm; Ca, L.
28D1	R. Price	7-54	817	J	112	2	S: 3ft, 60g	100	12	Sd, G	Pl C	20	D, S	Yield 20 gpm; Ca, L.
27A1	B. Phillips	9-52	822	J	90	2	do	80	10	Sd, G	Pl C	12	D, S	Yield 17 gpm; L.
31N1	R. Schlosser	1-52	834	J	57	2	S: 2 1/2 ft, 60g, dia 1 1/2	35	22	Sd, G	Pl U	35	S	Yield 20 gpm; Ca, L.
34R1	J. Graber	7-56	813	J	32	2	S: 3ft, 60g	---	---	Sd, G	Pl	26	S	Yield 17 gpm; Ca.
38/4-3F1	C. Gottschalk	8-54	828	J	45	2	S: 3ft, 60g, dia 1 1/2	41	4	Sd, G	Pl C	10	D, S	Sand and gravel overlain by 41 ft yellow & blue clay; Ca.
16M1	E. Gottschalk	1955	822	J	45	2	do	20	25	Sd, G	Pl C	15	D, S	Sand and gravel overlain by 20 ft blue clay; Ca.
19A1	N. Hodges	7-29-59	832	J	45	2	do	40	5	G	Pl	---	---	Ca, L.
19E1	G. Myers	2-24-37	843	Dr	148	6	S: 10ft, 15sl, dia 5 1/2	130	18	Sd, G	Pl C	37	N	Oil test; bedrock at 160 ft.
19E2	Town of Bourbon	---	846	Dr	132	8	8	---	---	Sd, G	Pl	---	---	Ca, L.
19H1	L. Gouchenour	10-15-59	838	J	48	2	S: 3ft, 60g, dia 1 1/2	41	7	Sd	Pl C	36	P	Yield 20 gpm; Ca, L.
19M1	W. Cumberland	2-28-39	842	Dr	144	4	S: 5ft, 20sl, dia 3 1/2	131	13	G	Pl C	32	Ac, P	Oil test; bedrock at 190 ft; L.
19M2	Town of Bourbon	5-31-51	838	Dr	117	8	Gp; S	107	10	Sd, G	Pl C	32	P	Oil test; bedrock at 160 ft.
32M1	W. Creakbaum	4-27-60	847	J	39	2	S: 3ft, 60g, dia 1	30	9	Sd, G	Pl C	30	D	Ca, L.
32M2	---	1-1900	847	J	60	2	do	---	---	Sd	Pl C	---	---	Ca, L.
34/1-101	J. Ringle	9-28-59	813	J	87	2	S: 3 1/2 ft, 12sl, dia 1 1/2	75	12	Sd, G	Pl C	20	S	Yield 10 gpm; Ca, L.
5/1	F. Stull	7-14-59	737	J	66	2	S: 4ft, 60g, dia 1 1/2	---	---	Sd, G	Pl	---	---	Ca, L.
5C1	A. Snyder	3-9-56	727	J	77	2	S: 3ft, 60g, dia 1 1/2	60	17	Sd, G	Pl C	4	D	Yield 12 gpm; gravel overlain by 20 ft fine sand and 68 ft blue clay and sand.
6C2	J. Schroeder	10-6-55	723	J	93	2	do	68	25	Sd, G	Pl C	10	D, S	Oil test; bedrock at 190 ft; L.
6C3	---	7-26-50	723	Dr	268	53/4	---	---	---	---	---	---	---	Oil test; bedrock at 160 ft.
671	C. W. Kendall	9-24-49	714	Dr	454	8 1/2	---	---	---	---	---	---	---	Ca, L.
9P1	D. Strang	6-6-56	755	J	35	2	S: P	25	10	Sd, G	Pl C	8	S	Yield 25 gpm; L.
10F1	Evangelical United Brethren Church	8-18-56	807	Dr	70	4	S: 5ft, 10sl	65	5	G	Pl C	35	P	Ca, L.
10L1	M. Marvin	9-10-59	812	J	50	2	S: 4ft, 60g, dia 1 1/2	42	8	Sd	Pl C	40	D	Ca, L.
10L2	P. Whiteleather	4-20-60	805	J	47	2	do	33	14	Sd, G	Pl U	33	D	Yield 10 gpm; L.
10M1	W. R. Waller	7-27-56	798	J	45	2	S: 3 1/2 ft, 60g, dia 1 1/2	30	15	Sd, G	Pl C	26	D	Ca, L.
10M2	J. Payne	7-52	797	Dr	32	1 1/2	do	---	---	Sd, G	Pl	---	---	Ca, L.
10N1	F. Ripper	7-2-59	797	J	48	2	do	18	30	Sd	Pl U	14	---	Sand from 0-48 ft.
11E1	F. Lowry	10-14-55	798	J	45	2	S: 3 1/2 ft, 60g, dia 1 1/2	37	8	Sd, G	Pl C	26	D	Yield 5 gpm; sand and fine gravel overlain by 37 ft chiefly blue clay; Ca.
18C1	C. Williams	9-2-55	811	J	60	2	do	---	---	G	Pl	---	---	Medium gravel overlain by yellow and blue clay and sand.
18P1	J. Peterson	5-17-56	739	J	46	2	S: 3ft, 60g, dia 1 1/2	38	8	Sd, G	Pl C	7	D	Yield 10 gpm; fine to coarse sand and fine gravel overlain by 38 ft blue clay with some sand lenses.
20G1	S. Yazel	5-6-60	773	Dr	37	1 1/2	S: 3ft, 60g, dia 1 1/2	---	---	Sd	Pl C	---	---	Flowed; Ca.
21C1	C. Pontius	7-8-60	778	J	114	2	S: 3ft, 12sl, dia 1 1/2	84	30	Sd, G	Pl C	6	D	Yield 20 gpm; Ca, L.
22E1	O. Sims	7-18-57	852	J	90	2	S: 3ft, 10sl, dia 1 1/2	60	30	G	Pl C	45	D	Yield 10 gpm; Ca, L.

Table 3.--Records of wells and test holes in Marshall County, Indiana--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
									Thickness (feet)	Character	Geologic age	Conditions of occurrence				
34/1-2301	P. Borneat	E. Brooker	7-30-59	836	J	60	2	S; 4ft., 60g., dia 1 1/2	12	Sd, G	Pl	C	40	D, S	J3/4	Ca, L. Yield 10 gpm; Ca, L. Yield 8 gpm; sand and gravel overlain by 32 ft clay; Ca.
2301	M. Johnson	-----do-----	3-28-60	826	J	93	2	-----do-----	34	Sd, G	Pl	C	54	D, S	-----	Yield 10 gpm; Ca, L. Yield 8 gpm; sand and gravel overlain by 32 ft clay; Ca.
2301	L. Higgins	E. W. Schroeder	6-25-60	855	J	93	2	S; 3ft., 60g., dia 1 1/2	9	Sd, G	Pl	C	28	D, S	L	Yield 10 gpm; Ca, L. Yield 8 gpm; sand and gravel overlain by 32 ft clay; Ca.
2301	A. Ruff	R. Price	11-50	832	J	41	2	S; 8ft	32	Sd, G	Pl	C	40	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
2681	E. Unger	Kennedy's Well Service	5- 6-60	827	J	134	2	S; 3ft., 60g., dia 1	38	G, Sd	Pl	C	40	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
2691	R. Goodrich	-----do-----	9- 9-55	837	J	60	2	S; 3ft., 60g., dia 1 1/2	15	G, Sd	Pl	U	45	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
2781	R. Day	-----do-----	8-21-56	822	J	56	2	-----do-----	6	G	Pl	C	38	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
2781	R. Weiger	-----do-----	4-55	822	J	85	2	-----do-----	5	Sd, G	Pl	C	45	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
2981	M. Otto	-----do-----	7-27-55	782	J	49	2	-----do-----	15	Sd, G	Pl	C	26	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
2981	J. Carr	Casad Drilling Co.	1-27-60	812	J	56	2	S; 3ft., 60g., dia 1 1/2	30	Sd, G	Pl	U	38	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
3081	R. Livinghouse	E. Brooker	7-10-56	774	J	70	2	S; 3ft., 60g., dia 1 1/2	15	Sd, G	Pl	C	12	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
3181	G. Andrews	Kennedy's Well Service	9- 4-57	747	J	36	2	S; 3ft., 10s1., dia 1 1/2	6	Sd, G	Pl	C	12	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
3181	-----do-----	-----do-----	9-19-59	747	J	49	2	S; 3ft., 60g., dia 1 1/2	4	G	Pl	C	12	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
3281	C. Whiteall	-----do-----	7-15-59	778	J	32	2	S; 3ft., 10s1., dia 1 1/2	4	G, Sd	Pl	C	6	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
3381	Circle M Roller Bank	Sraver Drilling Co.	5-17-54	808	J	58	2	S; 3ft., 60g., dia 1 1/2	8	Sd, G	Pl	C	28	P	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
3381	W. Graybank	Kennedy's Well Service	10-20-59	802	J	42	2	-----do-----	38	4 G, Sd	Pl	U	20	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
3481	P. L. Everetts	-----do-----	4-11-57	827	J	54	2	S; 3ft., 60g., dia 1 1/2	14	G, Sd	Pl	U	50	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
34/2-181	L. Belsley	C. Rouch	4-11-50	826	J	65	2	S; 4ft., 60g., dia 1 1/2	8	Sd	Pl	C	10	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	Mr. Smith	E. W. Schroeder	6- 8-57	807	J	57	2	S; 3ft., 10s1., dia 1 1/2	3	G	Pl	C	8	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	Mr. Rescoe	C. Rouch	2- 6-60	822	J	117	2	S; 4ft., 60g., dia 1 1/2	17	Sd	Pl	C	17	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	R. Richmond	Kennedy's Well Service	3-12-56	852	J	30	2	S; 3ft., 60g., dia 1 1/2	26	4 G, Sd	Pl	C	18	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	A. Marcar	E. W. Schroeder	1- 2-56	862	J	50	2	S; 3ft., dia 1 1/2	10	G	Pl	C	33	D, S	J	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	F. Dunn	-----do-----	4- 1-56	847	J	47	2	S; 3ft., 60g., dia 1 1/2	40	17 G	Pl	C	26	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	P. Balough	-----do-----	5- 6-57	852	J	44	2	-----do-----	14	Sd, G	Pl	C	28	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	P. Johnson	-----do-----	7-15-57	852	J	40	2	S; 3ft., 60g., dia 1 1/2	35	5 G	Pl	C	28	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	E. W. Schroeder	-----do-----	8- 8-57	833	J	63	2	S; 4ft., 60g., dia 1	57	6 G	Pl	C	28	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	H. Withey	-----do-----	3- 1-57	848	J	39	2	S; 3ft., 60g., dia 1 1/2	7	G	Pl	U	32	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	H. Williams	Kennedy's Well Service	7- 4-56	843	J	65	2	S; 3ft., 10s1., dia 1 1/2	10	G, Sd	Pl	C	26	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	Mr. Daniels	E. Brooker	8-18-55	847	J	45	2	S; 3ft., 60g., dia 1 1/2	6	G	Pl	C	30	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	O. Blue	Kennedy's Well Service	3-28-58	842	J	66	2	-----do-----	60	9 G	Pl	C	24	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	R. Easons	E. W. Schroeder	7-28-53	836	J	57	2	S; 3ft., 60g., dia 1 1/2	48	9 G	Pl	C	12	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	J. Hatfield	Kennedy's Well Service	9- 8-59	823	J	40	2	-----do-----	31	Sd	Pl	C	4	D	-----	Yield 15 gpm; yellow and gray gravel and sand overlain by 25 ft blue clay with some pebbles and sand; Ca.
181	M. Houghton	-----do-----	5-11-60	832	J	130	2	S; 3ft., 10s1., dia 1 1/2	126	4 Sd, G	Pl	C	27	D	-----	Oil test; bedrock at 216 ft.
1181	V. Miller	C. W. Kendall	11-20-50	832	Dr	405	8 1/2	-----do-----	405	-----	-----	-----	-----	-----	-----	Gas well; bedrock at 259 ft; L.
1181	N. Saltenright	-----do-----	10-24-50	828	Dr	374	8 1/2	S; 3ft., 10s1., dia 1 1/2	-----	-----	-----	-----	-----	-----	-----	Gas well; bedrock at 230 ft; L.
1281	J. Hemaniger	Sraver Drilling Co.	8-16-44	814	J	74	2	S; 3ft., 100g., dia 1 1/2	80	13 G, Sd	Pl	C	6	D	-----	Gas well; bedrock at 208 ft.
1281	D. Rueche	E. W. Schroeder	4-12-56	809	J	93	2	S; 3ft., dia 1 1/2	-----	-----	-----	-----	-----	-----	-----	Gas test; bedrock at 230 ft; L.
1281	D. and V. Marks	C. W. Kendall	7-23-49	825	Dr	360	8 1/2	-----do-----	-----	-----	-----	-----	-----	-----	-----	Oil and gas test; bedrock at 173 ft; L.
1281	D. Marks	-----do-----	8- 6-49	828	Dr	350	8 1/2	-----do-----	-----	-----	-----	-----	-----	-----	-----	Gas well; bedrock at 208 ft.
1281	Mr. Kellver	-----do-----	8-10-49	825	Dr	400	8 1/2	-----do-----	-----	-----	-----	-----	-----	-----	-----	Gas test; bedrock at 230 ft; L.
1381	N. Anderson	-----do-----	10-28-49	826	Dr	373	8 1/2	-----do-----	-----	-----	-----	-----	-----	-----	-----	Oil and gas test; bedrock at 173 ft; L.

34/3- 7B2	W. Buchtel	Striver Drilling Co.	8-13-51	807 J	56	2	S; 3 1/2 ft, 80g, dia 1 1/2	50	6	Sd, G	Pl C	C	D	---	---	Sand and gravel overlain by 50 ft blue clay. L.
7B3	Mr. Ukele	---	6-50	807 J	40	2	S; 3ft, 60g, dia 1 1/2	35	5	Sd	Pl C	C	D	---	---	Sand overlain by 40 ft clay.
7B4	B. Bronsing	---	8-50	812 J	46	2	do	40	6	Sd	Pl C	C	D	---	---	Yield 20 gpm; sand overlain by 38 ft clay.
7B5	H. Felton	C. Rouch	8-27-57	807 J	44	2	S; 3ft, 10sl, dia 1 1/2	38	6	Sd	Pl C	C	D	---	---	Yield 15 gpm; L.
7G1	K. Tucker	Kennedy's Well Service	9-10-56	807 J	49	2	S; 4ft, 80g, dia 1 1/2	40	9	G, Sd	Pl C	C	D	---	---	Yield 15 gpm; medium sand overlain by 61 ft blue clay. L.
9A1	C. Smith	Buffington and Payne	4-28-50	801 J	64	2	S; 3ft, 60g, dia 1 1/2	61	3	Sd	Pl C	C	D	---	---	
9J1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7- 2-56	792 B	30	4 1/2	---	25	5	Sd, G	Pl C	C	T	---	---	
9Q1	Resources Comm.	---	7- 2-56	792 B	30	4 1/2	---	8	8	Sd	Pl U	U	T	---	---	Flowed 40 gpm, 4-28-50; discharge measured 5 gpm, 6-13-57; Ca, L.
10C1	Bremen Clay Products Co.	Indiana-Michigan Water Development Co.	4-29-30	800 Dr	75	6	S; 5ft, 40sl, dia 5 1/2	60	15	Sd, G	Pl U	U	I	---	---	Flows: measured 16 gpm, 6-13-57; water level measured 2,4 ft above lsd, 6-13-57. L.
10C2	---	---	---	---	---	6	---	---	---	Sd, G	Pl C	C	---	---	---	
10D1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7- 2-56	797 B	30	4 1/2	---	---	---	Sd	Pl	---	I	---	---	
10E1	Resources Comm.	---	7- 2-56	796 B	30	4 1/2	---	---	---	Sd	Pl	---	T	---	---	Yield 12 gpm; Ca.
10F1	B. Young	E. J. Burkholder	8-13-59	810 J	25	2	S; 4ft, 60g, dia 1	20	5	Sd	Pl C	C	D	---	---	Yield 13 gpm; Ca, L.
11A1	E. Vernon	Kennedy's Well Service	8- 6-57	807 J	38	2	S; 3 1/2 ft, 60g, dia 1 1/2	32	6	G, Sd	Pl C	C	D	---	---	Yield 15 gpm; gravel overlain by hard blue clay mixed with gravel; Ca.
14P1	H. Hostetler	---	9-29-56	807 J	58	2	do	---	---	G	Pl C	C	D	---	---	Sand and gravel overlain by yellow and blue clay. L.
15D1	J. C. Landerman	E. J. Burkholder	7- 5-57	802 J	86	2	S; 60g	---	---	Sd, G	Pl C	C	D, S	---	---	
18B1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	7- 2-56	793 B	30	4 1/2	---	18	8	Sd	Pl C	C	T	---	---	
18G1	Resources Comm.	---	6-30-56	792 B	30	4 1/2	---	14	13	Sd	Pl C	C	T	---	---	
18H1	---	---	6-30-56	797 B	30	4 1/2	---	---	---	Sd	Pl C	C	T	---	---	
18I1	---	---	6-20-56	792 B	30	4 1/2	---	8	22	Sd	Pl U	U	T	---	---	Coarse sand and gravel overlain by 75 ft blue clay. L.
18N1	P. Berger	R. Price	12-55	827 J	84	2	S; 3ft, 60g	75	9	Sd, G	Pl C	C	J1/3	---	---	
21A1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	6-30-56	798 B	30	4 1/2	---	22	8	Sd	Pl C	C	T	---	---	
21H1	Resources Comm.	---	6-30-56	792 B	31	4 1/2	---	7	6	Sd	Pl D	D	T	---	---	Medium gravel overlain by 33 ft yellow clay. L.
21P1	---	---	6-29-56	787 B	25	4 1/2	---	7	15	Sd	Pl U	U	T	---	---	Yield 17 gpm; fine sand overlain by 35 ft yellow clay and stone. L.
28C1	---	---	6-29-56	790 B	30	4 1/2	---	12	16	Sd	Pl U	U	T	---	---	
28E1	---	---	6-29-56	792 B	25	4 1/2	---	4	19	Sd	Pl U	U	T	---	---	See log well 28C1. L.
29M1	---	---	6-29-56	790 B	25	4 1/2	---	10	15	Sd	Pl U	U	T	---	---	See log well 29M1. L.
29P1	---	---	6-29-56	782 B	25	4 1/2	---	4	21	Sd	Pl U	U	T	---	---	
29Q1	---	---	6-29-56	785 B	25	4 1/2	---	5	20	Sd	Pl U	U	T	---	---	
30E1	D. McAfee	J. Payne	7-13-59	802 J	45	2	S	33	12	G	Pl C	C	D	---	---	
30L1	L. Kreigbaum	---	9- 3-59	807 J	45	2	S	35	10	Sd	Pl C	C	D	---	---	
30P1	Indiana Flood Control & Water Resources Comm.	Corps of Engineers	5-28-56	793 B	25	4 1/2	---	15	10	Sd	Pl U	U	T	---	---	
30P2	Resources Comm.	---	6-28-56	793 B	25	4 1/2	---	14	11	Sd, G	Pl U	U	T	---	---	
30Q1	---	---	6-28-56	787 B	14	4 1/2	---	---	---	Sd, G	Pl U	U	T	---	---	Brown loose fine to medium sand with some silt and fine gravel from 0-25 ft. L.
31D1	---	---	6-28-56	797 B	25	4 1/2	---	21	4	Sd, G	Pl U	U	T	---	---	
34J1	G. Stine	Layne-Northern Co., Inc.	4-29-49	793 Dr	80	8	S	60	20	Sd	Pl C	C	+6 Ir	---	---	Flows: discharge measured 8 gpm, 6-13-57; Ca, L.
34/4- 5C1	D. Hochstetler	E. J. Burkholder	11- 3-56	822 Du	24	1 1/2	S	---	---	Sd	Pl C	C	S	---	---	
5C2	Striver Drilling Co.	---	---	822 J	75	2	S; 3 1/2 ft, 10sl, dia 1 1/2	66	9	Sd	Pl C	C	28	---	---	Dark sand overlain by 66 ft blue clay. L.
16J1	E. Burgener	E. J. Burkholder	5-13-57	822 J	66	2	S; 50g	---	---	Sd, G	Pl	---	D, S	---	---	Yield 15 gpm; gravel overlain by clay; Ca.
17R1	L. Young	M. C. Hahn	9-16-60	812 J	81	2	S; 3ft, 60g, dia 1	---	---	G	Pl	---	D	---	---	Yield 12 gpm; Ca. L.
21D1	W. Stutzman	E. J. Burkholder	4-12-60	813 J	29	2	S; 4ft, 60g, dia 1	24	5	Sd	Pl C	C	D	---	---	Yield 15 gpm; sand overlain by 50 ft yellow and gray clay with stones. L.
30N1	Fairview Church	---	8-11-59	807 J	54	2	do	50	4	Sd	Pl C	C	P	---	---	
32C1	H. Hoyle	Kennedy's Well Service	8-30-57	820 J	79	2	S; 3ft, 10sl, dia 1 1/2	---	---	Sd, G	Pl	---	N	---	---	Yield 13 gpm. L.

Table 3.--Records of wells and test holes in Marshall County, Indiana--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				
35/1-22B1	C. Reese	J. Payne	Fall 1949	755 J	57	2	S; 3ft., 60g, dia 1 1/4			5	Sd, G	Pl	C			Flowed; sand and gravel overlain by 52 ft blue clay; Ca.
23C1	J. Foster	Mr. Smith	1942	772 J	105	2	Oe			7	Sd, G	Pl	C			Flows; discharge measured 2 gpm, 6-11-57; water level measured 3.3 ft above lsd, 6-11-57; coarse sand and gravel overlain by 98 ft blue clay; Ca.
23G1	H. Mullins	E. Brooker	8-24-55	767 J	50	2	Oe				G	Pl	C			Flows; discharge measured 5 gpm, 6-11-57; pumps 20 gpm; medium gravel overlain by 50 ft blue clay; Ca.
22L1	J. A. Gernert			772 Dm		1 1/2					Sd, G	Pl	C			Flows; discharge measured 2 gpm, 6-11-57; water level measured 5 ft above lsd, 6-11-57; Ca.
23P1	Certified Milk Co.	Moore Bros.	1931	780 Dr	127	6	S; 13ft			10	G	Pl	C			Flows.
23P2	J. Keck	E. Brooker	12-21-48	787 J	59	2	S; 3 1/2ft., 60g, dia 1 1/4			13	Sd, G	Pl	C			Yield 13 gpm; Ca, L.
25N1	F. Patterson	J. Payne	1945	812 J	52	2	S; 3ft., 60g, dia 1 1/4			4	Sd, G	Pl	C			Yield 17 gpm; sand and gravel overlain by 48 ft yellow clay; Ca.
25P1	C. Bewley	E. Brooker	5-11-57	833 J	89	2	S; 3 1/2ft., 60g, dia 1 1/4			3	G	Pl	C			Gravel overlain by 86 ft yellow clay; Ca.
27M1	V. Rust		9-9-80	763 J	112	2	S; 4ft., 60g, dia 1 1/4			15	Sd, G	Pl	C			Ca, L.
31H1	W. C. Lowry		4-57	723 J	77	2	S; 3 1/2ft., 60g, dia 1 1/4			22	Sd, G	Pl	C			Yield 17 gpm; sand and gravel overlain by 48 ft yellow clay; Ca.
31R1	J. Kaizer		6-29-50	720 Dr	270	2										Gravel overlain by 86 ft yellow clay; Ca.
32N1	D. and M. Lowry	A. A. Glesen	6-12-50	723 Dr	705	8										Gravel overlain by 86 ft yellow clay; Ca.
33E1	G. Stull	E. W. Schroeder	7-12-57	755 J	41	2	S; 3ft., 60g, dia 1 1/4			11	G	Pl	C			Oil test; bedrock at 125 ft; water-bearing limestone from 255-270 ft; L.
33L1	M. Mawer	E. Brooker	5-2-55	756 J	39	2	S; 3 1/2ft., 60g, dia 1 1/4			4	G, Sd	Pl	C			Oil test; bedrock at 140 ft; L. Yield 10 gpm; pea-sized gravel overlain by 30 ft yellow clay and top soil; Ca, gravel and yield 12 gpm fine gravel and coarse sand overlain by 38 ft yellow gravelly clay; Sand and gravel overlain by 37 ft clay.
33N1	N. Stull		3-57	748 J	43	2				6	Sd, G	Pl	C			Flows; discharge measured 5 gpm, 6-11-57; has number of springs on property; Ca.
34R1	J. Fulton	J. Payne	Spring 1954	742 J	42	2	Oe				G	Pl	C			Yield 9 gpm; pea-sized gravel overlain by 22 ft yellow clay mixed with gravel.
35G1	L. C. Rumsel	E. W. Schroeder	8-8-56	772 J	27	2	S; 3ft., 60g, dia 1 1/4			5	G	Pl	C			Ca, L.
36B1	P. A. Betz	Srifer Drilling Co.	12-11-56	837 J	84	2 1/2	S; 5ft., 60g, dia 1 1/4			14	Sd	Pl	C			Yield 10 gpm; Ca, L.
36Q1	M. Jones	E. W. Schroeder	1-18-50	825 J	87	2	S; 3 1/2ft., 60g, dia 1 1/4			17	G	Pl	C			Yield 10 gpm; Ca, L.
35/2-24J1	S. Wynn	Srifer Drilling Co.	10-30-48	835 J	58	2	S; 3ft., 60g, dia 1 1/4			6	Sd, G	Pl	C			Sand and gravel overlain by 52 ft clay mixed with gravel; Ca.
24J2			12-11-54	835 J	58	2	S; 3 1/2ft., 60g, dia 1 1/4			7	Sd	Pl	C			Dark sand overlain by 51 ft blue clay; Ca.
26Q1	C. Crum	C. Rouch	10-20-59	832 J	60	2	S; 4ft., 60g, dia 1 1/4			15	Sd	Pl	C			Yield 20 gpm; sand overlain by 45 ft clay; Ca.
27F1	Baltimore and Ohio Railroad	Layne-Northern Co., Inc.	9-15-27	846 Dr	136	26-	Gp. S; 25ft., 80sl, dia 12			22	Sd, G	Pl	C			Dd 12 ft pumping 475 gpm; Ca, L.
27G1			9-9-29	846 Dr	202											Bedrock at 197 ft; L.
27N1	A. Garner	C. Rouch	10-11-59	849 J	140	2	S; 4ft., 60g, dia 1 1/4				Sd	Pl	C			Yield 15 gpm; Ca.
27P1	C. Garner	E. W. Schroeder	5-22-56	847 J	160	2	S; 3ft., dia 1 1/4			10	G	Pl	C			Yield 8 gpm; Ca, L.
28D1	J. Vice		8-10-56	854 J	42	2	S; 3ft., 60g, dia 1 1/4			7	G	Pl	C			Yield 4 gpm; well originally drilled to 37 ft but later deepened; depth unknown; medium sand & gravel overlain by 30 ft yellow clay; Ca.
28E2			6-30-56	857 J		2					Sd, G	Pl	C			

Well No.	Owner	Driller	Date	Depth (ft)	Log	Remarks	Yield (gpm)	Pressure (psi)	Flow (gpm)	Notes
2881	W. Barrett	Srifer Drilling Co.	9-18-46	45	2 S; 3ft, 60g, dia 1 1/2	89	---	---	---	Yield 8 gpm; Ca, L.
2882	Lapaz State Bank	---	3-24-53	57	4 S; 6ft, 108l, dia 1	75	---	---	---	Yield 3 gpm; fine sand overlain by 38 ft yellow and blue clay; well deepened; depth unknown; L.
2883	G. Martin	---	6-3-51	53	2 S; 3ft, 60g, dia 1	38	---	---	---	Yield 10 gpm; Ca, L.
2884	G. Annis	---	8-30-56	42	2 S; 3ft, 60g, dia 1 1/2	38	---	---	---	Yield 10 gpm; Ca, L.
2885	E. H. Linn	---	7-17-56	48	3 S; 4ft, dia 2	38	---	---	---	Yield 10 gpm; see log well 28F4.
28F1	D. Green	---	9- 5-57	857	2 S; 3ft, 108l, dia 1 1/2	---	---	---	---	Yield 10 gpm; well deepened; depth unknown; L.
28F2	Baltimore and Ohio Railroad	Srifer Drilling Co.	3-11-47	56	2 S; 3ft, 60g, dia 1 1/2	---	---	---	---	Yield 10 gpm; Ca, L.
28F3	S. Clifton	---	9-21-56	105	2 S; 3ft, 60g, dia 1 1/2	90	---	---	---	Yield 10 gpm; Ca, L.
28F4	H. Wackerle	---	1- 8-60	110	2 S; 3ft, 128l, dia 1 1/2	90	---	---	---	Yield 10 gpm; L.
28M1	R. Alberts	---	9- 4-59	108	2 S; 3ft, 258l, dia 1 1/2	95	---	---	---	Yield 10 gpm; see log well 28F4.
28N1	Rogers Restaurant	---	11- 5-41	862	2 S; 3ft, 60g, dia 1 1/2	---	---	---	---	Yield 10 gpm; Ca, L.
28N2	Standard Oil Co.	---	8-18-55	127	2 S; 3ft, 60g, dia 1 1/2	45	---	---	---	Yield 8 gpm; L.
28P1	J. Dorweiler	Srifer Drilling Co.	9- 1-59	857	2 S; 3ft, 60g, dia 1 1/2	28	---	---	---	Yield 8 gpm; gravel overlain by 30 ft yellow and blue clay; gravel underlain by 12 ft blue gravelly clay.
28P2	H. Hall	---	6-5-56	868	2 S; 3ft, 60g, dia 1	30	---	---	---	Yield 8 gpm; Ca, L.
29A1	Mr. Dennis	J. Hughes	4-5-56	848	2 S; 3ft, 60g, dia 1	133	---	---	---	Yield 8 gpm; see log well 29A3.
29A3	R. Snyder	E. W. Schroeder	7- 7-57	862	2 S; 3ft, 60g, dia 1 1/2	115	---	---	---	Yield 10 gpm; Ca, L.
29A4	---	---	6-22-56	867	2 S; 3ft, 60g, dia 1 1/2	50	---	---	---	Yield 8 gpm; L.
29A5	A. Wingett	---	6-11-56	865	2 S; 3ft, 60g, dia 1 1/2	38	---	---	---	Yield 8 gpm; see log well 29A3.
29A6	A. Kaser	---	7-10-59	99	2 S; 3ft, 60g, dia 1 1/2	90	---	---	---	Yield 10 gpm; L.
29A7	T. Boyer	---	5-28-47	867	2 S; 3ft, 60g, dia 1	48	---	---	---	Ca.
29A8	Peptic Blueberry Plantation	Layne-Northern Co., Inc.	4-5-56	848	2 S; 3ft, 60g, dia 1	133	---	---	---	Observation well Marshall 4; water level measured 44.73 ft below lsd, 8-13-57; E, G, L.
29L2	---	---	5- 1-56	843	12 Gp; S; 30ft, 558l, dia 1 1/2	69	---	---	---	Yield 10 gpm; Ca, L.
29R1	F. Albert	E. W. Schroeder	5-19-57	108	2 S; 3ft, 60g, dia 1 1/2	108	---	---	---	Yield 10 gpm; Ca, L.
29R2	---	---	5-19-57	862	2 S; 3ft, 60g, dia 1 1/2	108	---	---	---	Yield 10 gpm; see log well 29R1; Ca.
30M1	R. Halt	C. Rouch	5-20-60	87	2 S; 6ft, 60g, dia 1 1/2	50	---	---	---	Yield 20 gpm; sand and gravel overlain by 30 ft clay; Ca.
30Q1	D. Creed	E. W. Schroeder	9-14-50	846	2 S; 3ft, 60g, dia 1 1/2	78	---	---	---	Yield 10 gpm; Ca, L.
32A1	S. C. McCartney	---	8-27-56	857	2 S; 3ft, 60g, dia 1 1/2	99	---	---	---	Yield 10 gpm; see log well 32A2.
32A2	F. Armstrong	---	2- 4-56	860	2 S; 3ft, 60g, dia 1 1/2	100	---	---	---	Ca, L.
32B1	E. Maffey	---	5-28-56	863	2 S; 3ft, dia 1 1/2	100	---	---	---	Yield 8 gpm; see log well 32A2; Ca.
32H1	R. Jackson	Srifer Drilling Co.	9-29-54	854	2 S; 3ft, 60g, dia 1 1/2	54	---	---	---	Ca, L.
32M1	L. Platz	---	7-50	867	2 S; 3ft, 60g, dia 1 1/2	84	---	---	---	Yield 8 gpm; L.
33B1	H. Hill	E. W. Schroeder	8-31-57	852	2 S; 3ft, 60g, dia 1 1/2	45	---	---	---	Yield 8 gpm; L.
33B2	M. Albert	---	3-25-56	832	2 S; 3ft, dia 1 1/2	160	---	---	---	Pea-sized gravel overlain by 150 ft clay mixed with gravel.
33B3	G. C. Gold	---	1-56	857	2 S; 3ft, 60g, dia 1 1/2	50	---	---	---	Ca, L.
33D1	K. Emmons	---	7-26-56	864	2 S; 3ft, 60g, dia 1 1/2	99	---	---	---	Yield 10 gpm; see log well 33D3.
33D2	Sun Oil Co.	---	6-29-56	862	2 S; 3ft, 60g, dia 1 1/2	99	---	---	---	Yield 7 gpm; see log well 33D3.
33D3	---	---	8-18-56	862	2 S; 3ft, 60g, dia 1 1/2	99	---	---	---	Yield 40 gpm; Ca, L.
33D4	L. Dorweiler	Srifer Drilling Co.	8-18-55	857	3 S; 5ft, 60g, dia 2	100	---	---	---	Yellow sand overlain by 46 ft gray and brown clay.
36B1	C. Cillinc	---	2-15-55	820	2 S; 3ft, 60g, dia 1 1/2	46	---	---	---	Yield 10 gpm; sand overlain by 101 ft gray and blue clay; Ca.
35/3-19P1	V. Zillmer	E. J. Burkholder	---	111	2 S; 4ft, 60g, dia 1	101	---	---	---	Yield 15 gpm; tight sand and gravel overlain by 132 ft blue clay with some fine sand.
21E1	R. Walker	Kennedy's Well Service	---	142	2 S; 4ft, 60g, dia 1 1/2	132	---	---	---	Sand and gravel overlain by about 48 ft clay mixed with gravel; Ca.
23D1	L. Hummel	E. J. Burkholder	6-12-57	827	2 S; 60g	---	---	---	---	Yield 15 gpm; gray coarse sand overlain by 84 ft blue clay mixed with little gravel.
25E1	D. Schipec	Srifer Drilling Co.	10- 1-52	822	2 S; 4ft, 60g, dia 1 1/2	54	---	---	---	Yield 15 gpm; sand overlain by 61 ft yellow and blue clay.
25J1	D. Soales	Kennedy's Well Service	8-11-56	827	2 S; 3ft, 60g, dia 1 1/2	61	---	---	---	L.
25J2	Mr. Heckman	E. J. Burkholder	8-20-60	824	2 S; 4ft, 60g, dia 1 1/2	10	---	---	---	Bedrock at 146 ft; L.
26N1	Indiana Flood Control & Water Resources Comm.	---	7- 5-56	803	4 1/2	---	---	---	---	
26P1	---	---	7- 5-56	812	4 1/2	---	---	---	---	
26Q1	Town of Bremen	---	7- 1925	820	Dr	---	---	---	---	

Table 3.--Records of wells and test holes in Marshall County, Indiana--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				
35/3-26R1	Indiana Flood Control & Water Resources Com.	Corps of Engineers	7-5-56	802	B	30	4½		11	19	Sd	P1	U		L.	
27K1	do	do	7-5-56	800	B	30	4½		18	12	Sd	P1	C		L.	
27L1	do	do	7-3-56	798	B	30	4½		7	23	Sd, G	P1	C		L.	
27M1	do	do	7-3-56	802	B	30	4½		9	21	Sd	P1	U		L.	
27Q1	Town of Bremen	Indiana-Michigan Water Development Co.	11-9-52	818	Dr	157	12	3; 18ft, 100sl, dia 1½	136	21	G	P1	C		L.	See log well 27L1. Dr 17 ft pumping 1,200 gpm; L. Dr 5 ft pumping 300 gpm; L.
27Q2	do	do	4-18-60	818	Dr	175	6	11½		18	Sd, G	P1	C		L.	Do.
27Q3	do	do	5-12-60	815	Dr	155	6		120	9	Sd	P1	C		L.	
27R1	Indiana Flood Control & Water Resources Com.	Corps of Engineers	7-5-56	802	B	30	4½		10	9	Sd	P1	C		L.	
29H1	J. and E. Goreel	C. A. Perry		817	Dr	435	8				G	P1	C		L.	Oil test; bedrock at 140 ft; L. Yield 30 gpm; for mint still; sand overlain by 38 ft muck and clay.
30N1	G. Claudiandiel	M. C. Hahn	7-2-60	814	J	45	3	8; 4½ft, 10sl, dia 2	38	7	Sd	P1	C		L.	Oil test; bedrock at 163 ft; L. Yield 15 gpm; sand overlain by 50 ft clay.
31A1	G. Stichter	C. A. Perry	5-16-51	811	Dr	366	8-5½		48	5	Sd, G	P1	C		L.	Oil test; bedrock at 163 ft; L. Yield 15 gpm; sand overlain by 50 ft clay.
33C1	D. Stump	Kennedy's Well Service	7-10-56	804	J	56	2	3; 3½ft, 60g, dia 1½	50	6	G, Sd	P1	C		L.	Ca, L.
33D1	F. Krouse	C. Rouch	3-24-60	826	J	56	2	5; 4ft, 60g, dia 1½	124	29	Sd, G	P1	C		L.	Dr 62 ft after 4 hr pumping 800 gpm; L.
33H1	T. Walters	Skiver Drilling Co.	1-6-54	806	J	87	2	3; 3ft, 60g, dia 1½	17	13	Sd	P1	U		L.	
34B1	Town of Bremen	Indiana-Michigan Water Development Co.	4-20-59	818	Dr	163	12	8; 15ft, 100sl			Sd, G	P1	C		L.	
34E1	Indiana Flood Control & Water Resources Com.	Corps of Engineers	7-3-56	800	B	30	4½		11	19	Sd	P1	U		L.	
34M1	do	do	7-3-56	802	B	30	4½		16	3	Sd	P1	C		L.	
34N1	do	do	7-3-56	798	B	30	4½		104	9	Sd, G	P1	C		L.	Dr 31 ft after 2.5 hr pumping 560 gpm; screen, upper 2 ft 40 sl, middle 3 ft, 60sl, lower 5 ft 40 sl; L.
35B1	Town of Bremen	Indiana-Michigan Water Development Co.	6-11-48	827	Dr	113	12	8; 10ft, dia 1½			Sd, G	P1	C		L.	Dr 21 ft after 2.5 hr pumping 525 gpm; L. Yield 30 gpm; sand overlain by 18 ft clay; Ca.
35B2	do	do	7-8-49	827	Dr	110	12	8; 12ft, 80sl, dia 1½	94	16	G, Sd	P1	C		L.	See log well 36E1.
35Q1	D. Klefer	C. Rouch	9-28-59	835	J	37	2	5; 4ft, 60g, dia 1½	18	19	Sd	P1	C		L.	
36C1	J. Huff	E. J. Burkholder	10-31-59	842	J	80	2	5; 4ft, 60g, dia 1	74	6	Sd	P1	C		L.	
36D1	Indiana Flood Control & Water Resources Com.	Corps of Engineers	7-3-56	809	B	30	4½		8	22	Sd	P1	U		L.	
36E1	do	do	7-6-56	805	B	30	4½		9	21	Sd	P1	U		L.	
39/4-20H1	D. Hochstetler	E. J. Burkholder	6-15-56	843	J	76	2	5; 60g			Sd, G	P1	D, S		L.	
21G1	A. Wheatstone	do	7-28-56	832	J	53	2	5; 40			Sd, G	P1	D, S		L.	
28M1	R. Hochstetler	do	8-15-56	826	J	23	2	5			Sd, G	P1	N		L.	
29H1	E. Burkholder	do	9-3-56	827	J	87	2	5; 60g			Sd, G	P1	D		L.	
32L1	L. Hershberger	do	6-25-60	842	J	95	2	5; 4ft, 80g, dia 1	88	7	Sd	P1	C		L.	Yield 15 gpm; sand overlain by 88 ft clay.
33D1	E. J. Burkholder	do		839	J	90	2	5; 60g			Sd	P1	D, S		L.	
33O2	R. Schaecker	do	8-10-56	853	J	74	2	5; 10sl			Sd	P1	P		L.	Yield 12 gpm.
33E1	H. Yoder	do	8-29-60	844	J	21	2	5; 4ft, 80g, dia 1			Sd	P1	P		L.	

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

Well 32/1- 2M1

Type of record: Driller's log.

Altitude: 770 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, blue-----	60	60	
Sand-----	10	70	
Clay, blue-----	30	100	
Sand-----	10	110	
Gravel-----	6	116	

Well 32/1- 4B1

Type of record: Driller's log.

Altitude: 775 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil and yellow clay-----	10	10	
Gravel, yellow-----	20	30	
Gravel, pea-sized-----	18	48	

Well 32/1- 4B2

Type of record: Driller's log.

Altitude: 775 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay and sand-----	18	18	
Gravel and sand; with streaks of clay-----	35	53	
Sand and gravel; clean-----	4	57	

Well 32/1- 6C1

Type of record: Driller's log.

Altitude: 759 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, red, and clay-----	15	15	
Sand, coarse, white-----	10	25	
Sand, very fine-----	7	32	
Sand and rocks-----	3	35	
Gravel-----	5	40	
Gravel and rocks-----	5	45	
Gravel, coarse, and boulders-----	25	70	
Sand, fine-----	10	80	
Sand, coarse, and boulders-----	10	90	

Well 32/1- 7N1

Type of record: Driller's log.

Altitude: 747 feet.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	21	21	
Gravel-----	34	55	
Clay, blue-----	15	70	
Gravel, coarse-----	17	87	

Table 4.--Slected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/1- 9C1

Type of record: Driller's log.		Altitude: 788 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil and yellow clay-----	30	30	
Gravel-----	10	40	
Clay, blue, and gravel; mixed----	19	59	
Gravel, fine-----	16	75	

Well 32/1-10N1

Type of record: Driller's log.		Altitude: 777 feet.	
Quaternary System:			
Recent and Pleistocene Series:			
Sand and clay; mixed-----	25	25	
Gravel-----	7	32	
Clay, blue-----	58	90	
Gravel-----	6	96	

Well 32/1-10Q1

Type of record: Driller's log.		Altitude: 813 feet.	
Quaternary System:			
Recent and Pleistocene Series:			
Clay, blue-----	15	15	
Clay, blue, and fine sand; mixed-	76	91	
Gravel, coarse, gray, and sand---	5	96	

Well 32/1-12D1

Type of record: Driller's log.		Altitude: 815 feet.	
Quaternary System:			
Recent and Pleistocene Series:			
Clay, blue-----	40	40	
Sand and clay-----	5	45	
Clay, blue-----	25	70	
Sand and gravel-----	3	73	
Clay, blue-----	44	117	
Gravel, fine-----	5	122	

Well 32/1-15E6

Type of record: Driller's log.		Altitude: 770 feet.	
Quaternary System:			
Recent and Pleistocene Series:			
Open pit-----	11	11	
Clay, sandy-----	10	21	
Sand and gravel-----	3	24	
Clay, gravelly-----	11	35	
Sand and gravel-----	10	45	

Table.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/1-15E6--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay-----	30	75	
Sand and gravel; with clay balls-	5	80	
Sand and gravel-----	20	100	

Well 32/1-16J3

Type of record: Driller's log.

Altitude: 750 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Fill-----	1	1	
Muck-----	2	3	
Marl-----	9	12	
Clay, sandy-----	3	15	
Sand and gravel; muddy-----	2	17	
Sand and gravel-----	3	20	
Clay, sandy-----	34	54	
Gravel with sand-----	20	74	
Clay, sandy, brown-----	3	77	

Well 32/1-16K1

Type of record: Driller's log.

Altitude: 775 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, fine, and clay; with boulders-----	18	18	
Clay, blue-----	12	30	
Sand and clay-----	5	35	
Gravel, clean, and sand-----	6	41	Blue clay at 41 feet.

Well 32/1-16K2

Type of record: Driller's log.

Altitude: 748 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Fill; muck and clay-----	22	22	
Gravel, yellow-----	12	34	
Clay, blue, and gravel-----	11	45	
Sand and clay-----	13	58	
Clay, blue-----	16	74	
Sand and clay-----	5	79	
Gravel and sand; clean-----	5	84	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/1-17F1

Type of record: Driller's log. Altitude: 770 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand-----	11	11	
Clay, yellow-----	33	44	
Sand, coarse-----	5	49	

Well 32/1-17G1

Type of record: Driller's log. Altitude: 767 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow-----	10	10	
Clay, yellow-----	8	18	
Sand and gravel; muddy, gray----	17	35	
Clay, blue, with some grit-----	45	80	
Sand becoming coarser and gravelly with depth-----	16	96	
Gravel, very coarse, very hard---	3	99	

Well 32/1-20R1

Type of record: Driller's log. Altitude: 747 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow-----	10	10	
Clay, blue-----	18	28	
Sand, yellow-----	8	36	
Sand and gravel-----	8	44	

Well 32/1-22H1

Type of record: Driller's log. Altitude: 770 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Soil and clay-----	6	6	
Sand-----	3	9	
Clay, blue-----	23	32	

Well 32/1-22H2

Type of record: Driller's log. Altitude: 760 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	11	11	
Sand-----	25	36	
Clay, blue-----	62	98	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/1-22H3

Type of record: Driller's log from memory. Altitude: 750 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay-----	50	50	
Sand and gravel-----	8	58	
Clay-----	8	66	
Sand and gravel-----	2	68	

Well 32/1-22H7

Type of record: Driller's log. Altitude: 740 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, sandy, blue-----	41	41	
Gravel, coarse-----	8	49	
Clay, blue-----	32	81	
Sand, fine-----	12	93	
Clay, blue-----	12	105	
Sand, fine-----	13	118	
Sand, coarse-----	10	128	

Well 32/1-22J3

Type of record: Driller's log. Altitude: 753 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay and sand; yellow-----	40	40	
Sand, fine-----	14	54	
Clay, blue-----	24	78	
Gravel, dirty-----	24	102	
Clay and sand; blue-----	13	115	
Sand, coarse-----	5	120	

Well 32/1-22J4

Type of record: Driller's log. Altitude: 747 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	35	35	
Gravel, coarse-----	23	58	
Clay, blue-----	14	72	
Gravel, coarse-----	8	80	
Clay, yellow, and stone-----	23	103	
Sand and clay; blue-----	5	108	
Sand, coarse-----	6	114	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/1-22R2

Type of record: Driller's log.

Altitude: 755 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	38	38	
Gravel, coarse, dirty-----	11	49	
Clay, blue-----	27	76	
Sand, fine-----	11	87	
Sand and gravel; dirty-----	31	118	
Gravel, medium-----	7	125	

Well 32/1-23D1

Type of record: Driller's log.

Altitude: 790 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay-----	6	6	
Gravel-----	4	10	
Clay, blue-----	15	25	
Gravel-----	23	48	
Rocks-----	7	55	

Well 32/1-23D2

Type of record: Driller's log.

Altitude: 790 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay-----	10	10	
Gravel-----	5	15	
Clay, yellow, and boulders-----	22	37	
Sand, fine-----	1	38	
Clay, sand, and gravel-----	15	53	
Sand and gravel-----	15	68	
Clay, yellow, and boulders-----	20	88	
Sand, fine-----	2	90	
Gravel, coarse-----	21	111	

Well 32/1-23E1

Type of record: Driller's log.

Altitude: 775 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	53	53	
Sand, medium-----	2	55	
Clay, yellow, and stone-----	26	81	
Sand, coarse-----	6	87	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/1-25R1

Type of record: Driller's log.

Altitude: 795 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	15	15	
Clay, blue-----	10	25	
Sand, muddy-----	5	30	
Sand and gravel becoming coarser with depth-----	10	40	

Well 32/1-31K2

Type of record: Driller's log.

Altitude: 737 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand-----	10	10	
Sand, fine to medium-----	10	20	
Clay, blue, and boulders-----	1	21	
Sand, fine-----	24	45	
Sand, coarse, and gravel-----	18	63	

Well 32/1-34B1

Type of record: Driller's log.

Altitude: 742 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil-----	3	3	
Clay, blue, with gravel-----	19	22	
Sand grading downward to gravel--	13	35	
Gravel, rice-sized to pea-sized--	7	42	

Well 32/1-34B2

Type of record: Driller's log.

Altitude: 760 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	15	15	
Clay, blue, with streak of gravel	6	21	
Clay, blue-----	31	52	
Sand and gravel; muddy-----	2	54	
Sand-----	21	75	
Clay, blue with streak of sand and gravel-----	50	125	
Sand and gravel-----	8	133	
Gravel-----	6	139	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/1-34C4

Type of record: Driller's log. Altitude: 740 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	3	3	
Peat-----	3	6	
Sand-----	4	10	
Clay, blue-----	8	18	
Sand and gravel-----	15	33	
Gravel, pea-sized-----	4	37	

Well 32/1-34C5

Type of record: Driller's log. Altitude: 740 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand-----	10	10	
Clay, hard, blue-----	40	50	
Gravel, coarse-----	7	57	

Well 32/1-34D2

Type of record: Driller's log from memory. Altitude: 740 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay-----	50	50	
Sand-----	6	56	
Clay, blue-----	44	100	
Clay with streaks of sand-----	28	128	
Sand grading downward to gravel--	10	138	

Well 32/2- 1N1

Type of record: Driller's log from memory. Altitude: 828 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	12	12	
Sand and gravel-----	23	35	
Clay, blue, streaked with sand---	85	120	
Sand with some gravel grading downward into gravel-----	18	138	

Well 32/2- 2A1

Type of record: Driller's log. Altitude: 817 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	14	14	
Sand and gravel-----	17	31	
Clay, blue-----	19	50	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/2- 2A1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand, muddy, with streak of blue clay 4 to 5 feet thick-----	40	90	
Sand, muddy-----	18	108	
Sand-----	10	118	
Gravel, pinhead-sized to pea- sized, very clean-----	7	125	

Well 32/2- 6Q1

Type of record: Driller's log. Altitude: 808 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	40	40	
Sand and gravel with streaks of blue clay-----	20	60	
Mud, sand, and gravel-----	20	80	
Sand, fine, clean-----	40	120	
Gravel, pinhead-sized to pea- sized-----	5	125	

Well 32/2- 7Q1

Type of record: Driller's log. Altitude: 798 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand, yellow-----	20	20	
Clay, blue-----	10	30	
Sand-----	6	36	
Gravel, pea-sized-----	2	38	
Clay, blue, with streak of sand and gravel-----	22	60	
Sand and gravel-----	8	68	

Well 32/2- 9B1

Type of record: Driller's log. Altitude: 776 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand-----	10	10	
Sand and gravel-----	10	20	
Sand with streaks of clay-----	10	30	
Clay, blue-----	6	36	
Sand and gravel; muddy-----	29	65	
Sand and gravel-----	19	84	
Gravel, pea-sized-----	4	88	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/2-10K2

Type of record: Driller's log.

Altitude: 795 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	10	10	
Clay, blue-----	8	18	
Mud, sand, and gravel-----	30	48	
Clay, blue-----	6	54	
Sand-----	16	70	
Sand and gravel-----	7	77	
Gravel, pea-sized-----	6	83	

Well 32/2-11J1

Type of record: Driller's log.

Altitude: 815 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	18	18	
Clay, blue-----	14	32	
Sand and gravel-----	7	39	

Well 32/2-12M1

Type of record: Driller's log.

Altitude: 815 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	9	9	
Gravel and clay; mixed-----	29	38	
Clay, blue-----	20	58	
Sand, yellow-----	22	80	
Gravel-----	2	82	
Hardpan-----	13	95	
Clay and sticky sand-----	3	98	
Gravel-----	18	116	
Sand-----	4	120	
Gravel-----	13	133	Clay at 133 ft.

Well 32/2-15R1

Type of record: Driller's log.

Altitude: 820 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Gravel with clay-----	14	14	
Gravel with brown stone-----	9	23	
Gravel with clay-----	2	25	
Gravel and sand; gray-----	5	30	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/2-22J2

Type of record: Driller's log.

Altitude: 852 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	18	18	
Sand and gravel-----	17	35	
Clay-----	65	100	
Sand-----	10	110	
Gravel-----	10	120	

Well 32/2-22L1

Type of record: Driller's log.

Altitude: 827 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	20	20	
Sand and gravel-----	20	40	
Clay, blue-----	100	140	
Gravel-----	10	150	

Well 32/2-24N1

Type of record: Driller's log.

Altitude: 846 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil and sand-----	22	22	
Clay and hardpan-----	16	38	
Silt, fine-----	3	41	
Clay, blue-----	26	67	
Sand, fine-----	4	71	
Gravel, sharp, and fine sand; mixed-----	4	75	

Well 32/2-25D1

Type of record: Driller's log.

Altitude: 850 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, sandy, yellow-----	12	12	
Sand and gravel-----	8	20	
Sand-----	3	23	
Clay, blue-----	42	65	
Sand, muddy-----	5	70	
Clay, blue, with streaks of sand-	35	105	
Sand, muddy, very hard-----	15	120	
Sand, muddy, very hard, gray----	45	165	
Sand, muddy, yellow-----	15	180	
Sand, muddy, gray-----	18	198	
Clay, blue-----	18	216	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/2-27L1

Type of record: Driller's log. Altitude: 860 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Sand and gravel-----	55	55	
Sand, fine-----	15	70	
Clay, blue-----	55	125	
Sand and gravel-----	12	137	

Well 32/2-30P1

Type of record: Driller's log. Altitude: 795 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	15	15	
Clay, blue-----	15	30	
Sand and gravel-----	5	35	
Gravel, coarse-----	7	42	

Well 32/2-33M1

Type of record: Driller's log. Altitude: 815 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	18	18	
Clay, blue-----	67	85	
Gravel, medium-----	6	91	

Well 32/2- 1A1

Type of record: Driller's log. Altitude: 832 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil-----	8	8	
Clay, yellow-----	16	24	
Clay and sand; blue-----	66	90	
Hardpan-----	20	110	
Sand and gravel-----	20	130	

Well 32/3- 2P1

Type of record: Driller's log. Altitude: 797 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	16	16	
Clay, sand, and gravel; blue-----	5	21	
Sand, fine-----	5	26	
Clay, blue, with streak of muddy sand-----	14	40	
Clay, blue-----	10	50	
Sand and gravel; muddy-----	10	60	
Gravel-----	6	66	

Table 4.--Selected logs of wells and test holes in Marshall County, Ind.--Cont.

Well 32/3- 5R1

Type of record: Driller's log.

Altitude: 785 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary System:			
Recent and Pleistocene Series:			
Top soil-----	6	6	
Muck-----	4	10	
Clay, sandy, red-----	48	58	
Sand, fine, gray-----	42	100	
Sand, coarser, with little gravel	5	105	
Clay, hard, gray, with strips of gravel-----	33	138	
Clay, hard, brown-----	17	155	

Well 32/3-16D1

Type of record: Driller's log.

Altitude: 804 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	25	25	
Clay, blue-----	34	59	
Sand-----	6	65	
Clay, blue-----	10	75	
Sand grading downward to coarse gravel with very little sand---	9	84	

Well 32/3-21H1

Type of record: Driller's log.

Altitude: 812 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Clay, yellow-----	25	25	
Sand and gravel-----	10	35	
Clay, blue-----	55	90	
Sand and gravel-----	5	95	
Clay, blue-----	45	140	
Gravel-----	10	150	

Well 32/3-22D1

Type of record: Driller's log.

Altitude: 792 feet.

Quaternary System:			
Recent and Pleistocene Series:			
Sand-----	12	12	
Clay, blue, with gravel; hard---	38	50	
Clay, black-----	5	55	
Sand and gravel-----	2	57	
Clay, blue, with sand-----	93	150	
Clay, reddish-brown, with sand---	28	178	