

STATE OF INDIANA
INDIANA DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

BULLETIN NO. 15

GROUND-WATER RESOURCES
OF NORTHWESTERN INDIANA

Preliminary Report: St. Joseph County



Prepared by the
GEOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF THE INTERIOR
In cooperation with the
DIVISION OF WATER RESOURCES
INDIANA DEPARTMENT OF CONSERVATION

1962

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Donald E. Foltz, Director

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Charles H. Bechert, Director

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BY

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GROUND-WATER RESOURCES OF NORTHWESTERN INDIANA

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ABSTRACT

St. Joseph County, in northwestern Indiana, has an area of about 468 square miles. Glaciofluvial sand and gravel of Pleistocene age is the chief source of ground water for domestic and stock, industrial, and public supplies. Wells that tap this source generally are less than 200 feet deep and yield from 5 to more than 2,000 gpm. 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 is generally greater than 200 ppm and less than 500 ppm. In much of the county the concentration of iron exceeds maximum concentration recommended in the U. S. Public Health Service drinking-water standards for iron and manganese together. However, there are sizable areas where this standard is not exceeded.

This preliminary report contains tabulated records of about 1,850 wells and test holes giving information about well construction, water level, condition of occurrence, and characteristics of water-bearing material; selected logs for about 710 wells and test holes giving driller's description of material penetrated and authors' interpretation of their geologic age; results of 426 field chemical analyses giving hardness of water and the bicarbonate, carbonate, chloride, iron, and sulfate content; and water levels in 24 observation wells indicating the magnitude of short-term and long-term water-level fluctuations in the unconsolidated rock. 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 St. Joseph County shows the location of each well or test hole listed in this report. Additional maps show the availability of ground water in the county and quality of water in the unconsolidated rocks of Pleistocene age with respect to the hardness and iron content of the ground water.

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 fourth 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 geology and ground-water conditions 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 general direction of A. N. Sayre and P. E. LaMoreaux, successive chiefs of the Ground Water Branch of the Geological Survey, and under the immediate supervision of C. M. Roberts, district geologist of the Ground Water Branch for Indiana.

Location and Areal Extent

St. Joseph County is in the northwestern part of Indiana (fig. 1). The county is rectangular and includes about 468 square miles. It is bounded on the north by the State of Michigan, on the south by Marshall and Starke Counties, on the west by La Porte County, and on the east by Elkhart County.

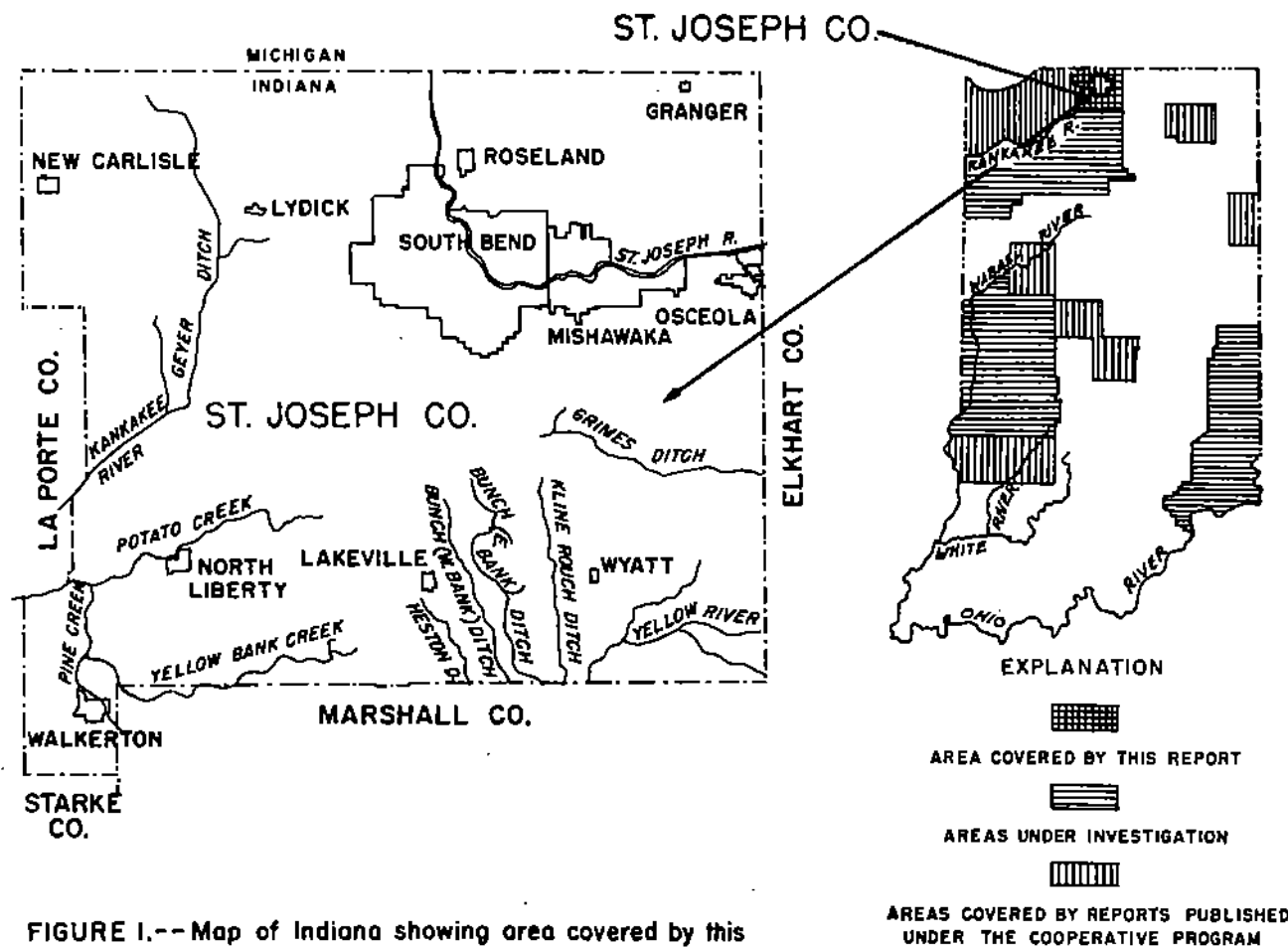


FIGURE 1.-- Map of Indiana showing area covered by this report, areas under investigation and areas covered by reports published under the cooperative program.

SEE PAGE 315 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 indicates its location according to the official rectangular public-land survey. As wells in this report are east and west of the second principle meridian, the letter "W" is included for ranges west of the meridian. No letter is included for ranges east of the second principle meridian. For example, in the number for Well 37/1W-24G1 the numbers preceeding the hyphen indicates that the well is in T. 37 N., R. 1 W. The first number after the hyphen indicates the section in which the well is located. Each quarter-quarter section (40-acre tract) within a section is assigned a letter symbol as shown on Figure 2. Within the quarter-quarter section the wells are numbered consecutively. Therefore, Well 24G1 is in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 37 N., R. 1 W.

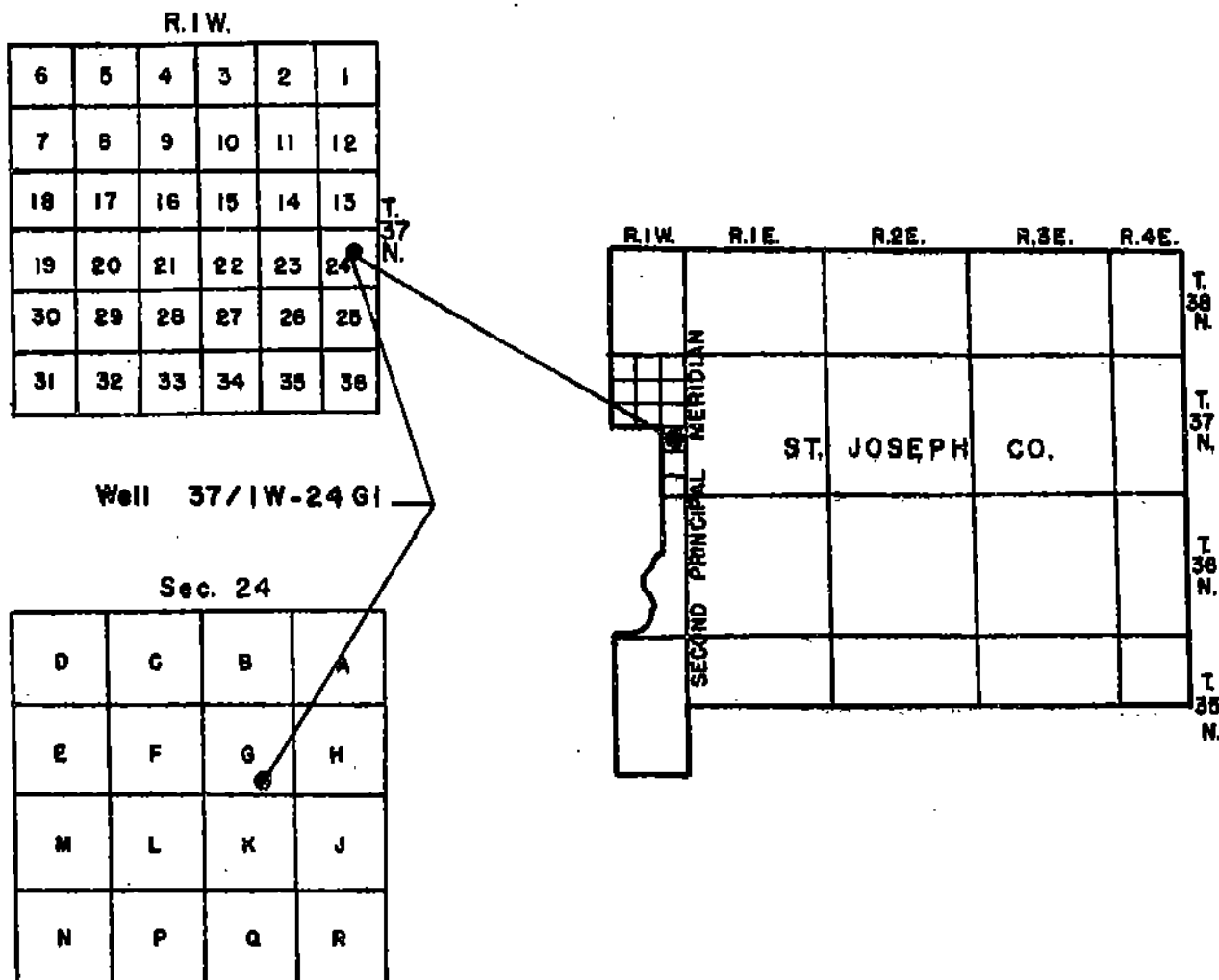


Figure 2.— Sketch showing well-numbering system.

Acknowledgments

The authors thank all persons who contributed time, information, and assistance during the collection, tabulation, and processing of data for this report. R. J. Vig, formerly of the Geological Survey, and W. J. Steen and

H. C. Kost of the Indiana Department of Conservation assisted in processing the data in the field. G. F. Westinghouse of the Topographic Division of the Geological Survey provided the elevations that were determined by the Topographic Division for unpublished topographic quadrangle maps of the county. Well drillers, whose names are listed in the table of well records, furnished much of the information summarized in tables 2 and 3.

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 State Highway Department; Indiana Toll Road Commission; and Indiana State Board of Health.

DATA COLLECTION AND PROCESSING

The well data were collected from drillers, water-works superintendents, owners, and others. The well records obtained from the drillers were of two types--written records and reports from memory. Tentative driller's locations were checked against the property records in the County Courthouse to verify the location, to locate the property, and to obtain the name of the current property owner. Discrepancies between driller's location and the location of property shown in the plat books were corrected. The locations of wells were checked further in the field if major discrepancies existed between the driller's location and the property record in the plat books, if the location given by the driller 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 2. In addition, selected driller's logs of wells and test holes are given in table 3.

Samples of water were collected at the time well sites were visited. These water samples were analyzed in the field office for hardness, alkalinity (carbonate and bicarbonate), chloride, and sulfate content by standard titration methods. The alkalinity is expressed as carbonate and bicarbonate. The total 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 4) were used to select sites for collecting larger water samples for more comprehensive and accurate chemical analyses by the laboratory of the U. S. Geological Survey.

Observation wells were established prior to and during the investigation in order to determine the factors affecting the changes in storage in the ground-water reservoir. Table 5 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. Whenever 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 St. Joseph 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 supply in the county because of their depth and the highly mineralized water which they contain.

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). This shale is listed as Devonian age in table 3. 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 St. Joseph County, they are a potential source of water, and the quality and quantity available are uncertain.

The bedrock is overlain by unconsolidated glacial drift of Pleistocene age. The drift forms several prominent topographic features in the county (Klaer and Stallman, 1948, pl 2; Leverett and Taylor, 1915, pl. 6; Wayne, 1958) such as the Valparaiso moraine in the extreme northwestern part, a two-prong extension of the Kalamazoo moraine in the north-central part; the Maxinkuckee moraine in the south-central part, and glaciofluvial plains and terraces in the northern and southwestern parts.

The unconsolidated rocks of Pleistocene age range in thickness from less than 50 feet to about 300 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 200 feet deep and yield from 5 to more than 2,000 gpm.

The unconsolidated rocks of Pleistocene age are overlain locally by thin alluvium, eolian 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. In addition, plates 3 and 4 show respectively the areal distribution of hardness and iron content of water from sand and gravel of Pleistocene age. The water is hard to very hard. The hardness is generally greater than 200 ppm and less than 500 ppm. However, in several small areas in the northern and southern parts of the county the hardness is less than 200 ppm. Although the iron content in much of the county exceeds maximum concentration

recommended in the U. S. Public Health Service drinking-water standards (p.252) for iron and manganese together, there are sizeable areas where this standard is not exceeded.

CONFINED AND UNCONFINED CONDITIONS

Ground water occurs in the consolidated and unconsolidated rocks of St. Joseph County under confined (artesian) conditions or under unconfined (water-table) conditions. Under confined conditions the saturated water-bearing material is overlain directly by relatively impervious material, and the water will rise above the level at which it is encountered in the water-bearing material. Under unconfined conditions the water-bearing material is overlain directly by permeable unsaturated material, and the water will not rise above the level at which it is encountered.

TYPES OF WELLS

Drilled, driven, and jetted wells are the principal types of water wells used in St. Joseph 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. When 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 screens 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 1 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 St. Joseph County generally were drilled by the cable-tool method. Structure test holes for foundations and bridges generally are drilled by the wash-boring method. In this method test hole samples usually are collected by driving a sampling tube into the material after specific intervals of boring.

Table 1.--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 Devonian and Mississippian(?) age are a potential source of water of uncertain quality and quantity.

The quality of water from the rocks of Pleistocene age varies. The water is generally hard to very hard. In several small areas in the northern and southwestern parts 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 sizeable areas in which the iron content does not exceed these standards.

RECORDS

The records of about 1,850 wells and test holes are given in table 2. 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, except test borings was interpolated from topographic maps or extrapolated from aerial photographs using the vertical control of the Topographic Division of the Geological Survey. Altitudes of borings were leveled by the Federal or State agency for whom the borings were made.

Table 3 contains the selected logs of about 710 wells and test holes. This table gives the driller's description of the material encountered, pertinent remarks with regard to the material, and the authors' interpretation of the geologic age of the material.

The results of 450 partial chemical analyses of water are given in table 4. Of this number 426 were determined in the field office of the Geological Survey, and 24 were determined by commercial or other governmental laboratories. This table gives information about geologic source, temperature, concentration in parts per million (ppm) of iron, carbonate, 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 standards have been established for hardness of water. However, water with respect to hardness is generally classified as follows: 0-60 ppm soft; 61-120 ppm moderately hard; 121-200 ppm hard; more than 200 ppm very hard. Water having a hardness of more than 200 ppm requires softening for many purposes.

Table 5 contains the records of 24 observation wells of which two were established during the investigation and the rest 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 2.--Records of wells and test holes in St. Joseph County, Indiana

Well: See text for description of well-numbering system.
 Altitude: Altitude of land-surface datum from topographic map, except as noted in text p. 7.
 Type of well: D, bored; Dr, driven; Dr, drilled; Da, dug; J, jetted.
 Finish: Gp, gravel pack; S, screen; dia, diameter in inches; 6, gauze size; sl, slot size.
 Character: D, drift; G, gravel; Sd, sand.
 Geologic age: Pl, Pleistocene
 Condition of occurrence: C, confined; U, unconfined; see text for definition of terms.

Water level: In feet below land-surface datum on date of completion of well, except where otherwise noted.
 Use: Ac, air conditioning; D, domestic; Do, destroyed; I, industrial; Ir, irrigation; N, not used; O, observation; P, public supply; S, stock; T, test.
 Type of pump and horsepower: C, centrifugal; J, jet; L, lift; P, pitcher; S, submersible; T, turbine; numeral indicates rated horsepower of electric motor.
 Remarks: Ch, field chemical analysis in table 4; ud, drawdown; E, electric log available for inspection; G, gamma-ray log available for inspection; gpm, gallons per minute; NS, 1948, in Klear and Stallman (1948); L, log of well in table 1.

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				
35/1W-181	H. Clinganpoel	E. Brooker	7-12-55	712 J	63	2	S; 3 1/2 ft, 60g, dia 1 1/2	44	19	Sd, G	Pl	C	12	D, S	J	Fine sand and medium gravel overlain by 4 1/2 ft yellowish clay mixed with sand; Ca.
1281	D. Schmitz	do	7-10-59	710 J	35	2 1/2	S; 4 ft, 60g, dia 1 1/2	30	21	Sd, G	Pl	U	30	D	J 1/2	Ca, L.
1361	J. Capak	Woods and Keol Well Drilling Co.	7-11-59	718 J	51	2	S; 3 1/2 ft, 60g, dia 1 1/2	42	12	Sd, G	Pl	C	28	D	J 1/2	See log well 1361; Ca.
1381	G. Matz	Spivlor Drilling Co.	9-30-49	722 J	54	2	S; 3 ft, 60g, dia 1 1/2	145	14	Sd, G	Pl	C	26	D	J 1/2	Ca.
1381	J. Groves	E. Brooker	8-6-55	726 J	159	2	S; 3 1/2 ft, 60g, dia 1 1/2	61	31	Sd, G	Pl	C	15	Do	---	See log well 23J2.
23J1	Town of Walkerton	Layne-Northern Co., Inc.	9-32	715 Dr	92	12	S; 20ft	---	---	Sd, G	Pl	---	---	P	---	Bedrock at 183 ft; L.
23J2	do	Indiana-Michigan Water Development Co.	8-2-42	715 Dr	163	12	S	---	---	Sd	Pl	---	---	T	---	See log well 23J2.
23J3	do	do	3-9-45	715 Dr	100	6	---	60	39	Sd	Pl	C	2	P	T20	See log well 23J2.
23J4	do	do	4-11-45	715 Dr	98	12	S; 28ft, 10sl	---	---	Sd	Pl	C	---	T	---	See log well 23J2.
23R1	do	do	8-7-36	718 Dr	124	12	S; 12ft, 40sl, dia 1 1/2	109	15	G, Sd	Pl	C	18	P	T20	See log well 23J2.
24M1	do	do	9-4-42	710 Dr	142	12	S; 20ft, dia 10	122	20	G, Sd	Pl	C	16	P	T20	See log well 23J2.
24N2	do	do	10-15-42	710 Dr	141	12	S; 12 1/2 ft, dia 10	122	19	G, Sd	Pl	C	14	P	T15	See log well 23J2.
24M3	J. Norris	E. Brooker	8-10-55	723 J	47	2	S; 3 1/2 ft, 60g, dia 1 1/2	43	4	G, Sd	Pl	C	28	Ac	J 1/3	See log well 23J2.
25C1	Town of Walkerton	Indiana-Michigan Water Development Co.	1-24-45	724 Dr	148	6	---	---	---	Sd	Pl	---	51	T	---	See log well 23J2.
25D1	do	do	J-2-45	728 Dr	136	6	---	---	---	Sd, G	Pl	---	---	T	---	See log well 23J2.
25E1	J. Erbaugh	E. Brooker	6-23-56	730 J	54	2	S; 3 1/2 ft, 60g, dia 1 1/2	40	14	Sd, G	Pl	C	24	D	---	See log well 23J2.
26A1	W. D. Gerslino	Spivlor Drilling Co.	10-17-49	719 J	39	2	S; 3 ft, 60g, dia 1 1/2	---	---	Sd	Pl	---	24	D	---	See log well 23J2.
35H1	E. Kerchart	E. Brooker	6-21-57	710 J	78	2	S; 3 1/2 ft, 60g, dia 1 1/2	---	---	Sd, G	Pl	---	9	I	---	See log well 23J2.
35/1-1A1	H. Kneer	Spivlor Drilling Co.	11-10-52	800 J	60	2	S; 3 ft, 60g, dia 1 1/2	36	72	Sd, G	Pl	C	25	D, S	J 1/3	See log well 23J2.
1A2	do	E. W. Schroeder	8-6-59	800 J	108	2	S; 3 ft, 12sl, dia 1 1/2	45	9	G	Pl	C	32	D, S	L	See log well 23J2.
1D1	do	do	7-3-57	810 J	57	2	S; 3 ft, 60g, dia 1 1/2	48	20	Sd	Pl	C	22	D, S	J	See log well 23J2.
1J1	R. A. McEnderfer	Spivlor Drilling Co.	11-4-53	815 J	65	2	---	45	20	G	Pl	C	22	D, S	J	See log well 23J2.
2E1	W. Kane	do	---	777 J	65	2	S; 3 1/2 ft, 60g, dia 1 1/2	---	---	Sd	Pl	---	14	N	---	See log well 23J2.

35/1-581	J. Six	E. Brooker	12-3-55	7:35 J	46	2	S; 3ft, 60g, dia 1 1/2	40	6	G, Sd	Pl C	18 D	J1/3	Medium gravel with fine sand overlain by 40 ft yellow and blue clay.
812	R. C. Nye	Srivor Drilling Co.	5-7-54	752 J	88	2 1/2	S; 5ft, 60g, dia 1 1/2	82	6	Sd	Pl C	10 S	J	Ca, L.
1041	C. Hivley	J. Hughes	10-56	758 J	82	2	S; 3ft, 60g, dia 1	60	32	G, Sd	Pl C	---	Pl/4	Flored 5 gpm; gravel with gray sand overlain by 80 ft yellow and blue clay.
1271	R. Collins	Srivor Drilling Co.	11-26-54	832 J	88	2	S; 3ft, 60g, dia 1 1/2	60	8	Sd	Pl C	49	J1/2	L.
1481	J. Longancker	Mr. Kirkley	---	768 J	84	2	---	48	10	Sd, G	Pl C	3	---	Flored 1 gpm.
1711	W. Parvey	E. Brooker	7-5-59	737 J	58	2	S; 4ft, 60g, dia 1 1/2	48	10	Sd, G	Pl C	14	J1/2	Ca, L.
35/2-181	M. Moise	C. Rouch	3-55	830 J	125	2	S; 4ft, 60g	63	82	Sd, G	Pl C	12	C3/4	Yield 20 gpm; sand and gravel overlain by 83 ft clay and silt.
171	E. Miller	---	8-2-57	835 J	40	3	---	30	10	Sd, G	Pl C	22	J3/4	Yield 30 gpm; Ca, L.
271	C. E. Cavender	Srivor Drilling Co.	12-23-46	840 J	40	2	S; 3ft, 60g, dia 1 1/2	24	18	Sd, G	Pl U	24	---	Sand and gravel from 0-40 ft; Ca.
281	F. W. Rupert	---	8-50	845 J	44	2	---	28	18	Sd, G	Pl U	28	---	Sand and gravel from 0-44 ft; Ca, L.
291	J. Wooley	---	8-23-53	840 J	49	2	---	24	23	C, Sd	Pl U	24	---	Ca.
291	W. Pugh	---	---	835 J	39	2	S; 3ft, 10sal, dia 1 1/2	---	25	Sd, G	Pl	32	J3/4	Sand and gravel from 0-44 ft; Ca, L.
291	J. Peters	Srivor Drilling Co.	5-18-49	830 J	39	2	S; 3ft, 60g, dia 1 1/2	28	11	Sd, G	Pl C	18	---	L.
291	G. Faustler	---	8-23-52	835 J	49	2	S; 3ft, 60g, dia 1 1/2	10	30	Sd, G	Pl U	10	---	Sand and gravel from 0-49 ft.
311	L. Platz	---	6-14-48	860 J	58	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd, G	Pl	48	---	Course sand and gravel overlain by clay mixed with gravel.
391	F. Kizer	---	---	860 J	65	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd, G	Pl	59	L1/2	Ca.
401	G. F. Stump	Srivor Drilling Co.	5-8-47	875 J	144	2	S; 5ft, 80g, dia 1 1/2	---	---	Sd	Pl	68	D, S	Ca.
401	P. W. Pillor	---	5-12-47	885 J	94	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd, G	Pl	80	D, S	Ca.
481	S. Byrer	---	10-18-52	870 J	111	2	S; 3ft, 60g, dia 1 1/2	104	7	Sd	Pl C	49	---	Ca, L.
511	S. Styrkul	---	8-8-45	875 J	100	2	S; 5ft, 60g, dia 1 1/2	---	---	Sd	Pl	64	---	Ca, L.
611	C. Storzynski	---	---	810 J	84	2 1/2	S; 5ft, dia 1 1/2	74	10	Sd	Pl C	30	J1	Ca.
642	---	---	---	810 J	75	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd	Pl	27	J1	Ca.
611	R. Korsh	---	---	825 J	48	2	---	---	---	Sd, G	Pl	30	---	Ca.
711	G. Guahwa	Srivor Drilling Co.	3-10-50	851 J	76	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd, G	Pl	59	---	Ca, L.
891	F. Markloy	---	6-8-56	885 J	105	2	S; 3ft, 8sal, dia 1 1/2	90	15	Sd	Pl C	50	---	L.
891	R. Roush	---	8-18-53	892 J	87	2	S; 3ft, 60g, dia 1 1/2	66	21	G	Pl U	66	---	Yield 10 gpm; L.
1001	M. Richards	E. W. Schroeder	8-19-59	870 J	126	2	S; 3ft, 12sal, dia 1 1/2	100	28	Sd, G	Pl C	80	---	Sand and gravel overlain by 20 ft blue clay; Ca.
1011	Mr. Houck	Srivor Drilling Co.	---	847 J	35	2	S; 3ft, 60g, dia 1 1/2	20	15	Sd, G	Pl C	18	L	Flored to coarse sand overlain by 54 ft clay and silt.
1101	C. Everett	C. Rouch	10-57	836 J	70	2	S; 4ft, 60g	54	16	Sd	Pl C	40	J1/2	Yield 20 gpm; Ca, L.
1491	L. Geyer	---	9-55	832 J	45	2	S; 3ft, 60g, dia 1 1/2	36	9	Sd	Pl C	18	J1/2	Ca, L.
1501	R. Heiser	Srivor Drilling Co.	5-9-46	851 J	99	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd	Pl	34	J1/2	Ca.
1601	C. V. Gillis	---	10-27-45	897 J	124	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd	Pl	100	---	Ca.
1691	F. Bronner	Indiana-Michigan Water Development Co.	5-20-40	873 Dr	49	4	S; 10ft, 15sal, dia 1 1/2	25	24	Sd, G	Pl U	25	T2	Ca, L.
1801	E. Koser	E. W. Schroeder	9-13-57	816 J	40	2	S; 3ft, 60g, dia 1 1/2	30	10	G	Pl C	28	---	Yield 8 gpm; Ca, L.
1801	T. Harbaugh	Srivor Drilling Co.	1052	842 J	63	2	S; 3ft, 60g, dia 1 1/2	48	21	Sd, G	Pl U	48	J1/2	Sand and gravel overlain by 45 ft clay; Ca.
1801	E. A. Hively	---	2-23-40	842 J	89	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd	Pl	23	J3/4	Ca.
2101	H. Bartlett	---	---	887 J	50	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd	Pl	18	J1	Yield 60 gpm; Ca, L.
35/3-1101	C. Dotal	Kennedy Well Service	10-17-56	820 Dr	98	4	S; 4ft, 10sal, dia 1 1/2	92	8	Sd, G	Pl C	18	D, S	Ca, L.
1301	J. Pittman	W. BarKholder	6-14-57	822 J	101	2	S; 60g	131	6	Sd, G	Pl C	100	J1/2	Ca, L.
1801	S. Hochstetler	Srivor Drilling Co.	9-29-48	847 J	139	3	S; 5ft, 60g, dia 2	60	10	Sd	Pl C	15	L1/4	Ca, L.
1801	E. Rouch	C. Rouch	5-55	832 J	70	2	S; 4ft, 60g	102	10	Sd	Pl C	18	---	Ca.
35/4-1711	A. Stevens	Srivor Drilling Co.	4-4-46	831 J	112	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd	Pl C	---	---	Oil test; bedrock at 175 ft; 97 ft sand overlain by 17 ft dolomite; dolomite contained water with hydrogen sulfide gas.
36/1A-1301	W. H. Snyder	Shell Oil Co.	1941	807 Dr	289	---	---	---	---	---	---	---	---	---

Table 2.--Records of wells and test holes in St. Joseph 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				Remarks				
									Depth to top (feet)	Thickness (feet)	Character	Geologic mgs		Conditions of occurrence	Water level (feet)	Use	Type of pump and horsepower
36/1W-25P1 26D1	W. Rona M. Nelson	Huntz Kessler Hardware Shell Oil Co.	1056 1941	704 J 688 Dr	300	58	2	S; 4ft, 60g	20	38	Sd, G	Pl	U	20	S	J1	Yield 15 gpm; Ca, L. Oil test; bedrock at 152 ft; 136 ft shale overlain by 12 ft dolomite. Ca, L.
35B1	W. Ruff	Srivor Drilling Co.	10-30-50	705 J	40	40	2	S; 3 1/2 ft, 60g, dia 1 1/2	25	15	Sd	Pl	C	13	D, S	J1/4	
36/1-1P1	Camp Millhouse	Indiana-Michigan Water Development Co.	6-16-51	745 Dr	88	88	4	S; 8ft, 30gal, dia 1 1/2	22	21	G, Sd	Pl	U	22	D, S	J1/2	Sand overlain by 40 ft gravel; Ca
1H1	V. Krieg	Srivor Drilling Co.	-----	750 J	43	43	2	S; 3ft, 60g, dia 1 1/2	27	12	Sd	Pl	C	18	S	-----	Originally drilled to 58 ft; Ca Yield 10 gpm; L.
1K1	R. Rogers	Woods and Koel Well Drilling Co.	2-15-57 11-9-59	745 J 740 J	37 39	37	2	S; 3 1/2 ft, 60g, dia 1 1/2	27	12	Sd	Pl	C	27	D	-----	Sand and gravel from 0-43 ft. Oil test; bedrock at 112 ft; 230 ft shale overlain by 10 ft limestone and dolomite. L.
1R1	G. Strantz	Srivor Drilling Co.	9-20-51	740 J	43	43	2	-----	-----	-----	Sd, G	Pl	-----	-----	-----	-----	
6N1	R. Miller	Shell Oil Co.	1941	695 Dr	332	332	2	-----	-----	-----	Sd	Pl	-----	-----	-----	-----	
8Q1	H. Whilman	Srivor Drilling Co.	12-24-53	722 J	87	87	2	S; 3ft, 60g, dia 1 1/2	75	12	Sd	Pl	C	38	D	J3/4	Sand and gravel overlain by 18 ft clay, Yield 15 gpm; Ca, L.
6R1	E. Lynn	-----	12-24-53	735 J	87	87	2	-----	70	17	Sd	Pl	C	40	D	J3/4	
9L1	R. Futa	-----	12-27-46	742 J	50	50	2	-----	-----	-----	Sd, G	Pl	-----	44	D, S	-----	
9L2	-----	-----	11-15-49	742 J	50	50	2	S; 3 1/2 ft, 60g, dia 1 1/2	-----	-----	Sd, G	Pl	U	31	D, S	-----	Sand and gravel from 0-50 ft.
10C1	H. Wolff	-----	7-28-55	740 J	47	47	2 1/2	S; 3ft, 60g, dia 1 1/2	31	16	Sd, G	Pl	U	31	D	-----	Sand and gravel overlain by 18 ft clay, Yield 15 gpm; Ca, L.
10C2	H. P. Woods	Woods and Koel Well Drilling Co.	9-28-59	746 J	50	50	2	S; 3 1/2 ft, 60g, dia 1 1/2	30	20	Sd	Pl	-----	30	D	J3/4	Yield 15 gpm; Ca, L.
10D1	W. Kopanski	Srivor Drilling Co.	4-16-58	749 J	64	64	2	-----	31	33	Sd, G	Pl	V	31	D	-----	Yield 15 gpm; Ca, L.
11D1	Z. R. Prytz	-----	9-19-50	748 J	40	40	2	S; 3ft, 60g, dia 1 1/2	30	10	Sd, G	Pl	V	30	D	J3/4	Yield 15 gpm; Ca, L.
12B1	C. E. Patterson	-----	4-19-50	740 J	35	35	2	S; 3ft, 60g	-----	-----	Sd, G	Pl	-----	16	-----	-----	
12C1	T. Jones	-----	7-18-51	740 Dr	32	32	2	S; 3ft, 60g, dia 2	106	14	Sd, G	Pl	C	75	D	J1/2	Sand and gravel from 0-40 ft.
13H1	A. Sattler	-----	-----	790 J	120	120	2	S; 3 1/2 ft, 60g, dia 1 1/2	-----	-----	Sd	Pl	C	64	D	-----	
13K1	H. Gerlack	-----	1-8-57	780 J	100	100	3	S; 3ft, 60g, dia 1 1/2	90	10	Sd	Pl	C	64	D	-----	
17B1	H. Whitmer	-----	-----	732 J	36	36	2	-----	-----	-----	Sd	Pl	-----	-----	-----	-----	
17B2	E. Whitmer	-----	12-10-52	732 J	90	90	2	S; 3 1/2 ft, 60g, dia 1 1/2	-----	-----	Sd	Pl	-----	17	D, S	J1/2	Yield 12 gpm; sand from 0-24 ft.
17Q1	H. Chabora	Woods and Koel Well Drilling Co.	7-14-59	727 J	24	24	2	-----	13	11	Sd	Pl	U	13	D	-----	Yield 12 gpm; sand from 0-24 ft.
19B1	E. Eldred	Srivor Drilling Co.	3-31-47	727 J	50	50	2	S; 3ft, 60g, dia 1 1/2	-----	-----	Sd, G	Pl	-----	30	D	-----	Ca.
19R1	V. R. Smith	W. Hughes	-----	727 Dr	21	21	2	-----	-----	-----	Sd	Pl	C	8	D	-----	Ca, L.
21D1	J. Parnelay	Srivor Drilling Co.	-----	728 J	38	38	2	S; 3 1/2 ft, 60g, dia 1 1/2	29	9	Sd	Pl	C	8	D	-----	Ca, L.
22C1	J. Holloway	-----	9-14-50	742 Dr	25	25	1 1/2	S	-----	-----	Sd	Pl	-----	15	D	-----	
22A1	R. Anglin	-----	5-12-45	742 J	45	45	2	S; 3ft, 60g, dia 1 1/2	40	25	Sd	Pl	C	2	D	-----	Yield 9 gpm; sand overlain by 40 ft clay with some sand. Sand and gravel overlain by 18 ft clay
23Q1	C. Whitcar	Woods and Koel Well Drilling Co.	8-9-59	758 J	85	85	2	S; 3ft, 60g, dia 1 1/2	29	24	Sd, G	Pl	U	29	D, S	-----	Oil test; bedrock at 225 ft; L.
24H1	C. Lightfoot	Srivor Drilling Co.	7-4-50	790 J	53	53	2	-----	-----	-----	Sd, G	Pl	-----	-----	-----	-----	Oil test; bedrock at 202 ft; L. Ca, L.
26J1	W. F. Hay	Srivor Drilling Co.	1-29-52	800 Dr	300	300	6-3	-----	-----	-----	Sd, G	Pl	-----	-----	-----	-----	
26P1	F. Xing	-----	1-29-52	770 J	110	110	2	S	-----	-----	Sd	Pl	-----	-----	-----	-----	
28C1	D. A. Pearson	Shell Oil Co.	-----	733 Dr	1,514	1,514	7	-----	-----	-----	Sd	Pl	-----	-----	-----	-----	
28E1	L. D. Shonemaker	E. Brooker	6-12-57	722 J	63	63	2	S; 3 1/2 ft, 60g, dia 1 1/2	40	23	Sd, G	Pl	C	12	D, I	J1/2	

Well No.	Town of North Liberty	Company	Date	Dr	67	8	9	10ft, dia 6	11	17	P	T15	Yield
2881	Liberty	Layne-Northern Co., Inc.	Before 1930	722 Dr	100	8	8	3; 16ft	35	18 P	P	T	Yield 260 gpm.
2882	W. E. Becono	E. Brooker	3-13-40	728 Dr	44	2	2	5; 3ft, 60g, dia 1 1/2	35	14 D	D	L	Yield 400 gpm; L.
3261	J. W. Hall	Silver Drilling Co.	8-14-57	732 J	49	2	2	5; 3ft, 80g, dia 1 1/2	35	14 D	D	L	Fine to coarse sand and fine gravel overlain by 13 ft yellow clayey gravel; Ca.
3262	J. Holmes	do	---	730 J	49	2	2	5; 3ft, 80g, dia 1 1/2	25	14 D	D	---	Ca. L.
3263	F. J. Larson	do	---	732 J	40	2	2	do	25	14 D	D	---	See log well 3262.
3381	H. Louka	do	11-21-46	730 J	67	2	2	5; 3ft, 80g, dia 1 1/2	42	15 D	D	J1/2	Ca. L.
3382	Wells Speciality Co., Inc.	Indiana-Michigan Water Development Co.	12-5-58	730 J	73	2	2	5; 3ft, 80g, dia 1 1/2	55	18 I	I	T0	Ca. L.
3383	T. Pearce	Silver Drilling Co.	4-13-54	735 Dr	46	2	2	5; 10ft, 14in, dia 1 1/2	---	20 D, S	D, S	---	Sand overlain by 49 ft clay; Ca.
3441	C. E. Stull	do	4-8-52	737 J	58	2	2	5; 3ft, 10in, dia 1 1/2	0	12 D	D	J	Ca.
3442	C. Kaer	do	7-50	769 J	73	2	2	5; 3ft, 60g, dia 1 1/2	49	12 D	D	J	Ca.
3581	G. Stull	do	11-1-45	753 J	43	2	2	5; 3ft, 80g, dia 1 1/2	38	6 D	D	---	Flowed; sand overlain by 38 ft blue clay.
3582	do	do	---	753 J	78	2	2	5; 3ft, 80g, dia 1 1/2	58	18 D	D	J	Flowed 17 gpm; L.
3681	R. Remachnydor	C. Rouch	9-57	753 J	108	2	2	5; 3ft, 80g, dia 1 1/2	---	20 D	D	J1/2	Ca.
3682	Z. W. Miller	Silver Drilling Co.	---	800 J	58	2	2	5; 3ft, 80g, dia 1 1/2	---	7 D	D	J1/2	Ca.
3683	H. Mackley	do	10-25-46	810 J	52	2	2	5; 3ft, 80g, dia 1 1/2	---	4 D	D	---	Sand overlain by 21 ft yellow clay; Ca.
3684	E. Hensinger	do	1-14-45	800 J	90	2	2	5; 3ft, 80g, dia 1 1/2	72	54 D	D	J3/4	L.
3685	A. C. Spillman	do	5-11-45	849 J	07	2	2	5; 3ft, 80g, dia 1 1/2	---	7 D	D	---	Sand and gravel from 0-51 ft.
161	W. A. Mitchell	do	8-19-53	895 J	51	2	2	5; 3ft, 80g, dia 1 1/2	34	34 D	D	J1/2	Sand and gravel from 0-51 ft.
162	R. L. Redger	do	10-15-53	895 J	51	2	2	do	30	30 D	D	J1/2	Sand and gravel from 0-51 ft.
163	E. A. Peterson	do	1-14-45	895 J	52	2	2	do	18	30 D	D	J1/2	Sand and gravel from 0-51 ft.
164	C. Richards, Jr.	do	10-24-53	895 J	55	2	2	do	23	30 D	D	J1/2	Sand and gravel from 0-51 ft.
165	C. E. Restatler	Silver Drilling Co.	8-14-48	895 J	58	2	2	do	22	30 D	D	J3/4	Sand and gravel from 0-58 ft.
166	C. W. Brown	do	---	895 J	82	2	2	5; 3ft, 10in, dia 1 1/2	---	43 D	D	---	Sand and gravel from 0-58 ft.
167	V. L. Crisp	Silver Drilling Co.	---	895 J	57	2	2	5; 3ft, 80g, dia 1 1/2	37	37 D	D	J1/2	Sand and gravel from 0-57 ft.
168	R. Edward	do	9-8-52	890 J	47	2	2	5; 3ft, 80g, dia 1 1/2	28	28 D	D	J1/2	Sand and gravel from 0-47 ft.
169	H. F. Trapp	Silver Drilling Co.	9-29-53	890 J	51	2	2	5; 3ft, 80g, dia 1 1/2	---	31 D	D	J1/2	Sand and gravel from 0-49 ft.
170	Keller	do	---	890 J	49	2	2	do	23	31 D	D	---	Sand and gravel from 0-50 ft.
171	V. Danner, Jr.	do	9-30-53	890 J	50	2	2	do	24	26 D	D	J1/2	Sand and gravel from 0-50 ft.
211	D. Beyer	do	9-19-50	850 J	87	2	2	do	68	58 D	D	---	Ca. L.
212	R. Foley	do	8-9-48	825 J	59	2	2	do	21	38 D	D	---	Ca. L.
213	R. Fletcher	do	7-23-49	810 J	42	2	2	5; 3ft, 80g, dia 1 1/2	---	24 D	D	J3/4	Sand and gravel overlain by 8 ft clay.
214	G. Blavens	do	12-27-45	800 J	40	2	2	5	---	21 D	D	J1/2	Sand and gravel overlain by 14 ft yellow clay.
215	H. Lohar	Silver Drilling Co.	9-15-49	825 J	64	2	2	5; 3ft, 80g, dia 1 1/2	---	46 D	D	---	Sand and gravel overlain by 50 ft clay.
216	L. Pocklin	do	10-20-45	825 J	52	2	2	5; 3ft, 80g, dia 1 1/2	---	47 D	D	---	Sand and gravel from 0-94 ft.
217	L. Kelly	do	---	860 J	87	2	2	5; 3ft, 80g, dia 1 1/2	60	60 D	D	---	Sand and gravel overlain by 60 ft clay.
218	A. H. Featherling	do	5-14-40	890 J	110	2	2	5; 3ft, 80g, dia 1 1/2	100	100 D	D	J1	L.
219	L. Michael	do	10-15-50	870 J	94	2	2	up	70	70 D	D	J1	Sand and gravel from 0-94 ft.
220	H. Abe	do	8-18-47	865 J	114	2	2	5; 3ft, 80g, dia 2	51	51 D	D	---	Sand and gravel overlain by 60 ft clay.
221	E. P. Eby	do	8-24-53	875 J	113	2	2	5; 3ft, 80g, dia 1 1/2	28	85 D	D	---	L.
222	W. K. Watkins	do	5-19-51	880 J	118	2	2	5; 3ft, 80g, dia 1 1/2	31	87 D	D	---	L.
223	H. Moore	do	8-12-54	890 Dr	121	4	4	5; 10ft, 10in	34	87 D	D	J2	L.
224	F. Duerzollch	do	10-20-56	870 J	115	3	3	5; 3ft, 80g, dia 2	---	---	---	J	Sand and gravel overlain by 20 ft yellow clay; Ca.
225	H. Schafer	do	---	890 J	98	2	2	5; 3ft, 80g, dia 1 1/2	---	85 D	D	J1	L.
226	W. Gidley	Silver Drilling Co.	7-30-47	885 J	116	2	2	5; 3ft, 80g, dia 1 1/2	24	92 D	D	---	L.

Table 2.--Records of wells and test holes in St. Joseph 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				Use	Type of pump and horsepower	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age			
367/2-2R6	J. Oduch	Striver Drilling Co.	1-3-51	885 J	J	115	3	S; 4ft., 80g, dia 2	25	Sd, G	Pl	U	D	J1	Yellow sand and gravel overlain by 25 ft yellow clay. Sand and gravel overlain by 35 ft yellow clay.
2R7	C. K. Miller	-----do-----	-----	880 J	J	112	2 1/2	S; 5ft., 60g, dia 1 1/2	26	Sd, G	Pl	U	D	J1/3	L.
3A1	S. Hertzog	-----do-----	1-18-49	825 J	J	63	2	S; 3ft., 60g, dia 1 1/2	48	Sd, G	Pl	U	D	---	L.
3B1	C. Steck	-----do-----	7-24-48	815 J	J	52	2	S; 4ft., 60g, dia 1 1/2	15	Sd, G	Pl	C	D	---	L.
3D1	E. Lawson	-----do-----	8-5-48	815 J	J	44	2	S; 3ft., 60g, dia 1 1/2	---	Sd	Pl	---	D	---	L.
3D2	Z. Pronikowski	-----do-----	8-6-48	815 J	J	44	2	S; 4ft., 60g, dia 1 1/2	---	Sd	Pl	---	D	---	L.
3E3	W. Dower	-----do-----	4-16-47	820 J	J	40	2	S; 3ft., 80g, dia 1 1/2	---	Sd, G	Pl	---	D	---	L.
3D4	Z. Gubac	-----do-----	5-7-51	820 J	J	58	2	S; 3ft., 80g, dia 1 1/2	37	Sd, G	Pl	C	D	---	L.
3G1	Mr. Barber	-----do-----	5-22-57	820 J	J	94	2	S; 3ft., 60g, dia 1 1/2	7	G	Pl	C	---	---	L.
3N1	F. Smith	-----do-----	-----	840 J	J	83	2	S; 5ft., 10al, dia 1 1/2	18	Sd, G	Pl	C	---	---	L.
3P1	R. Daly	-----do-----	-----	840 J	J	42	2	S; 5ft., 60g, dia 1 1/2	22	Sd, G	Pl	V	D	---	Yellow sand and gravel overlain by 18 ft yellow clay.
3P2	W. M. Bognar	-----do-----	-----	840 J	J	83	2	S; 3ft., 10al, dia 1 1/2	---	Sd	Pl	---	---	---	L.
3R1	F. D. Wilson	-----do-----	-----	840 J	J	83	2	S; 3ft., 10al, dia 1 1/2	16	G	Pl	C	X	T10	Dd 20 ft pumping 180 gpm; L.
3R2	Gentner Packing Co.	Indiana-Michigan Water Development Co.	9-10-37	845 Dr	Dr	176	8	S; 10ft., 40al, dia 7 1/2	158	G	Pl	C	P, I	T15	Dd 52 ft pumping 90 gpm; Ca, L.
3R3	-----do-----	-----do-----	8-19-45	845 Dr	Dr	161	12	S; 15ft., 70g, dia 10	149	Sd	Pl	C	I	T10	Dd 102 ft pumping 75 gpm; Ca, L.
3R4	-----do-----	-----do-----	11-9-54	845 Dr	Dr	154	10	S; 10ft., 10al, dia 10	143	Sd	Pl	C	I	T10	Dd 102 ft pumping 75 gpm; Ca, L.
3R5	F. D. Wilson	Striver Drilling Co.	6-22-56	840 J	J	177	2 1/2	S; 5ft., 60g, dia 1 1/2	146	Sd	Pl	C	D	J1	Ca, L.
4M1	W. E. Kessler	-----do-----	4-28-50	805 J	J	114	2	S; 5ft., 60g, dia 1 1/2	---	Sd	Pl	C	D	---	Ca, L.
4M2	L. Kolly	-----do-----	3-6-52	820 J	J	154	2 1/2	S; 5ft., 60g, dia 1 1/2	8	Sd	Pl	C	D	---	Red sand overlain by 148 ft blue clay.
4M3	A. Parker	-----do-----	12-27-57	825 J	J	162	2 1/2	S; 3ft., 60g, dia 1 1/2	148	Sd, G	Pl	C	D	---	Ca, L.
4M4	F. Rice, Sr.	-----do-----	9-2-58	---	J	148	2	S; 3ft., 10al, dia 1 1/2	140	Sd	Pl	C	D	J1	Sand overlain by 140 ft blue clay; Ca.
4N1	R. Campbell	-----do-----	-----	820 J	J	160	2	S; 3ft., 80g, dia 1 1/2	---	Sd	Pl	---	D, S	J3/4	L.
5D1	R. Umbaugh	Striver Drilling Co.	-----	778 J	J	68	2	S; 3ft., 80g, dia 1 1/2	53	Sd	Pl	C	D	---	See log well 5D1.
5D2	V. Nemeth	-----do-----	12-11-51	770 J	J	59	2	S; 3ft., 80g, dia 1 1/2	52	Sd	Pl	C	D	---	Yellow sand and gravel overlain by 20 ft yellow clay.
5F1	E. J. Frushour	-----do-----	-----	780 J	J	97	2	S; 3ft., 80g, dia 1 1/2	54	Sd, G	Pl	U	---	J1/2	L.
5G1	C. J. Huffman	-----do-----	-----	780 J	J	94	2	S; 3ft., 60g, dia 1 1/2	---	Sd	Pl	---	D	J1/2	Sand overlain by 80 ft clay. Hard gravel overlain by 65 ft clay and gravel.
5K1	T. Farris	-----do-----	8-13-50	780 J	J	68	2	S; 3ft., 60g, dia 1 1/2	80	Sd	Pl	C	---	---	L.
5K2	P. R. A. Cooper	-----do-----	5-23-49	730 J	J	70	2	-----do-----	85	G	Pl	C	---	---	L.
5L1	Z. Pinter	-----do-----	8-23-52	790 J	J	68	2	S; 3ft., 60g, dia 1 1/2	---	Sd	Pl	---	D	---	L.
5L2	J. Poczak	-----do-----	4-7-47	795 J	J	94	2	S; 3ft., 80g, dia 1 1/2	75	Sd, G	Pl	C	D	J3/4	L.
5L3	R. Moore	-----do-----	5-3-48	795 J	J	94	2	-----do-----	19	Sd, G	Pl	C	D	---	L.
5M1	L. James	-----do-----	8-7-47	785 J	J	80	2	-----do-----	---	Sd, G	Pl	C	D	---	L.
5N2	J. J. Pinter	-----do-----	5-20-48	765 J	J	77	2	-----do-----	89	Sd, G	Pl	C	D	---	L.
5N3	R. E. Pacey	-----do-----	5-30-50	765 J	J	66	2	S; 3ft., 60g, dia 1 1/2	41	Sd, G	Pl	U	---	---	Sand and gravel from 0-68 ft.
5N4	G. R. Youngs	-----do-----	7-23-52	765 J	J	68	2 1/2	S; 3ft., 60g, dia 1 1/2	58	Sd	Pl	C	D	---	Ca, L.

36/2-582	R. E. Youngs	Striver Drilling Co.	1950	765 J	65	2	S; 3ft, 100g, dia 1 1/2	96	9	Sd	P1	C	28	---	---	See log well 581; Ca.
591	A. F. Voronostro	---	4-13-48	820 J	94	2	S; 3ft, 80g, dia 1 1/2	124	10	G	P1	C	82 D	---	---	L.
591	D.	---	---	825 J	134	2	S; 3ft, 100g, dia 1 1/2	---	---	Sd	P1	C	87 D	---	---	Ca, L.
592	Stophens	---	5-28-49	785 J	94	2	S; 3ft, 80g, dia 1 1/2	84	10	Sd	P1	C	69 D	---	---	L.
593	---	---	1-24-53	825 J	120	2	S; 3ft, 100g, dia 1 1/2	103	17	G, Sd	P1	U	103 D	---	---	L.
594	---	---	3-2-54	765 J	88	2	S; 3ft, 100g, dia 1 1/2	76	10	Sd, G	P1	C	40 D	---	---	Yellow sand overlain by 38 ft yellow coarse gravel.
595	---	---	---	755 J	64	2	S; 3ft, 100g, dia 1 1/2	37	27	Sd	P1	U	37 D, S	---	---	Ca, L.
596	---	---	---	780 J	60	2	S; 3ft, 80g, dia 1 1/2	50	10	Sd, G	P1	C	34 D	---	---	---
597	---	---	2-24-54	780 J	57	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd, G	P1	U	40 D	---	---	---
598	---	---	---	780 J	78	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd, G	P1	U	40 D	---	---	---
599	---	---	---	805 J	52	2	S; 3ft, 80g, dia 1 1/2	35	17	Sd	P1	U	35	---	---	Sand from 0-52 ft.
600	---	---	9-13-50	775 J	64	2	S; 3ft, 80g, dia 1 1/2	40	24	Sd, G	P1	U	40 D	---	---	Sand and gravel from 0-84 ft.
601	---	---	8-15-48	775 J	72	2	S; 3ft, 80g, dia 1 1/2	68	6	Sd	P1	C	40 D	---	---	L.
602	---	---	7-23-48	775 J	81	2	S; 3ft, 80g, dia 1 1/2	48	15	Sd, G	P1	U	46 D	---	---	Sand and gravel from 0-81 ft.
603	---	---	8-7-56	---	160	2	S; 3ft, 80g, dia 1 1/2	143	15	Sd	P1	C	75 D, S	---	---	Ca, L.
604	---	---	7-20-49	---	72	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd	P1	U	42 D	---	---	---
605	---	---	---	---	58	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd	P1	U	24 D	---	---	---
606	---	---	---	845 J	128	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd	P1	U	46 D	---	---	---
607	---	---	---	815 J	166	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd	P1	U	46 D	---	---	---
608	---	---	---	875 Dr	---	6	S; 3ft, 80g, dia 1 1/2	---	---	Sd	P1	U	---	---	---	---
609	---	---	---	840 J	101	2	S; 3ft, 100g, dia 1 1/2	---	---	Sd	P1	U	26 D, S	---	---	Ca.
610	---	---	---	---	---	---	---	---	---	Sd, G	P1	U	20 D, S	---	---	---
611	J. Lanczowski	---	12-17-51	870 J	27	1 1/2	S; 3ft, 80g, dia 1 1/2	90	22	Sd, G	P1	U	90 D	---	---	Sand and gravel overlain by 18 ft clay.
612	Z. Dudek	---	12-11-48	870 J	112	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd, G	P1	U	24 D	---	---	Gravel from 0-84 ft.
613	J. K. Christinas	---	8-22-53	870 J	94	2	S; 3ft, 80g, dia 1 1/2	88	28	G	P1	U	66 D	---	---	Yellow sand and gravel from 0-92 ft.
614	J. Bowers	---	7-20-51	870 J	92	2	S; 3ft, 80g, dia 1 1/2	85	27	Sd, G	P1	U	85 D	---	---	---
615	G. Paynor	---	2-12-49	870 J	88	2	S; 3ft, 80g, dia 1 1/2	88	18	G, Sd	P1	U	68 D	---	---	---
616	R. Stapp	---	7-30-57	880 J	68	2	S; 3ft, 80g, dia 1 1/2	50	16	Sd, G	P1	U	50	---	---	Yield 10 gpm; sand and gravel from 0-88 ft.
617	G. C. Fleisher	---	7-23-51	870 J	78	2	S; 3ft, 80g, dia 1 1/2	81	15	Sd, G	P1	U	61 D	---	---	Sand and gravel overlain by 12 ft yellow clay.
618	C. R. Castle	---	---	---	90	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd	P1	U	---	---	---	Observation well St. Joseph 2; water level measured 33.20 below 1st, 10-7-35, ft yellow clay.
619	S. Gankowski	---	12-22-48	870 J	80	2	S; 3ft, 80g, dia 1 1/2	86	24	Sd, G	P1	U	58 N	---	---	Sand and gravel overlain by 36 ft yellow clay.
620	Hartman Builders	---	10-23-59	850 J	76	2	S; 3ft, 80g, dia 1 1/2	83	21	G, Sd	P1	C	45 D	---	---	Yield 11 gpm; L.
621	W. Alexander	---	9-13-48	885 J	86	2	S; 3ft, 80g, dia 1 1/2	82	24	Sd, G	P1	U	82 D	---	---	Sand and gravel overlain by 38 ft clay and gravel.
622	A. Alexander	---	4-2-52	885 J	69	2	S; 3ft, 80g, dia 1 1/2	53	36	Sd, G	P1	U	53 D	---	---	Red sand and gravel overlain by 35 ft yellow clay.
623	R. L. Seals	---	---	880 J	89	2	S; 3ft, 80g, dia 1 1/2	---	---	Sd, G	P1	U	---	---	---	Sand and gravel overlain by 40 ft blue clay.
624	V. K. Hazzard	---	---	860 J	80	2	S; 3ft, 80g, dia 1 1/2	52	35	G	P1	U	52 D	---	---	Gravel overlain by 40 ft yellow clay.
625	F. Dare	---	---	880 J	79	2	S; 3ft, 100g, dia 1 1/2	64	15	Sd, G	P1	U	84 D	---	---	Sand and gravel overlain by 33 ft blue clay.
626	R. Bauer	---	10-11-56	880 J	78	2	S; 3ft, 80g, dia 1 1/2	37	19	Sd, G	P1	U	57 D	---	---	---
627	V. Wells	---	8-17-51	860 J	74	2	S; 3ft, 80g, dia 1 1/2	58	16	Sd, G	P1	U	58 D	---	---	Yellow sand and gravel overlain by 35 ft blue clay.
628	R. Whitmer	---	8-10-56	875 J	94	2	S; 3ft, 80g, dia 1 1/2	77	17	Sd	P1	U	77 D, S	---	---	---
629	R. L. Smith	---	7-29-54	860 J	93	2	S; 3ft, 80g, dia 1 1/2	60	33	Sd, G	P1	U	60 D	---	---	Sand and gravel overlain by 35 ft blue clay; Ca.
630	Z. Metz	---	8-30-35	885 Dr	58	2	S; 4ft, 80g, dia 1 1/2	---	---	Sd	P1	U	42 D	---	---	Yield 40 gpm; L.
631	A. L. Williams	---	---	885 Dr	94	4	S; 10ft, 150g	35	39	Sd	P1	U	55 N	---	---	---
632	J. Birch	---	7-2-53	860 J	97	2	S; 3ft, 80g, dia 1 1/2	48	48	G, Sd	P1	U	48 D	---	---	---

Table 2.--Records of wells and test holes in St. Joseph 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				
36/2-14B2	R. Lyons	Srivor Drilling Co.	4-25-57	865 J	J	77	2	S; 3 1/2 ft., 60g. dia 1 1/2	59	18	Sd	P1	U	59 D	---	Sand overlain by 30 ft yellow clay.
14F1	F. Goethale	---	8-5-54	860 J	J	75	2	S; 3 ft., 60g. dia 1 1/2	47	28	Sd, G	P1	V	47 D	---	L.
14C1	T. E. McDaniel	---	3-2-46	865 J	J	78	2	do	---	---	Sd	P1	---	60 D	---	L.
14M1	C. Simmons	---	1-18-51	865 J	J	76	2	do	---	---	Sd	P1	---	57 D	---	L.
14M2	F. Kulczar	---	7-27-56	865 J	J	76	2	S; 3 1/2 ft., 60g. dia 1 1/2	57	19	Sd	P1	V	57 D	J3/4	Sand and gravel overlain by 30 ft clay.
14L1	L. Moon	---	6-50	860 J	J	76	2	S; 3 ft., 60g. dia 1 1/2	50	28	Sd, G	P1	V	50 D	---	Ca.
14P1	R. Overmyer	---	8-16-52	860 J	J	70	3	S; 4 ft., 60g. dia 2	35	61	Sd, G, Sd	P1	C	44 D	J1	L.
14R1	C. L. Van Slyk Hawk	---	do	860 Dr	Dr	06	4	S; 1 1/2 ft., 12in	---	---	Sd	P1	---	33 D	J5	L.
16Q1	Mr. Peterson	---	6-14-46	860 J	J	74	2	S; 3 ft., 60g. dia 1 1/2	---	---	Sd, G	P1	---	50 D	L	Ca, L.
17L1	A. Szabo	---	6-2-48	875 J	J	76	2	do	---	---	Sd, G	P1	---	58	---	Ca, L.
18C1	M. Summers	---	10-14-57	---	Dr	130	4	S; 10 ft., 10in	---	---	Sd, G	P1	---	48 S	---	---
18Q1	A. Gorbics	---	---	840 J	J	64	2	S; 3 1/2 ft., 10in	---	---	Sd, G	P1	---	36 S	---	---
19F1	L. Lawin	---	---	850 J	J	58	2	S; 3 ft., 60g. dia 1 1/2	---	---	Sd	P1	---	48	J1/3	Yield 5 gpm.
20A1	W. D. Reuser	Srivor Drilling Co.	7-26-48	870 J	J	79	2	do	62	17	Sd, G	P1	U	62 D, S	J	Sand and gravel overlain by 40 ft clay; Ca.
20B1	J. Andert	---	8-4-55	870 J	J	79	3	S; 3 1/2 ft., 60g. dia 1 1/2	64	15	Sd	P1	U	84 D, S	J1	Ca, L.
20C1	D. Dennison	---	11-14-56	860 J	J	76	2	S; 3 ft., 60g. dia 1 1/2	---	---	Sd	P1	---	60	J1	Ca, L.
21D1	H. Geyer	---	6-50	870 J	J	110	2	S; 3 ft., 10in	---	---	Sd	P1	---	39	J1/2	Ca.
21N1	E. L. Watkins	---	---	850 J	J	58	2	S; 3 1/2 ft., 60g. dia 1 1/2	---	---	Sd	P1	---	33	J1/2	---
21P1	R. Stephens	Srivor Drilling Co.	---	850 J	J	70	2	S; 3 ft., 60g. dia 1 1/2	---	---	Sd, G	P1	---	14	J1/2	Ca, L.
22F1	H. L. Carr	---	8-1-53	865 J	J	100	2	do	67	33	Sd, G	P1	U	67 D	J1/2	---
23D1	G. Strickler	---	5-15-47	855 J	J	80	2	do	---	---	Sd, G	P1	---	55	Jr	Gray sand and gravel overlain by 42 ft blue clay; Ca.
24B1	C. Good	---	9-3-52	855 J	J	71	2	S; 3 1/2 ft., 60g. dia 1 1/2	47	24	Sd, G	P1	U	47 D, S	---	---
24M1	S. Rucci	---	---	850 J	J	85	---	S	---	---	Sd	P1	---	50	D, S	Sand and gravel overlain by 55 ft yellow clay.
24N2	L. E. Pittman	---	---	845 J	J	68	2	S; 3 ft., 60g. dia 1 1/2	---	---	Sd	P1	---	42	D	---
24N1	C. Casper	W. Rodgers	4-25-56	845 J	J	60	2	S; 3 ft., 10in	55	5	Sd, G	P1	C	40 D	L	---
25C1	H. Wright	---	10-57	850 J	J	120	2	S; 4 ft., 60g	---	---	Sd, G	P1	---	45	D, S	Ca, L.
25E1	D. Whaley	---	---	845 J	J	60	2	S	---	---	Sd	P1	---	---	J1/2	---
25F1	C. Good	Srivor Drilling Co.	8-4-51	840 J	J	79	2 1/2	S; 5 ft., 60g. dia 1 1/2	68	11	Sd	P1	C	24 D, S	---	Yellow sand and gravel overlain by 15 ft yellow clay.
26B1	M. A. Matlino	---	---	850 J	J	58	2	S; 3 ft., 60g. dia 1 1/2	---	---	Sd	P1	---	39	J3/4	Yellow sand and gravel overlain by 30 ft blue clay.
26C1	Mr. King	Srivor Drilling Co.	---	855 J	J	81	2	do	54	27	Sd, G	P1	U	54	---	---
26D1	Mr. Kipp	---	---	855 J	J	57	2	do	41	16	Sd, G	P1	V	41 D	---	---
26E2	J. Auer	---	9-17-48	855 J	J	77	2	do	---	---	Sd	P1	---	52	D	Ca.
26E3	D. H. Thomas	---	---	855 J	J	75	2	do	---	---	Sd	P1	---	47	D	Yield 15 gpm; sand and hardpan from 0-80 ft.
26E1	H. M. Vincent	C. Rouch	9-6-57	855 J	J	80	2	S; 4 ft., 60g	---	---	Sd	P1	---	50	D, S	Sand and gravel overlain by 17 ft clay.
26H1	H. Annis	Srivor Drilling Co.	9-8-49	840 J	J	44	2	S; 3 ft., 60g. dia 1 1/2	28	10	Sd, G	P1	U	28 D	---	Sand and gravel overlain by 40 ft clay.
26J1	---	---	0-50	840 J	J	56	2	do	40	16	Sd, G	P1	---	26	D	---
26J2	Annis Bros.	---	11-21-50	840 J	J	53	2	S; 3 1/2 ft., 60g. dia 1 1/2	---	---	Sd, G	P1	---	31	D	---

Well No.	Owner	Company	Date	Depth (ft)	Drill Bit (dia)	Flow (gpm)	Pressure (psi)	Water Level (ft)	Gravel (ft)	Clay (ft)	Notes
36/2-28J3	H. Annie	Srivor Drilling Co.	3-24-52	81	2 5/8" ft, 10 1/2" dia	840 J	103	---	---	---	Dark sand overlain by 42 ft blue clay.
28W1	J. Kafafet	---	8-6-52	67	2 5/8" ft, 10 1/2" dia	855 J	108	38	---	---	L.
28W2	K. Lieber	---	3-20-52	76	2 5/8" ft, 10 1/2" dia	855 J	140	48	---	---	L.
28W3	F. Walters	---	8-26-52	60	2 5/8" ft, 10 1/2" dia	860 J	123	40	---	---	J1-1/2
28W4	R. Schafar	---	---	36	2 5/8" ft, 10 1/2" dia	845 J	92	---	---	---	J1
28W5	F. Dahn	---	---	41	2 5/8" ft, 10 1/2" dia	800 J	108	21	---	---	J
28W6	G. E. Barton	Srivor Drilling Co.	7-10-51	41	2 5/8" ft, 10 1/2" dia	800 J	108	21	---	---	J1-1/2
30C1	H. Roxstrow	---	9-1-51	108	2 5/8" ft, 10 1/2" dia	810 J	108	102	---	---	J1-1/2
30K1	C. Nueoth	---	8-7-53	73	2 5/8" ft, 10 1/2" dia	770 J	73	58	---	---	J1-1/2
31C1	H. Moon	---	8-23-45	73	2 5/8" ft, 10 1/2" dia	780 J	73	---	---	---	J2
32B1	J. Basyk	---	9-9-54	91	2 5/8" ft, 10 1/2" dia	835 J	123	65	---	---	J2
32J1	V. Six	---	3-18-46	123	2 5/8" ft, 10 1/2" dia	870 J	123	---	---	---	J2
32N1	Wabash Railroad Co.	Indiana-Michigan Water Development Co.	6-17-41	92	2 5/8" ft, 10 1/2" dia	824 Dr	92	43	---	---	J2
32H1	M. H. Goucher	Srivor Drilling Co.	---	103	2 5/8" ft, 10 1/2" dia	885 J	103	---	---	---	J1-1/2
32R1	J. Metz	---	11-21-53	184	2 5/8" ft, 10 1/2" dia	885 J	184	---	---	---	J1-1/2
33Q1	A. C. Milowski	---	---	183	2 5/8" ft, 10 1/2" dia	860 J	183	177	---	---	J1-1/2
33R1	N. Grzesink	C. Rouch	6-57	48	2 5/8" ft, 10 1/2" dia	850 J	48	---	---	---	J1-1/2
34J1	Town of Lakaville	Layne-Northern Co., Inc.	2-23-38	84	2 5/8" ft, 10 1/2" dia	845 Dr	84	31	---	---	J1-1/2
34R1	Fortlio Acres Dairy	Indiana-Michigan Water Development Co.	7-23-47	81	2 5/8" ft, 10 1/2" dia	845 Dr	81	---	---	---	J1-1/2
35L1	G. Dighl	Srivor Drilling Co.	3-24-56	58	2 5/8" ft, 10 1/2" dia	840 J	58	46	---	---	J1-1/2
35M1	M. Clark	---	2-27-53	39	2 5/8" ft, 10 1/2" dia	840 J	39	---	---	---	J1-1/2
36C1	R. Wright	C. Rouch	8-3-57	58	2 5/8" ft, 10 1/2" dia	840 J	58	54	---	---	J1-1/2
36J-1M1	L. Holmes	Srivor Drilling Co.	9-1-53	98	2 5/8" ft, 10 1/2" dia	855 J	98	73	---	---	J1-1/2
36J-1M2	D. Sharp	---	10-11-55	99	2 5/8" ft, 10 1/2" dia	855 J	99	80	---	---	J1-1/2
1N1	C. Ward	---	---	108	2 5/8" ft, 10 1/2" dia	855 J	108	80	---	---	J1-1/2
1P1	G. C. Avery	---	5-24-50	116	2 5/8" ft, 10 1/2" dia	850 J	116	108	---	---	J1-1/2
2D1	A. Sloss	---	8-10-50	99	2 5/8" ft, 10 1/2" dia	850 J	99	73	---	---	J1-1/2
2E1	E. Walters	---	1-27-47	112	2 5/8" ft, 10 1/2" dia	850 J	112	---	---	---	J1-1/2
2E2	J. De Witto	---	4-15-49	99	2 5/8" ft, 10 1/2" dia	855 J	99	79	---	---	J1-1/2
2F1	G. Hahn	---	3-10-51	115	2 5/8" ft, 10 1/2" dia	850 J	115	84	---	---	J1-1/2
2M1	R. Parcell	---	4-23-57	131	2 5/8" ft, 10 1/2" dia	850 J	131	90	---	---	J1-1/2
2Q1	R. Jaqua	---	---	98	2 5/8" ft, 10 1/2" dia	860 J	98	---	---	---	J1-1/2
2R1	D. Byrd	Srivor Drilling Co.	2-25-58	113	2 5/8" ft, 10 1/2" dia	855 J	113	94	---	---	J1-1/2
3R1	C. Goyer	Kennedy Well Service	9-18-55	92	2 5/8" ft, 10 1/2" dia	800 J	92	---	---	---	J1-1/2
3E2	Contact Lumber Co.	---	9-14-55	93	2 5/8" ft, 10 1/2" dia	860 J	93	78	---	---	J3/4
3E3	A. Moody	Srivor Drilling Co.	9-8-52	117	2 5/8" ft, 10 1/2" dia	870 J	117	60	---	---	J3/4
3E4	S. Crothers	---	8-20-54	99	2 5/8" ft, 10 1/2" dia	870 J	99	60	---	---	J3/4
3E5	F. B. Innis	---	10-14-57	94	2 5/8" ft, 10 1/2" dia	870 J	94	60	---	---	J3/4
3F1	R. O. Johnson	---	6-16-54	101	2 5/8" ft, 10 1/2" dia	870 J	101	76	---	---	J3/4
3G1	H. G. Merrick	---	---	90	2 5/8" ft, 10 1/2" dia	860 J	90	67	---	---	J3/4
4J1	K. Crofoot	Srivor Drilling Co.	2-12-54	102	2 5/8" ft, 10 1/2" dia	870 J	102	80	---	---	J3/4
5R1	W. Reith	---	---	93	2 5/8" ft, 10 1/2" dia	855 J	93	84	---	---	J3/4
5N1	L. K. Harris	Srivor Drilling Co.	7-15-56	89	2 5/8" ft, 10 1/2" dia	860 J	89	82	---	---	J1-1/2
7A1	H. Leach	---	1937	70	2 5/8" ft, 10 1/2" dia	855 J	70	18	---	---	J1
7B1	F. Koglewich	---	1-28-58	82	2 5/8" ft, 10 1/2" dia	855 J	82	62	---	---	J1

36/2-28J3
28W1
28W2
28W3
28W4
28W5
28W6
30C1
30K1
31C1
32B1
32J1
32N1
32H1
32R1
33Q1
33R1
34J1
34R1
35L1
35M1
36C1
36J-1M1
36J-1M2
1N1
1P1
2D1
2E1
2E2
2F1
2M1
2Q1
3R1
3E2
3E3
3E4
3E5
3F1
3G1
4J1
5R1
5N1
7A1
7B1

Table 2.--Records of wells and test holes in St. Joseph 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				Use	Type of pump and horsepower	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age			
3671-701	C. Shafer	Sprifer Drilling Co.	10-10-53	850 J	J	210	2	S; 5 1/2 ft, 60g. dia 1	---	---	---	---	---	J3/4	Ca, L.
701	M. Kerekhov	do	9-4-45	850 J	J	82	2	S; 5 1/2 ft, 80g. dia 2	---	---	---	---	---	---	Ca.
701	W. Shoresmeyer	do	5-18-57	850 J	J	88	2 1/2	S; 4 1/2 ft, 60g. dia	---	---	---	---	---	---	---
701	M. Fail	do	---	850 J	J	84	2	S; 3 1/2 ft, 60g. dia	---	---	---	---	---	J1	Yield 14 gpm; Ca, L.
801	P. Ruff	C. Rouch	---	855 J	J	100	2	S; 3 1/2 ft, 60g. dia 1	7	Sd, G	Pl	C	D	L	Sand and gravel overlain by 85 ft yellow clay.
801	R. C. Samuels	do	---	850 J	J	73	2	S; 3 1/2 ft, 60g. dia 1	---	---	---	---	---	J1/2	---
801	G. LaFroo	do	---	870 J	J	105	2	S; 3 1/2 ft, 60g. dia	---	---	---	---	---	L	---
901	D. Anthony	W. Rodgers	7-19-54	850 J	J	81	2	S; 3 1/2 ft, 10ml. dia	---	---	---	---	---	J1	---
902	F. Anthony	do	---	850 J	J	78	2	S; 3 1/2 ft, 60g. dia 1 1/2	---	---	---	---	---	J1/2	---
1001	R. C. Samuels	Sprifer Drilling Co.	6-11-50	845 J	J	95	2	S; 4 1/2 ft, 60g. dia	---	---	---	---	---	D, S	L.
1001	K. H. Felton	do	12-13-52	845 J	J	88	2	S; 3 1/2 ft, 60g. dia	28	Sd, G	Pl	C	D	J1	Yellow sand and gravel overlain by 80 ft blue and gray clay and gravel. Sand and gravel overlain by 60 ft tough gravelly clay. Sand and gravel overlain by 45 ft clay; Ca.
1002	H. J. Deahler	do	7-3-47	845 J	J	94	2	S; 3 ft, 60g. dia 1 1/2	34	Sd, G	Pl	C	D	L	---
1101	R. Bokhart	do	11-8-57	850 J	J	98	2	S; 3 1/2 ft, 10ml. dia	17	Sd, G	Pl	U	D	J1	---
1501	C. Trippel	do	---	845 J	J	75	2	S; 3 1/2 ft, 60g. dia	---	---	---	---	---	J1	---
1501	R. Frick	Sprifer Drilling Co.	4-19-50	845 J	J	94	2	do	85	Sd, G	Pl	C	D	---	---
1501	St. Joseph County	do	1-30-50	845 J	J	94	2	do	16	Sd	Pl	C	D	---	---
1502	Mr. Newcomer	do	11-50	840 J	J	92	2	S; 3 ft, 60g. dia 1 1/2	78	8d	Pl	C	D	---	---
1502	L. Marker	do	1952	845 J	J	93	2	S; 3 1/2 ft, 10ml. dia 1 1/2	75	Sd, G	Pl	C	D	J3/4	Blue sand and gravel overlain by 78 ft blue gravel and clay; Ca.
1601	C. Stuber	do	---	850 J	J	80	2	S; 3 ft, 60g. dia 1 1/2	72	Sd	Pl	C	D	---	---
1601	F. Kline	do	2-19-51	850 J	J	94	2	S; 3 1/2 ft, 60g. dia	72	Sd	Pl	C	D	---	---
1601	N. D. Craighend	do	9-14-50	845 J	J	94	2	S; 3 ft, 60g. dia 1 1/2	80	Sd, G	Pl	C	D	---	---
1601	K. Weil	do	7-18-47	845 J	J	94	2	do	60	Sd	Pl	C	D	---	---
1601	P. Koblid	do	8-50	845 J	J	94	2	do	85	Sd	Pl	C	D	---	---
1701	C. Harlein	do	11-19-52	845 J	J	69	3	S; 5 ft, 60g. dia 2	62	7	Sd, G	Pl	U	J1	Sand and gravel overlain by 80 ft clay.
1701	do	do	3-28-48	845 J	J	78	2	S; 3 ft, 60g. dia 1 1/2	57	23	Sd, G	Pl	U	---	---
1702	R. Dunning	do	4-18-50	845 J	J	80	2	S; 3 1/2 ft, 60g. dia	---	---	---	---	---	---	---
1701	Z. Myers	do	7-2-40	840 J	J	78	2	S; 3 ft, 60g. dia 1 1/2	---	---	---	---	---	J1/2	---
1701	F. Pasmacht	do	3-53	840 J	J	62	2	S; 3 1/2 ft, 80g. dia	---	---	---	---	---	J	---
1701	W. Kohlhardt	do	2-53	840 J	J	57	2	S; 3 ft, 60g. dia 1 1/2	40	17	Sd, G	Pl	C	---	---
1701	S. Horvath	do	1-13-54	840 J	J	78	2	do	---	---	---	---	---	L	---
1801	G. LaFroo	do	0-13-52	845 J	J	68	2	S; 3 1/2 ft, 60g. dia	---	---	---	---	---	J1	---
1801	G. Schutz	do	1-15-47	845 J	J	55	2	S; 3 ft, 60g. dia 1 1/2	---	---	---	---	---	L	---
1801	G. LaFroo	Sprifer Drilling Co.	9-24-49	860 J	J	75	2	do	58	17	Sd, G	Pl	U	L3/4	Sand and gravel overlain by 20 ft blue clay.

Well No.	Owner	Company	Date	Well No.	Depth	Strat.	Diag.	Flow	Yield	Notes
1861	L. J. Alford	---	---	860 J	80	2	5; 3ft, 60g, dia 1 1/2	---	---	Ca.
1861	L. Kurz	---	12-1-45	865 J	97	2	5; 3ft, 60g, dia 2	---	---	Ca.
1861	R. C. Brown	---	---	870 J	124	2	5; 3ft, 108l, dia 1	100	---	Yellow sand and gravel overlain by 100 ft blue clay.
1862	P. Schafer	---	7-22-46	875 J	112	2	5; 3ft, 60g, dia 1	---	---	L.
1863	C. Schaffer	---	---	870 J	113	2	5; 3ft, 60g, dia 1	---	---	L.
1864	Mr. Henderson	---	3-24-52	870 J	123	2	5; 3ft, 60g, dia 1	90	---	See log well 19CA.
1865	Mr. Schocker	---	---	885 J	148	2	5; 3ft, 60g, dia 1	---	---	L.
1866	Mr. Braniff	---	5-12-52	870 J	123	2	5; 3ft, 108l, dia 1	80	---	See log well 19CA.
1867	B. B. Henderson	---	10-14-59	870 J	137	4	5; 3ft, 80g, dia 1	104	---	L.
1868	P. C. Strandley	---	7-27-51	880 J	115	3	5; 3ft, 60g, dia 2	---	---	Sand and gravel overlain by 102 ft blue clay mixed with sand and gravel.
1901	D. Schaffer	---	5-37	875 J	112	3	5; 6ft, 60g	60	---	Yield 60 gpm; L.
1901	W. Zaiger	---	11-35	885 J	140	3	5; 3ft, 60g, dia 2	---	---	Do.
21A1	W. J. Bluo	---	4-28-51	830 J	116	3	5; 5ft, 60g, dia 2	102	---	Sand and gravel overlain by 102 ft blue clay and cobbles.
21C1	E. Manley	---	10-3-47	845 J	94	2	5; 3ft, 60g, dia 1 1/2	---	---	Ca, L.
21D1	L. Frick	---	6-22-57	840 J	74	2	5; 3ft, 60g, dia 1 1/2	60	---	Ca.
21E1	R. Frick	---	---	840 J	125	2	5; 3ft, 80g, dia 1	---	---	Yield 15 gpm; Ca, L.
21R1	F. Traub	---	8-28-57	835 J	103	2	5; 3ft, 60g	97	---	Ca.
22E1	R. Kilno	---	4-10-48	840 J	105	2	5; 3ft, 60g, dia 1	---	---	Yield 15 gpm; Ca, L.
23C1	C. L. Amick	---	6-4-59	850 Dr	100	4	5; 10ft, 27al, dia 1 1/2	86	---	Brown gravelly coarse sand overlain by 86 ft blue clay; very sandy, gravelly hardpan; Ca.
24B1	W. Seator	---	6-24-46	850 J	130	2	5; 3ft, 60g, dia 1 1/2	---	---	No water reported; bedrock at 177 ft; L.
27A1	W. Goyer	---	11-1-48	845 J	177	2	---	---	---	Ca.
30A1	H. R. McCauslan	---	---	885 J	125	2	5; 3ft, 60g, dia 1 1/2	---	---	Ca, L.
30B1	E. Rausch	---	---	885 J	120	2	5; 3ft, 60g, dia 1 1/2	---	---	Red sand and gravel overlain by 105 ft blue clay; Ca.
30D1	D. Stoner	---	2-27-53	845 J	80	2	5; 3ft, 60g, dia 1 1/2	50	---	Yield 60 gpm; Ca, L.
30H1	F. Warner	---	12-27-52	875 J	114	2	5; 3ft, 60g, dia 1 1/2	105	---	Observation well St. Joseph 3; water level measured 6.48 ft below 10-29-58.
32C1	H. C. Murrator	---	8-14-59	850 J	120	4	5; 6ft, 108l, dia 3	100	---	Dark sand overlain by 87 ft blue clay.
33Q1	J. Menaker	---	---	---	13	---	---	---	---	Gravel overlain by 101 ft clay; Ca, L.
34L1	L. Chalk	---	12-1-51	830 J	95	2	5; 3ft, 108l, dia 1 1/2	87	---	Sand overlain by 110 ft clay; Ca.
35B1	C. Kilno	---	8-50	840 J	108	2	5; 3ft, 60g, dia 1 1/2	101	---	Yield 11 gpm; L.
35B2	F. Wald	---	12-14-49	840 J	105	2	5; 3ft, 60g, dia 1 1/2	100	---	Bedrock at 133 ft; L.
36/A-5M1	F. Wald	---	3-1-51	830 J	118	2	5; 3ft, 60g, dia 1 1/2	110	---	Yield 10 gpm; hard sand overlain by 118 ft blue clay mixed with gravel; Ca.
6D1	A. P. Van Duran	---	11-24-14	850 J	112	2	5; 3ft, 80g, dia 1 1/2	52	---	L.
6M1	R. Berden	---	11-11-59	840 J	76	2	5; 3ft, 60g, dia 1 1/2	---	---	Bedrock at 133 ft; L.
16E1	L. W. Strycher	---	8-2-50	820 J	133	2	5; 20ft, 88g	---	---	Yield 10 gpm; hard sand overlain by 118 ft blue clay mixed with gravel; Ca.
17Q1	K. Berkey	---	7-17-53	830 J	123	2	5; 4ft, 60g, dia 1	118	---	L.
19A1	D. J. Moore and Son	---	8-20-51	---	117	2	5; 3ft, 60g, dia 1	115	---	Yield 10 gpm; sand and gravel from 0-44 ft; Ca.
29A1	Overholt Sisters	---	---	835 J	45	2	5; 3ft, 60g, dia 1	---	---	Ca.
29A2	---	---	9-3-59	835 J	44	2	5; 3ft, 60g, dia 1	20	---	Dark sand and gravel overlain by 12 ft blue clay; Ca.
30D1	M. Yedor	---	---	835 J	145	2	5; 3ft, 60g, dia 1	---	---	Ca.
32R1	K. C. Hunsberger	---	11-18-52	830 J	48	2	5; 3ft, 60g, dia 1	12	---	Ca.
33R1	M. H. Lantz	---	5-2-49	835 J	93	2	5; 3ft, 60g, dia 1 1/2	---	---	Ca.

Table 2.--Records of wells and test holes in St. Joseph 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 era					Conditions of occurrence
37/W-281	Mr. Grimes	Hunt Hoosier Hardware	9-6-56	781 J	47	2	S; 3½ ft, 60g, dia 1	34	13	Sd	P1 U	U	34	D	J1/2	Yield 13 gpm; coarse brown sand overlain by 40 ft brown sand and dirt; Ca.	
1101	A. Kitchen	-----do-----	11-1-57	850 Dr.	180	3	S; 4ft, 10al	126	34	Sd	P1 U	U	126	D	-----	-----	
14W	Studebaker Corp.	Indiana-Michigan Water Development Co.	5-9-43	735 Dr.	60	6	S; 20ft, 50g, dia 4	8	52	Sd	P1 U	U	8	T	T3	Dd 8 ft pumping 90 gpm; well S; 24-10 (KS, 1948); Ca, L. Oil test; bedrock at 287 ft.	
13F1	I. F. and M. J. Isaac	-----do-----	10-12-46	850 Dr.	1,017	10	-----do-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
24D1	Tri-County Farms	Layne-Northern Co., Inc.	8-26-46	717 Dr.	119	6	S; 3ft, 60g, dia 1½	4	44	Sd,G	P1 U	U	4	Do	-----	Sand and gravel from 0-46 ft; Ca.	
24J1	E. Surma	Striver Drilling Co.	1-29-49	710 J	48	2	S; 3ft, 60g, dia 1½	30	21	Sd,G	P1 U	U	30	Do	J1-1/2	Sand and gravel from 0-51 ft. Ca, L.	
37/1-181	W. Biggs	-----do-----	6-9-52	750 J	51	3	S; 8ft, 10al	33	33	Sd,G	P1 U	U	33	D	T15	Dd 3 ft pumping 200 gpm; L.	
111	Y. R. Danison	-----do-----	7-11-53	742 Dr.	66	4	S; 15 ft, 30al, dia 9½	8	54	Sd,G	P1 U	U	8	Ir, P	T10	Dd 7 ft pumping 1,000 gpm; Ca, L. 80 gpm; Ca, L.	
1W	South Bend Country Club	Indiana-Michigan Water Development Co.	10-31	735 Dr.	62	10	S; 15 ft, 30al, dia 9½	69	20	G, Sd	P1 U	U	69	D	-----	Sand and gravel from 0-40 ft. Yield 13 gpm; L.	
1W2	-----do-----	Michigan Drilling Co.	4-30-34	720 Dr.	76	10	-----do-----	7	51	Sd,G	P1 U	U	7	D	-----	Oil test; bedrock at 163 ft. Dark sand and gravel from 0-38 ft; Ca.	
2G1	Warren Township Trustees	-----do-----	8-22-56	748 Dr.	100	6	S	12	32	Sd,G	P1 U	U	12	D	-----	Sand and gravel from 0-44 ft. Dd 1 ft pumping 35 gpm; water level measured 8.8 ft below 1st, 8-14-58; L.	
7C1	Mr. King	Striver Drilling Co.	7-31-48	732 J	40	2	S; 3ft, 60g, dia 1½	7	33	Sd,G	P1 U	U	7	D	-----	Sand overlain by 40 ft gravel; Ca.	
7F1	O. Gardner	Hunt Hoosier Hardware	8-20-57	728 J	89	2	S; 4ft, 60g, dia 1	69	20	G, Sd	P1 U	U	69	D	-----	Yield 10 gpm; sand from 0-40 ft.	
8C1	J. Kush	-----do-----	9-27-49	727 Dr.	1,016	-----	-----do-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	
9F1	E. Cintor	Striver Drilling Co.	5-15-52	717 J	58	2	S; 3ft, 60g, dia 1½	7	51	Sd,G	P1 U	U	7	D	-----	-----	
9L1	T. Klodzynski	-----do-----	6-24-52	717 J	44	2	-----do-----	12	32	Sd,G	P1 U	U	12	D	-----	-----	
10R1	Mr. Stone	Indiana-Michigan Water Development Co.	7-16-47	717 Dr.	41	6	S; 10ft, 65al, dia 5½	7	34	Sd,G	P1 U	U	7	-----	-----	Sand overlain by 40 ft gravel; Ca.	
11A1	J. Oglesby	Striver Drilling Co.	-----	748 J	46	2	S; 3ft, 60g, dia 1½	11	35	G, Sd	P1 U	U	11	D	-----	-----	
11B1	J. Raffle	-----do-----	3-24-50	742 J	55	2	S; 3ft, 60g, dia 1½	-----	-----	Sd	P1	-----	28	D	-----	-----	
11B2	E. VandeZande	-----do-----	7-16-53	740 J	46	2	S; 3ft, 10al, dia 1½	30	16	Sd,G	P1 U	U	30	D	-----	Yellow gravel overlain by 40 ft yellow sand.	
11B3	G. Davis	R. Buddish	7-3-57	746 J	40	2	S; 3ft, 60g, dia 1½	25	15	Sd	P1 U	U	25	D	-----	Yield 10 gpm; sand from 0-40 ft.	
11E1	F. Smith	Striver Drilling Co.	8-2-57	728 J	40	2	-----do-----	19	21	Sd	P1 U	U	19	D	J1/2	Sand from 0-40 ft; Ca.	
11R1	P. Love	-----do-----	6-28-52	726 Dr.	25	2	S; 4ft, 60g, dia 2	7	-----	Sd	P1	-----	3	D	J3/4	-----	
12J1	O. Sharp	-----do-----	-----	752 J	51	2	S; 3ft, 60g, dia 1½	-----	-----	Sd	P1	-----	40	D	J1/2	-----	
12Q1	R. Rull	-----do-----	-----	734 J	38	2	S; 3ft, 60g, dia 1½	-----	-----	Sd	P1	-----	24	D	-----	-----	
13C1	R. Johnson	Striver Drilling Co.	2-4-54	740 J	40	2	S; 3ft, 60g, dia 1½	26	13	Sd	P1 U	U	26	D	J1/3	Coarse sand from 0-39 ft.	
13E1	Mr. Connolly	W. Rodgers	7-33	733 J	39	2	S; 3ft, 10al, dia 1½	15	30	Sd,G	P1 U	U	15	D	-----	Yellow sand and gravel from 0-45 ft; Ca.	
13L1	Mr. Przybylski	Striver Drilling Co.	12-13-53	722 J	45	2	S; 3ft, 60g, dia 1½	-----	-----	Sd	P1 U	U	-----	0	-----	Observation well St. Joseph 18; water level measured 24.54 ft below 1st, 6-22-43.	
13Q1	C. Sargent	-----do-----	-----	745 Dr.	27	1½	-----do-----	-----	-----	Sd	P1 U	U	-----	-----	-----	-----	
14A1	F. Moody	Striver Drilling Co.	1953	730 J	44	2	S; 3ft, 60g, dia 1½	19	25	Sd,G	P1 U	U	19	D	J1/2	Yield 4 gpm; difficult area to obtain water; Ca, L.	
23Q1	N. Peterson	-----do-----	12-2-47	712 J	31	2	S; 4ft, 90g, dia 1	27	4	Sd	P1 C	-----	10	-----	J1/2	Sand and gravel from 0-10 ft; Ca.	
24D1	J. Barlick	-----do-----	-----	734 J	40	2	S; 3ft, 60g, dia 1½	26	14	Sd,G	P1 U	U	26	D	J	-----	

Well No.	Owner	Company	Date	Drill	Depth	3	39	3	10	29	Sd.G	P1	U	10	D	J1	Notes
37/1-24E1	T. Worman		11-19-57	720 J	103	50	110	50	76	56	Sd.G	P1 C	U	3	P	T	Sand and gravel from 0-39 ft; clay at 39 ft; Ca. Yield 8 gpm; L.
J2E1	S. Toth	Keefe and Keel Well Drilling Co.	11-17-59	702 Dn	10	17	10	17	10	7	Sd	P1 U	U	10	D	---	
J2H1	S. Kulwici	Irwin Hoekley Hardware	9-12-59	702 J	10	22	10	22	10	12	G, Sd	P1 U	U	10	D	---	
33F1	R. Galvas	Lyvo Drilling Co.	11-28-49	700 J	37	37	37	37	---	---	Sd	P1	---	10	D	J	
38E1	Kankakee Valley Foods	Layne-Northern Co., Inc.	3-18-42	715 Dr	138	138	138	138	---	---	Sd.G	P1	---	11	N	---	Dd 99 ft pumping 350 gpm; bedrock at 136 ft; L.
36L1	Targatt Nursoria	Lyvo Drilling Co.	-----	735 J	46	46	46	46	22	25	Sd.G	P1 U	U	22	D	---	Yellow sand and gravel from 0-47 ft.
38P1	Mrs. O. E. Fisher	-----	-----	735 J	108	108	108	108	19	27	Sd.G	P1 U	U	10	---	---	Yellow sand and gravel from 0-48 ft.
37/2-1P1	City of South Bend	Layne-Northern Co., Inc.	7-25-58	672 Dr	104	104	104	104	65	39	Sd.G	P1 C	---	---	P	T50	Yield 2,100 GPM; flowed; L.
1P2	-----	-----	2-4-57	672 Dr	55	55	55	55	25	15	Sd	P1 U	---	---	T	---	
1L1	Nolan Construction Co.	-----	7-1-50	710 Dr	50	50	50	50	18	11	Sd	P1 U	---	---	T	---	
1L2	-----	-----	7-8-50	695 Dr	100	100	100	100	58	44	Sd.G	P1 C	---	---	T	---	
1L3	City of South Bend	-----	7-15-39	680 Dr	103	103	103	103	76	27	Sd.G	P1 C	---	---	P	---	See log well 1L5; well SJ 1-T1 (KS, 1948).
1L4	-----	-----	9-21-30	680 Dr	110	110	110	110	68	42	Sd.G	P1 C	---	---	T	---	Dd 24.8 ft after 10 hr pumping 2,220 gpm; well SJ 1-53 (KS, 1948); L.
1L5	-----	-----	12-14-39	680 Dr	110	110	110	110	54	56	Sd.G	P1 C	---	---	P	---	Well SJ 1-72 (KS, 1948); L.
1L6	-----	-----	1-13-40	678 Dr	110	110	110	110	---	---	G	P1 C	---	---	T	---	Bedrock at 110 ft; well SJ 1-T4 (KS, 1948); L.
1L7	-----	-----	2-14-40	679 Dr	110	110	110	110	---	---	Sd.G	P1 C	---	---	P	---	Dd 24.25 ft after 10 hr pumping 2,200 gpm; bedrock at 110 ft; see log well 1L5; well SJ 1-54 (KS, 1948).
1L8	-----	-----	8-17-49	678 Dr	105	105	105	105	75	30	G, Sd	P1 C	---	---	P	T40	Dd 21 ft after 9 hr pumping 1,500 gpm; see log well 1L6.
1M1	-----	-----	12-30-30	675 Dr	114	114	114	114	54	58	G, Sd	P1 C	---	---	T	---	Yield estimated at 125 g/r ft; dd; bedrock at 112 ft; well SJ 1-T3 (KS, 1948); L.
1M2	-----	-----	4-24-40	679 Dr	112	112	112	112	67	45	G, Sd	P1 C	---	---	N	---	Dd 34.8 ft after 10 hr pumping 2,200 gpm; see log well 1M1; well SJ 1-55 (KS, 1948).
1M3	-----	-----	11-8-45	695 Dr	125	125	125	125	62	59	G, Sd	P1 C	---	---	P	---	Bedrock at 121 ft; L.
1M4	-----	-----	1-3-47	695 Dr	113	113	113	113	63	50	G, Sd	P1 C	---	---	P	750	Dd 32 ft pumping 2,100 gpm; see log well 1M3.
1M5	-----	-----	6-12-51	675 Dr	110	110	110	110	80	30	Sd.G	P1 C	---	---	P	750	Dd 38 ft after 8 hr pumping 1,520 gpm; see log well 1M3.
1M6	International Business Machines Corp.	-----	12-16-56	685 Dr	111	111	111	111	78	35	G, Sd	P1 C	---	---	Ac	77-1/2	
1P1	Artificial Ice Co.	-----	-----	691 Dr	120	120	120	120	---	---	Sd.G	P1	---	---	I	T25	Yield 500 gpm; well SJ 30-2 (KS, 1948).
1P2	-----	A. L. Cox Co., Inc.	1945	691 Dr	120	120	120	120	---	---	Sd.G	P1	---	---	I	C25	Yield 500 gpm; well SJ 30-1 (KS, 1948); Ca.
1P3	I. D. Lov Co., Inc.	Indiana-Michigan Water Development Co.	-----	680 Dr	98	98	98	98	---	---	Sd.G	P1	---	---	N	---	Water 13 ft below bed, 8-21-41 well SJ 58 (KS, 1948).
1P4	-----	-----	6-27-47	680 Dr	102	102	102	102	75	27	Sd.G	P1 C	---	---	I	T10	Ca., L.
2A1	City of South Bend	-----	Before 1911	685 Dr	125	125	125	125	31	87	Sd.G	P1 C	---	---	T	---	Bedrock at 124 ft; well SJ 8-4 (KS, 1948); L.
2B1	-----	-----	Before 1911	685 Dr	148	148	148	148	47	101	Sd.G	P1 C	---	---	T	---	Bedrock at 146 ft; well SJ 8-5 (KS, 1948); L.
2C1	-----	Austin Drilling Co.	About 1927	705 Dr	146	146	146	146	44	100	G, Sd	P1 C	---	---	T	---	Flowed; bedrock at 144 ft; well SJ 8-9B (KS, 1948); L.
2C2	-----	-----	Before 1911	685 Dr	144	144	144	144	48	98	G, Sd	P1 C	---	---	T	---	See log well 2C1; well SJ 8-3 (KS, 1948).
2C3	-----	-----	Before 1911	705 Dr	152	152	152	152	77	75	G, Sd	P1 C	---	---	T	---	Bedrock at 152 ft; well SJ 8-5 (KS, 1948); L.
2D1	Drewrys Ltd., U. S. A., Inc.	Layne-Northern Co., Inc.	7-13-33	702 Dr	128	128	128	128	62	66	Sd.G	P1 C	---	---	T	---	Well SJ 12-T1 (KS, 1948); L.
2D2	-----	-----	3-30-40	702 Dr	142	142	142	142	117	25	Sd	P1 C	---	---	I	---	Dd 17 ft pumping 610 gpm; well SJ 12-2 (KS, 1948); L.

Table 2.--Records of wells and test holes in St. Joseph 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				Use	Type of pump and horsepower	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age			
37/2-203	Drowya Ltd., U. S. A., Inc.	Layne-Northern Co. Inc.	9-14-43	702 Dr	163	6			Sd, G	P1	C	20	T		Bedrock at 163 ft; see log well 207; well SJ 12-73 (KS, 1948).
204	-----	-----	10-16-46	702 Dr	156	28	Op; S; 20ft, 105gal, dia 18		Sd, G	P1	C	25	Do		Do 20 ft after 7 hr pumping 1,000 GPM; see log well 207.
205	-----	-----	2-8-40	702 Dr	167	10-6			Sd, G	P1	C	26	T		L.
206	-----	-----	4-1-49	702 Dr	159	30	Op; S; 30ft, 80gal, dia 18		Sd, G	P1	C	28	I	T100	Do 20.5 ft after 3 hr pumping 1,500 GPM; see log well 205; Ca.
207	-----	-----	11-10-49	702 Dr	161	10-6			Sd, G	P1	C	26	T		Bedrock at 159 ft; L.
208	-----	-----	4-7-50	702 Dr	154	28	Op; S; 40ft, 105gal, dia 26		Sd, G	P1	C	23	I	T150	Do 20 ft after 4 hr pumping 2,000 GPM; see log well 207.
209	-----	-----	2-17-54	702 Dr	144	34	Op; S; 40ft, 105gal, dia 18		Sd, G	P1	C	28	I	T100	Do 10.5 ft after 2.5 hr pumping 1,500 GPM; L.
210	A. Bjorans	Srifer Drilling Co.	10-20-49	705 J	45	2	S; 3ft, 60g, dia 1 1/2		Sd, G	P1	U	25	D		Sand and gravel from 0-45 ft.
211	City of South Bend		Before 1921	709 Dr	215				Sd	P1	C	25	T		Bedrock at 215 ft; well SJ G-23A (KS, 1948); L.
221	South Bend Shred and Gravel Co.	Indiana-Michigan Water Development Co.	11-28-29	700 Dr	145	10	S; 18ft, dia 15 1/2		G, Sd	P1	C		I	T50	Do 5 ft pumping 220 GPM; screen, upper 8 ft 20 gal, lower 9 ft 30 gal; water level 32 ft below bed, 3-11-49; see log well 202; well SJ 69 (KS, 1948).
222	-----	-----	3-28-40	700 Dr	166	12	S; 20ft, dia 11 1/2		Sd, G	P1	C	26	I	T40	Screen, upper 5 ft 40 gal, lower 15 ft 50 gal; well SJ 58 (KS, 1948); L.
223	-----	-----	8-5-49	700 Dr	157	12	-----do-----		Sd, G	P1	C		I	T40	Do 30 ft after 8 hr pumping 620 GPM; screen, upper 12 ft 50 gal, lower 8 ft 30 gal; see log well 304; Ca.
224	-----	-----	3-5-54	700 Dr	147	10	S; 16ft, dia 15 1/2		Sd, G	P1	C	35	I	T50	Do 50 ft pumping 750 GPM; screen, upper 10 ft 20 gal, lower 5 ft 30 gal; L.
231	R. Schmanski	Srifer Drilling Co.	-----	717 J	87	3	S; 5ft, 10gal, dia 2		Sd, G	P1	U	62	D	J1-1/2	Sand and gravel from 0-87 ft.
331	Subedjesen-Wittner Dairy, Inc.	Indiana-Michigan Water Development Co.	4-11-31	712 Dr	129	8	S; 25ft, dia 7 1/2		G, Sd	P1	C	28	I	T10	Screen, upper 10 ft 25 gal, lower 15 ft 15 gal; see log well 315; well SJ 74 (KS, 1948); Ca.
332	South Bend Drowing Co.		About 1920	712 Dr	135	12	-----		Sd, G	P1			N	C20	Well SJ 45-2 (KS, 1948).
333	-----	Indiana-Michigan Water Development Co.	5-24-31	712 Dr	133	12	S; 20ft, dia 11 1/2		G, Sd	P1	C	14	N		Do 4 ft pumping 200 GPM; screen upper 5 ft 20 gal, lower 15 ft 35 gal; well SJ 45-1 (KS, 1948); Ca, L.
334	-----	-----	8-15-46	712 Dr	147	12	S; 21ft, 100gal, dia 11 1/2		G, Sd	P1	C	34	N		Do 14 ft after 5 hr pumping 950 GPM; see log well 315.
335	-----	-----	2-5-48	712 Dr	151	6	S 11 1/2		G, Sd	P1	C	28	T		L.
336	City of South Bend		Before 1921	711 Dr	187		-----		G, Sd	P1	C	22	T		See log well 315; well SJ 8-22A (KS, 1948).
341	-----	-----	Before 1921	710 Dr	186		-----		Sd, G	P1	C	18	T		Well SJ 6-20A (KS, 1948); L.
341	-----	Indiana-Michigan Water Development Co.	10-24-31	710 Dr	200	5	S; 15ft, 30gal		Sd, G	P1	U	25	N	T15	Do 15 ft pumping 100 GPM; well SJ 23-4 (KS, 1948); L.
342	-----	-----	11-15-34	712 Dr	198	12	S; 30ft, dia 11 1/2		G, Sd	P1	U	22	O		Screen, upper 10 ft 5 gal, lower 20 ft 35 gal; observation well St. Joseph 8; water level measured 44.5 ft below bed, 6-14-44; see log well 311; well SJ 23-3 (KS, 1948).

37/2- 3N3	Bendix Aviation Corp.	9-41	713J Dr	208	20	5; 38ft	105	103	Sd, G	Pl	C	40	T25	Notes
3N4	-----do-----	9-41	713J Dr	210	---	-----	105	---	Sd, G	Pl	C	45	---	Dk 40 ft pumping 1,600 gpm; water level 21 ft below land.
3N5	-----do-----	9-41	712 Dr	205	---	-----	---	---	Sd, G	Pl	---	---	---	4-58; bedrock at 208 ft; see log well 3N4; well SJ 23-2 (KS, 1948)
3N6	-----do-----	10-14-53	718 Dr	163	12	5; 30ft, dia 1 1/2	---	---	Sd, G	Pl	---	---	---	log well 3N4; well SJ 23-2 (KS, 1948)
3N7	City of South Bend	Before 1921	711 Dr	196	---	-----	88	---	Sd, G	Pl	C	14	---	Dk 30 ft pumping 1,100 gpm; bedrock at 209 ft; L.
4E1	F. Alward	-----do-----	722 J	47	2	5; 3ft, 80g, dia 1 1/2	37	14	Sd, G	Pl	U	37	---	Bedrock at 202 ft; L.
4N1	M. C. Frick	8-18-54	719 J	182	---	-----	59	8	Sd, G	Pl	U	39	---	Screen, 15 ft, 35 sl, 5 ft 20 sl, 10 ft 30 sl; Ca.
4J1	Bendix Aviation Corp.	9-41	712 Dr	182	---	-----	---	---	Sd, G	Pl	---	---	---	Bedrock at 185 ft; well SJ 6-18A (KS, 1948); L.
4J2	-----do-----	9-41	712 Dr	205	18	-----	180	40	Sd, G	Pl	C	19	---	Ca, L.
4J3	Capital Elevator Company	4- 3-42	712 Dr	80	---	-----	38	22	Sd, G	Pl	C	---	---	Sand and gravel from 0-47 ft. Bedrock at 180 ft; L.
4N1	F. McKeo	-----do-----	721 J	44	2	5; 3ft, 80g, dia 1 1/2	---	---	Sd, G	Pl	C	14	---	Ca, L.
4Q1	Bendix Aviation Corp.	-----do-----	711 Dr	90	12	5; 3ft, 80g, dia 1 1/2	---	---	Sd, G	Pl	---	---	---	Bedrock at 204 ft; L. For elevator shaft; well SJ 6-14A (KS, 1948); L.
4R1	-----do-----	9-41	712 Dr	142	---	-----	---	---	Sd, G	Pl	C	2	---	Ca, L.
4R2	-----do-----	Before 1921	711 Dr	170	---	-----	80	50	Sd, G	Pl	C	---	---	Well SJ 6-17A (KS, 1948); L.
4R3	-----do-----	Before 1921	710 Dr	203	---	-----	15	185	Sd, G	Pl	---	0	---	Bedrock at 200 ft; well SJ 6-14A (KS, 1948); L.
5A1	L. W. Clippinger	8-10-46	754 J	59	2	5; 3 1/2 ft, 60g, dia 1 1/2	---	---	Sd	Pl	---	43	---	Yellow sand and gravel from 0-51 ft.
5A2	M. Wilson	-----do-----	748 J	44	2	-----do-----	25	26	Sd, G	Pl	U	25	---	Yield 6 gpm; L.
5A3	L. H. Miller	-----do-----	744 J	51	2	-----do-----	---	---	Sd	Pl	---	35	---	Yield 10 gpm; see log well 5B1.
5D1	Indiana Savings and Loan Co.	1- 8-57	754 J	56	2	-----do-----	45	11	Sd	Pl	C	35	---	---
5C1	Church of God	4-26-57	752 J	58	2	-----do-----	59	8	Sd	Pl	C	35	---	---
5G1	D. Neot	3- 2-56	739 J	58	2	-----do-----	---	---	Sd	Pl	---	---	---	---
5H1	L. Dillon	-----do-----	740 J	55	2	5; 3ft, 80g, dia 1 1/2	---	---	Sd, G	Pl	C	28	---	---
5H2	L. D. Irvin	8- 1-48	740 J	50	2	5; 3ft, 80g, dia 1 1/2	75	18	Sd, G	Pl	C	32	---	---
5H3	A. J. Jones	-----do-----	742 J	50	2	-----do-----	25	18	Sd, G	Pl	C	14	---	---
5H4	R. Hall	3- 8-57	743 J	63	2	5; 3 1/2 ft, 60g, dia 1 1/2	50	13	Sd	Pl	C	35	---	Yield 10 gpm; see log well 5B1.
5J1	E. Sellers	1-16-48	736 J	45	2	5; 3ft, 60g, dia 1 1/2	---	---	Sd	Pl	---	16	---	Sand and gravel overlain by 20 ft yellow sand.
5J2	L. Nowak	4- 3-58	730 J	40	2	5; 3 1/2 ft, 60g, dia 1 1/2	25	15	Sd, G	Pl	U	25	---	Sand and gravel from 0-47 ft.
5J3	J. A. Armour	-----do-----	735 J	47	2	-----do-----	27	20	Sd, G	Pl	U	27	---	Sand and gravel from 0-46 ft; Ca.
5K1	A. E. Kosinski	7-18-54	735 J	46	2	5; 3 1/2 ft, 10sl, dia 1 1/2	24	22	Sd, G	Pl	U	24	---	Sand and gravel from 0-46 ft; Ca.
5L1	Gish Lumber Co.	-----do-----	733 J	40	2	5; 3 1/2 ft, 60g, dia 1 1/2	12	34	Sd, G	Pl	U	12	---	Sand and gravel from 0-46 ft; Ca.
5P1	J. W. Buda	-----do-----	735 J	45	2	5; 3ft, 60g, dia 1 1/2	10	29	Sd, G	Pl	U	16	---	Sand and gravel from 0-45 ft.
5Q1	S. W. Paskiet	12- 3-53	731 J	36	2	-----do-----	---	---	Sd	Pl	---	17	---	Very fine brown sand from 0-50 ft.
5R1	Indiana State Highway Department	7-30-56	752 B	50	---	-----	---	---	Sd	Pl	---	---	---	Do.
5R2	-----do-----	7-30-56	751 B	50	---	-----	---	---	Sd	Pl	---	---	---	Do.
5R3	-----do-----	7-30-56	752 B	44	2	5; 3ft, 60g, dia 1 1/2	34	10	Sd, G	Pl	U	34	---	Brown sand from 0-50 ft.
5F1	T. Haugrud	-----do-----	747 J	42	2	5; 3ft, 60g, dia 1 1/2	25	17	Sd, G	Pl	U	25	---	Sand and gravel from 0-44 ft. Yellow sand and coarse gravel from 0-42 ft; Ca.
5G1	J. Mueller	-----do-----	740 J	56	2	5; 3ft, 60g, dia 1 1/2	30	28	C	Pl	U	30	---	Gravel from 0-56 ft.
5G2	L. Lough	2-27-57	748 J	45	2	5; 3 1/2 ft, 60g, dia 1 1/2	30	15	C	Pl	U	30	---	Gravel overlain by 20 ft sand.
5G3	Indiana State Highway Department	12- 6-56	745 B	50	---	-----	---	---	Sd, G	Pl	U	---	---	Do.
5G4	-----do-----	12- 6-56	746 B	50	---	-----	---	---	Sd, G	Pl	U	---	---	See log well 6C3.
5G5	-----do-----	12- 6-56	745 B	50	---	-----	---	---	Sd, G	Pl	U	---	---	Do.

Table 2.--Records of wells and test holes in St. Joseph 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	Conditions of occurrence				
37/2-668	Indiana State Highway Department		12-8-56	748 B	50				Sd, G	Pl	V			T		Sand and pea-sized gravel overlain by 35 ft brown sand.	
667	do		12-8-56	740 B	50				Sd, G	Pl	V			T		Sand and pea-sized gravel overlain by 38 ft brown sand.	
668	do		12-8-56	744 B	50				Sd, G	Pl	V			T		Sand and pea-sized gravel overlain by 44 ft brown sand.	
6Q1	do		7-30-56	736 B	50				Sd, G	Pl	V			T		See log well 663.	
6Q2	do		7-30-56	735 B	50				Sd, G	Pl	V			T		Yield 6 gpm; sand and gravel overlain by 20 ft sand.	
7D1	G. Vann Tornhout	R. Roddick	4-24-57	745 J	44	2	2	S; 3ft, 60g, dia 1 1/4	Sd, G	Pl	U		20	D	J	Sand and gravel overlain by 20 ft brown sand.	
7D2	Indiana State Highway Department		7-30-56	733 B	50				Sd, G	Pl	U			T		Sand and gravel overlain by 20 ft brown sand.	
7E3	do		7-30-56	735 B	50				Sd, G	Pl	U			T		Sand and gravel overlain by 22 ft brown sand.	
7B4	do		7-30-56	735 B	50				Sd, G	Pl	U			T		Sand and gravel overlain by 21 ft brown sand.	
7B5	do		7-30-56	735 B	50				Sd, G	Pl	U			T		Sand and gravel overlain by 18 ft brown sand.	
7G1	do		7-30-56	740 B	50				Sd	Pl	U			T		Brown sand from 0-50 ft.	
7G2	do		7-30-56	738 B	50				Sd	Pl	U			T		Brown sand overlain by 11 ft sand and pea-sized gravel.	
7G3	do		7-30-56	736 B	50				Sd	Pl	U			T		Brown sand overlain by 13 ft brown sand and pea-sized gravel.	
7H1	E. Mosatron	Silver Drilling Co.	5-11-51	742 J	67	2	2	S; 3ft, 60g, dia 1 1/4	Sd, G	Pl	U		29	D	J3/4	Ca, L.	
7J1	J. R. Moyer	do	10-4-51	745 J	36	2	2	S; 3ft, 60g, dia 1 1/4	Sd	Pl	U		26	D	J	Sand and gravel from 0-52 ft; blue clay at 52 ft.	
7J2	D. Do Vreese	do	1-12-54	745 J	52	2	2	do	Sd, G	Pl	U		38	D	J	Brown sand and pea-sized gravel from 0-50 ft.	
7K1	Indiana State Highway Department		7-30-56	738 D	50				Sd, G	Pl	U			T		Do.	
7N2	do		7-30-56	740 B	50				Sd, G	Pl	U			T		Do 9 ft pumping 440 GPM; water level 33 ft below top, 3-0-50;	
7M1	St. Joseph Cemetery Association	R. Kearsney		752 Dr	73	10	10	S; 10ft, 30ml, dia 8 1/2	Sd, G	Pl	U			Ir		Ca, L.	
7M2	do		10-23-52	740 Dr	84	12	12	S; 18ft, 20ml, dia 1 1/4	Sd, G	Pl	U		18	Ir		Ca, L.	
7P1	G. Kazmierzak	Indiana-Michigan Water Development Co.	9-8-49	743 J	41	2	2	S; 3ft, 60g, dia 1 1/4	Sd, G	Pl	U		27	T		See log well 7Q1.	
7Q1	Indiana State Highway Department	Silver Drilling Co.	8-27-56	742 B	50				Sd	Pl	U			T		Yellow sand overlain by 20 ft yellow clay.	
7Q2	do		8-27-56	740 B	50				Sd	Pl	U			T		L.	
7R1	J. Kujawa	Silver Drilling Co.	2-14-58	733 J	40	2	2	S; 3ft, 106l, dia 1 1/4	Sd, G	Pl	U		25	D	J1/2	See log well 7Q1.	
8A1	Indiana-Michigan Electric Co.	Layne-Northorn Co., Inc.	5-2-58	722 Dr	182				Sd, G	Pl	U		14	T		Yellow sand overlain by 20 ft yellow clay.	
8D1	C. Coniat	Silver Drilling Co.	7-10-51	724 Dr	22	1 1/2	1 1/2	S; 3ft, 60g, dia 1 1/4	Sd, G	Pl	U		7	D		Sand and gravel from 0-40 ft.	
8D2	R. M. Walt	do	10-15-50	724 J	40	2	2	S; 3ft, 60g, dia 1 1/4	Sd, G	Pl	U		10	D		L.	
8E1	E. Dean	do	8-23-54	737 J	80	2	2	S; 3ft, 106l, dia 1 1/4	Sd, G	Pl	U		26	D	J1/2		

37/2- 8F1	J. M. Wleczorek	7-28-50	740 J	40	2	8; 3ft. 60g, dia 1 1/2	24	15	Sd,G	Pl C	U	24	D	---	J1/2	Sand and gravel from 0-40 ft. Yield 7 gpm; Ca. Ca., L.
8F2	F. Habb	9-4-57	740 J	73	2	S; 3ft. 60g-dia 1 1/2	66	7	Sd	Pl C	U	40	D	---	J4	
8F3	Holy Family Parish School	12-5-53	752 Dr	71	5	S; 3ft. 30g1	48	25	Sd,G	Pl C	C	28	P	---		
8H1	South Bond Auto	---	717 J	58	3	S; 6ft. 60g, dia 2	48	10	G	Pl C	C	13	P	---		
8L1	Theater	---	726 J	44	2	S; 3ft. 60g, dia 1 1/2	35	9	Sd	Pl C	C	18	D	---		
8L2	H. Miller	7-7-48	732 J	50	2	---	39	6	Sd	Pl C	C	14	D	---		
8L3	T. Bocchelli	5-20-53	725 J	45	2	---	48	4	Sd	Pl C	C	24	I	---		
8L4	E. Plechoccki	10-26-53	730 J	53	2	---	16	30	Sd	Pl U	U	16	D	---		
8N1	J. Poty	4-18-56	730 J	46	2	S; 3ft. 60g, dia 1 1/2	0	168	Sd	Pl U	U	0	T	---		
8N1	L. Dombrowski	---	709 Dr	186	---	---	5	188	Sd,G	Pl U	U	5	T	---		
9A1	City of South Bend	Before 1921	714 Dr	193	---	---	80	120	Sd,G	Pl C	C	4	T	---		
9J1	---	Before 1921	714 Dr	200	---	---	90	110	Sd,G	Pl C	C	4	T	---		
9J2	---	Before 1921	714 Dr	200	---	---	92	38	Sd	Pl C	C	30	I	730		
9R1	---	Before 1921	714 Dr	200	---	---	---	---	Sd	Pl	U	40	I	---		
10B1	O'Brien Corp.	11-18-44	717 Dr	130	10	S; 20ft, dia 9 1/2	---	---	Sd	Pl	U	7	O	---		
10D1	Indiana-Michigan Water Development Co.	---	713 Dr	201	20	8	---	---	Sd	Pl	U	7	O	---		
10D1	A. L. Cox Co., Inc.	9-41	712 Dr	201	20	5	---	---	Sd	Pl	U	7	O	---		
10D2	Corp.	9-41	713 Dr	211	---	---	50	140	Sd,G	Pl C	C	6	T	---		
10E1	---	Before 1921	713 Dr	210	---	---	45	162	Sd,G	Pl C	C	7	T	---		
10E2	---	Before 1921	716 Dr	118	8	---	---	---	Sd,G	Pl	U	7	O	---		
10G1	Singer Manufactur- ing Co.	---	716 Du	40	480	---	---	---	Sd	Pl	U	7	O	---		
10G2	---	Before 1906	714 Dr	108	8	---	---	---	Sd,G	Pl	---	---	T	---		
10G3	---	7-19-34	714 Dr	118	30-18	GP; S; 23ft., 105g1, dia 18	90	26	Sd	Pl C	C	28	N	---		
10G4	Layne-Northern Co., Inc.	8-6-34	717 Dr	119	10	S; 20ft, dia 9 1/2	01	28	Sd,G	Pl C	C	30	I	740		
10H1	---	---	715 Dr	194	---	---	5	183	Sd,G	Pl	---	5	T	---		
10N1	---	1-16-53	715 Dr	182	---	---	---	---	Sd,G	Pl	---	5	T	---		
10N2	---	Before 1921	715 Dr	198	---	---	5	192	Sd,G	Pl	U	5	T	---		
10N3	---	Before 1921	714 Dr	184	---	---	8	168	Sd,G	Pl	U	8	T	---		
10P1	---	Before 1921	720 Dr	75	6	S; 10ft	48	27	G, Sd	Pl C	C	36	I	75		
11K1	American Telephone and Telegraph Co.	6-9-48	720 Dr	84	10	S; 20ft., 30g1, dia 9 1/2	35	29	Sd	Pl C	C	30	Do	---		
11J1	---	3-21-29	718 Du	28	144	---	---	---	Sd,G	Pl	---	10	N	---		
11K1	Clacys Candy Co.	Before 1906	718 Dr	125	6	---	25	82	Sd,G	Pl	U	25	T	---		
11K2	Oliver Corp.	10-27-44	718 Dr	96	50	S; 30ft., 130g1, dia 18	---	---	Sd,G	Pl	---	30	I	---		
11K3	---	3-24-45	718 Dr	---	---	---	---	---	Sd,G	Pl	---	---	---	---		

Table 2.--Records of wells and test holes in St. Joseph 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 zone				
37/2-1184	Oliver Corp.		1944	718	Dr	44	2									Observation well. St. Joseph 7; water level measured 28.28 ft below land 9-28-46.
1181	Studebaker Corp.	Smith-Monroe Co.		724	Dr	72	12	S; 15ft, dia 11½								Dd 16 ft pumping 400 gpm; bed-rock at 84 ft; well SJ 24-5 (KS, 1948); L.
1182		R. Korsev	1910	724	Dr	56	12	S; 20ft, 25ml, dia 10								Dd 21 ft pumping 450 gpm; sand and gravel overlain by 35 ft sand; well SJ 24-1 (KS, 1948); Ca.
1183		Indiana-Michigan Water Development Co.	8-38	725	Dr	81	12	S; 14ft								Dd 36 ft pumping 250 gpm; originally drilled to 44 ft; deepened to 81 ft. 10-29-48; L.
1184				725	Dr	97										See log well 11810; well SJ 24-76 (KS, 1948); L.
1185				724	Dr	100										Well SJ 24-72 (KS, 1948); L.
1186				725	Dr	96										See log well 1185; well SJ 24-73 (KS, 1948); L.
1187				725	Dr	100										See log well 11870; well SJ 24-74 (KS, 1948); L.
1188				724	Dr	90										See log well 1188; well SJ 24-75 (KS, 1948); L.
1189				725	Dr	103										See log well 11890; well SJ 24-79 (KS, 1948); L.
11810				725	Dr	103										Well SJ 24-78 (KS, 1948); L.
11811				724	Dr	90										See log well 1185; well SJ 24-76 (KS, 1948); L.
11812				724	Dr	63										See log well 1185; well SJ 24-77 (KS, 1948); L.
11813		A. L. Cox Co., Inc.	3- 3-41	725	Dr	94	12	S; 16ft, dia 11½								Yield 250 gpm; screen, upper 2 ft 10 in, middle 5 ft 20 in lower 8 ft 30 in; well SJ 24-12 (KS, 1948); L.
11814				725	Dr	63										See log well 1185; well SJ 24-79 (KS, 1948); L.
11815				724	Dr	63										See log well 1185; well SJ 24-79 (KS, 1948); L.
12C1	Granada Theatre	A. L. Cox Co., Inc	3-27	674	Dr	124	12	S; 18ft, dia 11½								Yield 450 gpm; water level 24 ft 5-30-42; well SJ 37 (KS, 1948); L.
12C2	Arrow Towel Co.	R. Korsev	1030	686	Dr	118	8	S; 20ft								Well SJ 46-1 (KS, 1948); Ca, L.
12C3	Taube Printing Co.	Indiana-Michigan Water Development Co.	5-31	685	Dr	110	12	S; 13ft, dia 11½								Screen upper 7 ft 20 in, lower 8 ft 30 in; see log well 12C9; well SJ 40 (KS, 1948); L.
12C4	Holloway House Cafeteria		3-21-39	705	Dr	124	8	S; 12ft, 35ml, dia 7½								Dd 8 ft pumping 150 gpm; see log well 12C5; well SJ 81 (KS, 1948); L.
12C5			10-15-46	705	Dr	119	B	S; 12ft, 35ml, dia 7½								Dd 13 ft pumping 90 gpm; Ca, L.
12C6	City of South Bend	Layne-Northern Co., Inc.	12-20-41	684	Dr	110										Bedrock at 109 ft; well SJ 2-71 (KS, 1948); L.

37/2-12C7	City of South Bend	4-25-42	684 Dr	106	50-38	Op; S; 20ft, 180sl, dia 38	84	24	G	Pl	C	4	N	-----	-----
12C8	-----	8-1-56	675 Dr	110	6	-----	55	61	Sd,G	Pl	C	2	T	-----	Dd 42.75 ft after 8 hr pumping 2,100 gpm; see log well 12C9; well SJ 2-35 (KS, 1948).
12C9	-----	11-27-56	675 Dr	118	38	Op; S; 25ft, 80sl, dia 28	86	30	Sd,G	Pl	C	7	P	-----	See log well 12C9.
12C10	-----	1906	675 Dr	99	4	-----	62	37	G,S4	Pl	C	---	P	-----	Dd 34.8 ft pumping 2,100 gpm; L.
12D1	Indiana and Michigan Electric Co.	8-28-38	708 Dr	136	12	S; 20ft, 40sl, dia 11 1/2	111	24	G,S4	Pl	C	32	N	-----	Well SJ 2-34 (KS, 1948); L.
12D2	A. L. Cox Co., Inc.	5-20-40	708 Dr	135	12	S; 20ft	---	---	G	Pl	---	35	P,Ac	-----	Log well 12D9; well SJ 70-2 (KS, 1948).
12D3	Mr. Inapp	1938	708 Dr	160	---	-----	---	---	Sd,G	Pl	---	---	---	-----	Well SJ 15-1 (KS, 1948).
12D4	Palace Theater	1923	708 Dr	97	12	S; 20ft, 35sl, dia 10	95	47	Sd,G	Pl	C	28	---	-----	Void 125 gpm; well SJ 33 (KS, 1948).
12D5	Palais Royale	1923	708 Dr	139	12	-----	---	---	Sd,G	Pl	---	30	N	-----	Dd 75 ft pumping 500 gpm; observation well St. Joseph 6, water level measured 37.29 ft below lsd, 6-8-44; well SJ 22-1 (KS, 1948); L.
12D6	J. M. S. Building	1909	708 Dr	142	6	S	120	22	G,Sd	Pl	C	---	N	-----	Void 400 gpm; well SJ 22-2 (KS, 1948).
12D7	Palace Theater	8-39	708 Dr	149	12	S; 20ft	---	---	Sd,G	Pl	---	40	Ac	-----	Water level 26 ft below lsd, well SJ 35 (KS, 1948).
12D8	South Bend Tribune	5-21-41	708 Dr	135	12	S; 20ft, 40sl, dia 1 1/2	110	25	G	Pl	C	41	Ac	-----	Screens, upper 4 ft 90 g, middle 12 ft 80 g, lower 4 ft 60 g; well SJ 22-3 (KS, 1948).
12D9	Michiana Hotel	-----	708 Dr	138	12	S; 20ft, 30sl, dia 10	111	27	G,Sd	Pl	C	---	P,Ac	-----	Dd 11 ft after 2 hr pumping 800 gpm; see log well 12D9; well SJ 42 (KS, 1948).
12E1	South Bend Tribune	8-13-54	709 Dr	73	10	S; 9ft, 30sl, dia	22	53	Sd,G	Pl	U	22	---	-----	Water level 32 ft below lsd, 8-27-35; well SJ 44 (KS, 1948); L.
12E2	-----	8-20-54	709 Dr	55	8	S; 20ft, 30sl, dia	28	27	G,Sd	Pl	U	28	---	-----	For heat pump system; Ca, L.
12E3	Young Men's Christian Association	9-23-39	709 Dr	99	8	S; 15ft, 20g, dia 7 1/2	30	69	G,Sd	Pl	U	30	P	-----	Return well for heat pump system; see log well 12E1.
12E4	Indiana Bell	12-30-53	712 Dr	64	6	S; 13ft, 12sl, dia	33	31	Sd,G	Pl	U	33	I	-----	Dd 22 ft pumping 150 gpm; see log well 12E4; well SJ 79 (KS, 1948).
12E5	Telephone Co.	9-25-37	708 Dr	140	10	S; 9ft, 20sl, dia	83	37	Sd,G	Pl	C	38	N	-----	Dd 17 ft after 7 hr pumping 120 gpm; bedrock at 95 ft; L.
12E6	Davies Laundry and Cleaning Co.	8-19-37	710 Dr	129	8	S; 10ft, 25sl, dia 7 1/2	77	52	Sd,G	Pl	C	38	Ac	-----	Dd 14 ft pumping 150 gpm; well SJ 32 (KS, 1948); L.
12E7	J. C. Penny Co.	6-29-37	708 Dr	160	---	-----	---	---	---	---	---	---	T	-----	Dd 30 ft pumping 200 gpm; L.
12F1	Slicks Laundry and Dry Cleaning	2-26-38	706 Dr	128	12	S; 14ft	96	32	Sd,G	Pl	C	25	I	-----	Shale overlain by 110 ft clay; no water reported; well SJ 48 (KS, 1948).
12H1	Jefferson Medical Arts Building	5-7-59	704 Dr	110	6	S; 10ft	75	41	Sd,G	Pl	C	28	P	-----	Dd 5 ft pumping 180 gpm; water level 38 ft below lsd, 11-16-44; screen, upper 6 ft 15 sl, lower 6 ft 40 sl; well SJ 31 (KS, 1948); Ca, L.
12H2	Utility Ice and Supply Co.	4-27-34	703 Dr	92	6	S; 15ft, 20sl, dia 5 1/2	72	20	Sd	Pl	C	19	N	-----	Dd 12 ft after 4 hr pumping 200 gpm; Ca, L.
12H3	-----	2-6-45	703 Dr	94	6	S; 15ft, 15sl, dia 5 1/2	77	17	Sd,G	Pl	C	25	I	-----	Dd 10 ft pumping 300 gpm; water level 20 ft below lsd, 11-30-38; see log well 12H1; well SJ 66-1 (KS, 1948).
12K1	Haughton Elevator Co.	8-18-37	706 Dr	27	10	-----	---	---	---	---	---	---	---	-----	See log well 12H1; well SJ 66-; (KS, 1948); Ca.
12L1	Grand Trunk Railroad	8-17-20	711 Dr	121	6	S; 12ft, 20sl, dia 5 1/2	105	16	Sd	Pl	C	30	---	-----	For elevator shaft; clay overlain by 24 ft sand and gravel; well SJ 76 (KS, 1948).
12N1	Purmas Division, Borden Co.	1032	720 Dr	80	8	S	---	---	Sd,G	Pl	---	36	N	-----	Void 50 gpm; well SJ 84 (KS, 1948); L.

Table 2.--Records of wells and test holes in St. Joseph County, Indiana--Continued

Well	Owner	Driller	Date completed	Attitude (feet)	Type of well	Depth of well below land surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone				Type of pump and bore opener	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age		
37/2-1282	Furnas Division, Borden Co.	Indiana-Michigan Water Development Co.	2-24-38	728	Dr	73	8	S; 15ft, 20in. dia	---	54	Pl	U	T10	Dd 14 ft after 5 hr pumping 180 gpm; well SJ 41-2 (KS, 1948); L.
1283	-----do-----	-----do-----	6-15-45	728	Dr	74	10	S; 8ft, dia 9½	39	54, G	Pl	U	Da	Dd 12 ft pumping 90 gpm; screen, upper 4 ft 40 in, lower 4 ft 70 in; see log well 1282.
1284	City of South Bend	Austin Drilling Co.	3-27	722	Dr	100	---	-----	46	54, G	Pl	U	T	Bedrock at 98 ft; well SJ 8-24B (KS, 1948); L.
1285	Stuebaker Corp.	Layne-Northern Co., Inc.	8-31-53	725	Dr	95	8	-----	83	54, G	Pl	C	---	Bedrock at 85 ft; L.
1291	White Swan Laundry	-----do-----	-----	728	Dr	81	12	S; 17ft, 20in. dia 1½	---	54, G	Pl	C	---	Dd 35 ft pumping 140 gpm; observation well St. Joseph 10; water level measured 41.28 ft below land, 2-15-45; well SJ 34-1 (KS, 1948).
1292	-----do-----	Indiana-Michigan Water Development Co.	12-11-41	726	Dr	97	6	-----	64	G, Sd	Pl	C	---	Well SJ 34-T1 (KS, 1948); L.
1293	-----do-----	-----do-----	12-31-41	726	Dr	95	12	S; 15ft, 35in. dia 1½	65	G, Sd	Pl	C	---	Dd 9 ft pumping 180 gpm; see log well 1292; well SJ 34-2 (KS, 1948).
1294	-----do-----	-----do-----	4-24-47	726	Dr	97	12	S; 15ft, 15in. dia 1½	---	G, Sd	Pl	C	T15	Bedrock at 285 ft; well SJ 7-12 (KS, 1948); L.
1291	City of South Bend	Austin Drilling Co.	8-15-26	692	Dr	333	---	-----	40	Sd	Pl	C	---	See log well 1345.
1292	Fattore Co.	Layne-Northern Co., Inc.	7-15-50	690	Dr	63	12	-----	20	Sd, G	Pl	C	---	Bedrock at 150 ft; well SJ 8-8 (KS, 1948); L.
1293	City of South Bend	R. Kersoy	1-11	685	Dr	150	---	-----	---	Sd, G	Pl	---	---	Well SJ 80-1 (KS, 1948).
1301	South Bend Toy Manufacturing Co.	-----do-----	-----	723	Dr	84	8	S; 18ft, dia 6	---	Sd, G	Pl	---	---	
1302	-----do-----	Indiana-Michigan Water Development Co.	5-31-44	723	Dr	88	10	S; 15ft, 15in. dia 9½	39	Sd	Pl	U	T7-1/2	Dd 10 ft pumping 100 gpm; see log well 1302; well SJ 80-2 (KS, 1948).
1303	South Bend Ball Co.	Layne-Northern Co., Inc.	1- 5-36	719	Dr	75	8	S; 15ft, dia 7	36	Sd, G	Pl	U	T7	Dd 9 ft pumping 200 gpm; well SJ 17-1 (KS, 1948); L.
1304	Northern Indiana Public Service Co.	-----do-----	7-13-47	712	Dr	73	6	-----	32	Sd, G	Pl	U	---	See log well 1345.
1305	-----do-----	-----do-----	9-12-47	712	Dr	75	34	Op; S; 20ft, 105in. dia 18	34	Sd, G	Pl	U	T30	Dd 14 ft after 6.5 hr pumping 1,070 gpm; L.
1306	City of South Bend	Austin Drilling Co.	6-16-27	704	Dr	91	---	-----	20	Sd, G	Pl	U	---	Bedrock at 87 ft; well SJ 7-31 (KS, 1948); L.
1301	-----do-----	-----do-----	1929	726	Dr	102	---	-----	---	Sd, G	Pl	---	---	Bedrock at 87 ft; well SJ 8-1B (KS, 1948); L.
1301	Borden Co.	Layne-Northern Co., Inc.	1-23-35	732	Dr	58	8	-----	---	Sd, G	Pl	U	---	Violated 60 gpm; observation well St. Joseph 21; water level measured 36.85 ft below land, 2-1-46; see log well 1301; well SJ 10-1 (KS, 1948).
1302	-----do-----	Indiana-Michigan Water Development Co.	7- 1-37	732	Dr	45	12	S; 7ft, 40in. dia 1½	---	Sd, G	Pl	U	---	Dd 20 ft pumping 90 gpm; observation well St. Joseph 22; water level measured 36.41 ft below land, 1-26-46; well SJ 10-2 (KS, 1948); L.

37/2-13EJ	F. G. Hay	Indiana-Michigan Water Development Co.	4-25-41	733 Dr	137	6	S; 10ft, 20in, dia	---	---	---	Sd,G	Pl	U	---	Ac	J2	L.	
13E4	---do---	Savior Drilling Co.	1-20-55	733 Dr	84	4	S; 7ft, 80g, dia. 3	01	1	---	Sd	Pl	C	---	49 N	---	L.	
13H1	---do---	Indiana-Michigan Water Development Co.	1-27-56	718 Dr	86	10	---	---	---	---	Sd,G	Pl	C	---	31 I	T15	Dd 44 ft pumping 200 gpm; Ca.	
13H2	Reliable Dairy, Inc.	---do---	---	713 Dr	80	8	S; 15ft, 20in, dia	---	---	---	Sd,G	Pl	C	---	---	---	---	Dd 10 ft pumping 100 gpm; water level 27 ft below led, 1-23-31; well Sj 65-1 (KS, 1948).
13H3	---do---	Indiana-Michigan Water Development Co.	8-8-46	713 Dr	86	10	S; 13ft, 40in, dia	58	38	---	G,Sd	Pl	C	---	32 I	---	---	Dd 20 ft pumping 75 gpm; well Sj 65-2 (KS, 1948); Ca, L. See log well 13H8.
13H4	Northern Indiana Public Service Inc.	Layne-Northern Co., Inc.	8-13-47	714 Dr	121	8	---	47	74	---	Sd,G	Pl	C	---	23 T	---	---	Dd 14 ft after 8 hr pumping 240 gpm; well Sj 14-2 (KS, 1948); Ca, L.
13H5	---do---	---do---	9-27-37	713 Dr	70	12	S; 20ft, dia 10	37	51	---	Sd,G	Pl	C	---	17 I	T10	---	---
13H6	---do---	---do---	8-20-47	714 Dr	84	8	---	---	---	---	Sd,G	Pl	---	---	18 T	---	---	---
13H7	---do---	---do---	8-8-47	713 Dr	53	30	Gp; 8; 20ft, 105in, dia 10	---	---	---	Sd,G	Pl	---	---	22 N	---	---	Dd 18 ft pumping 350 gpm; see log well 13H6.
13H8	---do---	---do---	9-3-47	713 Dr	72	8	---	21	16	---	Sd,G	Pl	U	---	21 T	---	---	---
13H9	City of South Bond	Austin Drilling Co.	8-4-27	713 Dr	115	---	---	---	---	---	Sd,G	Pl	---	---	20 T	---	---	Water level 43 ft below led, 2-25-37; well Sj 75 (KS, 1948).
13M1	Bob Rans Wholesale Co.	---do---	---	742 Dr	58	10	S; 8ft, dia 8	---	---	---	Sd,G	Pl	---	---	---	---	---	---
13M2	---do---	Indiana-Michigan Water Development Co.	3-38	742 Dr	76	8	S; 20ft	46	30	---	Sd,G	Pl	C	---	40 N	---	---	Dd 28.5 ft pumping 93 gpm; water level measured 41 ft below led, 4-11-58; L. See log well 13M3; well Sj 47 (KS, 1948).
13M3	Pennsylvania Railroad Co.	Layne-Northern Co., Inc.	2-27	750 Dr	77	8	---	62	13	---	Sd,G	Pl	C	---	32 N	---	---	---
13M4	---do---	Indiana-Michigan Water Development Co.	10-30-48	750 Dr	80	10	S; 6ft, 80in, dia	73	7	---	G	Pl	C	---	40 N	---	---	Dd 24 ft pumping 100 gpm; L.
13N1	South Bond Tool & Die Co.	---do---	8-30-39	744 Dr	103	8	S; 15ft, 30in, dia	---	---	---	Sd,G	Pl	---	---	---	---	---	---
14A1	Studebaker Corp.	---do---	1927	727 Dr	65	10	S; dia 12	---	---	---	Sd,G	Pl	---	---	---	---	---	---
14A2	---do---	Indiana-Michigan Water Development Co.	3-19-37	727 Dr	65	12	S; 15ft, 30in, dia	29	35	---	Sd,G	Pl	U	---	29 I	T40	---	Dd 27 ft pumping 450 gpm; see log well 14A3; well Sj 24-6 (KS, 1948); Ca.
14A3	---do---	---do---	---	727 Dr	103	---	---	---	---	---	Sd,G	Pl	---	---	---	---	---	---
14A4	---do---	---do---	---	727 Dr	105	---	---	---	---	---	Sd,G	Pl	---	---	---	---	---	---
14A5	---do---	---do---	---	727 Dr	87	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A6	---do---	---do---	---	727 Dr	80	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A7	---do---	---do---	---	727 Dr	103	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A8	---do---	---do---	---	727 Dr	83	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A9	---do---	---do---	---	727 Dr	72	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A10	---do---	---do---	---	727 Dr	93	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A11	---do---	---do---	---	727 Dr	70	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A12	---do---	---do---	---	727 Dr	65	---	---	---	---	---	Sd	Pl	U	---	---	---	---	---
14A13	---do---	---do---	---	728 Dr	70	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A14	---do---	---do---	---	728 Dr	65	---	---	---	---	---	G,Sd	Pl	U	---	---	---	---	---
14A15	---do---	---do---	---	727 Dr	115	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A16	---do---	---do---	---	727 Dr	63	---	---	---	---	---	G	Pl	U	---	---	---	---	---
14A17	---do---	---do---	---	727 Dr	70	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14A18	---do---	---do---	---	727 Dr	70	---	---	---	---	---	Sd,G	Pl	U	---	---	---	---	---
14B1	Wilson Brothers	H. Halo	1900	720 Dr	79	12	S; 18ft, 50in, dia	---	---	---	Sd,G	Pl	U	---	28 N	---	---	---
14B2	---do---	Indiana-Michigan Water Development Co.	6-25-44	722 Dr	70	12	S; 18ft, 50in, dia	26	44	---	Sd,G	Pl	U	---	28 I	T15	---	Dd 15 ft after 3.5 hr pump- log 580 gpm; well Sj 29-2 (KS, 1948); Ca, L.

Table 2.--Records of wells and test holes in St. Joseph 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 era				
37/2-1483	City of South Bend	-----	-----	718	Dr	100	---	---	---	---	---	19	T	-----	Bedrock at 100 ft; well SJ 8-6B (KS, 1948); L; Well SJ 36 (KS, 1948).	
1481	N. P. Bowers Co.	Indiana-Michigan Water Development Co.	1937	719	Dr	77	6	---	---	---	---	25	I	J1	Well SJ 38 (KS, 1948). Bedrock at 146 ft; observation well St. Joseph 20; water level measured 18.32 ft below land, 3-8-45; well SJ 28-1 (KS, 1948). Dd 13.7 ft pumping 400 gpm; well SJ 24-9 (KS, 1948); Ca. Dd 16 ft pumping 770 gpm.	
1481	Sanders Lumber Co.	-----	1924	719	Dr	100	6	---	---	---	---	24	I	-----	Well SJ 24-T22 (KS, 1948); L; Well SJ 24-T19 (KS, 1948); L; See log well 1489; well SJ 24-T20 (KS, 1948).	
1481	Oliver Corp.	-----	1910	720	Dr	72	12	---	---	---	---	18	O	-----	See log well 1489; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1481	Studobaker Corp.	-----	5-28	729	Dr	58	38	S; 20ft. dia J2	---	---	---	31	I	740	Well SJ 8-1A (KS, 1948); L; Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948). Dd 7 ft pumping 125 gpm; see log well 1491; Well SJ 7-16 (KS, 1948); L.	
1482	-----	-----	6-28	729	Dr	58	32	S; 20ft	---	---	---	34	I	775	See log well 1491; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	728	Dr	82	---	---	---	---	---	---	T	---	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	730	Dr	120	---	---	---	---	---	---	T	---	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	730	Dr	78	---	---	---	---	---	---	T	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	728	Dr	65	---	---	---	---	---	---	T	---	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	730	Dr	60	---	---	---	---	---	---	T	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	730	Dr	80	5	S; 10ft. 40s1, dia 7 1/4	---	---	---	26	P	73	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	723	Dr	132	---	---	---	---	---	56	T	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	765	Dr	182	---	---	---	---	---	53	T	---	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	767	Dr	93	8	S; 20ft	---	---	---	---	N	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	767	Dr	94	8	S; 15ft, 80g. dia 7 1/4	---	---	---	70	I	---	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	768	Dr	155	---	---	---	---	---	70	T	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	710	Dr	170	---	---	---	---	---	90	T	---	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	717	Dr	159	12	S; 21ft. dia 11 1/2	---	---	---	50	T	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	717	Dr	193	6	---	---	---	---	12	T	---	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	717	Dr	171	38-20	GP; S; 40ft., 156s1, dia 28	---	---	---	19	P	750	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	717	Dr	186	38	GP; S; 40ft., 105s1, dia 26	---	---	---	18	P	7150	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	716	Dr	171	---	---	---	---	---	18	T	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	
1483	-----	-----	-----	718	Dr	108	38	GP; S; 40ft., 105s1, dia 26	---	---	---	19	P	7150	Bedrock at 147 ft; well SJ 8-10 (KS, 1948); L; Yield 150 gpm; well SJ 49 (KS, 1948).	
1483	-----	-----	-----	716	Dr	152	3-14	S; 6ft	---	---	---	118	O	---	See log well 1491; well SJ 24-T20 (KS, 1948); See log well 1484; well SJ 24-T21 (KS, 1948); See log well 1484; well SJ 24-T22 (KS, 1948). Yield 100 gpm; well SJ 25-2 (KS, 1948); L.	

Well No.	Company	Date	Dr.	172	8	15ft, dia 5 1/2	16	5d, G	Pl	P, I	T	Notes
1567	City of South Bend	4-11-58	717 Dr	172	8	15ft, dia 5 1/2	16	5d, G	Pl	16 P, I	T	See log well 15C3.
1568	Indiana-Michigan Development Co.	9-21-50	717 Dr	71	6	5; 15ft, dia 5 1/2	57	5d, G	Pl	16 P, I	T7	Dr 10 ft pumping 40 gpm; screen, upper 5 ft 30 in, lower 10 ft 20 in; C 178 ft; well bedrock at 178 ft; well SJ 5-5 (KS, 1948); L.
1569	City of South Bend	Before 1921	715 Dr	178	---	---	86	5d, G	Pl	12 T	T	Well SJ 5-5 (KS, 1948); L.
1570	City of South Bend	10-22-41	719 Dr	180	12	9; 18ft, 20ft, dia 10	---	5d, G	Pl	7	T	Dr 18 ft screen, hr pumping 320 gpm; well SJ 28-2 (KS, 1948); L.
1571	City of South Bend	---	717 Dr	88	---	---	---	5d	Pl	17 I	C40	Well SJ 6-2A (KS, 1948); L.
1572	City of South Bend	---	722 Dr	135	---	---	---	5d, G	Pl	---	T	Well SJ 6-2A (KS, 1948); L.
1573	City of South Bend	---	720 Dr	90	---	---	71	5d, G	Pl	9 T	T	See log well 15H1; well SJ 6-3A (KS, 1948); L.
1574	City of South Bend	Before 1921	718 Dr	173	---	---	63	5d, G	Pl	13 T	T	Well SJ 6-4A (KS, 1948); L.
1575	City of South Bend	1931	715 Dr	80	8	---	---	5d, G	Pl	---	O	Observation well St. Joseph; water level measured 14.32 ft below 1st, 2-20-45; well SJ 85 (KS, 1948); S, G.
1576	City of South Bend	10-30-36	712 Dr	102	8	5; 14ft, dia 7 1/2	85	5d, G	Pl	18 N	---	Dr 40 ft pumping 150 gpm; well SJ 78 (KS, 1948); L.
1577	City of South Bend	5-23-45	712 Dr	102	8	5; 15ft, 50ft, dia 7 1/2	76	5d	Pl	10 I	T10	Dr 5 ft pumping 100 gpm; 600 log well 16B3.
1578	City of South Bend	4-17-51	712 Dr	100	12	5; 18ft, 30ft	75	5d, G	Pl	14 I	T20	Ca, L.
1579	City of South Bend	3-2-39	712 Dr	108	8	5; 15ft, dia 7 1/2	90	5d, G	Pl	9 I	T10	Dr 12 ft pumping 150 gpm; well SJ 78 (KS, 1948); L.
1580	City of South Bend	5-7-48	712 Dr	115	10	9; 18ft, 18ft, dia 8 1/2	77	5d	Pl	12 I	T20	Dr 29 ft pumping 660 gpm; Ca, L.
1581	City of South Bend	11-6-37	713 Dr	170	---	---	81	5d, G	Pl	8 T	---	See log well 16G1; well SJ 11-17 (KS, 1948); L.
1582	City of South Bend	1-11-46	713 Dr	174	34	Op; 8; 20ft, 105ft, dia 18	108	5d, G	Pl	11 N	---	Dr 13 ft after 6 hr pumping 830 gpm; well SJ 11-1 (KS, 1948); L.
1583	City of South Bend	8-31	710 Dr	152	12	5	---	5d, G	Pl	---	N	Well SJ 63-1 (KS, 1948); L.
1584	City of South Bend	1-27-49	710 Dr	117	6	---	76	5d, G	Pl	3 T	---	See log well 16N2.
1585	City of South Bend	3-10-49	711 Dr	142	12	5; 20ft, 80ft, dia 10	76	5d, G	Pl	1 Ir	---	Dr 25 ft after 4 hr pumping 1,800 gpm; L.
1586	City of South Bend	11-4-44	710 Dr	152	3	5; 5ft, dia 1 1/2	128	5d, G	Pl	9 O	---	Observation well St. Joseph; water level measured 8.56 below 1st, 2-18-45; well SJ 4-12 (KS, 1948); L.
1587	City of South Bend	7-24-52	718 J	44	2	5; 3 1/2ft, 10ft, dia 1 1/2	38	5d	Pl	7 D	---	Ca, L.
1588	City of South Bend	1-18-54	717 J	52	2	5; 3ft, 60ft, dia 1 1/2	30	5d, G	Pl	30 D	---	See log well 17K1.
1589	City of South Bend	12-11-56	717 D	50	---	---	---	5d, G	Pl	---	T	See log well 17K1.
1590	City of South Bend	12-11-56	715 B	50	---	---	---	G, Sd	Pl	---	T	Gray sand overlain by 7 ft muck.
1591	City of South Bend	12-11-56	716 B	50	---	---	---	G, Sd	Pl	---	T	Gray sand overlain by 7 ft muck and fill.
1592	City of South Bend	2-15-57	710 B	50	---	---	---	5d	Pl	---	T	Gray sand overlain by 6 ft muck.
1593	City of South Bend	2-15-57	712 B	50	---	---	---	5d	Pl	---	T	Do.
1594	City of South Bend	2-15-57	714 B	50	---	---	---	5d	Pl	---	T	See log well 16B2.
1595	City of South Bend	8-27-56	709 B	50	---	---	---	5d	Pl	---	T	See log well 16B2.
1596	City of South Bend	8-27-56	742 B	50	---	---	---	5d	Pl	---	T	See log well 16B2.
1597	City of South Bend	8-27-56	740 B	50	---	---	---	5d	Pl	---	T	Yellow sand and gravel from 0-47 ft.
1598	City of South Bend	8-27-56	740 B	50	---	---	---	5d	Pl	---	T	See log well 16B2.
1599	City of South Bend	12-15-53	743 J	47	2	5; 3ft, 60ft, dia 1 1/2	30	5d, G	Pl	30 D	---	See log well 16B2.

Table 2.--Records of wells and test holes in St. Joseph 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				Use	Type of pump and horsepower	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age			
37/2-20P1	M. Blad	Layne-Northern Co., Inc.	1-7-49	714	Dr	53	8	S; 8ft, dia 7	---	Sd,G	P1	---	I	---	Dd 16 ft after 1.25 hr pumping 140 gpm; see log well 20P2.
20P2	---	---	0-13-37	716	Dr	68	12	S; 20ft, 105gal	6	Sd,G	P1	U	I	---	Dd 21.2 ft after 2 hr pumping 550 gpm; Ca, L.
20P3	---	---	5-30-46	716	Dr	65	12	S; 20ft, 80gal, dia 10	5	Sd,G	P1	U	I	T25	Dd 20 ft after 3 hr pumping 560 gpm; see log well 20P2. Gray sand overlain by 4 ft muck.
21D1	Indiana State Highway Department	---	5-23-57	714	B	50	---	---	---	Sd	P1	U	T	---	---
21D2	---	---	5-23-57	714	D	50	---	---	---	Sd	P1	---	T	---	L.
21D3	---	---	5-23-57	717	B	50	---	---	---	Sd	P1	---	T	---	See log well 21D2.
21E1	---	---	5-23-57	714	B	50	---	---	---	Sd	P1	---	T	---	Do.
21F1	M. Blad	Layne-Northern Co., Inc.	9-2-47	721	Dr	86	8	---	---	Sd	P1	---	T	---	L.
21F2	---	---	1-28-48	721	Dr	51	30	Gp; S; 20ft, 105gal, dia 12	---	Sd	P1	---	Iv	T	Dd 30.5 ft after 6 hr pumping 830 gpm; L.
21K1	Indiana State Highway Department	---	11-18-56	777	D	50	---	---	---	---	---	---	T	---	L.
21K2	---	---	11-18-56	771	B	50	---	---	---	---	---	---	T	---	See log well 21K1.
21K3	---	---	11-18-56	772	B	50	---	---	---	---	---	---	T	---	Do.
21K4	---	---	11-18-56	772	B	50	---	---	---	---	---	---	T	---	Do.
21K5	---	---	11-18-56	773	B	50	---	---	---	---	---	---	T	---	Do.
21P1	E. Lonzo	Srivor Drilling Co.	7-23-56	778	J	71	21	S; 5ft, 60g, dia 1 1/2	52	Sd,G	P1	U	D	---	Yellow sand and gravel overlain by 15 ft Gray sand; Ca.
21R1	M. Juhau	---	8-27-48	775	J	76	2	S; 2 1/2 ft, 80g, dia 1 1/2	---	Sd	P1	---	D	---	---
21R2	J. Wozniak	---	4-17-48	780	J	78	2	S; 3ft, 60g, dia 1 1/2	57	G,Sd	P1	U	D	---	Gravel and sand overlain by 40 ft clay.
21R3	L. Wozniak	---	12-2-53	781	J	101	2 1/2	S; 5ft, 60g, dia 1 1/2	90	Sd	P1	C	D	---	Ca, L.
22C1	B. and B. Wilczak	---	4-3-43	760	J	56	2	S; 3ft, 60g, dia 1 1/2	42	Sd,G	P1	U	D	---	Sand and gravel from 0-56 ft.
22C2	E. S. Earl	---	1-9-48	760	J	65	2	---	44	Sd,G	P1	U	D	---	L.
22C3	J. Jovanich	---	7-23-56	738	J	57	2	S; 3 1/2 ft, 60g, dia 1 1/2	40	Sd	P1	C	D	J1/2	L.
22E1	F. H. Bouchard	---	8-12-54	755	J	39	2	S; 3ft, 00g, dia 1 1/2	26	Sd,G	P1	U	D	J1/3	Sand and gravel overlain by 16 ft gray clay.
22G1	City of South Bond	Indiana-Michigan Water Development Co.	8-10-36	784	Dr	102	4	S; 5ft, 16gal	95	G	P1	C	P	J1	Dd 40 ft pumping 100 gpm; Ca, L.
22G2	C. Dunlap	Srivor Drilling Co.	3-10-48	770	J	50	2	S; 3ft, 60g, dia 1 1/2	---	Sd,G	P1	---	D	---	---
22G3	---	---	5-27-48	770	J	50	2	---	---	Sd,G	P1	---	D	---	---
22G4	---	---	8-19-48	770	J	82	2	---	---	Sd,G	P1	---	D	---	---
22K1	F. Powell	---	7-30	785	J	102	2	S; 3 1/2 ft, 60g, dia 1 1/2	02	Sd,G	P1	C	D	---	See log well 22G1.
22P1	W. Sannon	---	---	820	J	122	2	S; 3 1/2 ft, 10gal, dia 1 1/2	115	Sd	P1	C	D	J1	L.
22P2	H. Kink	---	9-3-54	821	J	137	2	S; 3 1/2 ft, 60g, dia 1 1/2	133	Sd	P1	C	D	J1	Ca, L.
22P3	C. Dunlap	---	2-18-52	817	J	111	3	S; 3ft, 10gal, dia 2	101	Sd	P1	C	D	---	Red sand overlain by 101 ft clay and blue gravel.
22Q1	J. Kochanowski	---	---	810	J	112	2	S; 3ft, 60g, dia 1 1/2	---	Sd	P1	---	D	---	---
23D1	City of South Bond	Layne-Northern Co., Inc.	2-23-55	803	Dr	192	6	---	102	Sd,G	P1	C	T	---	Bedrock at 180 ft; L.

Well No.	City of South Band	Company	Date	805 Dr	138	34	Op; S; dia	98	40	Sd,G	P1	C	P	82	P	7100	Description
2372-23D2	City of South Band	Layne-Northern Co., Inc.	7-5-55	805 Dr	138	34	Op; S; 40ft, 80e1, dia 18	98	40	Sd,G	P1	C	P	82	P	7100	Dd 16.2 ft after 8 hr pumping 1,040 gpm; see log well 23D1; Ca.
23H1	do	Austin Drilling Co.	5-27-27	751 Dr	86	---	---	9	73	Sd,G	P1	U	T	9	T	---	Well SJ 7-29 (KS, 1948); L.
23Q1	do	do	4-21-27	701 Dr	160	---	---	22	94	Sd,G	P1	U	T	22	T	---	Well SJ 7-26 (KS, 1948); L.
23R1	do	Layne-Northern Co., Inc.	8-27-41	780 Dr	116	---	---	50	84	Sd,G	P1	U	T	50	T	---	Well SJ 3-T1 (KS, 1948); L.
23R2	do	do	4-16-42	790 Dr	109	38-18	Op; S; 25ft, 130e1, dia 18	77	72	Sd	P1	C	P	46	P	775	Dd 14 ft after 11 hr pumping 1,110 gpm; water level measured 51.5 ft below lad, 3-5-45; well SJ 3-4 (KS, 1948); L. See log well 23R4.
23R3	do	do	4-5-49	778 Dr	110	8-4	---	37	84	Sd,G	P1	U	T	37	T	---	L.
23R4	do	do	4-11-49	775 Dr	105	8-8	---	36	68	Sd,G	P1	U	T	36	T	---	L.
23R5	do	do	8-30-49	775 Dr	100	34	Op; S; 25ft, 80e1, dia 18	---	---	Sd,G	P1	---	P	40	P	760	Dd 19.5 ft after 8.5 hr pumping 1,050 gpm; see log well 23R4.
23R6	do	Austin Drilling Co.	1929	772 Dr	---	24-16	---	---	---	Sd,G	P1	---	N	38	N	---	Dd 24.3 ft pumping 950 gpm; water level 38.20 ft below lad, 8-11-41; well SJ 3-3 (KS, 1948).
23R7	do	do	1929	768 Dr	90	24-16	---	40	50	Sd,G	P1	U	P	40	P	---	Dd 19.3 ft pumping 1,420 gpm; water level measured 37.14 ft below lad, 3-5-45; see log well 23R4; well SJ 3-2 (KS, 1948).
23R8	do	do	1929	772 Dr	---	24-18	---	---	---	Sd,G	P1	---	P	40	P	---	Dd 12 ft pumping 950 gpm; water level 39.95 ft below lad, 8-11-41; well SJ 3-1 (KS, 1948).
24C1	Victoria Motors	Silver Drilling Co.	4-2-54	747 J	45	2	S; 3ft, 10e1, dia 1 1/2	35	10	Sd,G	P1	C	---	20	---	J	For fishing bait; Ca, L.
24D1	City of South Band	Austin Drilling Co.	8-24-26	759 Dr	205	---	---	27	58	Sd,G	P1	U	T	27	T	---	Bedrock at 195 ft; well SJ 7-15 (KS, 1948); L. See log well 24D1; well SJ 7-17 (KS, 1948).
24D2	do	do	10-8-26	759 Dr	205	---	S; 20ft	---	---	Sd,G	P1	---	T	---	T	---	Bedrock at 128 ft; well SJ 7-24 (KS, 1948); L.
24D3	do	do	3-18-27	740 Dr	129	---	---	11	59	G,Sd	P1	U	T	11	T	---	Bedrock at 122 ft; well SJ 7-24 (KS, 1948); L.
24E1	do	Boysie	1911	750 Dr	122	10	---	110	12	G	P1	C	T	4	T	---	Bedrock at 122 ft; well SJ 8-9 (KS, 1948); L. See log well 24D1; well SJ 7-28 (KS, 1948).
24E2	do	Austin Drilling Co.	5-23-27	749 Dr	83	---	---	---	81	Sd,G	P1	---	T	11	T	---	Bedrock at 180 ft; well SJ 7-20 (KS, 1948); L.
24F1	do	Gray Drilling Co.	12-20-28	788 Dr	185	---	---	---	25	G,Sd	P1	C	D	68	D	JJ/4	Bedrock at 180 ft; well SJ 7-20 (KS, 1948); L. Sand overlain by 80 ft gravel; Ca.
24K1	P. H. Copeland	Silver Drilling Co.	9-9-53	813 J	93	2	S; 3ft, 60g, dia 1 1/2	68	25	Sd,G	P1	C	D	68	D	---	Bedrock at 185 ft; well SJ 7-21 (KS, 1948); L. Sand and gravel from 0-58 ft.
24L1	City of South Band	Gray Drilling Co.	1-17-27	802 Dr	200	---	---	---	---	Sd	P1	---	T	---	T	---	Bedrock at 180 ft; well SJ 7-21 (KS, 1948); L. Sand and gravel from 0-109 ft.
24N1	Super Auto Salvage	Silver Drilling Co.	5-7-51	805 J	58	2	S; 3ft, 60g, dia 1 1/2	38	20	Sd,G	P1	V	---	38	---	---	Bedrock at 180 ft; well SJ 6-3K (KS, 1948); L.
25A1	City of South Band	R. Korsey	8-1-28	706 Dr	185	---	---	92	33	Sd	P1	V	---	92	T	---	Bedrock at 180 ft; well SJ 6-3K (KS, 1948); L.
25D1	do	do	---	813 J	82	2	S; 4ft, 60g, dia 1 1/2	---	---	Sd	P1	---	D	68	D	J1	Bedrock at 180 ft; well SJ 6-3K (KS, 1948); L.
25E1	J. Jones	Silver Drilling Co.	8-30-17	836 J	131	2	S; 3ft, 60g, dia 1 1/2	92	38	Sd,G	P1	V	D	92	D	---	Sand and gravel from 0-131 ft.
25E2	E. Lukas	do	9-10-52	830 J	109	2	S; 3ft, 60g, dia 1 1/2	88	20	Sd,G	P1	V	D	89	D	---	Sand and gravel from 0-109 ft.
25E3	W. Rock	do	1-8-51	825 J	133	3	S; 6ft, 80g, dia 2	---	---	Sd,G	P1	V	---	96	---	J1-1/2	Yellow sand and gravel overlain by 10 ft blue clay.
25E4	Standard Oil Co.	do	7-20-53	832 J	131	3	S; 5ft, 80g, dia 2	72	50	Sd,G	P1	V	---	72	P	---	Ca, L.
25E5	W. Rock	Silver Drilling Co.	9-13-57	832 J	77	2	S; 4ft, 80g, dia 1 1/2	94	25	Sd	P1	V	D	94	D	J1	Sand and gravel from 0-94 ft.
25E8	J. Roth	Silver Drilling Co.	---	846 J	119	2	S; 3ft, 60g, dia 1 1/2	---	---	Sd	P1	V	---	94	D	J1	Sand and gravel from 0-94 ft.
25F1	R. W. Maurice	do	11-5-49	824 J	94	2	---	77	17	Sd,G	P1	V	D	77	D	---	L.
25H1	City of South Band	Layne-Northern Co., Inc.	8-17-54	843 Dr	185	4	---	---	---	G,Sd	P1	---	T	86	T	---	See log well 25H1; Ca.
25H2	do	do	12-21-54	843 Dr	175	34	S; 40ft, 80e1, dia 16	87	88	G,Sd	P1	V	P	87	P	760	Dd 14 ft after 3 hr pumping 850 gpm; see log well 25H1; Ca.

Table 2.--Records of wells and test holes in St. Joseph 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				Use	Type of pump and horsepower	Remarks	
									Depth to top (feet)	Thickness (feet)	Character	Geologic age				Conditions of occurrence
37/2-25K1	G. Palmer	Srifer Drilling Co.	12- 8-54	837 J	J	125	3	S; 5ft, 60g, dia 2	84	11	Sd, G	P1	U	84	J	Sand and gravel from 0-125 ft; Ca. Yield 30 gpm; well S3 43 (KS, 1948); L.
25K2	L. F. Sumrall	Layne-Northern Co., Inc.	10-25-44	848 Dr	Dr	144	6	S; 8ft, dia 5	92	52	Sd, G	P1	U	92	D	Sand and gravel from 0-114 ft.
25K3	Z. H. Robinson	Srifer Drilling Co.	8- 3-55	833 J	J	114	2 1/2	S; 5ft, 60g, dia 1 1/2	83	31	Sd, G	P1	U	83	D	Sand and gravel from 0-112 ft.
25L1	R. Albert	-----	8-28-46	831 J	J	110	2	S; 3ft, 60g, dia 1 1/2	92	30	Sd, G	P1	U	92	D	-----
25L2	J. Darlakovich	-----	8-22-52	847 J	J	112	2	S; 5ft, 60g, dia 2	72	49	Sd, G	P1	U	72	D	-----
25L3	D. A. Row	-----	8-23-52	851 J	J	116	2	S; 10ft, dia 4	77	18	Sd, G	P1	U	77	D	-----
25L4	Michiana Realty Co.	Layne-Northern Co., Inc.	7- 9-54	833 Dr	Dr	121	6	S; 10ft, dia 4	60	20	Sd, G	P1	U	60	D	-----
25K1	P. Nash	-----	7-23-52	835 J	J	82	2	S; 3ft, 60g, dia 1 1/2	62	15	Sd, G	P1	U	62	D	-----
25K2	-----	Srifer Drilling Co.	8- 5-52	820 J	J	86	2	S; 3ft, 60g, dia 1 1/2	65	29	Sd, G	P1	U	65	D	-----
25N1	C. Hasler	-----	6-24-46	820 J	J	70	2	S; 3ft, 60g, dia 1 1/2	63	31	Sd, G	P1	U	63	D	-----
25N2	Mr. Krueer	-----	10-21-46	820 J	J	92	2 1/2	S; 3ft, 60g, dia 1 1/2	72	15	Sd, G	P1	U	72	D	-----
25N3	Mr. Fabyan	-----	11-17-52	820 J	J	94	2 1/2	-----do-----	58	29	Sd, G	P1	U	58	D	-----
25N4	F. Fuzekas	-----	-----	-----	-----	-----	-----	-----	59	-----	Sd, G	P1	-----	59	D	-----
25N5	P. Woodcox	-----	6-18-54	825 J	J	87	2	S; 3ft, 60g, dia 1 1/2	-----	-----	-----	-----	-----	-----	-----	-----
25N6	L. Stokes	-----	-----	822 J	J	97	3	S; 5ft, 60g, dia 2	-----	-----	-----	-----	-----	-----	-----	-----
25N7	D. Fuqua	-----	7-22-54	820 J	J	75	2	S; 3ft, 60g, dia 1 1/2	-----	-----	-----	-----	-----	-----	-----	-----
25N8	Indiana State Highway Department	-----	4-13-57	819 B	B	29	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
25N9	-----	-----	4-13-57	821 B	B	28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
25N10	-----	-----	4-13-57	821 B	B	29	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
25N11	-----	-----	3- 1-49	835 J	J	95	2	S; 3ft, 60g, dia 1 1/2	84	14	Sd, G	P1	U	84	D	-----
25P1	E. V. D. Korps	Srifer Drilling Co.	10- 2-54	835 J	J	94	2 1/2	S; 5ft, 60g, dia 1 1/2	80	14	Sd, G	P1	U	80	D	-----
25P2	R. W. Britton	-----	6-27-51	830 J	J	103	2	S; 3ft, 60g, dia 1 1/2	84	19	Sd, G	P1	U	84	D	-----
25P3	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
25P4	J. W. Majewski	-----	2-11-54	845 J	J	111	2 1/2	S; 6ft, 60g, dia 1 1/2	90	21	Sd, G	P1	U	90	D	-----
26A1	Royal Rubber Co.	Indiana-Michigan Water Co.	1-21-53	780 Dr	Dr	113	6	S; 10ft, 60g, dia 3 1/2	30	83	Sd, G	P1	U	30	I	-----
26B1	H. L. Sibly	Srifer Drilling Co.	-----	705 J	J	86	2	S; 3ft, 60g, dia 1 1/2	56	30	Sd, G	P1	U	56	D	-----
26C1	City of South Bend	Austin Drilling Co.	5- 6-27	802 Dr	Dr	165	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
26E1	F. N. Plala	Srifer Drilling Co.	9-12-51	615 J	J	92	2	S; 4 1/2ft, 10g, dia 1 1/2	80	12	Sd	P1	C	78	D	-----
26E2	F. Barker	-----	6-11-57	835 J	J	118	2 1/2	S; 5ft, 60g, dia 1 1/2	100	18	Sd, G	P1	U	100	D	-----
26F1	A. C. Fuitt	-----	4-28-48	812 J	J	77	2	S; 3ft, 60g, dia 1 1/2	82	15	Sd, G	P1	U	82	D	-----
26H1	J. Edwards	-----	6-30-48	838 J	J	109	2	-----do-----	43	86	Sd, G	P1	U	43	I	-----
26J1	Sealtost Corp.	Layne-Northern Co., Inc.	12-17-59	808 Dr	Dr	106	6	S; 10ft, 20g, dia 1 1/2	43	86	Sd, G	P1	U	43	I	-----
26K1	G. F. Burnett Co.	Indiana-Michigan Water Development Co.	4- 5-49	780 Dr	Dr	93	6	S; 10ft, 20g, dia 1 1/2	28	05	Sd, G	P1	U	28	I	-----

Well No.	Company	Location	Date	Dr	118	B	S; 15ft, 15x1, dia 7 1/2	60	58	SD, G	PI	C	43	P	T	T7-1/2	Remarks
37/2-2612	Sinclair Refining Co.	Indiana-Michigan Water Development Co.	0-27-46	800	118												Dr 10 ft pumping 60 gpm; Ca, L.
2612	Indiana State Highway Department		3- 6-57	797 D	50												L.
2613			3- 6-57	803 B	50												See log well 26P1.
26M1			11-28-58	803 B	50												L.
26M2			11-28-58	803 B	50												See log well 26M1.
26M3			11-28-58	803 B	50												See log well 26M1.
26M4			11-28-58	808 B	50												See log well 26M3.
26P1			3- 6-57	813 B	50												See log well 26P1.
26P2			5- 8-57	787 D	50												See log well 26P1.
26P3			5- 8-57	785 B	50												See log well 26L2.
2701	T. Baaty	Praver Drilling Co.	8- 2-46	803 J	102	2	3; 3 1/2 ft, 60g, dia 1 1/2			SD	PI		62	D			Gray clay overlain by 30 ft brown sand.
27F1	Indiana State Highway Department		11-28-58	799 B	50												Gray clay overlain by 27 ft brown sand.
27F2			11-28-58	788 D	50												Gray clay overlain by 30 ft brown sand.
27G1	R. Berkhoiser	Praver Drilling Co.	7-10-52	815 J	110	2	3; 3 1/2 ft, 60g, dia 1			SD	PI		82	D			Gray clay overlain by 30 ft brown sand.
27G2	Indiana State Highway Department		11-28-58	802 B	50												Gray clay overlain by 30 ft brown sand.
27G3			11-28-58	799 B	50												Gray clay overlain by 18 ft brown sand.
27G4			11-28-58	797 D	50												Gray clay overlain by 17 ft brown sand.
27J1			11-28-58	806 B	50												See log well 26M3.
27J2			11-28-58	807 B	50												Do.
27J3			11-28-58	809 B	50												Do.
27J4			11-28-58	805 B	50												See log well 26M1.
27J5			11-28-58	805 D	50												See log well 26P1.
27J6			11-28-58	806 B	50												L.
27J7			10-12-50	789 B	50												L.
27J8			10-12-50	787 B	50												L.
27J9			10-12-58	801 B	50												L.
27J10			10-12-58	800 B	50												L.
27K1	A. Datcho	Praver Drilling Co.	4-20-51	799 J	92	J	3; 3 ft, 60g, dia 2			SD, G	PI		58	D	J1		Gray clay overlain by 18 ft brown sand.
27K2	R. Kalish		8-10-58	803 J	94	2	3; 4 ft, 60g, dia 1	70	24	SD	PI		80	D	L		Gray clay overlain by 17 ft brown sand.
27K3	S. Nemes		1950	810 J	103	J	3; 6 ft, 60g, dia 2	85	18	SD, G	PI		88	D	L		See log well 26P1.
27K4	Indiana State Highway Department		10-12-50	798 B	50												L.
27L1	J. Marisch	Praver Drilling Co.		798 J	93	2	3; 3 1/2 ft, 10x1, dia 1 1/2	70	23	SD, G	PI		53	D	J3/4		Ca, L.
27M1	E. Kobor		7-23-47	840 J	130	2	3; 4 ft, 60g, dia 1			SD, G	PI		90	D			Ca, L
27M2	W. Smith			840 J	149	2	3; 3 1/2 ft, 60g, dia 1 1/2	120	28	SD, G	PI		114	D	J1		Ca, L
27N1	C. Bennett		7-27-57		101	4	3; 7 1/2 ft, 60g, dia 3			SD	PI		67	D			L.
27P1	C. W. Anderson		12- 8-40		114	3	3; 5 ft, 60g, dia 2	70	44	SD, G	PI		90	D	L		L.
28A1	J. Miko		9- 2-46	775 J	94	2	3; 2 1/2 ft, 60g, dia 1 1/2			SD	PI		50	D			L.
28C1	A. Molnar		10-28-48	777 J	78	3	3; 3 ft, 60g, dia 2			SD, G	PI		54	D			Ca, L.
28E1	H. Korrja		6-19-53	805 J	158	2	3; 3 1/2 ft, 10x1, dia 1 1/2	95	63	SD, G	PI		91	D	J3/4		Ca, L.
28F1	H. J. Kindl		3- 7-48	782 J	70	2	3; 3 ft, 60g, dia 1 1/2			SD, G	PI		58	D			
28F2	M. D. Johnson		8-10-55	782 J	110	J	3; 6 ft, 60g, dia 2			SD	PI		72	D			
28F3	E. L. Rungesser		8-12-48	785 J	82	2	3; 3 ft, 60g, dia 1 1/2			SD	PI		52	D			
28G1	W. Ruszkowski			773 J	81	2	do	71	10	SD	PI		56	D, 5			L.
28G2	S. Sabo			800 J	90	2	3; 3 1/2 ft, 10x1, dia 1 1/2			SD, G	PI		56	D	J		
28G3	C. E. Trombrado			800 J	130	2	3; 3 1/2 ft, 60g, dia 1 1/2			SD, G	PI		87	D			Yellow sand overlain by 11 1/2 ft sand and blue clay.
28G4	D. Golichowski	Praver Drilling Co.	7-12-50	810 J	128	J	3; 5 1/2 ft, 80g, dia 1 1/2			SD	PI		101	D	J1-1/2		
28J1	G. Parkins		7- 8-55	830 J	120	J	3; 5 ft, 60g, dia 2	80	40	SD, G	PI		80	D			L.
28J2	F. Savole			830 J	101	2	3; 6 ft, 60g, dia 2	80	21	SD, G	PI		78	D	J1		L.
28K1	E. Hartz		3-20-48	815 J	112	2	3; 3 ft, 60g, dia 1 1/2			SD, G	PI		86	D			L.

Table 2.--Records of wells and test holes in St. Joseph 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	Conditions of occurrence				
37/2-28X2	S. H. Saith	Srivor Drilling Co.	10-10-53	800 J	800 J	68	2	S; 3/4ft., 60g., dia 1 1/2	8	Sd.G	P1	C	30	J	J	L. Yield 10 gpm; gravel overlain by 30 ft sand, yellow sand and gravel from 0-87 ft.	
28B1	V. Chlebek	R. Reddick	8-12-57	717 J	45	2	S; 3/4ft., 60g., dia 1 1/2	33	Sd.G	P1	U	U	12	D		Yellow sand and gravel from 0-87 ft.	
28B2	C. Guar	Srivor Drilling Co.	9-21-50	725 J	67	2	S; 3/4ft., 60g., dia 1 1/2	43	Sd.G	P1	U	U	24	D		Yellow sand and gravel from 0-112 ft.	
28B3	C. Bailly		8-20-56	727 J	112	2	S; 3/4ft., 10s1., dia 1 1/2	99	Sd.G	P1	U	U	13	D		Yellow sand and gravel from 0-87 ft.	
28B4	M. Fox			727 J	67	2	S; 3/4ft., 60g., dia 1 1/2	43	Sd.G	P1	U	U	24	D	J1/2		Sand and gravel from 0-48 ft; Ca.
28C1	X. Mattheys		9-4-52	726 J	48	2	S; 3/4ft., 80g., dia 1 1/2	36	Sd.G	P1	U	U	12	D		L.	
28C2	M. L. Strong		10-28-52	730 J	63	2	S; 4ft., 80g., dia 1 1/2	39	G	P1	C	C	10	D		L.	
28D1	X. Blad	Layne-Northern Co., Inc.	10-28-53	710 Dr	171	6		121					15	T		L.	
28F1	K. Landman	Srivor Drilling Co.	6-25-52	740 J	72	2	S; 3/4ft., 10s1., dia 1 1/2	18	Sd	P1	C	C	26	D		L.	
28F2	K. Naragon		9-3-53	741 J	68	3	S; 5ft., 60g., dia 2 1/2	19	Sd	P1	C	C	26	D		See log well 28F1; Ca.	
28F3	R. D. Strycker		7-10-50	732 Dr	23	1 1/2	S; 3/4ft., 60g., dia 1 1/2		Sd	P1	D	D	8	D		Ca.	
28G1	L. H. Hartia			742 J	54	2	S; 3/4ft., 80g., dia 1 1/2		Sd	P1			22	D	J3/4		
28J1	Indiana Farm Bureau Co-Operative Association, Inc.		6-10-54	740 J	107	2	S; 3/4ft., 60g., dia 1 1/2	7	Sd.G	P1	C	C	20	N		Ca, L.	
28J2	O. D. Kessler		11-15-54	738 J	150	2		4	Sd.G	P1	C	C	20	P	J3/4	Ca, L.	
28K1			5-22-46	752 J	55	2	S; 3/4ft., 80g., dia 1 1/2		Sd.G	P1			38	D			
28K2			12-6-47	752 J	59	2	S; 3/4ft., 80g., dia 1 1/2	16	Sd.G	P1	U	U	43	D		Sand and gravel from 0-38 ft.	
28L1	A. Dudeck			748 J	50	2	S; 3/4ft., 60g., dia 1 1/2		Sd	P1			38	D			
28L2	R. Livengood			748 J	39	2	S; 3/4ft., 60g., dia 1 1/2		Sd	P1			30	D			
28L3	R. Yoder			752 J	58	2	S; 4ft., 80g., dia 1 1/2		Sd	P1			38	D	J		
28L4	D. Worthington			752 J	88	2			Sd	P1			36	D			
28L5	C. A. Newman	Srivor Drilling Co.	6-24-52	752 J	54	2	S		Sd.G	P1			44	D	J3/4		
28P1	R. H. Dreyer		6-50	785 J	60	2	S; 2ft., 10s1	43	Sd.G	P1	U	U	10	P, I	C5	Sand and gravel from 0-60 ft.	
30Q1	Illness Concrete Products Co.	Remeland Well Co.		720 J	50	J			Sd.G	P1	U	U	10	P, I			
30R1	L. Kelly			745 J	53	2	S; 3/4ft., 80g., dia 1 1/2		Sd	P1			38	D			
31A1	Western Indiana Sand and Gravel Co.	Woody and Keal Well Drilling Co.	8-11-59	750 J	77	2			Sd	P1			36	P		Yield 10 gpm; Ca, L.	
31B1	G. J. Snyder	Srivor Drilling Co.	10-10-46	750 Dr	70	4	S; 6ft., 60g., dia 2 1/2	40	Sd.G	P1	U	U	32	D	J3	Sand and gravel from 0-48 ft.	
31C1	J. Lichtenbarger		8-28-48	755 J	67	2	S; 3/4ft., 60g., dia 1 1/2	27	Sd.G	P1	U	U	42	D	J1/2	Sand and gravel from 0-87 ft.	
32B1	E. Luke		6-50	765 J	61	2		25	Sd.G	P1	U	U	24	D		Sand and gravel from 0-61 ft.	
32F1	E. Luke		12-3-43	765 J	54	2		21	Sd.G	P1	U	U	23	D		Sand and gravel from 0-87 ft; Ca.	
32G1	M. Ott	Srivor Drilling Co.		780 J	57	2	S; 3/4ft., 80g., dia 1 1/2	21	Sd.G	P1	U	U	46	D	J1/2		

37/2-3202	L. Kline	Driver Drilling Co.	1-18-56	780 J	62	2	S: 5ft, 60g, dia 1 1/2	44	Sd.G	Pl	U	D	-----	Sand and Gravel from 0-82 ft. Sand from 0-60 ft. Ca, L.
3203	L. Wolborn	-----do-----	10-19-53	780 J	60	2	S: 3ft, 60g, dia 1 1/2	44	Sd	Pl	U	44 D	-----	Sand and Gravel from 0-82 ft. Sand from 0-60 ft. Ca, L.
3204	M. C. Lake	-----do-----	9-23-50	770 J	71	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	Sd.G	Pl	U	26 D, 1	J1/2	Ca, L.
3205	Sumption Prairie Cemetery	-----do-----	-----	770 J	60	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	Sd	Pl	U	9	P	Ca.
3206	G. A. Penning	Driver Drilling Co.	6-30-53	780 J	75	2	S: 4 1/2 ft, 60g, dia 1 1/2	48	Sd	Pl	C	48 D	J1/2	L.
3207	C. Walgumath	-----do-----	-----	825 J	142	2	S: 3 1/2 ft, 60g, dia 1 1/2	130	Sd	Pl	C	84 D	L	L.
3208	L. R. Millock	-----do-----	-----	825 J	148	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	G	Pl	C	86 D	-----	Ca, L.
3209	O. Treash	-----do-----	5-31-45	810 J	138	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	Sd	Pl	C	75 D	J1	Ca, L.
3210	W. E. Johnson	-----do-----	6-15-55	810 J	138	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	Sd	Pl	C	75 D	J1	Ca, L.
3211	R. Pletcher	-----do-----	12-6-45	810 J	147	2	S: 4 ft, 60g, dia 1 1/2	145	Sd.G	Pl	C	82 D	L3/2	Fine sand overlain by 145 ft blue clay
3212	E. L. Hedman	-----do-----	9-29-51	810 J	150	2	S: 4 ft, 60g, dia 1 1/2	---	Sd	Pl	C	94 D	J1	L.
3213	F. Kohn	-----do-----	-----	810 J	65	2	S: 4 1/2 ft, 60g, dia 1 1/2	31	Sd.G	Pl	U	31 D	J	L.
3214	E. J. Kish	-----do-----	0-17-45	820 J	119	2	S: 3 1/2 ft, 60g, dia 1 1/2	80	Sd.G	Pl	U	80	L3/4	L.
3215	D. F. Ruddleston	-----do-----	-----	820 J	160	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	Sd	Pl	U	80 D	J1	Ca.
3216	T. Morgan	Driver Drilling Co.	11-18-46	820 J	128	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	G.Sd	Pl	C	81 D	J1	Ca, L.
3217	P. Retruck	-----do-----	9-17-53	820 J	153	2	S: 3 1/2 ft, 60g, dia 1 1/2	120	Sd	Pl	C	82 D, S	J3/4	Ca, L.
3218	A. Horvath	-----do-----	8-23-46	810 J	110	2	S: 2 1/2 ft, 60g, dia 1 1/2	---	Sd	Pl	C	56 D	-----	L.
3219	M. Kovatch	-----do-----	5-14-53	815 J	81	2	S: 3 ft, 60g, dia 2	68	Sd.G	Pl	C	84 D	J3/4	L.
3220	F. Berkowski	-----do-----	-----	805 J	79	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	Sd	Pl	C	90 D	-----	L.
3221	H. C. Studobaker	-----do-----	-----	850 J	140	2	S: 4 ft, 60g, dia 1 1/2	---	Sd	Pl	C	51 D	-----	L.
3222	J. Coronceo	Driver Drilling Co.	8-8-46	815 J	78	2	S: 3 1/2 ft, 60g, dia 1 1/2	104	Sd	Pl	U	64 D	L	L.
3223	W. C. Shortman	-----do-----	4-19-47	820 J	94	2	S: 3 ft, 60g, dia 1 1/2	---	Sd	Pl	C	86	J3/4	L.
3224	C. Campbell	-----do-----	1-2-53	805 J	112	2	-----do-----	---	Sd	Pl	U	35 D	-----	Sand and gravel from 0-46 ft.
3225	F. and M. Beanighoff	-----do-----	-----	805 J	60	2	S: dia 1	---	Sd	Pl	U	29 D	-----	Yellow sand and gravel from 0-51 ft. Gravel and sand from 0-40 ft. Ca, L.
3226	J. Quinlan	Driver Drilling Co.	6-1-50	800 J	48	2	S: 3 1/2 ft, 60g, dia 1 1/2	29	Sd.G	Pl	U	29 D	-----	Originally drilled to 32 ft; sand and gravel from 32-51 ft.
3227	J. C. L'Honnandieu	-----do-----	3-15-51	805 J	48	2	S: 3 1/2 ft, 60g, dia 1 1/2	33	Sd.G	Pl	U	26 D	J3/4	Ca, L.
3228	W. E. Cosagys	-----do-----	-----	805 J	51	2	S: 3 1/2 ft, 60g, dia 1 1/2	33	Sd.G	Pl	U	33 D	-----	Ca, L.
3229	R. T. Strong	-----do-----	5-31-48	800 J	40	2	S: 3 ft, 60g, dia 1 1/2	28	G.Sd	Pl	U	28 D	-----	Ca, L.
3230	K. Ulrich	-----do-----	12-5-53	800 J	45	2	-----do-----	38	Sd.G	Pl	C	25 D	-----	Ca, L.
3231	D. Holdrod	-----do-----	5-17-46	800 J	45	2	-----do-----	35	Sd.G	Pl	C	24 D	-----	Ca, L.
3232	A. M. Hafer	-----do-----	Summer 1951	815 J	107	2	S: 3 1/2 ft, 60g, dia 1 1/2	35	Sd.G	Pl	C	30 D	J3/4	Ca, L.
3233	J. Hoy	-----do-----	10-13-52	795 J	61	2	-----do-----	43	Sd	Pl	C	38 D	J3/4	L.
3234	H. Dille, Jr.	-----do-----	10-2-57	705 J	51	2	-----do-----	---	Sd.G	Pl	U	31 D	J1/2	Ca, L.
3235	J. Reed	Mr. Smith	-----	785 J	78	2	S: 3 1/2 ft, 10sl, dia 1 1/2	---	Sd	Pl	U	21 D	-----	Sand and gravel overlain by 18 ft clay.
3236	R. W. Derkholser	Driver Drilling Co.	7-3-50	800 J	46	2	S: 3 1/2 ft, 60g, dia 1 1/2	27	Sd.G	Pl	U	27 D	-----	Sand and gravel overlain by 22 ft clay.
3237	R. Dietl	-----do-----	9-22-50	800 J	44	2	S: 3 ft, 60g, dia 1 1/2	22	Sd.G	Pl	C	19 D	-----	Sand and gravel overlain by 18 ft clay.
3238	M. Goddard	-----do-----	10-80	805 J	58	2	-----do-----	24	Sd.G	Pl	U	24 D	-----	Sand and gravel overlain by 18 ft clay. Ca, L.
3239	R. Sims	-----do-----	8-21-54	805 J	80	2	S: 3 ft, 60g, dia 1 1/2	---	Sd.G	Pl	U	24 D	J	Ca, L.
3240	S. A. Rittonhouse	-----do-----	9-24-48	805 J	41	3	S: 4 ft, 60g, dia 2	---	Sd.G	Pl	U	16 D	-----	Ca, L.
3241	-----do-----	-----do-----	5-31-45	805 J	38	2	S: 2 1/2 ft, 60g, dia 1 1/2	---	Sd	Pl	U	15 D	-----	Ca, L.
3242	C. Dowron	-----do-----	5-17-52	800 Dr	47	4	S: 8 ft, 12sl	11	Sd.G	Pl	U	11 P	J1	Red sand and gravel from 0-47 ft.
3243	R. Lister	-----do-----	3-10-54	---	113	2	S: 3 1/2 ft, 60g, dia 1 1/2	90	Sd.G	Pl	U	96 D	J1	Ca, L.
3244	F. Vas	-----do-----	5-19-54	---	116	3	S: 8 ft, 60g, dia 2	93	Sd.G	Pl	U	93 D	-----	Sand and gravel from 0-118 ft. Yellow sand and gravel overlain by 18 ft yellow clay.
3245	M. Couls	-----do-----	-----	---	102	2	S: 3 ft, 60g, dia 1 1/2	88	Sd.G	Pl	U	88 D	-----	Ca, L.
3246	R. Tomlinson	-----do-----	4-26-46	810 J	76	2	-----do-----	---	Sd.G	Pl	U	69 D	J3/4	Ca, L.
3247	S. Clonyson	-----do-----	3-12-46	800 J	74	2	-----do-----	---	Sd.G	Pl	U	46 D	-----	Ca, L.

Table 2.--Records of wells and test holes in St. Joseph 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	Conditions of occurrence				
3772-36N3	G. Toth	---	---	800 J	J	76	2	S; 3ft, 60g, dia 1 1/2	---	Sd	Pl	---	50 D	J2	Ca.		
38DA	C. A. Walters	Spivor Drilling Co.	7-23-54	800 J	J	76	2	do	72	Sd,G	Pl	U	62 D	J1	Ca.	Sand and gravel from 0-83 ft.	
38E1	R. E. Waldo	---	12-30-55	J	J	93	3	S; 5ft, 60g, dia 2	---	Sd,G	Pl	U	72 D	J1	Ca.		
38E2	E. Skoog	---	---	J	J	58	2	S; 3 1/2ft, 60g, dia 1 1/2	---	Sd	Pl	---	35 D	L		Dr 24.5 ft pumping 180 gpm; L.	
38F1	Trustees, Cantor Township	Layno-Northern Co., Inc.	11-20-53	Dr	Dr	124	8	S; 20ft	64	Sd,G	Pl	U	64 P	TT-1/2		See log well 36F1.	
38F2	T. Van Geoy	Spivor Drilling Co.	6-50	J	J	98	2	S; 3 1/2ft, 60g, dia 1 1/2	68	Sd,G	Pl	U	68 D	---	Ca, L.		
38F3	J. Roark	---	11-5-51	J	J	100	2	S; 3 1/2ft, 10s1, dia 1 1/2	79	Sd	Pl	U	79 D	J3/4		Sand overlain by 89 ft sand and gravel.	
38G1	H. J. Bryant, Jr.	---	9-16-54	J	J	93	2	S; 3ft, 60g, dia 1 1/2	70	Sd,G	Pl	U	70 D	---	Ca.		
38L2	J. H. Snifor	---	---	J	J	83	2	S; 3 1/2ft, 10s1, dia 1 1/2	---	Sd,G	Pl	---	58 D	J1		L.	
38L3	Mr. Raker	Spivor Drilling Co.	---	J	J	93	2	S; 3ft, 60g, dia 1 1/2	77	Sd,G	Pl	U	77 D	---		Conurso gravel overlain by 30 ft clay with many rocks.	
38L4	M. L. Long	---	6-11-45	J	J	94	2	S; 2 1/2ft, 80g, dia 1 1/2	---	Sd,G	Pl	U	68 D	---		Sand and gravel from 0-83 ft.	
38L5	W. Phillips	---	10-7-47	845 J	J	83	2	S; 3ft, 60g, dia 1 1/2	68	Sd,G	Pl	U	60 D	---			
38L6	W. O. Waininger	---	6-19-47	845 J	J	94	2	do	---	G	Pl	U	67 D	---			
38L7	E. Jewell	---	6-26-47	855 J	J	94	2	do	---	Sd,G	Pl	U	78 D	---			
38L8	H. Kirkley	---	12-21-50	J	J	83	2	do	64	Sd,G	Pl	U	84 D	---			
38L9	J. Jackson	---	10-20-52	845 J	J	92	2	S; 3 1/2ft, 60g, dia 1 1/2	67	Sd,G	Pl	U	67 D	J3/4			
38L10	D. C. Sutherland	---	10-22-53	845 J	J	75	2	S; 3ft, 60g, dia 1 1/2	56	Sd,G	Pl	U	56 D	J3/4			
38L11	C. Pulley	---	1-2-53	J	J	91	2	do	61	Sd,G	Pl	U	61 D	---			
38M1	J. Rea	---	7-2-48	J	J	50	2	do	30	Sd,G	Pl	U	30 D	J3/4			
38M2	J. M. Smiley	---	11-28-46	J	J	40	2	do	---	Sd	Pl	---	30 D	---			
38M3	Evangelical United Brethren Church	---	---	J	J	50	2	S; 3 1/2ft, 10s1, dia 1 1/2	---	Sd	Pl	---	23 P	J3/4			
38M4	W. E. Werner	Spivor Drilling Co.	6-8-49	J	J	47	2	S; 3ft, 60g, dia 1 1/2	32	Sd,G	Pl	U	32 D	---		Sand and gravel overlain by 21 ft gravel.	
38M5	H. Hall	---	---	J	J	58	2	do	38	Sd,G	Pl	U	38 D	---			
38M6	Mr. Daniels	---	9-4-46	J	J	78	2	S; 2 1/2ft, 60g, dia 1 1/2	---	Sd,G	Pl	U	52 D	---			
38M7	R. F. Dix	---	6-50	J	J	60	2	S; 3ft, 60g, dia 1 1/2	36	Sd,G	Pl	U	36 D	---		Sand and gravel from 0-80 ft.	
38M8	A. E. Holt	---	7-23-54	J	J	57	2	do	35	Sd,G	Pl	U	35 D	J1/2		Gravel and sand overlain by 50 ft sand.	
38N1	E. Gawthrop	---	3-19-51	800 J	J	46	3	S; 4ft, 60g, dia 2	21	Sd,G	Pl	U	21 P	J1-1/2		Sand and gravel overlain by 18 ft top soil and clay.	
38N2	Circles Service Oil Co.	---	---	795 J	J	47	2	S; 4 1/2ft, 50g, dia 1 1/2	12	O, Sd	Pl	U	12 P	J1/2		Sand overlain by 40 ft gravel; Ca.	
38N3	J. R. Combs	---	---	805 J	J	58	2	do	32	Sd,G	Pl	U	32 D	---			
38N4	W. O. Faulkner	---	6-13-52	800 J	J	49	2	S; 3 1/2ft, 80g, dia 1 1/2	---	Sd	Pl	---	24 D	J3/4			
38N5	N. C. Hoderich	---	---	800 J	J	53	2	S; 4 1/2ft, 80g, dia 1 1/2	---	Sd	Pl	---	29 D	J3/4			
38P1	E. C. Hummel	Spivor Drilling Co.	4-28-51	820 J	J	63	2	S; 3 1/2ft, 60g, dia 1 1/2	35	Sd,G	Pl	U	35 D	---		Yellow coarse sand and gravel overlain by 10 ft yellow surfaco soil.	

37/2-3892	E. Tableman	12-6-48	825 J	64	2	S; 3ft, 60g, dia 1 1/4	42	22	Sd, G	Pl U	U	42	D	---	---	---	Sand and gravel from 0-64 ft.
3893	R. Scherzinger	8-4-54	825 J	75	2	do	57	16	Sd, G	Pl U	U	57	D	---	---	---	Sand and gravel from 0-75 ft.
3894	P. Miller	9-4-53	825 J	62	2	do	48	16	G, Sd	Pl U	U	48	D	---	---	---	L.
3895	F. J. Kirschner	3-22-52	825 J	61	2	S; 3ft, 10gal, dia	41	20	Sd, G	Pl U	U	41	D	J1/2	---	---	Yellow sand and gravel from 0-61 ft.
3896	J. Hofer	5-20-54	825 J	95	2 1/2	S; 3ft, 80g, dia 1 1/4	82	39	Sd, G	Pl U	U	82	D	J1	---	---	Sand and gravel from 0-95 ft.
3897	E. W. Bixler	---	830 J	83	2	S; 3ft, 80g, dia 1 1/4	65	28	Sd, G	Pl U	U	65	D	---	---	---	Yellow sand and gravel overlain by 20 ft yellow clay.
3898	E. Talcott	11-6-50	835 J	76	2	S; 3ft, 80g, dia	49	27	Sd, G	Pl U	U	49	D	---	---	---	Sand and gravel from 0-76 ft.
3899	L. Craft	9-24-51	820 J	62	2	do	44	18	Sd, G	Pl U	U	44	D	---	---	---	Yellow sand and gravel from 0-62 ft.
3901	L. Moore	7-30-48	845 J	92	2	S; 4ft, 80g, dia	66	26	Sd, G	Pl U	U	66	D	---	---	---	Sand and gravel from 0-92 ft.
3902	O. C. Biesbrook	---	845 J	95	2	S; 3ft, 80g, dia	72	23	Sd, G	Pl U	U	72	D	---	---	---	L.
3903	J. Lloyd	---	845 J	93	2	do	67	26	Sd, G	Pl U	U	67	D	J1	---	---	Sand overlain by 90 ft gravel.
3904	D. Heminger	---	860 J	94	2	S; 3ft, 80g, dia 1 1/4	66	28	G, Sd	Pl U	U	66	D	---	---	---	L.
3905	M. Schultz	4-28-48	865 J	117	4	S; 3ft, 84, dia 3	66	28	G, Sd	Pl U	U	66	D	---	---	---	Sand overlain by 90 ft gravel.
3906	R. H. Elyse	8-28-50	860 J	94	2	S; 3ft, 80g, dia	68	28	Sd, G	Pl U	U	68	D	---	---	---	Sand and gravel from 0-94 ft.
3907	R. St. Germain	---	855 J	102	2 1/2	S; 3ft, 80g, dia 1 1/4	66	38	Sd, G	Pl U	U	66	D	---	---	---	L.
3908	G. Packard, Jr.	10-29-46	835 J	84	2	S; 3ft, 80g, dia 1 1/4	70	24	Sd, G	Pl U	U	70	D	---	---	---	Sand and gravel from 0-84 ft.
3909	R. W. Stanifer	---	845 J	92	2	do	68	24	Sd, G	Pl U	U	68	D	---	---	---	Yellow sand and gravel overlain by 16 ft yellow clay.
3910	C. T. Yoder	---	855 J	93	2	do	---	---	Sd, G	Pl U	U	---	D	J1	---	---	Idl 27 ft pumping 210 gpm; L.
37/3-1K1	U. S. Rabbar Co., Inc.	8-20-54	742 Dr	131	6	S; 10ft, dia 4	112	19	Sd, G	Pl C	C	18	P	T10	---	---	Idl 27 ft pumping 250 gpm; L.
1R1	Sibley Machine and Foundry Corp.	3-27-51	742 Dr	120	8	S; 14ft	94	26	Sd	Pl C	C	19	K	---	---	---	Ca, L.
2E1	J. Bryce	11-28-53	748 J	57	2	S; 3ft, 60g, dia	---	---	Sd	Pl C	C	11	D	---	---	---	Ca, L.
2L1	H. Lilly	3-23-51	748 J	62	2	do	18	44	Sd	Pl C	C	7	D	J1/3	---	---	Ca, L.
2N1	J. Lesink	6-30	745 Dr	56	2	S; 3ft, 60g, dia 1 1/4	16	42	Sd, G	Pl U	U	16	D	J3/4	---	---	Sand and gravel from 0-58 ft.
2N2	H. E. Fletcher	10-10-52	745 Dr	53	4	S; 4ft, 10m, dia 1 1/4	23	30	Sd, G	Pl U	U	23	D	J3/4	---	---	L.
3O1	C. Hunt	12-2-53	743 J	44	2	S; 3ft, 60g, dia 1 1/4	25	19	Sd, G	Pl U	U	25	D	L1/3	---	---	Ca, L.
3K1	J. E. Hamilton	11-50	745 J	50	2	S; 3ft, 60g, dia	44	6	Sd, G	Pl C	C	39	D	---	---	---	L.
3L1	C. L. Hunter	---	743 J	35	2	S; 3ft, 80g, dia 1	---	---	Sd	Pl U	U	4	D	J1/2	---	---	Ca.
3N1	Votrans Homes of Mishawaka, Inc.	12-13-46	742 Dr	20	6	do	---	---	Sd, G	Pl U	U	7	T	---	---	---	See log well 21A; Ca.
3N2	City of Mishawaka	7-28-58	741 Dr	197	6 1/2	do	112	83	Sd, G	Pl C	C	27	T	---	---	---	Bedrock at 193 ft; Ca, L.
3N3	W. E. Clark	2-3-50	743 J	71	2	S; 3ft, 60g, dia 1 1/4	63	8	Sd	Pl C	C	16	D	---	---	---	Sand overlain by 63 ft clay; Ca.
3N4	City of Mishawaka	4-3-59	741 Dr	174	8	do	107	60	Sd, G	Pl C	C	---	T	---	---	---	L.
3N5	---	3-23-59	741 Dr	198	8	do	125	38	Sd, G	Pl C	C	28	D	---	---	---	Bedrock at 198 ft.
3Q1	D. Ringer	10-3-46	746 J	49	2	S; 4ft, 60g, dia 1 1/4	24	22	Sd	Pl C	C	8	D	J1/3	---	---	See log well JG1; Ca.
4E1	R. Stacy	5-18-53	742 J	46	2	S; 3ft, 80g, dia 1 1/4	---	---	Sd	Pl C	C	---	T	---	---	---	See log well 21A.
4J1	Votrans Homes of Mishawaka, Inc.	12-10-46	741 Dr	20	6	do	---	---	Sd, G	Pl U	U	6	T	---	---	---	See log well 21A.
4J2	---	12-18-46	741 Dr	20	6	do	2	18	G, Sd	Pl U	U	2	T	---	---	---	Bedrock at 190 ft; L.
4R1	City of Mishawaka	7-24-56	738 Dr	193	7 1/2	do	115	58	Sd, G	Pl C	C	28	T	---	---	---	Bedrock at 197 ft; Ca, L.
4R1	---	3-9-53	743 Dr	137	10	do	170	35	Sd, G	Pl C	C	30	T	---	---	---	Bedrock at 205 ft; L.
5C1	City of South Bend	8-18-48	747 Dr	205	38	Op; S; 25ft, 105gal, dia 26	148	57	G, Sd	Pl C	C	29	P	T150	---	---	Idl 14.7 ft after 10 hr pump- ing 2,200 gpm; L.
5C2	---	12-9-48	747 Dr	205	60-	Op; S; 26ft, 105gal, dia 26	---	---	G, Sd	Pl C	C	35	P	T	---	---	Idl 15.3 ft after 167 hr pump- ing 1,600 gpm; water level measured 36.35 ft below level 1-27-45; see log well 5E2; well SJ 5-1 (NS, 1948).
5E1	---	12-30	747 Dr	205	26	do	---	---	G, Sd	Pl C	C	35	P	---	---	---	Bedrock at 206 ft; well SJ 5-T4 (KS, 1948); L.
5E2	Harmon-Ness Co.	12-11-50	747 Dr	206	6	S; 20ft	133	73	G, Sd	Pl C	C	30	T	---	---	---	Idl 8.75 ft after 8 hr pumping 2,180 gpm; see log well 5E2.
5F1	Layno-Northern Co., Inc.	1-19-54	747 Dr	204	38	Op; S; 40ft, 105gal, dia 26	140	64	Sd, G	Pl C	C	39	P	---	---	---	---

Table 2.--Records of wells and test holes in St. Joseph 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	Conditions of occurrence				
37/3-3P2	City of South Bond	Layne-Northern Co.,	5-26-54	747	Dr	106	38	Gp; S; 40ft, 155h1, dia 26	136	60	G, Sd	Pl C	C	38	P	T150	Dd 7.5 ft after 8 hr pumping 2,210 gpm; see log well 582.
5L1	Morris Park Country Club	Indiana-Michigan Water Development Co.	6-19-50	749	Dr	173	6	S; 20ft, 45h1	146	27	Sd, G	Pl C	C	44	P	S10	Dd 10 ft pumping 90 gpm; L.
5P1	H. Eason	-----do-----	11-27-53	750	Dr	80	6	S; 15ft, 20h1, dia 3 1/2	45	35	Sd, G	Pl U	U	45	D	-----	Dd 10 ft pumping 90 gpm; L.
5P2	Morris Park Country Club	-----do-----	1923	745	Dr	86	12	-----	---	---	Sd, G	Pl U	U	10	O	T50	Observation well St. Joseph 19; water level measured 10.75 ft below 1st 4-8-43; well SJ 88 (KS, 1948); Ca.
5R1	O. Brown	Srivor Drilling Co.	12-14-50	751	J	---	2	S; 3 1/2ft, 60g, dia 1 1/2	---	---	Sd	Pl	---	D	---	J3/4	Bedrock at 212 ft; L.
6A1	City of South Bond	Layne-Northern Co., Inc.	11-21-30	746	Dr	213	6	-----	---	---	Sd, G	Pl	---	30	T	---	---
6A2	C. Caron	Srivor Drilling Co.	11-21-57	748	J	36	2	S; 3 1/2ft, 10h1, dia 1 1/2	---	---	G	Pl	---	23	D	---	---
6G1	R. D. Cox	-----do-----	12-14-48	752	J	62	2	S; 3ft, 60g, dia 1 1/2	48	14	Sd, G	Pl U	U	48	D	---	Sand and gravel from 0-92 ft.
6H1	R. Smith	Indiana-Michigan Water Development Co.	6-36	755	Dr	213	4-2 1/2	S; 8ft, 50g, dia 2 1/2	---	---	Sd, G	Pl	---	---	N	---	Bedrock at 212 ft; see log well 611.
6H2	City of South Bond	-----do-----	10-31-30	748	Dr	199	---	-----	---	---	Sd, G	Pl	---	30	T	---	Well SJ 5-T1 (KS, 1948); L.
6H3	-----do-----	Rayson-Ness Co.	11-4-30	748	Dr	70	6	-----	---	---	Sd	Pl C	C	57	D	J	Well SJ 5-T2 (KS, 1948); L.
6N1	L. Quimby	Srivor Drilling Co.	3-23-50	745	J	152	2	S; 3 1/2ft, 60g, dia 1 1/2	140	12	Sd	Pl C	C	57	D	---	Ca. L.
7A1	V. D. Morgan	-----do-----	-----	745	Dr	138	2	-----	---	---	Sd, G	Pl C(?)	C(?)	47	O	---	Observation well St. Joseph 17; water level measured 46.29 ft below land; 3-30-45; well SJ 8P (KS, 1948).
7H1	Trustees, Diocese Northern Indiana Corp.	Srivor Drilling Co.	3-25-54	736	Dr	100	4	S; 8ft, 12h1	85	15	Sd, G	Pl C	C	38	P	---	L.
7K1	L. Sellers	-----do-----	3-8-54	724	J	98	3	S; 5 1/2ft, 10h1, dia 1 1/2	90	8	Sd	Pl C	C	21	D	J1-1/2	L.
7N1	Fattoro Co.	Layne-Northern Co., Inc.	6-28-30	685	Dr	72	---	-----	28	39	Sd, G	Pl C	C	15	T	---	L.
7R2	-----do-----	-----do-----	7-27-50	685	Dr	49	12	-----	22	27	G, Sd	Pl C	C	15	T	---	See log well 7N1.
7P1	City of South Bond	Austin Drilling Co.	7-16-26	706	Dr	151	---	-----	28	14	Sd	Pl C(?)	C(?)	28	T	---	Bedrock 126 ft; well SJ 7-13 (KS, 1948); L.
7R1	-----do-----	-----do-----	3-11-25	713	Dr	122	---	-----	---	---	Sd	Pl	---	---	T	---	Bedrock 115 ft; well SJ 7-3 (KS, 1948); L.
7R2	-----do-----	-----do-----	2-22-27	712	Dr	134	---	-----	---	---	Sd, G	Pl	---	32	T	---	Bedrock at 127 ft; well SJ 7-22 (KS, 1948); L.
8C1	H. N. Light	Indiana-Michigan Water Development Co.	7-7-43	742	Dr	122	4	S; 3ft, 60g	---	---	Sd	Pl C	C	27	D, P	---	Dd 18 ft pumping 28 gpm; well SJ 81 (KS, 1948); Ca. L.
8N1	J. Mischelein	Srivor Drilling Co.	6-30	716	J	62	2	S; 3ft, 60g, dia 1 1/2	40	22	Sd, G	Pl U	U	40	D	---	---
10B1	Jentz Manufacturing Co.	Indiana-Michigan Water Development Co.	9-4-52	748	Dr	75	6	S; 13ft, 8h1, dia 4 1/2	57	18	Sd	Pl C	C	30	I	T5	Sand and gravel from 0-92 ft.
10G1	R. Arnold	Srivor Drilling Co.	5-20-54	737	J	52	2	S; 3ft, 60g, dia 1 1/2	48	4	Sd	Pl C	C	14	D	J	Ca. L.
10G2	City of Mishawaka	Layne-Northern Co., Inc.	3-28-52	737	Dr	112	8	-----	---	---	Sd, G	Pl	---	18	T	---	Bedrock at 100 ft; L.

Well No.	Company	Date	Time	Depth	Flow	Rate	Pressure	Notes
1181	M. H. Rush	6-50	737 J	51	2	45	8	S; 3ft, 60g, dia 1 1/4
1182	Dependable Welding Shop	10-8-50	737 J	82	2	45	17	S; 3ft, 60g, dia 1 1/4
1183	H. M. Plotner	9-12-53	744 J	53	2	30	23	S; 3ft, 60g, dia 1 1/4
1184	R. E. Geisler	2-18-54	740 J	48	2	38	10	S; 3ft, 60g, dia 1 1/4
1185	F. Myers	3-20-54	743 J	40	2	28	14	S; 3ft, 60g, dia 1 1/4
1186	City of Mishawaka	1929	701 Dr	81	24-18	33	58	S; 32ft, dia 10
1187	Layne-Northern Co., Inc.	1-8-51	701 Dr	339	6	---	---	---
1188	Layne-Northern Co., Inc.	5-18-51	701 Dr	329	6	290	39	Op; S; 33ft, dia 12
1189	Kelly Well Co.	1929	710 Dr	98	24-19	24	74	Op; S; 43ft, dia 7
1190	Layne-Northern Co., Inc.	2-20-57	702 Dr	100	38	8	91	Op; S; 23ft, 105ml, dia 20
1191	Layne-Northern Co., Inc.	9-24-41	687 Dr	120	---	---	---	---
1192	Layne-Northern Co., Inc.	9-23-41	688 Dr	123	6	82	41	---
1193	Layne-Northern Co., Inc.	9-27-41	702 Dr	130	6	---	---	---
1194	Layne-Northern Co., Inc.	12-11-41	686 Dr	121	6	---	---	---
1195	Layne-Northern Co., Inc.	11-24-48	688 Dr	129	6	100	20	Op; S; 35ft, 105ml, dia 20
1196	Layne-Northern Co., Inc.	3-24-47	701 Dr	115	28	100	15	Op; S; 35ft, 105ml, dia 20
1197	Layne-Northern Co., Inc.	3-18-49	703 Dr	101	82	15	88	Op; S; 25ft, dia 20
1198	Layne-Northern Co., Inc.	4-22-49	708 Dr	91	38	14	76	Op; S; 20ft, 80ml, dia 18
1199	Layne-Northern Co., Inc.	1-7-55	708 Dr	89	38	13	72	Op; S; 20ft, 105ml, dia 18
1200	Layne-Northern Co., Inc.	2-15-56	704 Dr	85	38	8	32	S; 3ft, 10ml, dia 1 1/4
1201	Layne-Northern Co., Inc.	9-13-41	702 Dr	119	8	---	---	---
1202	Layne-Northern Co., Inc.	8-19-41	704 Dr	100	8	---	---	---
1203	Sollitt Construction Co.	10-19-49	703 Dr	43	6	10	33	S; 10ft, 40ml, dia 5 1/2
1204	Sollitt Construction Co.	5-22-51	719 Dr	40	6	---	---	---
1205	Sollitt Construction Co.	3-24-51	703 Dr	34	6	---	---	---
1206	Sollitt Construction Co.	5-29-51	720 Dr	32	6	---	---	---
1207	Rockwell Spring and Axle Co.	4-3-57	743 Dr	131	4	29	29	S; 4ft, 12ml, dia 2 1/2
1208	Rockwell Spring and Axle Co.	8-15-57	742 J	40	2	27	13	S; 3 1/2ft, 10ml, dia 1 1/4
1209	Rockwell Spring and Axle Co.	11-23-55	748 Dr	150	8	84	46	S; 21ft, dia 4 1/2
1210	Rockwell Spring and Axle Co.	1924	710 Dr	100	8	---	---	---
1211	Indiana and Michigan Electric Co.	2-10-44	710 Dr	111	8	83	28	S; 15ft, 20ml, dia 3 1/2
1212	Indiana and Michigan Electric Co.	9-25-52	728 J	58	2	19	37	S; 3 1/2ft, 60g, dia 1 1/2
1213	G. Mond	9-25-52	728 J	43	2	12	31	S; 3 1/2ft, 10ml, dia 1 1/4
1214	P. Russell	12-30-43	728 Dr	39	---	14	25	---
1215	H. Neas	8-20-47	728 Dr	116	8-4	14	108	S; 3ft, 60g, dia 1 1/4
1216	F. Ulmer	7-16-53	727 J	45	2	10	35	S; 3ft, 60g, dia 1 1/4

See log well 1181. L. Ca, L. Ca, L. Yellow sand and gravel from 0-40 ft. Dd 11.2 ft after 48 hr pumping 650 gpm; see log well 1182; well S; 111-1-4 (KS, 1948). Flowed; L. Dd 39 ft after 8 hr pumping 1,200 gpm; Ca, L. Dd 6.5 ft after 41 hr pumping 650 gpm; well S; 111-1-3 (KS, 1948); L. Dd 32 ft after 48 hr pumping 820 gpm; see log well 1182; well S; 111-1-1 (KS, 1948). L. Well S; 111-1-78 (KS, 1948); L. See log well 1183; well S; 111-1-17 (KS, 1948). Bedrock at 120 ft; well S; 111-1-79 (KS, 1948); L. Flowed; L. Dd 49 ft after 2 hr pumping 880 gpm; see log well 1187. See log well 1182 Dd 15.4 ft after 12 hr pumping 1,570 gpm; see log well 1182. Dd 16 ft after 8 hr pumping 1,120 gpm; see log well 1182. Dd 12.8 ft after 8 hr pumping 1,000 gpm; see log well 1182. Observation well St. Joseph 1; water level measured 9.65 ft below led, 10-16-35. Bedrock at 119 ft; well S; 111-1-73 (KS, 1948); L. See log well 1183; well S; 111-1-74 (KS, 1948). Dd less than 10 ft pumping 60 gpm; see log well 1184. See log well 1184. L. Do. Yield 12 gpm; L. Sand and gravel from 0-40 ft. L. Well S; 112-1-1 (KS, 1948). Flowed 120 gpm; well S; 112-1-2 (KS, 1948); L. Sand and gravel from 0-56 ft. Sand and gravel from 0-43 ft. See log well 1382; well S; 113-1 (KS, 1948). Bedrock at 120 ft; L. Sand overlain by 10 ft clay. D

Table 2.---Records of wells and test holes in St. Joseph 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				
37/3-13K1	J. Bialock	Striver Drilling Co.	3-2-53	729 J	41	2	5; 3ft, 80g, dia 1 1/2		31	Sd,G	P1	U	10	D	-----	Yellow sand and gravel from 0-41ft; Ca.
14B1	City of Mishawaka	Layne-Northern Co., Inc.	5-19-41	702 Dr	108	42	Gp; S; 25ft, 180gal, dia 20		95	Sd,G	P1	U	12	P	725	Dd 10.7 ft after 24 hr pumping, 1,200 gpm; well SJ 111-1-2 (KS, 1948); L.
14C1	-----do-----	-----do-----	12-17-47	705 Dr	97	38	Gp; S; 25ft, 105gal, dia 20		89	Sd,G	P1	U	8	P	720	Dd 12 ft after 8 hr pumping, 1,600 gpm; sea log well 14B1.
14J1	C. Martinczak	Striver Drilling Co.	8-50	727 J	52	2	S; 2ft, 60g, dia 1 1/2		---	Sd	P1	U	---	D	-----	Sand from 0-52 ft.
14J2	W. Booker	-----do-----	9-25-52	727 J	46	2	S; 3ft, 108l, dia 1 1/2		38	Sd,G	P1	U	8	D	-----	Sand and gravel from 0-48 ft.
14J3	J. W. Peterson	-----do-----	9-8-54	728 J	43	2	S; 3ft, 00g, dia 1 1/2		38	Sd	P1	U	5	D	-----	Sand from 0-43 ft.
14K1	Bendis Aviation Corp.	Layne-Northern Co., Inc.	11-24-53	724 Dr	184	4	-----do-----		---	Sd,G	P1	---	---	T	-----	Bedrock at 148 ft; Ca, L.
14K2	-----do-----	-----do-----	6-28-54	726 Dr	145	10	5; 20ft, 20gal		---	Sd,G	P1	---	23	I	730	Dd 68 ft after 4 hr pumping, 500 gpm; bedrock at 148 ft; L.
14K3	-----do-----	-----do-----	7-13-54	724 Dr	142	10	5; 20ft		---	Sd,G	P1	---	18	I	730	Dd 71 ft pumping, 460 gpm; screen, upper 10 ft 40gal, lower 10 ft 20gal; Ca, L.
14M1	Wheelabrator Co.	A. L. Cox Co., Inc.	1938	723 Dr	165	10	8		---	Sd,G	P1	---	---	P, I, Ac	-----	Yield 300 gpm; Ca.
14N1	City of Mishawaka	Layne-Northern Co., Inc.	9-26-53	729 Dr	148	8	-----do-----		44	G, Sd	P1	U	12	T	-----	L.
15C1	South Bend Modern Moulding and Manufacturing Co.	Striver Drilling Co.	10-31-53	710 Dr	75	4	5; 8ft, 12gal		40	Sd,G	P1	C	17	I	-----	Ca, L.
15H1	Clarks Laundry and Dry Cleaning Co.	Indiana-Michigan Water Development Co.	4-29	722 Dr	99	10	S; 14ft, 10gal, dia 9 1/2		18	G, Sd	P1	C	9	I	-----	Dd 0 ft pumping, 150 gpm; well originally drilled to 44 ft, deepened 7-15-37; water level 18 ft below bed, 7-15-37; well SJ 115-1 (KS, 1948) Ca, L.
15H2	Varsity Cafe	Striver Drilling Co.	3-16-54	722 J	45	2	S; 3ft, 80g, dia 1 1/2		25	Sd,G	P1	U	20	Ac	J	Sand and gravel from 0-45 ft.
15M1	Dodge Manufacturing Co.	Layne-Northern Co., Inc.	6-20-49	723 Dr	52	18	Gp; S; 10ft, 105gal, dia 8		50	Sd,G	P1	U	13	P, I	-----	Dd 19.2 ft pumping, 600 gpm; sea log well 15M2; Ca.
15M2	-----do-----	-----do-----	7-15-50	724 Dr	88	18	Gp; S; 10ft, 50g, dia 10		52	Sd,G	P1	U	14	P, I	730	Dd 17 ft pumping, 500 gpm; Ca, L.
15R1	City of Mishawaka	-----do-----	2-1-54	724 Dr	75	8	-----do-----		---	Sd,G	P1	---	8	T	-----	Ca, L.
15R2	-----do-----	-----do-----	4-5-54	724 Dr	70	42	Gp; S; 15ft, 105gal, dia 18		65	Sd,G	P1	U	5	P	775	Dd 35.1 ft after 7.5 hr pumping, 1,040 gpm; Ca.
16A1	C. Colo and Son	-----do-----	1-3-50	703 Dr	50	8	-----do-----		7	G	P1	U	12	T	-----	Bedrock (?) at 43 ft; L.
16B1	U. S. Rubber Co.	-----do-----	6-25-50	695 Du	20	36	-----do-----		---	Sd	P1	---	---	---	-----	For dewatering.
16B2	-----do-----	Layne-Northern Co., Inc.	7-25-59	692 Dr	35	8	S; 9ft		14	Sd,G	P1	C	8	---	-----	Dd 22 ft after 2 hr pumping, 15 gpm; L.
16C1	Kamm and Schellinger Co., Inc.	-----do-----	3-20-42	695 Dr	52	8-8	-----do-----		27	Sd,G	P1	C	12	T	-----	See log well 16C3.
16C2	-----do-----	Indiana-Michigan Water Development Co.	9-18-42	695 Dr	116	6	5; 36ft, 60g		18	G	P1	---	98	D	-----	Well SJ 116-4 (KS, 1948).
16C3	-----do-----	-----do-----	1-12-46	695 Dr	119	6	-----do-----		---	Sd,G	P1	---	---	T	-----	L.
16C4	-----do-----	-----do-----	5-16-46	695 Dr	125	6	S		---	Sd	P1	---	40	I	715	Bedrock at 108 ft; well SJ 116-1-74 (KS, 1948); Ca, L.

Well No.	Company	Date	Dr	176	9-6	Remarks	Sd, G	PI	V	C	34	T	Notes
1801	City of Mishawaka	7-30-54	715	176	9-6		Sd, G	PI	V	C	34	T	Bedrock at 174 ft; L.
1802	C. Cole and Son	1-5-50	715	63	6		Sd, G	PI	V		27	T	70 ft pumping 120 gpm; screen 100 ft; 2 1/2 in.
1803	Kama and Shellinger Co., Inc.	5-1-33	703	127	6	S; 13ft	Sd, G	PI	C		20	I	Well SJ 116-3-1 (KS, 1948); L.
1804	Layne-Northern Co., Inc.	6-23-34	703	135			Sd, G	PI			20	T	Well SJ 116-1-1 (KS, 1948); L.
1805	Layne-Northern Co., Inc.	8-11-34	703	137	30-18	Gp; S; 25ft, 130gal, dia 18	Sd, G	PI			28	I	Well SJ 116-1-2 (KS, 1948); L.
1806	Indiana-Michigan Water Development Co.	1-24-48	710	114	6	S	Sd, G	PI			20	T	Bedrock at 112 ft; L.
1807	R. Kersay	Do for	723	723	6								Bedrock at 130 ft; well SJ 116-1-3 (KS, 1948).
1808	Layne-Northern Co., Inc.	3-24-49	721	31	6	S; 10ft	Sd, G	PI	V		16	N	Well SJ 116-3-1 (KS, 1948); L.
1809	Indiana-Michigan Water Development Co.	9-4-42	723	39	4	S; 8ft, 60g, dia 3	Sd, G	PI	V		17	N	Gravel overlain by 28 ft sand.
1810	Indiana-Michigan Water Development Co.	9-10-29	721	75	10	S; 14ft, 30gal, dia 8	Sd	PI				N	Well SJ 116-3-1 (KS, 1948).
1811	Hygrade Food Products Corp.	11-30-42	721	89	12	S; 15ft, dia 1 1/2	G, Sd	PI	C		5	N	Well SJ 116-3-1 (KS, 1948); L.
1812	Layne-Northern Co., Inc.	9-20-45	719	116	6		Sd, G	PI			12	T	Well SJ 116-3-2 (KS, 1948); L.
1813	Mishawaka Farmers Dairy Co.	10-9-45	719	133	6-4		Sd, G	PI			6	T	Well SJ 116-3-2 (KS, 1948); L.
1814	McMillan Bowling Alley	8-5-46	713	80	8	S; 3ft, dia 7	Sd, G	PI	V		22	Ac	Well SJ 116-3-2 (KS, 1948); L.
1815	N. Dawson	7-17-51	719	40	2	S; 2 1/2ft, 60g, dia 1 1/2	Sd, G	PI	V		11	N	Well SJ 116-3-2 (KS, 1948); L.
1816	Coca-Cola Bottling Co.	7-29-54	714	98	8	S; 22ft, 16gal	Sd, G	PI	V		28	I	Well SJ 116-3-2 (KS, 1948); L.
1817	National Milk Co.	11-2-37	700	67	12	S; 14ft, 30gal, dia 8	Sd, G	PI	C		43	N	Well SJ 116-3-2 (KS, 1948); L.
1818	Indiana-Michigan Water Development Co.	8-20-43	700	147	8	S	Sd, G	PI	C			T	Well SJ 116-3-2 (KS, 1948); L.
1819		8-31-43	700	74	8	S; 15ft, 40g, dia 8	G, Sd	PI	C		23	N	Well SJ 116-3-2 (KS, 1948); L.
1820	City of South Bend	7-26-26	690	112			Sd	PI			24	T	Well SJ 116-3-2 (KS, 1948); L.
1821		3-15-26	688	70			Sd	PI				T	Well SJ 116-3-2 (KS, 1948); L.
1822		2-15-26	693	70			Sd	PI				T	Well SJ 116-3-2 (KS, 1948); L.
1823		2-27-26	693	70			Sd	PI				T	Well SJ 116-3-2 (KS, 1948); L.
1824		5-6-26	693	169			Sd	PI				T	Well SJ 116-3-2 (KS, 1948); L.
1825		10-15-26	712	100			Sd	PI				T	Well SJ 116-3-2 (KS, 1948); L.
1826		11-4-26	688	220			Sd	PI	V		2	T	Well SJ 116-3-2 (KS, 1948); L.
1827		3-0-27	692	85			Sd, G	PI	V		22	T	Well SJ 116-3-2 (KS, 1948); L.
1828		6-18-28	688	105			Sd, G	PI	V		5	T	Well SJ 116-3-2 (KS, 1948); L.
1829		4-29-28	710	103			Sd, G	PI	V			T	Well SJ 116-3-2 (KS, 1948); L.
1830	W. Rodgers	12-5-49	741	67	2	S; 3ft, 10gal	Sd, G	PI	V		44	Ir	Well SJ 116-3-2 (KS, 1948); L.
1831	City of South Bend	4-18-28	700	140			Sd, G	PI	V		27	T	Well SJ 116-3-2 (KS, 1948); L.
1832		4-12-28	732	130			Sd	PI	V			T	Well SJ 116-3-2 (KS, 1948); L.
1833		6-7-28	732	183			Sd	PI	V		27	T	Well SJ 116-3-2 (KS, 1948); L.

Table 2.--Records of wells and test holes in St. Joseph 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				
377-19C1	City of South Bond	Austin Drilling Co.	4-18-26	737 Dr	116	---	---	---	89	Sd	Pl	U	28	T	---	See log well 19B1; well SJ 7-5 (KS, 1948). Bedrock at 162 ft; well SJ 7-25 (KS, 1948); L. Ca, L.
19B1	---	---	3-28-27	756 Dr	169	---	---	---	---	Sd, G	Pl	---	20	T	---	---
19B1	J. Filley	Striver Drilling Co.	7-14-53	797 J	66	2	8; 3ft, 60g, dia 1 1/2	---	14	Sd, G	Pl	U	52	D	J1/2	---
2001	D. Freeman	---	805 J	85	2	---	---	---	---	Sd	Pl	---	80	D	L	---
2002	D. Nelson	Striver Drilling Co.	2-19-54	809 Dr	117	4	S; 8ft, 14sl	---	27	Sd, G	Pl	U	90	D	---	---
2003	Concrete Products Corp.	Indiana-Michigan Water Development Co.	7-14-43	760 Dr	91	4	S; 6ft, 60g, dia 3	---	43	Sd, G	Pl	U	48	I	---	Yellow sand and gravel from 0-117 ft. Dd 12 ft; pumping 28 gpm; see log well 20D4. Dd 57 ft after 3 hr pumping 430 gpm; L. Dd 29 ft pumping 50 gpm; L. See log well 20D5.
20D4	---	---	3-7-51	762 Dr	128	10	S; 18ft, 100sl, dia 9 1/2	---	---	G, Sd	Pl	---	47	I	T	---
20D5	P. Behm, Sr.	---	7-26-57	793 Dr	116	6	S; 5ft, 40sl	---	6	Sd, G	Pl	C	71	D	---	---
20D6	C. C. Ziemer	Striver Drilling Co.	11-19-51	752 J	102	2	S; 3 1/2ft, 10sl, dia 1 1/2	---	9	Sd	Pl	C	67	D	---	---
20G1	C. F. Cunningham	Indiana-Michigan Water Development Co.	6-24-47	882 Dr	295	6	---	---	---	---	---	---	---	N	---	No water reported; bedrock at 231 ft; L.
20H1	St. Francis Convert	---	---	790 Dr	200	8	---	---	---	Sd, G	Pl	---	---	Ac, P	T20	---
20K1	C. F. Cunningham	Indiana-Michigan Water Development Co.	4-36	892 Dr	212	4	S; dia 1 1/2	---	5	G, Sd	Pl	C	180	---	---	Yield 40 gpm; L.
20K2	---	---	10-2-47	802 Dr	223	6	S; 13 1/2ft, dia 4	---	10	G, Sd	Pl	C	165	D	---	Dd 27 ft pumping 40 gpm; L.
21B1	J. Brackelmaire	Striver Drilling Co.	---	728 J	46	2	S; 3 1/2ft, 60g, dia 1 1/2	---	36	Sd	Pl	C	5	D	---	---
21G1	M. D. Yecko	---	750 J	57	2	2	S; 3ft, 60g, dia 1 1/2	---	17	Sd, G	Pl	U	17	D	---	Sand and gravel from 0-57 ft.
21G2	H. Brown	---	735 J	56	2	---	---	---	42	Sd, G	Pl	U	42	D	L	Sand and gravel from 0-56 ft.
21G3	R. G. Bultora	---	736 J	45	2	---	---	---	40	Sd	Pl	C	32	D	L	Ca, L.
21H1	A. E. Vannoni	---	743 J	54	2	2	S; 3 1/2ft, 10sl, dia 1 1/2	---	6	Sd	Pl	C	4	D	---	Yellow sand overlain by 48 ft blue and yellow clay.
21R2	M. Meunick	---	731 J	43	2	2	S; 3ft, 60g, dia 1 1/2	---	38	Sd	Pl	C	6	D	---	See log well 21G9.
21R3	S. Cneidi	---	5-19-50	738 J	40	2	---	---	26	Sd, G	Pl	U	14	D	---	Sand and gravel from 0-40 ft.
21R4	L. Six	---	11-6-50	738 J	40	2	S; 3 1/2ft, 60g, dia 1 1/2	---	---	Sd, G	Pl	---	---	D	---	---
21J1	S. Hearrell	---	8-24-55	805 Dr	97	4	S; 8ft, 10sl	---	70	Sd, G	Pl	U	70	D	---	L.
21K1	L. C. Phenegar	---	6-12-56	852 J	148	3	S; 6ft, 60g, dia 2	---	32	Sd, G	Pl	U	116	D	J1-1/2	Sand and gravel from 0-48 ft.
21O1	H. Rutling	---	6-8-53	883 J	175	3	S; 5ft, 60g, dia 2	---	7	Sd	Pl	C	138	D	---	L.
21Q2	K. Rehder	---	11-15-54	872 J	148	2	S; 5 1/2ft, 60g, dia 2	---	8	Sd	Pl	C	130	D	---	L.
21R1	C. T. Dunham	---	10-28-55	880 J	194	3	S; 4 1/2ft, 10sl, dia 2	---	10	Sd	Pl	C	131	D	---	L.
21R2	J. Kurth	---	9-10-54	882 J	176	3	---	---	26	Sd, G	Pl	C	149	D	J1-1/2	Ca, L.
22B1	F. Donath	---	---	752 J	51	2	S; 3 1/2ft, 60g, dia 1 1/2	---	21	Sd, G	Pl	C	29	D	---	L.
22B1	---	---	---	800 Dr	110	10	S; 18ft	---	33	Sd, G	Pl	C	59	I	---	Dd 33 ft after 3 hr pumping 500 gpm; screen, upper 10 ft 20sl, lower 5 ft 56sl; L. Sand and gravel from 0-40 ft. Do.
22B1	Dry Island Sand and Gravel Co.	Layne-Northern Co., Inc.	3-14-58	---	---	---	---	---	77	Sd, G	Pl	C	---	---	---	---
22B1	P. Miller	Striver Drilling Co.	10-5-46	753 J	40	2	S; 3ft, 60g, dia 1 1/2	---	16	Sd, G	Pl	U	24	D	---	---
22B2	V. Shreve	---	8-13-47	762 J	40	2	S; 2 1/2ft, 60g, dia 1 1/2	---	13	Sd, G	Pl	U	27	D	---	---
22B3	D. Overholser	---	9-13-50	753 J	40	2	S; 3ft, 60g, dia 1 1/2	---	10	Sd, G	Pl	U	21	D	---	---
22B4	J. DeClark	---	7-18-52	772 J	69	2	S; 3 1/2ft, 60g, dia 1 1/2	---	7	Sd	Pl	C	37	D	J3/4	Sand and gravel from 0-40 ft; L.
23O1	N. Brown	W. Rodgers	2-10-55	743 J	42	2	S; 3ft, 60g, dia 1 1/2	---	26	Sd, G	Pl	U	18	D	J1/3	Sand and gravel from 0-42 ft; Ca.

Well No.	Township	Owner	Date	Dr	176	8	105	6	Sd.G	Pl	C	T	Notes
2551	Trustees, Penn Township	Layno-Northern Co., Inc.	2-27-53	795 Dr	176	10	39	20	Sd.G	Pl	U	J3	Bedrock at 135 ft; L. Ca., L.
2552			3-30-53	807 Dr	60	3	140	9	Sd	Pl	C	J	Yield 8 gpm; sand and gravel from 0-40 ft; Ca.
2553	C. Love, Sr.	Srifer Drilling Co.	7-23-57	846 J	149	2	20	20	Sd	Pl	U	J1/2	Yellow sand and gravel overlain by 30 ft yellow clay. Sand overlain by 59 ft blue clay. Ca., L.
2601	E. Angol	R. Reddish	4-9-57	764 J	40	2	100	7	Sd	Pl	C	J1/2	Bedrock at 250 ft; well G-SJ 127-1 (MS, 1948). Ca., L.
2602	T. Fry	Srifer Drilling Co.	11-5-45	808 J	74	2	87	6	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2603	J. Haines		8-4-54	837 J	167	2	78	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2604	F. J. Michalo			846 J	96	2	59	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2605	H. C. Ecklor		8-9-51	837 J	66	2	55	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2606	Mr. Hall		5-23-55	770 J	61	2	82	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2607	W. J. Mitchell			827 J	82	2	78	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2608	J. Reynolds	Srifer Drilling Co.	12-5-50	817 J	110	2	78	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2609	H. Carson		7-9-46	857 J	155	2	82	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2610	H. Nunnally		5-31-51	850 J	91	2	82	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2611	J. Taggle		11-19-55	792 J	39	2	82	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2612	W. O. Price		8-18-53	860 J	102	2	82	5	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2613	P. Klein		11-18-45	860 J	100	2	137	7	Sd	Pl	C	J1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2614	E. D. Zoltwanger		4-29-52	874 J	144	3	166	9	Sd	Pl	C	J1-1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2615	H. Shirk, Jr.		8-31-53	880 J	174	3	180	10	Sd	Pl	C	J1-1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2616	E. Wallis		4-24-54	878 J	180	3	180	10	Sd	Pl	C	J1-1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2617	W. Ballinger		3-5-54	885 J	180	3	180	10	Sd	Pl	C	J1-1/2	Sand and gravel overlain by 20 ft yellow clay. Ca.
2618	H. Powell		5-3-50	872 J	130	2	100	30	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2619	C. and B. Weiss	M. C. Plitcher	7-19-45	846 Dr	500	8	82	21	Sd	Pl	U	J1	Sand and gravel overlain by 20 ft yellow clay. Ca.
2620	R. D. Robinson	Srifer Drilling Co.	9-30-50	890 J	103	2	165	5	Sd	Pl	C	L	Sand and gravel overlain by 20 ft yellow clay. Ca.
2621	D. Horstbarger		8-13-56	887 J	170	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2622	C. V. Biltz		8-1-58	887 J	215	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2623	St. Francis Convent		8-25-57	902 J	173	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2624	F. A. DeNava		12-5-49	896 J	163	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2625	H. Lentino		11-1-50	887 Dr	188	4	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2626	E. Bechler		5-5-48	882	108	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2627	Mr. Alton		7-11-59	879 J	152	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2628	J. Brokewelt	Srifer Drilling Co.	6-47	876 J	153	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2629	R. Lehinger		10-50	876 J	150	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2630	T. Pynnest			891 J	110	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2631	W. J. Below		7-6-47	893 J	168	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2632	L. Marker		7-30-45	899 J	168	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2633	P. Dalio		4-15-54	885 J	147	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2634	A. Martens	Srifer Drilling Co.	10-15-58	860 J	158	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2635	D. Koil		3-17-58	802 J	174	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2636	F. Battles		3-24-58	895 J	140	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2637	R. C. Stein		6-12-48	842 J	133	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2638	R. G. Brandt		8-2-56	840 J	133	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2639	J. E. Falloy			843 J	139	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2640	M. R. Compeau		6-52	878 J	153	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2641	R. Dufendach		9-49	895 J	171	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2642	J. Battles		3-28-58	868 J	144	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2643	F. S. Orlich		3-2-51	863 J	131	2	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2644	D. C. Alexander		10-21-58	862 J	141	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.
2645	J. Pintor		10-10-55	802 J	136	3	140	33	Sd	Pl	U	J	Sand and gravel overlain by 20 ft yellow clay. Ca.

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Table 2.--Records of wells and test holes in St. Joseph 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				Remarks			
									Depth to top (feet)	Thickness (feet)	Character	Geologic age		Conditions of occurrence	Water level (feet)	Use
37/3-28N1	R. Curmican	Striver Drilling Co.	4-18-50	875 J	J	133	3	S; 3 1/2 ft., 60g. dia 2	13	S4,G	P1	C	111	D	---	L, See log well 29N1. Sand and gravel from 0-132 ft.
29N2	C. Kosczyk	---	9-20-52	883 J	J	141	2 1/2	S; 4 ft., 60g. dia 1 1/2	21	S4,G	P1	C	110	D	J1	---
29N3	Z. Grono	---	1-24-53	872 J	J	132	3	S; 4 ft., 60g. dia 2	22	S4,G	P1	U	110	D	J1	---
29N4	R. P. Morrissten	---	3-8-57	877 J	J	127	2	S	---	S4,G	P1	U	---	---	---	---
29N5	C. E. Buffe	---	---	880 J	J	138	2	S; 4 1/2 ft., 60g. dia	112	S4,G	P1	U	112	D	---	---
30A1	Mr. Corroll	---	10-24-56	803 J	J	83	2	S; 3 1/2 ft., 60g. dia	---	S4	P1	---	81	D	J3/4	---
30A2	Mr. Watsch	---	11-5-56	804 J	J	81	2	S; 3 1/2 ft., 10s1, dia	61	S4,G	P1	U	81	D	---	---
30A3	Mr. Reitsair	---	1957	807 J	J	118	2	S; 3 1/2 ft., 60g. dia	95	S4,G	P1	U	95	D	J3/4	---
30A4	B. Shaobo	---	5-15-57	857 J	J	134	3	S; 7 ft., 60g. dia 2	114	S4,G	P1	V	114	D	---	---
30A5	J. Goff	---	10-56	858 J	J	136	3	S; 5 ft., 80g. dia 2	118	S4	P1	U	118	D	---	---
30A6	Mr. Johnson	---	10-23-56	858 J	J	135	3	do	---	S4	P1	U	114	D	J	---
30G1	R. Huston	---	5-21-58	880 J	J	132	2	S; 5 ft., 80g. dia 1 1/2	110	S4,G	P1	V	110	D	---	---
30G2	Brethron Hens Kisselton Council, Inc.	---	9-10-57	877 J	J	168	3	S; 6 ft., 10s1, dia 2	120	S4,G	P1	V	120	P	---	---
30J1	Mr. Sebraerhorn	---	3-57	867 J	J	168	3	S; 7 ft., 80g. dia 2	---	S4	P1	---	110	D	---	---
30K1	M. W. Droubeck	---	9-43	880 J	J	153	3	S	---	S4	P1	---	---	---	---	---
30M1	C. Allon	---	---	873 J	J	129	2	S; 4 ft., 80g. dia 1	---	S4	P1	---	70	N	---	---
31A1	O. Demango	Layno-Northern Co.,	6-24-59	865 Dr	Dr	173	6	S; 15 ft., 15s1, dia 4	---	S4,G	P1	---	110	D	J1	---
31A2	St. Joseph County	---	---	---	---	---	---	---	---	---	P1	---	---	---	---	---
31C1	G. Zimser	Striver Drilling Co.	9-50	860 J	J	112	2	S; 3 ft., 60g. dia 1 1/2	88	S4,G	P1	V	88	D	J	---
31D1	J. A. Gordon	---	5-15-55	860 J	J	114	3	S; 2 1/2 ft., 80g. dia 1	90	S4,G	P1	V	90	D	---	---
31E2	H. Mietah	---	7-23-57	860 J	J	113	3	S; 5 ft., 10s1, dia 2	88	G.Sd	P1	V	86	D	---	---
31E3	E. L. Zimser	---	---	860 J	J	150	2	S; 3 1/2 ft., 10s1, dia	---	S4,G	P1	---	95	D,S	J1	---
31H1	South Bend Tribune	Indiana-Michigan Water Development Co.	10-8-47	878 Dr	Dr	164	6	S; 15 ft., dia 5 1/2	101	S4,G	P1	V	101	Ag,H	T7-1/2	---
31I2	P. R. Mangos	Striver Drilling Co.	8-27-50	870 J	J	131	2	S; 3 1/2 ft., 60g. dia	---	S4,G	P1	---	---	D	J1	---
31M1	A. M. Boulanger	---	---	863 J	J	110	2	S; 3 1/2 ft., 60g. dia	92	S4,G	P1	V	92	D	---	---
31M2	M. Ballot, Jr.	---	4-27-49	853 J	J	110	2	S; 3 ft., 80g. dia 1 1/2	92	S4,G	P1	U	92	D	L3/4	Do.
31R1	G. Battion	---	---	853 J	J	84	2	S; 3 ft., 60g. dia 1 1/2	---	S4,G	P1	---	86	D,S	L3/4	Ca.
33A1	E. Randolph	Striver Drilling Co.	---	873 J	J	113	2	do	88	S4,G	P1	V	88	D	---	---
33A2	J. Gemser	---	---	875 J	J	110	2	S; 3 1/2 ft., 60g. dia	85	S4,G	P1	V	85	D	---	---
33A3	M. Beiking	---	4-14-53	880 J	J	125	2 1/2	S; 3 1/2 ft., 80g. dia 1 1/2	120	S4	P1	C	106	D	J1	---
33A4	E. B. Christian	---	---	875 J	J	110	2	S; 3 1/2 ft., 60g. dia	91	S4,G	P1	V	91	D	---	---
33A5	J. Callahan	---	4-17-55	875 J	J	129	2 1/2	S; 5 ft., 60g. dia 1 1/2	88	S4,G	P1	V	88	D	---	---

37/3-33A6	A. Major	Drivilling Co.	8-30-57	680 J	122	3	9; 4 1/2 ft, 10al, dia 1 1/2	102	20	Sd, G	Pl U	102 D	Jl-1/2	L.
33B1	K. Blitz	W. Rodgers		685 J	131	2	S; 3 1/2 ft, 60g, dia 1 1/2	115	16	Sd, G	Pl V	115 D		Sand and gravel overlain by 60 ft yellow clay mixed with gravel.
33B2	D. Sovlak	Drivilling Co.	5-18-55	885 J	125	2 1/2	S; 3 ft, 60g, dia 1 1/2	100	25	Sd	Pl V	100 D		See log well 33A8.
33B3	J. W. Wallick	do	11-4-57	885 J	180	3	S; 3 ft, 60g, dia 2			Sd	Pl U		Jl-1/2	Ca, L.
33C1	A. Wendol	do	5-18-47	890	122	5	S; 3 1/2 ft, 10al, dia 1 1/2	97	41	Sd, G	Pl V	97 P	S	Dr 5 ft pumping 10 gpm; Ca, L.
33E1	Truth Publishing Co.	Layne-Northern Co., Inc.	12-9-57	874 Dr	132	6	S; 10 1/2 ft, 15al, dia 4	108	26	Sd, G	Pl V	108 D		Sand and gravel overlain by 48 ft brown clay.
33J1	W. K. Franco	Drivilling Co.		885 J	132	3	S; 3 ft, 60g, dia 1 1/2	98	20	Sd	Pl U	98 D		L.
33J2	L. Schwartz	do	8-19-55	875 J	118	3	S; 3 ft, 60g, dia 2	82	19	Sd	Pl U	82 D		L.
3441	R. A. Frick	do	2-3-55	880 J	101	2	S; 3 ft, 60g, dia 1 1/2	82	31	Sd, G	Pl U	84 D, S	Jl/2	
34B1	W. Weiss	do	4-8-45	880 J	82	2	S; 3 ft, 60g, dia 1 1/2	82	31	Sd, G	Pl U	82 D, S	L	Rod sand and gravel overlain by 50 ft blue clay; Ca.
34B1	R. Kline	do	11-15-51	800 J	113	2	S; 3 1/2 ft, 10al, dia 1 1/2	76	19	G, Sd	Pl U	76 D, S	Jl	Gravel and sand overlain by 20 ft yellow clay; Ca.
35D1	C. Rodgers	do	9-18-51	840 J	95	2 1/2	S; 3 ft, 60g, dia 1 1/2	82	18	G, Sd	Pl U	82 D, S	J3/4	For fire protection; coarse gravel overlain by 30 ft blue clay.
35D2	E. Castello	do	J-7-53	850 Dr	100	3	S; 3 ft, 60g, dia 2	64	26	G	Pl U	64		L.
35D3	Trustees Penn Township	do	8-29-57	855 Dr	90	4	S; 10 ft, 10al	70	21	Sd, G	Pl U	70 D		Gravel overlain by 60 ft yellow and blue clay; Ca.
35N1	M. Hurlbut	do	2-26-53	850 J	91	2	S; 3 1/2 ft, 10al, dia 1 1/2	73	18	G	Pl U	73 D		Ca.
35N2	C. Van Ooteghem	do		850 J	91	2	S; 3 1/2 ft, 10al, dia 1 1/2	71	35	0	Pl V	71 D		Ca.
36Q1	L. E. Duchatolot	do	8-50	840 J	108	2	S; 3 1/2 ft, 60g, dia 1 1/2	26	32	Sd, G	Pl U	26 P		Yellow sand and gravel overlain by 18 ft yellow sand.
37/4-4UJ	Buck's Shell Station	do	3-18-49	758 Dr	34	2	S			Sd	Pl	27 P		Sand and gravel from 0-49 ft.
4UJ	Night Fall Motel	do	1-9-53	748 Dr	58	4	S; 8 ft, 10al	33	16	Sd, G	Pl V	33 D		Sand and gravel from 0-45 ft.
4P1	N. Gaugler	do		752 J	49	2	S; 3 1/2 ft, 60g, dia 1 1/2	32	13	Sd, G	Pl U	32 D		Sand and gravel from 0-37 ft.
4B2	F. Gaugler	do	4-23-49	752 J	48	2	S; 3 ft, 60g, dia 1 1/2	22	18	Sd, G	Pl V	22 D	J	Sand and gravel from 0-40 ft.
4B1	T. Miller	do	10-3-50	752 J	57	3	S; 3 ft, 60g, dia 2	22	18	Sd, G	Pl V	22 D	J	Do.
5E1	C. Fisher	do	7-20-56	748 J	40	2	S; 3 1/2 ft, 10al, dia 1 1/2	25	15	Sd, G	Pl U	25 D		Yield 10 gpm; Ca, L.
5U1	W. Horn	do	12-28-53	752 J	40	2	S; 3 1/2 ft, 60g, dia 1 1/2	24	24	Sd, G	Pl U	24 Jr	J5	Yield 90 gpm; sand and gravel from 0-48 ft; Ca.
6B1	J. Balog	Barrett and Kama	7-15-59	754 J	25	2	S; 4 ft, 10al, dia 1			Sd, G	Pl C	7 D		L.
6J1	Vielnyck Nursery	Drivilling Co.	3-10-55	748 J	91	2	S; 4 ft, 10al, dia 1			Sd, G	Pl U	24 Jr		L.
6J2	do	do	3-3-55	748 Dr	48	4	S; 10 ft, 10al	34	8	Sd, G	Pl C	27 D		Sand overlain by clay.
7A1	M. Heeter	do		748 J	42	2	S; 3 ft, 60g, dia 1 1/2	42	16	Sd, G	Pl C	28 D		L.
7A2	R. C. Riffol	do	10-15-48	744 J	58	2	do	48	19	Sd, G	Pl C	32 D		L.
7A3	O. Ulck	do	8-7-54	747 J	67	2	do	20	44	Sd, G	Pl U	20 D	J1/3	Sand and gravel from 0-64 ft; Ca.
7A4	W. J. Culp	do	1954	747 J	64	2	S; 3 1/2 ft, 60g, dia 1 1/2			Sd, G	Pl	28 T		L.
7B1	Trustees Penn Township	Layne-Northern Co., Inc.	2-24-56	747 Dr	152	5	do			Sd, G	Pl	32 P	J	Dr 17 ft pumping 730 gpm; Ca, L.
7B2	do	do	11-30-57	746 Dr	152	26-12	Gp; S; 30 ft, 80al, dia 1 1/2			Sd, G	Pl	32 P	Jl/2	Yellow sand and gravel from 0-44 ft.
7C1	F. A. Liggell	Drivilling Co.	1-28-54	747 J	44	2	S; 3 ft, 60g, dia 1 1/2	28	16	Sd, G	Pl V	28 D	Jl/2	Do 57 ft after 8 hr pumping 1,700 gpm; L.
7D1	Rockwell Spring and Art Co.	Layne-Northern Co., Inc.	11-7-57	748 Dr	154	28	S; 25 ft, 80al, dia 1 1/2			Sd, G	Pl C	40 I	T125	Bedrock at 156 ft; L.
7E2	do	do	10-4-57	748 Dr	149	8	S; 10 ft, dia 6	139	17	Sd, G	Pl C	32 T		Do 13 ft after 3 hr pumping 630 gpm; bedrock at 153 ft; Ca, L.
7E1	W. L. Davis	Drivilling Co.	11-4-55	748 J	40	2	S; 4 ft, 60g, dia 1 1/2	99	54	Sd, G	Pl C	32 I		Sand and gravel from 0-44 ft.
7E2	Rockwell Spring and Art Co.	Layne-Northern Co., Inc.	2-24-56	749 Dr	153	26	Gp; S; 25 ft, 105al, dia 1 1/2			Sd, G	Pl C	32 I		L.
7E1	C. Barnhardt	Drivilling Co.	8-20-49	746 J	44	2	S; 3 ft, 60g, dia 1 1/2	40	4	Sd, G	Pl U	40 D		Ca.
7E1	J. McMillan	do	12-4-56	742 J	83	2	S; 3 1/2 ft, 60g, dia 1 1/2	55	7	Sd, G	Pl C	35 D		L.
7H1	C. B. Addington	do	11-9-56	742 J	76	2	S; 3 1/2 ft, 10al, dia 1 1/2			0	Pl	---	J	Ca.
7N1	Wayne Heating Co.	do	6-18-55	730 J	40	2	S; 3 1/2 ft, 60g, dia 1 1/2	13	27	Sd, G	Pl V	13 D	J	Sand and gravel from 0-40 ft; Ca.

Table 2.--Records of wells and test holes in St. Joseph 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	Conditions of occurrence				
374-	R. Fisher	Srivor Drilling Co.	1-10-58	740 J	81	2	S; 3 1/2 ft. 60g. dia 1 1/2	73	6	Sd	Pl	C	29	D	J1/2	L.	
821	W. Rogers	-----do-----	-----	722 J	40	2	S; 3 ft. 60g. dia 1 1/2	30	10	Sd	Pl	C	---	D	J	See log well BR2; Ca.	
822	P. Duardorff	-----do-----	Fall 1945	722 J	44	2	-----do-----	54	10	Sd	Pl	C	24	D	J1/2	Ca. L.	
9A1	J. Wright	-----do-----	10-12-48	750 J	74	3	S; 5 ft. 80g. dia 2	60	14	Sd	Pl	C	48	D	J	Ca. L.	
9C1	J. L. Boiesel	-----do-----	7-10-51	748 J	45	2	S; 3 1/2 ft. 80g. dia 1 1/2	31	14	Sd, G	Pl	U	31	D	J1/2	Sand and gravel from 0-45 ft.	
9C2	C. Hood, Jr.	-----do-----	4-17-50	724 J	39	2	S; 3 ft. 60g. dia 1 1/2	16	23	Sd, G	Pl	U	16	D	---	Sand and gravel from 0-39 ft.	
9D1	Chapel Hill Development Co.	Indiana-Michigan Water Development Co.	5-26-50	750 Dr	100	10	S; 15 ft. 40gal. dia 9"	30	70	Sd, G	Pl	U	30	P, Jr	T10	Da 50 ft pumping 150 gpm; Ca. L.	
9C1	F. Kocly	Srivor Drilling Co.	6-16-51	731 J	27	2	S; 3 1/2 ft. 80g. dia 1 1/2	16	15	Sd, G	Pl	U	16	D	---	Fine sand overlain by 27 ft sand and gravel; clay at 32 ft.	
9E2	G. Clark	W. Rodgers	8-10-54	731 J	44	2	S; 3 ft. 60g. dia 1 1/2	40	4	Sd, G	Pl	C	18	D	J1	Yield 13 gpm; Ca. L.	
9A1	D. Quier	Srivor Drilling Co.	5-18-50	732 J	40	2	-----do-----	19	22	Sd, G	Pl	U	18	D	---	Sand and gravel from 0-40 ft.	
9B2	J. Dean	-----do-----	8-50	728 J	32	2	-----do-----	---	---	Sd, G	Pl	U	---	D	---	Sand and gravel from 0-32 ft. clay at 32 ft.	
9P1	A. Martzog	-----do-----	1-27-51	725 J	45	2	-----do-----	40	5	Sd	Pl	C	8	D	---	Sand overlain by 40 ft clay.	
9Q1	F. Dishop	W. Rodgers	12-15-54	727 J	65	2	S; 3 ft. 10gal. dia 1 1/2	58	7	Sd, G	Pl	C	8	D	J1/2	Yield 10 gpm; L.	
9R2	W. K. Micholien	Srivor Drilling Co.	11-7-50	728 J	42	2	S; 3 ft. 60g. dia 1 1/2	22	18	Sd, G	Pl	U	22	D	---	Sand and gravel from 0-40 ft.	
16C1	G. Bensingler	-----do-----	11-30-48	728 J	42	2	S; 5 ft. 80g. dia 1 1/2	45	7	Sd, G	Pl	C	16	D	---	Sand and gravel from 0-32 ft.	
16C2	F. B. Wiso	-----do-----	6-50	728 J	52	2	S; 3 ft. 60g. dia 1 1/2	45	7	Sd, G	Pl	C	15	D	---	Sand overlain by 40 ft clay.	
16D1	R. Weissweaver	-----do-----	10-17-51	737 J	74	2	S; 3 1/2 ft. 80g. dia 1 1/2	21	15	Sd, G	Pl	U	21	D	---	Yield 10 gpm; L.	
16E1	F. Millor	-----do-----	Fall 1952	741 J	37	2	S; 3 ft. 10gal. dia 1 1/2	21	16	Sd, G	Pl	U	21	D	---	Sand and gravel from 0-37 ft.	
16E2	H. Brown	-----do-----	2-5-54	741 J	68	2	S; 3 ft. 60g. dia 1 1/2	43	23	Sd, G	Pl	C	22	D	---	Ca. L.	
16P1	G. Morgan	-----do-----	7-28-51	747 Dr	30	2	S; 3 ft. 60g. dia 2	13	17	Sd, G	Pl	U	13	D	J1/3	Sand and gravel from 0-30 ft.	
17A1	Town of Osceola	Indiana-Michigan Water Development Co.	8-3-50	737 Dr	114	6	S; 12 ft. 25gal. dia 5 1/2	72	42	Sd, G	Pl	C	14	P	T5	Da 5 ft pumping 78 gpm; at the Moran School; Ca. L.	
17A2	R. Ingraham	-----do-----	7-54	738 Dr	81	8	S; 6 ft. 30gal. dia 7 1/2	---	---	Sd	Pl	---	21	D	J1/4	Da less than 12 ft pumping 95 gpm; L.	
17B1	C. LaCluyse	Srivor Drilling Co.	10-8-55	734 J	57	2	S; 3 1/2 ft. 10gal. dia 1 1/2	32	25	Sd	Pl	C	13	D	---	Bedrock at 143 ft; L.	
17C1	Town of Osceola	Layno-Northern Co., Inc.	12-22-58	732 Dr	145	8 1/2	-----do-----	---	---	Sd, G	Pl	---	---	T	---	---	
17F1	C. Krahuloc	Srivor Drilling Co.	9-20-51	733 J	50	2	S; 3 1/2 ft. 60g. dia 1 1/2	---	---	Sd	Pl	---	---	D	---	---	
17H1	W. H. Drown	-----do-----	1952	727 J	57	3	S; 5 ft. 60g. dia 2	---	---	Sd	Pl	---	15	P	J	Ca. L.	
18D1	City of Mishawaka	Layne-Northern Co., Srivor Drilling Co.	3-18-55	728 Dr	143	---	-----do-----	---	---	G, Sd	Pl	---	15	T	---	Ca. L.	
19A1	C. Kainak	-----do-----	1-23-54	742 J	51	2	S; 3 1/2 ft. 10gal. dia 1 1/2	---	---	Sd, G	Pl	---	11	D	J1/3	Ca. L.	
21P1	Mr. Williamson	-----do-----	1-56	752 J	64	2	S; 3 1/2 ft. 60g. dia 1 1/2	---	---	Sd, G	Pl	---	14	D	---	Ca. L.	
28L1	J. Monnaugh	-----do-----	1-24-58	756 J	65	2	-----do-----	54	11	Sd	Pl	C	17	D	---	L.	
29J1	L. Frick	Woods and Keol Well Drilling Co.	12-4-59	772 J	44	2	-----do-----	13	31	Sd	Pl	U	13	D	---	Yield 6 gpm; L.	
30K1	V. Rowley	Srivor Drilling Co.	6-50	768 J	39	2	-----do-----	17	22	Sd, G	Pl	U	17	D, S	---	Sand and gravel from 0-38 ft; Ca.	
31M1	H. Ort	-----do-----	5-5-49	805 J	83	2	-----do-----	---	---	Sd	Pl	---	73	D, S	L	Ca.	

37/4-3381	L. Eby	Sliver Drilling Co.	7-8-59	805 J	70	2	S: 3ft, 60g, dia 1 1/2	64	6	84.0	P1 C	C	52	D	Ca, L.
38/1-1031	O. Proud	Hunt Hooster Hardware	12-28-55	755 J	100	2	S: 4ft, 60g, dia 1	92	8	84.0	P1 C	C	50	D, S	Ca, L.
1081	L. Deubois	Raymond Concrete Pile Co.	4-24-54	700 B	25	2	S: 4ft, 60g, dia 1	---	---	84.0	P1 U	U	12	T	See log well 1483.
1482	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Do.
1483	---	---	4-23-54	722 D	30	---	---	14	11	84.0	P1 C	U	14	T	L.
1484	---	---	4-22-54	731 B	25	---	---	14	9	84.0	P1 C	C	14	T	See log well 1483.
1485	---	---	4-22-54	733 B	25	---	---	14	9	84.0	P1 C	C	13	T	Do.
1481	---	---	4-14-54	805 B	35	---	---	---	---	---	---	---	---	---	No water reported; see log well 1482.
1482	---	---	4-15-54	807 B	35	---	---	---	---	---	---	---	---	---	L.
1483	---	---	4-16-54	808 B	40	---	---	---	---	---	---	---	---	---	L.
1481	---	---	4-18-54	797 B	60	---	---	---	---	---	---	---	---	---	L.
1521	R. Copponour	Barrett and Kama	7-1-49	800 J	65	2	S: 4ft, 100g, dia 1	52	8	84.0	P1 C	C	45	D	Yield 9 Gpm; Ca, L.
1531	O. Proud	Hunt Hooster Hardware	7-7-53	805 J	66	2	S: 60g	70	16	84.0	P1 C	C	55	D, S	Ca.
1532	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-14-54	804 B	35	---	---	---	---	---	---	---	---	---	No water reported; see log well 1533.
1533	---	---	4-14-54	802 B	35	---	---	---	---	---	---	---	---	---	L.
1534	---	---	4-15-54	800 B	35	---	---	---	---	---	---	---	---	---	L.
1535	---	---	4-15-54	798 B	20	---	---	---	---	---	---	---	---	---	See log well 1533.
1531	R. Coffman	Sliver Drilling Co.	2-18-54	803 J	105	3	S: 7ft, dia 2	68	37	84.0	P1 U	U	68	D	See log well 1533.
1531	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-13-54	811 B	45	---	---	---	---	---	---	---	---	---	Ca, L.
1542	---	---	4-14-54	814 B	35	---	---	---	---	---	---	---	---	---	L.
1541	---	---	4-15-54	798 B	45	---	---	---	---	---	---	---	---	---	L.
1541	---	---	4-16-54	801 B	31	---	---	---	---	---	---	---	---	---	See log well 1542.
1542	---	---	3-19-57	786 Dr	110	6	S: 10ft, dia 5 1/2	78	33	84.0	P1 C	C	28	I	See log well 1542.
2281	Indiana and Michigan Electric Co.	Development Co.	7-24-39	785 Dr	106	6	S: 10ft, dia 5 1/2	64	42	84	P1 C	C	28	I	See log well 1542.
2282	---	---	---	---	---	---	---	---	---	---	---	---	---	---	upper 5 ft 15 sl, lower 5 ft 25 sl; L.
24E1	Raven Hubbard Memorial	---	---	783 Dr	86	4	---	---	---	84.0	P1	---	---	---	15 sl and 25 sl; see log well 2281; Ca.
24E2	Town of New Carlisle	Michigan Drilling Co.	4-7-52	820 Dr	192	6	---	---	---	84.0	P1 C	---	---	---	Ca.
34M1	C. Ray	Hunt Hooster Hardware	6-1-57	815 J	65	2	S: 4ft, 60g, dia 1	50	16	84.0	P1 U	U	50	---	Yield 13 Gpm; Ca, L.
35D1	Town of New Carlisle	Indiana-Michigan Water Development Co.	10-3-54	785 Dr	115	12	S: 20ft, 300g, dia 1 1/2	88	30	84.0	P1 C	C	30	P	See log well 1542.
35D2	---	---	10-21-40	795 Dr	132	8	S: 10ft, 28sl, dia 1 1/2	115	17	84	P1 C	C	33	P	See log well 1542.
38D1	Indiana-Michigan Electric Co.	Layne-Northern Co., Inc.	11-28-57	792 Dr	05	6	S: 10ft, 15sl, dia 3 1/2	48	17	84.0	P1 C	C	20	P, I	See log well 781.
38J1	C. Cole and Son	---	11-3-40	748 Dr	41	8	---	---	---	84.0	P1 U	U	16	D, S	See log well 822.
38/1-781	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-28-54	737 B	48	---	---	---	---	84.0	P1 U	U	2	T	See log well 822.
782	---	---	4-28-54	737 B	42	---	---	---	---	---	---	---	---	---	L.
8N1	---	---	4-29-54	738 B	40	---	---	---	---	---	---	---	---	---	L.
8N2	---	---	4-29-54	738 B	40	---	---	---	---	---	---	---	---	---	L.
8N3	---	---	4-30-54	738 B	40	---	---	---	---	---	---	---	---	---	L.
13L1	C. Reish	Layne-Northern Co., Inc.	3-8-50	798 Dr	110	12	S: 20ft	76	34	84.0	P1 C	C	50	I*	See log well 822.
13P1	---	---	11-19-49	822 J	102	2	S: 3 1/2 ft, 60g, dia 1 1/2	87	15	84	P1 U	U	87	---	See log well 822.
13Q1	A. Lichtenbarger	Sliver Drilling Co.	10-28-40	822 J	102	2	S: 3 1/2 ft, 60g, dia 1 1/2	---	---	84.0	P1	---	---	---	Sand overlain by 85 ft gravel and stone; Ca.
13Q2	R. Lichtenbarger	---	10-28-40	805 J	72	2	S: 3 1/2 ft, 60g, dia 1 1/2	53	19	84.0	P1 C	C	53	S	Ca.
15E1	Indiana Toll Road Commission	Raymond Concrete Pile Co.	5-5-54	739 B	35	---	---	---	---	84.0	P1 U	U	7	T	L.
15E2	---	---	5-6-54	739 B	30	---	---	---	---	84.0	P1 U	U	8	T	See log well 15E1.
15E3	---	---	---	790 B	20	---	---	---	---	---	---	---	---	---	No water reported; see log well 15E1.
15K1	---	---	---	796 B	18	---	---	---	---	---	---	---	---	---	No water reported; fine sand overlain by 2 ft silt and top well.

Table 2.--Record of wells and lost holes in St. Joseph 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				Remarks			
									Depth to top (feet)	Thickness (feet)	Character	Geologic age		Conditions of occurrence	Water level (feet)	Use
2611	G. W. Rough	Raymond Concrete Pile Co.	12-27-46	787 J	J	65	2	S; 3ft, 60g, dia 1 1/2	50	15	Sd, G	Pl U	---	---	---	Sand and gravel from 0-65 ft; thin layers of sand; Ca. Ca.
2612	H. M. Shaw	Raymond Concrete Pile Co.	---	787 J	J	59	2	S; 3ft, 60g, dia 1 1/2	44	15	Sd	Pl U	---	---	---	Yellow sand overlain by 32 ft yellow stony gravel; Ca.
2613	W. F. Gummel	Raymond Concrete Pile Co.	7-31-54	757 J	J	64	2	S; 2ft, 60g, dia 1 1/2	35	29	Sd, G	Pl U	---	---	---	Sand and gravel from 0-64 ft.
2614	J. Podomski	Raymond Concrete Pile Co.	9-29-51	772 J	J	60	2	S; 3ft, 60g, dia 1 1/2	44	16	Sd, G	Pl U	---	---	---	Yellow sand and gravel with stones from 0-80 ft.
2615	W. Millekin	Hunts Hoopster Hardware	7-10-54	787 J	J	76	2	S; 3ft, 60g, dia 1 1/2	61	15	Sd, G	Pl U	---	---	---	Ca. l.
2616	J. Doreus	Raymond Concrete Pile Co.	10-1-59	785 J	J	63	2	S; 3ft, 60g, dia 1 1/2	63	5	Sd	Pl C	---	---	---	L.
2617	G. D. Frye	Silver Drilling Co.	5-22-47	771 J	J	82	2	S; 3ft, 60g, dia 1 1/2	44	22	Sd, G	Pl U	---	---	---	Sand and gravel from 0-66 ft.
2618	H. Hatis	Raymond Concrete Pile Co.	8-9-47	765 J	J	66	2	do	44	22	Sd, G	Pl U	---	---	---	---
2619	J. Singletary	Raymond Concrete Pile Co.	8-6-50	782 J	J	80	2	do	---	---	Sd	Pl	---	---	---	---
2361	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-19-54	777 D	D	35	---	---	30	5	Sd	Pl U	---	---	---	No water reported; see log well 2361.
2362	do	do	4-20-54	775 B	B	30	---	---	---	---	---	---	---	---	---	No water reported; see log well 2364.
2363	do	do	4-20-54	772 B	B	35	---	---	32	3	Sd, G	Pl U	---	---	---	No water reported; L.
2364	do	do	4-22-54	773 D	D	55	---	---	---	---	---	---	---	---	---	See log well 2361.
2365	do	do	1-19-54	772 B	B	26	---	---	---	---	---	---	---	---	---	Sand and gravel overlain by 21 ft brown clay; Ca.
2381	E. Porter	Silver Drilling Co.	12-8-54	800 J	J	81	3	S; 1ft, 60g, dia 2	54	27	Sd, G	Pl U	---	---	---	No water reported; L.
2431	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-23-54	794 B	B	95	---	---	---	---	---	---	---	---	---	No water reported; L.
2432	do	do	4-23-54	794 B	B	40	---	---	30	10	Sd, G	Pl U	---	---	---	See log well 2432.
2433	do	do	4-21-54	793 B	B	40	---	---	30	10	Sd, G	Pl U	---	---	---	Do.
2434	do	do	4-22-54	792 B	B	40	---	---	22	18	Sd, G	Pl U	---	---	---	Do.
2435	do	do	4-22-54	794 B	B	38	---	---	---	---	---	---	---	---	---	Sand and gravel overlain by 80 ft blue clay with few thin layers of sand; Ca.
2511	J. C. Smith	Silver Drilling Co.	3-7-47	762 J	J	86	2	S; 3ft, 60g, dia 1 1/2	80	8	Sd, G	Pl C	---	---	---	Sand and gravel from 0-65 ft; thin layers of sand; Ca. Ca.
2512	L. Pogzli	do	8-9-51	755 J	J	88	3	S; 5ft, 60g, dia 2	---	---	---	---	---	---	---	Yellow sand overlain by 32 ft yellow stony gravel; Ca.
2611	G. W. Rough	Raymond Concrete Pile Co.	12-27-46	787 J	J	65	2	S; 3ft, 60g, dia 1 1/2	50	15	Sd, G	Pl U	---	---	---	Sand and gravel from 0-64 ft.
2612	H. M. Shaw	Raymond Concrete Pile Co.	---	787 J	J	59	2	S; 3ft, 60g, dia 1 1/2	44	15	Sd	Pl U	---	---	---	Yellow sand and gravel with stones from 0-80 ft.
2613	W. F. Gummel	Raymond Concrete Pile Co.	7-31-54	757 J	J	64	2	S; 2ft, 60g, dia 1 1/2	35	29	Sd, G	Pl U	---	---	---	Ca. l.
2614	J. Podomski	Raymond Concrete Pile Co.	9-29-51	772 J	J	60	2	S; 3ft, 60g, dia 1 1/2	44	16	Sd, G	Pl U	---	---	---	L.
2615	W. Millekin	Hunts Hoopster Hardware	7-10-54	787 J	J	76	2	S; 3ft, 60g, dia 1 1/2	61	15	Sd, G	Pl U	---	---	---	Sand and gravel from 0-66 ft.
2616	J. Doreus	Raymond Concrete Pile Co.	10-1-59	785 J	J	63	2	S; 3ft, 60g, dia 1 1/2	63	5	Sd	Pl C	---	---	---	---
2617	G. D. Frye	Silver Drilling Co.	5-22-47	771 J	J	82	2	S; 3ft, 60g, dia 1 1/2	44	22	Sd, G	Pl U	---	---	---	---
2618	H. Hatis	Raymond Concrete Pile Co.	8-9-47	765 J	J	66	2	do	44	22	Sd, G	Pl U	---	---	---	---
2619	J. Singletary	Raymond Concrete Pile Co.	8-6-50	782 J	J	80	2	do	---	---	Sd	Pl	---	---	---	---

38/1-3101	J. Halonsy	Hunts Hoosier Hardware	747 J	31	2	8; 3 1/2 ft., 80g, dia 1 1/2	---	Sd, G	P1	12 D	---	Yield 13 gpm; sand and gravel overlain by 18 ft sand and clay; Ca.
3181	C. Cole and Son	Layne-Northorn Co., Inc.	743 Dr	86	16	8	4	Sd, G	P1 U	4 Jr	---	Sand and gravel overlain by 2 ft top soil.
3381	New York Control System	---	722 Dr	48	12	8; 16 ft., 16x1	5	Sd, G	P1 U	5 N	---	Dd 1.8 ft pumping 400 gpm.
3382	---	---	722 Dr	38	12	8; 16 ft	5	Sd, G	P1 U	5 O	---	Dd 7.5 ft pumping 420 gpm; Observation well St. Joseph 20; water level measured 5.19 ft below lnd, 8-21-56; see log well JSRI.
3371	W. Do Vang	Srifer Drilling Co.	728 J	44	2	8; 3 ft., 80g, dia 1 1/2	---	Sd	P1	28 D	---	L.
3371	F. Yando Zando	---	737 J	57	2	---	35	G, Sd	P1 C	28 D	---	L.
3372	R. R. Fricfor	---	742 J	64	2	---	22	Sd, G	P1 C	20 D	---	L.
3371	C. Michalski	---	723 J	45	2	---	---	Sd	P1	---	---	Sand overlain by 38 ft quick-sand and clay.
3582	F. Mark	---	742 J	54	2	8; 5 ft., 80g, dia 1 1/2	---	Sd	P1	20 D	---	Ca.
3581	J. Romano	---	757 J	54	2	8; 3 ft., 80g, dia 1 1/2	---	Sd	P1 C	38 D	---	Dd 15 ft pumping 50 gpm; well SJ 37 (RS, 1948); Ca, L.
3881	City Bureau Development Co.	Indiana-Michigan Water Development Co.	782 Dr	72	6	5; 10 ft., 30x1, dia 5 1/2	60	Sd, G	P1 C	35 P	---	Dd 16 ft pumping 40 gpm; L.
3882	---	---	745 Dr	82	6	8; 10 ft., 20x1, dia 5 1/2	---	Sd, G	P1	29 P	---	---
38/2- 711	C. L. Ehninger	Srifer Drilling Co.	802 J	87	2	8; 3 ft., 80g, dia 1 1/2	50	Sd, G	P1 U	50	---	Sand and gravel from 0-67 ft; Ca.
681	J. Sluss	---	800 J	80	2	8; 3 1/2 ft., 60g, dia 1 1/2	---	Sd, G	P1	54 D	---	J1
891	F. Szuch	Srifer Drilling Co.	787 J	71	2	8; 3 ft., 80g, dia 1 1/2	48	Sd, G	P1 U	48 D	---	Sand and gravel from 0-71 ft. Ca, L.
892	O. Sant V. Dunn	---	800 J	64	2	---	32	Sd, G	P1 U	52 D	---	Ca, L.
891	R. Volte	---	787 J	74	2	---	55	Sd, G	P1 U	55	---	J1/2
1181	A. Ladd	---	896 J	48	2	8; 3 1/2 ft., 80g, dia 1 1/2	33	Sd, G	P1 U	33 D	---	J3/4
1271	E. Day	---	743 J	59	2	8; 3 ft., 80g, dia 1 1/2	40	Sd, G	P1 U	40 D	---	Sand and gravel from 0-59 ft.
1281	Wegwood Park Water Co.	Indiana-Michigan Water Development Co.	738 Dr	77	6	8; 15 ft	---	Sd, G	P1 U	---	---	Dd 15 ft pumping 150 gpm; screen, upper 3 ft 46 in, lower 12 ft, 16 in; see log well 1282.
1282	---	---	738 Dr	85	10	8; 15 ft., 20x1, dia 1 1/2	22	Sd, G	P1 U	22 P	---	Dd 27.5 ft after 24 hr pumping 350 gpm; L.
1281	Mr. Stang	Srifer Drilling Co.	729 J	42	2	8; 3 ft., 80g, dia 1 1/2	25	Sd, G	P1 U	25 D	---	Sand and gravel from 0-42 ft.
1282	A. L. Kovacska	---	724 J	44	2	8; 3 1/2 ft., 80g, dia 1 1/2	23	Sd, G	P1 U	23 D	---	Sand and gravel from 0-44 ft.
1283	C. Adams	---	720 J	45	2	8; 3 ft., 80g, dia 1 1/2	22	Sd, G	P1 U	22 D	---	Yellow sand and gravel from 0-45 ft. Ca, L.
1371	Truette, Clay Township	---	732 Dr	142	4	8; 8 ft., 80g, dia 2 1/2	---	Sd, G	P1	35 P	---	---
1372	H. Van Riesen	Indiana-Michigan Water Development Co.	732 Dr	60	6	8; 5 1/2 ft., 15x1, dia 1 1/2	26	G, Sd	P1 U	26 D	---	Dd 6 ft pumping 38 gpm; L.
1381	J. V. Kacurab	Srifer Drilling Co.	727 J	51	2	8; 3 1/2 ft., 80g, dia 1 1/2	9	Sd, G	P1 V	9 D	---	Sand and gravel from 0-51 ft.
1381	R. C. Huss	---	734 J	58	2	8; 4 1/2 ft., 60g, dia 1 1/2	32	Sd, G	P1 V	32 D	---	Sand and gravel from 0-58 ft.
1382	J. Dumlug	---	734 J	51	3	8; 4 ft., 60g, dia 2	22	Sd, G	P1 V	22 D	---	Sand and gravel from 0-51 ft.
1383	A. Wess, Jr.	---	734 J	54	2	8; 3 1/2 ft., 80g, dia 1 1/2	30	Sd, G	P1 U	30 D	---	Sand and gravel from 0-54 ft.
1384	D. A. Scott	---	734 J	58	2	8; 3 ft., 80g, dia 1 1/2	---	Sd, G	P1	28 D	---	---
1391	F. Vaughn	---	723 J	37	2	---	---	Sd	P1 U	---	---	L
1392	F. Nojman	R. Reddish	725 J	44	2	8; 3 1/2 ft., 80g, dia 1 1/2	20	Sd	P1 U	20 D	---	---
1393	M. Hileman	Srifer Drilling Co.	732 J	60	3	8; 5 ft., 60g, dia 2	28	Sd, G	P1 V	28 D	---	Sand from 0-44 ft.
1391	L. Mitchell	---	726 J	40	2	8; 3 1/2 ft., 60g, dia 1 1/2	15	Sd	P1 U	15 D	---	Blue sand and gravel overlain by 50 ft yellow sand and gravel; Ca.
1392	D. Peditke	Indiana-Michigan Water Development Co.	726 J	40	2	8; 3 ft., 80g, dia 1 1/2	14	Sd, G	P1 U	14 D	---	Sand and gravel from 0-40 ft. Ca, L.
1411	J. W. Toyne	---	690 Dr	41	4	8; 6 ft., 80g, dia 2 1/2	21	G, Sd	P1 C	15 D	---	Sand from 0-46 ft.

Table 2.--Records of wells and test holes in St. Joseph 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					Type of pump and horsepower	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age	Conditions of occurrence		
1481	M. E. Winstead	Srivor Drilling Co.	6-30-48	701 J	J	112	2	S: 3ft., 60g., dia 1 1/2	25	18	Sd, G	Pl	V	J1	L. Sand and gravel from 0-43 ft.; Ca. L.
1482	-----do-----	-----do-----	4-17-54	701 J	J	43	2	S: 4 1/2 ft., 7 gal., dia 1 1/2	26	14	Sd, G	Pl	V	D	Sand and gravel from 0-40 ft.
1481	J. C. Bayman	-----do-----	7-17-54	711 J	Dr	40	2	S: 1ft., 60g., dia 1 1/2	42	20	Sd	Pl	C	J1	Ch. L.
1511	A. Klupa	-----do-----	11-8-46	716 Dr	Dr	80	4	S: 60g., dia 2 1/2	70	16	Sd, G	Pl	U	J1	Ch. L.
1512	W. Heider	-----do-----	10-27-57	723 J	J	62	2	S: 3 1/2 ft., 60g., dia 1 1/2	50	17	Sd	Pl	C	J1/2	See log well 1682. Dd less than 15 ft pumping 40 gpm; screen, upper 7 ft 15 in., lower 3 ft 30 in.; Ca. L.
15M1	E. Stillson	-----do-----	8-17-48	812 J	J	86	2	S: 3ft., 60g., dia 1 1/2	67	39	Sd, G	Pl	C	---	---
15M1	F. C. Dawson	-----do-----	-----	788 J	J	135	2	S: 3 1/2 ft., 60g., dia 1 1/2	65	22	Sd, G	Pl	U	---	Sand and gravel from 0-89 ft. L.
16M1	E. Boiregson	R. Reddish	6-11-57	701 J	J	67	2	-----do-----	67	27	Sd, G	Pl	U	---	See log well 19F1.
16B2	F. Schuett	Indiana-Michigan Water Development Co.	2-23-48	785 Dr	Dr	104	6	S: 10ft., dia 5 1/2	10	30	Sd, G	Pl	U	---	No water reported; see log 19F1.
16R1	W. Lawrence	Srivor Drilling Co.	7-11-55	787 J	J	89	2 1/2	S: 5ft., 60g., dia 1 1/2	8	8	Sd, G	Pl	U	---	No water reported; see log 19F1.
19F1	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-24-54	804 B	B	40	---	-----	20	6	Sd, G	Pl	U	---	See log well 19F1.
19F2	-----do-----	-----do-----	4-26-54	804 B	B	35	---	-----	---	---	Sd, G	Pl	U	---	No water reported; see log 19F1.
19F3	-----do-----	-----do-----	4-28-54	804 B	B	35	---	-----	---	---	Sd, G	Pl	U	---	See log well 19F1.
19F4	-----do-----	-----do-----	4-27-54	804 B	B	35	---	-----	---	---	Sd, G	Pl	U	---	See log well 19F1.
19F5	-----do-----	-----do-----	4-27-54	804 B	B	35	---	-----	---	---	Sd, G	Pl	U	---	Dd 5 ft after 8 hr pumping 130 gpm; Ca. L.
19F1	Trustees, German Township	Indiana-Michigan Water Development Co.	10-15-57	815 Dr	Dr	180	8	S: 10ft., 20gal., dia 7 1/2	72	22	Sd, G	Pl	U	L	Sand and gravel from 0-94 ft.; Ca. L.
19Q1	P. Mattens	Srivor Drilling Co.	2-8-55	792 J	J	94	2	S: 3ft., 10gal., dia 1 1/2	114	16	Sd	Pl	C	---	Dd 20 ft after 8 hr pumping 150 gpm; L.
20L1	Indiana Toll Road Commission	Layne-Northon Co., Inc.	5-6-55	812 Dr	Dr	130	8	S: 10ft., dia 6	---	---	G	Pl	---	---	Ca. L.
22J1	Z. D. Ray	Srivor Drilling Co.	8-6-47	719 J	J	64	2	S: 3ft., 60g., dia 1 1/2	88	6	Sd	Pl	C	J3/4	Void 11 gpm; Ca. L.
22K1	C. W. Miller	-----do-----	8-50	753 J	J	94	2	-----do-----	60	20	Sd	Pl	C	---	---
22K2	W. Morehouse	Woods and Kool Well Drilling Co.	10-10-59	737 J	J	80	2	S: 3 1/2 ft., 60g., dia 1 1/2	---	---	Sd	Pl	---	---	---
22M1	A. Topash	Srivor Drilling Co.	9-6-55	776 J	J	100	2	S: 3 1/2 ft., 80g., dia 1 1/2	---	---	Sd	Pl	---	---	No water reported; see log well 22N2.
22N1	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-29-54	772 B	B	35	---	-----	45	23	Sd, G	Pl	U	---	No water reported; L. Dd less than 7 ft pumping 45 gpm; screen, 6 ft 10 in., 2 ft 20 in.; L.
22R2	-----do-----	-----do-----	4-27-54	773 B	B	35	---	-----	---	---	Sd, G	Pl	U	---	---
22P1	M. L. Nurwich	Indiana-Michigan Water Development Co.	3-23-48	766 Dr	Dr	65	6	S: 10ft., dia 5 1/2	---	---	Sd	Pl	---	---	---
22P2	-----do-----	-----do-----	6-21-54	760 J	J	224	3	S: 10ft., 10gal., dia 1 1/2	---	---	Sd, G	Pl	U	---	Sand and gravel from 0-68 ft. L.
22P3	-----do-----	Srivor Drilling Co.	7-16-54	760 Dr	Dr	68	6	S: 3ft., 60g., dia 1 1/2	48	20	Sd, G	Pl	U	---	Sand and gravel from 0-61 ft.
22P4	-----do-----	-----do-----	9-23-54	760 Dr	Dr	57	4	S: 3ft., 60g., dia 1 1/2	36	25	Sd, G	Pl	U	---	---
22Q1	G. M. Murphy	-----do-----	4-23-47	737 J	J	81	2	S: 3ft., 60g., dia 1 1/2	125	13	Sd, G	Pl	C	J3/4	Dd 7 ft pumping 15 gpm; L.
22Q2	J. Toth	-----do-----	4-5-47	738 J	J	56	2	-----do-----	---	---	Sd	Pl	---	---	---
22Q3	P. Rudabic	H. Crowie	5-47	729 Dr	Dr	138	4	S: 10ft., 80g., dia 1 1/2	---	---	Sd	Pl	---	---	---
22R1	B. Perkins	Srivor Drilling Co.	9-14-46	717 J	J	67	2	S: 3 1/2 ft., 60g., dia 1 1/2	---	---	Sd	Pl	---	---	Sand and stone from 0-56 ft.
22R2	C. Perkins	-----do-----	3-10-48	715 J	J	56	2	S: 3ft., 60g., dia 1 1/2	---	---	Sd	Pl	---	---	---
23B1	V. N. Fairchild	-----do-----	3-16-50	713 J	J	58	2	S: 3 1/2 ft., 60g., dia 1 1/2	23	33	Sd, G	Pl	U	---	---

36/2-23B2	A. Willsop	11-21-54	698 J	41	2	S; 4 1/2 ft., 60g, dia 1 1/2	21	20	Sd	Pl U	21 D	-----	Yellow sand from 0-41 ft.
23D1	Mr. Moore	6- 8-54	702 J	62	2 1/2	S; 5 ft., 60g, dia 1 1/2	44	18	Sd, G	Pl U	44 D	-----	Sand and gravel overlain by 20 ft clay, Ca. See log well 23F3.
23F1	Nonlathwin Hospital	-----	698 Dr	68	8	S; 16 ft., 20g, dia 7/8	---	---	Sd, G	Pl U	27 P	-----	Yield 200 gpm. Dd 12 ft pumping 160 gpm; screen, 2 ft 20 ml, 5 ft 60 gpm, 5 ft 30 gpm; well SJ 20-1 (KS, 1948); L. Well SJ 27-1 (KS, 1948); L.
23F2	-----	1922	698 Dr	65	---	S	35	32	Sd, G	Pl U	35 P	-----	Dd 8 ft after 8 hr pumping 500 gpm; 600 1/2 well 23F4; well SJ 27-2 (KS, 1948); L.
23F3	-----	7-10-38	698 Dr	67	8	S; 12 ft., dia 7/8	---	---	Sd, G	Pl U	---	-----	Yield 10 gpm. L.
23F4	-----	0-11-44	698 Dr	147	6	---	37	110	Sd, G	Pl C	23 T	-----	See log well 23G4.
23F5	-----	11-21-44	698 Dr	142	16	Gp; S; 20ft., 105ml, dia 9/8	37	105	Sd, G	Pl C	23 P	-----	Sand and gravel from 0-50 ft.
23G1	W. R. Alward	8-28-50	698 J	40	2	S; 3 ft., 60g, dia 1 1/2	---	---	Sd, G	Pl C	23 D	-----	Sand and gravel from 0-44 ft.
23G2	M. O. Moore	10-20-46	700 Dr	53	4	S; 5 ft., 60g, dia 2 1/2	34	19	Sd	Pl C	24 D	-----	Yellow sand overlain by 40 ft yellow sand and gravel. See log well 24B9.
23G3	E. Molnar	10-13-52	717 J	48	3	S; 5 ft., 60g, dia 2	40	8	Sd, G	Pl C	30 D	-----	L.
23G4	P. Papandria	7-17-54	717 J	54	2	S; 3 ft., 60g, dia 1 1/2	40	14	Sd, G	Pl C	35 D	-----	See log well 24B9.
23H1	A. Papandria	10- 8-47	718 J	50	2	S; 3 ft., 60g, dia 1 1/2	30	20	Sd, G	Pl U	30 D	-----	Sand and gravel from 0-54 ft.
23K1	Isaac Walton	3-23-51	695 J	40	2	S; 3 ft., 60g, dia 1 1/2	---	---	Sd	Pl U	4 D	-----	L.
24B1	R. Loague	11- 8-49	731 J	44	2	S; 3 1/2 ft., 60g, dia 1 1/2	24	20	Sd, G	Pl U	24 D	-----	Sand and gravel from 0-55 ft.
24B2	E. W. Toth	11-22-53	732 J	47	2	S; 3 ft., 60g, dia 1 1/2	18	29	Sd, G	Pl U	18 D	-----	Yellow sand overlain by 40 ft yellow sand and gravel. See log well 24B9.
24B3	R. Reese	11- 9-46	731 J	45	2	do-----	30	15	Sd	Pl C	16 D	-----	L.
24B4	A. Somerfield	12-21-53	731 J	44	2	S; 4 ft., 60g, dia 1 1/2	35	9	Sd, G	Pl C	26 D	-----	See log well 24B9.
24B5	V. Boney	1-25-53	732 J	48	2	do-----	40	6	Sd	Pl C	24 D	-----	L.
24B6	W. Woolly	9-18-53	727 J	51	2	do-----	37	14	Sd	Pl C	26 D	-----	Sand and gravel from 0-54 ft.
24B7	G. Snyder	2-14-56	730 J	54	2	S; 3 1/2 ft., 60g, dia 1 1/2	20	34	Sd, G	Pl U	20 D	-----	L.
24B8	V. Bordonar	10-25-56	725 J	44	2	S; 3 1/2 ft., 10ml, dia 1 1/2	38	6	Sd, G	Pl C	17 D	-----	Sand and gravel from 0-55 ft.
24B9	W. Call	7-23-52	722 J	55	2	S; 3 1/2 ft., 60g, dia 1 1/2	35	20	Sd, G	Pl U	35 D	-----	Sand and gravel from 0-58 ft.
24C1	R. Beard	7-25-49	720 J	56	2	S; 3 ft., 60g, dia 1 1/2	38	18	Sd, G	Pl V	38 D	-----	Sand and gravel from 0-58 ft.
24C2	E. Jefferson	8-28-47	729 J	56	2	do-----	38	20	Sd, G	Pl U	38 D	-----	Yellow sand and gravel from 0-42 ft.
24C3	B. M. Richey	3-22-54	714 J	42	2	do-----	25	17	Sd, G	Pl V	25 D	-----	Sand and gravel from 0-58 ft.
24D1	D. Snowden	5- 6-60	720 J	58	2	S; 3 1/2 ft., 60g, dia 1 1/2	27	31	Sd, G	Pl U	27 D	-----	Yellow sand and gravel from 0-51 ft.
24E1	F. Nickerson	4- 4-52	727 J	53	2	S; 3 1/2 ft., 10ml, dia 1 1/2	34	19	Sd, G	Pl U	34 D	-----	Sand and gravel from 0-46 ft.
24F1	J. Blankenhaker	10-27-50	725 J	51	2	S; 3 ft., 60g, dia 1 1/2	32	19	Sd, G	Pl U	32 D	-----	Sand and gravel from 0-51 ft.
24F2	Pearlrose Supply Co.	1-23-56	727 J	46	2	do-----	10	38	Sd, G	Pl U	10 D	-----	Sand and gravel from 0-51 ft.
24F3	Robland Lumber Co.	9-24-47	727 J	51	2	do-----	30	21	Sd, G	Pl U	30 D	-----	Yellow sand and gravel from 0-57 ft.
24G1	Mr. Loughman	8- 7-51	725 J	57	2	S; 3 1/2 ft., 60g, dia 1 1/2	32	23	Sd, G	Pl U	32 D	-----	L.
24G2	W. Ravener	11- 4-51	725 Dr	63	4	S; 10ft, 10ml	49	20	Sd, G	Pl C	8	-----	Yellow sand and gravel from 0-53 ft.
24G3	H. Powers	10-16-50	724 J	70	2	S; 3 1/2 ft., 60g, dia 1 1/2	80	10	Sd	Pl C	20 D	-----	L.
24J1	J. Young	-----	727 J	53	2	S; 3 ft., 60g, dia 1 1/2	38	15	Sd, G	Pl U	38 D	-----	Yellow sand and gravel from 0-53 ft.
24K1	C. M. McHugh	-----	727 J	53	2	S; 3 1/2 ft., 60g, dia 1 1/2	40	10	Sd	Pl C	34 D	-----	L.
24L1	C. B. Bates	12-27-49	725 J	50	2	do-----	---	---	Sd	Pl C	---	-----	L.
24L2	J. Osborn	-----	727 J	49	2	S; 3 1/2 ft., 60g, dia 1 1/2	---	---	Sd	Pl C	---	-----	L.
24L3	E. L. Niles	-----	725 J	50	2	do-----	---	---	Sd	Pl C	---	-----	L.

Table 2.--Records of wells and test holes in St. Joseph County, Indiana--Continued.

Well	Owner	Driller	Date completed	Attitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone				Type of pump and horsepower	Remarks		
									Depth to top (feet)	Thickness (feet)	Character	Geologic age			Conditions of occurrence	Water level (feet)
38/2-24L4	R. L. Gardner	Striver Drilling Co.	6-2-53	726 J	J	57	2	S; 3½ft, 10al, dia 1½	32	25	G	P1 U	U	32	D	Yellow gravel overlain by 16 ft yellow sand. Sand and gravel from 0-57 ft; Ca.
24L5	E. Hackley	-----do-----	6-23-54	727 J	J	57	2½	S; 3ft, 60g, dia 1½	31	28	Sd,G	P1 U	U	31	D	Yield 50 gpm; L.
24M1	Alou Tourist Hotel	-----do-----	6-1-57	722 J	J	60	3	S	50	10	Sd	P1 C	C	40	P	Yield 250 gpm; Ca, L.
24M2	A. Rosinski	Layne-Northern Co., Inc.	7-19-49	718 Dr	Dr	71	6	S; 10ft, 30al, dia 4	29	44	Sd,G	P1 U	U	29	P	Yellow sand and gravel from 0-30 ft; Ca.
24N1	Dr. Odell	Striver Drilling Co.	4-15-50	719 Dr	Dr	77	6	S; 10ft	54	23	Sd,G	P1 C	C	25	D	Sand and gravel from 0-88 ft; Ca.
24P1	A. H. Richards	-----do-----	-----	728 J	J	50	2	S; 3ft, 60g, dia 1½	34	18	Sd,G	P1 U	U	34	D	Yellow sand and gravel from 0-46 ft; Ca, L.
24P2	H. Kondor	-----do-----	1950	721 J	J	68	2	S; 3½ft, 60g, dia 1½	38	28	Sd,G	P1 U	U	38	D	Yellow sand and gravel from 0-46 ft; Ca, L.
24Q1	M. D. Bosers	-----do-----	1-24-57	730 J	J	46	2	-----do-----	22	24	Sd,G	P1 U	U	22	D	Do 10 ft pumping 200 gpm; Ca, L.
24Q2	Trustees, Clay Township	Layne-Northern Co., Inc.	4-23-51	731 Dr	Dr	70	8	S; 10ft	29	45	Sd,G	P1 U	U	29	P	See log well 25A1.
25A1	K. Buckles	Striver Drilling Co.	9-4-51	731 J	J	46	2	S; 3ft, 80g, dia 1½	40	14	Sd	P1 C	C	12	D	Follow sand and gravel 0-46 ft.
25A2	T. Braden	-----do-----	9-17-52	732 J	J	46	2	S; 3ft, 60g, dia 1½	21	25	Sd,G	P1 U	U	21	D	Yellow sand and gravel from 0-46 ft.
25A3	A. J. Herrmann	-----do-----	-----	730 J	J	46	2	S; 3ft, 10al, dia 1½	21	25	G, Sd	P1 U	U	21	D	Yellow sand and gravel from 0-47 ft.
25A4	E. Mellichar	-----do-----	7-14-52	730 J	J	47	2	S; 3ft, 80g, dia 1½	17	30	Sd,G	P1 U	U	17	D	Gravel overlain by 10 ft yellow sand.
25A5	J. Haney	-----do-----	3-10-55	732 J	J	45	3	S; 5ft, 60g, dia 2	23	22	G	P1 U	U	23	D	Sand and gravel from 0-60 ft; follow sand overlain by 35 ft yellow sand and gravel; Ca.
25A6	J. White	-----do-----	3-24-55	730 J	J	45	3	S; 5ft, 60g, dia 1½	24	38	Sd,G	P1 U	U	24	D	Sand and gravel from 0-40 ft.
25A7	J. Nasko	-----do-----	4-18-56	732 J	J	60	3	-----do-----	22	27	Sd,G	P1 U	U	22	D	See log well 25C3.
25A8	L. Grant	-----do-----	10-16-56	726 J	J	49	2	S; 5ft, 60g, dia 1½	18	15	Sd	P1 C	C	8	T	Do 24.5 ft pumping 50 gpm; used for lawn sprinkling; L.
25C1	V. V. Engle	-----do-----	5-20-51	715 J	J	40	2	S; 3ft, 60g, dia 1½	20	20	Sd,G	P1 U	U	20	P	See log well 25D5.
25C2	Indiana Toll Road Commission	Case Foundation Co.	5-10-54	707 B	B	44	---	-----do-----	15	29	Sd,G	P1 U	U	15	T	Do.
25C3	-----do-----	-----do-----	5-12-54	719 B	B	56	---	-----do-----	18	31	Sd,G	P1 C	C	18	T	Do.
25C4	-----do-----	-----do-----	6-10-54	722 B	B	40	---	-----do-----	20	20	Sd	P1 C	C	20	T	Do.
25C5	-----do-----	-----do-----	5-12-54	719 B	B	31	---	-----do-----	18	15	Sd	P1 C	C	8	T	Do.
25D1	J. D. Lang	Indiana-Michigan Water Development Co.	3-18-30	710 Dr	Dr	46	6	S; 8ft, 24al, dia 5½	20	26	Sd,G	P1 U	U	20	D	See log well 25D10.
25D2	Indiana Toll Road Commission	Case Foundation Co.	5-5-54	705 B	B	20	---	-----do-----	14	8	Sd,G	P1 U	U	14	T	White sand overlain by 42 ft yellow coarse gravel; Sand and gravel from 0-36 ft.
25D3	-----do-----	-----do-----	5-4-54	711 B	B	32	---	-----do-----	20	12	Sd,G	P1 U	U	20	T	Do.
25D4	-----do-----	-----do-----	5-6-54	714 B	B	30	---	-----do-----	27	3	Sd,G	P1 U	U	27	T	Do.
25D5	-----do-----	-----do-----	5-4-54	716 B	B	50	---	-----do-----	25	25	Sd,G	P1 U	U	25	T	Do.
25D6	-----do-----	-----do-----	4-20-54	713 B	B	30	---	-----do-----	22	8	Sd,G	P1 U	U	22	T	Do.
25D7	-----do-----	-----do-----	3-7-54	708 B	B	35	---	-----do-----	13	22	Sd,G	P1 U	U	13	T	Do.
25D8	-----do-----	-----do-----	4-6-54	706 B	B	30	---	-----do-----	14	18	Sd	P1 U	U	14	T	Do.
25D9	-----do-----	-----do-----	5-7-54	721 B	B	30	---	-----do-----	24	8	Sd	P1 U	U	24	T	Do.
25D10	-----do-----	-----do-----	5-11-54	721 B	B	54	---	-----do-----	35	25	Sd	P1 C	C	22	T	Do.
25E1	W. Herrath	Striver Drilling Co.	-----	725 J	J	48	2	S; 3ft, 60g, dia 1½	35	13	Sd,G	P1 U	U	35	D	Do.
25E2	-----do-----	-----do-----	5-28-50	724 J	J	56	2	S; 3ft, 60g, dia 1½	21	35	Sd,G	P1 U	U	21	D	Do.

38/2-2521	B. Stochurski Moore Engineering, Inc., Variety Co. Stone	Srifer Drilling Co. Indiana-Michigan Water Development Co. W. Rodgers	10-24-50 8-19-48	722 J 730 Dr	50 134	2 8	S; 3ft., 60g, dia 1 1/2 S; 10ft., 15al, dia 6 1/2	38 80	18 74	Sd, G Sd, G	Pl C Pl C	U C	38 41 N	D N	Sand and gravel from 0-56 ft. Dd 5 ft pumping 50 gpm; L.
2525	W. White	Srifer Drilling Co.	8-20-53	727 J	45	2	S; 3ft., 60g, dia 1 1/2	35	10	Sd, G	Pl U	U	35	P	Sand and gravel from 0-45 ft.
2527	R. Lutz	Case Foundation Co.	12-30-54	720 J	48	2	S; 3ft., 60g, dia 1 1/2	21	23	G, Sd	Pl U	U	23	D	Gravel and sand from 0-46 ft.
2528	L. Riegen	Case Foundation Co.	7-31-47	717 J	62	3	S; 3ft., 60g, dia 2 1/2	37	25	Sd	Pl U	U	37	D	L.
2529	M. Stull	Case Foundation Co.	1-5-56	727 J	44	2	S; 3ft., 60g, dia 1 1/2	28	15	Sd, G	Pl U	U	29	D	Sand and gravel from 0-44 ft.
2534	J. Stull	Case Foundation Co.	4-21-54	724 J	52	2	S; 3ft., 60g, dia 1 1/2	28	24	Sd, G	Pl U	U	28	D	Sand and gravel from 0-52 ft.
2535	J. Menick	Case Foundation Co.	7-23-54	723 J	48	2	S; 3ft., 60g, dia 1 1/2	25	15	Sd, G	Pl U	U	25	D	Sand and gravel from 0-44 ft.
2536	L. Collip	Case Foundation Co.	12-21-50	716 J	48	2 1/2	S; 4ft., 60g, dia 1 1/2	40	6	Sd	Pl C	C	14	D	L.
2551	Indiana Toll Road Commission	Case Foundation Co.	5-13-54	712 B	22	---	---	---	---	Sd, G	Pl U	U	---	D	Sand and gravel from 0-40; underlain by 64 ft clay.
2552	H. F. Bushong	Srifer Drilling Co.	5-13-54	715 B	20	---	---	---	---	Sd	Pl U	U	2	T	L.
2553	Indiana Toll Road Commission	Case Foundation Co.	5-17-54	722 B	37	---	---	---	---	Sd	Pl U	U	5	T	L.
2554	H. Brunetto	Srifer Drilling Co.	5-19-54	724 Dn	30	1 1/2	S; 3ft., 60g, dia 1 1/2	0	21	Sd, G	Pl U	U	9	T	See log well 2553. Sand overlain by 30 ft blue clay.
2555	P. Fodrozzi North Dumas University	Indiana-Michigan Water Development Co.	5-22-57 11-21-47	724 J 729 Dr	45 147	2 6	S; 10ft., dia 5 1/2	40 103	5 44	Sd Sd, G	Pl C Pl C	C C	25 30 P	D P	See log well 2555. Dd 7 ft pumping 80 gpm; screen, upper 5 ft 12 al, lower 5 ft 30 al; L.
2681	Indiana Toll Road Commission	Case Foundation Co.	5-25-54	718 B	57	---	---	---	---	Sd, G	Pl U	U	30	T	L.
2682	---	---	5-25-54	717 B	20	---	---	---	---	Sd	Pl U	U	29	T	See log well 2681. Do.
2683	---	---	5-24-54	716 B	30	---	---	---	---	Sd	Pl U	U	29	T	Do.
2684	---	---	5-25-54	718 B	40	---	---	---	---	Sd	Pl U	U	30	T	Do.
2685	---	---	3-31-55	710 Dr	88	6	S; 10ft., 30al	29	38	Sd, G	Pl U	U	29	P	Dd 2 ft after 8 hr pumping 55 gpm; Ca, L. See log well 2682.
2686	---	---	6-10-54	682 B	30	---	---	---	---	Sd, G	Pl U	U	4	T	See log well 2683. L.
2687	---	---	6-8-54	659 B	31	---	---	---	---	Sd, G	Pl U	U	0	T	See log well 2684. L.
2688	---	---	6-10-54	684 B	50	---	---	---	---	Sd	Pl U	U	0	T	See log well 2685. L.
2689	---	---	6-11-54	653 B	50	---	---	---	---	Sd	Pl U	U	5	T	See log well 2686. L.
2690	---	---	6-11-54	689 B	30	---	---	---	---	Sd, G	Pl U	U	5	T	See log well 2687. L.
2691	---	---	5-1-54	687 B	24	---	---	---	---	Sd, G	Pl C	C	+1	T	See log well 2688. L.
2692	---	---	4-30-54	682 B	29	---	---	---	---	Sd, G	Pl C	C	+1	T	See log well 2689. L.
2693	---	---	4-16-41	678 Dr	60	8	S; 3ft., 20al, dia 7 1/2	---	---	Sd, G	Pl U	U	23	P	Dd 9 ft pumping 50 gpm; well Sj 19-1 (K9, 1948); L. See log well 2694.
2694	---	---	4-28-54	687 B	28	---	---	---	---	Sd	Pl U	U	22	T	See log well 2695. L.
2695	---	---	4-29-54	676 B	37	---	---	---	---	Sd, G	Pl U	U	7	T	No water reported; see log well 2693.
2696	---	---	4-29-54	675 B	32	---	---	---	---	Sd, G	Pl U	U	7	T	See log well 2696. Do.
2697	---	---	4-29-54	675 B	20	---	---	---	---	Sd, G	Pl U	U	10	T	See log well 2697. L.
2698	---	---	4-30-54	670 B	35	---	---	---	---	Sd, G	Pl U	U	2	T	See log well 2698. L.
2699	---	---	7-3-52	673 J	48	2	S; 60g	20	28	G, Sd	Pl C	C	6	P	See log well 2699. L.
2700	---	---	2-2-59	678 Dr	144	8	---	---	---	Sd, G	Pl U	U	---	T	Bedrock at 141 ft; see log well 2699. Bedrock at 140 ft; L.
2701	---	---	2-12-59	678 Dr	144	8	---	---	---	Sd, G	Pl U	U	1	T	See log well 2700. L.
2702	---	---	3-4-59	678 Dr	138	10	---	---	---	Sd, G	Pl U	U	0	T	See log well 2701. L.
2703	---	---	8-8-47	723 Dr	150	14	S; 20ft., 50al, dia 12	118	33	Sd, G	Pl C	C	42	P	Dd 22 ft pumping 900 gpm; L.
2704	---	---	---	724 Dr	158	14	S; 20ft., dia 12	---	---	G	Pl U	U	48	P	Observation well St. Joseph 15; water level measured 4.23 ft below tad, 3-22-48, See log well 2804.
2705	---	---	---	755 Du	10	42	---	---	---	Sd	Pl U	U	---	O	---
2706	---	---	---	756 B	30	---	---	---	---	---	---	---	---	T	---

Table 2.--Records of wells and test holes in St. Joseph 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	Conditions of occurrence					
38/2-27C3	Indiana Toll Road Commission	Raymond Concrete Pile Co.	4-10-54	755 B	B	25						22	J	U	U	---	See log well 26C4.	
27C4	do	do	4-28-54	755 D	D	35						---	---	---	---	---	L. See log well 27C4.	
27C5	do	do	4-29-54	760 B	B	38						---	---	---	---	---	Do. No water reported; see log well 27D3.	
27C6	do	do	4-28-54	776 B	B	40						---	---	---	---	---	See log well 27D3.	
27D1	do	do	4-28-54	775 D	D	35						---	---	---	---	---	See log well 27D3.	
27D2	do	do	4-28-54	774 D	D	50						---	---	---	---	---	L. Yield 10 gpm; L.	
27D3	City of South Bend	Layne-Northern Co., Inc.	6-14-50	748 Dr	Dr	81	4	S; 10ft, dia 2 1/2	S4,G	P1	C	61	24	P	L	---	L. Yield 10 gpm; L.	
27F1	do	do	2-26-59	678 Dr	Dr	108	6	S; 3 1/2ft, 60g, dia 1 1/2	S4,G	P1	C	76	24	J	---	---	L. Ca, L.	
29L1	C. Higgins	Srivor Drilling Co.	12-22-49	787 J	J	100	2	S; 3 1/2ft, 60g, dia 1 1/2	S4,G	P1	C	76	24	J	---	---	L. Ca, L.	
30H1	Methodist Church	do	7-9-53	795 J	J	87	2	S; 3ft, 60g, dia 1 1/2	S4,G	P1	U	66	21	P	---	---	L.	
30H2	L. O. Hawkins	do	6-1-53	803 J	J	87	2	S; 5ft, 60g, dia 2	S4,G	P1	U	74	D	J1-1/2	---	---	L. Gravel and sand from 0-87 ft.	
31H1	A. Rhinack	do	6-1-53	803 J	J	87	2	S; 5 1/2ft, 60g, dia 2	G,S4	P1	U	75	D	---	---	---	L.	
31H2	G. Lattoroll	do	6-3-53	805 J	J	105	2	S; 3 1/2ft, 60g, dia 1 1/2	G	P1	U	90	D	---	---	---	L. Brown very fine sand from 0-50 ft.	
31Q1	Indiana State Highway Department	do	7-30-50	752 B	B	50						---	---	---	---	---	Do. Brown sand from 0-50 ft.	
31Q2	do	do	7-30-50	752 B	B	50						---	---	---	---	---	Do. Brown sand from 0-50 ft.	
31Q3	do	do	7-30-50	787 J	J	94	2	S; 3ft, 60g, dia 1	S4	P1	---	---	---	---	---	---	Ca. Yield 50 gpm; Ca, L.	
32C1	R. Pletz	Srivor Drilling Co.	8-17-48	775 J	J	80	6	S; 3ft, 60g, dia 1	S4	P1	U	49	D	---	---	---	Do.	
32J1	Anderson Trailer and Motor Sales	Layne-Northern Co., Inc.	8-17-48	757 Dr	Dr	80	6	S; 10ft, dia 4	G,S4	P1	U	42	P	TJ	---	---	---	
32L1	F. R. Ferrro	do	4-21-48	776 J	J	78	2	S; 3ft, 60g, dia 1 1/2	S4	P1	---	---	---	---	---	---	Do.	
32L2	O. Williams	Srivor Drilling Co.	5-25-53	765 J	J	64	2	S; 5ft, 60g, dia 2	S4,G	P1	U	50	D	---	---	---	Sand and gravel from 0-69 ft.	
32M1	V. Cavender	do	5-25-53	772 J	J	64	2	S; 3ft, 60g, dia 1 1/2	S4,G	P1	U	50	D	---	---	---	Sand and yellow gravel from 0-84 ft.	
32M2	Mr. Dummick	Indiana-Michigan Water Development Co.	2-3-58	749 Dr	Dr	136	6	S; 10ft, 1 1/2in, dia 1 1/2	S4	P1	C	36	P	---	---	---	Do 65 ft after 4 hr pumping 50 gpm; Ca, L.	
32N1	P. Stroup	do	9-20-44	760 J	J	63	3	S; 3ft, 60g, dia 1 1/2	S4,G	P1	---	---	---	---	---	---	Do.	
32P1	L. Cull	do	5-0-45	760 J	J	57	3	do	G	P1	---	---	---	---	---	---	Do.	
32Q1	H. A. McCuen	do	12-21-48	756 J	J	60	2	do	S4,G	P1	---	---	---	---	---	---	Do.	
32Q2	H. L. Hegand	do	12-5-48	757 J	J	58	2	do	S4,G	P1	---	---	---	---	---	---	Do.	
32Q3	D. L. Ward	do	12-6-46	757 J	J	60	2	do	S4,G	P1	U	44	D	---	---	---	Sand and gravel from 0-60 ft.	
32Q4	R. J. Galichowski	do	12-3-46	758 J	J	60	2	S; 3ft, 60g, dia 1 1/2	S4,G	P1	U	42	D	---	---	---	Do.	
32Q5	T. F. Pitor	do	12-11-46	756 J	J	59	2	S; 2ft, 60g, dia 1 1/2	S4,G	P1	U	42	D	---	---	---	Sand and gravel from 0-60 ft; clay at 60 ft.	
32Q6	S. Simpson	R. Reddish	5-1-57	754 J	J	58	2	S; 3ft, 60g, dia 1 1/2	S4,G	P1	U	40	D	J1/2	---	---	---	Yield 8 gpm; sand and gravel overlain by 25 ft sand.
32R1	L. W. Roms	Srivor Drilling Co.	10-9-47	757 J	J	63	2	S; 3ft, 60g, dia 1 1/2	S4,G	P1	U	48	D	---	---	---	Sand and gravel from 0-62 ft.	
32R2	Foust Metal	do	10-17-57	762 J	J	62	2	do	S4,G	P1	U	38	D	---	---	---	Do.	
33L1	City of South Bend	Layne-Northern Co., Inc.	8-18-59	760 Dr	Dr	103	6-2	do	S4,G	P1	U	53	T	---	---	---	Sand and gravel from 0-63 ft.	
33M1	do	do	8-12-48	764 Dr	Dr	115	8-6	do	S4,G	P1	U	55	T	---	---	---	Do.	
33M2	do	do	8-9-50	764 Dr	Dr	105	3B	Gp; S; 20ft, 105x1, dia 2B	G,S4	P1	U	53	P	T100	---	---	Do 9.5 ft after 8 hr pumping 1,750 gpm; see log well 33M1; Ca.	

38/2-3383	City of South Bend	Layne-Northern Co., Inc.	6-18-59	783 Dr	108	6-2	47	61	G.Sd	P1 U	47	T	See log well 3381.
3391	P. C. Winther	Srivor Drilling Co.	6-7-49	750 J	80	2			Sd,G	P1			Dd 3 ft pumping 25 gpm; for sprinkling lawn; screen, upper 4 ft 12 in, lower 5 ft 18 in; Ca, L.
3401	A. A. Toth		11-18-53	703 Dr	108	4			Sd,G	P1			
3421	V. C. Hastings			738 J	76	2			Sd	P1	34	D	Yellow sand and gravel from 0-87 ft.
3432	L. Krops	Srivor Drilling Co.	9-28-51	731 J	87	2		28	Sd,G	P1 U	41	D	Water level 2 ft below lsd, 7-1-53; well SJ 53-8
3441	M. Conway		9-18-54	742 J	84	2			Sd	P1	44	D	
3531	St. Mary's College			670 Dr	108	6			Sd,G	P1 C		N	water level 2 ft below lsd, 7-1-53; well SJ 53-4 (KS, 1948).
3532				670 Dr	80	8			Sd,G	P1 C		N	Dd 8 ft pumping 150 gpm; water level 2 ft below lsd, (KS, 1948).
3533				675 Dr	90	10			Sd,G	P1 C		N	Dd 20 ft pumping 75 gpm; water level 10 ft below lsd, 7-1-53; well SJ 53-2 (KS, 1948).
3534				675 Dr	100	8			Sd,G	P1 C		N	Dd 14 ft pumping 150 gpm; water level 10 ft below lsd, 7-1-53; well SJ 53-3 (KS, 1948).
3535				675 Dr	118	12			Sd,G	P1 C		O	Dd J. 5 ft pumping 150 gpm; Observation well St. Joseph 18; water level measured 6.30 ft below lsd, 3-24-45; well SJ 53-5 (KS, 1948).
3536				675 Dr	105	12			Sd,G	P1 C		Ac.	Yield 650 gpm; water level 9 ft below lsd. 1951.
3537		Indiana-Michigan Water Development Co.	9-29-35	675 Dr	104	12		64	Sd,G	P1 C	10	P	Dd 1 ft pumping 150 gpm; well SJ 53-1 (KS, 1948); L.
3538		Dunbar Drilling and Supply Co.		675 Dr	104	14		72	Sd,G	P1 C	8	Ac.	Dd 26 ft pumping 1,000 gpm; screen, upper 3 ft 80 in, lower 17 ft 125 in; L.
3539				675 Dr	123	6			Sd,G	P1 C	+2	T	Well SJ 8-31 (KS, 1948); L.
3531	B. Cebulski, Sr.	Srivor Drilling Co.	1911	675 J	74	2		16	Sd	P1 C		D	Flowed; L.
3532	H. Cebulski, Jr.		7-21-54	675 J	59	2		50	Sd	P1 C		D	See log well 3531.
3531	City of South Bend			676 Dr	148	2 1/2		64	Sd,G	P1 C	+6	T	Bedrock at 148 ft; well SJ 8-2 (KS, 1948); L.
3531	Suaodsson		1911	697 Dr	97	6			Sd	P1		N	Dd 28 ft pumping 30 gpm; water level 18 ft below lsd, 7-11-29; well SJ 68 (KS, 1948).
3532	Drowys, Ltd., U. S. A., Inc.	Layne-Northern Co. Inc.	10-2-43	698 Dr	154			70	Sd,G	P1 C	17	T	Bedrock at 154 ft; L.
3533			11-30-43	698 Dr	147	26		66	Sd,G	P1 C	18	I	Dd 23.5 ft after 3 hr pumping 1,240 gpm; see log well 3532; well SJ 12-3 (KS, 1948); Ca.
3531	Sobenito, Inc.	Indiana-Michigan Development Co.	8-3-43	680 Dr	124	8		79	Sd,G	P1 C	+1	I	Yield 35 gpm; see log well 3534; well SJ 62 (KS, 1948); Ca.
3532			5-5-48	680 Dr	135	8		75	Sd,G	P1 C	4	I	Dd less than 5 ft pumping 180 gpm; L.
3533	D. W. Lynch			680 Dr	110	1 1/2			Sd,G	P1 C		O	Observation well St. Joseph 13; water level measured 2.54 ft below lsd, 3-0-45; well SJ 87 (KS, 1948).
3534	City of South Bend			680 Dr	147	2 1/2		101	G.Sd	P1 C	+5	T	Bedrock at 146 ft; well SJ 8-1 (KS, 1948); L.
3531	Lock Joint Tube Co.	Indiana-Michigan Water Development Co.	12-28-44	680 Dr	120	8		33	G	P1 C	6	I	Ca, L.

Table 2.--Records of wells and test holes in St. Joseph County, Indiana--Continued

Well	Owner	Driller	Data completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter of well (inches)	Finish	Water-bearing zone				Use	Type of pump and horsepower	Remarks
									Depth to top (feet)	Thickness (feet)	Character	Geologic age			
3872-35Q2	Lock Joint Tubo Co.	Indiana-Michigan Water Development Co.	9-13-57	680	Dr	126	8	S; 10ft., 25ml, dia 7 1/2	76	Sd,G	PI	C	10	N	Dr. 19.5 ft pumping 370 gpm; sec. log well 157; Well SJ 8-31 (KS, 1948); L.
36K1	University of Notre Dame	-----	Before 1911	732	--	151	2	-----	111	Sd,G	PI	C	23	T	Dr. 44 ft pumping 170 gpm; water level 58 ft below land surface; L.
36H2	-----do-----	-----	1911-1927	730	Dr	170	8	-----	---	Sd,G	PI	---	58	P	Dr. 28.7 ft. pumping 260 gpm; water level 10 ft. below land surface; L.
36K1	-----do-----	R. Norsey	1027	732	Dr	161	12	S; 20ft	---	G,Sd	PI	---	34	N	Dr. 52.3 ft. pumping 180 gpm; well SJ 52-2 (KS, 1948); L.
36K2	-----do-----	Indiana-Michigan Water Development Co.	10-12-39	732	Dr	157	12	S; 20ft., 25ml, dia 1 1/2	47	G,Sd	PI	C	32	N	Dr. 10.6 ft. pumping 900 gpm; well SJ 52-2 (KS, 1948); L.
36K3	-----do-----	-----do-----	5-13-43	725	Dr	184	12	S; 30ft., 50g, dia 1 1/2	70	G,Sd	PI	C	28	P	Sec. log well 284; well SJ 52-22 (KS, 1948); L.
36K4	-----do-----	-----do-----	11- 8-37	724	Dr	40	6	-----	---	G,Sd	PI	---	---	T	Sec. log well 284; well SJ 52-22 (KS, 1948); L.
3873- 9P1	H. Bonney	Sr-iver Drilling Co.	8-24-50	827	J	97	2	S; 3ft., 60g, dia 1 1/2	27	Sd,G	PI	U	70	D	Sand and gravel from 0-97 ft; Ca.
13G1	F. S. Smith	-----do-----	5-11-47	806	J	44	2	-----do-----	16	Sd,G	PI	U	28	D	Sand and gravel from 0-44 ft. Do.
13M1	J. Geist	-----do-----	4-22-47	797	J	44	2	-----do-----	22	Sd,G	PI	U	22	D	Ch.
13K2	S. J. Jamson	-----do-----	9- 9-46	796	J	40	3	S; 5ft., 60g, dia 2	---	Sd,G	PI	U	21	D	Yellow sand and gravel from 0-42 ft; Ca.
13P1	D. Woolley	-----do-----	3-16-54	796	J	42	2	S; 3ft., 80g, dia 1 1/2	30	Sd,G	PI	U	30	D	Dr. 3 ft. pumping 50 gpm; L.
14J1	F. Nemeath	Indiana-Michigan Water Development Co.	12-25-45	794	Dr	83	6	S; 15ft., 15ml, dia 5 1/2	62	Sd,G	PI	V	21	Ir	Sand and gravel from 0-38 ft; Ca.
14M1	E. R. Ayers	Sr-iver Drilling Co.	8-25-49	791	J	38	2	S; 3ft., 60g, dia 1 1/2	22	Sd,G	PI	U	22	D	Sand and gravel from 0-38 ft; Ca.
16F1	F. Triplett	-----do-----	-----	811	J	89	2	S	---	Sd	PI	---	---	D	Gravel from 0-91 ft. 0-97 ft.
16K1	F. Szabo	Sr-iver Drilling Co.	10-28-48	726	J	91	2	S; 3ft., 60g, dia 1 1/2	17	G	PI	U	74	D	Sand and gravel from 0-81 ft; Ca.
16N1	V. Brown	W. Rodgers	8-20-53	833	J	97	2	S; 3ft., 80g, dia 1 1/2	80	Sd,G	PI	U	80	D	Sand and gravel from 0-81 ft; Ca.
16Q1	L. Sabe	Sr-iver Drilling Co.	5- 1-48	817	J	81	2	S; 3ft., 60g, dia 1 1/2	15	Sd,G	PI	U	86	D	Ca.
17E1	A. S. Dominick	-----do-----	5-14-48	817	J	94	2	-----do-----	20	Sd,G	PI	U	74	D	Sand and gravel from 0-94 ft.
17E2	H. Lake	-----do-----	7-18-51	805	J	90	2	S; 3ft., 80g, dia 1 1/2	71	Sd,G	PI	U	71	D	Sand and gravel from 0-90 ft.
17E3	L. Guin	-----do-----	10- 2-57	793	J	94	J	S; 5ft., 60g, dia 2	24	Sd,G	PI	U	70	D	Sand and gravel from 0-94 ft; Ca.
17J1	M. H. Dimick	-----do-----	4-18-51	812	J	93	2	S; 3ft., 60g, dia 1 1/2	30	Sd,G	PI	U	63	---	Sand and gravel from 0-93 ft.
17J2	R. Evans	-----do-----	8-16-56	821	J	90	2	-----do-----	22	Sd,G	PI	U	71	D	Do.
17K1	P. Van Es	-----do-----	10-24-49	816	J	92	2	S; 3ft., 60g, dia 1 1/2	74	Sd	PI	U	74	---	Sand and gravel from 0-94 ft.
17M1	T. Terkleson	-----do-----	7-17-50	807	J	94	2	-----do-----	18	Sd,G	PI	U	66	---	Sand and gravel from 0-72 ft.
17N2	R. Gruba	-----do-----	-----	784	J	72	2	-----do-----	42	Sd,G	PI	U	42	D	Yellow sand from 0-43 ft; Ca.
18F1	N. K. Simons	-----do-----	-----	782	J	43	2	S; 3ft., 60g, dia 1 1/2	3	Sd	PI	U	3	D	Ca.
19A1	C. E. Savery	-----do-----	7-21-50	795	J	58	2	S; 3ft., 60g, dia 1 1/2	16	Sd,G	PI	U	42	---	Sand and gravel from 0-58 ft.
18N1	P. Yuhasz	-----do-----	-----	725	J	41	2	-----do-----	27	Sd,G	PI	U	14	---	Sand and gravel from 0-31 ft; Ca.
20F1	O. R. Shupp	-----do-----	3-25-49	817	J	90	2	-----do-----	16	Sd,G	PI	U	80	D	Sand and gravel from 0-96 ft; Ca.
20J1	E. Greenwood	-----do-----	5-12-50	811	J	95	J	S; 5ft., 60g, dia 2	29	G,Sd	PI	U	68	D	Ca., L.

Well No.	Owner	Location	Date	Driller	Depth (ft)	Log	Remarks	Notes
2081	W. Fuenak	Sliver Drilling Co.	8-5-48	795 J	78	2	S; 3ft. 80g, dia 1 1/4	68
2082	M. Smith	-----do-----	4-10-58	804 J	101	2	S; 3 1/2 ft., 80g, dia 1 1/4	82
2083	C. Van Bellingham	-----do-----	6-23-49	798 J	62	2	S; 3ft., 80g, dia 1 1/4	50
2084	L. Nagy	-----do-----	7-3-52	786 J	68	2	S; 3 1/2 ft., 80g, dia 1 1/4	50
21A1	G. Smith	-----do-----	1-28-48	812 J	60	2	S; 3ft., 80g, dia 1 1/4	62
21C1	R. Bennett	-----do-----	1958	814 J	82	2	S; 3 1/2 ft., 108l, dia 1 1/4	62
21D1	C. Hurvich	-----do-----	4-13-56	819 J	94	2	S; 5ft., 60g, dia 2	68
21E1	A. Hunsbrell	-----do-----	2-28-55	804 J	61	2	S; 3ft., 80g, dia 1 1/4	48
21N1	A. J. Taylor	-----do-----	1-20-54	792 J	70	2	-----do-----	48
21P1	P. Hoy	-----do-----	-----	801 J	78	2	S; 3 1/2 ft., 60g, dia 1 1/4	54
21Q1	F. Wachowak	-----do-----	4-17-51	785 J	64	2	S; 3 1/2 ft., 80g, dia 1 1/4	42
21Q2	J. L. Powell	-----do-----	-----	795 J	67	2	S; 3ft., 80g, dia 1 1/4	44
21Q3	F. Rehmel	-----do-----	4-11-51	801 J	68	2	S; 3 1/2 ft., 60g, dia 1 1/4	51
21Q4	W. Coy	Layne-Northern Co., Inc.	1-15-54	783 Dr	82	6	S; 10ft., dia 4	36
21R1	J. Nyergus	Sliver Drilling Co.	6-50	787 J	58	2	S; 3ft., 60g, dia 1 1/4	30
21R2	D. C. Bauer	-----do-----	4-25-53	787 J	61	2	S; 3 1/2 ft., 80g, dia 1 1/4	36
22J1	J. Whitmer	-----do-----	8-50	787 J	48	3	S; 5ft., 60g, dia 2	28
22K1	O. Hannon	-----do-----	7-5-48	787 Dr	45	2	-----do-----	26
22C1	C. E. Ruggen	-----do-----	2-23-55	789 J	45	3	-----do-----	10
22N1	Indiana Toll Road Commission	Case Foundation Co.	5-25-54	788 B	30	---	-----do-----	29
23Y2	-----do-----	-----do-----	5-25-54	786 B	30	---	-----do-----	20
24T1	-----do-----	-----do-----	5-26-54	785 B	40	---	-----do-----	15
24T2	-----do-----	-----do-----	5-26-54	789 B	30	---	-----do-----	10
24F3	-----do-----	-----do-----	5-28-54	785 B	30	---	-----do-----	10
24F4	-----do-----	-----do-----	5-26-54	785 B	30	---	-----do-----	17
24F5	-----do-----	-----do-----	5-27-54	787 B	42	---	-----do-----	20
23N1	-----do-----	-----do-----	-----	755 Dr	14	14	-----do-----	10
26D1	Indiana Toll Road Commission	Case Foundation Co.	5-27-59	786 D	40	---	-----do-----	27
26D2	-----do-----	-----do-----	5-25-54	786 B	30	---	-----do-----	27
26D3	-----do-----	-----do-----	5-27-54	786 B	41	---	-----do-----	20
27C1	I. Royce	Sliver Drilling Co.	9-22-49	781 J	39	2	S; 3ft., 60g, dia 1 1/4	28
27G1	Indiana Toll Road Commission	Case Foundation Co.	5-26-54	784 D	56	---	-----do-----	13
27G2	-----do-----	-----do-----	5-25-54	783 B	30	---	-----do-----	9
27G3	-----do-----	-----do-----	5-25-54	763 B	30	---	-----do-----	14
27G4	-----do-----	-----do-----	5-26-54	782 B	40	---	-----do-----	11
27H1	-----do-----	-----do-----	5-25-54	782 B	30	---	-----do-----	14
27M1	-----do-----	-----do-----	5-24-54	752 B	20	---	-----do-----	6
28E1	St. Joseph Valley Development Co.	Indiana-Michigan Water Development Co.	5-21-50	777 Dr	119	12	S; 20ft., 306l, dia 1 1/4	30
28E2	-----do-----	-----do-----	3-31-51	777 Dr	81	12	-----do-----	30
28C1	F. Nield	Sliver Drilling Co.	3-21-46	786 J	58	2	S; 3ft., 60g, dia 1 1/4	48
28K1	Indiana Toll Road Commission	Case Foundation Co.	5-21-54	763 D	30	---	-----do-----	21
28K2	-----do-----	-----do-----	5-24-54	763 B	43	---	-----do-----	21
28K3	-----do-----	-----do-----	5-24-54	762 B	30	---	-----do-----	22
28L1	-----do-----	-----do-----	5-21-54	761 B	32	---	-----do-----	28
28L2	-----do-----	-----do-----	5-24-54	764 B	50	---	-----do-----	22
28M1	-----do-----	-----do-----	5-21-54	764 B	52	---	-----do-----	30

Table 2.--Records of wells and test holes in St. Joseph 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						Remarks			
									Depth to top (feet)	Thickness (feet)	Character	Geologic age	Conditions of occurrence	Water level (feet)		Use	Type of pump and horsepower	
38/J-28N2	Indiana Toll Road Commission	Caso Foundation Co.	5-20-54	763 B	30													No water reported; see log well 28M1.
28N3	do	do	5-20-54	762 B	30													Do.
28N4	do	do	5-18-54	762 B	40													L.
28N5	do	do	5-21-54	757 B	27													See log well 28M1.
28N1	U. S. Rubber Co.	Indiana-Michigan Water Development Co.	12-30-55	752 Dr	52	8	3	S; 10ft, 10in	Sd, G	Pl U	U	U	U	U	U	U	U	For fire protection; L.
28P1	T. De Meyer	Srifer Drilling Co.		749 J	51	3	3	S; 5ft, 60g, dia 2	Sd, G	Pl U	U	U	U	U	U	U	U	Dark sand overlain by 18 ft yellow sand.
28D1	G. Racz	do	3-28-54	797 J	95	2 1/2	2 1/2	S; 3 1/2 ft, 10in, dia	Sd, G	Pl U	U	U	U	U	U	U	U	L.
28D2	E. Mamua	do	4-20-54	810 J	113	2	2	S; 5ft, 60g, dia 1 1/2	Sd, G	Pl U	U	U	U	U	U	U	U	Yellow sand and gravel from 0-11 1/2 ft.
28J1	R. E. McGarr	do	9-10-48	762 J	58	2	2	S; 2 1/2 ft, 80g, dia	Sd, G	Pl U	U	U	U	U	U	U	U	Sand and gravel from 0-48 ft.
28J2	Mr. Vendorly	do	5-19-47	762 J	48	2	2	S; 3ft, 60g, dia 1 1/2	Sd, G	Pl U	U	U	U	U	U	U	U	L.
28J3	Mr. Palmer	do	4-10-48	761 J	40	2	2	S; 2 1/2 ft, 60g, dia	Sd, G	Pl U	U	U	U	U	U	U	U	See log well 28J4.
28J4	Indiana Toll Road Commission	Caso Foundation Co.	5-19-54	745 D	20													No water reported; see log well 28M1.
28J5	do	do	5-19-54	746 B	22													No water reported; see log well 28M1.
28N1	do	do	5-19-54	764 B	31													See log well 30E2.
28N2	do	do	5-19-54	760 D	31													Do.
30B1	T. Begue	Srifer Drilling Co.	5-10-49	759 J	85	2	2	S; 3ft, 60g, dia 1 1/2	Sd, G	Pl U	U	U	U	U	U	U	U	Sand and gravel from 0-85 ft.
30E1	W. Bender	W. Rodgers		720 J	40	2	2	do	Sd	Pl U	U	U	U	U	U	U	U	Yield 10 gpm; coarse sand from 0-40 ft.
30E2	Indiana Toll Road Commission	Caso Foundation	5-14-54	721 D	60													L.
30E3	do	do	5-17-54	792 B	32													See log well 30E2.
30E4	do	do	5-17-54	775 B	20													Do.
30E5	do	do	5-18-54	774 B	20													Do.
30F1	do	do	5-17-54	719 B	20													L.
30H1	R. Haunsholl	Srifer Drilling Co.	5-8-50	784 J	63	2	2	S; 10ft	Sd, G	Pl U	U	U	U	U	U	U	U	Sand and gravel from 0-63 ft.
30H2	H. Blako	do	8-50	768 J	71	2	2	S; 3 1/2 ft, 60g, dia	Sd, G	Pl U	U	U	U	U	U	U	U	Sand and gravel from 0-73 ft.
30J1	Arco-Midwest Construction Co. Inc.	do	2-10-55	761 Dr	59	4	4	S; 7ft, 60g, dia 2 1/2	Sd, G	Pl U	U	U	U	U	U	U	U	Sand and gravel from 0-69 ft.
30J2	Indiana Toll Road Commission	Caso Foundation Co.	5-19-54	765 B	48													L.
30J3	do	do	5-18-54	761 D	31													No water reported; see log well 30J2.
30J4	do	do	5-18-54	759 B	41													Do.
30M1	E. Vande Zande	Srifer Drilling Co.	8-15-54	726 J	43	2	2	S; 4ft, 60g, dia	Sd	Pl C	U	U	U	U	U	U	U	Ca, L.
30M2	J. Repler	do	8-16-52	727 J	39	2	2	S; 3 1/2 ft, 10in, dia	Sd, G	Pl U	U	U	U	U	U	U	U	Yellow sand and gravel from 0-39 ft.
30M3	H. E. Cooper	do		797 J	41	3	3	S; 3ft, 60g, dia 2	Sd	Pl U	U	U	U	U	U	U	U	Sand from 0-41 ft.
30M4	F. A. Baltessor	do	6-15-53	729 J	45	2	2	S; 3ft, 60g, dia 1 1/2	Sd, G	Pl U	U	U	U	U	U	U	U	Sand and gravel from 0-45 ft.

38/3-3081	Trustees, Clay Township	Striver Drilling Co.	3-1-54	755 J	163	3	S; 5 1/2 ft., 10al, dia 1 1/2	150	10	G	Pl	C	31	P	J1/2	Ca, L.
3101	B. Locks	do	2-7-58	743 Dn	29	2	S; 3 ft., 60g, dia 1 1/2	---	---	Sd,G	Pl	U	25	D	---	L.
3102	C. Tirota	do	2-3-54	740 J	50	2	S; 3 ft., 60g, dia 1 1/2	45	5	Sd	Pl	C	25	---	---	Yellow sand and gravel from 0-37 ft.
3103	L. Marks	do	2-3-54	734 J	37	2	S; 3 ft., 60g, dia 1 1/2	28	9	Sd,G	Pl	U	28	D	---	L.
3104	Layno-Northern Co., Inc.	do	12-7-58	730 Dr	187	8 1/2	---	115	72	Sd,G	Pl	C	22	T	---	Do 34 ft after 8 hr pumping 1,100 gpm; L.
3105	do	do	3-18-57	730 Dr	187	26	Gp; S; 30ft., 80al, dia 12	143	44	Sd,G	Pl	C	25	P	---	Bedrock at 250 ft; L.
3106	do	do	4-17-51	732 Dr	250	6	---	---	---	Sd,G	Pl	---	25	T	---	Yield 1,100 gpm; Ca, L.
3107	do	do	3-1-52	732 Dr	180	28	Gp; S; 30ft., 105al, dia 12	128	52	Sd,G	Pl	C	22	P	---	L.
3108	do	do	---	733 J	61	2	S; 3 1/2 ft., 80g, dia 1 1/2	---	---	Sd	Pl	---	19	D	---	---
3109	M. Lyvers	Striver Drilling Co.	---	733 J	59	2	S; 3 1/2 ft., 80g, dia 1 1/2	---	---	Sd	Pl	---	10	S	L	---
3110	G. Emblees	do	---	734 J	55	2	S; 3 1/2 ft., 80g, dia 1 1/2	43	12	Sd	Pl	C	14	D	---	See log well 39F4, Ca, L.
3111	C. Wilman	do	10-13-53	732 J	37	2	S; 3 1/2 ft., 80g, dia 1 1/2	40	11	Sd	Pl	C	19	D	---	L.
3112	N. Guljan	do	7-13-51	734 J	35	2 1/2	S; 4 1/2 ft., 10al, dia 1 1/2	18	17	Sd	Pl	U	18	D	J1/2	---
3113	L. J. Vollenor	do	8-25-54	741 J	52	2	S; 3 ft., 60g, dia 1 1/2	45	7	Sd	Pl	C	12	D	---	L.
3114	W. Bakulowicz	do	1-21-53	742 J	88	6	S; 3 1/2 ft., 15al, dia 1 1/2	21	47	Sd,G	Pl	C	21	D	73	Do less than 12 ft pumping 55 gpm; see log well 31D1.
3115	J. Hoffman	Indiana-Michigan Water Development Co.	8-10-48	745 Dr	200	6	---	107	93	Sd,G	Pl	C	32	T	---	Bedrock at 200 ft; L.
3116	University of Notre Dame	do	7-17-48	737 Dr	187	12	S; 20ft., 100al, dia 1 1/2	107	93	Sd,G	Pl	C	34	P	775	Bedrock at 200 ft; see log well 31M1.
3117	do	do	10-3-46	737 Dr	187	12	S; 20ft., 100al, dia 1 1/2	107	93	Sd,G	Pl	C	34	P	775	Bedrock at 200 ft; see log well 31M1.
3118	G. Lates	Striver Drilling Co.	3-21-55	749 J	51	2	S; 3 1/2 ft., 60g, dia 1 1/2	44	7	Sd	Pl	C	20	D	---	L.
3119	L. Schmidt	do	10-18-47	785 J	64	2	S; 3 1/2 ft., 60g, dia 1 1/2	47	17	Sd,G	Pl	U	47	D	J3/4	Sand and gravel from 0-64 ft.
3120	do	do	---	755 J	43	2	S; 3 ft., 60g, dia 1 1/2	36	7	Sd,G	Pl	U	36	D	---	Sand and gravel from 0-43 ft.
3121	J. P. Grokouski	do	7-21-54	755 J	46	2	---	28	12	Sd	Pl	U	34	D	J1/2	Sand from 0-48 ft.
3122	J. Hutchinson	do	10-23-53	753 J	45	2	---	28	18	Sd	Pl	U	28	D	J	Coarse sand overlain by 40 ft sand and gravel; Ca.
3123	A. M. Nagy	do	2-13-54	748 J	41	2	---	---	---	Sd,G	Pl	U	32	D	J1	Sand and gravel from 0-50 ft. Do.
3124	M. Macht	do	0-15-56	780 J	50	2 1/2	S; 5 ft., 60g, dia 1 1/2	16	34	Sd,G	Pl	U	16	D	---	Do.
3125	J. Billmeyer	do	9-10-58	750 J	50	2	S; 3 1/2 ft., 60g, dia 1 1/2	16	34	Sd,G	Pl	U	16	D	---	Do.
3126	S. Vargo	do	7-11-53	755 J	49	5	---	---	---	Sd	Pl	---	30	---	---	Yellow sand and gravel from 0-47 ft.
3127	C. Klodder	do	4-18-54	756 J	47	2 1/2	S; 5 1/2 ft., 60g, dia 1 1/2	31	16	Sd,G	Pl	U	31	D	---	Yellow sand and gravel from 0-47 ft.
3128	J. Bauer	do	5-24-45	759 J	53	2	S; 3 ft., 60g, dia 1 1/2	28	17	Sd,G	Pl	U	28	D	J1/2	Sand and gravel from 0-45 ft.
3129	J. Rankin	do	10-23-53	753 J	45	2	S; 3 ft., 60g, dia 1 1/2	28	13	Sd,G	Pl	U	28	D	---	Yellow sand and gravel from 0-41 ft.
3130	Mr. Bonfior	do	2-13-54	748 J	41	2	---	---	---	Sd,G	Pl	U	14	D	J1/2	Sand and gravel from 0-48 ft.
3131	do	do	---	758 J	48	2	---	14	15	Sd,G	Pl	U	14	D	---	Yellow sand and gravel from 0-41 ft.
3132	O. E. Coon	do	---	753 J	41	2	---	20	15	Sd,G	Pl	U	14	D	---	Sand and gravel from 0-40 ft.
3133	Y. H. Pugh	do	---	753 J	41	2	---	20	15	Sd,G	Pl	U	14	D	---	Sand from 0-45 ft. Ca, L.
3134	E. C. Alrgood	do	6-31-54	751 J	40	2	---	24	16	Sd,G	Pl	U	24	D	J	Sand and gravel from 0-46 ft.
3135	W. C. Thielko	do	9-21-54	749 J	45	2	---	21	24	Sd	Pl	U	21	D	---	Yellow sand from 0-45 ft.
3136	H. G. De Wolf	do	---	750 J	40	2	S; 3 1/2 ft., 7al, dia 1 1/2	21	12	G,Sd	Pl	U	28	D	---	---
3137	do	do	---	751 J	40	2	---	28	18	Sd,G	Pl	U	28	D	---	---
3138	L. Nemeth	do	9-21-53	751 J	45	2	S; 3 1/2 ft., 60g, dia 1 1/2	28	17	Sd	Pl	U	28	D	---	---
3139	C. Nyman	do	5-8-53	752 J	45	2	S; 3 1/2 ft., 60g, dia 1 1/2	28	17	Sd	Pl	U	28	D	---	---
3140	Trustees, Clay Township	Indiana-Michigan Water Development Co.	5-30-45	747 Dr	63	4	S; 3 ft., 60g, dia 3	19	44	Sd	Pl	U	19	P	J2	Sand from 0-63 ft; clay at 89 ft; Ca.
3141	R. Maerhout	Striver Drilling Co.	---	747 J	36	2	S; 3 ft., 60g, dia 1 1/2	22	14	Sd,G	Pl	U	22	D	---	Yellow sand and gravel from 0-36 ft; Ca.
3142	Indiana and Michigan Electric Co.	do	1925	743 Dr	178	8	---	---	---	Sd,G	Pl	---	---	I	---	---
3143	do	do	1925	743 Dr	40	8	---	---	---	Sd,G	Pl	---	---	I	---	---
3144	F. Malinowski	Barrett and Kuan	11-6-59	756 J	46	3	S; 4 ft., 10al, dia 2	---	---	Sd,G	Pl	---	---	I	J	Yield 16 gpm; Ca, L.

Table 2.---Records of wells and test holes in St. Joseph 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					Remarks		
									Depth to top (feet)	Thickness (feet)	Character	Geologic age	Conditions of occurrence		Water level (feet)	Use
3B/A-7P1	K. Roberts	Striver Drilling Co.	2-21-58	805 J	J	48	2	S; 7 1/2 ft, 80g, dia 1 1/4	25	Sd, G	Pl	U	25	D	---	Sand and gravel from 0-48 ft.
6K1	Central Hardware	---	6-50	807 J	Dr	43	2	S; 7 ft, 80g, dia 1 1/4	16	Sd	Pl	U	16	D	J2	Sand from 0-43 ft.
18B1	Harris Township Fire Department	---	11-15-57	800 Dr	Dr	51	4	S; 7 ft, 80g, dia 2 1/2	12	Sd, G	Pl	U	12	P	---	For fire protection; sand and gravel from 0-51 ft; Ca.
18C1	Standard Oil Co.	Layne-Northern Co., Inc.	4-15-53	807 Dr	Dr	80	8	S; 10 ft, 58g, dia 6	24	Sd	Pl	U	24	P	T7-1/2	Dr 16 ft after 2.5 hr pumping 220 gpm; Ca, L.
19E1	Indiana Toll Road Commission	Case Foundation Co.	5-27-54	774 B	B	20	---	---	7	Sd	Pl	U	7	T	---	See log well 19F1.
19F1	---	---	5-27-54	789 B	B	42	---	---	20	Sd	Pl	U	20	T	---	L.
19G1	---	---	---	789 B	B	32	---	---	18	Sd	Pl	U	18	T	---	Oil test; bedrock at 146 ft;
20B1	E. Warden	J. H. McLean	5-21-41	777 Dr	Dr	642	8-5 1/2	---	---	Sd, G	Pl	---	---	---	---	Oil test; bedrock at 146 ft; well G-SJ E20-2 (NS, 1948); L.
20D1	R. Knoblock	Robert Allen Crude Oils	8-15-40	780 Dr	Dr	500	8-5 1/2	---	---	---	---	---	---	---	---	Oil test; bedrock at 147 ft; 383 ft shale underlain by 170 ft dolomite containing water.
20E1	Indiana Toll Road Commission	Case Foundation Co.	5-27-54	774 B	B	22	---	---	5	Sd	Pl	U	5	T	---	L.
20J1	---	---	5-23-54	774 B	B	42	---	---	4	Sd, G	Pl	U	4	T	---	Oil test; water-bearing limestone from 528-580 ft; well G-SJ E20-1 (NS, 1948); L.
20K1	University of Notre Dame	---	9-28-44	788 Dr	Dr	1,045	5 1/2	---	---	---	---	---	---	---	---	Oil test; water-bearing limestone from 528-580 ft; well G-SJ E20-1 (NS, 1948); L.
21A1	M. Burggraf	Striver Drilling Co.	9-1-51	787 J	J	42	2	S; 3 ft, 80g, dia 1 1/4	16	Sd	Pl	U	16	D	J1/2	Yellow sand from 0-42 ft; Ca.
21J1	Indiana Toll Road Commission	Indiana-Michigan Water Development Co.	4-1-55	777 Dr	Dr	73	8	S; 10 ft, 40s1, dia 7 1/4	7	Sd, G	Pl	U	7	P	---	Dr 18 ft after 8 hr pumping 150 gpm; Ca, L.
21J2	---	---	3-28-54	776 B	B	42	---	---	11	Sd, G	Pl	U	11	T	---	L.
21J3	---	---	5-27-54	776 B	B	30	---	---	10	Sd	Pl	U	10	T	---	See log well 21K1.
21J4	---	---	5-28-54	776 B	B	30	---	---	9	Sd	Pl	U	9	T	---	Oil test; bedrock at 224 ft; 301 ft shale underlain by 43 ft limestone (?); water-bearing shale from 243-253 ft; water-bearing limestone(?) from 547-574 ft; well G-SJ E29-1 (NS, 1948); L.
21L1	---	---	5-28-54	770 B	B	22	---	---	4	Sd, G	Pl	U	4	T	---	Speed overlain by 48 ft gravel; Ca.
21M1	---	---	---	774 B	B	32	---	---	---	---	---	---	---	---	---	Yield 11 gpm; L.
29J1	R. and G. Wall	Robert Allen Crude Oils	6-24-40	764 Dr	Dr	574	8-5	---	---	---	---	---	---	---	---	Oil test; bedrock at 175 ft; water-bearing shale from 185-190 ft; well G-SJ E23-1 (NS, 1948); L.
28N1	R. A. Hamlinger	Striver Drilling Co.	---	762 J	J	52	2	S; 4 1/2 ft, 80g, dia 1 1/4	16	G, Sd	Pl	U	16	D	---	Oil test; bedrock at 215 ft; L.
31P1	M. Osejnik	Barratt and Kama	8-13-59	758 J	J	44	2	S; 4 ft, 10s1, dia 1 1/4	10	Sd, G	Pl	U	10	D	---	---
33E1	V. Kubitrcheck	M. C. Pletcher	3-1-45	765 Dr	Dr	523	8 1/2	---	---	---	---	---	---	---	---	---
33E2	---	Calumet Oil Producers	7-16-54	764 Dr	Dr	700	8-5	---	---	Sd, G	Pl	---	---	---	---	Oil test; bedrock at 215 ft; L.

Table 3.--Selected logs of wells and test holes in St. Joseph County, Indiana

Well 35/1W-12B1

Type of record: Driller's log.

Altitude: 710 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	25	25	
Sand-----	6	31	
Sand, coarse-----	4	35	

Well 35/1W-13G1

Type of record: Driller's log.

Altitude: 718 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	12	12	
Hardpan-----	12	24	
Sand and gravel-----	11	35	
Sand, white-----	16	51	

Well 35/1W-23J2

Type of record: Driller's log.

Altitude: 715 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	11	11	
Sand, gray-----	24	35	
Stones and clay-----	32	67	
Sand, fine, dirty-----	12	79	
Sand, fine, clean-----	3	82	
Gravel and sand-----	5	87	Suitable for 30-slot screen.
Clay with very hard boulders-----	19	106	
Clay, soft-----	8	114	
Clay, hard-----	3	117	
Gravel-----	1	118	Suitable for 100-slot screen.
Gravel and sand-----	6	124	
Sand, clean-----	5	129	Suitable for 15-slot screen.
Gravel with clay-----	7	136	
Gravel-----	8	144	Suitable for 25-slot screen.
Sand, clean-----	9	153	Suitable for 15-slot screen.
Clay-----	10	163	Shale at 163 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 35/1W-23R1

Type of record: Driller's log.

Altitude: 718 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil-----	4	4	
Gravel, hard-----	1	5	
Sand, sugar-sized-----	24	29	
Gravel and sand-----	11	40	
Clay and sand-----	48	88	
Sand-----	10	98	Suitable for 8-slot screen.
Clay, soft-----	4	102	
Clay, hard-----	7	109	
Gravel and sand-----	15	124	Suitable for 80-slot screen.

Well 35/1W-24M1

Type of record: Driller's log.

Altitude: 710 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	13	13	
Sand, gray-----	25	38	
Gravel-----	2	40	
Sand, fine-----	32	72	
Clay with boulders-----	7	79	
Gravel and clay; mixed-----	4	83	
Sand, fine, clean-----	5	88	
Gravel-----	1	89	
Sand, clean-----	4	93	Suitable for 20-slot screen.
Sand and gravel-----	4	97	Suitable for 50-slot screen.
Sand, fine, and clay; mixed-----	18	115	
Clay, hard-----	7	122	
Gravel-----	5	127	Suitable for 80-slot screen.
Clay-----	1	128	
Sand-----	9	137	Suitable for 25-slot screen.
Gravel-----	5	142	Suitable for 50-slot screen.

Well 35/1W-24M2

Type of record: Driller's log.

Altitude: 710 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, yellow-----	19	19	
Sand, gray-----	23	42	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 35/1W-24M2--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Boulders and clay-----	14	56	
Sand, fine-----	20	76	
Clay, blue, and gravel-----	38	114	
Hardpan-----	8	122	
Gravel and sand; dirty-----	11	133	Suitable for 40-slot screen.
Gravel-----	8	141	Suitable for 60-slot screen.

Well 35/1W-25C1

Type of record: Driller's log. Altitude: 724 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	9	9	
Sand, yellow-----	44	53	
Sand, fine-----	7	60	
Sand and clay-----	15	75	
Sand, muddy-----	11	86	
Clay and sand-----	5	91	
Clay, soft-----	9	100	
Clay with some coarse gravel-----	20	120	
Gravel and clay balls-----	2	122	
Sand-----	8	130	
Sand, fine-----	11	141	
Clay-----	7	148	

Well 35/1W-25D1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	30	30	
Sand, coarse-----	5	35	
Sand, fine, yellow-----	16	51	
Sand-----	11	62	
Gravel, coarse-----	2	64	
Hardpan-----	54	118	
Clay, sandy-----	18	136	

Well 35/1W-25E1

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

Quaternary system:			
Recent and Pleistocene series:			
Gravel, yellow-----	20	20	
Clay, yellow-----	20	40	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 35/1W-25E1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	10	50	
Gravel, medium-----	4	54	

Well 35/1-1A2

Type of record: Driller's log. Altitude: 800 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	20	20	
Clay, blue-----	16	36	
Sand, coarse, and fine gravel----	72	108	

Well 35/1-1D1

Type of record: Driller's log. Altitude: 810 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	18	18	
Clay, blue-----	30	48	
Gravel, pea-sized-----	9	57	

Well 35/1-1J1

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

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Gravel-----	5	35	
Clay, blue-----	10	45	
Sand-----	20	65	

Well 35/1-9J1

Type of record: Driller's log. Altitude: 752 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Sand, yellow-----	2	32	
Clay, blue-----	50	82	
Sand, yellow-----	6	88	

Well 35/1-12J1

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

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	32	32	
Sand, yellow-----	6	38	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 35/1-12J1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	22	60	
Sand-----	8	68	

Well 35/1-17J1

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

Quaternary system:			
Recent and Pleistocene series:			
Loam-----	10	10	
Clay, yellow-----	30	40	
Clay, blue-----	8	48	
Sand-----	6	54	
Gravel-----	4	58	

Well 35/2-1F1

Type of record: Driller's log. Altitude: 835 feet.

Quaternary system:			
Recent and Pleistocene series:			
Loam-----	9	9	
Sand and gravel-----	9	18	
Clay-----	12	30	
Sand and gravel-----	10	40	

Well 35/2-2K1

Type of record: Driller's log. Altitude: 840 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	20	20	
Gravel-----	20	40	
Sand and gravel-----	9	49	

Well 35/2-2P1

Type of record: Driller's log. Altitude: 830 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	23	23	
Clay and gravel-----	5	28	
Sand and gravel-----	11	39	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 35/2-4R1

Type of record: Driller's log.

Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	22	22	
Clay, blue-----	78	100	
Sand and clay; blue-----	4	104	
Sand-----	7	111	

Well 35/2-6A1

Type of record: Driller's log.

Altitude: 810 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, red-----	20	20	
Sandstone-----	3	23	Boulder (?).
Clay, blue-----	51	74	
Sand-----	10	84	

Well 35/2-8B1

Type of record: Driller's log.

Altitude: 885 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Sand-----	40	70	
Hardpan-----	20	90	
Sand-----	15	105	

Well 35/2-8N1

Type of record: Driller's log.

Altitude: 852 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, coarse-----	21	21	
Clay, blue-----	19	40	
Gravel, coarse-----	30	70	
Gravel, fine-----	17	87	

Well 35/2-10D1

Type of record: Driller's log.

Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Clay, blue-----	30	60	
Sand, coarse, and fine gravel----	10	70	
Clay, blue-----	30	100	
Sand, coarse, and fine gravel----	26	126	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 35/2-14H1

Type of record: Driller's log.

Altitude: 832 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Loam and clay-----	22	22	
Sand-----	5	27	
Clay-----	9	36	
Sand-----	9	45	

Well 35/2-16H1

Type of record: Driller's log.

Altitude: 873 feet.

Quaternary system:			
Recent and Pleistocene series:			
Overburden and clay-----	24	24	
Sand, fine, and gravel-----	12	36	
Sand, fine-----	4	40	
Sand and gravel-----	9	49	

Well 35/2-18E1

Type of record: Driller's log.

Altitude: 816 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	21	21	
Clay, blue, and gravel; mixed----	9	30	
Gravel, coarse-----	10	40	

Well 35/3-11D1

Type of record: Driller's log.

Altitude: 820 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow, with little sand---	28	28	
Sand, fine-----	4	32	
Clay, blue, with little sand-----	60	92	
Gravel, coarse, gray, and sand---	6	98	

Well 35/3-16E1

Type of record: Driller's log.

Altitude: 847 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	28	28	
Clay, blue, and gravel-----	103	131	
Sand and gravel-----	8	139	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 35/3-18E1

Type of record: Driller's log.

Altitude: 832 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	18	18	
Sand, yellow-----	12	30	
Clay-----	30	60	
Sand-----	10	70	

Well 36/1W-25P1

Type of record: Driller's log from memory.

Altitude: 704 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	20	20	
Sand, white-----	16	36	
Sand, fine-----	14	50	
Gravel, coarse-----	8	58	

Well 36/1W-35B1

Type of record: Driller's log.

Altitude: 705 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	18	18	
Clay-----	7	25	
Sand-----	15	40	

Well 36/1-1F1

Type of record: Driller's log.

Altitude: 745 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	8	8	
Sand, fine, dirty, with small stones-----	17	25	
Sand, fine, brown, with small stones-----	20	45	
Sand, fine, reddish-gray-----	9	54	
Sand, fine, red-----	3	57	
Gravel with clay-----	21	78	
Sand with some fine gravel-----	9	87	
Gravel-----	1	88	

Well 36/1-1N1

Type of record: Driller's log.

Altitude: 740 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay and gravel-----	15	15	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/1-1N1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	12	27	
Sand, coarse, light-----	12	39	

Well 36/1-8Q1

Type of record: Driller's log. Altitude: 722 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	40	40	
Clay, blue-----	35	75	
Sand, yellow-----	12	87	

Well 36/1-8R1

Type of record: Driller's log. Altitude: 735 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	40	40	
Clay, blue-----	30	70	
Sand, yellow-----	17	87	

Well 36/1-10C2

Type of record: Driller's log. Altitude: 746 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	7	7	
Gravel-----	18	25	
Hardpan-----	5	30	
Sand, light-----	20	50	

Well 36/1-13H1

Type of record: Driller's log. Altitude: 790 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	88	88	
Clay, blue-----	18	106	
Sand and gravel; dark-----	14	120	

Well 36/1-13K1

Type of record: Driller's log. Altitude: 780 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	60	60	
Clay, yellow-----	24	84	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/1-13K1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and clay; yellow-----	6	90	
Sand, yellow-----	10	100	

Well 36/1-21D1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	20	20	
Clay, blue-----	9	29	
Sand, yellow-----	9	38	

Well 36/1-25J1

Type of record: Driller's log. Altitude: 800 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	190	190	
Gravel-----	5	195	
Gravel and sand; coarse-----	5	200	
Sand and gravel; fine-----	5	205	
Sand and gravel; coarse-----	13	218	
Sand, light-brown-----	7	225	
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Shale, brown-----	5	230	
Shale, dark-brown-----	4	234	
Shale, dark, mixed-----	3	237	
Shale, light-brown-----	3	240	
Shale, brown and black-----	2	242	
Shale, light-brown-----	4	246	
Shale, black-----	4	250	
Shale, black, mixed-----	6	256	
Shale, black, and gray lime- stone; mixed-----	14	270	Total depth of well 300 feet; rest of log indefinite.

Well 36/1-28C1

Type of record: Driller's log. Altitude: 733 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, clay, and gravel-----	202	202	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/1-28C1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Shale, gray, green, and brown----	3	205	
Shale, light-brown-----	5	210	
Shale, green and gray-----	9	219	
Shale, dark-brown-----	67	286	
Devonian system:			
Middle Devonian series:			
Dolomite, fine, sucrose-----	2	288	
Shale and hard dolomite-----	7	295	
Shale with quartz grains-----	1	296	
Dolomite, calcareous, brown-----	11	307	
Dolomite with quartz grains-----	3	310	
Dolomite, light-buff-----	3	313	
Limestone, light-buff-----	2	315	
Dolomite, calcareous, light-buff-	4	319	
Limestone, light-buff-----	67	386	
Limestone, brown and gray-----	27	413	
Dolomite, brown-----	35	448	
Silurian(?) system; undifferentiated:			
Dolomite, light-gray-----	7	455	
Dolomite with some sand-----	5	460	
Dolomite, gray-white-----	111	571	
Dolomite-----	366	937	
Dolomite, milky to cherty-----	33	970	
Dolomite, no chert-----	20	990	
Dolomite, white, with chert-----	65	1,055	
Ordovician system; undifferentiated:			
Dolomite, with green-shale streak-----	142	1,197	
Shale, green-gray-----	13	1,210	
Shale, soft, green-gray-----	65	1,275	
Shale, brown and light-brown----	122	1,397	
Dolomite, buff to brown-----	117	1,514	

Well 36/1-28E1

Type of record: Driller's log from memory.

Altitude: 722 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay and gravel; mixed-----	30	30	
Clay, yellow-----	10	40	
Sand, gray-----	20	60	
Gravel, very coarse, or coarse sand-----	3	63	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/1-28N2

Type of record: Driller's log.

Altitude: 728 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	3	3	
Sand, coarse-----	16	19	
Clay, sand, and gravel-----	21	40	
Sand, fine-----	5	45	
Sand, coarse, and gravel-----	25	70	
Sand, medium-----	5	75	
Gravel-----	25	100	

Well 36/1-32G2

Type of record: Driller's log.

Altitude: 727 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, white-----	20	20	
Clay, blue-----	15	35	
Gravel-----	14	49	

Well 36/1-33B1

Type of record: Driller's log.

Altitude: 730 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	21	21	
Clay-----	21	42	
Sand-----	25	67	

Well 36/1-33D1

Type of record: Driller's log.

Altitude: 735 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	8	8	
Sand, red-----	15	23	
Sand, fine, clean-----	22	45	
Sand, fine, dirty-----	6	51	
Gravel and sand-----	4	55	
Sand, clean, with some gravel----	18	73	

Well 36/1-35M2

Type of record: Driller's log.

Altitude: 753 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	40	40	
Quicksand-----	12	52	
Clay, blue-----	6	58	
Sand and gravel-----	18	76	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-1C1

Type of record: Driller's log. Altitude: 805 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	20	20	
Gravel-----	25	45	
Sand-----	6	51	

Well 36/2-1C3

Type of record: Driller's log. Altitude: 805 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	21	21	
Gravel-----	28	49	
Sand-----	3	52	

Well 36/2-2A1

Type of record: Driller's log. Altitude: 825 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	18	18	
Clay-----	7	25	
Sand and gravel-----	34	59	

Well 36/2-2Q4

Type of record: Driller's log. Altitude: 875 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	45	45	
Gravel-----	55	100	
Sand and gravel-----	13	113	

Well 36/2-2R1

Type of record: Driller's log. Altitude: 880 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Gravel, yellow-----	57	87	
Sand and gravel; yellow-----	31	118	

Well 36/2-2R2

Type of record: Driller's log. Altitude: 880 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	60	60	
Sand-----	20	80	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-2R2--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	30	110	
Sand-----	11	121	

Well 36/2-2R5

Type of record: Driller's log.		Altitude: 885 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Clay, very stony-----	25	25	
Clay-----	35	60	
Gravel and sand-----	56	116	

Well 36/2-3A1

Type of record: Driller's log.		Altitude: 825 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	30	20	
Clay-----	15	45	
Sand and gravel-----	18	63	Very stony from 55-60 feet.

Well 36/2-3B1

Type of record: Driller's log.		Altitude: 815 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	42	42	
Clay-----	8	50	
Sand and gravel-----	12	62	

Well 36/2-3G1

Type of record: Driller's log.		Altitude: 830 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	20	20	
Clay, yellow-----	5	25	
Sand, yellow-----	25	50	
Clay, blue-----	10	60	
Sand, fine, blue-----	20	80	
Sand and gravel-----	17	97	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-3N1

Type of record: Driller's log.

Altitude: 840 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	18	18	
Gravel-----	50	68	
Clay, blue-----	20	88	
Gravel-----	7	95	

Well 36/2-3P1

Type of record: Driller's log.

Altitude: 840 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	15	15	
Gravel-----	15	30	
Clay, blue-----	35	65	
Sand and gravel-----	18	83	

Well 36/2-3R2

Type of record: Driller's log.

Altitude: 845 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	4	4	
Clay and sand-----	21	25	
Gravel-----	13	38	
Sand, fine-----	32	70	
Sand, fine, and clay-----	6	76	
Sand-----	8	84	Suitable for 20-slot screen.
Sand-----	12	96	Suitable for 15-slot screen.
Gravel-----	2	98	
Clay-----	15	113	
Hardpan-----	28	141	
Clay-----	17	158	
Gravel-----	18	176	

Well 36/2-3R3

Type of record: Driller's log.

Altitude: 845 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	22	22	
Sand, clean, and gravel-----	8	30	
Clay, blue-----	15	45	
Hardpan-----	25	70	
Clay, blue-----	10	80	
Clay, sandy-----	16	96	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-3R3--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	9	105	Suitable for 15-slot screen.
Sand and clay-----	15	120	
Clay, blue-----	29	149	
Sand, fine-----	15	164	
Gravel and yellow sand-----	16	180	

Well 36/2-3R4

Type of record: Driller's log. Altitude: 845 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	18	18	
Sand and gravel-----	6	24	
Clay, blue-----	11	35	
Hardpan and coarse gravel-----	35	70	
Clay, sandy, and gravel-----	28	98	
Clay and dirty sand-----	6	104	
Sand, clean-----	5	109	
Sand, dirty-----	5	114	
Clay-----	26	140	
Gravel and clay-----	3	143	
Sand-----	5	148	
Sand, coarse-----	6	154	
Clay, soft, yellow-----	3	157	

Well 36/2-3R5

Type of record: Driller's log. Altitude: 840 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	67	67	
Sand, gray-----	76	143	
Clay-----	3	146	
Sand-----	31	177	

Well 36/2-4M1

Type of record: Driller's log. Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	66	66	
Sand and clay-----	39	105	
Sand-----	9	114	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-4M3

Type of record: Driller's log. Altitude: 825 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, clayey, blue-----	148	148	
Sand, fine-----	8	156	
Sand and gravel; yellow-----	6	162	

Well 36/2-5D1

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	32	32	
Clay, blue-----	21	53	
Sand, fine, yellow-----	6	59	
Sand, yellow-----	7	66	

Well 36/2-5L3

Type of record: Driller's log. Altitude: 790 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	40	40	
Clay-----	35	75	
Gravel, fine-----	19	94	

Well 36/2-5M2

Type of record: Driller's log. Altitude: 765 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	60	60	
Clay, blue-----	9	69	
Sand and gravel-----	8	77	

Well 36/2-5N1

Type of record: Driller's log. Altitude: 765 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	16	16	
Gravel, yellow-----	34	50	
Clay, blue-----	8	58	
Sand, yellow-----	10	68	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-5Q1

Type of record: Driller's log.

Altitude: 825 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	46	46	
Clay, yellow-----	7	53	
Sand, fine, yellow-----	35	88	
Clay, blue-----	36	124	
Sand, coarse, dark-----	10	134	

Well 36/2-5Q2

Type of record: Driller's log.

Altitude: 795 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	34	34	
Clay-----	50	84	
Sand-----	10	94	

Well 36/2-5Q3

Type of record: Driller's log.

Altitude: 825 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	40	40	
Gravel and blue clay-----	20	60	
Clay, blue-----	40	100	
Gravel and sand; coarse-----	20	120	

Well 36/2-6A1

Type of record: Driller's log.

Altitude: 765 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	54	54	
Clay, blue-----	22	76	
Sand and gravel; yellow-----	10	86	

Well 36/2-6F1

Type of record: Driller's log.

Altitude: 760 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	20	20	
Clay, blue-----	10	30	
Clay, yellow-----	20	50	
Sand and gravel; yellow-----	10	60	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-6F2

Type of record: Driller's log.

Altitude: 760 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	50	50	
Clay, blue-----	2	52	
Sand, yellow-----	5	57	

Well 36/2-8D2

Type of record: Driller's log.

Altitude: 775 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	7	7	
Sand and gravel-----	26	33	
Clay-----	33	66	
Sand-----	6	72	

Well 36/2-8J1

Type of record: Driller's log.

Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	60	60	
Clay, yellow-----	20	80	
Clay and sand; blue-----	50	130	
Clay, blue-----	15	145	
Sand-----	15	160	

Well 36/2-11B3

Type of record: Driller's log.

Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	24	24	
Hardpan-----	26	50	
Gravel and sand-----	36	86	

Well 36/2-11N1

Type of record: Driller's log.

Altitude: 850 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, soft, brown-----	15	15	
Sand and gravel; brown-----	10	25	
Clay, soft, blue-gray-----	26	51	
Clay and gravel; hard, blue-gray-	4	55	
Gravel, coarse, hard, mixed			
colors-----	13	68	
Sand and fine gravel; soft, light-			
brown-----	8	76	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-11P6

Type of record: Driller's log.

Altitude: 860 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	35	35	
Sand and gravel; yellow-----	25	60	
Sand-----	16	76	

Well 36/2-12Q1

Type of record: Driller's log.

Altitude: 875 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	35	35	
Sand and hardpan-----	25	60	
Sand-----	34	94	

Well 36/2-13Q1

Type of record: Driller's log.

Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt-----	16	16	
Sand, coarse-----	14	30	
Clay and gravel-----	8	38	
Hardpan-----	17	55	
Sand, fine-----	15	70	
Sand-----	24	94	

Well 36/2-14B1

Type of record: Driller's log.

Altitude: 860 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Clay-----	20	40	
Gravel-----	40	80	
Sand-----	17	97	

Well 36/2-14F1

Type of record: Driller's log.

Altitude: 860 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	21	21	
Clay, blue-----	15	36	
Sand and gravel; yellow-----	39	75	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-14H2

Type of record: Driller's log.

Altitude: 865 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	40	40	
Sand, yellow-----	20	60	
Sand, white-----	16	76	

Well 36/2-14R1

Type of record: Driller's log.

Altitude: 850 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	35	35	
Gravel, coarse, yellow-----	25	60	
Sand and gravel; yellow-----	36	96	

Well 36/2-18C1

Type of record: Driller's log.

Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, and yellow clay-----	85	85	
Sand, fine, blue-----	30	115	
Sand, coarse, and gravel-----	15	130	

Well 36/2-20B1

Type of record: Driller's log.

Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	25	25	
Sand-----	15	40	
Clay, blue-----	5	45	
Sand-----	34	79	

Well 36/2-22F1

Type of record: Driller's log.

Altitude: 865 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Clay and gravel; yellow-----	30	60	
Sand and gravel-----	40	100	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-25P1

Type of record: Driller's log.

Altitude: 840 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	18	18	
Sand and gravel; mixed-----	20	38	
Clay, blue-----	30	68	
Sand, yellow-----	11	79	

Well 36/2-26M1

Type of record: Driller's log.

Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	26	26	
Gravel-----	34	60	
Sand, yellow-----	7	67	

Well 36/2-27A1

Type of record: Driller's log.

Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	45	45	
Clay, yellow-----	2	47	
Sand and gravel; yellow-----	29	76	

Well 36/2-30C1

Type of record: Driller's log.

Altitude: 810 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, red-----	50	50	
Clay, blue-----	45	95	
Sand-----	2	97	
Clay, hard, blue-----	5	102	
Sand, tan-----	7	109	

Well 36/2-32B1

Type of record: Driller's log.

Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	15	15	
Gravel-----	35	50	
Clay and gravel-----	15	65	
Gravel-----	20	85	
Sand-----	6	91	

Table 3--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-32M1

Type of record: Driller's log. Altitude: 824 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and yellow clay-----	5	5	
Clay, yellow, and sand-----	24	29	
Sand, red, and gravel-----	19	48	
Gravel, gray, with some red and gray sand-----	12	60	
Sand, gray-----	33	93	Suitable for 15-slot screen.
Sand, yellow-----	2	95	

Well 36/2-32R2

Type of record: Driller's log. Altitude: 885 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	60	60	
Gravel-----	40	100	
Clay, blue-----	20	120	
Gravel-----	20	140	
Clay, blue, sand, and gravel-----	44	184	

Well 36/2-33Q2

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

Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	32	32	
Gravel, dark-----	4	36	
Clay, blue, with few layers of sand-----	141	177	
Sand, light-----	6	183	

Well 36/2-33R1

Type of record: Driller's log. Altitude: 850 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	36	36	
Clay and gravel-----	6	42	
Sand-----	6	48	

Well 36/2-34J1

Type of record: Driller's log. Altitude: 845 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	8	8	
Clay, sandy-----	20	28	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/2-34J1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and yellow fine gravel-----	3	31	
Sand, coarse-----	10	41	
Sand, coarse, and gravel-----	9	50	
Sand, muddy-----	12	62	
Sand, coarse, and gravel-----	22	84	
Sand, fine-----	2	86	
Well 36/2-34R1			
Type of record: Driller's log.			Altitude: 845 feet.
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	35	35	
Sand, dirty-----	8	43	
Gravel-----	8	51	
Clay and sand-----	14	65	
Gravel-----	15	80	
Sand and gravel-----	1	81	
Well 36/2-35L1			
Type of record: Driller's log.			Altitude: 840 feet.
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	10	10	
Sand, gray-----	20	30	
Clay, blue-----	16	46	
Sand-----	12	58	
Well 36/2-36C1			
Type of record: Driller's log.			Altitude: 840 feet.
Quaternary system:			
Recent and Pleistocene series:			
Loam, sand, and gravel-----	28	28	
Clay-----	26	54	
Sand-----	4	58	
Well 36/3-1M1			
Type of record: Driller's log.			Altitude: 855 feet.
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	66	66	
Gravel-----	14	80	
Sand-----	18	98	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/3-1M2

Type of record: Driller's log. Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Sand-----	40	70	
Clay-----	10	80	
Sand-----	19	99	

Well 36/3-1N1

Type of record: Driller's log. Altitude: 855 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	80	80	
Stone and gravel-----	10	90	
Gravel-----	5	95	
Sand-----	13	108	

Well 36/3-1P1

Type of record: Driller's log. Altitude: 850 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	22	22	
Sand-----	4	26	
Clay and streaks of sand-----	82	108	
Gravel-----	8	116	

Well 36/3-2E2

Type of record: Driller's log. Altitude: 855 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Gravel-----	6	36	
Clay, blue-----	24	60	
Sand and gravel-----	33	93	

Well 36/3-2M1

Type of record: Driller's log. Altitude: 850 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	20	20	
Sand, yellow-----	60	80	
Clay, blue-----	10	90	
Sand-----	41	131	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/3-2R1

Type of record: Driller's log. Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Sand, yellow-----	10	40	
Clay, blue-----	54	94	
Sand-----	19	113	

Well 36/3-3F1

Type of record: Driller's log. Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Clay, blue-----	24	54	
Sand and gravel-----	47	101	

Well 36/3-4J1

Type of record: Driller's log. Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	40	40	
Clay, yellow-----	40	80	
Sand and gravel-----	22	102	

Well 36/3-7C1

Type of record: Driller's log. Altitude: 850 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Record missing-----	108	108	
Sand-----	67	175	
Clay-----	25	200	
Sand-----	10	210	

Well 36/3-8B1

Type of record: Driller's log. Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	45	45	
Hardpan-----	20	65	
Quicksand-----	25	90	
Clay-----	3	93	
Sand and gravel-----	7	100	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/3-10E1

Type of record: Driller's log. Altitude: 845 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	38	38	
Gravel, blue and rocks-----	8	46	
Sand, yellow-----	34	80	
Clay, yellow-----	3	83	

Well 36/3-15N2

Type of record: Driller's log. Altitude: 840 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	18	18	
Sand-----	4	22	
Clay-----	54	76	
Sand-----	16	92	

Well 36/3-16R1

Type of record: Driller's log. Altitude: 845 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	18	18	
Sand-----	28	46	
Clay-----	39	85	
Sand-----	9	94	

Well 36/3-17B2

Type of record: Driller's log. Altitude: 845 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Sand-----	30	60	
Gravel-----	10	70	
Sand-----	10	80	

Well 36/3-17Q1

Type of record: Driller's log. Altitude: 840 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Clay, blue-----	10	40	
Sand and gravel-----	17	57	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/3-19C4

Type of record: Driller's log. Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	90	90	Rough drilling.
Gravel, blue-----	15	105	
Sand, yellow-----	18	123	

Well 36/3-19C7

Type of record: Driller's log. Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, red-----	6	6	
Sand-----	9	15	
Clay, red, and gravel-----	15	30	
Clay, blue-----	74	104	
Sand, red-----	22	126	
Clay, blue-----	1	127	
Sand-----	4	131	
Sand, clean-----	6	137	

Well 36/3-19P1

Type of record: Driller's log. Altitude: 875 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	18	18	
Sand, yellow-----	82	100	
Sand and gravel-----	12	112	

Well 36/3-19R1

Type of record: Driller's log. Altitude: 885 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	20	20	
Gravel and clay; hardpan-----	40	60	
Quicksand and clay-----	70	130	
Gravel-----	10	140	

Well 36/3-21D1

Type of record: Driller's log. Altitude: 840 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	36	36	Boulder.
Rock-----	4	40	
Clay, sandy-----	20	60	
Sand-----	14	74	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/3-21R1

Type of record: Driller's log. Altitude: 835 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	70	70	
Sand-----	24	94	
Clay and hardpan-----	3	97	
Gravel-----	6	103	

Well 36/3-27A1

Type of record: Driller's log. Altitude: 845 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface dirt and clay-----	26	26	
Gravel-----	32	58	
Clay and gravel-----	102	160	
Clay, very hard, sandy, sticky---	17	177	Blue shale at 177 feet.

Well 36/3-30D1

Type of record: Driller's log. Altitude: 845 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay and gravel; blue-----	50	50	
Gravel and sand; coarse, yellow--	13	63	
Sand, yellow-----	17	80	

Well 36/3-32C1

Type of record: Driller's log. Altitude: 850 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	20	20	
Sand-----	45	65	
Clay, soft-----	35	100	
Gravel and sand-----	20	120	

Well 36/3-35B2

Type of record: Driller's log. Altitude: 840 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay and gravel; mixed-----	87	87	
Clay, sandy-----	13	100	
Gravel, coarse-----	5	105	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 36/4-6M1

Type of record: Driller's log. Altitude: 840 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, soft, brown-----	42	42	
Clay, blue-----	10	52	
Sand and gravel-----	24	76	

Well 36/4-16E1

Type of record: Driller's log. Altitude: 820 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue, sand, and gravel-----	115	115	
Sand, coarse, gray, and gravel---	1	116	
Clay balls, brown, sand, and gravel-----	17	133	Blue shale at 133 feet.

Well 36/4-18M1

Type of record: Driller's log. Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown and blue, sand, and gravel-----	40	40	
Gravel, coarse, and stones-----	7	47	
Clay, blue, sand, and gravel-----	68	115	
Stone, broken, hard-packed, and gravel-----	2	117	

Well 37/1W-11D1

Type of record: Driller's log. Altitude: 850 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay and sand-----	15	15	
Sand-----	15	30	
Gravel-----	70	100	
Sand and little gravel-----	40	140	
Sand, fine, and silt-----	5	145	
Sand, fine-----	6	151	
Sand, coarse, brown-----	9	160	

Well 37/1W-14H1

Type of record: Driller's log. Altitude: 735 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	8	8	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/1W-14H1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	25	33	Clay at 60 feet.
Sand, gray-----	27	60	

Well 37/1W-24D1

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

Quaternary system:			
Recent and Pleistocene series:			
Muck-----	7	7	
Clay-----	6	13	
Sand, medium-----	10	23	
Sand, coarse, with some gravel---	25	48	
Clay-----	2	50	
Sand, medium-----	69	119	

Well 37/1-1L1

Type of record: Driller's log. Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	30	30	
Sand and clay; yellow-----	5	35	
Sand, yellow-----	20	55	
Gravel-----	11	66	

Well 37/1-1M1

Type of record: Driller's log. Altitude: 735 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, red-----	14	14	
Sand, fine, gray-----	24	38	
Sand, very fine-----	1	39	
Sand, gray-----	5	44	
Gravel-----	18	62	

Well 37/1-1M2

Type of record: Driller's log. Altitude: 720 feet.

Quaternary system:			
Recent and Pleistocene series:			
Muck-----	3	3	
Sand, fine, gray-----	34	37	
Sand, fine, with some clay-----	8	45	
Sand-----	9	54	
Gravel-----	10	64	
Gravel and boulders-----	12	76	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/1-2G1

Type of record: Driller's log.

Altitude: 746 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, red, and clay-----	5	5	
Sand, coarse, red, and clay-----	5	10	
Sand, fine, red, and clay-----	5	15	
Sand, coarse, red, and clay-----	5	20	
Sand, fine, red, and clay-----	5	25	
Sand, fine, red-----	15	40	
Sand, coarse, gray, and pea-sized gravel-----	5	45	
Gravel, rice-sized to pea-sized--	10	55	
Gravel, coarse, gray-----	10	65	
Gravel, rice-sized, red-----	10	75	
Sand, coarse, gray-----	10	85	
Sand, finer, gray-----	5	90	
Sand, coarse, gray-----	10	100	
Clay, blue-----	4	104	

Well 37/1-7F1

Type of record: Driller's log.

Altitude: 728 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay and gravel-----	18	18	
Gravel-----	67	85	
Sand, brown, and gravel-----	4	89	

Well 37/1-10H1

Type of record: Driller's log.

Altitude: 717 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	6	6	
Sand, yellow-----	4	10	
Sand, gray-----	8	18	
Sand, coarse-----	7	25	
Gravel-----	13	38	
Sand, coarse-----	3	41	

Well 37/1-14A1

Type of record: Driller's log.

Altitude: 730 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	18	18	
Gravel, yellow-----	4	22	
Sand, yellow-----	22	44	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/1-23Q1

Type of record: Driller's log.

Altitude: 712 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	4	4	
Sand and gravel; yellow-----	6	10	
Clay, yellow-----	2	12	
Gravel, yellow-----	5	17	
Clay, gray-----	10	27	
Sand, white-----	4	31	Clay at 31 feet.

Well 37/1-31E1

Type of record: Driller's log.

Altitude: 702 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Loam, dark-----	3	3	
Sand-----	7	10	
Sand, light-----	7	17	

Well 37/1-32H1

Type of record: Driller's log.

Altitude: 702 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, and silt-----	12	12	
Gravel-----	4	16	
Sand, coarse, brown-----	6	22	

Well 37/1-36E1

Type of record: Driller's log.

Altitude: 715 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Cinders and fill-----	4	4	
Muck-----	14	18	
Sand, fine-----	20	38	
Clay, soft-----	6	44	
Clay, soft, and fine sand; in layers-----	15	59	
Sand, fine-----	21	80	
Sand, fine, muddy-----	20	100	
Clay, soft, and sand-----	20	120	
Gravel and fine sand-----	7	127	
Sand, fine-----	3	130	
Gravel and fine sand-----	6	136	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	1	137	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-1F1

Type of record: Driller's log.

Altitude: 672 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	2	2	
Sand and gravel-----	13	15	
Sand, clean, and coarse gravel---	11	26	
Clay, gray-----	32	58	
Sand, fine-----	7	65	
Sand, fine, and coarse gravel----	43	108	Clay at 108 feet.

Well 37/2-1F2

Type of record: Driller's log.

Altitude: 672 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	4	4	
Sand and gravel-----	16	20	
Clay, gray-----	27	47	
Sand, fine, silty, with some clay	18	65	
Sand and gravel-----	39	104	Large boulders near base of deposit.

Well 37/2-1L1

Type of record: Driller's log.

Altitude: 710 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, red-----	10	10	
Sand, medium, gray-----	30	40	
Clay, blue-----	15	55	

Well 37/2-1L2

Type of record: Driller's log.

Altitude: 695 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and some gravel-----	6	6	
Sand, medium-----	23	29	
Clay, blue-----	11	40	
Quicksand-----	10	50	

Well 37/2-1L4

Type of record: Driller's log.

Altitude: 680 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	12	12	
Clay, gravelly-----	5	17	
Sand and some clay-----	5	22	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-1L4--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent Pleistocene series:			
Clay, sandy-----	34	56	
Sand, fine-----	12	68	
Clay-----	5	73	
Clay and gravel-----	3	76	
Sand, coarse, and gravel-----	18	94	
Sand, medium to coarse-----	6	100	
Sand, coarse, and boulders-----	3	103	

Well 37/2-1L5

Type of record: Driller's log.

Altitude: 680 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil and sand-----	10	10	
Gravel, coarse-----	9	19	
Clay, brown-----	9	28	
Quicksand and clay; mixed-----	26	54	
Sand, fine to medium-----	15	69	
Gravel, coarse, and sand-----	9	78	
Gravel, fine to coarse-----	22	100	
Sand, coarse-----	5	105	
Sand, coarse, and gravel-----	5	110	

Well 37/2-1L6

Type of record: Driller's log.

Altitude: 679 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil and gravel-----	13	13	
Clay, tough-----	17	30	
Clay, soft-----	28	58	
Clay, gritty-----	10	68	
Gravel, coarse-----	20	88	
Gravel, medium-----	22	110	Shale at 110 feet.

Well 37/2-1M1

Type of record: Driller's log.

Altitude: 675 feet.

Quaternary system:			
Recent and Pleistocene series:			
Dirt-----	2	2	
Sand-----	15	17	
Clay, tough-----	13	30	
Clay, gritty-----	24	54	
Sand, fine-----	13	67	
Gravel and sand; medium-----	6	73	
Gravel and sand; coarse-----	14	87	
Gravel and sand-----	25	112	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-1M1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian system: Lower Mississippian series: Shale-----	2	114	

Well 37/2-1M3

Type of record: Driller's log.

Altitude: 695 feet.

Quaternary system: Recent and Pleistocene series:			
Fill-----	4	4	
Gravel and sand; coarse-----	7	11	
Clay, blue-----	4	15	
Quicksand-----	3	18	
Clay, blue-----	20	38	
Quicksand-----	3	41	
Clay, blue-----	21	62	
Quicksand-----	17	79	
Gravel and sand; coarse-----	26	105	
Gravel and sand; medium-----	16	121	
Mississippian system: Lower Mississippian series: Shale-----	4	125	

Well 37/2-1M6

Type of record: Driller's log.

Altitude: 685 feet.

Quaternary system: Recent and Pleistocene series:			
Sand, gravel, and boulders-----	16	16	
Clay, dark-gray-----	45	61	
Clay, hard, blue-----	15	76	
Gravel and sand-----	12	88	
Sand and gravel-----	10	98	
Sand, gravel, and boulders-----	13	111	

Well 37/2-1P4

Type of record: Driller's log.

Altitude: 680 feet.

Quaternary system: Recent and Pleistocene series:			
Fill-----	10	10	
Clay, blue-----	40	50	
Clay and sand-----	25	75	
Gravel-----	3	78	
Sand and gravel-----	24	102	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-2A1

Type of record: Driller's log.

Altitude: 685 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	12	12	
Clay-----	19	31	
Quicksand-----	13	44	
Sand, fine-----	24	68	
Sand and gravel-----	50	118	
Clay-----	6	124	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	125	

Well 37/2-2B1

Type of record: Driller's log.

Altitude: 685 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	15	15	
Sand and gravel-----	6	21	
Quicksand-----	5	26	
Clay-----	21	47	
Quicksand-----	46	93	
Sand, fine-----	13	106	
Gravel, coarse-----	42	148	Shale at 148 feet.

Well 37/2-2C1

Type of record: Driller's log.

Altitude: 706 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	8	8	
Clay-----	12	20	
Quicksand-----	8	28	
Clay-----	16	44	
Sand-----	38	82	
Gravel, coarse-----	22	104	
Sand-----	4	108	
Gravel-----	20	128	
Sand and gravel; coarse-----	16	144	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	146	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-2C3

Type of record: Driller's log. Altitude: 706 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	23	23	Boulder at 12 and 23 feet.
Sand, fine, white-----	19	42	
Clay-----	35	77	
Sand, medium, white-----	33	110	
Gravel-----	42	152	Shale at 152 feet.

Well 37/2-2D1

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

Quaternary system:			
Recent and Pleistocene series:			
Soil, sand, and gravel-----	32	32	
Clay-----	30	62	
Sand-----	32	94	
Sand, fine, and gravel-----	4	98	
Sand, medium, gray, and gravel---	30	128	

Well 37/2-2D2

Type of record: Driller's log. Altitude: 802 feet.

Quaternary system:			
Recent and Pleistocene series:			
Gravel and sand; coarse-----	26	26	
Sand, coarse-----	10	36	
Clay, smooth, gray-----	81	117	
Sand, medium to coarse-----	25	142	

Well 37/2-2D5

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

Quaternary system:			
Recent and Pleistocene series:			
Sand, muddy, red, and gravel-----	10	10	
Sand, clean, and gravel-----	16	26	
Clay, gummy, gray-----	5	31	
Sand, fine, gray-----	5	36	
Clay, gummy, blue-----	34	70	
Clay, sandy, gray-----	2	72	
Sand, very fine, muddy, gray-----	8	80	
Sand, fine, gray-----	20	100	
Sand, fine to medium-----	10	110	
Sand, coarse, and medium gravel--	12	122	
Sand, fine, with little gravel---	4	126	
Sand, coarse, with little gravel-	15	141	
Sand, fine-----	7	148	
Gravel, medium, with little sand-	7	155	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-2D5--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system: Recent and Pleistocene series: Sand, coarse, with little gravel-	2	157	

Well 37/2-2D7

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

Quaternary system: Recent and Pleistocene series: Top soil-----	2	2	
Gravel and sand-----	21	23	
Clay, blue-----	54	77	
Quicksand-----	31	108	
Gravel and sand-----	17	125	
Sand, coarse, with some gravel---	5	130	
Gravel and sand; coarse-----	11	141	
Sand, coarse, and very little gravel-----	4	145	
Sand, medium, with some gravel---	14	159	
Mississippian system: Lower Mississippian series: Shale-----	2	161	

Well 37/2-2D9

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

Quaternary system: Recent and Pleistocene series: Top soil-----	1	1	
Sand and gravel-----	18	19	
Clay and some gravel-----	21	40	
Clay-----	45	85	
Sand, fine-----	22	107	
Sand and gravel-----	37	144	Clay at 144 feet.

Well 37/2-2M1

Type of record: Driller's log. Altitude: 709 feet.

Quaternary system: Recent and Pleistocene series: Top soil-----	10	10	
Sand, fine-----	10	20	
Sand, coarse-----	20	40	
Clay-----	40	80	
Sand, very fine, and fine shale washings-----	10	90	
Sand, very fine-----	10	100	
Sand, very coarse-----	20	120	
Sand, coarse-----	20	140	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-2M1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	20	160	
Sand, very fine-----	20	180	
Sand, coarse-----	20	200	
Sand, very coarse-----	14	214	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	215	

Well 37/2-3D2

Type of record: Driller's log.

Altitude: 700 feet.

Quaternary system:			
Recent and Pleistocene series:			
Pit-----	18	18	
Sand and gravel-----	30	48	
Sand-----	4	52	
Clay and sand; yellow-----	5	57	
Clay-----	38	95	
Sand, fine, dirty-----	33	128	
Sand-----	5	133	
Sand and gravel-----	15	148	Suitable for 40-slot screen.
Sand-----	8	156	

Well 37/2-3D4

Type of record: Driller's log.

Altitude: 700 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	8	8	
Sand, yellow and gray-----	26	34	
Gravel and sand-----	29	63	
Clay and hardpan-----	56	119	
Sand, yellow and gray-----	12	131	
Gravel and sand; yellow-----	6	137	
Sand and gravel; gray-----	7	144	
Sand, fine, yellow-----	7	151	

Well 37/2-3J3

Type of record: Driller's log.

Altitude: 712 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	24	24	
Gravel-----	31	55	
Clay-----	19	74	
Clay and very fine sand-----	16	90	
Sand, fine-----	20	110	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-3J3--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	1	111	
Gravel and sand-----	22	133	

Well 37/2-3J5

Type of record: Driller's log. Altitude: 712 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	5	5	
Sand-----	15	20	
Sand and gravel-----	10	30	
Gravel-----	4	34	
Clay-----	32	66	
Hardpan-----	30	96	Clay and sand (?)
Pack-sand-----	14	110	
Gravel and sand-----	5	115	
Sand-----	2	117	
Gravel-----	34	151	

Well 37/2-3L1

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil-----	10	10	
Sand and gravel-----	35	45	
Clay-----	39	84	
Sand, muddy-----	16	100	
Sand, fine-----	20	120	
Sand and gravel-----	30	150	
Gravel-----	18	168	
Sand, fine-----	10	178	
Sand and gravel-----	8	186	

Well 37/2-3N1

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Muck-----	10	10	
Sand, yellow-----	40	50	
Sand, fine-----	15	65	
Clay-----	1	66	
Sand and small gravel-----	9	75	
Sand, fine, yellow-----	83	158	
Clay-----	1	159	
Sand and gravel-----	19	178	Suitable for 25-slot screen

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-3N1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	20	198	Suitable for 35-slot screen.
Clay, sand, and gravel-----	8	206	

Well 37/2-3N4

Type of record: Driller's log.

Altitude: 713 feet.

Quaternary system:			
Recent and Pleistocene series:			
Loam, sandy-----	12	12	
Sand, medium to coarse, yellow- ish tint-----	13	25	
Sand, coarse, and medium gravel--	24	49	
Sand, coarse, and medium gravel; mixed with clay-----	2	51	
Clay and medium sand-----	1	52	
Sand, fine, mixed with clay-----	13	65	
Sand, coarse-----	19	84	
Sand, medium, mixed with clay----	3	87	
Clay, sandy, and hardpan-----	18	105	
Sand, fine, mixed with clay-----	29	134	
Sand, fine, dark-yellowish tint--	34	168	
Sand, coarse, and medium gravel--	41	209	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	210	

Well 37/2-3N5

Type of record: Driller's log.

Altitude: 713 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	15	15	
Sand and fine gravel-----	9	24	
Sand, coarse, and fine gravel----	21	45	
Sand, coarse-----	18	63	
Sand, fine-----	62	125	
Clay, hard, mixed with sand-----	2	127	
Sand, medium, and fine gravel; mixed with clay-----	38	165	
Sand, coarse, clean-----	5	170	
Sand, fine, mixed with clay-----	2	172	
Gravel, fine-----	3	175	
Clay-----	2	177	
Clay and coarse sand; mixed-----	2	179	
Clay-----	2	181	
Clay mixed with some gravel-----	2	183	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-3N5--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, fine, clean-----	3	186	
Clay and gravel; mixed-----	4	190	
Clay and sand; mixed-----	4	194	
Clay mixed with fine sand and gravel-----	4	198	
Clay and hardpan-----	4	202	
Mississippian system:			
Lower Mississippian series:			
Shale-----	3	205	

Well 37/2-3N7

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

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	10	10	
Sand and gravel-----	25	35	
Clay-----	51	86	
Sand and gravel-----	66	152	
Sand, cemented-----	11	163	Hardpan.
Sand and gravel-----	32	195	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	196	

Well 37/2-4E1

Type of record: Driller's log. Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	29	29	
Clay, blue-----	5	34	
Sand and gravel; yellow-----	17	51	

Well 37/2-4J1

Type of record: Driller's log. Altitude: 712 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and fill-----	12	12	
Sand, coarse-----	12	24	
Sand, coarse, and fine gravel----	5	29	
Gravel, medium-----	16	45	
Clay, hard-----	135	180	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	182	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-4J2

Type of record: Driller's log.

Altitude: 712 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand; mixed-----	12	12	
Sand, coarse, and fine gravel----	8	20	
Gravel, fine-----	14	34	
Clay, hard, mixed with gravel----	51	85	
Clay, gluey, mixed with some gravel-----	10	95	
Clay, soft, mixed with sand-----	45	140	
Hardpan; clay and gravel; mixed--	10	150	
Sand and clay; in layers-----	10	160	
Sand, fine-----	25	185	
Sand with fine gravel-----	5	190	
Gravel, fine-----	5	195	
Sand, coarse, clean-----	2	197	
Sand, coarse, mixed with clay----	1	198	
Sand, coarse-----	2	200	
Clay-----	4	204	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	205	

Well 37/2-4J3

Type of record: Driller's log.

Altitude: 712 feet.

Quaternary system:			
Recent and Pleistocene series:			
Pit-----	19	19	
Gravel and boulders-----	14	33	
Clay-----	5	38	
Sand and gravel-----	22	60	Suitable for 50-slot screen.

Well 37/2-4N1

Type of record: Driller's log.

Altitude: 721 feet.

Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	35	35	
Sand-----	2	37	
Clay-----	2	39	
Sand-----	5	44	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-4R1

Type of record: Driller's log.

Altitude: 712 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil, sand, and fill-----	12	12	
Sand, medium-----	13	25	
Sand, coarse-----	45	70	
Sand, coarse, mixed with clay----	5	75	
Clay-----	23	98	
Sand, coarse, mixed with gravel--	8	106	
Sand, fine-----	35	141	
Sand, fine, mixed with shale-----	1	142	

Well 37/2-4R2

Type of record: Driller's log.

Altitude: 711 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	10	10	
Gravel-----	10	20	
Sand and gravel-----	30	50	
Clay-----	10	60	
Clay and sand-----	10	70	
Clay-----	10	80	
Sand-----	70	150	
Sand and gravel-----	20	170	

Well 37/2-4R3

Type of record: Driller's log.

Altitude: 710 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck-----	15	15	
Sand-----	5	20	
Gravel-----	10	30	
Sand and gravel-----	17	47	
Clay-----	4	51	
Sand and gravel-----	29	80	
Gravel-----	10	90	
Sand and gravel-----	20	110	
Sand-----	70	180	
Sand and gravel-----	20	200	
Mississippian system:			
Lower Mississippian series:			
Shale-----	3	203	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-5B1

Type of record: Driller's log from memory. Altitude: 754 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	30	30	
Gravel-----	5	35	
Clay-----	10	45	
Sand-----	11	56	

Well 37/2-5H2

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	40	40	
Clay-----	35	75	
Sand and gravel-----	5	80	

Well 37/2-5H3

Type of record: Driller's log. Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	28	28	
Clay, blue-----	7	35	
Sand and gravel; yellow-----	18	53	

Well 37/2-6G3

Type of record: Driller's log. Altitude: 745 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, brown-----	18	18	
Sand and pea-sized gravel-----	9	27	
Sand, brown-----	8	35	
Sand and pea-sized gravel-----	15	50	

Well 37/2-7H1

Type of record: Driller's log. Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; red-----	50	50	
Sand and gravel; blue-----	10	60	
Sand, gray-----	7	67	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-7M2

Type of record: Driller's log.

Altitude: 740 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	16	16	
Sand and gravel; yellow-----	14	30	
Sand, coarse, with some gravel---	6	36	
Sand, fine-----	12	48	
Gravel-----	8	56	
Clay balls-----	7	63	
Sand, coarse, and gravel-----	9	72	
Sand, coarse-----	12	84	

Well 37/2-7Q1

Type of record: Driller's log.

Altitude: 742 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, brown-----	14	14	
Sand and pea-sized gravel-----	10	24	
Sand, brown-----	26	50	

Well 37/2-8A1

Type of record: Driller's log.

Altitude: 722 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, fine-----	3	4	
Sand and heavy gravel-----	10	14	
Clay-----	1	15	
Sand and gravel; dirty-----	6	21	
Sand, clean-----	3	24	
Sand and gravel-----	12	36	
Clay-----	2	38	
Sand, fine-----	11	49	
Sand and gravel-----	22	71	
Clay-----	19	90	
Sand, fine, muddy-----	7	97	
Clay-----	15	112	
Sand, muddy-----	11	123	
Sand, clean-----	4	127	
Sand, fine, muddy-----	19	146	
Sand, fine-----	7	153	
Sand and gravel-----	5	158	
Sand, clean-----	5	163	
Sand and gravel, with streaks of clay-----	5	168	
Sand and gravel-----	11	179	
Clay-----	3	182	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-8E1

Type of record: Driller's log.		Altitude: 737 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	40	40	
Clay, sandy-----	30	70	
Gravel-----	5	75	
Sand-----	5	80	

Well 37/2-8F3

Type of record: Driller's log.		Altitude: 732 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow, and clay; mixed----	28	28	
Clay, blue-----	18	46	
Sand, fine, gray-----	16	62	
Gravel and sand-----	9	71	
Clay, blue-----	5	76	

Well 37/2-8H1

Type of record: Driller's log.		Altitude: 717 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Clay, blue-----	28	48	
Gravel-----	10	58	

Well 37/2-8L1

Type of record: Driller's log.		Altitude: 726 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; mixed-----	17	17	
Clay, blue-----	18	35	
Sand, dark-----	9	44	

Well 37/2-8L4

Type of record: Driller's log.		Altitude: 730 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	20	20	
Clay, blue-----	29	49	
Sand-----	4	53	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-9A1

Type of record: Driller's log.

Altitude: 709 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand, very fine-----	30	40	
Sand-----	10	50	
Sand, coarser-----	10	60	
Sand, very fine-----	60	120	
Sand, powdered-----	10	130	
Sand, fine to medium-----	56	186	

Well 37/2-9J1

Type of record: Driller's log.

Altitude: 714 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand, fine-----	10	20	
Sand and gravel-----	30	50	
Sand, coarse-----	80	130	
Sand, finer-----	30	160	
Sand, coarse-----	33	193	Bedrock at 193 feet.

Well 37/2-9J2

Type of record: Driller's log.

Altitude: 714 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Loam-----	8	8	
Sand, fine-----	62	70	
Clay-----	10	80	
Sand and gravel-----	120	200	

Well 37/2-9R1

Type of record: Driller's log.

Altitude: 714 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Loam, sandy-----	10	10	
Sand, fine-----	55	65	
Clay-----	20	85	
Clay, hard-----	5	90	
Sand and gravel-----	110	200	Bedrock at 200 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-10B1

Type of record: Driller's log.

Altitude: 717 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	8	8	
Sand, brown-----	42	50	
Gravel and sand-----	18	68	
Hardpan-----	22	90	
Clay and fine sand-----	2	92	
Sand-----	6	98	Suitable for 20-slot screen.
Sand-----	23	121	
Sand-----	9	130	Suitable for 30-slot screen.

Well 37/2-10D2

Type of record: Driller's log.

Altitude: 712 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	4	4	
Sand, fine, yellowish-----	15	19	
Gravel, fine-----	16	35	
Clay-----	3	38	
Gravel, fine-----	33	71	
Sand, fine-----	7	78	
Gravel, medium-----	14	92	
Sand, fine-----	12	104	
Gravel, medium to coarse-----	23	127	
Clay mixed with coarse sand and gravel-----	14	141	
Sand, coarse-----	38	179	
Gravel, coarse-----	2	181	
Clay and sand; mixed-----	7	188	
Sand, medium-----	13	201	

Well 37/2-10E1

Type of record: Driller's log.

Altitude: 713 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	8	8	
Sand-----	4	12	
Sand and gravel-----	8	20	
Gravel and coarse sand-----	10	30	
Gravel and coarse sand; muddy----	10	40	
Clay and some hardpan-----	10	50	
Sand and gravel-----	10	60	
Gravel-----	10	70	
Quicksand-----	10	80	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-10E1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	10	90	
Sand with some gravel-----	10	100	
Sand, coarse, and fine gravel----	10	110	
Sand, coarse, and fine gravel----	10	120	More sand than above.
Sand, finer, with small amount of gravel-----	10	130	
Sand, finer, with small amount of gravel-----	10	140	More gravel than above.
Gravel, small, and fine sand-----	20	160	
Gravel, small, and fine sand-----	10	170	More sand than above.
Gravel, small, and fine sand-----	10	180	More gravel than above.
Sand, finer, getting muddy-----	10	190	
Mud-----	21	211	Mostly clay; shale at 211 feet.

Well 37/2-10E2

Type of record: Driller's log.

Altitude: 713 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	7	7	
Sand and gravel-----	13	20	
Gravel, coarse-----	12	32	
Clay and gravel-----	8	40	
Clay-----	5	45	
Quicksand-----	25	70	
Gravel-----	9	79	
Clay-----	1	80	
Sand, coarse-----	10	90	
Sand and gravel-----	50	140	
Sand-----	20	160	
Sand and gravel-----	10	170	
Sand-----	20	190	
Sand and gravel-----	17	207	
Mississippian system:			
Lower Mississippian series:			
Shale-----	3	210	

Well 37/2-10G3

Type of record: Driller's log.

Altitude: 714 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil and sand-----	3	3	
Sand, gray-----	7	10	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-10G3--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	7	17	
Boulders-----	5	22	
Sand, coarse, gray-----	8	30	
Gravel, coarse, gray-----	2	32	
Sand and gravel; coarse-----	15	47	
Sand, fine, sharp, clean-----	10	57	
Sand, fine, and coarse gravel----	4	61	
Clay with some gravel-----	25	86	
Sand, fine, and clay-----	4	90	
Sand, coarse, and gravel-----	11	101	
Sand, coarse-----	14	115	
Sand, fine-----	11	126	
Gravel, coarse, and rocks-----	6	132	
Sand and gravel; coarse-----	6	138	

Well 37/2-10H1

Type of record: Driller's log.

Altitude: 717 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	1	1	
Clay, sandy-----	2	3	
Sand, yellow-----	7	10	
Sand and gravel-----	31	41	
Clay, gravelly, yellow-----	24	65	
Clay, blue-----	26	91	
Sand and gravel-----	4	95	
Sand, coarse-----	24	119	Clay at 119 feet.

Well 37/2-10N1

Type of record: Driller's log.

Altitude: 715 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	8	8	
Sand and gravel-----	17	25	
Hardpan-----	7	32	
Sand and gravel-----	12	44	
Sand, gravel, and boulders-----	22	66	
Sand and gravel, with some boulders-----	11	77	
Gravel-----	8	85	
Sand, fine, with some gravel----	20	105	
Sand, fine-----	19	124	
Hardpan-----	3	127	
Sand, coarse-----	28	155	
Sand, fine-----	15	170	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-10N1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, finer-----	10	180	
Sand, fine, with some clay-----	8	188	
Mississippian system:			
Lower Mississippian series:			
Shale-----	6	194	

Well 37/2-10P1

Type of record: Driller's log. Altitude: 714 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	8	8	
Gravel-----	12	20	
Sand, light-colored-----	8	28	
Sand, cemented-----	7	35	
Sand and gravel-----	12	47	
Sand and gravel, somewhat coarser-----	28	75	
Gravel-----	50	125	
Sand and gravel-----	25	150	
Sand and gravel; somewhat coarser-----	26	176	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	8	184	

Well 37/2-11H1

Type of record: Driller's log. Altitude: 720 feet.

Quaternary system:			
Recent and Pleistocene series:			
Record missing-----	10	10	
Gravel, coarse-----	2	12	
Sand-----	3	15	
Gravel, coarse-----	3	18	
Clay, brown-----	2	20	
Gravel-----	3	23	
Hardpan, gravelly, blue-----	18	41	
Clay, blue-----	7	48	
Sand, fine-----	2	50	
Gravel, coarse-----	4	54	
Sand, fine, with some clay-----	2	56	
Gravel, coarse, red-----	14	70	
Gravel, coarse, gray-----	5	75	Brown hardpan at 75 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-11J1

Type of record: Driller's log.

Altitude: 720 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	9	9	
Sand, fine, white-----	17	26	
Clay and sand-----	9	35	
Sand-----	29	64	

Well 37/2-11K2

Type of record: Driller's log.

Altitude: 718 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Cinders and soil-----	1	1	
Sand and gravel-----	45	46	
Sand and gravel; fine-----	10	56	
Sand, medium, clean-----	4	60	
Sand and gravel; fine-----	15	75	
Sand, black-----	4	79	
Clay-----	1	80	
Sand, clean, and gravel-----	5	85	
Sand, fine, clean-----	5	90	
Sand, clean, and gravel-----	7	97	
Sand, strippy, and clay-----	7	104	
Sand, fine-----	3	107	
Clay, blue-----	18	125	

Well 37/2-11R1

Type of record: Driller's log.

Altitude: 724 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	28	28	
Gravel-----	19	47	Suitable for 40-slot screen.
Sand and gravel-----	21	68	Suitable for 30-slot screen.
Sand-----	4	72	Do.
Clay and stones-----	1	73	
Clay-----	15	88	
Sand-----	3	91	Suitable for 20-slot screen.
Hardpan-----	3	94	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	7	101	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-11R3

Type of record: Driller's log.

Altitude: 725 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Pit-----	20	20	
Gravel and sand-----	7	27	
Sand and gravel-----	17	44	
Record missing-----	13	57	
Sand, coarse, yellow-----	4	61	
Sand, coarse, and gravel-----	18	79	
Clay, soft, mixed with sand-----	5	84	
Sand, coarse, dirty-----	6	90	
Sand, coarse, and gravel-----	5	95	
Sand with clay-----	2	97	

Well 37/2-11R5

Type of record: Driller's log.

Altitude: 724 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand-----	30	40	
Sand, fine-----	5	45	
Gravel-----	5	50	
Gravel, fine-----	8	58	
Sand-----	2	60	
Clay-----	18	78	
Sand, cemented-----	4	82	
Clay and fine sand-----	13	95	
Hardpan and blue clay-----	5	100	

Well 37/2-11R10

Type of record: Driller's log.

Altitude: 725 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand and loam-----	20	30	
Sand, sharp-----	10	40	
Sand, coarse, and gravel-----	5	45	
Sand, fine, and gravel-----	5	50	
Sand, fine-----	15	65	
Sand, coarse-----	5	70	
Clay-----	10	80	
Sand-----	5	85	
Sand and some gravel-----	5	90	
Sand, fine to medium-----	4	94	
Hardpan and blue clay-----	9	103	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-12C2

Type of record: Driller's log.

Altitude: 686 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	25	25	
Clay-----	30	55	
Quicksand-----	25	80	
Gravel-----	36	116	

Well 37/2-12C5

Type of record: Driller's log.

Altitude: 705 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Pit-----	10	10	
Gravel and sand-----	10	20	
Sand-----	15	35	
Clay-----	50	85	
Pack sand-----	15	100	
Gravel-----	19	119	

Well 37/2-12C6

Type of record: Driller's log.

Altitude: 684 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	11	11	
Sand and gravel-----	3	14	
Clay, soft-----	10	24	
Clay, sandy-----	2	26	
Clay, medium-----	26	52	
Clay, sandy-----	30	82	
Sand and gravel-----	23	105	
Gravel and sand-----	4	109	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	110	

Well 37/2-12C9

Type of record: Driller's log.

Altitude: 675 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	17	17	
Clay, gray-----	38	55	
Sand, fine, and silt-----	7	62	
Clay, gray-----	14	76	
Sand, fine, muddy-----	8	84	
Clay, gray-----	2	86	
Sand, fine to medium-----	3	89	
Sand and gravel; clean-----	27	116	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-12C10

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	14	14	
Gravel-----	8	22	
Clay-----	20	42	
Sand-----	10	52	
Clay-----	10	62	
Sand-----	12	74	
Clay-----	3	77	
Gravel-----	22	99	

Well 37/2-12D4

Type of record: Driller's log. Altitude: 708 feet.

Quaternary system:			
Recent and Pleistocene series:			
Pit-----	14	14	
Sand-----	46	60	
Clay-----	35	95	
Hardpan and gravel-----	25	120	
Gravel and sand-----	22	142	

Well 37/2-12D9

Type of record: Driller's log. Altitude: 708 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	17	17	
Sand-----	33	50	
Clay, blue-----	11	61	
Hardpan-----	8	69	
Clay, blue-----	15	84	
Clay, sandy-----	27	111	
Sand-----	6	117	
Gravel-----	21	138	

Well 37/2-12E1

Type of record: Driller's log. Altitude: 709 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	5	5	
Gravel, sandy-----	30	35	
Sand-----	17	52	
Gravel-----	13	65	
Sand-----	8	73	
Gravel-----	2	75	
Sand, very fine, almost like clay-----	15	90	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-12E1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	5	95	
Clay, blue, and gravel-----	5	100	
Gravel-----	1	101	
Clay, blue-----	82	183	

Well 37/2-12E4

Type of record: Driller's log. Altitude: 712 feet.

Quaternary system:			
Recent and Pleistocene series:			
Record missing-----	12	12	
Sand and gravel; yellow-----	26	38	
Sand and gravel-----	26	64	
Hardpan and shale-----	32	96	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	14	110	

Well 37/2-12E5

Type of record: Driller's log. Altitude: 708 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	14	14	
Sand, clean-----	30	44	
Hardpan-----	1	45	
Clay, blue-gray-----	38	83	
Sand, fine, yellow-----	41	124	
Gravel and sand-----	16	140	

Well 37/2-12E6

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	38	38	
Clay, blue-----	39	77	
Sand, fine-----	18	95	Suitable for 10-slot screen.
Sand with clay balls-----	1	96	
Sand, fine-----	24	120	Suitable for 10-slot screen.
Gravel and sand-----	4	124	Suitable for 25-slot screen.
Gravel and clay-----	5	129	Suitable for 40-slot screen.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-12F1

Type of record: Driller's log.

Altitude: 706 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	7	7	
Gravel-----	14	21	
Clay, yellow-----	14	35	
Clay, blue-----	38	73	
Hardpan-----	7	80	
Clay and sand-----	3	83	
Hardpan-----	13	96	
Sand, fine-----	9	105	
Sand-----	6	111	
Sand and gravel-----	3	114	
Sand-----	5	119	Suitable for 15-slot screen.
Gravel and sand-----	9	128	Suitable for 40-slot screen.

Well 37/2-12H1

Type of record: Driller's log.

Altitude: 704 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	5	5	
Sand and some gravel-----	10	15	
Sand, light-----	15	30	
Clay-----	45	75	
Sand, dirty-----	5	80	
Sand and some gravel-----	10	90	
Sand-----	15	105	
Sand and clean gravel-----	11	116	

Well 37/2-12L1

Type of record: Driller's log.

Altitude: 711 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	55	55	
Clay and sand-----	10	65	
Clay-----	40	105	
Sand, dirty-----	16	121	

Well 37/2-12N2

Type of record: Driller's log.

Altitude: 728 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	23	23	
Gravel and clay-----	22	45	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-12N2--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	16	61	Suitable for 10-slot screen.
Sand-----	10	71	Suitable for 16-slot screen.
Sand, coarse, gray-----	2	73	
Hardpan and clay-----	17	90	

Well 37/2-12N4

Type of record: Driller's log. Altitude: 722 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	59	59	
Clay, blue-----	30	89	
Sand and gravel-----	9	98	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	100	

Well 37/2-12N5

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

Quaternary system:			
Recent and Pleistocene series:			
Pit-----	40	40	
Sand, coarse, and gravel-----	10	50	
Sand, medium, brown, with some gravel-----	4	54	
Sand and gravel-----	8	62	
Clay, blue-----	21	83	
Sand and gravel-----	12	95	Shale at 95 feet.

Well 37/2-12P2

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

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	6	6	
Sand, yellow-----	8	14	
Gravel, gray-----	4	18	
Sand, yellow-----	31	49	
Hardpan, very hard-----	11	60	
Clay, soft-----	4	64	
Sand, very fine, yellow-----	1	65	
Gravel, yellow, and sand-----	4	69	Suitable for 40-slot screen.
Gravel, yellow, sand, and clay balls-----	10	79	Suitable for 30-slot screen.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-12P2--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, yellow, and sand-----	3	82	
Sand, gray-----	4	86	Suitable for 30-slot screen.
Gravel, yellow, and sand-----	2	88	Do.
Sand, gray-----	9	97	Suitable for 25-slot screen; clay at 97 feet.

Well 37/2-12R1			
Type of record: Driller's log.			Altitude: 692 feet.
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, fine, mixed with blue clay-	5	25	
Clay, blue, with some sand-----	15	40	
Sand, fine, with some clay-----	5	45	
Sand, fine-----	10	55	
Sand, coarse-----	5	60	
Sand, fine, with some stones-----	5	65	
Sand, fine-----	15	80	
Sand, very fine, mixed with blue clay-----	55	135	
Clay, blue-----	150	285	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	48	333	

Well 37/2-12R3			
Type of record: Driller's log.			Altitude: 685 feet.
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Clay, blue-----	40	50	
Gravel with round coarse stones and fine sand-----	10	60	
Clay-----	50	110	
Quicksand, coarse sand, and fine gravel-----	20	130	
Clay-----	20	150	Shale at 150 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-13A3

Type of record: Driller's log.

Altitude: 719 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	5	5	
Clay-----	2	7	
Sand, coarse-----	8	15	
Sand and gravel-----	5	20	
Sand with trace of gravel-----	16	36	
Clay-----	1	37	
Sand, coarse-----	8	45	
Clay-----	1	46	
Gravel with some sand-----	2	48	
Sand and clay-----	7	55	
Sand, coarse-----	19	74	
Sand and gravel-----	1	75	
Sand, muddy-----	3	78	

Well 37/2-13A5

Type of record: Driller's log.

Altitude: 712 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	6	6	
Sand and gravel-----	24	30	
Sand, medium, clean-----	20	50	
Sand, coarse-----	10	60	
Sand, coarse, and fine gravel----	15	75	

Well 37/2-13A6

Type of record: Driller's log.

Altitude: 704 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Cinder fill-----	3	3	
Sand, medium to coarse, gray----	7	10	
Sand, coarse, with little gravel-----	2	12	
Sand, coarse, and gravel-----	2	14	
Loam, sandy, black-----	2	16	
Gravel, heavy-----	2	18	
Sand, coarse-----	5	23	
Sand, medium to coarse-----	12	35	
Sand, coarse, with some gravel----	13	48	
Sand, fine to medium-----	3	51	
Sand, fine to medium, and gravel-----	8	59	
Clay, sandy, yellow-----	13	72	
Sand and gravel; muddy-----	2	74	
Clay, sandy-----	7	81	
Sand and gravel; muddy-----	2	83	
Gravel-----	4	87	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-13A6--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian system: Lower Mississippian series: Shale, blue-----	4	91	

Well 37/2-13D1

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

Quaternary system: Recent and Pleistocene series: Sand and gravel----- Clay----- Sand and gravel-----	74 12 11	74 86 97	
Mississippian system: Lower Mississippian series: Rock-----	5	102	

Well 37/2-13E2

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

Quaternary system: Recent and Pleistocene series: Sand, yellow----- Gravel----- Gravel, coarse----- Clay, blue----- Gravel and sand-----	9 22 10 3 9	9 31 41 44 53	
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Well 37/2-13E3

Type of record: Driller's log. Altitude: 733 feet.

Quaternary system: Recent and Pleistocene series: Clay and boulders----- Sand, fine----- Sand and gravel----- Sand, fine----- Sand, packed----- Sand, fine----- Gravel-----	40 40 6 8 15 16 12	40 80 86 94 109 125 137	Suitable for 10-slot screen.
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Well 37/2-13E4

Type of record: Driller's log. Altitude: 733 feet.

Quaternary system: Recent and Pleistocene series: Sand and gravel----- Sand, yellow----- Clay, blue----- Sand-----	44 2 45 3	44 46 91 94	
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Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-13H3

Type of record: Driller's log.

Altitude: 713 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	24	24	
Clay-----	34	58	
Sand, dirty-----	17	75	
Gravel, yellow-----	21	96	

Well 37/2-13H5

Type of record: Driller's log.

Altitude: 713 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	6	6	
Sand and gravel; dirty-----	14	20	
Clay, soft-----	17	37	
Sand and gravel-----	23	60	
Sand, coarse-----	20	80	
Sand, fine, muddy-----	8	88	
Clay, hard-----	10	98	

Well 37/2-13H6

Type of record: Driller's log.

Altitude: 714 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	3	3	
Sand and gravel-----	35	38	
Clay, sand, and gravel-----	10	48	
Sand with clay strips-----	12	60	
Sand with medium clay balls-----	10	70	
Sand, medium, and fine gravel; little dirty-----	14	84	Fine sand and clay at 84 feet.

Well 37/2-13H8

Type of record: Driller's log.

Altitude: 713 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	18	18	
Sand and gravel-----	19	37	
Clay, gravelly-----	35	72	Coarse gravel at 72 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-13H9

Type of record: Driller's log.

Altitude: 713 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, yellow-----	3	3	
Sand and gravel-----	5	8	
Clay, sandy, red-----	1	9	
Marl-----	33	42	
Clay, sandy-----	5	47	
Sand, coarse, and gravel-----	4	51	
Sand, medium to coarse-----	6	57	
Sand, fine to medium-----	3	60	
Sand, coarse, and gravel-----	6	66	
Sand, medium to coarse, and gravel-----	4	70	
Sand, coarse, and gravel-----	6	76	
Clay, sandy, yellow-----	9	85	
Sand, medium to coarse, muddy---	3	88	
Sand, medium to coarse, and gravel; muddy-----	2	90	
Clay, sandy, brown-----	12	102	
Sand and gravel; blue-----	8	110	
Clay, blue, and shale-----	5	115	

Well 37/2-13M2

Type of record: Driller's log.

Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	8	8	
Top soil-----	4	12	
Sand, fine-----	12	24	
Clay, yellow-----	22	46	
Sand, coarse, and fine gravel; with small amount of clay-----	10	56	
Hardpan, sandy-----	2	58	
Sand, medium, clean-----	18	76	

Well 37/2-13M4

Type of record: Driller's log.

Altitude: 750 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Hardpan-----	63	73	
Gravel with clay balls-----	7	80	
Clay-----	2	82	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-13N1

Type of record: Driller's log.

Altitude: 744 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	18	18	
Hardpan-----	51	69	
Sand and gravel; dirty-----	19	88	
Sand, yellow-----	4	92	
Gravel, blue-----	11	103	

Well 37/2-14A3

Type of record: Driller's log.

Altitude: 727 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand, coarse, and gravel-----	20	30	
Gravel-----	5	35	
Sand, coarse, and gravel-----	22	57	
Sand-----	5	62	
Clay-----	25	87	
Sand, fine to medium-fine-----	8	95	
Sand, fine, and clay-----	5	100	
Hardpan and blue clay-----	3	103	

Well 37/2-14A4

Type of record: Driller's log.

Altitude: 727 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand and gravel-----	20	30	
Gravel-----	10	40	
Sand-----	10	50	
Gravel-----	22	72	
Hardpan-----	23	95	
Gravel-----	10	105	

Well 37/2-14A5

Type of record: Driller's log.

Altitude: 727 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand-----	20	30	
Sand and gravel-----	15	45	
Sand, yellow-----	5	50	
Hardpan-----	17	67	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-14A7

Type of record: Driller's log.

Altitude: 727 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand-----	10	20	
Gravel-----	48	68	
Clay-----	17	85	
Hardpan-----	18	103	

Well 37/2-14A12

Type of record: Driller's log.

Altitude: 727 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand-----	10	20	
Gravel-----	5	25	
Sand, coarse-----	25	50	
Sand-----	5	55	
Sand, fine-----	10	65	Sand and clay at 65 feet.

Well 37/2-14A15

Type of record: Driller's log.

Altitude: 727 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Gravel, fine-----	10	20	
Sand-----	5	25	
Gravel-----	5	30	
Sand-----	10	40	
Gravel, coarse-----	27	67	
Hardpan-----	3	70	
Sand and clay-----	30	100	
Sand-----	5	105	
Gravel-----	5	110	
Hardpan-----	5	115	

Well 37/2-14B2

Type of record: Driller's log.

Altitude: 722 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	14	14	
Gravel-----	31	45	
Sand, fine-----	2	47	
Sand-----	23	70	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-14B3

Type of record: Driller's log. Altitude: 718 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	70	70	
Clay-----	19	89	
Sand, fine-----	11	100	Shale at 100 feet.

Well 37/2-14H3

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand-----	22	32	
Sand and gravel-----	10	42	
Sand, coarse, and gravel-----	11	53	
Gravel, coarse-----	15	68	
Sand, and fine gravel-----	12	80	
Clay-----	2	82	

Well 37/2-14H4

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Gravel-----	10	20	
Sand-----	25	45	
Gravel-----	10	55	
Sand-----	5	60	
Sand, fine-----	25	85	
Sand, extra fine-----	30	115	
Sand and clay-----	5	120	

Well 37/2-14L1

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	12	12	
Gravel and sand; yellow-----	48	60	
Gravel, light-----	14	74	
Gravel, reddish-----	6	80	Hardpan at 80 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-14M1

Type of record: Driller's log.

Altitude: 723 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck and sand-----	17	17	
Sand-----	32	49	
Clay-----	7	56	
Sand, coarse-----	6	62	
Sand, fine-----	9	71	
Sand, finer-----	13	84	
Gravel and sand-----	48	132	

Well 37/2-14Q1

Type of record: Driller's log.

Altitude: 765 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface soil-----	2	2	
Sand, very fine-----	23	25	
Clay, blue-----	10	35	
Gravel, coarse, and fine sand----	4	39	
Gravel mixed with clay-----	14	53	
Gravel, round stones, and fine sand-----	39	92	
Gravel and sand; fine-----	28	120	
Gravel, light-colored, and gritty fine sand-----	7	127	
Sand, light-colored-----	10	137	
Sand, coarse, dark-colored-----	10	147	
Mississippian system:			
Lower Mississippian series:			
Shale-----	35	182	

Well 37/2-14R3

Type of record: Driller's log.

Altitude: 768 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, coarse, and gravel-----	25	45	
Sand, fine-----	15	60	
Clay-----	10	70	
Sand, fine-----	5	75	
Gravel, fine, and stones-----	5	80	
Sand, coarse-----	5	85	
Sand, fine-----	66	151	
Clay, blue-----	4	155	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-15B2

Type of record: Driller's log.

Altitude: 717 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Gravel, fine, with some sand----	30	40	
Clay with small amounts of gravel	10	50	
Sand and gravel; very coarse----	50	100	
Gravel, very coarse-----	13	113	
Sand and gravel; very coarse----	25	138	
Sand, coarse, with some pebbles--	21	159	

Well 37/2-15C1

Type of record: Driller's log.

Altitude: 717 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	7	7	
Clay-----	9	16	
Gravel and sand; coarse-----	31	47	
Muck-----	33	80	
Sand and gravel; rusty-----	49	129	
Gravel and sand; clean-----	14	143	
Sand and gravel-----	27	170	
Sand and gravel; rusty-----	21	191	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	193	

Well 37/2-15C3

Type of record: Driller's log.

Altitude: 717 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck and top soil-----	3	3	
Sand and gravel-----	127	130	
Sand, coarse-----	15	145	
Sand and gravel-----	15	160	
Sand, medium-----	6	166	

Well 37/2-15C4

Type of record: Driller's log.

Altitude: 716 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand and muck-----	3	4	
Marl-----	11	15	
Sand, muddy-----	4	19	
Sand with little gravel-----	63	82	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-15C4--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	18	100	
Sand and gravel; with few boulders-----	15	115	
Sand and gravel-----	20	135	
Sand, medium-----	10	145	
Sand and gravel-----	26	171	Blue shale at 171 feet.

Well 37/2-15C6

Type of record: Driller's log.

Altitude: 716 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand and clay-----	1	3	
Sand-----	12	15	
Sand, coarse-----	7	22	
Sand-----	3	25	
Gravel and sand-----	61	86	
Clay, gravelly-----	32	118	
Sand and gravel-----	47	165	
Mississippian system:			
Lower Mississippian series:			
Shale-----	6	171	

Well 37/2-15G1

Type of record: Driller's log.

Altitude: 716 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, fine-----	23	43	
Shale-----	7	50	
Gravel, heavy, and boulders-----	2	52	
Shale-----	11	63	
Clay-----	27	90	
Sand, fine-----	10	100	
Sand, coarse, with some small stones-----	10	110	
Sand and fine gravel-----	10	120	
Sand, very coarse-----	13	133	
Sand, coarse, and fine gravel-----	10	143	
Sand, very coarse, and gravel-----	10	153	
Sand, medium-----	25	178	Bedrock at 178 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-15G2

Type of record: Driller's log.

Altitude: 719 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	40	40	
Sand, coarse, with some gravel---	40	80	
Record missing-----	10	90	
Sand, fine-----	10	100	
Sand, coarse-----	10	110	
Sand, coarse, and gravel-----	10	120	
Sand, very fine-----	10	130	
Sand, not as fine-----	20	150	
Clay-----	10	160	
Sand, fine-----	10	170	
Sand, very fine-----	10	180	

Well 37/2-15J1

Type of record: Driller's log.

Altitude: 722 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck and sand-----	10	10	
Sand and gravel-----	20	30	
Gravel with some sand-----	10	40	
Sand-----	10	50	
Sand and fine gravel-----	10	60	
Sand, fine, sharp-----	10	70	
Sand, coarse, with some strata of fine sand-----	65	135	

Well 37/2-15K1

Type of record: Driller's log.

Altitude: 718 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, fine-----	23	43	
Boulders, gravel, and clay-----	2	45	
Clay-----	18	63	
Sand, fine-----	27	90	
Sand and fine gravel-----	10	100	
Sand, coarse, with some small stones-----	10	110	
Sand, very coarse-----	10	120	
Sand, coarse, and fine gravel----	13	133	
Sand, very coarse, and gravel----	7	140	
Sand, fine to medium-----	33	173	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-16B3

Type of record: Driller's log. Altitude: 712 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	17	17	
Hardpan-----	2	19	
Gravel, coarse-----	18	37	
Gravel with clay balls-----	4	41	
Clay-----	3	44	
Sand, fine-----	12	56	
Clay and hardpan-----	19	75	
Sand and gravel with some clay balls-----	5	80	
Sand and gravel-----	17	97	
Sand, fine-----	3	100	

Well 37/2-16B4

Type of record: Driller's log. Altitude: 712 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck and silt-----	9	9	
Sand and gravel-----	31	40	
Clay and gravel-----	20	60	
Hardpan-----	30	90	
Sand-----	10	100	
Sand, coarse, and gravel-----	10	110	

Well 37/3-16B5

Type of record: Driller's log. Altitude: 712 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	60	60	
Hardpan-----	10	70	
Clay-----	7	77	
Sand, dirty-----	1	78	
Sand-----	14	92	
Sand, clean-----	22	114	
Sand, fine-----	2	116	

Well 37/2-16G2

Type of record: Driller's log. Altitude: 713 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck-----	3	3	
Sand-----	10	13	
Sand and gravel-----	45	58	
Clay, sandy-----	23	81	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-16G2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, muddy-----	24	105	
Clay, sandy-----	1	106	
Sand and gravel-----	62	168	
Sand, coarse-----	4	172	
Gravel, sandy-----	2	174	

Well 37/2-16G3

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	37	37	
Clay and hardpan-----	73	110	
Sand, very fine-----	2	112	
Gravel-----	17	129	
Record missing-----	23	152	

Well 37/2-16N2

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

Quaternary system:			
Recent and Pleistocene series:			
Muck-----	4	4	
Sand, fine to medium, muddy-----	8	12	
Sand, medium, red-----	24	36	
Sand and gravel-----	16	52	
Sand, fine-----	8	60	
Clay, gummy, gray-----	16	76	
Sand, fine to medium-----	19	95	
Sand, coarse, clean, with little gravel-----	23	118	
Sand, coarse, clean-----	5	123	
Sand, coarse, and gravel-----	7	130	
Gravel, fine to medium-----	12	142	

Well 37/2-17A1

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil-----	3	3	
Sand and gravel-----	12	15	
Gravel and sand-----	24	39	
Clay, sandy-----	17	56	
Clay, gravelly-----	72	128	
Sand and gravel-----	33	161	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-17A1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian system: Lower Mississippian series: Shale-----	5	166	

Well 37/2-17B1

Type of record: Driller's log. Altitude: 718 feet.

Quaternary system: Recent and Pleistocene series: Sand and gravel; yellow-----	26	26	
Clay, blue-----	12	38	
Sand, yellow-----	6	44	

Well 37/2-17K1

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

Quaternary system: Recent and Pleistocene series: Sand, brown, and pea-sized gravel-----	26	26	
Sand, gray-----	10	36	
Sand, gray, and pea-sized gravel-	14	50	

Well 37/2-17L1

Type of record: Driller's log. Altitude: 716 feet.

Quaternary system: Recent and Pleistocene series: Loam and brown sand-----	6	6	
Gravel, pea-sized-----	31	37	
Gravel-----	13	50	

Well 37/2-18B2

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

Quaternary system: Recent and Pleistocene series: Sand, brown-----	14	14	
Sand and pea-sized gravel-----	8	22	
Sand, brown-----	28	50	

Well 37/2-20P2

Type of record: Driller's log. Altitude: 716 feet.

Quaternary system: Recent and Pleistocene series: Fill-----	2	2	
Muck-----	4	6	
Sand, brown, with some gravel----	18	24	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-20P2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel with some sand-----	11	35	
Sand, fine, brown-----	5	40	
Sand and gravel-----	28	68	

Well 37/2-21D2

Type of record: Driller's log.		Altitude: 714 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Muck-----	3	3	
Marl-----	4	7	
Sand, gray-----	43	50	

Well 37/2-21F1

Type of record: Driller's log.		Altitude: 721 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Muck-----	4	4	
Muck, red-----	6	10	
Sand, red, dirty-----	15	25	
Sand, medium, and little gravel; cleaner-----	8	33	
Sand, coarse, clean-----	10	43	
Sand, coarse, and little gravel--	10	53	
Sand, fine, dirty-----	3	56	
Sand, fine, muddy-----	4	60	
Sand, fine, and muddy clay-----	26	86	

Well 37/2-21F2

Type of record: Driller's log.		Altitude: 721 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Muck-----	3	3	
Sand and clay-----	9	12	
Sand, fine-----	23	35	
Sand, coarse-----	15	50	
Sand, fine-----	3	53	Clay at 53 feet.

Well 37/2-21K1

Type of record: Driller's log.		Altitude: 777 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	6	6	
Clay, sandy, brown-----	12	18	
Clay, gray, with sand-----	32	50	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-21R3

Type of record: Driller's log.

Altitude: 781 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	60	60	
Sand-----	10	70	
Clay, blue-----	20	90	
Sand-----	11	101	

Well 37/2-22C2

Type of record: Driller's log.

Altitude: 760 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface dirt and sand-----	15	15	
Clay, sandy, yellow-----	10	25	
Sand and fine gravel-----	40	65	

Well 37/2-22C3

Type of record: Driller's log.

Altitude: 750 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	30	30	
Clay-----	10	40	
Sand-----	17	57	

Well 37/2-22G1

Type of record: Driller's log.

Altitude: 784 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	35	35	
Gravel-----	4	39	
Hardpan and clay-----	56	95	
Gravel-----	7	102	

Well 37/2-22P1

Type of record: Driller's log.

Altitude: 820 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	42	42	
Clay, blue-----	73	115	
Sand, yellow-----	7	122	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-22P2

Type of record: Driller's log.

Altitude: 821 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	60	60	
Hardpan-----	30	90	
Clay and sand; blue-----	10	100	
Hardpan-----	33	133	
Sand-----	4	137	

Well 37/2-23D1

Type of record: Driller's log.

Altitude: 805 feet.

Quaternary system:		
Recent and Pleistocene series:		
Clay, sandy-----	17	17
Sand and fine gravel-----	8	25
Clay, brown-----	1	26
Sand and gravel-----	6	32
Clay, gravelly, sand, and gravel; in thin strips-----	8	40
Clay, bouldery-----	6	46
Boulders-----	6	52
Clay, bouldery-----	6	58
Clay, soft-----	7	65
Clay, hard, bouldery-----	37	102
Sand and gravel-----	2	104
Gravel, gray, with clay balls----	2	106
Gravel and sand, with a little clay-----	1	107
Gravel and sand; gray, with a little clay-----	3	110
Sand and gravel; with clay balls----	12	122
Sand and gravel-----	1	123
Sand and gravel; with a little clay-----	4	127
Gravel, fine, and sand-----	2	129
Sand, gravel, boulders, and clay balls-----	1	130
Sand and gravel, with trace of clay-----	5	135
Sand and medium gravel-----	5	140
Gravel and sand; hard brown-----	2	142
Gravel and sand; brown, with trace of clay-----	4	146
Sand and gravel, with trace of clay-----	4	150
Clay, hard, smooth, brown-----	18	168
Clay, soft, smooth, brown-----	7	175
Clay, hard, smooth, brown-----	5	180

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-23D1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian system: Lower Mississippian series: Shale, blue-green-----	12	192	

Well 37/2-23H1

Type of record: Driller's log.

Altitude: 751 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system: Recent and Pleistocene series:			
Loam, sandy, red-----	3	3	
Sand and boulders; muddy gray----	2	5	
Sand, fine, brown-----	2	7	
Sand, fine, yellow-----	4	11	
Sand, medium to coarse, with some gravel-----	2	13	
Sand, red-----	3	16	
Sand, medium to coarse, and gravel-----	4	20	
Sand, fine-----	24	44	
Sand, coarse, and gravel-----	10	54	
Gravel-----	16	70	
Sand, coarse, and gravel-----	8	78	
Sand-----	3	81	
Clay, sandy-----	5	86	

Well 37/2-23Q1

Type of record: Driller's log.

Altitude: 761 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system: Recent and Pleistocene series:			
Loam, sandy-----	2	2	
Sand and gravel; red, with some flat rock-----	4	6	
Sand, coarse-----	2	8	
Sand, coarse, and gravel; with some boulders-----	3	11	
Sand, medium to coarse, with some gravel-----	5	16	
Sand and fine gravel-----	6	22	
Sand, coarse, with some gravel---	3	25	
Sand and fine gravel-----	4	29	
Sand-----	11	40	
Sand, coarse, and gravel, with some clay-----	27	67	
Sand, fine-----	18	85	
Sand, medium to coarse, and gravel-----	8	93	
Gravel, fine-----	11	104	
Sand with small amount of gravel-	5	109	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-23Q1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, pea-sized, with some sand-----	7	116	
Clay, blue-----	31	147	
Clay and sand-----	11	158	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	160	

Well 37/2-23R1

Type of record: Driller's log. Altitude: 790 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	10	10	
Sand and coarse gravel-----	15	25	
Sand, medium, with some gravel---	28	53	
Sand, medium-----	23	76	
Sand, coarse-----	5	81	
Sand, coarse, and gravel-----	9	90	
Sand, coarse, with some gravel---	5	95	
Sand, medium to coarse-----	13	108	
Gravel-----	3	111	
Sand and gravel; with clay balls-	3	114	
Clay, sandy-----	2	116	

Well 37/2-23R2

Type of record: Driller's log. Altitude: 790 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil, sandy-----	4	4	
Sand-----	19	23	
Sand and boulders-----	20	43	
Sand, fine-----	27	70	
Clay strips, sandy-----	7	77	
Sand, coarse-----	32	109	

Well 37/2-23R4

Type of record: Driller's log. Altitude: 775 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand and gravel; muddy, red-----	8	9	
Gravel, coarse, and boulders-----	7	16	
Sand, red, with little gravel----	24	40	
Sand, medium, red, with little gravel-----	7	47	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-23R4--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, red-----	10	57	
Sand, coarse, red-----	3	60	
Sand, medium, red-----	12	72	
Sand, medium, coarse gravel, and boulders-----	8	80	
Sand, coarse, and fine gravel----	4	84	
Clay, gritty, red-----	3	87	
Gravel, medium, and clay balls---	1	88	
Gravel, fine to medium-----	4	92	
Clay, gritty, red-----	2	94	
Sand, medium-----	2	96	
Sand, medium, and gravel-----	5	101	
Sand, medium, and coarse gravel--	1	102	
Clay, gritty, gray-----	3	105	

Well 37/2-24C1

Type of record: Driller's log.

Altitude: 747 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	35	35	
Gravel-----	5	40	
Sand-----	5	45	

Well 37/2-24D1

Type of record: Driller's log.

Altitude: 759 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Gravel, coarse-----	5	25	
Sand, fine-----	20	45	
Sand, coarse-----	10	55	
Sand, coarse, with some finer sand-----	5	60	
Sand, coarse-----	5	65	
Gravel, coarse, and stones-----	5	70	
Gravel, coarse-----	15	85	
Clay, blue-----	10	95	
Sand, fine-----	35	130	
Clay, blue-----	65	195	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	10	205	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-24D3

Type of record: Driller's log.

Altitude: 746 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; black dirt-----	2	2	
Sand, dirty, and gray gravel----	2	4	
Sand, medium to coarse, and gravel-----	8	12	
Sand, medium to coarse-----	6	18	
Sand, fine-----	18	36	
Sand, coarse, brown-----	6	42	
Gravel, brown-----	11	53	
Gravel, clean-----	10	63	
Sand, coarse, and gravel-----	7	70	
Clay, blue, with sandy gravel----	29	99	
Gravel, sandy, brown-----	5	104	
Clay, sandy, brown-----	6	110	
Clay, blue, with sand and gravel-	16	126	
Mississippian system:			
Lower Mississippian series:			
Shale-----	3	129	

Well 37/2-24E1

Type of record: Driller's log.

Altitude: 750 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Clay-----	40	60	
Gravel, coarse-----	10	70	
Quicksand-----	20	90	
Clay-----	20	110	
Gravel-----	12	122	Shale at 122 feet.

Well 37/2-24F1

Type of record: Driller's log.

Altitude: 789 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, fine-----	60	80	
Sand, coarse-----	5	85	
Sand, coarse, with some small pebbles-----	15	100	
Clay and sand-----	15	115	
Sand, very fine-----	45	160	
Clay, blue-----	20	180	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	5	185	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-24L1

Type of record: Driller's log.

Altitude: 802 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, fine-----	20	40	
Sand, fine, with clay-----	55	95	
Sand, fine-----	35	130	
Clay-----	10	140	
Clay with sand-----	10	150	
Clay with gravel-----	5	155	
Clay-----	25	180	
Clay, blue-----	15	195	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	5	200	

Well 37/2-25A1

Type of record: Driller's log.

Altitude: 796 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	22	22	
Sand, coarse-----	15	37	
Sand, fine-----	25	62	
Sand, very fine-----	12	74	
Sand, some coarser-----	5	79	
Sand, coarse-----	26	105	
Sand, very fine-----	5	110	
Sand, coarse-----	5	115	
Sand, very fine-----	10	125	
Sand, fine, and blue clay-----	55	180	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	5	185	

Well 37/2-25E6

Type of record: Driller's log.

Altitude: 840 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	28	28	
Rocks-----	8	36	Gobbles or boulders.
Hardpan-----	14	50	
Sand-----	69	119	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-25H1

Type of record: Driller's log. Altitude: 843 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil and sandy subsoil-----	10	10	
Clay, bouldery, sand, and gravel; in strips-----	10	20	
Sand, loose and cemented, and gravel-----	80	100	
Gravel, fine, and sand-----	40	140	
Clay, brown-----	5	145	
Gravel, fine, and sand-----	30	175	
Clay, sandy, brown-----	10	185	

Well 37/2-25K2

Type of record: Driller's log. Altitude: 848 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	17	17	
Gravel-----	93	110	
Sand, fine-----	21	131	
Sand, medium to coarse-----	13	144	

Well 37/2-25L4

Type of record: Driller's log. Altitude: 833 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	4	4	
Gravel and clay-----	27	31	
Gravel, dirty-----	49	80	
Sand-----	41	121	

Well 37/2-25N1

Type of record: Driller's log. Altitude: 820 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; red-----	75	75	
Clay, yellow-----	2	77	
Sand, red-----	9	86	

Well 37/2-25N7

Type of record: Driller's log. Altitude: 820 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel, yellow-----	40	40	
Sand and clay, yellow-----	20	60	
Sand and gravel; yellow-----	15	75	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-25N8

Type of record: Driller's log.

Altitude: 819 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, brown-----	6	6	
Sand, brown-----	4	10	
Sand and pea-sized gravel-----	9	19	
Sand and gravel-----	10	29	

Well 37/2-25P4

Type of record: Driller's log.

Altitude: 845 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	20	20	
Gravel, yellow-----	75	95	
Sand, yellow-----	16	111	

Well 37/2-26A1

Type of record: Driller's log.

Altitude: 780 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, yellow-----	5	5	
Sand, fine, and gravel-----	42	47	
Sand, fine, yellow-----	15	62	
Sand, fine-----	37	99	
Sand and gravel-----	3	102	
Sand, coarse, and gravel-----	8	110	
Sand, coarse-----	3	113	

Well 37/2-26C1

Type of record: Driller's log.

Altitude: 802 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Loam, sandy-----	1	1	
Sand, red-----	2	3	
Sand, red, and gravel; with some boulders-----	9	12	
Sand, fine to medium, yellow-----	4	16	
Sand, coarse, with some gravel---	1	17	
Sand, fine, to medium, yellow---	9	26	
Sand, coarse, with some gravel---	2	28	
Gravel, coarse, sandy-----	4	32	
Sand, fine to medium, and gravel---	3	35	
Sand, medium to coarse-----	24	59	
Sand, fine-----	16	75	
Sand and heavy gravel-----	8	83	
Clay, sandy-----	6	89	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-26C1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, with some gravel-----	3	92	
Sand and gravel-----	8	100	
Clay, sandy-----	18	118	
Sand and gravel; muddy-----	7	125	
Clay, sandy-----	22	147	
Clay, hard, and soapstone-----	1	148	
Clay, hard-----	15	163	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	165	

Well 37/2-26E2

Type of record: Driller's log. Altitude: 835 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Sand and gravel-----	35	65	
Clay and sand-----	30	95	
Sand-----	23	118	

Well 37/2-26J1

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

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	4	4	
Sand and gravel; dirty-----	16	20	
Sand and gravel-----	16	36	
Sand-----	10	46	
Sand with traces of gravel-----	20	66	
Sand-----	14	80	
Sand, fine-----	10	90	
Sand and gravel-----	5	95	
Sand, coarse, and gravel-----	14	109	

Well 37/2-26K1

Type of record: Driller's log. Altitude: 780 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, brown-----	15	15	
Gravel-----	15	30	
Sand, yellow-----	45	75	
Sand and gravel; yellow-----	7	82	
Sand, coarse, and gravel-----	5	87	
Gravel-----	6	93	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-26L1

Type of record: Driller's log.

Altitude: 800 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	7	7	
Clay, yellow-----	13	20	
Clay-----	8	28	
Sand, yellow-----	4	32	
Clay and sand; yellow-----	28	60	
Sand-----	11	71	
Sand, yellow-----	19	90	
Sand, coarse-----	3	93	
Gravel, reddish-----	4	97	
Gravel, gray-----	13	110	
Sand-----	8	118	

Well 37/2-26L2

Type of record: Driller's log.

Altitude: 797 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, brown-----	11	11	
Clay, sandy, gray-----	10	21	
Clay, gray-----	29	50	

Well 37/2-26M1

Type of record: Driller's log.

Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	7	7	
Muck-----	6	13	
Sand, gray-----	11	24	
Sand, brown-----	26	50	

Well 37/2-26M3

Type of record: Driller's log.

Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	5	5	
Muck-----	8	13	
Sand, gray-----	16	29	
Clay, gray-----	21	50	

Well 37/2-26P1

Type of record: Driller's log.

Altitude: 813 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, brown-----	21	21	
Sand, gray-----	7	28	
Clay, gray-----	22	50	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-27J8

Type of record: Driller's log.

Altitude: 797 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	4	4	
Sand, brown-----	10	14	
Gravel, pea-sized-----	7	21	
Sand, gray-----	8	29	
Clay, gray-----	21	50	

Well 37/2-27J9

Type of record: Driller's log.

Altitude: 801 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	17	17	
Sand, gray-----	11	28	
Clay, gray-----	22	50	

Well 37/2-27J10

Type of record: Driller's log.

Altitude: 800 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	3	3	
Sand, brown-----	21	24	
Sand, gray-----	7	31	
Clay, gray-----	19	50	

Well 37/2-27K2

Type of record: Driller's log.

Altitude: 803 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	60	60	
Clay, yellow-----	10	70	
Sand, yellow-----	24	94	

Well 37/2-27K3

Type of record: Driller's log.

Altitude: 810 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	62	62	
Clay-----	23	85	
Sand and gravel-----	18	103	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-27K4

Type of record: Driller's log. Altitude: 796 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	4	4	
Sand, brown-----	9	13	
Sand, gray-----	10	23	
Clay, gray-----	27	50	

Well 37/2-27L1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	20	20	
Clay, blue-----	10	30	
Hardpan; clay and gravel-----	40	70	
Sand and gravel; yellow-----	23	93	

Well 37/2-27M2

Type of record: Driller's log. Altitude: 840 feet.

Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	50	50	
Clay, blue-----	70	120	
Sand and gravel-----	29	149	

Well 37/2-27N1

Type of record: Driller's log. Altitude:

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	10	10	
Sand, fine, and blue clay-----	66	76	
Sand, white-----	25	101	

Well 37/2-27P1

Type of record: Driller's log. Altitude:

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	45	45	
Clay-----	25	70	
Sand and gravel-----	44	114	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-28E1

Type of record: Driller's log.

Altitude: 805 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay and gravel; yellow-----	40	40	
Clay, blue-----	55	95	
Sand, fine, gray-----	55	150	
Gravel, dark-----	8	158	

Well 37/2-28G1

Type of record: Driller's log.

Altitude: 775 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	23	23	
Sand, yellow-----	3	26	
Clay, blue-----	45	71	
Gravel, dark-----	10	81	

Well 37/2-28J1

Type of record: Driller's log.

Altitude: 830 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	26	26	
Sand, yellow-----	10	36	
Clay, yellow-----	29	65	
Gravel-----	10	75	
Sand and gravel-----	35	110	
Sand, coarse-----	10	120	

Well 37/2-28J2

Type of record: Driller's log.

Altitude: 830 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	20	20	
Sand-----	40	60	
Clay-----	20	80	
Sand-----	21	101	

Well 37/2-28K2

Type of record: Driller's log.

Altitude: 800 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, blue-----	35	35	
Clay, blue-----	45	80	
Sand and gravel; yellow-----	8	88	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-29D1

Type of record: Driller's log.

Altitude: 710 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck-----	3	3	
Marl-----	9	12	
Sand, very fine-----	28	40	
Clay-----	11	51	
Gravel-----	16	67	
Clay, sandy, with gravel strips--	4	71	
Clay and rocks-----	40	111	
Clay with strips of sand-----	10	121	
Gravel-----	39	160	
Clay-----	11	171	

Well 37/2-29F1

Type of record: Driller's log.

Altitude: 740 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	10	10	
Sand, blue-----	38	48	
Clay, blue-----	6	54	
Sand, dark-----	18	72	

Well 37/2-29J1

Type of record: Driller's log.

Altitude: 740 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	32	32	
Clay, blue-----	18	50	
Sand, white-----	17	67	
Clay, blue-----	33	100	
Sand and gravel; white-----	7	107	

Well 37/2-29J2

Type of record: Driller's log.

Altitude: 738 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	30	30	
Clay, blue-----	116	146	
Sand and gravel-----	4	150	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-31A1

Type of record: Driller's log.

Altitude: 750 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, coarse-----	18	18	
Sand, yellow-----	14	32	
Hardpan-----	28	60	
Sand, light-----	18	78	

Well 37/2-32L1

Type of record: Driller's log.

Altitude: 770 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	36	36	
Clay-----	2	38	
Sand and gravel-----	33	71	

Well 37/2-32P2

Type of record: Driller's log.

Altitude: 780 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	40	40	
Marl-----	2	42	
Clay-----	6	48	
Sand-----	34	82	

Well 37/2-33B1

Type of record: Driller's log.

Altitude: 825 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Clay-----	120	130	
Sand-----	12	142	

Well 37/2-33C1

Type of record: Driller's log.

Altitude: 810 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	40	40	
Quicksand, gray-----	12	52	
Clay, blue-----	50	102	
Gravel and hardpan-----	18	120	
Sand-----	18	138	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-33E1

Type of record: Driller's log. Altitude: 810 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	22	22	
Sand and gravel; white-----	38	60	
Sand, white-----	5	65	

Well 37/2-33F1

Type of record: Driller's log. Altitude: 820 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	40	40	
Sand and gravel-----	60	100	
Sand and stone-----	10	110	
Sand-----	9	119	

Well 37/2-33M1

Type of record: Driller's log. Altitude: 820 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	80	80	
Sand-----	20	100	
Clay-----	20	120	
Sand, fine-----	20	140	
Sand, coarse-----	13	153	

Well 37/2-33P2

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

Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	22	22	
Sand, yellow-----	8	30	
Clay, blue-----	38	68	
Sand and gravel; dark-----	13	81	

Well 37/2-34C1

Type of record: Driller's log. Altitude:

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	38	38	
Clay, blue-----	66	104	
Sand, yellow-----	7	111	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-35B1

Type of record: Driller's log. Altitude: 800 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	18	18	
Clay, yellow-----	18	36	
Sand and gravel; yellow-----	9	45	

Well 37/2-35G2

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	27	27	
Clay, yellow-----	8	35	
Sand, coarse, and gravel-----	45	80	
Sand, fine-----	15	95	
Sand, coarse, and gravel-----	12	107	

Well 37/2-35H1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; dark-----	41	41	
Clay, blue-----	2	43	
Sand, yellow-----	18	61	

Well 37/2-35J4

Type of record: Driller's log. Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	4	4	
Clay-----	16	20	
Sand and gravel-----	48	68	
Clay-----	2	70	
Sand-----	10	80	

Well 37/2-36C1

Type of record: Driller's log. Altitude:

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Gravel-----	70	100	
Sand-----	13	113	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-36F1

Type of record: Driller's log.

Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill; gravel-----	5	5	
Sand and gravel-----	31	36	
Clay, gravelly-----	3	39	
Sand and gravel-----	59	98	
Sand, fine-----	5	103	
Sand, fine to medium-----	21	124	

Well 37/2-36F3

Type of record: Driller's log.

Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	50	50	
Gravel, coarse, yellow-----	10	60	
Sand, yellow-----	30	90	
Clay, yellow-----	2	92	
Sand, yellow-----	8	100	

Well 37/2-36L3

Type of record: Driller's log.

Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	40	40	
Hardpan-----	35	75	
Sand and gravel; yellow-----	18	93	Clay at 93 feet.

Well 37/2-36M5

Type of record: Driller's log.

Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	20	20	
Clay, yellow-----	3	23	
Sand and gravel; yellow-----	35	58	

Well 37/2-36N3

Type of record: Driller's log.

Altitude: 805 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	15	15	
Hardpan, yellow-----	15	30	
Sand and gravel; yellow-----	28	58	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/2-36P4

Type of record: Driller's log.

Altitude: 825 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	20	20	
Gravel-----	37	57	
Sand and gravel-----	5	62	

Well 37/2-36Q2

Type of record: Driller's log.

Altitude: 845 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	12	12	
Hardpan-----	4	16	
Sand and gravel; yellow-----	79	95	

Well 37/2-36Q3

Type of record: Driller's log.

Altitude: 845 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	4	4	
Gravel-----	76	80	
Sand-----	13	93	

Well 37/2-36R4

Type of record: Driller's log.

Altitude: 855 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	15	15	
Sand and gravel-----	65	80	
Sand-----	22	102	

Well 37/3-1K1

Type of record: Driller's log.

Altitude: 742 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand, dirty-----	11	13	
Sand and gravel-----	7	20	
Clay-----	76	96	
Clay, sandy-----	16	112	
Gravel, small-----	19	131	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-1R1

Type of record: Driller's log.

Altitude: 742 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Loam, sandy-----	3	3	
Sand, fine, light-brown-----	6	9	
Sand, fine, light-brown mixed with gravel and stones-----	8	17	
Sand, coarse, and gravel-----	5	22	
Gravel, coarse, gray, with some stones-----	10	32	
Sand, fine, gray, and stones-----	8	40	
Sand-----	2	42	
Sand, coarse-----	4	46	
Sand, coarse, very active-----	4	50	
Clay, sticky, blue-----	23	73	
Mud-----	3	76	
Clay, blue, and hardpan-----	18	94	
Sand, fine, silty, and clay balls-----	10	104	
Sand, medium to coarse-----	6	110	
Sand, coarse, with few stones-----	10	120	

Well 37/3-2E1

Type of record: Driller's log.

Altitude: 748 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	18	18	
Clay and gravel; blue-----	32	50	
Sand, gray-----	7	57	

Well 37/3-2L1

Type of record: Driller's log.

Altitude: 746 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	15	15	
Clay and gravel-----	3	18	
Sand, fine-----	34	52	
Sand, medium-----	10	62	

Well 37/3-2N2

Type of record: Driller's log.

Altitude: 745 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	20	20	
Gravel, yellow-----	16	36	
Sand and gravel; yellow-----	17	53	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-3G1

Type of record: Driller's log.

Altitude: 743 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	15	15	
Clay, blue-----	10	25	
Sand, gray-----	19	44	

Well 37/3-3K1

Type of record: Driller's log.

Altitude: 745 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	16	16	
Clay and gravel; hard-----	28	44	
Sand and gravel-----	6	50	Clay at 50 feet.

Well 37/3-3N2

Type of record: Driller's log.

Altitude: 741 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	5	5	
Sand and gravel-----	5	10	
Clay-----	2	12	
Clay, sandy, with gravel-----	20	32	
Clay, sandy, with strips of gravel-----	20	52	
Sand and gravel-----	15	67	
Clay, sandy, with gravel and boulders-----	5	72	
Clay, sandy, with gravel-----	28	100	
Clay, sandy-----	12	112	
Sand and gravel-----	64	176	
Sand and gravel with traces of clay-----	19	195	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	197	

Well 37/3-3N4

Type of record: Driller's log.

Altitude: 741 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, silty-----	4	5	
Sand-----	6	11	
Clay, gravelly-----	14	25	
Clay, sandy-----	10	35	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-3N4--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, gravelly, with strips of gray very sticky clay-----	72	107	
Sand with some gravel-----	60	167	
Clay, gray-----	7	174	

Well 37/3-4J2

Type of record: Driller's log. Altitude: 741 feet.

Quaternary system:			
Recent and Pleistocene series:			
Muck and soil-----	3	3	
Gravel and sand; clean-----	14	17	
Sand, fine, silty-----	3	20	

Well 37/3-4L1

Type of record: Driller's log. Altitude: 739 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil, sandy-----	2	2	
Sand-----	8	10	
Sand and gravel-----	4	14	
Gravel and clay-----	118	132	
Sand and gravel-----	58	190	
Mississippian system:			
Lower Mississippian series:			
Shale-----	3	193	

Well 37/3-4R1

Type of record: Driller's log. Altitude: 743 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	6	6	
Sand, medium, red-----	12	18	
Sand and gravel-----	22	40	
Sand, medium, muddy, gray-----	13	53	
Clay and gray sand in strips-----	12	65	
Sand, medium, muddy, gray-----	7	72	
Clay, sandy, gray-----	4	76	
Clay, gray-----	39	115	
Sand, fine, muddy, gray-----	3	118	
Sand, fine-----	5	123	
Sand, medium, with some gravel---	2	125	
Sand mixed with gravel-----	2	127	
Gravel, fine, and sand-----	10	137	Blue shale at 137 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-5C1

Type of record: Driller's log.

Altitude: 747 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, red, with little gravel----	13	14	
Gravel, fine-----	12	26	
Sand, medium, yellow-----	4	30	
Gravel, fine, gray, and fine to coarse sand-----	4	34	
Sand, fine to medium-----	19	53	
Clay, soft, gummy, blue-----	47	100	
Clay, hard, blue-----	6	106	
Clay, soft, gummy-----	19	125	
Sand, hard, and clay-----	10	135	
Clay, hard, gravelly-----	35	170	
Gravel, fine to coarse-----	10	180	
Sand, medium, and coarse gravel--	7	187	
Gravel, coarse, and sand; with shale fragments-----	1	188	
Gravel, fine, and medium sand---	9	197	
Sand, coarse, and fine to coarse gravel-----	3	200	
Sand, coarse, with little gravel--	3	203	
Gravel, medium, and sand-----	2	205	Shale at 205 feet.

Well 37/3-5C2

Type of record: Driller's log.

Altitude: 747 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	3	3	
Sand and gravel-----	47	50	
Clay, blue-----	96	146	
Gravel, coarse, with some sand---	57	203	

Well 37/3-5E2

Type of record: Driller's log.

Altitude: 747 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	38	38	
Clay, hard, gritty-----	3	41	
Sand-----	8	49	
Sand, fine, muddy-----	9	58	
Sand, fine-----	8	66	
Clay-----	42	108	
Sand, fine, muddy-----	11	119	
Clay, gritty-----	14	133	
Sand-----	9	142	
Gravel, coarse, and sand-----	64	206	Shale at 206 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-5L1

Type of record: Driller's log.

Altitude: 749 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, yellow-----	17	18	
Sand and gravel-----	3	21	
Clay, blue-----	63	84	
Clay, sandy-----	62	146	
Sand, dirty, and gravel-----	14	160	
Sand, coarse, and gravel-----	13	173	

Well 37/3-5P1

Type of record: Driller's log.

Altitude: 750 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, yellow-----	18	18	
Sand, yellow-----	18	36	
Sand, yellow and gray; mixed-----	17	53	
Sand and gravel; gray-----	27	80	

Well 37/3-6A1

Type of record: Driller's log.

Altitude: 748 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil and clay-----	14	14	
Gravel, coarse-----	12	26	
Gravel, fine-----	1	27	
Clay, gritty-----	34	61	
Sand, fine-----	25	86	
Clay-----	23	109	
Sand, fine-----	11	120	
Clay-----	9	129	
Sand, fine-----	11	140	
Sand and gravel-----	3	143	
Sand, fine, muddy-----	13	156	
Clay, hard, gritty-----	4	160	
Boulders-----	1	161	
Sand, fine, muddy-----	7	168	
Gravel-----	5	173	
Sand-----	5	178	
Gravel, coarse-----	34	212	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	213	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-6H2

Type of record: Driller's log.

Altitude: 748 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil and clay-----	14	14	
Gravel-----	11	25	
Sand, coarse-----	15	40	
Sand, coarse, and gravel-----	20	60	
Sand, coarse-----	12	72	
Sand, coarse, and gravel-----	4	76	
Clay-----	52	128	
Clay, gritty-----	24	152	
Gravel-----	33	185	
Gravel, sandy, and clay-----	4	189	

Well 37/3-6H3

Type of record: Driller's log.

Altitude: 748 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil-----	6	6	
Gravel, coarse-----	20	26	
Clay, gritty-----	8	34	
Sand, fine, muddy-----	36	70	

Well 37/3-6N1

Type of record: Driller's log.

Altitude: 745 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	45	45	
Clay and gravel; mixed-----	95	140	
Sand-----	12	152	

Well 37/3-7H1

Type of record: Driller's log.

Altitude: 736 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	21	21	
Clay, blue-----	64	85	
Sand and gravel; yellow-----	15	100	

Well 37/3-7K1

Type of record: Driller's log.

Altitude: 724 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Clay, sandy, blue-----	60	90	
Sand-----	8	98	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-7N1

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	18	18	
Marl-----	10	28	
Sand and gravel-----	4	32	
Clay-----	1	33	
Gravel-----	6	39	
Clay-----	1	40	
Sand and gravel-----	27	67	
Marl-----	5	72	

Well 37/3-7P1

Type of record: Driller's log. Altitude: 706 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Clay-----	5	25	
Sand-----	15	40	
Sand, very fine-----	30	70	
Sand and clay-----	10	80	
Clay, blue-----	40	120	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	31	151	

Well 37/3-7R1

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	15	15	
Sand, fine-----	10	25	
Sand, coarse-----	20	45	
Sand, fine-----	20	65	
Sand, coarse-----	45	110	
Sand, fine-----	5	115	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	7	122	

Well 37/3-7R2

Type of record: Driller's log. Altitude: 712 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, gravel, and boulders-----	5	5	
Marl-----	20	25	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-7R2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, gray-----	10	35	
Sand, fine-----	2	37	
Sand and gravel-----	1	38	
Clay, sandy-----	2	40	
Sand, fine, gray-----	12	52	
Clay, sandy-----	3	55	
Sand and gravel-----	54	109	
Sand, medium, fine-----	5	114	
Sand and heavy gravel-----	5	119	
Sand, coarse, brown, and gravel--	2	121	
Sand, medium-----	2	123	
Sand and heavy gravel-----	1	124	
Clay, green-----	2	126	
Sand and heavy gravel-----	1	127	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	7	134	

Well 37/3-8G1

Type of record: Driller's log. Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand and gravel-----	17	27	
Hardpan-----	18	45	
Sand-----	1	46	
Clay and sand-----	37	83	
Sand-----	2	85	
Clay and sand-----	20	105	
Sand-----	17	122	

Well 37/3-10B1

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

Quaternary system:			
Recent and Pleistocene series:			
Fill; cinders-----	6	6	
Sand, yellow-----	12	18	
Clay, sandy-----	39	57	
Sand, fine, gray-----	18	75	

Well 37/3-10G1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	28	28	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Jose

Well 37/3-10G1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	20	48	
Sand, yellow-----	4	52	

Well 37/3-10G2

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand and gravel-----	46	47	
Clay, sandy, gray-----	15	62	
Sand and gravel; muddy-----	2	64	
Sand, fine, muddy-----	5	69	
Clay, gray, with gravel-----	11	80	
Clay, blue, with shale-----	20	100	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	12	112	

Well 37/3-11E2

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	18	18	
Clay-----	27	45	
Sand, fine-----	10	55	
Gravel-----	7	62	

Well 37/3-11F1

Type of record: Driller's log. Altitude: 744 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Gravel-----	20	40	
Sand-----	13	53	

Well 37/3-11G1

Type of record: Driller's log. Altitude: 744 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	30	30	
Clay, blue-----	6	36	
Sand, white-----	10	46	

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Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-11N2

Type of record: Driller's log.

Altitude: 701 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	42	42	
Sand, fine to medium-----	17	59	
Gravel, medium-----	29	88	
Gravel, coarse-----	3	91	
Clay, gravelly, gray-----	36	127	
Gravel, fine, with little clay---	8	135	
Clay, hard, brown-----	2	137	
Gravel, fine, black, streaked with clay-----	11	148	
Gravel, coarse, black-----	9	157	
Pebbles, shale-----	11	168	
Boulders, shale, chipped-----	7	175	
Clay, gray, with shale pebbles---	5	180	
Boulders, shale, chipped-----	7	187	
Boulders, shale, with clay-----	10	197	
Clay, gray-----	33	230	
Sand, coarse, shale pebbles, and clay-----	40	270	
Sand, coarse, and shale pebbles--	43	313	
Clay-----	2	315	
Sand, coarse, and shale pebbles--	24	339	

Well 37/3-11N3

Type of record: Driller's log.

Altitude: 701 feet.

Quaternary system:			
Recent and Pleistocene series:			
Gravel, coarse, and sand-----	42	42	
Sand, coarse-----	28	70	
Boulders and coarse gravel-----	28	98	
Clay and gravel; in strips-----	99	197	
Clay-----	33	230	
Gravel, coarse, and sand-----	15	245	
Clay-----	45	290	
Gravel and sand-----	39	329	

Well 37/3-11P1

Type of record: Driller's log.

Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil, clay, sandy, and gravel-----	24	24	
Sand and gravel-----	36	60	
Sand and gravel; coarse-----	38	98	
Clay and stones-----	1	99	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-11P3

Type of record: Driller's log.

Altitude: 697 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	36	36	
Gravel and clay-----	37	73	
Gravel, sand, and clay-----	8	81	
Gravel and clay-----	34	115	
Sand and gravel-----	7	122	
Gravel and clay-----	8	130	

Well 37/3-11P4

Type of record: Driller's log.

Altitude: 696 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	5	5	
Sand and gravel-----	10	15	
Gravel and clay-----	32	47	
Sand, medium to coarse-----	13	60	
Gravel and clay-----	10	70	
Sand, gray, and gravel-----	5	75	
Gravel and clay-----	7	82	
Sand, light-----	18	100	
Sand and gravel-----	33	133	

Well 37/3-11P6

Type of record: Driller's log.

Altitude: 696 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	20	20	
Clay, soft-----	33	53	
Gravel and sand-----	6	59	
Boulders, gravel, and clay-----	29	88	
Sand and gravel-----	7	95	
Clay and gravel-----	15	110	
Sand and gravel-----	10	120	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	121	

Well 37/3-11P7

Type of record: Driller's log.

Altitude: 698 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	50	50	
Clay, sand, and gravel; in strips-----	33	83	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-11P7--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	12	95	
Clay-----	5	100	
Sand and gravel; dirty-----	20	120	Sandy clay at 120 feet.

Well 37/3-11Q1

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

Quaternary system:			
Recent and Pleistocene series:			
Loam, sandy-----	6	6	
Sand, coarse, and gravel-----	7	13	
Sand, coarse-----	12	25	
Sand, fine to medium-----	9	34	
Sand, medium to coarse-----	17	51	
Gravel and clay-----	14	65	
Sand, coarse, clean-----	18	83	
Sand, coarse, gravel, and boulders-----	5	88	
Gravel and clay-----	7	95	
Sand, medium-----	10	105	
Sand, medium, with little gravel-----	14	119	Hard blue stone at 119 feet.

Well 37/3-11R4

Type of record: Driller's log. Altitude: 720 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	3	3	
Sand, brown, and gravel-----	10	13	
Sand, coarse, with some gravel---	6	19	
Sand, coarse-----	6	25	
Sand-----	10	35	
Sand and gravel-----	4	39	
Gravel-----	2	41	
Sand, fine, and gravel-----	9	50	
Sand, fine, gray-----	8	58	
Sand, fine, and clay-----	4	62	

Well 37/3-12G1

Type of record: Driller's log. Altitude: 745 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	7	7	
Sand and gravel-----	42	49	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-12G1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	3	52	
Clay, sandy-----	50	102	
Sand with gravel-----	23	125	
Record missing-----	6	131	

Well 37/3-12H1

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, fine-----	27	28	
Sand and coarse gravel-----	21	49	
Sand, fine, muddy-----	18	67	
Clay, hard, with some gravel----	7	74	
Clay, sandy, with some gravel----	20	94	
Sand, fine, muddy, gray-----	10	104	
Sand, fine, dirty, brown-----	11	115	
Sand, fine, clean-----	7	122	
Sand, fine, clean, and gravel----	2	124	
Sand and coarse gravel; with clay balls-----	3	127	
Sand, fine, clean, and gravel----	23	150	

Well 37/3-12N2

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	8	8	
Gravel-----	4	12	
Sand, dirty-----	8	20	
Gravel-----	6	26	
Sand-----	22	48	
Clay and sand-----	20	68	
Gravel, sand, and clay-----	15	83	
Sand, gray-----	15	98	
Sand, yellow-----	13	111	

Well 37/3-13E2

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand and gravel-----	48	50	
Sand, muddy, and gravel-----	15	65	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-13E2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	45	110	
Gravel and sand-----	10	120	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	16	136	

Well 37/3-14B1

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

Quaternary system:			
Recent and Pleistocene series:			
Soil, sand, and gravel-----	7	7	
Gravel, coarse-----	8	15	
Sand, coarse-----	45	60	
Sand, coarse, with some gravel---	35	95	
Sand, coarse, and gravel-----	12	107	

Well 37/3-14K1

Type of record: Driller's log. Altitude: 724 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Hardpan-----	1	3	
Sand and hardpan-----	3	6	
Gravel-----	3	9	
Sand-----	4	13	
Gravel-----	11	24	
Clay-----	11	35	
Sand, fine, white-----	15	50	
Sand, fine, yellow-----	38	88	
Clay with gravel-----	12	100	
Clay-----	8	108	
Clay with gravel-----	4	112	
Gravel and sand-----	15	127	
Clay-----	3	130	
Clay with some hardpan-----	16	146	
Mississippian system:			
Lower Mississippian series:			
Shale-----	18	164	

Well 37/3-14K2

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

Quaternary system:			
Recent and Pleistocene series:			
Soil, black-----	4	4	
Boulders-----	4	8	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-14K2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	4	12	
Gravel and boulders-----	7	19	
Clay-----	14	33	
Sand-----	1	34	
Clay-----	9	43	
Sand-----	3	46	
Clay-----	8	54	
Sand-----	7	61	
Clay-----	2	63	
Sand-----	21	84	
Sand and rocks-----	4	88	
Clay and gravel-----	2	90	
Sand-----	14	104	
Clay and gravel-----	3	107	
Sand-----	16	123	
Clay and gravel-----	3	126	
Gravel-----	4	130	
Sand-----	16	146	Shale at 146 feet.

Well 37/3-14K3

Type of record: Driller's log.

Altitude: 724 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil, black-----	2	2	
Sand and gravel; with large boulders-----	8	10	
Sand and gravel-----	13	23	
Clay, gray-----	4	27	
Sand, fine-----	56	83	
Sand and gravel; with boulders---	5	88	
Clay, sandy, gray-----	14	102	
Sand and gravel; clean-----	10	112	
Sand, fine, muddy, with some clay-----	3	115	
Sand and small gravel; yellow----	9	124	
Sand and small gravel; gray-----	13	137	
Sand, fine to medium, gray-----	5	142	

Well 37/3-14N1

Type of record: Driller's log.

Altitude: 729 feet.

Quaternary system:			
Recent and Pleistocene series:			
Muck-----	1	1	
Sand and gravel-----	24	25	
Sand, medium-----	9	34	
Sand, coarse, and gravel-----	12	46	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-14N1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, red-----	2	48	
Sand, fine, muddy-----	8	56	
Clay, soft, sandy-----	76	132	
Gravel-----	6	138	
Gravel and some sand-----	2	140	
Clay-----	6	146	

Well 37/3-15C1

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Gravel, coarse, yellow-----	20	20	
Clay, blue-----	15	35	
Gravel, coarse-----	15	50	
Sand, blue-----	25	75	

Well 37/3-15H1

Type of record: Driller's log. Altitude: 722 feet.

Quaternary system:			
Recent and Pleistocene series:			
Muck-----	7	7	
Sand-----	13	20	
Sand and some gravel-----	20	40	
Clay-----	4	44	
Sand, fine-----	24	68	
Clay-----	15	83	
Gravel-----	9	92	Suitable for 40-slot screen.
Gravel-----	5	97	Suitable for 20-slot screen.
Sand, fine-----	4	101	

Well 37/3-15M2

Type of record: Driller's log. Altitude: 724 feet.

Quaternary system:			
Recent and Pleistocene series:			
Cement-----	1	1	
Fill-----	3	4	
Sand and gravel; muddy-----	21	25	
Sand and gravel-----	22	47	
Sand, fine-----	2	49	
Sand, coarse, and gravel-----	9	58	
Sand, clean, and gravel-----	7	65	
Sand, fine, clean-----	1	66	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-15R1

Type of record: Driller's log.

Altitude: 724 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Gravel, sand, and clay-----	9	10	
Sand and gravel-----	58	68	
Clay and muddy sand-----	7	75	

Well 37/3-16A1

Type of record: Driller's log.

Altitude: 703 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	10	10	
Gravel, coarse-----	9	19	
Clay, yellow-----	11	30	
Clay, blue-----	13	43	
Mississippian(?) system:			
Lower Mississippian(?) series:			
Shale(?), blue-----	7	50	

Well 37/3-16B2

Type of record: Driller's log.

Altitude: 692 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Cinders-----	3	3	
Clay, sandy-----	4	7	
Sand and gravel-----	5	12	
Sand-----	5	17	
Clay, silty-----	5	22	
Clay, sandy-----	4	26	
Sand, muddy-----	4	30	
Sand and gravel-----	3	33	
Sand, muddy-----	2	35	
Sand and gravel-----	1	36	
Clay, silty-----	1	37	
Sand and gravel-----	3	40	
Clay, blue-----	1	41	

Well 37/3-16C3

Type of record: Driller's log.

Altitude: 695 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	3	3	
Gravel-----	5	8	
Hardpan-----	27	35	
Sand, yellow-----	11	46	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-16C3--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	7	53	
Hardpan-----	7	60	
Clay-----	19	79	
Clay, yellow, and gravel-----	21	100	
Gravel, hard, with clay-----	13	113	
Sand, coarse-----	6	119	

Well 37/3-16C4

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

Quaternary system:				
Recent and Pleistocene series:				
Muck-----	6	6		
Boulders-----	9	15		
Hardpan-----	25	40		
Sand and clay-----	2	42		
Sand-----	6	48		
Sand, clean-----	4	52		
Sand, coarse-----	8	60	Suitable for 15-slot screen.	
Sand, fine-----	3	63		
Clay and sand-----	4	67		
Sand with few gravel-----	9	76		
Clay-----	1	77		
Sand, yellow-----	7	84		
Clay, yellow-----	10	94		
Clay, hard, blue-----	12	106		
Sand, yellow-----	2	108		
Mississippian system:				
Lower Mississippian series:				
Shale, blue-----	17	125		

Well 37/3-16C5

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand and gravel-----	48	50	
Clay-----	2	52	
Sand and gravel-----	5	57	
Clay-----	1	58	
Sand and gravel-----	9	67	
Clay-----	3	70	
Gravel-----	2	72	
Clay-----	3	75	
Clay with gravel-----	10	85	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-16C5--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	17	102	
Clay-----	12	114	
Sand-----	20	134	
Clay-----	6	140	
Sand-----	4	144	
Clay-----	2	146	
Sand-----	4	150	
Clay-----	14	164	
Gravel-----	2	166	
Clay, blue-----	8	174	
Mississippian system:			
Lower Mississippian series:			
Shale-----	2	176	

Well 37/3-16D1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	7	7	
Gravel, coarse-----	16	23	
Sand with some gravel-----	7	30	
Sand, coarse-----	20	50	
Sand, medium-----	13	63	

Well 37/3-16F1

Type of record: Driller's log. Altitude: 703 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil and clay-----	76	76	
Sand, dirty-----	2	78	Suitable for 15-slot screen.
Clay-----	32	110	
Sand-----	2	112	Suitable for 25-slot screen.
Hardpan, mixed-----	1	113	
Sand and gravel-----	5	118	Suitable for 40-slot screen.
Sand and gravel-----	9	127	Suitable for 40- to 50-slot screen.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-16F2

Type of record:

Altitude: 703 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil and dirt-----	2	2	
Gravel-----	2	4	
Hardpan-----	16	20	
Sand-----	31	51	
Sand and gravel-----	9	60	
Clay-----	32	92	
Sand-----	1	93	
Sand and gravel-----	8	101	
Gravel, sand, and clay-----	10	111	
Sand and fine gravel-----	17	128	
Sand and coarse gravel-----	7	135	

Well 37/3-16F4

Type of record: Driller's log.

Altitude: 710 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	3	3	
Gravel-----	4	7	
Hardpan-----	37	44	
Gravel and sand-----	4	48	
Sand-----	8	56	
Clay and sand-----	8	64	
Clay-----	11	75	
Clay, yellow-----	21	96	
Sand, yellow-----	11	107	
Sand, coarse, yellow-----	5	112	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	2	114	

Well 37/3-16H1

Type of record: Driller's log.

Altitude: 721 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, red, and gravel-----	15	15	
Gravel, medium, yellow, and boulders-----	5	20	
Sand, medium, gray, and pea- sized gravel-----	5	25	
Sand, fine, gray-----	5	30	
Sand, fine, gray, muddier-----	3	33	

Well 37/3-16N2

Type of record: Driller's log.

Altitude: 721 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	8	8	
Gravel-----	15	23	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-16N2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	4	27	
Gravel, yellow-----	4	31	
Clay, yellow-----	1	32	
Sand, yellow-----	11	43	
Hardpan and boulders-----	20	63	
Sand, dirty-----	4	67	
Gravel-----	11	78	
Gravel, coarse-----	11	89	Clay at 89 feet.

Well 37/3-16N3

Type of record: Driller's log. Altitude: 719 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil and fill-----	1	1	
Muck-----	2	3	
Sand and coarse gravel-----	13	16	
Clay, sandy-----	7	23	
Sand and gravel; brown-----	4	27	
Sand, fine, brown-----	3	30	
Gravel and clay-----	17	47	
Clay, sandy-----	14	61	
Sand and gravel; somewhat dirty-----	14	75	
Clay, sandy-----	4	79	
Gravel and clay-----	11	90	
Clay, smooth-----	4	94	
Gravel, sand, and clay strips---	22	116	

Well 37/3-16N4

Type of record: Driller's log. Altitude: 719 feet.

Quaternary system:			
Recent and Pleistocene series:			
Cinders-----	1	1	
Muck-----	2	3	
Sand and gravel-----	16	19	
Sand-----	2	21	
Clay, gravelly-----	27	48	
Clay, sandy-----	27	75	
Gravel, sand, and clay; strippy-----	11	86	
Clay, sandy-----	47	133	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-16R1

Type of record: Driller's log. Altitude: 723 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Pit-----	7	7	
Sand, red-----	3	10	
Gravel-----	20	30	
Hardpan-----	16	46	Yellow clay at 46 feet.

Well 37/3-17M1

Type of record: Driller's log. Altitude: 713 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	7	7	
Gravel and sand-----	51	58	
Sand, coarse-----	2	60	

Well 37/3-18D1

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Pit-----	20	20	
Clay-----	4	24	
Sand-----	23	47	
Sand, gray-----	4	51	
Gravel and sand-----	6	57	
Sand and gravel; gray-----	10	67	

Well 37/3-8D2

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Old well-----	68	68	
Gravel and sand-----	7	75	
Hardpan-----	10	85	
Clay, blue-----	17	102	
Clay, soft, and sand-----	45	147	Shale at 147 feet.

Well 37/3-18D4

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, coarse-----	15	35	
Sand, fine-----	15	50	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-18D4--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, some coarser-----	10	60	
Sand and gravel; fine to coarse--	10	70	
Sand and blue clay-----	10	80	
Sand, very fine-----	32	112	

Well 37/3-18G4

Type of record: Driller's log. Altitude: 712 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, fine-----	25	45	
Sand, coarse-----	30	75	
Clay, blue-----	20	95	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	5	100	

Well 37/3-18G5

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Gravel, fine-----	10	30	
Sand, fine-----	5	35	
Sand and gravel-----	10	45	
Sand, fine-----	5	50	
Gravel, coarse-----	5	55	
Sand, coarse-----	5	60	
Gravel, coarse-----	8	68	
Clay, blue-----	151	219	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	1	220	

Well 37/3-18K1

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, fine-----	5	25	
Sand, coarse to 1/4" stones-----	65	90	
Sand, coarse to 3/8" stones-----	10	100	
Clay, blue-----	3	103	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-18P1

Type of record: Driller's log.

Altitude: 730 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Sand, coarse-----	15	35	
Sand, fine-----	5	40	
Sand, coarser-----	40	80	
Sand, coarse to 1/4" stones-----	5	85	
Sand, coarse-----	25	110	
Sand, fine-----	20	130	
Clay, blue-----	10	140	

Well 37/3-18Q1

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	15	15	
Sand, coarse-----	32	47	
Sand, fine-----	63	110	
Sand, coarse-----	6	116	
Clay, blue-----	14	130	

Well 37/3-19B1

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	21	21	
Sand, coarse-----	26	47	
Sand, fine-----	60	107	
Sand, coarse-----	8	115	
Clay, blue-----	60	175	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	8	183	

Well 37/3-19E1

Type of record: Driller's log.

Altitude: 756 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; black dirt-----	2	2	
Sand, red-----	2	4	
Sand, fine to medium yellow-----	2	6	
Sand and gravel with boulders----	3	9	
Clay, sandy, with boulders-----	4	13	
Sand and gravel with boulders----	9	22	
Sand, medium, and gravel-----	5	27	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-19E1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse, and gravel-----	20	47	
Sand and yellow clay-----	10	57	
Sand and gravel-----	3	60	
Clay, sandy, yellow-----	9	69	
Sand, muddy, and gravel-----	9	78	
Sand and heavy gravel-----	12	90	
Sand, fine-----	24	114	
Clay, sandy-----	10	124	
Sand, fine-----	5	129	
Sand, muddy, and gravel-----	5	134	
Clay, sandy, blue-----	2	136	
Gravel-----	9	145	
Clay, sandy, blue-----	2	147	
Gravel-----	8	155	
Clay, sandy-----	4	159	
Gravel-----	3	162	
Mississippian system:			
Lower Mississippian series:			
Shale-----	6	168	

Well 37/3-19R1

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

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	40	40	
Gravel-----	10	50	
Sand-----	16	66	

Well 37/3-20D4

Type of record: Driller's log. Altitude: 762 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	30	30	
Sand and gravel; yellow-----	27	57	
Sand, coarse, and gravel; dirty--	3	60	
Sand and gravel; dirty-----	9	69	
Sand-----	18	87	
Gravel-----	1	88	
Clay, yellow-----	6	94	
Sand, coarse, and gravel-----	9	103	
Gravel, dirty-----	3	106	
Gravel, coarse-----	7	113	
Gravel-----	16	129	Clay at 129 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-20D5

Type of record: Driller's log.

Altitude: 793 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and clay; yellow-----	12	12	
Sand, yellow-----	70	82	
Clay, blue-----	16	98	
Sand and gravel; with clay balls-	7	105	
Clay, blue-----	5	110	
Sand and gravel-----	6	116	

Well 37/3-20G1

Type of record: Driller's log.

Altitude: 882 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel and clay-----	53	53	
Sand and clay-----	104	157	
Sand-----	21	178	
Clay, blue-----	22	200	
Hardpan-----	31	231	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	4	235	

Well 37/3-20K1

Type of record: Driller's log.

Altitude 892 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel and sand-----	186	186	
Clay-----	21	207	
Gravel-----	3	210	
Sand, fine-----	2	212	

Well 37/3-20K2

Type of record: Driller's log.

Altitude: 892 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, sand, and clay; yellow---	17	17	
Gravel, yellow-----	129	146	
Sand, yellow-----	9	155	Streak of yellow clay balls at 155 feet.
Gravel, yellow-----	8	163	
Sand, yellow-----	16	179	
Sand, coarse, gray-----	15	194	
Gravel, coarse, gray-----	3	197	
Clay and hardpan-----	16	213	
Gravel and sand; with some clay balls	10	223	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-20K2--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	3	226	

Well 37/3-21B1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	30	30	
Clay, blue-----	6	36	
Sand, yellow-----	10	46	

Well 37/3-21G3

Type of record: Driller's log. Altitude: 736 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	32	32	
Clay, yellow and blue-----	8	40	
Sand, yellow-----	5	45	

Well 37/3-21J1

Type of record: Driller's log. Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Sand-----	40	70	
Pack sand-----	15	85	
Gravel and sand-----	12	97	

Well 37/3-21Q1

Type of record: Driller's log. Altitude: 883 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	16	16	
Sand and gravel; yellow-----	124	140	
Clay, blue-----	28	168	
Sand, yellow-----	7	175	

Well 37/3-21Q2

Type of record: Driller's log. Altitude: 872 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	123	123	
Clay, blue-----	17	140	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-21Q2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse-----	8	148	

Well 37/3-21R1

Type of record: Driller's log. Altitude: 880 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	150	150	
Clay-----	34	184	
Sand-----	10	194	

Well 37/3-21R2

Type of record: Driller's log. Altitude: 882 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	140	140	
Clay-----	10	150	
Sand and gravel-----	26	176	

Well 37/3-22M1

Type of record: Driller's log. Altitude: 752 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Gravel-----	5	35	
Sand and gravel-----	16	51	

Well 37/3-22N1

Type of record: Driller's log. Altitude: 800 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	30	30	
Clay-----	6	36	
Hardpan-----	3	39	
Clay-----	15	54	
Pack sand-----	2	56	
Clay streaked with sand-----	21	77	
Sand, fine-----	7	84	
Sand, clean-----	9	93	
Sand and gravel-----	10	103	
Sand-----	2	105	
Gravel-----	5	110	
Clay-----	7	117	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-22R4

Type of record: Driller's log.

Altitude: 772 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	44	44	
Clay, yellow-----	13	57	
Sand, yellow-----	3	60	
Clay, yellow-----	2	62	
Sand, brown-----	7	69	

Well 37/3-25E1

Type of record: Driller's log.

Altitude: 795 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	4	4	
Sand and gravel-----	8	12	
Clay and gravel-----	33	45	
Sand and gravel-----	4	49	
Clay-----	35	84	
Sand-----	3	87	
Clay-----	18	105	
Sand and gravel-----	6	111	
Clay-----	24	135	
Mississippian system:			
Lower Mississippian series:			
Shale-----	41	176	

Well 37/3-25E2

Type of record: Driller's log.

Altitude: 807 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	23	23	
Clay and gravel-----	23	46	
Sand and gravel-----	3	49	
Sand-----	10	59	
Clay-----	29	88	
Sand, muddy-----	14	102	
Clay-----	2	104	
Sand, muddy-----	11	115	
Clay-----	10	125	
Sand, muddy-----	7	132	
Shale-----	5	137	Clay.
Gravel-----	1	138	
Mississippian system:			
Lower Mississippian series:			
Shale-----	52	190	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-25M1

Type of record: Driller's log. Altitude: 846 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	22	22	
Sand, yellow-----	60	82	
Clay, blue-----	13	95	
Hardpan-----	3	98	
Clay, sandy-----	42	140	
Sand-----	9	149	

Well 37/3-26C2

Type of record: Driller's log. Altitude: 837 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	40	40	
Gravel, yellow-----	40	80	
Clay, blue-----	20	100	
Sand and gravel; yellow-----	60	160	
Sand, yellow-----	7	167	

Well 37/3-26G3

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	22	22	
Clay, yellow-----	7	29	
Sand-----	5	34	
Clay, blue-----	21	55	
Sand-----	6	61	

Well 37/3-26N1

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	25	25	
Clay, blue-----	17	42	
Sand, yellow-----	53	95	
Sand and gravel; yellow-----	7	102	

Well 37/3-27E1

Type of record: Driller's log. Altitude: 874 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Sand and gravel; yellow-----	86	116	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-27E1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	21	137	
Sand and gravel; yellow-----	7	144	

Well 37/3-27E2

Type of record: Driller's log. Altitude: 880 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	25	25	
Clay, blue-----	17	42	
Sand and gravel; yellow-----	82	124	
Clay and gravel; blue-----	41	165	
Sand and gravel; yellow-----	9	174	

Well 37/3-27E3

Type of record: Driller's log. Altitude: 878 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	50	50	
Gravel-----	56	106	
Sand-----	74	180	

Well 37/3-27R1

Type of record: Driller's log. Altitude: 850 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	30	30	
Clay, blue-----	15	45	
Gravel-----	48	93	
Sand-----	10	103	

Well 37/3-28A1

Type of record: Driller's log. Altitude: 867 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	110	110	
Clay, blue-----	55	165	
Sand and gravel; yellow-----	5	170	Yellow clay at 170 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-28D1

Type of record: Driller's log. Altitude: 902 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	30	30	
Stony material-----	40	70	
Hardpan-----	20	90	
Sand and gravel-----	83	173	

Well 37/3-28H2

Type of record: Driller's log. Altitude: 879 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	24	24	
Sand-----	100	124	
Clay-----	16	140	
Sand-----	12	152	

Well 37/3-29F1

Type of record: Driller's log. Altitude: 842 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	100	100	
Clay-----	8	108	
Sand-----	25	133	

Well 37/3-29H1

Type of record: Driller's log. Altitude: 868 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	27	27	
Sand-----	17	44	
Hardpan-----	16	60	
Sand and gravel-----	84	144	

Well 37/3-29K2

Type of record: Driller's log. Altitude: 862 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	130	130	
Clay-----	3	133	
Gravel-----	8	141	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-29K3

Type of record: Driller's log.

Altitude: 862 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	18	18	
Sand-----	91	109	
Clay-----	5	114	
Sand-----	24	138	

Well 37/3-29N1

Type of record: Driller's log.

Altitude: 875 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	15	15	
Gravel, coarse-----	55	70	
Hardpan-----	40	110	
Clay, yellow-----	10	120	
Sand and gravel; yellow-----	13	133	

Well 37/3-29N5

Type of record: Driller's log.

Altitude: 880 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	15	15	
Sand and gravel; yellow-----	115	130	
Sand, yellow-----	8	138	

Well 37/3-31A2

Type of record: Driller's log.

Altitude: 865 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, brown-----	7	7	
Sand, muddy, and gravel-----	13	20	
Sand and gravel; some coarse-----	69	89	
Sand, muddy, brown-----	41	130	
Sand, muddy, and clay-----	1	131	
Sand, clean, brown-----	12	143	
Sand, fine-----	8	151	
Sand and gravel; clean-----	20	171	
Sand, clean-----	4	175	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-31H1

Type of record: Driller's log. Altitude: 870 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow, and sand-----	10	10	
Clay, yellow, with gravel and sand-----	97	107	
Sand, fine, yellow-----	21	128	
Sand, coarse, yellow, and gravel-	2	130	
Sand, fine, yellow-----	17	147	
Sand, coarse, yellow-----	6	153	
Gravel, coarse, gray-----	11	164	
Clay and hardpan; yellow-----	2	166	

Well 37/3-33A2

Type of record: Driller's log. Altitude: 875 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	70	70	
Gravel, coarse-----	30	100	
Sand-----	10	110	

Well 37/3-33A3

Type of record: Driller's log. Altitude: 880 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	20	20	
Gravel-----	60	80	
Rock-----	10	90	
Clay-----	30	120	
Sand-----	5	125	

Well 37/3-33A4

Type of record: Driller's log. Altitude: 875 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	28	28	
Gravel, yellow-----	7	35	
Clay, blue-----	7	42	
Sand and gravel; yellow-----	68	110	

Well 37/3-33A6

Type of record: Driller's log. Altitude: 880 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	40	40	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-33A6--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	50	90	
Clay-----	10	100	
Sand and gravel-----	22	122	Clay at 122 feet.

Well 37/3-33B3

Type of record: Driller's log. Altitude: 885 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	125	125	
Clay-----	39	164	
Clay and sand-----	5	169	
Clay-----	6	175	
Sand-----	5	180	

Well 37/3-33E1

Type of record: Driller's log. Altitude: 874 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	10	10	
Clay, sandy-----	8	18	
Clay, gray-----	7	25	
Clay, fine, sandy-----	15	40	
Sand and gravel; with clay-----	5	45	
Sand and gravel-----	20	65	
Sand and gravel; with boulders---	45	110	
Sand and gravel; with traces of clay-----	28	138	
Clay-----	3	141	
Clay, gravelly-----	4	145	

Well 37/3-33J2

Type of record: Driller's log. Altitude: 875 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	30	30	
Gravel and rock-----	40	70	
Gravel-----	20	90	
Sand-----	26	116	Bedrock at 116 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/3-34A1

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	38	38	
Hardpan-----	27	65	
Sand-----	36	101	Clay at 101 feet.

Well 37/3-35D2

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue-----	30	30	
Clay and gravel; yellow-----	15	45	
Clay, blue-----	10	55	
Sand and gravel; yellow-----	35	90	
Gravel, yellow-----	10	100	

Well 37/3-35M1

Type of record: Driller's log. Altitude: 850 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	70	70	
Sand and gravel-----	10	80	
Sand-----	11	91	

Well 37/3-36Q1

Type of record: Driller's log. Altitude: 840 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Clay and stone-----	22	52	
Gravel-----	54	106	

Well 37/4-6B1

Type of record: Driller's log. Altitude: 754 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill, black-----	4	4	
Sand and clay; mixed-----	11	15	
Sand and gravel-----	10	25	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-6J1

Type of record: Driller's log.

Altitude: 748 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	38	38	
Sand, fine-----	16	54	
Sand, coarse-----	16	70	
Sand, fine-----	11	81	
Clay and sandy clay-----	5	86	
Sand, fine, with some gravel-----	5	91	

Well 37/4-7A1

Type of record: Driller's log.

Altitude: 746 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	18	18	
Clay, yellow-----	6	24	
Hardpan-----	10	34	
Sand and gravel; white-----	8	42	

Well 37/4-7A3

Type of record: Driller's log.

Altitude: 747 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	44	44	
Sand and clay; yellow-----	4	48	
Sand, fine, yellow-----	12	60	
Sand and gravel; yellow-----	7	67	

Well 37/4-7B1

Type of record: Driller's log.

Altitude: 747 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand, yellow, and gravel-----	1	11	
Sand-----	6	17	
Sand and gravel-----	10	27	
Clay, sandy, and gravel-----	3	30	
Sand and gravel-----	31	61	
Sand, fine-----	7	68	
Clay, sandy-----	44	112	
Sand and gravel-----	18	130	
Sand and fine to coarse gravel---	22	152	Clay at 152 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-7B2

Type of record: Driller's log.

Altitude: 746 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	54	54	
Clay, hard, and gravel-----	14	68	
Sand, medium, brown-----	34	102	
Sand and gravel, with some clay--	12	114	
Sand, clean, and gravel-----	38	152	Clay at 152 feet.

Well 37/4-7D1

Type of record: Driller's log.

Altitude: 748 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	34	34	
Clay-----	17	51	
Sand, fine-----	4	55	
Sand and gravel-----	24	79	
Clay, yellow-----	12	91	
Sand, fine-----	14	105	
Clay-----	9	114	
Sand and gravel-----	12	126	
Clay-----	2	128	
Sand and gravel-----	26	154	

Well 37/4-7D2

Type of record: Driller's log.

Altitude: 748 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine-----	15	15	
Gravel and sand-----	18	33	
Gravel-----	4	37	
Clay-----	7	44	
Clay, sandy-----	9	53	
Sand and gravel-----	18	71	
Sand-----	10	81	
Clay-----	5	86	
Clay and gravel-----	19	105	
Clay with streaks of sand-----	17	122	
Sand and gravel-----	12	134	
Clay-----	5	139	
Sand and gravel-----	17	156	
Mississippian series:			
Lower Mississippian series:			
Shale-----	2	158	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-7E2

Type of record: Driller's log.

Altitude: 749 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand and gravel-----	60	61	
Clay-----	38	99	
Sand, fine-----	13	112	
Sand and gravel-----	41	153	Brown shale at 153 feet.

Well 37/4-7G1

Type of record: Driller's log.

Altitude: 742 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	45	45	
Clay, yellow-----	10	55	
Sand and gravel; yellow-----	7	62	

Well 37/4-8D1

Type of record: Driller's log.

Altitude: 740 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	37	37	
Sand, fine-----	4	41	
Clay, blue-----	8	49	
Sand, sugar-sized-----	5	54	
Clay, red-----	19	73	
Sand-----	8	81	

Well 37/4-8E2

Type of record: Driller's log.

Altitude: 722 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Clay, blue-----	14	34	
Sand-----	10	44	

Well 37/4-9A1

Type of record: Driller's log.

Altitude: 750 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface soil and sand-----	21	21	
Clay, yellow-----	39	60	
Sand-----	14	74	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-9D1

Type of record: Driller's log.

Altitude: 750 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, brown-----	22	22	
Sand and gravel-----	20	42	
Sand, fine, yellow-----	11	53	
Sand, fine, silty-----	13	66	
Sand, fine, yellow-----	7	73	
Sand, fine, gray-----	12	85	
Sand and gravel-----	9	94	
Sand, coarse, and gravel-----	2	96	
Sand, fine, gray-----	4	100	

Well 37/4-9G2

Type of record: Driller's log from memory.

Altitude: 731 feet.

Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	18	18	
Clay, blue, and hard gravel-----	22	40	
Sand, coarse, mixed with gravel--	4	44	

Well 37/4-9Q1

Type of record: Driller's log from memory.

Altitude: 727 feet.

Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	25	25	
Clay, gravel, and rock-----	33	58	
Sand, coarse, and gravel; mixed--	7	65	

Well 37/4-16C2

Type of record: Driller's log.

Altitude: 736 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	30	30	
Clay and gravel-----	15	45	
Sand and gravel-----	7	52	

Well 37/4-16D1

Type of record: Driller's log.

Altitude: 737 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	30	30	
Clay, blue-----	40	70	Three-foot boulder at 47 feet.
Sand-----	4	74	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-16G2

Type of record: Driller's log. Altitude: 741 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	23	23	
Clay, yellow-----	20	43	
Sand and gravel; yellow-----	23	66	

Well 37/4-17A1

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Gravel, coarse, red-----	2	3	
Sand, gray, dirty-----	8	11	
Sand and gravel; gray-----	1	12	
Gravel and stones-----	4	16	
Clay, brown, and hardpan-----	4	20	
Clay, blue, hardpan, and stones--	10	30	
Clay, blue, hardpan, and sand----	42	72	
Sand, fine, clean-----	9	81	
Sand, fine-----	16	97	
Sand, coarse-----	4	101	
Gravel, fine-----	7	108	
Sand, coarse-----	6	114	

Well 37/4-17A2

Type of record: Driller's log. Altitude: 736 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	3	3	
Hardpan-----	3	6	
Sand-----	28	34	
Pack sand, yellow-----	16	50	
Clay and gravel; yellow-----	5	55	
Hardpan-----	12	67	
Clay and sand; yellow-----	8	75	
Sand, yellow-----	6	81	

Well 37/4-17B1

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	24	24	
Hardpan-----	8	32	Clay?
Sand-----	25	57	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-17C1

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Gravel-----	1	2	
Sand-----	2	4	
Sand and gravel-----	12	16	
Hardpan-----	4	20	
Clay-----	3	23	
Clay with gravel-----	3	26	
Gravel, cemented-----	5	31	
Sand and gravel; with clay-----	3	34	
Gravel, cemented-----	2	36	
Sand and gravel-----	3	39	
Clay, sandy, with strips of cemented gravel-----	11	50	
Clay, sandy-----	8	58	
Sand and gravel-----	85	143	
Mississippian system:			
Lower Mississippian series:			
Shale, blue-----	2	145	

Well 37/4-17F1

Type of record: Driller's log.

Altitude: 733 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	25	25	
Clay and gravel; blue-----	22	47	
Sand, blue-----	5	52	
Clay, sandy-----	6	58	Shale fragments at 58 feet.

Well 37/4-17H1

Type of record: Driller's log.

Altitude: 737 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	35	35	
Clay, blue-----	13	48	
Sand, dark-----	9	57	

Well 37/4-18D1

Type of record: Driller's log.

Altitude: 729 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; gravelly clay-----	3	3	
Gravel, sandy-----	7	10	
Gravel-----	28	38	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-18D1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, gray-----	28	66	
Gravel, sandy-----	5	71	
Clay, gray-----	27	98	
Sand, fine-----	20	118	
Clay, hard, dark-brown-----	6	124	
Shale, gravelly, light-blue-----	11	135	
Mississippian system:			
Lower Mississippian series:			
Shale, light-blue-----	8	143	

Well 37/4-19M1

Type of record: Driller's log. Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel, yellow-----	35	35	
Clay, yellow-----	10	45	
Sand and gravel; yellow-----	6	51	

Well 37/4-21P1

Type of record: Driller's log. Altitude: 752 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	30	30	
Clay-----	28	58	
Sand and gravel-----	6	64	

Well 37/4-28L1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	20	20	
Clay and sand; blue-----	34	54	
Sand-----	11	65	

Well 37/4-29J1

Type of record: Driller's log. Altitude: 772 feet.

Quaternary system:			
Recent and Pleistocene series:			
Loam, dark-----	5	5	
Clay-----	2	7	
Sand, red-----	23	30	
Sand, light-----	14	44	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 37/4-33R1

Type of record: Driller's log.

Altitude: 805 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Quicksand with a few strips of clay-----	50	50	
Clay, blue-----	14	64	
Sand and gravel-----	6	70	

Well 38/1W-10J1

Type of record: Driller's log.

Altitude: 755 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown-----	38	38	
Sand and gravel; brown-----	20	58	
Silt and clay-----	10	68	
Clay-----	24	92	
Sand, coarse, white-----	8	100	

Well 38/1W-10R1

Type of record: Driller's log.

Altitude:

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and clay-----	10	10	
Clay and sand; blue-----	10	20	
Sand and gravel-----	10	30	
Sand, fine, and clay-----	18	48	
Gravel-----	8	56	
Sand, white-----	20	76	

Well 38/1W-14H3

Type of record: Driller's log.

Altitude: 792 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; loam-----	1	1	
Clay, very stiff, silty, brown and gray, with trace of fine sand-----	11	12	
Clay, hard, silty, brown and gray, with fine sand and small gravel-----	2	14	
Clay, stiff, silty, sandy, brown, with some small gravel-----	2	16	
Sand, fine to coarse, brown, with some small gravel-----	6	22	
Sand, fine to medium brown-----	8	30	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1W-14M2

Type of record: Driller's log.

Altitude: 800 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, gravelly, silty-----	4	4	
Clay, brown and gray, with trace of small gravel-----	2	6	
Clay, stiff, silty, brown and gray, with trace of small gravel-----	2	8	
Clay, stiff, silty, gravelly, brown and gray-----	4	12	
Sand, fine to medium brown, with trace of small gravel-----	10.	22	
Sand, medium to coarse, gravelly, brown, with trace of silt-----	13	35	

Well 38/1W-14M3

Type of record: Driller's log.

Altitude: 797 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	2	2	
Clay, soft, silty, gray, with trace of sand and small gravel-----	14	16	
Clay, stiff, silty, gray, with trace of fine sand-----	13	29	
Sand, medium to coarse, brown, and gravel; with clay binder---	4	33	
Sand, medium to coarse, brown, with clay binder-----	7	40	

Well 38/1W-14N1

Type of record: Driller's log.

Altitude: 797 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, soft, silty, gravelly, brown and gray-----	2	2	
Silt, soft, clayey, organic, blue, with trace of small gravel-----	3	5	
Peat, very soft-----	13	18	
Silt, soft, organic, blue-----	7	25	
Clay, silty, sandy, gravelly, blue-----	6	31	
Clay, hard, silty, gravelly, blue-----	7	38	
Clay, stiff, silty, gravelly, blue-----	14	52	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1W-14N1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to coarse, clayey, gravelly, gray-----	4	56	
Sand, fine to coarse, gravelly, brown-----	4	60	

Well 38/1W-15E1

Type of record: Driller's log. Altitude: 800 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Gravel-----	5	35	
Gravel and clay; mixed-----	20	55	
Sand-----	10	65	

Well 38/1W-15J3

Type of record: Driller's log. Altitude: 802 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, stiff, brown, with trace of fine sand and small gravel--	7	7	
Sand, fine to medium, brown, with clay binder-----	20	27	
Sand, fine to coarse, brown, with clay binder-----	5	32	
Sand, medium to coarse, and gravel; brown, with clay binder-----	3	35	

Well 38/1W-15K1

Type of record: Driller's log. Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	30	30	
Sand-----	6	36	
Clay-----	4	40	
Gravel-----	40	80	
Sand-----	25	105	

Well 38/1W-15M1

Type of record: Driller's log. Altitude: 811 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1W-15M1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, brown mixed with gray, with trace of fine sand and small gravel-----	6	8	
Clay, brown and gray, and brown medium sand; thin seams-----	5	13	
Clay, silty, gray, with trace of sand and small gravel-----	15	28	
Sand, fine to coarse, and gravel; brown, with clay binder	5	33	
Sand, very dense, fine to coarse, and gravel; brown, with clay binder-----	12	45	

Well 38/1W-15M2

Type of record: Driller's log.

Altitude: 814 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, silty, yellow and gray, with trace of small gravel----	6	6	
Clay, silty, sandy, yellow, with trace of small gravel-----	2	8	
Clay, soft, silty, sandy, yellow, with trace of small gravel-----	4	12	
Clay, silty, gravelly, yellow----	5	17	
Sand, fine to coarse, gravelly, gray and brown-----	5	22	
Sand, fine to coarse, gravelly, brown, with trace of silt-----	4	26	
Sand, fine to coarse, brown, with trace of small gravel-----	9	35	

Well 38/1W-15R1

Type of record: Driller's log.

Altitude: 798 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill; clay, gravel, and rubbish--	3	3	
Peat, brown-----	6	9	
Silt, organic-----	3	12	
Clay, silty, blue, with some gravel and trace of fine sand--	5	17	
Clay, very stiff, silty, blue, with some fine sand and gravel-	21	38	
Sand, compact, fine to medium brown, with some gravel-----	7	45	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1W-22R1

Type of record: Driller's log.

Altitude: 765 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	6	6	
Sand-----	34	40	Suitable for 15-slot screen.
Sand and soft clay-----	38	78	
Sand, fine-----	8	86	
Sand, fine-----	15	101	Suitable for 10-slot screen.
Sand and gravel-----	7	108	
Sand, very clean-----	3	111	

Well 38/1W-34G4

Type of record: Driller's log.

Altitude: 820 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil, black-----	1	1	
Loam, sandy, dark-----	3	4	
Sand, red-----	1	5	
Sand, coarse, brown, and gravel; dirty-----	19	24	
Gravel, brown, and yellow clay; mixed-----	2	26	
Sand, brown, and gravel; dirty---	59	85	
Sand, fine, gray-----	8	93	
Clay, sticky, blue-----	41	134	
Sand, fine, gray-----	10	144	
Gravel, coarse, and sand-----	5	149	
Clay, blue-----	12	161	
Sand, fine, gray-----	14	175	
Sand and gravel; mixed-----	5	180	
Sand, coarse, and gravel-----	12	192	

Well 38/1W-34M1

Type of record: Driller's log.

Altitude: 815 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Dirt and sand-----	18	18	
Sand, clay, and gravel-----	27	45	
Sand and gravel; brown-----	21	66	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1W-35D1

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand and gravel; yellow-----	39	49	
Sand, gray-----	14	63	
Clay, soft, blue-----	23	86	
Sand, gray, and small gravel-----	8	94	
Gravel-----	1	95	
Gravel-----	17	112	Suitable for 40-slot screen.
Sand-----	4	116	

Well 38/1W-35D2

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Pit-----	15	15	
Sand-----	45	60	
Clay-----	44	104	
Gravel-----	2	106	
Hardpan-----	9	115	
Sand-----	17	132	

Well 38/1W-36D1

Type of record: Driller's log. Altitude: 752 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Clay, sandy-----	16	17	
Sand and gravel-----	13	30	
Clay-----	18	48	
Sand, fine-----	10	58	
Sand and gravel-----	7	65	
Clay-----	7	72	

Well 38/1W-36J1

Type of record: Driller's log. Altitude: 746 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, red-----	10	10	
Sand, red, and gravel-----	8	18	
Sand, red, with little gravel-----	3	21	
Sand, fine to medium, reddish-gray-----	10	31	
Sand, coarse, red, and gravel-----	5	36	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1W-36J1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, gray-----	4	40	
Sand, medium to coarse, gray, with very little gravel-----	1	41	
Clay, runny-----	1	42	Red medium sand at 42 feet.

Well 38/1-7R1

Type of record: Driller's log.

Altitude: 737 feet.

Quaternary system:			
Recent and Pleistocene series:			
Loam, clayey, black-----	1	1	
Clay, fine, sandy, vari-colored--	2	3	
Sand, fine, clayey, with trace of silt-----	1	4	
Sand, fine to medium, and small gravel-----	4	8	
Sand, fine, silty, yellow-----	9	17	
Sand, fine, clayey, gray-----	6	23	
Sand, fine to medium, with some small gravel-----	9	32	
Sand, medium gray, and small to large gravel-----	5	37	
Sand, medium, and small gravel---	7	44	
Sand, coarse, and large gravel; brown-----	1	45	
Sand, very coarse, and small to large gravel; brown-----	2	47	
Sand, coarse, and small to large gravel; brown-----	1	48	

Well 38/1-8N2

Type of record: Driller's log.

Altitude: 738 feet.

Quaternary system:			
Recent and Pleistocene series:			
Loam, sandy, clayey, dark-----	1	1	
Clay, fine, sandy, yellow-----	2	3	
Sand, medium, yellow-----	2	5	
Sand, medium, to coarse, and small to large gravel-----	3	8	
Sand, coarse, and small gravel---	4	12	
Sand, fine, yellow, with some large gravel-----	4	16	
Sand, fine, compact, yellow, and small gravel-----	2	18	
Sand, very fine, gray-----	7	25	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1-8N2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, medium, blue-----	2	27	
Sand, medium, compact-----	1	28	
Sand, medium, with trace of clay-	4	32	
Sand, medium-----	6	38	
Sand, coarse, and small to large gravel-----	2	40	

Well 38/1-13L1

Type of record: Driller's log.

Altitude: 796 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand, fine-----	12	14	
Sand and gravel; muddy-----	30	44	
Sand, fine, muddy-----	11	55	
Clay, sandy-----	13	68	
Clay-----	4	72	
Clay, sandy-----	4	76	
Sand, very fine, muddy-----	8	84	
Sand, muddy, and gravel-----	2	86	
Sand, medium to coarse-----	2	88	
Sand, coarse, and gravel-----	5	93	
Sand, medium to coarse-----	3	96	
Sand, medium-----	4	100	
Sand, fine to medium-----	4	104	
Sand, fine-----	6	110	

Well 38/1-13Q2

Type of record: Driller's log.

Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	20	20	
Clay-----	8	28	
Sand and gravel-----	44	72	

Well 38/1-15E1

Type of record: Driller's log.

Altitude: 739 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Clay, sandy-----	3	4	
Sand, clayey-----	1	5	
Sand, coarse-----	19	24	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1-15E1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse, with shale fragments-----	5	29	
Sand, coarse-----	5	34	
Sand, coarse, with some gravel---	1	35	

Well 38/1-15K2

Type of record: Driller's log. Altitude: 794 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Silt-----	1	2	
Sand, fine-----	10	12	
Gravel-----	2	14	
Sand, fine-----	8	22	

Well 38/1-16A1

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Clay, silty, sandy-----	2	3	
Sand, clayey, with trace of gravel-----	1	4	
Sand, coarse, with trace of clay-	8	12	
Sand, medium-----	2	14	
Sand, coarse-----	21	35	

Well 38/1-16D1

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand, fine to coarse, brown, with some small gravel-----	6	8	
Sand, fine to coarse, brown, and small to medium gravel-----	10	18	
Sand, fine to medium, silty, gray	5	23	
Sand, fine to medium, silty, gray, with some small gravel-----	5	28	
Sand, medium to coarse, gray, and gravel-----	22	50	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1-17A2

Type of record: Driller's log. Altitude: 735 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand, fine to coarse, brown, with clay binder-----	6	8	
Sand, medium to coarse, brown, with some small gravel-----	16	24	
Sand, fine to coarse, silty, brown-----	3	27	
Sand, medium to coarse, silty, gray, and gravel-----	5	32	

Well 38/1-23G1

Type of record: Driller's log. Altitude: 777 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, silty, sandy, gravelly-----	6	6	
Sand, fine to medium, brown-----	7	13	
Silt, inorganic, brown-----	5	18	
Silt, very sandy, inorganic, brown-----	4	22	
Sand, fine to coarse, brown, with clay binder-----	13	35	

Well 38/1-23G4

Type of record: Driller's log. Altitude: 773 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill; clay, loam, gravel, and sand-----	8	8	
Sand, medium to coarse, brown, and small gravel; with clay binder-----	9	17	
Sand, fine, to coarse, brown, with some small gravel-----	11	28	
Sand, fine to medium, silty, brown-----	9	37	
Silt, inorganic, brown-----	9	46	
Sand, fine to coarse, compact, clayey, brown, with some small gravel-----	9	55	

Well 38/1-24E1

Type of record: Driller's log. Altitude: 794 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil, medium, clayey, brown--	5	5	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1-24E1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, soft, silty, sandy, gravelly, brown-----	3	8	
Clay, silty, sandy, gravelly brown-----	4	12	
Sand, medium to coarse, gravelly, brown-----	5	17	
Clay, very soft, silty, sandy, gravelly-----	5	22	
Sand, medium to fine, brown, with pieces of rock-----	7	29	
Sand, fine to coarse, very dense, brown, stratified with layers of silt; trace of small gravel-----	3	32	
Sand, medium to coarse, brown----	6	38	
Sand, fine to coarse, brown with silt layer and trace of small gravel-----	4	42	
Sand, fine to coarse, brown, with trace of small gravel-----	4	46	
Sand, fine to medium, silty, with trace of small gravel-----	6	52	
Sand, fine to coarse, brown, with silt layer-----	4	56	
Sand, fine to medium, silty, with trace of small gravel-----	6	62	
Silt, sandy, stratified with brown coarse sand-----	4	66	
Sand, fine to coarse, brown, with trace of small gravel-----	4	70	
Sand, fine to coarse, gravelly, brown, with trace of silt-----	7	77	
Sand, fine to coarse, brown, with some silt and small gravel-----	7	84	
Silt, blue-----	2	86	
Sand, medium to coarse, gray, with trace of small gravel-----	6	92	
Sand, fine to coarse, gravelly, gray-----	3	95	

Well 38/1-24E2

Type of record: Driller's log.

Altitude: 794 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil, sandy, black-----	5	5	
Clay, sandy, brown-----	3	8	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1-24E2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, silty, sandy, gravelly-----	6	14	
Sand, fine to medium, brown, with some gravel-----	4	18	
Sand, fine to coarse, brown, and gravel; with clay binder-----	4	22	
Sand, fine to coarse, brown, with some small gravel-----	14	36	
Sand, fine to medium, silty, brown-----	4	40	

Well 38/1-26K3

Type of record: Driller's log.		Altitude: 787 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Hardpan, yellow-----	40	40	
Clay, yellow-----	4	44	
Sand and gravel; yellow-----	32	76	

Well 38/1-26L1

Type of record: Driller's log.		Altitude: 785 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Dirt, black-----	3	3	
Sand-----	27	30	
Gravel and sand-----	15	45	
Sand-----	13	58	
Clay-----	5	63	
Sand, coarse, brown-----	5	68	

Well 38/1-35J1

Type of record: Driller's log.		Altitude: 737 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	23	23	
Gravel, dark-----	7	30	
Clay, blue-----	5	35	
Gravel and sand; dark-----	22	57	

Well 38/1-35J2

Type of record: Driller's log.		Altitude: 742 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	39	39	
Clay, yellow-----	3	42	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/1-35J2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system: Recent and Pleistocene series: Sand and gravel; white-----	22	64	

Well 38/1-36M1

Type of record: Driller's log. Altitude: 762 feet.

Quaternary system: Recent and Pleistocene series:			
Gravel-----	48	48	
Sand, yellow-----	7	55	
Hardpan-----	5	60	
Sand and gravel-----	12	72	

Well 38/1-36M2

Type of record: Driller's log. Altitude: 745 feet.

Quaternary system: Recent and Pleistocene series:			
Sand and clay; yellow-----	42	42	
Sand, gray-----	8	50	
Sand and gravel-----	12	62	
Clay, blue-----	3	65	

Well 38/2-8P2

Type of record: Driller's log. Altitude: 800 feet.

Quaternary system: Recent and Pleistocene series:			
Clay, yellow-----	28	28	
Sand and gravel-----	7	35	
Clay, yellow-----	9	44	
Sand and gravel-----	20	64	

Well 38/2-9K1

Type of record: Driller's log. Altitude: 787 feet.

Quaternary system: Recent and Pleistocene series:			
Sand and gravel; yellow-----	35	35	
Clay, blue-----	8	43	
Sand and gravel; white-----	31	74	

Well 38/2-12K2

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

Quaternary system: Recent and Pleistocene series:			
Top soil-----	4	4	
Sand, yellow-----	24	28	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-12K2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse, and gravel; with some yellow clay-----	8	36	
Sand, yellow-----	19	55	
Gravel-----	10	65	
Sand, gray, and gravel-----	20	85	
Sand and gravel; with clay balls-	2	87	

Well 38/2-13F1

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

Quaternary system:			
Recent and Pleistocene series:			
Gravel and sand-----	84	84	
Clay, blue-----	44	128	
Sand and gravel-----	14	142	

Well 38/2-13F2

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	7	7	
Sand and gravel-----	30	37	
Gravel-----	17	54	
Gravel, gray-----	6	60	

Well 38/2-14F1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	14	14	
Clay-----	7	21	
Gravel-----	14	35	
Sand-----	6	41	

Well 38/2-14N1

Type of record: Driller's log. Altitude: 701 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	58	58	
Sand, fine, and clay-----	45	103	
Sand and gravel; gray-----	9	112	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-15H2

Type of record: Driller's log. Altitude: 723 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Clay-----	22	42	
Sand-----	20	62	

Well 38/2-15M1

Type of record: Driller's log. Altitude: 812 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	18	18	
Clay, blue-----	40	58	
Sand and gravel-----	28	86	

Well 38/2-16B2

Type of record: Driller's log. Altitude: 785 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill and loam-----	5	5	
Sand, muddy-----	25	30	
Sand, brown-----	5	35	
Clay, soft-----	30	65	
Sand, gray-----	10	75	
Gravel, gray-----	4	79	
Sand, brown-----	25	104	

Well 38/2-19F1

Type of record: Driller's log. Altitude: 804 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill; gravel, brown, silt and clay-----	2	2	
Top soil, clayey-----	4	6	
Clay, silty, sandy, gravelly, brown, with trace of rock fragments-----	4	10	
Sand, fine to medium, brown, with trace of small gravel, rock fragments, and silt-----	7	17	
Sand, medium to coarse, gravelly, brown-----	3	20	
Gravel, small to medium, with some rock fragments-----	6	26	
Sand, fine to medium, clayey, gravelly, brown-----	8	34	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-19F1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, clayey, silty, gravelly, brown-----	2	36	
Sand, fine to coarse, gray, with trace of small gravel-----	4	40	

Well 38/2-19P1

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

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	3	3	
Sand and gravel-----	37	40	
Sand, fine, dirty-----	10	50	
Sand and gravel; yellow-----	30	80	
Sand, coarse, and gravel-----	46	126	
Sand, gray-----	34	160	

Well 38/2-20L1

Type of record: Driller's log. Altitude: 812 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand and gravel; dirty-----	26	27	
Sand, fine, muddy-----	13	40	
Sand, fine-----	14	54	
Clay, gray-----	38	92	
Clay and gravel-----	22	114	
Sand, fine-----	7	121	
Sand, medium-----	7	128	
Sand, fine, clean-----	2	130	

Well 38/2-22K1

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	60	60	
Clay-----	28	88	
Sand-----	6	94	

Well 38/2-22K2

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

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	20	20	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-22K2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	40	60	
Sand, light-----	20	80	

Well 38/2-22N2

Type of record: Driller's log. Altitude: 773 feet.

Quaternary system:			
Recent and Pleistocene series:			
Loam-----	1	1	
Sand, fine to coarse, silty, brown-----	3	4	
Sand, fine to coarse, brown-----	10	14	
Sand, medium to coarse, brown, with some small gravel-----	15	29	
Sand, compact, fine to medium, silty, brown-----	6	35	

Well 38/2-22P1

Type of record: Driller's log. Altitude: 766 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	5	5	
Clay and brown sand-----	25	30	
Sand, coarse, yellow-----	5	35	
Sand, fine, yellow-----	25	60	
Gravel-----	4	64	
Sand, fine, gray-----	4	68	
Clay, hard, blue-----	4	72	

Well 38/2-22P2

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

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	14	14	
Sand, yellow-----	8	22	
Sand, coarse-----	47	69	
Clay, blue-----	26	95	
Sand-----	2	97	
Clay-----	106	203	
Hardpan and shale-----	21	224	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-22Q3

Type of record: Driller's log.

Altitude: 728 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	12	12	
Sand-----	20	32	
Sand and yellow clay; mixed-----	40	72	
Clay, blue-----	53	125	
Sand-----	5	130	
Gravel-----	6	136	
Sand-----	2	138	

Well 38/2-23F3

Type of record: Driller's log.

Altitude: 698 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Pit-----	11	11	
Sand and gravel-----	24	35	
Sand and coarse gravel-----	21	56	
Sand-----	2	58	
Gravel and sand-----	6	64	
Sand and gravel-----	3	67	

Well 38/2-23F4

Type of record: Driller's log.

Altitude: 698 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	4	4	
Sand and gravel-----	11	15	
Clay, sandy-----	22	37	
Sand and gravel-----	30	67	
Sand, muddy, and gravel-----	33	100	
Gravel and sand-----	45	145	
Sand-----	2	147	

Well 38/2-23G2

Type of record: Driller's log.

Altitude: 700 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	10	10	
Clay, blue-----	24	34	
Sand-----	19	53	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-23G4

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	20	20	
Clay, blue-----	20	40	
Sand and gravel; white-----	14	54	

Well 38/2-24B5

Type of record: Driller's log. Altitude: 731 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	30	30	
Clay, blue-----	5	35	
Sand and gravel; yellow-----	9	44	

Well 38/2-24B7

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	21	21	
Sand-----	7	28	
Clay-----	9	37	
Sand-----	3	40	
Sand, coarse-----	11	51	

Well 38/2-24B9

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	35	35	
Clay, yellow-----	3	38	
Sand and gravel; yellow-----	6	44	

Well 38/2-24J1

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; red-----	19	19	
Clay, blue-----	30	49	
Sand and gravel; gray-----	20	60	Blue clay at 69 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-24K1

Type of record: Driller's log. Altitude: 724 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Clay-----	40	60	
Sand-----	10	70	

Well 38/2-24L3

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, rough-----	36	36	
Clay-----	4	40	
Sand-----	10	50	

Well 38/2-24M1

Type of record: Driller's log. Altitude: 722 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	10	10	
Sand and gravel-----	30	40	
Clay, yellow-----	5	45	
Clay, blue-----	5	50	
Sand, yellow-----	10	60	

Well 38/2-24M2

Type of record: Driller's log. Altitude: 719 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Gravel, sand, and clay-----	10	11	
Sand and gravel; dirty-----	49	60	
Gravel and sand-----	11	71	
Sand, fine-----	2	73	

Well 38/2-24N1

Type of record: Driller's log. Altitude: 719 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, gravel, and boulders-----	31	31	
Clay, soft, yellow-----	3	34	
Sand, fine, muddy-----	15	49	
Clay, soft, yellow-----	5	54	
Sand, fine to medium-----	3	57	
Sand, medium to coarse-----	7	64	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-24N1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, medium to coarse, with some gravel-----	3	67	
Sand, medium to coarse, and gravel-----	10	77	

Well 38/2-24Q2

Type of record: Driller's log. Altitude: 731 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, red-----	10	10	
Sand and gravel; red-----	11	21	
Sand and gravel; gray-----	14	35	
Sand, gray, with stones-----	10	45	
Sand and gravel; gray-----	12	57	
Gravel and sand; red-----	2	59	
Sand, coarse, and gravel-----	11	70	
Sand, fine, dirty-----	4	74	

Well 38/2-25A1

Type of record: Driller's log. Altitude: 731 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	26	26	
Clay, gray-----	13	39	
Sand, gray-----	7	46	

Well 38/2-25A4

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

Quaternary system:			
Recent and Pleistocene series:			
Sand, white-----	14	14	
Gravel, yellow-----	22	36	
Sand, yellow-----	10	46	

Well 38/2-25C3

Type of record: Driller's log. Altitude: 719 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, silty, black-----	1	1	
Clay, brown, with gravel-----	4	5	
Silt, clayey, gravelly, light- brown-----	4	9	
Silt, clayey, gray-----	5	14	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-25C3--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, very tough, blue-----	3	18	
Sand, medium, light-brown-----	2	20	
Sand, medium, gray and brown-----	4	24	
Sand, medium, gray, with trace of gravel-----	5	29	
Sand, medium, gray-----	5	34	
Sand, medium, silty, gray-----	5	39	
Sand, medium, gray-----	5	44	
Sand, gray, with gravel-----	5	49	
Clay, very tough, blue-----	6	55	
Silt, clayey, gray-----	1	56	

Well 38/2-25D1

Type of record: Driller's log.

Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Pit-----	7	7	
Sand, very fine-----	13	20	
Sand-----	19	39	
Sand and gravel-----	7	46	

Well 38/2-25D5

Type of record: Driller's log.

Altitude: 716 feet.

Quaternary system:			
Recent and Pleistocene series:			
Silt-----	1	1	
Clay, soft, brown, with sand, gravel, and trace of silt-----	2	3	
Sand, medium, light-brown, and gravel, with brown clay and silt-----	3	6	
Sand, fine, brown-----	3	9	
Sand, medium to coarse, light-brown, with trace of gravel-----	15	24	
Sand, fine, brown, with gravel---	10	34	
Gravel, fine, silty, sandy-----	5	39	
Gravel, fine, silty, sandy, light-brown-----	6	45	
Sand, medium, silty, gravelly, light-brown-----	3	48	
Gravel, coarse, silty, sandy-----	2	50	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-25D10

Type of record: Driller's log.

Altitude: 721 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt, black-----	1	1	
Sand, clayey, silty, gravelly, brown-----	4	5	
Sand, medium, gravelly, brown----	5	10	
Sand, fine, silty, dark-brown----	3	13	
Clay, very tough, blue-----	2	15	
Silt, dense, gray-----	2	17	
Clay, very tough, blue-----	1	18	
Sand, medium, light-brown-----	4	22	
Silt, clayey, gray-----	3	25	
Sand, fine, silty, gray and brown-----	3	28	
Sand, medium, silty, gray, with trace of gravel-----	6	34	
Sand, medium, silty, gray-----	5	39	
Sand, medium, silty, gray, with trace of gravel-----	4	43	
Sand, medium, silty, gray, into gray sandy fine silt-----	7	50	
Sand, medium, silty, gray-----	1	51	
Clay, very tough, silty, blue----	3	54	

Well 38/2-25E4

Type of record: Driller's log.

Altitude: 730 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Sand and gravel-----	39	49	
Sand-----	14	63	
Clay-----	17	80	
Pack sand-----	47	127	
Sand-----	5	132	
Gravel-----	22	154	

Well 38/2-25F2

Type of record: Driller's log.

Altitude: 717 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	22	22	
Gravel-----	16	38	
Sand-----	24	62	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-25F6

Type of record: Driller's log. Altitude: 723 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	38	38	
Clay, blue-----	2	40	
Sand-----	6	46	

Well 38/2-25G2

Type of record: Driller's log. Altitude: 712 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt-----	1	1	
Gravel, medium, sandy, yellow and brown-----	5	6	
Sand, fine, silty, yellow and brown-----	4	10	
Sand, medium, silty, yellow and brown-----	5	15	
Sand, medium, silty, brown-----	5	20	
Sand, medium, gray-----	2	22	

Well 38/2-25G3

Type of record: Driller's log. Altitude: 716 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt-----	1	1	
Record missing-----	4	5	
Silt, medium to coarse, gray-----	4	9	
Sand, medium, silty, gray-----	5	14	
Sand, fine, silty, gray-----	6	20	

Well 38/2-25H1

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

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	36	36	
Clay, blue-----	12	48	
Sand-----	8	56	

Well 38/2-25H2

Type of record: Driller's log. Altitude: 722 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt-----	1	1	
Sand, silty, gravelly, brown-----	3	4	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-25H2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, medium to coarse, yellow and brown, with trace of gravel-----	5	9	
Sand, coarse, brown, and medium gravel-----	3	12	
Gravel, medium to coarse, sandy--	8	20	
Gravel, coarse, sandy, brown-----	5	25	
Gravel, medium to coarse, sandy--	7	32	
Sand, medium to coarse, gray with trace of gravel-----	3	35	
Sand, medium to coarse, gray-----	2	37	

Well 38/2-25R1

Type of record: Driller's log.

Altitude: 729 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	5	5	
Clay-----	15	20	
Sand, fine, brown-----	38	58	
Sand and gravel-----	6	64	
Clay-----	39	103	
Sand, fine, gray-----	26	129	
Sand-----	7	136	
Sand, coarse, and gravel-----	11	147	

Well 38/2-26A1

Type of record: Driller's log.

Altitude: 718 feet.

Quaternary system:			
Recent and Pleistocene series:			
Silt, reddish-brown, sand, and gravel; with trace of clay-----	2	2	
Sand, medium, light-brown, and coarse gravel; with small chunks of clay-----	8	10	
Sand, medium, light-brown, and fine gravel; with trace of clay-----	3	13	
Sand, medium, light-brown-----	5	18	
Sand, fine, light-brown-----	2	20	
Sand, fine to medium, light- brown-----	8	28	
Sand, medium to coarse, light- brown, with trace of gravel and chunks of clay-----	2	30	
Sand, medium to coarse, light- brown, with trace of gravel-----	10	40	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-26A1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, medium, light-brown-----	5	45	
Sand, coarse, gravelly, brown----	12	57	

Well 38/2-26A5

Type of record: Driller's log. Altitude: 710 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	6	6	
Clay, sandy, red, and gravel-----	4	10	
Sand, light-brown, and gravel----	9	19	
Sand, fine, clean-----	36	55	
Sand and gravel; gray-----	13	68	

Well 38/2-26C2

Type of record: Driller's log. Altitude: 659 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, silty, with trace of fine gravel, and organic matter-----	4	4	
Gravel, fine to medium, sandy, brown, with trace of silt-----	3	7	
Gravel, sandy-----	3	10	
Gravel, fine to medium, sandy, brown, with trace of silt and clay-----	1	11	
Clay-----	2	13	
Gravel, coarse-----	2	15	
Gravel, fine to medium, silty, gray, with trace of sand-----	3	18	
Sand, fine, silty-----	2	20	
Sand, fine, silty, gray-----	31	51	

Well 38/2-26C4

Type of record: Driller's log. Altitude: 653 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, gravelly, gray, with trace of silt-----	4	4	
Sand, gray, with trace of silt and gravel-----	3	7	
Sand, fine, silty, gray-----	7	14	
Silt, clayey, gray, with trace of fine sand-----	2	16	
Sand, fine, silty, gray-----	34	50	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-26C7

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, silty, sandy-----	4	4	
Sand, coarse, and gravel; with trace of clay and rock fragments-----	13	17	
Sand, fine to medium, compact----	8	25	

Well 38/2-26D1

Type of record: Driller's log. Altitude: 678 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	46	46	
Clay and gravel-----	4	50	
Sand and gravel-----	29	79	
Sand and gravel; muddy-----	1	80	

Well 38/2-26D3

Type of record: Driller's log. Altitude: 676 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse, and gravel-----	4	4	
Sand, silty, with some gravel and rock fragments-----	1	5	
Sand, fine to medium-----	2	7	
Sand, coarse, with some gravel and trace of clay-----	4	11	
Sand, coarse, with some gravel---	3	14	
Sand, coarse, and gravel; with trace of clay-----	16	30	
Sand, coarse, and gravel with shale fragments-----	7	37	

Well 38/2-26M1

Type of record: Driller's log. Altitude: 672 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, light-----	12	12	
Clay, blue-----	8	20	
Gravel-----	15	35	
Sand-----	11	46	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-26M3

Type of record: Driller's log. Altitude: 678 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, muddy, brown-----	12	12	
Sand and gravel; muddy-----	15	27	
Gravel and sand; clean-----	22	49	
Sand, clean, brown-----	11	60	
Sand and gravel; clean, brown---	45	105	
Sand and gravel-----	12	117	
Sand and gravel; muddy-----	9	126	
Sand, fine, muddy-----	14	140	
Mississippian system:			
Lower Mississippian series:			
Shale, green-----	4	144	

Well 38/2-26M4

Type of record: Driller's log. Altitude: 678 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, muddy-----	14	14	
Sand and gravel-----	24	38	
Sand, coarse-----	28	66	
Sand and gravel-----	5	71	
Clay, sandy-----	1	72	
Gravel and sandy clay-----	13	85	
Sand and gravel-----	39	124	
Sand, fine, muddy-----	10	134	
Sand, muddy, dark-----	4	138	

Well 38/2-26R1

Type of record: Driller's log. Altitude: 723 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	40	40	
Sand and clay; yellow-----	23	63	
Clay-----	4	67	
Hardpan-----	17	84	
Clay-----	3	87	
Clay and sand-----	31	118	
Gravel-----	33	151	

Well 38/2-27C4

Type of record: Driller's log. Altitude: 759 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, silty, sandy, gravelly-----	3	3	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-27C4--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; medium to coarse, brown, with clay binder-----	5	8	
Sand, fine to medium, silty, brown-----	10	18	
Sand and gravel; medium to coarse brown, with clay binder-----	16	34	
Sand, fine to medium, silty, brown, with some small gravel--	1	35	

Well 38/2-27D3

Type of record: Driller's log.

Altitude: 774 feet.

Quaternary system:			
Recent and Pleistocene series:			
Loam, black-----	2	2	
Sand, fine to medium, silty, brown-----	4	6	
Sand, medium to coarse, and gravel; brown-----	6	12	
Sand, medium to coarse, silty, brown, with small to large gravel-----	1	13	
Sand, coarse, brown, with small to large gravel-----	3	16	
Sand, medium to coarse, brown, and small to large gravel; with some silt-----	8	24	
Sand, medium to coarse, silty, brown, with some small gravel--	4	28	
Sand, fine to medium, brown, with some silt-----	6	34	
Sand, fine to medium, brown, with small gravel-----	5	39	
Sand, medium, brown, with some silt-----	5	44	
Sand, medium to coarse, silty brown, and small gravel-----	6	50	

Well 38/2-27F1

Type of record: Driller's log.

Altitude: 748 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil-----	2	2	
Sand and gravel-----	2	4	
Sand-----	24	28	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-27F1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	10	38	
Clay-----	3	41	
Sand and gravel-----	3	44	
Clay-----	17	61	
Sand and gravel-----	14	75	
Sand, fine-----	10	85	

Well 38/2-27J1

Type of record: Driller's log.

Altitude: 678 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, muddy-----	10	10	
Sand and gravel-----	31	41	
Clay, gray-----	1	42	
Sand, gray-----	4	46	
Clay, sandy-----	2	48	
Sand, brown-----	3	51	
Sand, muddy, and clay-----	7	58	
Sand, silty, muddy-----	10	68	
Sand, brown-----	10	78	
Sand and gravel; brown-----	47	125	
Sand and gravel; some coarse-----	13	138	Clay and boulders at 138 feet.

Well 38/2-29L1

Type of record: Driller's log.

Altitude: 797 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	38	38	
Clay and gravel; mixed-----	38	76	
Gravel, blue-----	24	100	

Well 38/2-30N1

Type of record: Driller's log.

Altitude: 795 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	50	50	
Clay, gray and yellow-----	2	52	
Sand and gravel; yellow-----	28	80	
Sand, yellow-----	7	87	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-30N2

Type of record: Driller's log. Altitude: 791 feet.

Material	Thick ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, coarse, yellow-----	63	63	
Clay, yellow-----	2	65	
Sand and gravel; mixed-----	30	95	

Well 38/2-31H2

Type of record: Driller's log. Altitude: 805 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	30	30	
Clay, yellow-----	10	40	
Sand-----	30	70	
Gravel, coarse-----	36	106	

Well 38/2-32J1

Type of record: Driller's log. Altitude: 757 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, red-----	2	2	
Sand, medium, yellow-----	18	20	
Sand, fine, yellow-----	6	26	
Sand, coarse, yellow-----	4	30	
Sand, very fine, yellow-----	10	40	
Sand, coarse, yellow-----	10	50	
Gravel, very coarse-----	6	56	
Sand, coarse, brown-----	11	67	
Gravel, coarse-----	13	80	

Well 38/2-32M2

Type of record: Driller's log. Altitude: 749 feet.

Quaternary system:			
Recent and Pleistocene series:			
Record missing-----	5	5	
Sand, dirty, yellow-----	55	60	
Clay, blue-----	45	105	
Clay, sandy-----	11	116	
Sand, fine, gray-----	20	136	

Well 38/2-33M1

Type of record: Driller's log. Altitude: 764 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, muddy-----	13	13	
Sand-----	14	27	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-33M1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, soft-----	2	29	
Sand and gravel-----	2	31	
Sand and gravel; muddy-----	5	36	
Sand and gravel-----	28	64	
Gravel, yellow-----	4	68	
Gravel, gray-----	4	72	
Gravel, yellow-----	6	78	
Sand and gravel; gray-----	6	84	
Gravel, coarse, with some sand---	16	100	
Sand, fine-----	2	102	
Sand and gravel-----	8	110	
Clay-----	5	115	

Well 38/2-34A1

Type of record: Driller's log.

Altitude: 703 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand-----	2	4	
Gravel-----	7	11	
Sand-----	2	13	
Sand, gravel, and yellow clay---	11	24	
Sand, fine, and yellow clay----	14	38	
Sand and yellow clay-----	9	47	
Sand, fine, and yellow clay----	31	78	
Sand, fine, dirty-----	15	93	
Clay, yellow-----	3	96	
Clay balls and gravel-----	1	97	
Sand, fine, and rice to pea-sized gravel-----	2	99	
Sand, medium-----	3	102	
Sand, coarse, red-----	7	109	

Well 38/2-34L1

Type of record: Driller's log.

Altitude: 742 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	40	40	
Hardpan-----	5	45	
Sand-----	19	64	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-35B7

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	9	9	
Boulders-----	6	15	
Clay-----	11	26	
Clay, sandy-----	14	40	
Pack sand-----	27	67	
Sand-----	3	70	
Sand and gravel-----	7	77	
Gravel-----	27	104	

Well 38/2-35B8

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill; ashes-----	5	5	
Sand with very little gravel-----	15	20	
Gravel, dirty-----	7	27	
Clay, gravelly-----	5	32	
Sand and gravel-----	6	38	
Gravel, coarse-----	3	41	
Sand, fine, dirty-----	36	77	
Gravel-----	27	104	Coarse sand at 104 feet.

Well 38/2-35B9

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	10	10	
Clay, blue-----	20	30	
Quicksand-----	50	80	
Gravel-----	20	100	
Sand-----	7	107	
Gravel-----	8	115	
Clay, blue-----	4	119	
Sand and gravel-----	4	123	

Well 38/2-35J1

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, yellow-----	21	21	
Clay, blue-----	37	58	
Sand, dark-----	16	74	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-35K1

Type of record: Driller's log.

Altitude: 676 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	8	8	
Clay-----	11	19	
Quicksand-----	1	20	
Clay-----	9	29	
Quicksand-----	6	35	
Clay-----	6	41	
Quicksand-----	11	52	
Clay-----	12	64	
Sand, fine-----	13	77	
Sand, coarse, and gravel-----	45	122	
Quicksand-----	5	127	
Gravel-----	19	146	Shale at 146 feet.

Well 38/2-35N2

Type of record: Driller's log.

Altitude: 698 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	3	3	
Sand and gravel-----	28	31	
Clay, blue-----	50	81	
Sand, fine-----	13	94	
Sand, coarse-----	10	104	
Sand, coarse, and gravel-----	11	115	
Sand, coarse-----	15	130	
Sand and gravel-----	24	154	Blue shale at 154 feet.

Well 38/2-35P2

Type of record: Driller's log.

Altitude: 680 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	8	8	
Sand and gravel; brown-----	2	10	
Clay-----	50	60	
Sand, fine, gray-----	20	80	
Sand, coarse, gray-----	5	85	
Gravel, coarse-----	20	105	
Sand, coarse, and gravel-----	15	120	
Sand, fine-----	8	128	
Sand, coarse, and gravel-----	7	135	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-35P4

Type of record: Driller's log.

Altitude: 680 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	7	7	
Clay-----	13	20	
Quicksand-----	10	30	
Clay-----	16	46	
Sand-----	39	85	
Gravel, coarse-----	22	107	
Sand-----	3	110	
Gravel-----	22	132	
Sand, coarse, and gravel-----	14	146	
Mississippian system:			
Lower Mississippian series:			
Shale-----	1	147	

Well 38/2-35Q1

Type of record: Driller's log.

Altitude: 680 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	12	12	
Gravel, coarse-----	3	15	
Clay-----	65	80	
Clay, sandy-----	7	87	
Gravel-----	33	120	

Well 38/2-36H1

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Clay, blue-----	20	40	
Sand, light, and quicksand-----	103	143	
Sand, medium, and gravel-----	8	151	

Well 38/2-37H2

Type of record: Driller's log.

Altitude: 730 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	35	35	
Sand, yellow-----	23	58	
Sand, fine, and silt-----	70	128	
Sand, fine, and clay-----	18	146	
Sand, fine-----	19	165	
Sand, fine, with some gravel-----	5	170	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-36K2

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	8	8	
Clay, blue-----	30	38	
Sand, fine-----	6	44	
Sand, red-----	16	60	
Sand-----	19	79	
Clay-----	16	95	
Clay and pack sand-----	15	110	
Sand, very fine-----	13	123	
Gravel and sand-----	34	157	

Well 38/2-36K3

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	6	6	
Sand-----	4	10	
Gravel-----	30	40	
Sand, gray-----	8	48	
Clay, hard-----	32	80	
Clay, soft-----	5	85	
Clay, sandy-----	29	114	
Sand, dirty-----	19	133	
Gravel-----	51	184	Sand at 184 feet.

Well 38/3-14J1

Type of record: Driller's log. Altitude: 794 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	4	4	
Sand, yellow-----	11	15	
Sand and gravel; yellow-----	15	30	
Sand, yellow-----	20	50	
Sand, coarse, yellow-----	10	60	
Sand, gray-----	23	83	

Well 38/3-17K1

Type of record: Driller's log. Altitude: 816 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	18	18	
Clay-----	18	36	
Sand-----	56	92	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-20J1

Type of record: Driller's log.

Altitude: 811 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	4	4	
Gravel-----	46	50	
Clay-----	6	56	
Gravel and coarse sand-----	39	95	

Well 38/3-21Q4

Type of record: Driller's log.

Altitude: 783 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, sandy, dirty-----	30	30	
Gravel and sand-----	4	34	
Sand, coarse, with small gravel--	34	68	
Gravel with coarse sand; clean---	14	82	
Gravel and sand; with traces of clay-----	1	83	

Well 38/3-21R1

Type of record: Driller's log.

Altitude: 787 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	30	30	
Sand, fine-----	15	45	
Sand-----	13	58	

Well 38/3-24F5

Type of record: Driller's log.

Altitude: 787 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and silt-----	2	2	
Sand, fine, red and brown, with trace of gravel and silt-----	8	10	
Silt, brown, with trace of clay--	1	11	
Sand, medium, light-brown, with trace of coarse sand and gravel-----	18	29	
Sand, medium to coarse, light- brown, with trace of gravel----	3	32	
Sand, medium, light-brown, with trace of gravel-----	10	42	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-26D3

Type of record: Driller's log.

Altitude: 786 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Silt, sand, and gravel; red and brown-----	2	4	
Sand, fine, light-brown-----	20	24	
Sand, medium, light-brown, with trace of gravel-----	4	28	
Sand, medium to coarse, light- brown, with trace of silt and gravel-----	3	31	
Sand, fine to medium, light- brown-----	10	41	

Well 38/3-27G1

Type of record: Driller's log.

Altitude: 764 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Silt, sand, and gravel-----	3	5	
Sand, medium, light-brown-----	20	25	
Sand, medium, light-brown, with trace of gravel-----	13	38	
Sand, coarse, light-brown, with trace of gravel-----	7	45	
Sand, medium, light-brown, with trace of silt-----	9	54	
Sand, medium, light-brown, with trace of gravel-----	2	56	

Well 38/3-27G4

Type of record: Driller's log.

Altitude: 762 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Silt, clayey, gravelly, red and brown-----	2	4	
Sand, medium, clayey, silty, dark-reddish-brown-----	4	8	
Sand, medium, light-brown, with trace of silt-----	17	25	
Sand, coarse, and gravel; light- brown-----	3	28	
Sand, medium, light-brown-----	5	33	
Sand, coarse, and gravel; light-brown-----	7	40	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-27M1

Type of record: Driller's log. Altitude: 752 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, fine, silt, light-brown----	5	7	
Sand, fine, silty, gray, with trace of fine gravel-----	5	12	
Sand, coarse, gray, with gravel--	6	18	
Gravel, loose, silty, sandy, gray-----	2	20	

Well 38/3-28B1

Type of record: Driller's log. Altitude: 777 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Till and sand-----	55	55	
Sand, fine, and gravel-----	31	86	
Clay-----	13	99	
Sand and gravel-----	20	119	

Well 38/3-28K2

Type of record: Driller's log. Altitude: 763 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Clay, silt, sand, and gravel----	4	6	
Sand, medium, silty, gravelly, brown-----	2	8	
Sand, fine, light-brown, with trace of gravel-----	12	20	
Sand, medium, light-brown-----	10	30	
Sand, fine, light-brown-----	4	34	
Sand, coarse, gravelly, light- brown-----	9	43	

Well 38/3-28L2

Type of record: Driller's log. Altitude: 764 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, brown, silt, and gravel----	2	4	
Sand, medium, light-brown, with trace of gravel-----	11	15	
Sand, fine, light-brown-----	4	19	
Sand, medium, light-brown, with trace of gravel-----	19	38	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-28L2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse, light-brown, with trace of gravel-----	5	43	
Sand, coarse, gravelly, light- brown-----	7	50	

Well 38/3-28M1

Type of record: Driller's log. Altitude: 764 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; loose sand and silt----	2	2	
Sand, fine, reddish-brown-----	4	6	
Sand, coarse, gray and brown, with trace of gravel-----	3	9	
Sand, medium, gray and brown, with trace of gravel-----	9	18	
Gravel, medium, sandy-----	3	21	
Sand, medium, light-brown-----	10	31	
Sand, coarse, light-brown, with trace of gravel-----	5	36	
Sand, coarse, brown, with trace of gravel and silt-----	16	52	

Well 38/3-28M4

Type of record: Driller's log. Altitude: 762 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, fine, reddish-brown, with trace of gravel-----	3	5	
Sand, medium, light-brown, with trace of gravel-----	10	15	
Sand, medium, gravelly, light- brown, with trace of silt-----	5	20	
Sand, medium, light-brown-----	3	23	
Sand, medium, light-brown, with trace of gravel and silt-----	4	27	
Sand, medium, light-brown, with trace of fine gravel-----	8	35	
Sand, coarse, brown, with trace of gravel-----	5	40	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-28N1

Type of record: Driller's log. Altitude: 752 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	14	14	
Sand and gravel-----	28	42	
Sand, coarse, and gravel-----	10	52	

Well 38/3-29D1

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	24	24	
Clay, yellow-----	6	30	
Sand and gravel; yellow-----	65	95	

Well 38/3-29J4

Type of record: Driller's log. Altitude: 745 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil, medium, silty-----	2	2	
Gravel, silty-----	1	3	
Sand, medium, dark-brown, with trace of fine gravel-----	5	8	
Sand, fine, light-brown-----	12	20	

Well 38/3-29M1

Type of record: Driller's log. Altitude: 764 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	3	3	
Gravel, silty, sandy-----	1	4	
Sand, medium, silty, brown-----	5	9	
Sand, medium, silty, reddish- brown-----	4	13	
Sand, medium, silty, reddish- brown, with trace of gravel----	1	14	
Sand, medium, silty, dark-brown--	5	19	
Sand, medium, silty, dark-brown, with trace of gravel-----	5	24	
Sand, medium to coarse, light- brown, with trace of gravel----	7	31	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-30E2

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

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt-----	1	1	
Gravel, clayey, sandy-----	3	4	
Sand, medium to coarse, silty, light-brown-----	11	15	
Sand, medium to coarse, silty, yellow-----	2	17	
Sand, coarse, gray, with trace of gravel-----	1	18	
Gravel, sandy, with small boulders-----	1	19	
Gravel, coarse, with small boulders and sand-----	13	32	
Sand, medium, gray-----	3	35	
Sand, medium to coarse, gray, with trace of gravel-----	5	40	
Sand, coarse, gray, with trace of gravel-----	5	45	
Sand, medium to coarse, gray-----	13	58	
Sand, medium to coarse, gray, with trace of gravel-----	2	60	

Well 38/3-30F1

Type of record: Driller's log. Altitude: 719 feet.

Quaternary system:			
Recent and Pleistocene series:			
Silt, black-----	2	2	
Sand, fine, silty, yellow and brown-----	6	8	
Sand, fine, light-brown-----	12	20	

Well 38/3-30J2

Type of record: Driller's log. Altitude: 765 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, fine, reddish-brown, with trace of gravel-----	3	5	
Sand, fine, brown, with trace of gravel-----	4	9	
Sand, light-brown-----	10	19	
Sand, light-brown, with trace of gravel-----	20	39	
Sand, fine, light-brown-----	6	45	
Sand, coarse, gravelly, light- brown-----	1	46	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-30M1

Type of record: Driller's log.

Altitude: 726 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	16	16	
Sand, fine, yellow-----	14	30	
Clay, yellow-----	6	36	
Sand, yellow-----	7	43	

Well 38/3-30R1

Type of record: Driller's log.

Altitude: 755 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	54	54	
Clay-----	96	150	
Gravel-----	13	163	

Well 38/3-31B2

Type of record: Driller's log.

Altitude: 740 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	31	31	
Clay, blue-----	14	45	
Sand-----	5	50	

Well 38/3-31D1

Type of record: Driller's log.

Altitude: 730 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	3	3	
Sand and gravel-----	22	25	
Sand and gravel; with strips of hardpan-----	20	45	
Sand and gravel; with traces of clay-----	10	55	
Sand-----	7	62	
Clay-----	33	95	
Clay with strips of sand-----	20	115	
Sand with strips of clay-----	9	124	
Sand-----	16	140	
Sand with gravel-----	47	187	Boulders with clay at 187 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-31D2

Type of record: Driller's log.

Altitude: 730 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, gravelly-----	4	4	
Sand and gravel-----	24	28	
Clay, hard-----	2	30	
Sand and gravel-----	31	61	
Clay, soft, gray-----	29	90	
Sand and gravel; with some small strips of clay-----	48	138	
Clay, gravelly, with some boulders-----	5	143	
Sand, medium to coarse, with some small gravel-----	44	187	Gray clay at 187 feet.

Well 38/3-31E1

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, with occasional boulders-----	15	15	
Boulders and fine gravel-----	4	19	
Clay, sandy-----	17	36	
Boulders-----	1	37	
Sand, fine, and gravel; with some clay-----	9	46	
Sand, fine, with little clay-----	12	58	
Gravel and boulders-----	1	59	
Sand, fine-----	75	134	
Sand, coarse-----	10	144	
Sand and gravel-----	29	173	
Sand, gravel, and clay balls, with few boulders-----	16	189	
Clay, gritty, gray, with some boulders-----	3	192	
Boulders-----	2	194	
Clay, gritty, blue, with some boulders-----	56	250	Blue shale at 250 feet.

Well 38/3-31E2

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil-----	2	2	
Sand and gravel-----	14	16	
Clay-----	112	128	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-31E2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	2	130	
Sand and gravel-----	50	180	Clay at 180 feet.

Well 38/3-31F1

Type of record: Driller's log.		Altitude: 733 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	40	40	
Hardpan; blue clay and gravel----	10	50	
Sand, white-----	11	61	

Well 38/3-31F4

Type of record: Driller's log.		Altitude: 734 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	17	17	
Clay-----	29	46	
Sand-----	11	57	

Well 38/3-31G1

Type of record: Driller's log.		Altitude: 741 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	18	18	
Sand-----	17	35	
Clay-----	13	48	

Well 38/3-31H1

Type of record: Driller's log.		Altitude: 742 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	20	20	
Sand-----	20	40	
Clay-----	5	45	
Sand-----	7	52	

Well 38/3-31M1

Type of record: Driller's log.		Altitude: 737 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	5	5	
Gravel-----	16	21	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-31M1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	20	41	
Sand, fine-----	7	48	
Sand-----	17	65	
Clay and clayey sand-----	42	107	
Sand-----	2	109	
Sand, dirty-----	20	129	
Sand-----	14	143	
Sand, coarse-----	10	153	
Gravel-----	14	167	
Sand and gravel-----	5	172	
Gravel-----	28	200	Blue shale at 200 feet.

Well 38/3-31R1

Type of record: Driller's log.

Altitude: 749 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	36	36	
Clay, blue-----	4	40	
Sand-----	2	42	
Clay, yellow-----	2	44	
Sand-----	7	51	

Well 38/3-32L3

Type of record: Driller's log.

Altitude: 750 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	10	10	
Clay, yellow-----	5	15	
Gravel and sand-----	25	40	

Well 38/3-36M1

Type of record: Driller's log.

Altitude: 756 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Sand mixed with clay-----	8	28	
Sand and gravel-----	18	46	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-18C1

Type of record: Driller's log.

Altitude: 807 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, muddy-----	7	8	
Sand, medium, clean-----	42	50	
Sand, fine-----	8	58	
Sand, medium-----	20	78	
Sand, coarse, with some clay-----	2	80	

Well 38/4-19F1

Type of record: Driller's log.

Altitude: 789 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, yellowish- brown-----	4	4	
Sand, fine to medium, silty, brown-----	4	8	
Sand, fine, yellowish-brown, with trace of silt-----	8	16	
Sand, fine to medium, light- brown-----	6	22	
Sand, fine to coarse, light- brown-----	19	41	
Sand, fine to coarse, gravelly, gray, with trace of silt-----	1	42	

Well 38/4-20B1

Type of record: Driller's log.

Altitude: 777 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	144	144	
Gravel-----	2	146	
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Shale-----	6	152	
Shale, green-----	28	180	
Shale, sandy, green-----	220	400	
Shale, dark-----	100	500	
Shale, hard, dark-----	48	548	
Shale, gray-----	6	554	
Middle Devonian series:			
Lime with shells-----	14	568	
Lime with shells and shale-----	19	587	
Lime, brown-----	11	598	
Lime, dark-gray-----	13	611	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-20B1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian and Devonian systems: Lower Mississippian and Upper Devonian series:			
Lime, light-gray-----	8	619	
Lime, light-brown-----	8	627	
Lime, light-gray-----	15	642	

Well 38/4-20E1

Type of record: Driller's log. Altitude: 774 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and silt; with trace of clay-----	2	2	
Sand, medium, silty, gray-----	16	18	
Sand, fine, gray-----	4	22	

Well 38/4-20J1

Type of record: Driller's log. Altitude: 774 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, silty, dark-brown, with trace of gravel-----	2	2	
Sand, silty, gravelly, grayish- brown-----	2	4	
Sand, fine to coarse, brown, with trace of silt-----	2	6	
Sand, fine to medium, brown, with trace of silt-----	3	9	
Sand, fine to medium, yellow and brown, with trace of silt and organic matter-----	4	13	
Sand, medium, gravelly, gray and brown-----	6	19	
Sand, fine to medium, gray and brown-----	4	23	
Sand, fine, gray and brown-----	5	28	
Sand, medium to coarse, silty, gravelly, gray-----	14	42	

Well 38/4-21J1

Type of record: Driller's log. Altitude: 777 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	9	9	
Sand, yellow, with some gravel---	26	35	
Sand, gray-----	24	59	
Sand, coarse, gray, and gravel---	14	73	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-21J2

Type of record: Driller's log.

Altitude: 776 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, silty, dark-brown-----	1	1	
Sand, medium, gravelly, red and brown-----	6	7	
Sand, medium, yellow and brown, with trace of gravel and silt--	8	15	
Sand, medium, yellow and brown, with trace of silt-----	4	19	
Sand, fine to coarse, yellow and brown-----	13	32	
Sand, medium to coarse, gravelly, brown-----	3	35	
Gravel, fine to medium, sandy----	5	40	
Sand, medium to coarse, gravelly-	2	42	

Well 38/4-21M1

Type of record: Driller's log.

Altitude: 774 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, silty, dark-brown----	2	2	
Sand, fine, yellow and brown, with trace of silt-----	2	4	
Sand, fine to medium, yellow and brown, with trace of silt-----	2	6	
Sand, fine, yellow and brown, with trace of silt-----	2	8	
Sand, medium, yellow and brown---	4	12	
Sand, fine to medium, gravelly, light-brown-----	7	19	
Sand, medium to coarse, light-brown-----	7	26	
Sand, silty, gray, and fine to medium gravel-----	2	28	
Sand, fine to coarse, silty, gravelly-----	4	32	

Well 38/4-31P1

Type of record: Driller's log.

Altitude: 758 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	5	5	
Sand-----	25	30	
Sand and gravel-----	10	40	
Gravel-----	4	44	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-33E1

Type of record: Driller's log.

Altitude: 765 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Drift-----	127	127	
Mud, gray-----	48	175	
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Lime, gray-----	10	185	
Shale, gray-----	38	223	
Lime, dense-----	19	242	
Shale, green-----	33	275	
Shale and shells-----	17	292	
Shale, green-----	38	330	
Shale, green, and shells-----	52	382	
Shale, light-brown-----	29	411	
Shale, gray-----	3	414	
Shale, dark-brown-----	74	488	
Shale, gray-----	4	492	
Devonian system:			
Middle Devonian series:			
Lime, brown-----	12	504	
Lime, gray-----	12	516	
Gypsum, white-----	3	519	
Limestone-----	4	523	

Well 38/4-33E2

Type of record: Driller's log.

Altitude: 764 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	89	89	
Mud and sand-----	61	150	
Sand and gravel-----	65	215	
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Shale, gray-----	85	300	
Shale, green-----	15	315	
Lime and shale-----	27	342	
Shale, green and brown-----	58	400	
Shale, light-brown-----	45	445	
Shale(?), dark-brown-----	55	500	
Devonian system:			
Middle Devonian series:			
Lime and shale-----	37	537	
Lime, hard-----	13	550	
Lime, blue-----	10	560	
Lime, white-----	18	578	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-33E2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Devonian system:			
Middle Devonian series:			
Lime, brown and gray-----	12	590	
Lime, light-brown-----	26	616	
Lime(?), hard, light-brown-----	19	635	
Lime, light-brown-----	65	700	

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana (Results in parts per million. Analyses by U. S. Geological Survey, except where otherwise noted.)

Well: See text for description of well-numbering system.

Material: G, gravel; Sd, sand.

Geologic age: P1, Pleistocene.

Iron (Fe): U. S. Public Health Service drinking-water standards - 0.3 parts per million for iron and manganese together.

Sulfate (SO₄): U. S. Public Health Service drinking-water standards - 250 parts per million.

Chloride (Cl): U. S. Public Health Service drinking-water standards - 250 parts per million.

Remarks: ECI, analysis by Emerson-Constock, Inc.; GFC, analysis by General Filter Co.; ICI, analysis by Industrial Chemicals, Inc.; ISBH, analysis by Indiana State Board of Health; LN, analysis by Layne-Northern Co., Inc.; NALCO, analysis by National Aluminate Corp.; PCC, analysis by Pepsi-Cola Bottling Co.;

TDS, total dissolved solids; So, analysis of softened water; U, analyst unknown; WHB, analysis by W. H. Betz Co.

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
35/1W-1R1	Sd,G	P1	1-12-60	--	0.1	10	176	60	4	196	
13G1	Sd,G	P1	1-14-60	--	.5	14	185	35	8	188	
13H1	Sd,G	P1	8-20-58	58	1.3	0	224	---	8	184	
13H1	Sd,G	P1	1-14-60	--	1.5	0	178	15	28	176	
13K1	Sd,G	P1	1-14-60	56	.5	24	298	5	8	244	
35H1	Sd,G	P1	8-20-58	58	.8	0	317	---	6	212	
35/1-1A2	Sd,G	P1	1-11-60	--	.3	19	346	5	4	280	
1J1	Sd	P1	6-18-58	56	<.1	0	307	---	20	288	
1J1	Sd	P1	1-11-60	--	.1	19	268	45	8	296	
9J1	Sd	P1	12-19-57	52	1.0	10	244	---	20	224	
9J1	Sd	P1	1-12-60	50	1.5	5	293	10	4	220	
17J1	Sd,G	P1	1-14-60	--	2.0	38	248	30	12	276	
35/2-1F1	Sd,G	P1	6-18-58	57	1.5	19	268	---	20	344	
1F1	Sd,G	P1	1-14-60	--	1.5	19	278	110	16	336	
2F1	Sd,G	P1	7-12-56	--	---	0	332	---	12	288	
2K1	G,Sd	P1	1-14-60	--	1.5	24	302	60	16	324	
3N1	Sd,G	P1	8-56	--	---	12	268	---	10	352	

Table 4. --Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
35/2-4D1	Sd	P1	1-11-60	--	2.5	5	376	25	4	292	
4R1	Sd	P1	1-14-60	--	.1	24	356	45	12	340	
6A1	Sd	P1	1-13-60	--	5.0	5	336	15	<4	280	
6A2	Sd	P1	12-19-57	50	1.0	34	342	---	16	372	
8B1	Sd	P1	6-17-58	--	1.0	0	454	---	16	388	
8B1	Sd	P1	1-11-60	--	.5	19	429	40	4	384	
10J1	Sd,G	P1	6-17-58	55	.8	0	337	---	20	324	
10J1	Sd,G	P1	1-14-60	53	.5	19	312	75	8	320	
14H1	Sd	P1	1-14-60	--	1.0	19	234	35	12	240	
16H1	Sd,G	P1	12-17-57	--	.5	14	205	---	16	252	
16H1	Sd,G	P1	1-14-60	--	.1	19	381	60	16	380	
18E1	G	P1	1-14-60	--	.1	19	278	120	40	472	
18Q1	Sd,G	P1	12-17-57	51	.1	19	283	---	46	384	
21C1	Sd	P1	6-17-58	--	1.2	0	434	---	24	444	
35/3-11D1	Sd,G	P1	6-20-58	58	6.0	0	444	---	16	320	
11D1	Sd,G	P1	2- 2-60	--	3.0	24	283	10	4	240	
13R1	Sd,G	P1	7-29-58	60	3.5	0	410	---	8	264	
13R1	Sd,G	P1	1-21-60	--	3.0	0	410	5	12	260	
16K1	Sd,G	P1	6-18-58	55	5.0	0	356	---	16	256	
16K1	Sd,G	P1	1-21-60	--	3.0	0	351	0	<4	248	
18K1	Sd	P1	1-21-60	--	.5	0	337	15	16	280	
35/4-17L1	Sd	P1	12-20-57	55	3.0	0	390	---	10	260	
36/1W-25P1	Sd,G	P1	6-19-58	56	5.0	0	298	---	20	348	
35B1	Sd	P1	1-12-60	--	.1	10	244	80	12	300	
36/1-1H1	G,Sd	P1	10-58	56	.1	0	273	---	24	300	
1H1	G,Sd	P1	1-11-60	--	.1	5	307	35	20	348	
1K1	Sd,G	P1	1-11-60	53	.5	10	312	35	16	292	
8R1	Sd	P1	1-12-60	--	.1	0	264	30	12	252	
10C2	Sd	P1	1-12-60	--	.1	14	264	30	8	256	
12C1	Sd,G	P1	10-58	59	.1	0	249	---	16	220	
13K1	Sd	P1	11-19-58	54	.1	10	288	---	6	264	
17B2	Sd	P1	1956	--	---	0	288	---	<4	268	

36/1-19B1	Sd,G	P1	11-19-57	60	2.0	24	254	---	14	300
19R1	Sd	P1	1-12-60	--	.1	14	346	45	16	328
21D1	Sd	P1	1-12-60	--	.5	14	298	10	4	240
28E1	Sd,G	P1	12-19-57	54	.5	34	317	---	16	312
28E1	Sd,G	P1	1-12-60	---	.3	19	376	5	4	288
32G1	Sd,G	P1	12-19-57	50	.3	0	220	---	18	224
32G2	G	P1	1-12-60	--	.1	14	244	50	16	292
32K1	Sd,G	P1	7-13-56	---	---	0	171	---	28	292
33D1	Sd,G	P1	1956	53	---	2	227	---	4	222
33D1	Sd,G	P1	1956	53	---	2	281	---	4	280
34A1	Sd	P1	1-12-60	---	.1	5	356	20	4	272
34J1	Sd	P1	6-19-58	54	.5	0	410	---	16	320
36N1	Sd	P1	7-56	---	---	12	383	---	6	272
36/2-1B1	Sd	P1	11-11-58	---	.1	0	210	---	12	208
1C3	G,Sd	P1	1-13-60	---	.1	10	239	25	8	236
1H1	Sd,G	P1	1-21-60	---	.1	10	229	25	8	212
2A1	Sd,G	P1	1-13-60	---	.1	10	298	45	32	360
2R3	Sd,G	P1	10-58	56	1.0	0	303	---	12	228
3R3	Sd	P1	1-13-60	---	.5	14	322	25	4	292
3R4	Sd	P1	4-16-58	55	.5	0	356	---	16	336
3R5	Sd	P1	11-13-58	58	.1	5	278	---	12	216
4M3	Sd,G	P1	1-13-60	---	.1	19	376	10	4	328
4M4	Sd	P1	10-58	---	.1	10	400	---	12	300
5N1	Sd	P1	1-13-60	---	.1	19	293	60	8	292
5N2	Sd	P1	10-58	56	.2	10	283	---	28	288
5Q2	Sd	P1	10-58	59	.8	14	366	---	16	292
6G1	Sd,G	P1	1-13-60	---	.1	19	268	40	8	288
8J1	Sd	P1	10-58	58	.1	10	386	---	8	300
10D1	Sd	P1	10-58	58	.1	0	303	---	16	236
10K1	Sd,G	P1	10-58	56	.1	0	259	---	20	272
10K1	Sd,G	P1	1-13-60	53	.1	0	346	40	8	336
13F1	Sd,G	P1	11-21-58	---	.1	34	351	---	10	---
13F1	Sd,G	P1	1-21-60	---	.1	19	361	30	4	280
14P1	Sd	P1	11-13-58	---	3.0	0	85	---	---	320
18C1	Sd,G	P1	11-19-58	56	1.0	0	400	---	12	332
18C1	Sd,G	P1	1-13-60	---	.3	5	359	40	8	340
20A1	Sd,G	P1	12-17-57	54	.1	43	283	---	52	468
20B1	Sd	P1	8-15-58	56	<.1	0	312	---	24	312
20B1	Sd	P1	1-13-60	---	.1	19	312	50	8	316

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
36/2-20R1	Sd	P1	6-17-58	54	5.0	0	405	---	20	364	
21C1	Sd	P1	7-20-58	58	<.1	0	351	---	12	280	
21C1	Sd	P1	1-13-60	54	.3	19	293	25	4	264	
22F1	Sd,G	P1	1-13-60	--	.1	24	273	40	4	280	
24B1	Sd,G	P1	1-21-60	--	.1	14	317	50	8	4	So.
25P1	Sd	P1	12-17-57	52	2.0	14	303	---	16	296	
25P1	Sd	P1	1-21-60	52	1.0	5	332	75	8	336	
26D3	Sd	P1	8-56	--	---	5	310	---	6	208	
30C1	Sd	P1	12-20-57	60	.5	24	259	---	12	284	
30C1	Sd	P1	1-13-60	--	.3	14	273	20	8	248	
32B1	G,Sd	P1	12-17-57	--	.1	24	195	---	100	420	
32R2	Sd,G	P1	1-13-60	--	5.0	19	439	25	4	364	
33Q2	Sd	P1	1-13-60	--	7.5	10	381	10	4	322	
33R1	Sd	P1	1-13-60	--	.1	10	342	80	16	356	
34R1	Sd,G	P1	3-27-57	53	---	---	---	---	12	308	
35L1	Sd	P1	7-29-58	60	1.0	0	303	---	12	296	
35L1	Sd	P1	1-13-60	--	.5	14	288	65	8	300	
35M1	Sd,G	P1	6-17-58	58	.1	0	249	---	20	244	
36/3-1P1	G	P1	1-21-60	55	3.0	19	342	5	8	240	
2F1	Sd,G	P1	12-16-58	50	1.5	0	322	---	16	252	
2M1	Sd	P1	12-16-58	60	.2	24	268	---	10	240	
2R1	Sd	P1	1-13-59	--	.5	29	381	---	10	328	
3F1	Sd,G	P1	12-16-58	57	<.1	14	278	---	14	288	
3F1	Sd,G	P1	1-21-60	--	.1	14	366	40	4	336	
5F1	Sd	P1	12-16-58	50	.2	19	259	---	10	268	
5N1	Sd,G	P1	12-16-58	52	.4	34	361	---	12	368	
5N1	Sd,G	P1	1-21-60	--	.3	24	360	45	4	348	
7A1	Sd	P1	12-17-58	53	.1	0	386	---	10	316	
7C1	Sd	P1	11-11-58	55	.8	0	283	---	106	204	
7C1	Sd	P1	1-21-60	--	.5	5	351	10	108	260	
7E1	Sd	P1	11-11-58	53	<.1	19	312	---	24	340	
8B1	Sd,G	P1	12-16-58	52	.1	43	288	---	12	312	

36/3-8B1	Sd,G	P1	1-21-60	--	.3	19	356	30	4	320
11A1	Sd,G	P1	12-16-58	56	1.5	34	327	---	12	276
15C1	Sd	P1	1-14-59	56	1.5	10	332	15	10	256
15N3	Sd,G	P1	6-20-58	55	1.5	0	361	---	16	260
16R1	Sd	P1	1-21-60	--	3.0	24	293	25	4	272
17C1	Sd	P1	7-29-58	58	.7	0	415	---	12	336
17P1	Sd	P1	12-17-57	51	---	29	283	---	28	372
17Q1	Sd,G	P1	6-20-58	55	5.0	0	405	---	20	332
17Q1	Sd,G	P1	1-21-60	---	3.0	5	395	35	4	336
18C1	Sd	P1	11-12-58	50	2.0	0	381	---	12	348
18E1	Sd	P1	11-11-58	--	2.0	0	332	---	20	272
18M1	Sd	P1	11-12-58	--	5.0	5	205	---	152	384
21D1	Sd	P1	2- 1-60	--	.1	14	254	45	4	---
21E1	Sd	P1	7-29-58	55	2.5	0	395	---	16	308
21R1	G	P1	2- 2-60	--	1.0	0	102	10	164	260
22E1	G	P1	7-29-58	56	1.0	0	371	---	16	272
23C1	Sd,G	P1	2- 1-60	48	.3	29	317	5	8	232
30A1	Sd	P1	7-29-58	59	<.3	0	376	---	8	324
30D1	Sd,G	P1	6-17-58	56	1.5	0	429	---	28	348
30H1	Sd,G	P1	1956	---	---	7	256	---	6	180
30H1	Sd,G	P1	2- 2-60	58	2.0	24	342	55	4	332
32C1	G,Sd	P1	2- 2-60	59	.5	29	307	20	4	---
35B2	G	P1	2- 2-60	---	4.0	38	356	10	4	272
36/4-5M1	Sd	P1	12-17-58	---	.1	24	283	---	18	156
5M1	Sd	P1	1-21-60	---	.5	5	346	10	12	140
17Q1	Sd	P1	12-18-57	51	.5	10	317	---	26	108
17Q1	Sd,G	P1	1-21-60	51	<.1	10	312	10	16	92
29A2	Sd,G	P1	1-21-60	---	1.0	0	264	35	144	332
30D1	Sd	P1	12-18-57	55	3.0	34	346	---	68	304
30D1	Sd	P1	1-21-60	--	2.5	10	425	5	16	272
32R1	Sd,G	P1	1-21-60	--	2.5	0	298	135	52	360
33R1	Sd	P1	1-21-60	--	1.5	5	439	0	<4	320
37/1W-2B1	Sd	P1	7-20-58	59	<.1	0	361	---	16	364
11D1	Sd	P1	8-13-58	59	.1	0	322	---	12	296
11D1	Sd	P1	1-11-60	--	.1	10	273	35	8	284
14H1	Sd	P1	2- 3-60	50	2.0	10	220	55	4	220
24J1	Sd,G	P1	8-13-58	60	2.0	0	346	---	16	400
37/1-1L1	Sd,G	P1	11-21-58	--	.1	5	346	---	8	268
1M2	Sd,G	P1	10-10-57	52	.5	10	327	---	12	336

So.

So.

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
37/1-2G1	G,Sd	P1	8-14-56	--	2.3	0	258	200	---	306	ICI; TDS - 450.
	G,Sd	P1	1-13-60	--	2.0	19	331	50	16	328	
	Sd,G	P1	1-12-60	--	.3	14	195	55	16	216	
	G,Sd	P1	1-13-60	--	.3	24	229	45	12	248	
	Sd	P1	8-14-58	55	<.1	0	185	---	12	176	
	Sd,G	P1	8-13-58	56	.1	0	190	---	8	164	
	Sd,G	P1	1-13-60	--	.3	14	151	35	16	156	
	Sd,G	P1	8-14-58	59	<.1	0	132	---	8	116	
	Sd,G	P1	8-13-58	54	2.0	0	249	---	16	228	
	Sd	P1	1-12-60	---	.5	14	200	25	16	172	
	Sd,G	P1	8-13-58	55	.6	0	259	---	20	244	
	Sd,G	P1	8-13-58	58	.3	0	239	---	20	224	
	Sd,G	P1	4-15-58	53	.4	0	303	---	12	296	
	Sd,G	P1	4-15-58	56	.5	0	264	---	12	276	
37/2-1P2	Sd,G	P1	4-30-58	--	1.5	0	259	---	12	248	U.
	Sd,G	P1	4-15-58	53	<.1	0	332	---	12	332	
	Sd,G	P1	4-15-58	55	2.0	0	386	---	20	444	
	G,Sd	P1	5-17-34	---	---	0	372	---	10	---	
	Sd,G	P1	1-14-60	--	3.0	19	298	185	20	460	
	Sd,G	P1	1-13-60	---	.1	24	298	70	16	336	
	Sd	P1	11-18-58	57	1.0	19	244	---	12	256	
	Sd,G	P1	11-21-58	58	1.0	0	317	---	20	280	
	Sd,G	P1	1-15-59	---	.1	0	312	60	12	---	
	Sd,G	P1	1-13-60	---	.1	19	181	40	16	208	
	Sd,G	P1	1-13-60	---	.1	29	210	50	12	236	
	Sd,G	P1	1-13-60	---	.1	19	229	---	20	268	
	Sd,G	P1	10- 8-57	60	.4	19	259	---	6	208	
	Sd,G	P1	11-18-58	55	.1	0	234	---	8	220	
Sd,G	P1	10- 8-57	60	.5	0	322	---	10	260		
8F3	Sd	P1	11-18-58	58	.4	0	215	65	16	244	So.
	Sd	P1	1-14-60	--	.5	19	229	---	18	244	
	Sd	P1	11-18-58	56	.1	0	229	---	18	244	
	Sd	P1	11-18-58	56	.1	0	229	---	18	244	

37/2-10D1	Sd	P1	1-14-60	--	7.5	0	439	305	48	648	
10H1	Sd,G	P1	1-14-60	--	.1	10	293	60	16	296	WHB.
11H1	G,Sd	P1	1-58	--	4.7	0	417	430	36	816	
11K3	Sd,G	P1	4-29-58	--	.1	0	371	---	12	364	
11R2	Sd,G	P1	4-20-58	58	<.1	0	390	---	28	464	
12C2	G	P1	4-11-58	--	.5	10	215	---	12	224	
12C5	G,Sd	P1	1-20-60	--	<.1	0	425	135	52	472	GFC.
12E2	Sd,G	P1	8-13-54	--	.1	0	366	---	---	382	
12F1	Sd,G	P1	4-11-58	--	.1	0	322	---	36	368	
12H1	Sd,G	P1	5-8-59	--	.7	0	291	70	34	314	ICI; TDS - 430.
12H3	Sd,G	P1	4-11-58	57	1.0	10	151	---	16	164	
13H1	Sd,G	P1	4-9-58	54	.1	0	312	---	24	324	
13H1	Sd,G	P1	12-6-56	56	<.1	0	295	40	12	300	PCC; TDS - 275.
13H3	G,Sd	P1	4-9-58	53	.1	0	268	---	16	272	
13H4	Sd,G	P1	4-10-58	--	.1	0	298	---	16	288	
14A2	Sd,G	P1	4-20-58	58	<.1	0	322	---	32	344	
14B2	Sd,G	P1	4-10-58	59	.1	10	205	---	20	236	
14H1	Sd	P1	4-20-58	57	.1	0	376	---	36	396	
15C5	Sd,G	P1	12-10-53	--	.1	---	---	---	---	578	LN.
15F1	Sd,G	P1	4-11-58	49	.1	0	322	---	12	408	
15F1	Sd,G	P1	1-14-60	--	.1	29	312	100	16	368	
15H1	Sd	P1	4-15-58	--	.1	10	298	---	12	300	
16B3	Sd,G	P1	4-11-58	--	0.3	0	300	---	25	393	ICI; TDS - 550.
16B3	Sd,G	P1	4-11-58	52	.1	0	307	---	16	424	
16B5	Sd	P1	4-10-58	54	.1	14	283	---	20	520	
16B5	Sd	P1	1-19-60	55	.3	0	303	260	20	488	
17B1	Sd	P1	11-18-58	59	.1	0	317	---	36	372	
20P2	Sd,G	P1	1-19-60	--	1.0	24	312	115	24	384	
21P1	Sd,G	P1	11-19-58	57	.2	0	342	---	10	296	
21R3	Sd	P1	1-5-60	--	.1	0	429	40	12	364	
22G1	G	P1	4-16-58	55	.1	0	268	---	8	268	
22P2	Sd	P1	11-19-58	56	.1	14	322	---	6	280	
23D2	Sd,G	P1	7-5-55	49	<.1	0	317	---	18	304	LN.
24C1	Sd,G	P1	1-14-59	--	.1	0	234	40	10	204	
24K1	G,Sd	P1	11-19-58	55	.1	0	307	---	14	272	
24K1	G,Sd	P1	1-20-60	--	.1	0	288	30	12	256	
25E6	Sd	P1	11-10-58	--	.1	19	366	---	22	408	
25H2	G,Sd	P1	8-19-54	--	.3	---	---	---	---	340	LN.
25K1	Sd,G	P1	1-20-60	--	<.1	10	298	30	4	280	

Table 4. --Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
37/2-25P3	Sd,G	P1	11-10-58	--	0.1	14	249	---	34	284	
26B1	Sd,G	P1	11-19-58	57	.1	0	288	---	12	268	
26E2	Sd	P1	11-13-58	--	3.0	5	303	---	20	284	
26F1	Sd,G	P1	11-11-58	56	.1	0	278	---	18	272	
26L1	Sd,G	P1	10- 8-57	--	.1	5	200	---	12	196	
26L1	Sd,G	P1	1- 5-60	--	.1	24	312	35	16	324	
27L1	Sd,G	P1	11-11-58	--	<.1	5	322	---	12	264	
27M2	Sd,G	P1	10-58	56	1.5	0	376	---	16	276	
28E1	Sd,G	P1	10-58	57	1.5	0	376	---	12	288	
28E1	Sd,G	P1	1-18-60	--	.3	24	346	25	4	316	
29C1	Sd,G	P1	10-58	59	3.5	14	332	---	24	340	
29F2	Sd	P1	1-18-60	--	.5	29	332	64	12	344	
29F3	Sd	P1	1-15-59	--	.1	10	268	---	18	320	
29J1	Sd,G	P1	8-12-58	60	.5	0	405	---	16	328	
29J2	Sd,G	P1	10-58	55	.8	5	298	---	12	248	
31A1	Sd	P1	2- 3-60	--	.3	14	254	25	12	236	
32G1	Sd,G	P1	10-58	59	.3	19	283	---	20	288	
32L1	Sd	P1	1-11-60	--	.1	14	298	35	4	284	
32N1	Sd	P1	10-58	54	.1	0	405	---	16	340	
33C1	Sd,G	P1	10-58	57	.1	10	229	---	12	204	
33G1	Sd	P1	11-11-58	--	.1	19	332	---	26	328	
33M1	Sd	P1	10-58	58	.5	0	425	---	16	328	
35B1	Sd,G	P1	1-11-60	55	.1	14	268	40	8	260	
35G1	Sd,G	P1	10-58	58	.1	0	293	---	16	260	
35G2	Sd,G	P1	1-13-59	--	.1	29	264	---	16	288	
35J4	Sd,G	P1	1-11-60	--	.1	24	283	35	8	284	
36C1	Sd,G	P1	11-13-58	--	<.1	24	254	---	20	284	
36D4	Sd,G	P1	11-11-58	58	.1	0	244	---	14	244	
36E1	Sd,G	P1	11-13-58	--	.3	0	288	---	36	340	
36F3	Sd	P1	11-11-58	53	.1	0	244	---	12	212	
36L2	Sd,G	P1	11-11-58	54	.1	0	268	---	34	252	
36L11	Sd,G	P1	1-14-59	--	.1	29	215	25	8	240	

37/2-36N2	G,Sd	P1	11-13-58	--	<.1	5	215	---	20	228
37/3-2E1	Sd	P1	1-20-60	54	1.0	5	181	45	4	176
2L1	Sd	P1	12-18-58	50	.3	0	132	---	12	132
3G1	Sd	P1	1-20-60	---	.3	0	176	60	8	188
3L1	Sd	P1	12-15-58	---	.1	0	259	---	80	32
3N2	Sd,G	P1	7-30-56	---	1.0	0	317	---	8	266
3N3	Sd	P1	12-18-58	---	1.0	0	239	---	16	128
4E1	Sd	P1	12-15-58	55	.3	19	200	---	14	220
4R1	Sd,G	P1	3- 8-53	---	.3	0	295	---	8	260
5P2	Sd,G	P1	4-16-58	---	.1	0	388	---	20	412
6N1	Sd	P1	1-20-60	---	.1	5	249	50	12	240
8G1	Sd	P1	4-15-58	---	1.5	0	307	---	8	272
8G1	Sd	P1	1-18-60	---	.1	0	307	30	8	256
10G1	Sd	P1	1-18-60	---	.1	5	234	50	16	232
11F1	Sd,G	P1	12-18-58	---	.3	14	181	---	10	180
11F1	Sd,G	P1	1-18-60	---	.1	5	181	40	8	172
11N3	G,Sd	P1	5-16-51	---	.3	0	549	---	29	325
13K1	Sd,G	P1	1-21-60	---	3.0	0	337	225	12	464
14K1	Sd,G	P1	-----	---	2.0	0	348	---	0	453
14K1	Sd,G	P1	-----	---	.4	0	332	---	2	465
14K3	Sd,G	P1	4-17-58	---	1.0	0	278	---	16	392
14M1	Sd,G	P1	5- 2-58	---	.1	5	288	---	12	336
15C1	Sd,G	P1	12-18-58	---	.1	0	224	---	10	168
15H1	G,Sd	P1	4-17-58	---	1.0	0	337	---	12	508
15M1	Sd,G	P1	4-16-58	---	.3	0	224	---	16	344
15M2	Sd,G	P1	1-20-60	---	1.0	0	425	200	12	528
15R1	Sd,G	P1	2- 2-54	---	.1	--	---	---	---	306
15R2	Sd,G	P1	4- 1-54	---	.1	--	---	---	---	323
16C4	Sd	P1	4-17-58	---	.8	0	378	---	76	520
16F3	Sd,G	P1	4-17-58	---	.8	0	371	---	24	328
16N2	G,Sd	P1	4-17-58	52	1.1	0	400	---	12	336
16R1	G	P1	4-17-58	55	.1	0	361	---	20	484
18A1	Sd,G	P1	4-15-58	---	2.0	0	249	---	16	220
19R1	Sd,G	P1	11-20-58	55	.1	19	346	---	6	340
21G3	Sd	P1	12-18-58	---	.1	14	376	---	12	288
21R2	Sd,G	P1	12-18-58	---	.5	0	327	---	6	232
22R3	Sd,G	P1	1-20-60	---	<.1	0	312	45	8	236

ISBH.

LN; taken at 24 feet.

LN; taken at 125 feet.

LN.
LN.

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
37/3-23H1	Sd,G	P1	1-15-59	--	0.1	19	259	25	12	232	
25E2	Sd,G	P1	1-21-60	--	<.1	0	337	35	12	272	
25M1	Sd	P1	12-17-58	--	.4	0	420	---	10	312	
26A1	Sd,G	P1	12-17-58	54	.1	34	259	---	14	284	
26G3	Sd	P1	12-18-58	55	.1	43	307	---	24	304	
26L1	Sd	P1	12-16-58	57	<.1	29	317	---	20	308	
26P1	Sd,G	P1	12-16-58	54	<.1	24	298	---	12	292	
27R1	Sd,G	P1	1-13-59	58	.1	0	312	60	18	280	
27R1	Sd	P1	1-21-60	56	.1	14	264	50	8	280	
28D1	Sd,G	P1	12-18-58	--	.1	0	307	---	10	248	
28M1	Sd,G	P1	1-21-60	51	.1	5	371	30	4	316	
28N1	Sd	P1	12-17-58	--	.1	38	268	---	16	316	
29K3	Sd	P1	12-17-58	54	.1	0	356	---	28	304	
30A5	Sd	P1	1-20-60	--	<.1	5	322	30	4	288	
31C1	Sd,G	P1	12-19-58	--	.1	19	264	---	10	300	
31D1	Sd,G	P1	11-20-58	56	.1	0	273	---	8	272	
31D2	G,Sd	P1	1-21-60	--	.1	14	244	35	8	268	
31R1	Sd,G	P1	11-12-58	--	.5	0	137	---	132	316	
33A4	Sd,G	P1	12-17-58	55	.1	34	298	---	10	300	
33B3	Sd	P1	12-17-58	55	.3	29	390	---	12	336	
33E1	Sd,G	P1	4-18-58	55	3.5	0	425	---	8	368	
33E1	Sd,G	P1	1-20-60	--	7.5	19	381	20	4	336	
34Q1	Sd,G	P1	1-13-59	--	.1	24	361	25	12	340	
34Q1	Sd,G	P1	1-20-60	--	.1	24	361	30	4	336	
35D1	G,Sd	P1	12-17-58	51	.1	34	303	---	16	292	
35D2	G,Sd	P1	12-18-58	54	.1	38	305	---	42	416	
35M2	G	P1	1-20-60	52	.1	19	342	25	4	320	
36Q1	G	P1	12-17-58	55	.1	34	346	---	20	308	
36Q1	G	P1	1-20-60	54	.5	19	390	5	4	312	
37/4-4J1	Sd	P1	12-18-58	--	.2	0	205	---	14	184	
6B1	Sd,G	P1	1-19-60	--	.5	5	229	35	4	204	

37/4-6J2	Sd,G	P1	5- 2-58	--	0.1	0	273	---	12	216	
7A4	Sd,G	P1	12-18-58	57	<.1	14	195	---	12	208	
7B2	Sd,G	P1	4-16-58	--	.1	0	293	---	16	220	
7B2	Sd,G	P1	1-18-60	--	.1	5	278	15	4	212	
7E2	Sd,G	P1	2-56	--	2.0	0	281	---	8	222	
7E2	Sd,G	P1	12-31-56	--	.1	0	305	15	15	256	ECl.
7E2	Sd,G	P1	1- 4-57	--	.1	0	317	---	10	248	LN.
7E2	Sd,G	P1	12-18-58	54	.1	14	293	---	6	220	LN.
7H1	G	P1	12-18-58	54	.7	0	220	---	14	236	
8E1	Sd	P1	1-18-60	--	.1	14	239	25	4	208	
8E2	Sd	P1	12-19-58	--	.1	14	229	---	8	212	
9A1	Sd	P1	1-14-60	--	.1	14	190	45	20	212	
9D1	Sd,G	P1	5-16-58	--	.1	0	210	---	8	188	
9G2	Sd,G	P1	12-18-58	54	<.1	5	215	---	16	228	
16G2	Sd,G	P1	1-14-60	--	<.1	29	346	55	16	412	
17A1	Sd,G	P1	1-14-60	--	1.0	24	249	125	8	264	
17H1	Sd	P1	12-17-58	51	1.5	14	229	---	10	240	
17H1	Sd	P1	1-14-60	51	1.5	14	239	60	12	260	
18D1	G,Sd	P1	3-19-55	--	.8	0	342	---	---	272	LN.
19M1	Sd,G	P1	1-14-60	--	.5	24	332	55	16	328	
21P1	Sd,G	P1	1-13-59	--	.5	48	303	---	12	260	
30K1	Sd,G	P1	12-16-58	--	3.0	29	259	---	12	216	
30K1	Sd,G	P1	1-14-60	53	2.5	19	351	15	12	276	
31M1	Sd	P1	1-13-59	--	1.0	0	410	---	8	286	
31M1	Sd	P1	1-21-60	53	3.0	--	---	5	12	---	
33R1	Sd,G	P1	1-13-59	56	.3	19	342	105	18	388	
33R1	Sd,G	P1	2- 4-60	59	.1	0	264	85	12	272	
38/1W-10J1	Sd	P1	1-11-60	54	1.0	29	361	15	4	328	
15E1	Sd	P1	1-11-60	--	1.0	14	361	20	4	308	
15J1	Sd,G	P1	11-59	54	.3	43	307	80	14	372	
15K1	Sd,G	P1	7-30-58	59	.2	0	473	---	12	388	
15K1	Sd,G	P1	1-11-60	--	1.5	10	366	45	4	332	
22R2	Sd	P1	1-11-60	--	.3	5	278	50	12	268	
24E2	Sd,G	P1	1-12-60	53	.5	10	298	55	20	284	
34M1	Sd,G	P1	1-11-60	--	.1	19	278	30	12	292	
36D1	Sd,G	P1	1-12-60	47	.3	14	268	60	24	284	
38/1-13P1	Sd	P1	1-13-60	--	.1	10	400	65	20	464	
13Q1	Sd,G	P1	8-13-58	56	.1	0	342	---	8	312	
23H1	Sd,G	P1	2- 4-60	--	.3	5	229	30	8	232	

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
38/1-25L2	Sd,G	P1	1-13-60	--	0.5	0	273	65	20	260	
26J1	Sd,G	P1	8-13-58	60	<.1	0	273	---	16	244	
26J2	Sd	P1	1-13-60	--	.1	19	234	40	12	248	
26K3	Sd,G	P1	1-12-60	--	.3	34	220	55	28	284	
31C1	Sd,G	P1	1-12-60	--	.1	19	244	45	28	284	
35K2	Sd	P1	8-13-58	60	<.1	0	317	---	24	284	
36M1	Sd,G	P1	1-12-60	--	1.0	19	366	65	20	384	
37/2-7L1	Sd,G	P1	8-22-58	57	.1	0	386	---	< 4	404	
8P2	Sd,G	P1	1-20-60	--	.1	19	254	45	4	280	
9K1	Sd,G	P1	8-14-58	58	.2	0	288	---	8	280	
11N1	Sd,G	P1	8-14-58	60	<.1	0	288	---	16	260	
11N1	Sd,G	P1	1-19-60	--	.1	19	244	40	4	220	
13F1	Sd,G	P1	1-19-60	61	.3	19	229	35	4	252	
13P3	Sd,G	P1	1-19-60	--	1.5	0	24	55	136	244	
14F1	G,Sd	P1	1-19-60	--	1.0	19	288	60	8	312	
14N2	Sd,G	P1	1-14-59	--	.3	19	317	35	12	304	
15H2	Sd	P1	1-15-59	--	.1	29	234	40	10	252	
15M1	Sd,G	P1	1-20-60	--	.1	14	244	50	8	268	
16B2	Sd,G	P1	1-20-60	--	.1	19	244	40	8	272	
19P1	Sd,G	P1	4-15-58	--	.1	0	327	---	8	328	
19P1	Sd,G	P1	1-19-60	54	.3	5	283	70	4	292	
19Q1	Sd,G	P1	8-14-58	56	.2	0	405	---	28	484	
22K1	Sd	P1	1-19-60	--	.1	19	288	80	8	328	
22K2	Sd	P1	1-19-60	54	.1	19	351	65	8	352	
23D1	Sd,G	P1	8-14-58	58	<.1	0	303	---	12	260	
23F5	Sd,G	P1	4-16-58	54	1.0	0	273	---	12	273	
23F5	Sd,G	P1	1-19-60	54	.1	19	249	40	4	240	
24L5	Sd,G	P1	1-20-58	55	.1	0	293	---	16	248	
24N1	Sd,G	P1	11-20-58	58	.2	0	264	---	8	240	
24P2	Sd,G	P1	12-19-58	--	.1	14	249	---	12	252	
24Q2	Sd,G	P1	1-19-60	--	<.1	0	234	50	20	228	

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38/2-25A8	P1	Sd,G	8-22-58	57	0	0	283	---	---	10	264		
26A5	P1	Sd,G	3-31-55	--	0	0	165	161	---	---	277		
29L1	P1	G	8-14-58	57	0	0	327	---	---	16	248		
29L1	P1	G	1-19-60	--	19	0	307	90	---	8	360		
32C1	P1	Sd	8-22-58	55	0	0	337	---	---	16	308		
32J1	P1	G,Sd	4-17-58	--	0	0	244	---	---	12	252		
32J1	P1	G,Sd	1-19-60	--	19	0	317	50	---	4	252		
32M2	P1	Sd,G	5-16-58	--	0	0	254	---	---	4	192		
33M2	P1	G,Sd	5- 8-58	53	0	0	342	---	---	16	332		
34A1	P1	Sd,G	4-15-58	--	5	5	337	---	---	16	336		
34A1	P1	Sd,G	1-18-60	59	0	0	356	80	---	8	240		
35N3	P1	Sd,G	4-30-58	55	0	0	342	---	---	8	324		
35P1	P1	Sd,G	4-15-58	53	10	0	205	---	---	12	224		
35Q1	P1	G	4-15-58	53	0	0	307	---	---	12	280		
38/3-9P1	P1	Sd,G	8-22-58	--	0	0	268	---	---	12	244		
9P1	P1	Sd,G	1-19-60	--	5	5	273	25	---	8	240		
13M2	P1	Sd,G	7-30-58	58	0	0	283	---	---	16	276		
13P1	P1	Sd,G	7-30-58	59	0	0	239	---	---	12	220		
14M1	P1	Sd,G	1-19-60	--	0	0	239	25	---	8	232		
16Q1	P1	Sd,G	1-19-60	--	5	5	185	25	---	4	168		
17E3	P1	Sd,G	8-22-58	57	0	0	288	---	---	8	264		
17K1	P1	Sd	7-30-58	--	0	0	244	---	---	16	232		
18F1	P1	Sd	1-19-60	--	5	5	254	30	---	4	224		
19N1	P1	Sd,G	8-22-58	58	0	0	229	---	---	8	208		
20F1	P1	Sd,G	11-20-58	52	10	0	312	---	---	10	276		
20J1	P1	G,Sd	1-20-60	--	5	5	244	30	---	8	200		
20N1	P1	Sd,G	8-22-58	55	0	0	249	---	---	8	248		
21C1	P1	Sd,G	8-21-58	55	0	0	215	---	---	2	176		
21Q4	P1	G,Sd	1-20-60	--	0	0	73	35	---	148	276		
21R2	P1	Sd,G	8-21-58	55	0	0	210	---	---	6	188		
22J1	P1	Sd,G	1-20-60	--	10	10	312	40	---	12	312		
27C1	P1	Sd,G	7-30-58	52	0	0	293	---	---	12	288		
27C1	P1	Sd,G	1-20-60	--	14	14	239	50	---	4	252		
30M1	P1	Sd	1-19-60	--	10	10	239	25	---	4	272		
30R1	P1	G	1-20-60	--	14	14	268	115	---	16	360		NALCO.
31E2	P1	Sd,G	8-19-57	--	0	0	249	90	---	10	320		
31F4	P1	Sd	1-19-60	--	5	5	278	70	---	12	284		
32D3	P1	Sd	8-19-58	58	14	14	254	---	---	22	288		
32L3	P1	G,Sd	12-18-58	--	0	0	200	---	---	10	172		

Table 4. --Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
38/3-32N1	Sd	P1	1-19-60	--	0.1	0	190	55	12	180	
32N2	Sd,G	P1	8-20-58	--	.2	0	205	---	16	216	
36M1	Sd,G	P1	1-20-60	56	1.0	0	185	85	4	228	
38/4-18B1	Sd,G	P1	7-30-58	58	<.1	0	312	---	28	364	
18C1	Sd	P1	5-10-60	53	.5	10	259	15	8	248	
21A1	Sd	P1	7-30-58	55	<.1	0	93	---	8	80	
21A1	Sd	P1	1-19-60	--	.3	---	---	25	---	96	
21J1	Sd,G	P1	4-1-55	--	.7	0	54	2	14	118	ICI.
29N1	G,Sd	P1	8-20-58	57	1.5	0	234	---	6	220	

Table 5.--Water levels in observation wells in St. Joseph County, Indiana
(In table below land-surface datum, except as noted. Water level: e, esti-
mated; h, tape measurement)

St. Joseph 1. (37/3-11P13). City of Mishawaka. Mishawaka Water and Light Dept., Virgil and Linden Sts. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 37 N., R. 3 E. Previously shown as the SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 37 N., R. 3 E. Driven unused water-table well in sand, diameter 1 $\frac{1}{2}$ inches, depth 40 feet. Land-surface datum is 702.37 feet above msl. Highest water level is 4.46 below lsd, May 25, 1943; lowest is 17.70 below lsd, Oct. 15, 1956. Records available: 1935-57. Affected by nearby pumping.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1935							
Oct. 16	9.85	Apr. 1	9.33	Dec. 1	9.64	Apr. 1	8.42
Nov. 1	10.82	16	8.33	17	10.75	15	7.96
16	8.54	May 3	8.16	1939			
Dec. 3	8.96	17	9.00	1939			
17	8.76	June 2	9.69	Jan. 2	9.50	June 1	8.41
1936							
Jan. 2	8.58	17	8.17	16	10.66	17	8.08
16	8.66	July 16	7.40	Feb. 1	9.54	July 1	8.61
Feb. 1	9.68	Aug. 3	8.92	14	8.68	16	8.69
17	10.21	16	9.02	Mar. 1	8.25	1	12.17
Mar. 1	8.92	Sept. 1	9.34	16	8.84	16	11.26
17	8.71	16	10.82	Apr. 1	8.09	1	9.31
Apr. 1	9.12	Oct. 1	11.17	5	7.92	15	9.85
16	8.78	Nov. 16	9.09	2	7.83	1	10.34
May 2	7.86	Dec. 1	10.00	15	8.68	16	10.57
16	9.25	15	10.25	June 1	9.82	Nov. 1	9.92
June 1	10.75	1938		16	9.95	15	10.09
19	10.29	Jan. 1	8.75	July 1	8.34	2	9.75
July 2	10.33	17	8.92	15	9.25	16	9.55
17	12.83	Feb. 1	9.18	Aug. 1	9.98	1941	
Aug. 3	11.25	14	8.29	16	8.85	Jan. 1	9.57
17	11.50	Mar. 1	8.42	22	8.08	16	9.66
Sept. 15	10.67	16	8.31	Sept. 1	9.92	15	9.34
Oct. 1	10.12	Apr. 1	8.07	16	11.18	15	10.74
16	9.91	15	7.65	Oct. 2	9.85	Mar. 1	10.92
Nov. 2	9.58	May 2	8.67	16	10.42	17	8.75
Dec. 2	10.08	16	8.25	Nov. 1	10.40	Apr. 1	8.91
16	9.66	June 2	7.34	16	10.00	15	9.84
1937							
Jan. 4	8.75	July 1	8.62	Dec. 1	10.24	May 1	9.17
16	8.91	16	7.84	16	9.42	16	11.25
Feb. 1	8.33	Aug. 1	9.21	1940			
18	8.25	16	10.08	Jan. 1	9.74	June 2	11.65
Mar. 1	8.75	Sept. 1	9.83	16	9.00	16	11.85
16	9.59	15	10.25	Feb. 1	9.22	July 1	12.92
1938							
Jan. 1	8.75	Oct. 1	9.83	15	9.50	15	13.06
16	8.91	15	10.00	Mar. 1	9.59	Aug. 1	13.34
Feb. 1	8.33	Nov. 1	9.96	16	9.93	16	13.09
18	8.25	15	11.08	1941			
Mar. 1	8.75	1939		Jan. 1	9.74	Sept. 2	12.15
16	9.59	1938		16	9.00	15	11.51
1937							
Jan. 4	8.75	1937		Feb. 1	9.22	1941	
16	8.91	1936		15	9.50	1940	
Feb. 1	8.33	1935		Mar. 1	9.59	1939	
18	8.25	1934		16	9.93	1938	
Mar. 1	8.75	1933		1937			
16	9.59	1932		1936			
1932							
1931							
1930							
1929							
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1902							
1901							
1900							

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 1.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1941		June 1	4.67	Apr. 1	9.42	Jan. 16	9.25
		15	7.34	15	10.00	31	10.16
Oct. 1	11.33	July 1	9.50	May 1	8.34	Feb. 14	9.67
16	10.52	15	9.68	16	9.00	Mar. 1	9.58
Nov. 1	9.02	Aug. 1	10.17	June 1	9.25	15	10.25
16	8.52	16	9.75	15	10.08	Apr. 1	7.83
Dec. 1	8.15	Sept. 1	9.75	July 2	8.75	15	4.70
16	9.26	15	9.16	16	10.67	May 1	5.33
		Oct. 1	9.58	31	10.66	16	7.17
1942		15	9.42	Aug. 16	10.25	June 1	5.75
		Nov. 1	8.75	Sept. 1	11.08	16	6.92
Jan. 3	7.95	15	9.42	15	10.58	July 1	8.34
16	9.18	Dec. 1	8.67	Oct. 1	9.08	16	12.00
Feb. 1	7.74	16	9.33	15	8.42	Aug. 1	11.83
15	7.65			Nov. 1	10.25	16	12.33
Mar. 1	8.50	1944		15	10.42	Sept. 1	9.66
16	6.81	Jan. 1	9.26	Dec. 1	10.75	15	10.50
Apr. 1	7.17	17	8.57	15	10.59	30	11.08
15	7.34	Feb. 1	8.92			Oct. 16	10.90
May 1	9.15	Mar. 1	8.07	1946		Nov. 1	10.75
16	9.42	16	6.06	Jan. 1	10.08	15	9.66
June 1	10.01	Apr. 1	6.58	16	8.17	Dec. 1	10.08
15	8.92	15	6.08	Feb. 1	10.24	16	9.17
July 1	10.16	May 1	6.00	15	8.75		
Aug. 1	9.92	16	6.84	Mar. 1	8.92	1948	
15	9.25	June 1	7.42	15	7.63	Jan. 1	9.83
Sept. 1	9.17	15	11.83	Apr. 1	8.84	17	10.34
15	9.42	July 1	9.84	15	8.92	Feb. 15	11.08
Oct. 1	9.69	15	11.24	May 1	10.75	Mar. 1	8.59
16	9.08	Aug. 1	12.58	16	10.50	15	9.75
Nov. 2	8.93	16	12.75	June 1	10.84	Apr. 1	6.92
16	8.50	Sept. 1	11.24	15	11.42	18	9.67
Dec. 1	8.32	16	12.31	July 1	10.33	May 1	10.34
16	9.25	Oct. 2	10.75	15	13.58	15	6.75
		16	11.08	Aug. 1	14.59	31	9.67
1943		Nov. 1	11.51	15	13.00	June 15	10.58
		15	9.75	Sept. 2	12.67	July 1	11.08
Jan. 1	6.25	Dec. 1	9.66	16	13.50	16	11.57
16	8.00	16	9.83	Oct. 1	13.33	Aug. 2	9.75
Feb. 1	7.60			16	11.17	8	10.50
16	7.15	1945		Nov. 1	10.67	Sept. 4	11.32
18	11.18	Jan. 1	11.18	15	11.16	15	12.84
Mar. 1	6.92	16	11.51	Dec. 1	9.91	Oct. 1	11.42
16	7.42	Feb. 1	11.74	16	9.68	15	11.58
Apr. 1	7.08	15	9.66			Nov. 1	11.34
15	7.50	Mar. 1	9.25	1947		15	11.32
May 1	8.33	16	9.82	Jan. 1	9.16	Dec. 1	10.67
15	5.58					15	9.35
25	4.46						

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 1.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1948							
Dec. 31	9.75	Sept. 2	11.00	May 16	10.43	Feb. 1	11.00
		19	10.68	June 1	7.50	15	11.75
1949		Oct. 1	11.08	17	10.34	Mar. 1	9.50
		15	11.50	July 1	9.92	15	10.42
Jan. 15	10.17	Nov. 1	12.42	16	10.50	Apr. 1	8.84
Feb. 1	9.00	16	10.16	Aug. 3	10.50	15	8.17
15	10.00	Dec. 1	10.00	19	11.42	May 1	9.50
Mar. 1	10.50	16	11.00	Sept. 2	10.83	15	10.75
16	8.92			16	12.33	31	11.25
Apr. 1	9.00	1951		Oct. 2	14.60	June 15	12.00
16	9.84			15	12.60	July 1	13.85
May 1	8.17	Jan. 2	9.67	Nov. 2	11.50	Aug. 1	12.68
16	11.66	Feb. 1	10.17	15	11.42	15	12.33
June 1	14.33	17	9.75	Dec. 1	11.08	25	13.00
16	12.25	Mar. 1	9.83	15	13.08	Sept. 1	12.50
July 1	11.66	16	9.25			15	12.90
16	10.00	Apr. 2	8.92	1953		Oct. 1	13.70
Aug. 1	11.50	16	10.00			15	9.42
16	11.90	May 1	9.43	Jan. 2	13.84	Nov. 1	9.00
Sept. 1	11.58	15	8.25	16	14.83	15	10.65
15	11.17	June 1	9.25	31	15.08	Dec. 1	11.50
Oct. 1	12.00	16	12.17	Feb. 16	14.33	15	11.08
16	11.50	July 1	8.58	Mar. 1	15.33		
Nov. 1	11.92	16	9.25	16	13.32	1955	
15	10.75	Aug. 1	11.16	Apr. 1	13.32		
Dec. 2	11.08	15	10.58	15	13.08	Jan. 1	10.66
16	11.00	Sept. 2	9.83	May 2	13.50	15	11.16
		17	10.50	18	12.00	Feb. 1	12.32
1950		Oct. 1	11.58	June 1	14.50	16	12.50
		16	12.68	July 1	14.60	Mar. 1	10.83
Jan. 1	8.00	Nov. 2	9.66	16	14.25	16	10.16
15	9.00	16	10.75	Aug. 1	14.74	Apr. 1	9.58
Feb. 1	9.92	Dec. 2	10.32	15	13.50	16	11.07
15	9.07	16	8.50	Sept. 1	15.34	May 2	10.57
Mar. 1	10.66			15	14.00	16	13.00
15	9.32	1952		Oct. 2	13.58	June 1	12.08
Apr. 1	5.75			15	13.75	15	12.66
5	4.75	Jan. 5	7.84	Nov. 2	12.50	July 1	14.75
15	7.57	16	6.92	16	11.25	16	14.17
May 15	8.58	Feb. 3	6.86	Dec. 1	11.50	Aug. 1	13.84
June 2	10.83	17	8.17	15	10.50	15	13.58
15	7.50	Mar. 2	8.50			Sept. 1	13.58
July 2	8.42	16	7.92	1954		15	15.08
16	9.00	Apr. 2	8.84			Oct. 2	12.75
Aug. 1	9.08	15	8.00	Jan. 1	10.67	15	13.58
16	11.50	May 2	8.75	15	11.17	Nov. 1	14.00

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 1.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1955		Mar. 1	11.33	Sept. 4	15.10	Feb. 15	11.65
		16	13.30	15	15.00	Mar. 1	10.34
Nov. 16	13.58	Apr. 1	13.00	30	15.60	16	8.20
Dec. 1	14.42	16	13.70	Oct. 15	17.70	Apr. 1	7.90
15	14.70	May 1	11.06	Nov. 2	15.65	15	6.66
31	13.41	16	11.50	15	13.60	May 1	7.40
		June 1	14.34	Dec. 1	13.00	15	8.10
1956		16	16.50	16	16.40	June 1	8.25
		July 1	16.50			15	8.80
Jan. 16	12.66	16	16.40	1957		July 1	9.12
Feb. 1	12.70	Aug. 1	17.05	Jan. 15	12.75	15	9.90
15	10.60	15	16.80	Feb. 1	12.71	Aug. 1	10.88
						15	13.34
						Sept. 1	14.30

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 2. (36/2-11G2). G. R. Castle. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T. 36 N., R. 2 E. Drilled unused water-table well in sand, diameter 2 inches, reported depth 90 feet. Highest water level is 52.0 below lsd, Dec. 17, 1935, May 15, 1936; lowest 57.0 below lsd, Nov. 23, 1935, June 22, 1937. Records available: 1935-37.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1935		Dec. 17	52.00	Feb. 1	53.50	May 15	52.00
				19	54.00	June 16	53.00
Oct. 7	53.20	1936		Mar. 3	53.50		
Nov. 4	54.00			16	54.00	1937	
23	57.00	Jan. 7	53.60	Apr. 7	53.00		
Dec. 4	53.00	18	53.00	May 6	53.00	June 22	57.00

St. Joseph 3. (36/3-33Q1). John Hensler. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 36 N., R. 3 E. Dug unused well in glacial drift, diameter unknown, depth 13 feet. Highest water level is 0.75 below lsd, Mar. 13, Apr. 15, 1939; lowest 9.94 lsd, Sept. 29, 1941. Records available: 1938-42.

1938		Mar. 13	0.75	1941		Sept. 4	8.70
		Apr. 1	1.86			19	9.10
Oct. 29	6.48	15	0.75	Jan. 15	9.12	29	9.94
Nov. 12	7.43	29	1.95	31	8.51	Oct. 15	9.05
14	7.48	May 13	3.12	Feb. 15	8.08	Nov. 3	8.35
26	7.56	June 1	4.48	Mar. 1	7.61	17	4.70
Dec. 4	6.72	13	5.18	15	7.07	Dec. 1	2.95
17	7.47	29	5.65	29	6.38	16	3.05
		July 14	6.27	Apr. 15	3.52		
1939		Aug. 21	7.30	30	2.53	1942	
				May 15	3.39		
Jan. 5	6.95	1940		31	4.10	Jan. 21	3.95
14	7.18			June 15	4.30	Feb. 12	1.95
28	6.97	Dec. 14	9.69	July 1	5.47	24	2.60
Feb. 10	6.80	31	9.46	17	6.13	Apr. 30	2.95
18	6.58			Aug. 1	6.80	Aug. 9	3.58
28	3.16			15	7.45		

St. Joseph 4. (37/2-10G1). Formerly S_j 16-1. Singer Manufacturing Co. Olive St. and Western Ave., South Bend. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 37 N., R. 2 E. Drilled unused water-table (?) well in sand and gravel, diameter 6 inches, depth 118 feet. Land-surface datum is 716 feet above msl. Highest water level is 23.20 below lsd, Mar. 1, 1946; lowest 34.0 below lsd, May 16, 1949. Records Available: 1944-53. Affected by nearby pumping.

1944		July 12	30.14	Aug. 10	30.10	Sept. 7	29.59
		19	30.21	16	31.27	13	29.49
June 28	29.86	26	30.42	24	30.17	20	29.85
July 5	29.41	Aug. 1	30.87	30	29.60	27	29.10

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 4--Continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1944		Aug. 8	30.84	Sept. 27	32.25	Dec. 29	29.90
		16	30.42	Oct. 16	31.49		
Oct. 4	29.30	23	30.42	23	30.94	1948	
11	29.45	30	30.57	Nov. 1	31.90	Jan. 5	29.10
19	29.55	Sept. 6	30.80	25	30.25	12	30.16
25	29.32	14	29.74	29	29.70	19	28.97
Nov. 8	28.59	20	29.09	Dec. 5	30.30	26	28.87
12	29.12	27	29.07			Feb. 2	28.94
16	29.38	Oct. 4	29.03	1947		9	29.19
22	29.96	10	28.94	Feb. 14	29.88	16	29.21
29	29.34	18	29.22	28	29.90	23	29.01
Dec. 6	29.70	25	28.74	Mar. 7	29.90	Mar. 1	29.42
15	29.04	Nov. 1	28.90	14	30.03	8	28.40
22	29.71	9	28.58	28	30.75	15	29.53
28	28.79	16	29.19	Apr. 4	29.70	22	29.27
		30	29.17	22	29.54	29	28.02
1945		Dec. 9	29.55	May 3	29.80	Apr. 5	28.30
		13	29.37	9	30.10	12	27.60
Jan. 3	29.58	21	29.19	17	29.25	19	28.40
11	29.53			21	26.45	26	28.90
17	29.38	1946		June 9	26.68	May 3	29.00
24	28.85	Jan. 7	28.75	16	27.40	10	28.40
Feb. 1	29.10	18	27.82	23	27.20	17	28.03
8	28.63	30	27.15	30	27.70	24	29.01
14	28.84	Feb. 7	27.18	July 3	28.40	31	28.98
22	29.01	15	27.46	12	28.70	June 7	28.00
Mar. 1	28.84	Mar. 1	23.20	19	28.30	14	28.67
8	29.01	8	28.37	Aug. 4	28.96	21	28.40
15	30.74	13	27.57	11	28.58	28	28.53
22	29.76	20	28.69	18	28.47	July 5	28.40
29	31.83	27	29.18	26	29.17	12	28.60
Apr. 6	30.50	Apr. 3	28.26	Sept. 9	28.70	19	29.42
12	30.01	11	28.55	15	28.68	26	30.10
19	30.80	18	28.27	22	29.10	Aug. 2	29.20
26	30.51	25	27.93	29	27.82	9	28.58
May 3	30.36	May 3	29.26	Oct. 5	28.50	16	29.61
10	30.17	9	29.30	12	28.15	23	28.86
17	30.28	16	29.55	20	28.50	30	29.03
24	30.16	23	28.90	27	28.48	Sept. 6	30.10
June 1	29.73	31	26.80	Nov. 3	29.10	13	30.40
7	29.55	June 7	28.75	10	28.50	20	29.94
14	30.23	21	27.40	17	28.65	27	29.90
21	29.98	28	28.73	24	28.62	Oct. 4	29.35
28	30.17	July 19	32.20	Dec. 1	28.98	11	28.94
July 5	29.18	Aug. 15	31.20	5	29.07	18	29.32
12	30.61	23	31.10	15	28.78	25	29.20
19	31.41	Sept. 5	31.24	22	29.02	Nov. 1	28.90
Aug. 2	30.67						

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 4--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1948		Feb. 7	29.64	1951		Nov. 26	28.75
		13	29.60			Dec. 3	27.50
Nov. 8	29.36	20	29.20	Jan. 1	28.40	10	28.00
15	29.40	27	28.90	8	28.10	16	28.40
22	29.00	Mar. 6	27.50	17	27.70	27	27.55
29	29.20	13	28.40	22	28.10		
Dec. 6	29.10	20	28.40	29	28.40	1952	
13	29.58	27	29.00	Feb. 5	27.60	Jan. 2	26.85
20	29.30	Apr. 3	28.30	12	27.60	8	28.05
26	29.50	10	27.20	19	27.40	15	28.00
		17	27.50	26	27.00	22	26.80
1949		24	28.10	Mar. 5	28.40	29	27.10
		May 1	27.00	12	28.40	Feb. 5	27.95
Jan. 3	29.47	8	28.60	19	28.20	12	27.55
10	30.80	15	27.00	26	28.40	19	26.90
17	30.85	22	27.60	Apr. 2	27.80	26	26.65
Mar. 14	29.00	29	26.00	9	28.60	Mar. 4	27.00
Apr. 4	29.80	June 5	27.40	16	26.70	18	26.80
11	31.05	12	27.10	23	28.30	25	27.50
18	30.10	19	26.90	30	29.00	Apr. 3	27.75
25	30.40	26	27.00	May 7	28.10	16	27.20
May 2	30.24	July 3	26.53	14	29.10	May 1	27.40
9	30.60	10	28.96	21	29.00	6	27.40
16	34.00	17	26.80	28	27.80	13	27.30
23	30.70	24	27.80	June 4	27.70	20	28.10
30	29.10	31	27.80	11	28.80	27	28.00
June 6	31.80	Aug. 7	28.20	18	29.30	June 3	28.40
13	31.70	14	27.00	25	29.30	16	28.70
20	31.20	21	27.80	July 2	29.00	23	28.40
Sept. 5	31.76	28	27.10	9	29.00	July 1	29.20
12	30.70	Sept. 4	26.70	16	29.60	8	29.80
19	31.10	11	27.20	23	29.75	15	28.60
24	31.80	18	27.20	30	27.50	22	29.60
Oct. 3	31.00	25	28.20	Aug. 7	26.30	29	27.40
10	31.45	Oct. 2	27.70	13	27.98	Aug. 12	27.90
17	30.41	9	27.70	27	27.20	18	29.40
24	31.10	16	27.60	Sept. 4	27.80	26	29.05
31	30.30	23	27.50	10	28.20	Sept. 3	29.70
Nov. 7	30.50	30	28.30	17	27.90	9	29.30
14	31.90	Nov. 6	28.80	25	29.20	16	29.30
Dec. 5	31.32	13	28.10	Oct. 1	28.60	29	29.70
12	32.50	20	28.50	8	29.40	Oct. 7	28.10
		27	28.00	15	30.20	14	29.60
1950		Dec. 4	28.30	22	28.95	28	29.45
		11	27.70	29	30.00	Nov. 3	28.70
Jan. 9	28.70	18	27.50	Nov. 5	30.25	11	29.45
16	29.50	25	28.50	12	28.30	18	29.30
30	28.60			19	28.00		

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 4--continued

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1952		1953		Feb. 10	30.00	Mar. 31	30.20
Nov. 26	29.10	Jan. 13	29.30	17	29.30	Apr. 14	30.30
Dec. 16	29.10	20	29.80	Mar. 2	29.90	May 5	29.50
30	29.30	27	30.80	10	30.10	12	30.70
				24	30.50		

St. Joseph 5. (37/2-10G2). Formerly Sj 16-2, Sj 16F. Singer Manufacturing Co. Olive St. and Western Ave., South Bend. SW $\frac{1}{2}$ NE $\frac{1}{2}$ sec. 10, T. 37 N., R. 2 E. Dug unused water-table (?) well in sand, diameter 40 feet, reported depth 40 feet. Land-surface datum is 716 feet above msl. Highest water level is 15.89 below lsd, July 17, 1950; lowest 21.72 below lsd, Feb. 22, 1945. Records available: 1944-53. Affected by nearby pumping.

1944		Jan. 24	21.64	Oct. 10	21.19	1947	
June 28	19.28	Feb. 1	21.64	18	21.04	Feb. 14	19.89
July 5	19.31	8	21.71	25	21.14	Apr. 4	19.89
12	19.48	14	21.70	Nov. 1	21.14	22	19.89
19	19.57	22	21.72	9	21.09	May 3	20.89
26	19.87	Mar. 1	21.67	16	21.09	17	20.39
Aug. 1	19.91	8	21.64	30	21.15	21	19.89
10	19.79	15	21.62	Dec. 9	21.19	June 16	19.89
16	20.29	22	21.65	13	21.19	23	19.89
24	20.45	29	21.71	21	21.19	Aug. 4	19.89
30	20.54	Apr. 6	21.67			11	19.89
Sept. 7	20.70	12	21.60	1946		18	19.89
13	20.83	19	21.54	Jan. 7	21.09	26	19.89
20	20.95	26	21.46	Mar. 20	20.39	Sept. 15	19.89
27	21.09	May 3	21.41	27	20.40	Nov. 3	19.89
Oct. 11	21.20	10	21.52	Apr. 3	20.40	10	19.89
19	21.26	June 1	20.74	11	19.90	Dec. 1	19.89
25	21.30	7	20.58	18	19.90	22	19.89
Nov. 1	21.14	14	20.59	May 3	19.90	29	19.89
8	21.35	21	20.54	9	19.90		
16	21.42	28	20.64	16	19.90	1948	
22	21.38	July 5	20.66	July 7	19.90	Jan. 5	19.89
29	21.63	12	20.68	July 19	19.90	12	19.89
Dec. 6	21.46	19	20.64	Aug. 23	19.40	19	19.89
15	21.48	Aug. 2	21.39	Sept. 5	19.40	26	19.89
22	21.57	8	21.01	27	19.40	Feb. 2	19.89
28	21.46	16	21.01	Oct. 16	19.40	16	19.89
		23	21.13	23	19.90	23	19.89
		30	21.14	Nov. 25	19.90	Mar. 1	19.89
1945		Sept. 6	21.14	29	19.90	8	19.89
Jan. 3	21.63	14	21.09			15	19.89
11	21.58	20	21.07			22	20.39
17	21.61	27	21.04				
		Oct. 4	21.11				

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph . 5--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1948		May 2	19.89	July 3	16.19	May 21	17.69
		9	19.89	10	16.09	28	17.59
Mar. 29	17.89	16	19.89	17	15.89	June 4	17.69
Apr. 19	18.89	23	19.89	24	16.09	11	17.59
26	18.89	30	19.81	31	16.39	18	17.72
May 10	20.09	June 6	19.89	Aug. 7	16.14	25	17.89
17	19.39	13	19.89	14	16.39	July 2	17.89
24	19.39	20	19.64	21	16.64	9	18.14
31	19.39	Sept. 5	20.14	28	16.89	16	18.14
June 7	18.89	12	20.14	Sept. 4	16.89	23	18.14
14	19.14	19	20.39	11	16.89	30	18.39
21	18.89	24	20.39	18	17.19	Aug. 7	18.39
28	18.89	Oct. 3	20.39	25	17.39	13	18.49
July 5	18.89	10	20.14	Oct. 2	17.79	Sept. 4	18.64
12	19.09	17	20.14	9	18.39	10	18.64
19	18.89	24	20.14	16	17.59	17	18.64
26	18.89	31	20.14	23	17.89	25	18.89
Aug. 2	18.89	Nov. 7	20.14	30	17.89	Oct. 1	18.89
9	18.89	14	20.14	Nov. 6	18.19	8	18.89
16	18.89	Dec. 5	20.64	13	18.39	15	18.89
23	18.89	12	20.64	20	18.39	22	18.89
30	18.89			27	18.39	29	18.89
Sept. 6	18.89	1950		Dec. 4	18.39	Nov. 5	18.89
13	18.89			11	19.39	12	18.64
20	18.89	Jan. 9	20.49	18	18.39	19	19.06
27	18.89	16	20.49	25	18.39	26	18.89
Oct. 4	18.89	30	20.09			Dec. 3	18.89
18	20.89	Feb. 7	19.89	1951		10	18.64
25	21.19	13	19.89	Jan. 1	18.39	16	18.64
Nov. 1	20.89	20	19.89	8	18.39	27	18.64
8	20.64	27	19.89	17	18.19		
15	20.89	Mar. 6	19.89	22	18.19	1952	
22	20.39	13	19.89	29	18.09	Jan. 2	18.39
Dec. 6	20.56	20	19.39	Feb. 5	18.09	8	18.39
13	19.89	27	19.14	12	17.89	15	18.72
20	21.39	Apr. 3	18.89	19	17.89	22	17.89
26	20.56	10	18.39	26	17.89	29	17.81
		17	17.89	Mar. 12	17.89	Feb. 5	17.72
1949		24	17.64	19	18.19	12	17.39
		May 1	17.39	26	18.09	19	17.22
Jan. 3	21.39	8	17.49	Apr. 2	18.09	26	17.14
10	21.06	15	16.89	9	20.49	Mar. 4	17.14
17	21.39	22	16.89	16	18.09	18	17.14
Mar. 14	20.89	29	16.89	23	18.09	25	17.22
Apr. 4	20.14	June 5	16.69	30	18.19	Apr. 3	17.22
11	20.14	12	16.64	May 7	17.89	16	17.14
18	20.22	19	16.39	14	17.89	May 1	17.14
25	20.14	26	16.39				

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 5--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1952		July 29	17.39	Nov. 11	18.14	Feb. 17	19.39
		Aug. 12	17.89	18	18.89	Mar. 2	19.39
May 13	16.97	18	18.14	26	17.76	10	19.39
20	16.89	26	18.14	Dec. 16	19.06	24	18.89
27	16.89	Sept. 3	18.39	30	19.39	31	19.14
June 3	17.14	9	18.14			Apr. 14	18.89
16	17.39	16	18.22	1953		May 5	18.89
23	17.39	29	18.22			12	18.89
July 1	17.39	Oct. 7	18.14	Jan. 13	19.39	June 12	18.64
8	17.39	14	18.14	20	19.39	17	18.89
15	17.48	28	18.14	27	19.47	23	18.89
22	17.39	Nov. 3	18.14	Feb. 10	19.39		

St. Joseph 6. (37/2-12D4). Formerly Sj 22. Palace Theater. Colfax Ave. and Michigan St., South Bend. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 37 N., R. 2 E.. Drilled unused artesian well in sand and gravel, diameter 12 inches, depth 97 feet. Land-surface datum is 708 feet above msl. Recording gage installed Sept. 20, 1944. Highest water level is 26.20 below lsd, Mar. 31, 1949; lowest 46.95 below lsd, Aug. 27, 28, 1948. Records available: 1944-53. Affected by nearby pumping.

(Daily 2 a.m. water level from recorder graph)

1944		Nov. 18	36.20	May 1	31.55	Nov. 1	32.25
		27	32.15	4	31.05	11	33.05
June 8	h37.29	Dec. 1	33.95	15	31.50	15	32.80
12	h34.06	10	36.70	27	35.40	23	31.15
15	h37.87	15	36.10	June 1	34.00	Dec. 1	32.10
29	h40.44	27	31.30	4	31.45	3	30.50
July 1	h39.22			15	38.50	15	32.25
8	h41.97	1945		30	41.30	21	33.75
15	h39.67			July 1	41.00		
22	h36.55	Jan. 1	32.45	15	39.40	1946	
Aug. 1	h39.90	3	32.40	16	37.10	Jan. 1	29.95
5	h43.46	6	35.70	21	43.00	26	33.70
15	h42.87	15	33.05	Aug. 1	40.10	Feb. 9	34.25
29	h34.63	Feb. 1	34.30	3	41.90	15	31.90
Sept. 1	h35.18	15	35.00	15	40.25	18	30.95
7	h36.47	18	35.75	27	36.50	Mar. 1	33.55
15	h35.16	26	32.95	Sept. 2	40.30	15	32.65
20	h36.90	Mar. 1	34.35	8	41.00	27	30.95
Oct. 1	34.15	10	32.50	15	34.70	Apr. 1	31.20
7	35.35	15	35.70	17	32.95	15	30.40
13	34.05	18	36.95	Oct. 1	31.70	26	33.85
23	31.70	Apr. 1	32.85	8	31.05	May 1	34.10
Nov. 1	33.95	15	32.20	15	31.65	13	31.25
15	35.00	23	30.45	19	33.40		

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 6--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1946		Apr. 21	29.40	Apr. 15	32.05	Mar. 31	26.85
		May 1	32.25	19	31.05	Apr. 1	30.60
May 15	34.55	15	33.10	28	35.60	15	36.45
31	35.60	24	35.40	May 1	34.10	29	37.45
June 1	35.20	26	29.95	15	34.25	May 1	36.95
2	33.23	June 1	29.85	17	32.25	2	34.35
15	37.90	2	28.85	29	39.25	7	41.85
27	41.35	15	34.70	June 1	36.55	15	42.30
July 2	38.30	25	37.25	5	44.00	June 1	37.70
3	37.95	July 1	38.25	14	35.70	12	44.00
15	41.75	15	38.95	15	36.30	15	42.10
21	45.35	22	35.35	July 1	37.80	20	36.95
Aug. 1	43.65	27	41.10	15	44.55	July 1	44.50
4	45.20	Aug. 1	41.70	17	45.40	11	39.50
12	37.45	4	39.95	Aug. 1	43.10	15	42.65
15	39.65	14	44.40	9	37.30	21	46.20
Sept. 1	38.55	15	43.65	15	41.75	Aug. 1	40.05
8	41.90	Sept. 1	38.10	28	46.90	15	40.70
15	35.00	15	36.50	Sept. 1	44.75	27	45.85
16	33.55	21	40.25	4	45.35	Sept. 15	40.35
Oct. 1	35.30	28	34.95	15	40.80	18	41.00
11	37.55	Oct. 1	36.20	27	34.25	26	36.25
15	34.50	13	35.10	Oct. 1	37.50	Oct. 1	37.10
21	32.95	15	35.65	2	38.25	5	31.85
Nov. 1	35.35	18	37.70	15	36.25	9	39.05
4	32.60	Nov. 1	35.30	18	33.60	15	38.65
15	33.65	15	34.15	Nov. 1	34.00	Nov. 1	35.95
Dec. 1	33.15	30	31.90	13	35.90	5	38.00
6	35.35	Dec. 2	32.05	15	32.75	15	33.55
15	34.25	4	33.90	29	31.50	28	28.85
30	31.20	15	31.05	Dec. 1	33.60	Dec. 1	33.45
		27	30.30	15	36.30	15	34.35
				23	36.50	16	36.25
				27	32.10	27	29.00
1947		1948		1949		1950	
Jan. 1	32.85	Jan. 1	33.05	Jan. 1	34.40	Jan. 1	31.90
15	32.85	5	30.75	3	30.60	4	28.95
25	35.50	15	32.80	15	35.85	12	32.10
30	30.10	17	33.45	Feb. 1	31.85	15	30.60
Feb. 3	32.15	Feb. 1	33.20	5	35.05	Feb. 1	e31.60
7	34.90	2	31.55	15	32.95	3	33.55
15	33.85	7	34.10	21	31.80	15	30.25
17	31.75	15	33.30	Mar. 1	32.25	21	29.40
Mar. 1	34.40	Mar. 1	31.50	7	31.75	Mar. 1	28.75
13	34.80	15	32.05	12	35.85	15	30.20
24	30.70	19	33.50	15	34.00	20	28.10
Apr. 1	32.70	22	31.05				
4	34.75	Apr. 1	31.95				
15	31.20						

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 6--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1950		Aug. 21	34.80	Jan. 20	36.45	July 14	36.65
		27	39.95	Feb. 1	35.95	15	37.80
Mar. 31	33.70	Sept. 1	38.05	3	36.10	28	41.90
Apr. 1	34.70	15	35.60	15	35.10	Aug. 1	39.25
2	34.80	25	28.65	26	31.75	15	39.15
15	33.80	Oct. 14	h36.90	Mar. 1	33.20	20	35.90
17	30.75	21	38.10	5	32.75	31	40.95
May 1	31.90	23	33.35	15	34.90	Sept. 1	41.25
15	35.25	Nov. 1	38.35	17	35.70	10	35.65
26	37.85	13	32.40	Apr. 1	34.75	15	39.40
June 3	36.75	15	34.60	14	35.50	Oct. 1	34.10
9	38.15	Dec. 1	35.30	15	35.30	2	31.85
15	36.10	7	31.00	23	31.65	6	38.80
20	31.35	15	36.20	May 1	34.65	Nov. 1	34.30
July 1	e35.80			14	34.30	5	31.20
5	32.15	1951		15	34.50	15	35.60
13	38.65			20	39.05	16	35.65
15	36.30	Jan. 1	33.55	June 1	36.50	Dec. 1	35.30
Aug. 1	36.40	2	31.80	19	41.65	10	31.60
15	38.05	15	35.20	July 1	39.10	15	34.75
						22	36.35

(Daily highest water level from recorder graph, 1952)

Day	Jan.	Feb.	Mar.	Apr.	May	June
1	-----	32.05	31.55	30.25	37.10	32.70
2	-----	31.95	30.50	31.25	38.05	31.60
3	31.70	30.65	29.35	31.55	37.65	33.70
4	32.75	29.40	30.40	32.00	37.05	34.40
5	33.55	30.25	31.15	32.25	37.05	35.55
6	32.45	30.80	31.80	31.45	38.40	36.44
7	31.20	31.30	31.55	30.00	38.50	38.00
8	31.90	31.60	31.85	30.45	37.35	39.20
9	31.40	31.50	30.65	30.85	35.55	38.50
10	32.30	31.50	29.25	31.80	34.70	38.50
11	33.30	29.75	30.45	32.30	33.70	38.85
12	33.80	30.55	30.90	31.85	31.55	39.00
13	32.45	31.45	31.30	30.45	32.00	38.15
14	30.25	31.65	31.15	29.30	32.00	38.50
15	31.10	31.80	31.20	30.55	32.20	37.85
16	32.05	32.10	29.95	32.20	31.80	36.65
17	32.95	29.85	29.35	32.55	31.60	38.35
18	33.30	28.80	29.55	32.95	30.25	38.50
19	33.40	29.15	29.95	33.35	29.20	39.40
20	32.35	29.40	30.40	33.10	30.45	39.30
21	30.65	28.95	30.95	31.95	30.90	37.60

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 6--continued

(Daily highest water level from recorder graph, 1952)

Day	Jan.	Feb.	Mar.	Apr.	May	June
22	31.25	29.20	31.35	33.20	31.85	35.65
23	31.95	29.60	30.90	34.65	30.95	35.35
24	-----	29.80	29.50	34.65	32.50	35.15
25	32.85	28.65	29.90	34.35	32.60	36.80
26	33.20	30.10	30.70	34.45	31.75	-----
27	32.25	30.85	31.75	34.65	32.20	-----
28	30.10	-----	31.95	34.40	33.80	-----
29	30.85	32.35	31.70	35.30	34.50	-----
30	31.40	-----	31.50	36.00	34.65	-----
31	32.10	-----	29.75	-----	33.15	-----

(Daily highest water level from recorder graph, 1953)

1	-----	34.45	34.05	32.35	35.45	41.85
2	-----	33.50	-----	32.70	36.40	41.05
3	33.00	-----	33.30	32.70	36.50	41.30
4	33.45	-----	34.15	-----	35.85	42.10
5	32.35	-----	34.50	-----	35.70	43.15
6	33.35	-----	34.70	-----	36.05	43.10
7	34.10	-----	34.40	-----	36.55	42.10
8	34.55	-----	34.45	-----	36.85	41.70
9	35.05	33.90	33.30	-----	36.55	41.80
10	-----	34.70	33.80	-----	36.95	-----
11	-----	35.20	34.35	-----	36.90	-----
12	-----	35.55	34.55	-----	37.45	-----
13	-----	35.55	34.40	33.80	38.35	-----
14	-----	35.05	34.75	34.35	38.05	-----
15	-----	33.30	34.50	34.95	37.65	-----
16	-----	-----	33.35	35.20	37.65	-----
17	-----	33.05	33.65	35.40	36.90	-----
18	-----	33.95	-----	35.30	35.20	-----
19	-----	34.45	34.05	35.00	36.05	-----
20	-----	34.80	34.75	34.00	37.55	-----
21	-----	34.95	35.10	34.35	38.85	-----
22	-----	34.30	34.95	35.05	39.60	-----
23	-----	33.85	33.40	35.95	38.10	-----
24	35.60	33.65	33.80	36.15	37.55	-----
25	35.25	34.20	34.15	35.40	35.85	-----
26	33.55	34.55	33.75	35.55	37.75	-----
27	33.30	34.80	32.95	-----	38.80	-----
28	33.95	34.80	32.60	-----	39.35	-----
29	34.55	-----	31.70	34.60	39.80	-----
30	34.85	-----	31.35	35.15	40.15	-----
31	34.65	-----	31.85	-----	41.35	-----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 7. (37/2-11K4). Formerly Sj 25-3. Oliver Farm Equipment Co. Chapin and Fords Sts., South Bend. NW $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 11, T. 37 N., R. 2 E. Driven unused water-table well in sand and gravel diameter 2 inches, depth 44 feet. Land-surface datum is 718 feet above msl. Highest water level is 28.37 below lsd, July 5, 1945; lowest 32.10 below lsd, Mar. 22, 1945. Records available: 1944-45.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1944		1945		Mar. 15	31.77	July 19	30.00
Sept. 30	29.28	Jan. 18	31.63	22	32.10	26	30.18
Oct. 3	29.68	25	31.69	29	31.81	Aug. 2	29.68
6	31.38	Feb. 1	31.70	Apr. 5	31.54	9	29.54
16	30.19	8	31.82	June 7	29.14	17	29.40
23	31.18	15	31.76	14	28.74	23	30.35
Nov. 1	31.30	22	31.72	21	29.70	30	30.33
8	31.28	Mar. 1	31.75	28	28.58	Sept. 6	30.40
		8	31.75	July 5	28.37		
				12	29.15		

St. Joseph 8. (37/2-3N2). Formerly Sj 23. Bendix Aviation Corp. Bendix Dr. and Westmoor St., South Bend. SW $\frac{1}{2}$ SW $\frac{1}{2}$ sec. 3, T. 37 N., R. 2 E. Drilled unused water-table well in gravel and sand, diameter 12 inches, depth 198 feet. Land-surface datum is 712 feet above msl. Recording gage installed June 13, 1944. Highest water level is 20.7 below lsd, Nov. 17, 1952; lowest 50.5 below lsd, May 7, 8, 1945. Records available 1944-53. Affected by nearby pumping.

(Daily lowest water level from recorder graph, 1944)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	----	----	----	----	----	----	48.7	48.1	47.3	46.8	42.4	39.6
2	----	----	----	----	----	----	48.2	47.9	47.5	46.6	42.1	39.6
3	----	----	----	----	----	----	38.8	47.5	47.2	46.8	42.0	39.4
4	----	----	----	----	----	----	36.8	47.4	46.5	47.1	41.8	39.3
5	----	----	----	----	----	----	37.4	47.2	46.7	47.2	41.6	39.5
6	----	----	----	----	----	----	37.5	46.4	46.8	47.3	41.9	----
7	----	----	----	----	----	----	37.2	46.3	46.9	47.4	41.6	----
8	----	----	----	----	----	----	37.1	----	46.8	46.5	41.3	----
9	----	----	----	----	----	----	37.0	----	47.0	47.0	41.1	----
10	----	----	----	----	----	----	42.1	47.6	46.7	----	41.1	----
11	----	----	----	----	----	----	42.8	47.7	----	----	41.0	----
12	----	----	----	----	----	----	----	47.7	----	47.4	40.8	----
13	----	----	----	----	----	----	----	47.3	----	47.3	40.9	39.3
14	----	----	----	----	----	44.5	----	47.5	46.2	47.2	40.8	39.2
15	----	----	----	----	----	45.0	----	47.5	46.8	46.8	40.7	39.3
16	----	----	----	----	----	45.6	----	47.6	47.3	46.8	40.2	39.3
17	----	----	----	----	----	45.5	----	47.5	47.2	46.9	41.0	39.2
18	----	----	----	----	----	45.0	46.1	47.5	47.5	47.0	40.6	39.0
19	----	----	----	----	----	45.1	46.6	47.3	47.8	47.1	40.4	39.1
20	----	----	----	----	----	45.4	46.7	46.9	47.2	47.1	40.1	39.2
21	----	----	----	----	----	45.7	46.6	47.1	47.5	47.0	----	39.1

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
22	----	----	----	----	----	45.9	46.7	47.2	47.4	46.8	40.1	38.9
23	----	----	----	----	----	45.9	46.6	47.1	47.0	46.6	40.0	38.8
24	----	----	----	----	----	45.9	46.3	47.0	46.7	46.9	39.9	38.7
25	----	----	----	----	----	45.2	47.1	47.1	46.5	47.1	39.8	38.1
26	----	----	----	----	----	46.1	47.2	47.1	47.4	47.1	39.7	38.1
27	----	----	----	----	----	46.8	47.5	46.6	47.6	47.1	----	38.1
28	----	----	----	----	----	47.0	47.7	47.0	47.6	46.9	----	38.3
29	----	----	----	----	----	47.8	47.8	47.4	47.5	43.7	39.7	38.2
30	----	----	----	----	----	48.4	47.5	47.5	47.5	42.6	39.6	38.1
31	----	----	----	----	----	----	47.9	47.9	----	42.5	----	37.9

(Daily lowest water level from recorder graph, 1945)

1	38.1	40.8	38.2	48.3	49.8	45.3	46.6	46.3	36.8	34.4	35.5	32.9
2	----	40.8	38.4	47.9	49.2	46.8	36.7	46.5	36.5	34.8	35.5	32.5
3	----	40.8	38.7	48.3	49.4	46.4	33.7	----	36.5	34.8	35.3	37.8
4	----	40.0	40.3	48.5	49.9	46.1	32.0	46.5	28.5	34.9	35.1	38.3
5	----	39.3	41.6	48.7	50.2	44.9	30.9	46.3	27.4	35.0	35.3	38.9
6	38.1	33.8	41.9	49.0	50.4	43.5	30.1	45.5	26.7	----	35.5	39.0
7	38.1	32.5	43.7	49.1	50.5	43.2	29.4	46.1	----	----	35.5	39.1
8	38.1	31.1	44.1	49.0	50.5	44.5	----	46.4	----	----	35.5	34.4
9	38.2	29.9	44.3	48.6	----	45.2	----	46.5	----	----	35.6	33.6
10	----	28.9	43.8	49.0	49.6	45.1	40.8	46.8	----	----	35.6	38.5
11	----	28.3	43.1	49.3	50.0	45.5	41.9	46.8	----	----	35.2	39.0
12	----	27.6	43.4	49.5	50.0	45.8	42.4	----	----	----	35.2	38.4
13	----	27.0	43.7	49.7	49.2	45.8	----	46.9	33.8	----	35.4	36.1
14	38.5	26.6	43.9	49.1	48.9	46.2	----	47.0	34.7	----	38.3	34.0
15	38.4	----	44.1	48.1	49.5	----	----	46.8	----	----	37.9	33.6
16	38.3	----	44.1	48.7	49.7	----	43.4	----	----	----	37.7	33.3
17	38.4	----	44.5	49.3	49.7	----	44.0	----	----	----	38.3	33.4
18	38.4	----	44.2	49.6	49.9	44.4	44.6	----	35.9	----	33.3	33.5
19	39.1	----	44.0	49.8	49.9	45.1	44.8	----	36.1	35.2	38.3	33.5
20	39.5	----	44.5	50.0	48.9	45.5	45.7	----	36.3	35.2	38.9	33.5
21	39.6	----	45.5	50.0	48.8	45.7	45.9	42.1	36.5	35.1	38.6	33.6
22	39.6	34.8	46.4	48.8	49.4	45.9	45.9	40.1	36.3	35.0	38.5	33.5
23	39.9	35.8	47.0	49.0	49.8	46.0	44.7	38.9	36.1	35.3	37.1	33.2
24	40.1	36.4	47.3	49.6	49.9	44.1	45.7	38.1	36.0	35.3	32.8	32.8
25	40.2	e36.8	47.2	50.0	49.4	44.6	45.8	37.3	36.4	35.4	32.2	----
26	40.3	e37.2	47.2	50.2	48.9	----	46.3	36.7	----	35.4	31.9	----
27	40.4	e37.7	47.9	50.4	48.5	46.0	46.5	----	34.8	35.3	32.0	----
28	40.4	37.9	48.5	----	47.8	46.4	43.1	35.7	34.8	35.0	32.8	----
29	40.6	----	48.6	----	47.8	46.7	44.8	36.2	34.6	35.3	32.8	33.0
30	40.7	----	48.6	----	47.7	46.8	45.5	36.5	34.3	35.3	32.8	32.8
31	40.8	----	48.4	----	47.7	----	46.0	36.9	----	35.5	----	32.8

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

(Daily lowest water level from recorder graph, 1946)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.6	35.7	35.5	34.9	34.8	----	----	----	----	----	44.3	----
2	32.5	35.7	35.5	35.4	34.9	----	----	----	----	----	44.1	----
3	32.7	35.3	35.3	35.3	34.8	----	----	----	----	----	40.4	37.8
4	32.7	35.3	35.5	35.3	34.3	----	----	----	----	----	43.3	37.6
5	34.6	35.3	35.4	35.3	----	----	----	----	----	----	43.7	37.6
6	34.7	35.3	35.5	35.2	----	----	----	----	----	----	44.3	37.2
7	35.0	35.4	35.6	35.1	----	----	----	----	----	----	44.7	36.9
8	35.2	35.4	35.6	35.2	----	----	----	----	----	----	----	36.3
9	35.4	35.4	33.3	35.3	----	----	----	----	----	----	41.5	40.5
10	35.5	35.0	33.3	35.4	----	----	----	----	----	----	41.0	41.3
11	35.4	35.2	34.9	35.3	33.6	----	----	----	----	----	42.9	----
12	35.4	35.4	35.1	35.2	33.3	----	----	----	----	----	43.7	----
13	35.4	35.4	35.1	34.9	33.8	----	----	----	----	----	44.3	----
14	35.5	35.5	35.2	----	----	----	----	----	----	----	44.6	----
15	35.8	35.6	35.2	34.9	----	----	----	----	----	31.8	44.8	----
16	35.7	35.5	35.1	35.0	----	----	----	----	----	32.2	44.5	42.4
17	35.9	35.4	34.9	35.0	----	----	----	----	----	32.4	----	43.2
18	35.9	35.3	35.0	34.9	----	----	----	----	----	32.5	43.2	43.7
19	35.9	35.4	35.2	34.6	----	----	----	----	----	32.2	44.1	44.0
20	35.6	35.5	35.3	34.5	----	----	----	----	----	31.5	44.6	44.3
21	35.5	35.5	35.3	34.3	----	----	----	----	----	----	45.0	44.0
22	35.8	35.6	35.3	34.7	----	----	----	----	----	----	43.2	40.6
23	35.7	35.4	35.1	34.9	----	----	----	----	31.5	----	41.2	42.7
24	35.5	35.0	35.0	34.9	----	----	33.5	----	32.3	38.0	40.2	42.7
24	35.6	35.1	35.2	35.0	----	----	33.9	----	32.8	37.8	39.5	----
26	35.4	35.3	35.3	34.7	----	----	34.1	----	33.2	37.6	39.3	42.2
27	35.2	35.5	35.4	34.3	----	----	33.5	----	33.1	32.8	39.3	42.8
28	35.3	35.6	35.4	34.1	----	----	32.5	----	----	40.6	39.1	42.8
29	35.4	----	35.4	34.5	----	----	----	----	----	42.2	----	39.4
30	35.6	----	35.3	34.7	----	----	----	----	----	43.2	----	41.9
31	35.7	----	35.1	----	----	----	----	----	----	44.0	----	42.5

(Daily lowest water level from recorder graph, 1947)

1	41.1	----	----	38.4	33.0	----	----	----	41.5	46.8	46.5	43.9
2	42.2	----	----	38.4	35.5	34.8	29.3	43.7	43.3	46.3	44.5	45.2
3	43.2	----	----	38.5	36.2	36.4	34.8	39.8	44.3	46.2	45.2	45.7
4	43.2	----	----	38.4	36.5	37.5	27.1	42.5	45.0	46.1	45.8	46.1
5	40.9	----	----	37.9	36.7	38.2	26.1	43.6	45.3	45.4	46.2	46.4
6	42.1	----	----	37.4	32.5	38.5	25.3	44.3	45.3	45.3	46.5	46.4
7	42.9	----	----	37.9	31.9	38.6	31.4	43.8	42.7	45.8	46.7	44.2
8	43.6	----	----	38.0	31.5	34.8	33.3	44.4	43.8	45.9	46.6	44.4
9	43.9	----	----	37.9	31.5	37.0	34.2	44.4	44.9	46.0	46.0	45.5
10	44.0	----	----	37.9	31.2	38.3	36.7	41.8	45.4	45.9	45.8	45.9
11	43.7	----	----	37.8	----	39.0	37.8	42.7	45.8	45.8	46.3	----
12	40.5	----	----	37.6	----	39.1	38.5	43.5	46.1	45.0	46.6	----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
13	42.4	-----	-----	36.9	-----	39.3	38.7	44.9	46.1	45.2	46.8	-----
14	43.5	-----	-----	37.1	28.1	39.5	37.0	45.3	45.8	45.6	46.9	-----
15	43.9	-----	-----	37.5	27.9	36.2	36.6	45.5	45.8	46.0	46.9	46.0
16	39.6	-----	-----	37.8	28.7	39.2	36.2	45.5	46.1	46.2	46.9	46.5
17	38.5	-----	-----	37.7	29.3	39.8	39.3	42.6	46.3	46.3	45.4	46.8
18	39.5	-----	-----	37.6	24.6	40.7	-----	43.5	46.5	46.3	46.2	47.0
19	37.3	-----	-----	35.2	28.1	41.1	-----	44.5	46.7	46.9	46.5	47.3
20	42.0	-----	38.6	33.9	29.1	41.3	37.0	45.3	46.7	45.6	46.7	47.3
21	42.7	-----	38.6	33.8	29.8	41.5	-----	45.7	46.4	45.9	46.8	47.1
22	43.2	-----	38.2	33.8	34.6	37.9	40.5	45.9	46.0	46.1	46.7	46.0
23	43.2	-----	37.3	33.7	35.7	40.4	41.3	45.8	46.3	46.3	46.6	46.8
24	41.5	-----	38.1	33.7	36.1	41.3	42.0	45.4	46.6	46.3	45.6	46.9
25	40.8	-----	-----	33.5	33.4	42.1	42.4	44.3	46.7	46.2	46.1	44.9
26	39.5	-----	-----	33.4	36.2	42.5	42.5	45.1	46.8	42.9	46.1	45.0
27	-----	-----	-----	32.7	36.9	43.0	42.4	45.5	46.7	44.6	46.1	45.7
28	-----	-----	-----	-----	37.5	43.0	41.8	45.9	46.5	45.4	43.9	45.7
29	-----	-----	-----	-----	38.0	42.8	42.5	46.0	46.2	46.0	43.2	45.4
30	-----	-----	-----	33.1	37.6	39.0	43.8	46.0	46.6	46.3	41.3	46.2
31	-----	-----	-----	-----	35.2	-----	-----	43.1	-----	46.5	-----	46.7

(Daily lowest water level from recorder graph, 1948)

1	46.6	45.4	47.1	47.2	46.4	37.0	-----	44.2	47.1	47.0	e44.5	45.7
2	45.3	44.0	47.4	47.3	46.4	36.9	-----	44.4	47.2	47.0	e39.6	46.1
3	45.4	45.1	47.6	47.3	46.3	36.9	-----	44.7	47.2	46.1	38.7	46.4
4	45.3	46.3	47.8	46.5	46.4	36.9	-----	44.8	47.2	45.8	38.1	46.4
5	45.7	46.8	47.8	46.2	46.4	36.8	28.5	44.9	47.1	46.2	42.0	46.4
6	46.5	47.1	47.8	46.6	46.5	36.6	30.7	45.0	46.4	46.5	42.7	46.3
7	46.9	47.1	46.7	46.8	46.5	36.4	31.6	45.0	46.6	46.9	-----	46.0
8	47.2	44.7	46.0	47.0	45.3	36.3	32.1	45.0	46.7	47.0	-----	46.5
9	47.4	45.3	46.7	47.0	45.5	36.3	32.5	45.0	46.7	47.0	44.6	46.7
10	47.4	46.2	47.0	47.0	45.6	36.2	32.7	45.3	46.7	46.9	45.2	46.8
11	45.0	46.9	47.2	46.9	42.7	36.1	32.9	45.4	46.7	46.3	45.5	46.8
12	45.3	47.1	47.4	46.2	41.3	36.1	-----	45.6	46.5	-----	45.7	-----
13	-----	47.5	47.4	46.5	40.6	35.9	38.2	45.6	46.3	-----	45.7	43.2
14	46.9	47.5	46.5	46.7	40.1	35.8	39.3	45.7	46.5	-----	45.6	44.4
15	47.2	45.1	46.7	46.7	39.7	35.8	40.3	45.6	46.7	-----	45.6	45.3
16	47.4	45.2	47.2	46.7	39.4	35.3	41.0	45.4	46.9	-----	46.0	45.9
17	47.4	46.0	47.5	46.6	39.1	35.2	41.2	45.8	47.0	-----	46.2	46.1
18	45.5	46.6	47.6	46.5	38.9	35.5	41.1	46.0	47.0	-----	46.3	46.2
19	45.3	47.1	47.7	45.8	38.7	35.5	41.7	46.3	47.0	-----	46.4	45.7
20	46.3	47.3	47.7	46.0	38.6	35.5	42.3	46.4	46.7	-----	45.5	46.0
21	47.0	47.3	46.9	45.9	38.4	35.4	42.6	46.4	46.9	-----	46.3	46.4
22	47.3	45.2	46.3	45.9	38.3	35.4	42.8	46.4	47.0	-----	46.2	46.6
23	47.5	45.5	46.9	46.0	38.1	35.5	42.8	46.3	47.0	-----	46.3	46.7
24	47.5	46.3	47.3	46.0	37.9	35.3	42.7	46.5	47.0	46.7	46.4	46.7
25	47.4	46.8	47.4	45.5	37.8	35.3	42.7	46.7	47.0	46.5	46.4	45.4
26	46.7	47.1	47.5	45.5	37.7	35.2	42.9	46.8	46.9	45.8	46.3	44.6

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
27	47.1	47.4	47.5	45.8	37.7	----	43.2	46.9	46.3	43.6	46.3	45.5
28	47.3	47.4	47.3	46.2	37.6	----	43.5	47.0	46.6	43.6	46.0	46.0
29	----	47.0	46.4	46.3	37.5	----	44.0	47.0	46.8	44.7	46.0	46.4
30	47.8	----	46.7	46.4	37.3	----	44.2	46.8	46.9	45.2	44.9	46.5
31	47.8	----	47.1	----	37.1	----	44.3	47.0	----	45.2	----	46.6

(Daily lowest water level from recorder graph, 1949)

1	46.3	46.5	46.2	44.3	----	----	----	43.3	44.9	42.8	41.0	42.6
2	45.0	46.5	----	44.3	----	----	28.8	43.5	44.7	41.1	36.1	42.8
3	44.5	46.4	----	36.0	----	----	29.2	43.6	44.6	40.1	35.4	42.8
4	46.0	46.4	43.3	40.3	----	----	29.7	43.8	44.5	42.6	35.0	39.9
5	46.3	46.4	43.9	41.5	----	----	----	44.0	44.1	43.1	34.7	40.9
6	46.6	46.2	44.0	----	----	----	----	44.0	44.5	40.9	34.5	41.4
7	46.8	46.1	44.3	----	----	----	----	44.0	44.7	39.9	34.1	41.7
8	46.8	46.1	44.5	----	----	----	----	44.1	44.8	39.5	33.8	41.9
9	46.7	46.1	44.5	----	----	----	----	44.3	44.9	39.3	33.7	42.0
10	46.5	46.1	44.7	----	----	----	----	44.5	44.9	41.7	39.2	41.9
11	46.8	46.1	44.7	----	----	----	38.2	44.5	44.9	42.8	39.7	41.9
12	46.8	46.0	42.3	----	----	----	----	44.6	44.7	43.4	37.6	42.2
13	46.9	45.9	----	----	----	----	39.2	44.5	44.9	43.7	36.5	42.3
14	46.9	44.0	41.9	34.0	----	----	39.7	44.1	45.0	44.0	40.0	42.4
15	46.9	44.9	43.1	38.4	----	----	40.1	----	45.0	44.0	41.1	42.5
16	46.8	45.3	43.6	39.2	----	----	40.3	----	45.0	41.3	41.6	42.6
17	46.6	45.4	44.0	----	----	----	40.0	----	43.9	42.5	42.0	42.6
18	46.7	45.5	44.1	----	----	----	40.6	----	42.7	43.5	42.2	42.6
19	46.8	45.5	44.2	----	----	----	41.1	----	43.3	43.9	42.2	42.6
20	46.8	45.4	41.5	----	----	----	41.5	----	44.1	44.1	39.2	42.6
21	46.8	----	42.6	36.1	----	----	41.7	----	44.4	44.3	41.2	42.7
22	46.8	----	43.4	30.3	----	----	42.0	44.3	44.7	44.4	41.9	42.7
23	46.6	----	43.9	28.8	----	----	42.1	44.7	44.7	41.6	42.5	42.7
24	46.5	45.2	44.2	27.9	----	----	42.0	44.9	44.8	40.4	42.5	42.7
25	46.6	45.8	44.4	27.1	----	----	42.3	45.1	44.7	37.6	41.6	40.5
26	46.6	45.9	44.4	26.6	----	----	42.6	----	44.7	37.0	41.8	39.2
27	46.6	45.9	41.4	26.1	----	----	42.8	----	44.7	36.6	39.1	41.0
28	46.7	46.0	42.5	----	----	----	43.1	----	44.8	36.2	41.1	41.5
29	46.7	----	43.3	----	----	----	43.2	----	44.9	35.9	41.9	41.7
30	46.5	----	43.7	----	----	----	43.2	44.8	44.9	35.6	42.3	41.8
31	46.4	----	44.1	----	----	----	43.1	44.9	----	40.4	----	41.9

(Daily lowest water level from recorder graph, 1950)

1	39.4	42.4	41.0	40.1	37.5	36.9	35.6	37.0	34.8	34.3	35.2	34.9
2	38.3	42.5	41.2	39.8	37.4	36.9	29.0	37.2	34.7	34.4	35.2	34.9
3	40.3	42.5	41.2	39.6	37.4	36.9	27.3	37.3	34.5	34.5	35.2	34.9
4	40.9	42.4	41.2	39.5	37.4	36.8	26.2	37.4	34.3	34.5	35.1	34.9
5	41.2	42.3	40.3	39.5	37.4	36.6	25.4	37.3	34.2	34.4	35.1	35.0

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	41.4	42.1	40.6	39.4	37.4	36.6	24.8	37.3	34.2	34.5	34.1	35.0
7	41.5	42.2	40.8	39.2	37.3	36.6	29.3	37.4	34.1	34.5	35.1	35.0
8	41.5	42.2	41.0	39.1	37.2	36.7	30.3	37.5	34.0	34.5	35.1	35.1
9	41.6	42.1	41.0	39.0	37.3	36.7	30.7	37.6	34.0	34.6	35.2	35.0
10	41.7	42.1	41.0	38.8	37.3	36.6	33.2	37.7	33.8	34.6	35.1	35.0
11	41.8	42.1	41.0	38.7	37.2	36.5	34.0	37.6	33.8	34.7	35.0	35.0
12	41.8	42.0	41.0	38.8	37.2	36.4	34.5	37.6	33.8	34.8	34.9	35.0
13	41.8	42.0	40.5	38.8	37.1	36.3	35.0	37.5	33.8	34.8	34.8	35.1
14	41.9	42.0	40.6	38.8	37.1	36.3	35.0	37.6	33.7	34.8	34.8	35.1
15	41.7	42.0	40.7	38.7	37.1	36.3	35.3	37.7	e33.7	34.8	34.8	35.1
16	40.9	42.0	40.6	38.5	37.2	36.3	35.5	37.7	33.6	34.8	34.9	35.1
17	41.0	42.0	40.6	38.4	37.2	36.3	35.6	37.8	33.6	34.8	34.9	35.0
18	41.2	42.0	40.6	38.4	37.1	36.2	35.9	37.7	33.5	34.9	34.8	35.0
19	41.8	41.9	40.5	38.3	37.1	e36.0	36.0	37.7	33.8	34.9	34.8	35.0
20	42.0	41.8	40.5	38.3	37.1	36.0	35.7	37.7	33.9	35.0	34.8	35.1
21	42.1	41.7	40.5	38.2	37.1	36.0	36.0	36.6	33.9	35.0	34.7	35.1
22	42.2	41.7	40.5	38.1	37.0	36.0	36.2	36.7	34.0	34.9	34.7	35.0
23	42.3	41.7	40.5	38.0	37.0	36.0	36.2	36.8	34.1	34.6	34.7	35.0
24	42.4	41.7	40.5	37.9	37.0	36.0	e36.4	36.8	34.1	34.8	33.6	34.9
25	42.5	41.6	40.5	37.9	36.8	35.9	----	36.8	34.1	34.9	33.9	34.8
26	42.5	39.1	40.3	37.9	37.0	35.7	36.8	36.5	34.1	35.0	34.3	34.9
27	42.3	40.3	40.3	37.8	37.0	35.7	e36.9	36.6	34.2	35.0	34.6	34.9
28	42.3	40.8	40.3	37.7	37.0	35.7	----	36.6	34.3	35.0	34.7	34.8
29	42.3	----	40.3	37.7	36.8	35.7	----	35.5	34.3	35.0	34.8	34.9
30	42.3	----	40.2	37.6	36.8	35.6	----	35.1	34.3	35.0	34.9	34.9
31	42.4	----	40.2	----	36.8	----	----	34.9	----	35.1	----	34.9

(Daily lowest water level from recorder graph, 1951)

1	34.4	34.6	41.0	37.3	43.5	46.7	34.0	47.0	34.2	38.6	46.0	45.3
2	34.1	34.6	41.3	33.9	43.8	46.8	33.0	47.2	41.7	39.5	46.0	45.2
3	34.5	34.6	41.9	37.4	44.1	46.9	34.1	47.4	43.7	40.1	46.0	45.0
4	34.7	29.4	42.0	37.4	44.4	46.7	30.5	47.4	44.7	40.3	46.0	45.0
5	34.7	32.6	42.3	37.2	44.5	46.9	34.3	47.4	45.4	40.8	46.1	44.9
6	34.8	33.2	42.8	37.2	44.6	47.0	34.8	47.4	45.9	41.3	46.1	44.9
7	34.8	33.6	43.2	37.0	44.9	47.1	34.9	47.6	46.3	41.5	46.2	44.9
8	34.7	33.8	43.4	31.9	45.3	47.1	35.0	47.7	46.5	41.8	46.3	44.8
9	34.8	33.9	43.4	30.6	45.5	47.2	40.0	48.0	46.5	42.1	46.3	44.7
10	34.8	33.9	43.4	29.9	45.4	47.0	41.4	48.1	46.7	42.5	46.2	44.5
11	34.9	34.0	43.5	29.2	45.6	47.4	42.3	48.1	46.8	42.6	46.1	44.5
12	34.9	34.1	43.7	28.5	45.7	47.5	43.0	48.1	39.6	42.8	45.9	44.5
13	34.9	34.2	44.2	28.0	45.7	47.6	43.1	48.0	35.8	42.9	46.0	44.5
14	34.8	34.2	44.2	27.5	45.6	47.7	44.0	48.1	33.7	42.9	46.1	44.4
15	34.8	34.2	44.2	26.9	46.0	47.7	44.0	48.1	32.5	43.3	46.2	44.4
16	34.8	34.2	44.4	26.4	46.1	47.9	44.4	48.0	31.5	43.6	46.2	44.1
17	34.8	34.1	44.5	26.2	46.1	47.8	44.8	47.6	30.7	43.8	46.2	43.5
18	34.8	34.2	44.6	25.9	42.5	48.0	45.2	48.7	30.3	43.9	46.0	----
19	34.8	34.1	44.8	31.0	45.0	48.0	45.5	48.7	29.7	42.6	45.9	----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
20	34.7	34.1	44.9	32.8	45.3	48.1	45.8	47.7	29.2	44.0	45.9	----
21	34.7	34.3	45.0	33.6	45.8	48.2	45.7	47.9	28.7	44.5	45.9	----
22	34.6	34.3	45.0	34.1	45.8	48.2	44.8	47.9	28.2	44.7	45.9	----
23	34.5	34.3	45.2	38.5	44.7	48.3	45.3	44.2	27.8	44.9	45.7	----
24	34.6	34.3	45.2	39.6	45.6	48.2	43.6	42.2	27.3	45.1	45.6	36.2
25	34.5	34.1	45.1	40.5	46.2	48.6	45.1	41.0	27.0	45.3	45.5	36.0
26	34.6	38.1	45.3	41.1	46.1	48.8	45.9	40.2	26.7	45.5	45.4	34.8
27	34.6	39.3	45.5	41.8	46.0	48.8	46.2	39.6	26.6	45.5	45.4	35.0
28	34.6	39.5	45.5	42.2	46.1	40.7	46.4	39.3	35.1	45.5	45.4	34.9
29	34.6	----	45.6	42.3	46.3	37.1	46.4	39.1	37.6	45.6	45.4	34.9
30	34.6	----	45.7	43.0	46.3	35.0	46.5	38.8	38.3	45.7	45.4	34.7
31	34.5	----	45.7	----	46.4	----	46.7	40.5	----	45.9	----	----

(Daily lowest water level from recorder graph, 1952)

1	34.7	33.1	40.0	39.5	37.8	35.9	----	32.2	31.6	28.1	22.0	----
2	34.6	33.1	39.9	39.7	37.8	35.9	----	32.4	31.7	28.0	21.8	----
3	34.8	32.9	39.8	39.8	37.8	36.0	----	32.4	31.7	27.8	21.8	----
4	34.7	----	40.1	39.9	30.2	36.1	----	32.5	31.7	27.8	21.8	----
5	34.8	----	40.2	39.8	35.7	36.2	----	32.6	31.6	27.6	21.7	----
6	34.8	----	40.2	----	36.5	36.2	----	32.6	31.6	27.5	21.6	----
7	34.7	----	40.2	39.8	36.7	36.2	29.8	32.7	31.6	27.2	21.6	----
8	34.7	----	40.2	39.8	36.8	36.0	29.7	32.8	30.4	27.2	21.5	----
9	34.7	----	40.1	39.8	37.1	36.1	31.3	32.8	30.5	27.0	21.3	----
10	34.7	----	40.1	39.8	37.1	36.2	31.4	32.7	30.5	26.5	21.2	----
11	34.7	41.0	40.2	39.8	36.8	36.2	31.9	32.8	30.5	26.1	21.2	----
12	34.6	41.0	40.2	39.8	36.6	36.0	32.2	32.9	30.5	26.0	21.2	----
13	34.5	39.4	40.2	39.5	36.7	36.1	32.4	32.5	30.5	26.1	21.2	----
14	34.4	39.5	40.2	39.3	36.8	34.3	32.5	32.8	30.4	26.1	21.1	----
15	34.5	----	40.2	38.3	36.9	33.6	31.7	32.5	30.3	26.8	21.1	----
16	34.4	39.5	40.0	38.2	36.9	33.1	31.9	32.3	30.3	27.0	21.0	----
17	34.3	39.3	40.0	38.0	36.9	34.9	31.5	32.2	30.2	27.0	20.8	----
18	34.2	39.0	40.0	37.9	36.7	35.2	31.6	32.2	29.5	27.0	----	----
19	34.2	39.3	40.1	37.8	36.7	35.4	31.9	32.2	29.3	26.9	----	----
20	34.1	39.4	39.7	37.6	36.7	35.5	32.0	32.2	29.2	27.0	----	----
21	----	39.5	39.9	37.5	36.8	35.5	32.1	32.2	28.9	27.0	----	----
22	34.0	39.6	39.9	37.4	36.8	35.4	21.9	32.2	28.8	26.9	----	----
23	34.0	39.6	39.2	37.5	36.8	35.5	32.1	32.1	28.7	26.9	----	----
24	34.0	39.5	39.4	37.6	36.7	35.4	32.2	32.0	28.6	24.6	----	----
25	33.8	39.8	39.6	37.7	36.5	35.5	32.3	31.9	28.5	23.8	----	----
26	33.8	39.9	39.7	37.7	36.5	35.5	32.4	31.9	28.4	23.4	----	----
27	33.7	39.9	39.4	37.7	----	35.4	32.4	31.9	28.4	22.9	----	----
28	32.9	40.0	39.2	37.6	36.3	35.1	32.5	31.9	28.2	22.7	----	----
29	33.2	40.0	39.0	37.7	36.3	33.2	32.4	31.9	----	22.5	----	----
30	33.2	----	38.5	37.7	36.3	----	32.1	31.9	28.1	22.3	----	----
31	33.2	----	39.0	----	36.0	----	32.0	31.8	----	22.1	----	----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9. (37/2-15L1). Formerly Sj 85. New Jersey, Indiana and Illinois Railroad Co. Olive St. and Indiana Ave., South Bend. NE¼SW¼ sec. 15, T. 37 N., R. 2 E. Drilled unused artesian well in sand and gravel, diameter 8 inches, depth 80 feet. Land-surface datum is 715 feet above msl. Recording gage installed Jan. 1, 1945, removed July 24, 1946, reinstalled July 28, 1948. Highest water level is 10.62 below lsd, June 12, 1947; lowest 17.55 below lsd, Sept. 5, 1953. Records available: 1945-58. Affected by barometric pressure and by trains.

(Daily highest water level from recorder graph, 1945)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	14.45	14.36	14.09	13.71	12.74	13.19	14.00	14.13	14.23	-----	14.29
2	-----	14.46	14.35	14.07	13.73	12.73	13.21	14.00	14.13	14.22	14.23	14.29
3	-----	14.46	14.36	14.07	13.73	12.75	13.22	13.99	14.12	14.21	14.24	14.28
4	-----	14.47	14.36	14.05	13.71	12.75	13.23	13.99	14.12	14.20	14.24	14.26
5	-----	14.48	14.34	14.04	13.70	12.75	13.24	13.99	14.12	14.19	14.23	14.25
6	-----	14.48	14.34	14.01	13.69	12.76	13.26	13.98	14.14	14.18	14.23	14.24
7	-----	14.49	14.34	13.98	13.67	12.78	13.28	13.98	14.15	14.17	14.23	14.25
8	-----	14.50	14.33	13.95	13.65	12.81	13.31	13.98	14.18	14.16	14.25	14.27
9	-----	14.52	14.30	13.92	13.63	12.83	13.34	13.98	14.20	14.15	-----	-----
10	-----	14.53	14.28	13.89	13.57	12.86	13.37	31.98	14.22	14.15	-----	-----
11	-----	14.54	14.23	13.87	13.54	12.88	13.40	13.98	14.23	14.13	-----	-----
12	-----	15.55	14.19	13.84	13.52	12.89	13.43	13.98	14.24	14.12	-----	-----
13	-----	e14.54	14.15	13.84	13.49	12.90	13.46	13.97	14.25	14.13	-----	-----
14	-----	e14.52	14.13	13.82	13.46	12.91	13.50	13.96	14.25	14.13	-----	-----
15	-----	-----	e14.10	13.81	13.44	12.93	13.52	13.96	14.25	14.13	-----	14.30
16	-----	-----	14.10	13.78	13.41	12.94	13.53	-----	14.25	14.13	14.25	14.31
17	-----	14.57	14.08	13.77	13.39	12.96	13.54	13.94	14.26	14.13	14.25	14.31
18	-----	14.56	14.07	13.76	13.34	12.97	13.55	13.94	14.26	14.13	14.25	14.32
19	-----	14.54	14.06	13.75	13.32	12.97	13.57	13.94	14.26	14.13	14.24	14.32
20	14.32	14.54	14.06	13.74	13.23	12.97	13.60	13.95	14.26	14.13	14.24	14.33
21	14.34	14.53	14.07	13.73	13.10	12.99	13.63	13.95	14.27	14.13	14.23	14.34
22	14.35	14.51	14.07	13.73	19.03	13.01	13.67	13.98	14.28	14.14	14.24	14.34
23	14.36	14.48	14.07	13.72	12.97	13.02	13.71	14.00	14.29	14.14	-----	14.35
24	14.37	14.45	14.07	13.72	12.92	13.04	13.74	14.02	14.29	14.14	-----	14.35
25	14.38	14.43	14.08	13.72	12.88	13.06	13.77	14.04	14.28	14.14	14.24	14.33
26	-----	14.41	14.08	13.72	12.85	13.09	13.81	14.06	14.26	-----	14.26	14.33
27	14.39	14.39	14.08	13.72	12.81	13.10	13.85	14.07	14.25	14.18	14.27	14.33
28	14.40	14.37	14.08	13.71	12.79	13.13	13.89	14.08	14.24	14.19	14.27	14.34
29	14.41	-----	14.08	13.71	12.77	13.14	13.93	14.09	14.24	14.21	14.28	14.35
30	14.42	-----	14.09	13.70	12.75	13.17	13.95	14.12	14.24	14.22	14.29	14.35
31	14.43	-----	14.09	-----	12.75	-----	13.97	14.12	-----	-----	-----	14.33

(Daily highest water level from recorder graph, 1946)

1	14.32	13.69	13.62	12.90	13.01	13.31	13.41	-----	-----	-----	-----	-----
2	14.32	13.69	13.62	12.90	13.04	13.32	13.38h	14.10	-----	-----	-----	-----
3	14.32	13.70	13.60	12.88	13.07	13.32	13.37	-----	-----	-----	-----	-----
4	14.33	13.69	13.59	12.87	13.08	13.32	13.38	-----	-----	-----	-----	-----
5	14.29	13.69	13.58	12.86	13.10	13.32	13.39	-----	-----	h14.77	-----	h14.96
6	14.24	13.68	13.56	12.85	13.11	13.33	13.41	-----	h14.52	-----	-----	-----
7	14.18	13.69	13.52	12.84	13.12	13.34	13.44	-----	-----	-----	-----	-----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
8	14.13	13.69	13.48	12.83	13.13	13.36	13.46	-----	-----	-----	h14.90	-----
9	14.09	13.68	13.44	12.84	13.14	13.37	13.49	-----	-----	-----	-----	-----
10	14.05	13.68	13.40	12.84	13.14	13.39	13.51h14.29	-----	-----	-----	-----	-----
11	14.01	13.68	13.35	12.84	-----	13.39	13.55	-----	-----	h14.81	-----	-----
12	13.97	13.68	13.32	12.84	13.13	13.41	13.59	-----	-----	-----	-----	h14.94
13	13.92	13.68	13.27	12.84	13.14	-----	13.62	-----	h14.58	-----	-----	-----
14	13.88	13.68	13.24	12.84	13.15	13.44	13.65	-----	-----	-----	h14.87	-----
15	13.85	13.68	13.21	12.84	13.16	13.45	13.69	-----	-----	-----	-----	-----
16	13.81	13.68	13.18	12.86	13.18	13.44	13.71h14.31	-----	-----	-----	-----	-----
17	13.79	13.68	13.16	12.86	13.20	13.42	13.73	-----	-----	-----	-----	-----
18	13.77	13.68	13.13	12.86	13.21	13.44	13.76	-----	-----	-----	-----	-----
19	13.75	13.67	13.13	12.85	-----	13.46	13.79	-----	-----	-----	-----	-----
20	13.74	13.67	13.09	12.87	-----	13.45	13.81	-----	h14.68	-----	-----	-----
21	13.73	13.67	13.08	12.89	13.23	13.45	13.84	-----	-----	h14.86	-----	-----
22	13.71	13.67	13.06	12.88	13.24	13.42	13.87	-----	-----	-----	-----	-----
23	13.70	13.68	13.05	12.89	13.24	13.40	13.88h14.38	-----	-----	-----	-----	-----
24	13.69	13.68	13.03	12.92	13.24	13.38	13.90	-----	-----	-----	-----	-----
25	13.69	13.66	13.01	12.92	13.25	13.38	-----	-----	-----	h14.89	-----	-----
26	13.69	13.66	12.99	-----	13.27	13.41h13.98	-----	-----	-----	-----	-----	-----
27	13.68	13.65	12.98	12.98	13.27	13.44	-----	-----	-----	-----	-----	h14.70
28	13.68	13.64	12.96	12.97	13.28	13.47	-----	-----	-----	-----	-----	-----
29	13.68	-----	12.95	12.97	-----	13.46	-----	-----	-----	-----	-----	-----
30	13.67	-----	12.94	12.98	13.29	13.43	-----	-----	-----	-----	-----	-----
31	13.67	-----	12.92	-----	13.30	-----	-----	-----	-----	-----	-----	-----

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1947		Mar. 21	h14.31	June 27	h11.00	Oct. 31	13.00
		Apr. 3	h14.08	July 14	h11.67	Nov. 14	h13.13
Jan. 16	h14.81	17	h12.54	Sept. 5	h12.90	Dec. 1	h13.26
23	h14.76	May 10	h11.89	11	h12.92		
Feb. 3	h14.63	16	h11.97	18	h12.58		
20	h15.03	24	h11.56	Oct. 3	h12.55		
27	h14.35	June 2	h11.13	10	h12.69		
Mar. 6	h14.37	12	h10.62	22	h12.94		

(Daily highest water level from recorder graph, 1948)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	-----	-----	-----	-----	-----	-----	13.36	14.35	14.36	14.70	14.87
2	-----	-----	-----	-----	-----	-----	-----	13.39	14.34	14.37	14.71	14.88
3	-----	-----	-----	-----	-----	-----	-----	13.41	14.33	14.39	14.71	14.88
4	-----	-----	-----	-----	-----	-----	-----	13.46	14.34	14.40	14.73	14.89
5	-----	-----	-----	-----	-----	-----	-----	-----	14.34	14.40	14.74	14.89

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9 --continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	-----	-----	-----	-----	-----	-----	-----	-----	14.33	14.41	14.74	14.90
7	-----	-----	-----	-----	-----	-----	-----	-----	14.32	14.42	14.75	14.91
8	-----	-----	-----	-----	-----	-----	-----	-----	14.31	-----	14.76	14.91
9	-----	-----	-----	-----	-----	-----	-----	-----	14.30	-----	14.76	14.92
10	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.47	14.77	14.92
11	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.47	14.78	14.93
12	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.48	14.78	14.94
13	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.49	14.79	14.96
14	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.50	14.79	14.96
15	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.51	14.84	14.97
16	-----	-----	-----	-----	-----	-----	-----	-----	14.30	14.52	-----	14.97
17	-----	-----	-----	-----	-----	-----	-----	-----	14.30	14.54	-----	14.98
18	-----	-----	-----	-----	-----	-----	-----	-----	14.31	-----	-----	14.99
19	-----	-----	-----	-----	-----	-----	-----	-----	14.31	14.55	-----	15.00
20	-----	-----	-----	-----	-----	-----	-----	-----	14.31	14.56	-----	15.00
21	-----	-----	-----	-----	-----	-----	-----	-----	14.32	14.56	-----	15.00
22	-----	-----	-----	-----	-----	-----	-----	-----	14.32	14.57	14.85	15.00
23	-----	-----	-----	h12.22	-----	-----	-----	-----	e14.34	14.58	14.85e	15.01
24	-----	-----	-----	-----	h12.55	-----	-----	-----	14.36	14.59	14.85e	15.02
25	-----	-----	-----	-----	-----	-----	-----	-----	14.36	14.60	14.86e	15.02
26	-----	-----	-----	-----	-----	-----	-----	-----	14.36	14.60	14.86e	15.02
27	-----	-----	-----	h12.02	-----	-----	-----	14.12	14.35	14.61	14.86	-----
28	-----	-----	-----	-----	-----	-----	-----	14.20	14.35	14.63	14.86	-----
29	-----	-----	-----	-----	-----	-----	13.25	14.27	14.35	14.66	14.86	-----
30	-----	-----	-----	-----	-----	-----	13.28	14.31	14.36	14.68	14.86	-----
31	-----	-----	-----	-----	-----	-----	13.32	14.33	-----	14.69	-----	-----

(Daily highest water level from recorder graph, 1949)

1	-----	14.38	13.82	13.82	13.80	14.13	14.74	15.25	15.67	-----	15.52	16.20
2	-----	14.37	13.80	13.84	-----	14.22	14.83	15.27	15.65	-----	15.53	16.23
3	14.99	14.36	13.79	13.83	13.83	14.32	14.88	15.24	15.63	15.59	15.55	16.26
4	14.99	14.34	13.77	13.80	13.85	14.40	14.92	15.23	15.61	15.56	-----	16.29
5	14.97	14.33	13.76	13.79	13.86	14.43	14.92	15.23	15.58	15.55	-----	16.32
6	14.94	14.32	13.76	13.79	13.89	14.44	14.92	15.23	15.55	15.53	-----	16.35
7	14.92	-----	13.74	13.79	13.92	14.47	14.88	15.24	15.53	15.53	15.55	16.31
8	14.91	-----	-----	13.80	13.95	14.51	14.86	15.23	15.52	15.53	15.56	16.41
9	14.90	-----	-----	13.81	13.97	14.55	14.84	15.27	15.51	15.53	15.57	16.43
10	14.87	-----	13.73	13.81	13.98	14.60	14.82	15.32	15.51	15.53	15.58	16.46
11	14.85	-----	13.72	13.80	14.00	14.65	14.82	15.35	15.50	15.53	15.58	16.49
12	14.84	-----	13.72	13.80	14.02	14.71	14.80	15.38	15.49	15.52	15.59	16.52
13	14.84	14.24	13.73	13.81	14.06	14.76	15.80	15.39	15.49	15.51	15.60	16.54
14	14.84	14.22	13.72	13.82	14.13	14.80	14.84	15.37	-----	15.50	15.60	16.57
15	14.83	14.19	13.72	13.83	14.20	14.81	14.92	15.36	-----	15.50	15.60	16.59
16	14.83	14.14	13.71	13.85	14.25	14.78	14.97	15.35	15.50	15.51	15.61	16.62
17	14.83	14.09	13.71	-----	14.27	14.75	15.00	15.38	15.49	15.50	15.62	16.64
18	14.81	14.04	-----	13.86	14.29	14.71	15.02	15.38	15.49	15.50	15.63	16.66
19	14.77	14.00	13.72	13.87	14.33	14.68	15.05	15.39	15.50	15.50	15.67	16.68

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
20	14.72	13.97	13.71	13.88	14.34	14.67	15.09	15.39	15.58	15.54	15.72	16.71
21	14.68	13.96	13.71	-----	14.33	14.69	15.13	15.41	15.59	15.54	15.77	16.73
22	14.63	13.93	13.71	-----	14.31	14.70	15.16	15.41	15.56	15.53	15.82	16.72
23	14.59	13.92	13.72	-----	14.30	14.69	15.14	15.43	15.54	15.51	15.87	16.67
24	14.55	13.90	13.73	13.85	14.27	14.73	15.14	15.45	15.53	15.49	15.91	16.61
25	14.52	13.88	13.63	13.78	14.23	14.79	15.13	15.49	15.53	15.49	15.96	16.59
26	14.49	13.87	13.74	13.76	14.19	14.78	15.16	15.54	15.53	-----	16.00	16.55
27	14.47	13.85	13.74	13.76	14.17	14.73	15.20	15.59	15.53	15.50	16.04	16.52
28	14.45	13.84	13.76	13.76	14.15	14.70	15.23	15.64	15.54	15.51	16.08	16.51
29	14.43	-----	13.78	13.77	14.11	14.69	15.26	15.67	15.55	15.52	16.12	16.50
30	14.42	-----	13.80	13.78	14.09	14.69	15.28	15.68	15.60	15.52	16.16	16.50
31	14.40	-----	13.81	-----	14.09	-----	15.27	15.68	-----	15.51	-----	16.49

(Daily highest water level from recorder graph, 1950)

1	16.49	16.04	15.99	14.37	12.03	11.81	11.68	12.54	13.93	14.28	13.76	-----
2	16.48	16.01	16.01	14.21	11.99	11.83	11.64	12.58	13.95	14.29	13.77	13.72
3	16.48	16.00	16.01	14.08	-----	11.55	11.57	12.61	13.96	14.30	13.77	13.70
4	16.48	15.98	16.02	13.96	11.90	11.38	11.53	12.65	13.98	14.31	13.76	13.68
5	16.48	15.95	16.02	13.83	11.87	11.29	11.49	12.69	14.00	14.33	13.75	13.67
6	16.48	15.94	15.98	13.58	11.86	11.25	11.45	12.72	14.02	14.30	13.75	13.64
7	16.48	15.93	15.94	13.53	11.86	11.23	11.42	12.75	14.03	14.25	13.75	13.62
8	16.47	15.92	15.88	13.38	11.83	11.25	11.40	12.79	14.05	14.19	13.73	13.62
9	16.46	15.92	15.80	13.23	11.80	11.31	11.39	12.85	14.07	-----	13.73	13.60
10	16.45	15.92	15.72	13.11	11.80	11.22	-----	12.91	14.09	14.11	13.76	13.58
11	16.45	15.92	15.63	13.02	11.79	11.20	11.42	12.97	14.05	14.06	13.77	13.56
12	16.44	15.91	15.58	12.94	11.77	11.20	11.49	13.03	13.99	14.05	13.76	13.54
13	16.44	15.88	15.52	12.86	11.77	11.20	11.60	13.08	13.98	14.01	13.76	13.53
14	16.43	15.85	15.47	12.78	11.76	11.26	11.74	13.12	13.99	13.99	13.75	13.52
15	16.42	15.84	15.42	12.71	11.76	11.32	11.80	13.14	14.01	13.97	13.74	13.51
16	16.41	15.84	15.38	12.63	11.76	11.37	11.84	13.19	14.05	13.94	13.74	13.50
17	16.39	15.84	15.35	12.57	11.77	11.45	11.90	13.26	14.08	13.92	13.77	13.50
18	16.36	15.85	15.33	12.52	11.79	11.49	11.91	13.33	14.09	13.90	13.78	13.49
19	16.34	15.86	15.31	12.47	11.82	11.50	11.91	13.39	14.10	13.88	13.80	13.49
20	16.32	15.87	15.29	12.43	11.84	11.54	11.94	13.43	14.12	13.87	13.83	13.49
21	16.29	15.89	15.27	12.40	11.88	11.58	11.99	13.46	14.13	13.85	13.83	13.47
22	16.27	15.90	15.25	12.35	11.90	11.62	12.03	13.49	14.14	13.84	13.81	13.47
23	16.25	15.91	15.22	12.31	11.92	11.64	12.06	13.53	14.15	13.84	13.79	13.46
24	16.24	15.93	15.21	12.30	11.91	11.67	12.10	13.59	14.17	13.83	13.80	13.46
25	16.23	15.94	15.20	12.27	11.93	11.72	12.14	13.65	14.20	13.83	13.73	13.48
26	16.21	15.96	15.17	12.24	-----	11.73	12.18	13.72	14.21	13.81	13.73	13.48
27	16.18	15.98	15.11	12.21	11.86	11.75	12.22	13.79	14.23	13.80	13.75	13.47
28	16.16	15.98	15.02	12.16	11.83	11.78	12.28	13.84	14.24	13.79	13.77	13.45
29	16.14	-----	14.89	12.11	11.80	11.79	12.35	13.87	14.26	13.79	13.75	13.45
30	16.10	-----	14.71	12.07	11.79	11.77	12.43	13.89	14.27	13.78	13.75	13.45
31	16.07	-----	14.53	-----	11.80	-----	12.50	13.90	-----	13.77	-----	13.46

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

(Daily highest water level from recorder graph, 1951)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.45	12.81	12.77	12.97	12.63	-----	13.24	14.45	14.84	15.36	-----	13.77
2	13.42	12.86	12.76	12.99	12.61	-----	13.29	14.48	14.86	15.37	-----	13.73
3	13.39	12.86	12.75	12.98	12.60	-----	13.34	14.51	14.88	15.38	-----	13.68
4	13.35	12.85	12.81	12.98	12.58	12.10	13.37	14.56	14.89	15.40	-----	13.65
5	13.27	12.99	12.92	12.96	12.55	12.09	13.42	14.59	14.90	15.42	15.33	13.61
6	13.20	12.86	12.80	12.92	12.52	12.09	13.46	14.61	14.91	15.43	15.32	13.57
7	13.12	12.89	12.81	12.90	12.48	12.14	13.51	14.61	14.93	15.45	15.32	13.55
8	13.07	12.95	12.83	12.90	12.45	12.19	13.57	14.62	14.95	15.46	15.33	13.52
9	13.01	12.98	12.87	12.87	12.44	12.22	13.60	14.63	14.97	15.47	15.35	13.50
10	12.97	12.94	12.89	12.87	12.40	12.23	13.64	14.65	14.97	15.48	15.33	13.46
11	12.95	12.92	12.88	12.81	12.36	12.23	13.68	14.67	14.99	15.49	15.27	13.43
12	12.93	12.87	12.85	12.78	12.33	12.28	13.72	14.69	15.01	15.51	15.19	13.42
13	12.89	12.87	12.85	12.76	12.27	12.35	13.77	14.71	15.02	15.52	15.11	13.40
14	12.86	12.88	12.88	12.75	12.21	12.41	13.80	14.72	15.04	15.52	15.02	13.37
15	12.85	12.84	12.90	12.74	12.16	12.46	13.83	14.65	15.06	15.53	14.93	13.37
16	12.83	12.82	12.93	12.73	12.14	12.51	13.86	14.65	15.08	15.53	14.82	-----
17	12.82	12.84	12.90	12.72	12.14	12.58	13.89	14.66	15.10	15.54	14.72	-----
18	12.81	12.84	12.86	12.72	12.11	12.65	13.94	14.68	15.11	15.55	14.62	-----
19	12.80	12.83	12.81	12.77	12.09	12.73	13.97	14.70	15.13	15.57	14.53	-----
20	12.79	12.81	12.80	12.83	12.07	12.82	14.01	14.71	15.15	15.58	14.43	-----
21	12.83	12.81	12.79	12.79	12.08	12.91	14.04	14.71	15.17	15.59	14.35	-----
22	12.78	12.83	12.78	12.79	12.09	12.96	14.08	14.73	15.20	15.59	14.27	-----
23	12.77	12.82	12.77	12.77	12.11	13.00	14.11	14.74	15.22	15.56	14.20	-----
24	12.78	12.79	12.81	12.74	12.09	12.99	14.14	14.75	15.24	15.50	14.14	13.23
25	12.79	-----	12.87	12.72	12.09	12.98	14.17	14.77	15.26	15.47	14.07	13.21
26	12.77	12.77	12.90	12.74	12.13	12.98	14.21	14.77	15.28	15.44	14.02	13.22
27	12.77	12.79	12.90	12.70	12.12	13.03	14.27	14.78	15.30	15.41	13.96	13.20
28	12.80	12.76	12.90	12.67	-----	13.08	14.33	14.79	15.31	15.39	13.91	13.17
29	12.82	-----	12.91	12.66	-----	13.13	14.37	14.80	15.33	-----	13.86	13.16
30	12.84	-----	12.92	12.65	-----	13.18	14.40	14.81	15.34	-----	13.82	13.16
31	12.81	-----	12.96	-----	-----	-----	14.42	14.82	-----	-----	-----	13.14

(Daily highest water level from recorder graph, 1952)

1	13.10	11.96	11.93	11.69	11.47	12.92	13.58	14.37	14.84	14.75	14.76	14.95
2	13.03	11.95	11.94	11.72	11.49	12.95	13.65	14.39	14.84	14.83	15.79	15.93
3	12.95	11.90	11.86	11.73	11.54	12.95	13.72	14.43	14.86	14.90	15.82	15.89
4	12.86	11.89	11.85	11.75	11.61	12.98	13.79	14.47	14.87	14.95	15.84	15.83
5	12.80	11.88	11.94	11.74	11.69	13.00	13.83	14.49	14.89	14.99	15.86	15.79
6	12.75	11.87	11.93	11.77	11.79	13.01	13.87	14.50	14.90	15.04	15.88	15.73
7	12.70	11.83	11.90	11.78	11.90	13.05	13.91	14.51	14.92	15.08	15.90	15.69
8	12.65	11.80	11.86	11.75	11.94	13.11	13.94	14.52	14.95	15.12	15.91	15.65
9	12.63	11.79	11.83	11.71	12.00	13.14	13.99	14.54	14.97	15.15	15.92e	15.61
10	12.62	11.76	11.78	11.71	12.05	13.18	14.01	14.56	14.99	15.19	15.93e	15.58
11	12.58	-----	11.78	11.72	12.11	13.22	14.02	14.58	15.02	15.22	15.94e	15.54
12	12.57	-----	11.81	11.67	12.15	13.25	14.04	14.59	15.05	15.25	15.95e	15.51

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
13	12.55	-----	11.79	11.66	12.21	13.28	14.07	14.60	15.09	15.29	15.96	15.48
14	12.52	-----	11.87	11.65	12.26	13.25	14.11	14.62	15.13	15.32	15.98	-----
15	12.52	-----	11.85	11.63	12.30	13.25	14.13	14.63	15.18	15.35	15.99	15.42
16	12.47	-----	11.85	11.60	12.36	13.21	14.16	14.62	15.20	15.38	16.00	15.40
17	12.44	-----	11.84	-----	12.41	13.22	14.17	14.62	15.22	15.40	16.02	15.38
18	12.42	11.73	11.77	-----	12.46	13.26	14.18	14.62	15.23	15.43	16.03	15.36
19	12.37	11.70	11.77	-----	12.50	13.28	14.18	14.64	15.22	15.46	16.05	15.34
20	12.37	11.70	11.80	-----	12.53	13.31	14.18	14.65	15.15	15.48	16.06	15.32
21	12.30	11.71	11.78	11.51	12.58	13.32	14.19	14.66	15.09	15.50	16.08	15.30
22	12.25	11.76	11.73	11.50	12.62	13.34	14.20	14.68	15.03	15.52	16.09	15.27
23	12.22	11.75	11.74	11.49	12.66	13.36	14.21	14.69	14.97	15.55	16.11	15.26
24	12.17	11.75	11.73	11.49	12.70	13.37	14.22	14.70	14.92	15.57	16.15	15.24
25	12.12	11.76	11.72	11.49	12.73	13.39	14.23	14.72	14.87	15.60	16.16	15.22
26	12.10	11.74	11.72	11.48	12.78	13.40	14.25	14.73	14.82	15.62	16.17	15.20
27	12.06	11.77	11.73	11.48	12.81	13.42	14.26	14.75	14.78	15.66	16.14	15.19
28	12.06	11.80	11.72	-----	12.84	13.47	14.27	14.78	14.74	15.68	16.07	15.18
29	12.03	11.88	11.73	-----	12.87	13.51	14.30	14.81	14.71	15.70	16.01	15.16
30	12.02	-----	11.71	-----	12.88	13.54	14.31	14.83	14.71	15.72	-----	15.15
31	11.99	-----	11.70	-----	12.90	-----	14.34	14.84	-----	15.74	-----	15.13

(Daily highest water level from recorder graph, 1953)

1	15.12	14.83	14.67	14.29	14.20	14.48	16.04	17.15	17.38	16.58	16.50	16.36
2	15.10	14.81	14.66	14.28	14.22	14.52	16.11	17.16	17.41	16.60	16.48	16.36
3	15.10	14.80	14.65	14.27	14.25	14.58	16.16	17.15	17.46	16.63	16.48	16.36
4	15.08	14.78	14.65	14.26	14.25	14.68	16.20	17.07	17.50	16.65	16.50	16.35
5	15.07	14.76	14.65	14.25	14.24	14.78	16.23	16.97	17.54	16.61	16.48	16.35
6	15.06	14.76	14.64	14.24	14.25	14.89	16.24	16.95	17.49	16.58	16.47	16.35
7	15.05	14.75	14.64	14.23	14.25	14.97	16.25	16.93	17.42	16.55	16.45	16.34
8	15.05	14.75	-----	14.22	14.26	14.96	16.26	16.87	17.36	-----	16.42	16.34
9	15.04	14.76	14.62	14.20	14.27	14.93	16.28	16.81	17.32	-----	16.42	16.33
10	15.03	14.75	14.62	14.20	14.28	14.89	16.30	16.75	17.28	-----	16.40	16.34
11	15.03	14.74	14.62	14.21	14.29	14.86	16.33	16.72	17.24	-----	16.40	16.35
12	15.01	14.73	14.61	14.21	14.29	14.84	16.37	16.71	17.21	-----	16.39	16.34
13	15.01	14.73	14.60	14.21	14.31	14.84	16.41	16.72	17.18	-----	16.38	16.33
14	15.00	14.72	14.59	14.21	14.31	14.93	16.45	16.76	17.14	-----	16.38	16.32
15	14.99	14.71	14.58	14.19	14.31	15.00	16.50	16.80	17.08	-----	16.37	16.33
16	15.01	14.71	14.57	14.19	14.31	15.05	16.56	16.84	17.02	-----	16.38	16.33
17	15.00	14.71	14.55	14.21	14.30	15.12	16.63	16.86	16.96	-----	16.37	16.33
18	15.00	14.70	14.53	14.21	14.30	15.19	16.69	16.89	16.91	-----	16.37	16.33
19	14.98	14.70	14.52	14.20	14.30	15.27	16.73	15.91	16.87	16.65	16.36	16.35
20	14.97	14.70	14.50	14.20	14.30	15.34	16.76	16.94	16.84	16.67	-----	16.34
21	14.96	14.69	14.47	14.20	14.31	15.43	16.78	16.97	16.80	16.69	-----	16.34
22	14.95	14.70	14.45	14.19	14.33	15.53	16.80	17.00	16.76	16.70	-----	16.34
23	14.94	14.69	14.42	15.19	14.36	15.61	16.82	17.04	16.72	16.71	-----	16.35
24	14.93	14.68	14.40	14.20	14.37	15.70	16.85	17.07	16.68	16.69	-----	16.35
25	14.93	14.67	14.39	14.19	-----	15.79	16.88	17.10	16.65	16.65	-----	16.34
26	14.91	14.66	14.37	14.20	-----	15.87	16.93	17.14	16.63	16.62	-----	16.34

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
27	14.89	14.66	14.35	14.22	-----	15.92	16.97	17.18	16.61	16.58	-----	16.34
28	14.88	14.67	14.34	14.22	-----	15.95	17.02	17.23e	16.57	16.56	-----	16.33
29	14.87	-----	14.33	14.22	-----	15.96	17.06	17.27e	16.56	16.54	-----	16.33
30	14.85	-----	14.32	14.20	-----	15.99	17.11	17.31e	16.57	16.52	-----	16.33
31	14.83	-----	14.30	-----	-----	-----	17.14	17.35	-----	16.50	-----	16.33

(Daily highest water level from recorder graph, 1954)

1	16.33	16.30	15.71	15.43	14.03	13.98	15.36	16.00	15.00	15.02	13.33	13.34
2	16.33	16.30	15.69	15.41	13.95	13.93	15.46	15.93	14.97	15.04	13.34	13.30
3	16.33	16.30	15.67	15.40	13.90	13.89	15.57	15.81	14.97	15.05	13.32	13.28
4	16.32	16.30	15.65	15.37	13.85	13.89	15.66	15.73	14.97	15.05	13.31	13.28
5	16.32	16.30	15.65	15.33	13.81	13.87	15.69	15.66	14.97	15.05	13.31	13.32
6	16.32	16.30	15.63	15.26	13.76	13.86	15.63	15.61	14.95	15.05	13.31	13.40
7	16.32	16.29	15.62	15.21	13.75	13.84	15.51	15.55	14.97	15.06	13.31	13.40
8	16.32	16.29	15.59	15.15	13.72	13.84	15.43	15.51	15.05	15.04	13.31	13.36
9	16.32	16.28	15.56	15.10	13.71	13.88	15.36	15.46	15.08	15.04	13.31	13.36
10	16.32	16.28	15.54	15.06	13.69	14.00	15.29	15.41	15.09	14.90	13.31	13.42
11	-----	16.29	15.52	15.06	13.69	14.13	15.22	15.37	15.10	14.75	13.29	13.44
12	-----	16.30	15.49	15.01	13.72	14.25	15.17	15.33	15.09	14.66	13.30	13.45
13	-----	16.29	15.48	14.96	13.76	14.35	15.17	15.30	15.06	14.57	13.28	13.45
14	-----	16.29	15.46	14.92	13.74	14.42	15.22	15.28	15.04	14.49	13.28	13.45
15	-----	16.28	15.45	14.89	13.72	14.45	15.32	15.25	15.03	14.40	13.28	13.44
16	-----	16.22	15.42	14.87	13.72	14.49	15.39	15.23	15.02	14.43	13.27	13.52
17	-----	16.16	15.40	14.84	13.72	14.56	15.46	15.19	15.01	14.24	13.28	13.50
18	16.33	16.11	15.37	14.82	13.73	14.63	15.51	15.16	14.99	14.12	13.28	13.53
19	16.33	16.06	15.34	14.79	13.78	14.69	15.55	15.13	-----	13.99	13.28	13.57
20	16.33	16.01	15.34	14.76	13.82	14.74	15.57	15.10	14.97	13.86	13.29	-----
21	16.34	15.97	15.36	14.72	13.81	14.77	15.61	15.10	14.96	13.76	13.32	-----
22	16.35	15.92	15.42	14.70	13.89	14.77	15.67	15.08	14.98	13.68	13.33	13.59
23	16.34	15.87	15.46	14.67	13.96	14.82	15.70	15.06	14.98	13.62	13.29	13.58
24	16.33	15.84	15.52	14.64	14.00	14.86	15.73	15.07	14.96	13.54	13.29	13.63
25	16.33	15.80	15.50	14.57	14.04	14.90	15.76	15.12	14.96	13.49	13.33	13.65
26	16.32	15.78	15.52	14.49	14.11	14.95	15.77	15.10	14.95	13.45	13.33	13.65
27	16.32	15.75	15.51	14.41	14.17	15.05	15.81	15.07	14.92	13.43	13.30	13.62
28	16.32	15.73	15.50	14.31	14.14	-----	15.85	15.06	14.91	13.39	13.30	13.56
29	16.31	-----	15.49	14.20	14.15	15.19	15.90	15.05	14.93	13.37	13.32e	13.51
30	16.31	-----	15.48	14.11	14.11	15.27	15.96	15.03	14.97	13.36	13.37e	13.46
31	16.31	-----	15.46	-----	14.05	-----	16.00	15.01	-----	13.36	-----e	13.41

(Daily highest water level from recorder graph, 1955)

1	e13.36	12.49	12.44	12.72	12.52	13.38	14.12	14.68	15.36	15.28	14.28	13.87
2	e13.30	12.51	12.49	12.68	12.52	13.41	14.18	14.73	15.32	15.25	14.26	13.87
3	e13.22	12.59	12.44	12.69	12.56	13.44	14.21	14.80	15.28	15.21	14.25	13.86
4	e13.15	12.60	12.43	12.63	12.64	13.46	14.19	14.87	15.28	15.18	14.23	13.87
5	e13.07	12.56	12.43	12.60	12.73	13.50	14.19	14.95	15.31	15.12	14.21	-----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	13.00	12.56	12.40	12.58	12.80	13.56	14.22	15.04	15.36	15.03	14.20	-----
7	12.93	12.58	12.40	12.58	12.84	13.59	14.22	15.05	15.38	14.97	14.18	-----
8	12.87	12.61	12.37	12.57	12.88	13.60	14.24	15.00	15.41	14.91	14.17	-----
9	12.82	12.61	12.35	12.57	12.90	13.58	14.27	14.96	15.43	14.85	14.14	-----
10	12.75	12.62	12.32	12.55	12.90	13.50	14.26	14.94	15.46	14.80	14.12	-----
11	12.69	12.65	12.32	12.53	12.91	13.47	14.24	14.93	15.49	14.75	14.11	-----
12	12.61	12.67	12.34	12.53	12.90	13.47	14.25	14.93	15.46	14.71	14.10	-----
13	12.58	12.72	12.34	12.52	12.89	13.44	14.29	14.94	15.46	14.67	14.08	-----
14	12.52	12.70	12.32	12.51	12.89	13.41	14.33	14.97	15.47	14.64	14.05	-----
15	12.51	12.70	12.31	12.52	12.89	13.41	14.38	14.95	15.50	14.62	14.04	-----
16	12.49	12.71	12.31	12.53	12.92	13.38	14.37	14.96	15.53	14.61	14.02	-----
17	-----	12.75	12.32	12.53	12.95	13.36	14.32	15.02	15.56	14.61	14.01	-----
18	-----	12.75	12.32	12.50	12.01	13.36	14.28	15.08	15.58	14.61	13.99	-----
19	-----	12.74	12.32	12.51	13.05	13.40	14.28	15.14	15.60	14.50	13.98	-----
20	-----	12.69	12.30	12.52	13.12	13.45	14.31	15.21	15.63	14.57	13.96	-----
21	-----	12.65	12.29	12.52	13.19	13.49	14.39	15.28	15.67	14.54	13.94	-----
22	-----	12.60	12.28	12.52	13.27	13.56	14.44	15.27	15.72	14.51	13.92	-----
23	-----	12.58	12.45	12.51	13.32	13.62	14.41	15.23	15.68	14.47	13.92	-----
24	12.41	12.54	12.52	12.48	13.35	13.67	14.42	15.19	15.63	14.45	13.93	-----
25	12.41	12.51	12.59	12.49	13.37	13.73	14.39	15.18	15.58	14.41	13.91	-----
26	12.43	12.48	12.61	12.53	13.38	13.80	14.38	15.17	15.52	14.39	13.90	13.95
27	12.47	12.46	12.68	12.52	13.37	13.85	14.40	15.20	15.46	14.37	13.89	13.96
28	12.46	12.44	12.71	12.51	13.40	13.90	14.46	15.27	15.41	14.33	13.88	13.94
29	12.47	-----	12.71	12.51	13.41	13.96	14.52	15.30	15.36	14.32	13.88	13.94
30	12.49	-----	12.73	12.51	13.39	14.03	14.57	15.31	15.32	14.31	13.90	13.94
31	12.49	-----	12.76	-----	13.37	-----	14.62	15.33	-----	14.29	-----	13.94

(Daily highest water level from recorder graph, 1956)

1	13.94	14.18	13.77	13.54	13.41	12.09	14.06	14.71	15.11	15.47	16.09	16.08
2	13.93	14.18	13.77	13.52	13.36	12.12	14.11	14.73	15.08	15.47	16.11	16.12
3	13.94	14.20	13.76	13.51	13.31	12.12	14.17	14.76	15.03	15.49	16.13	16.16
4	13.94	14.18	13.74	13.52	13.28	12.12	14.24	14.81	15.01	15.51	16.15	16.18
5	13.94	14.19	13.73	13.54	13.23	12.16	14.29	14.85	15.00	15.54	16.14	16.19
6	13.94	14.17	13.70	13.52	13.20	12.18	14.29	14.89	15.02	15.56	16.15	16.20
7	13.99	14.19	13.69	13.51	13.18	12.32	14.31	14.93	15.08	15.58	16.17	16.22
8	14.01	14.19	13.68	13.53	13.14	12.41	14.35	14.96	15.09	-----	16.18	16.24
9	14.00	14.15	13.65	-----	13.09	12.52	14.39	15.01	15.11	15.58	16.19	16.24
10	14.00	14.11	13.59	-----	13.07	12.63	14.39	15.06	15.10	15.59	16.19	16.23
11	14.03	14.09	13.59	-----	13.01	12.74	14.39	15.08	15.11	15.60	16.17	16.24
12	14.05	14.09	13.56	-----	12.79	12.86	14.41	15.08	15.12	15.61	-----	16.26
13	14.06	14.09	13.53	-----	12.57	12.99	14.45	14.92	15.14	15.62	-----	16.28
14	14.05	14.09	13.52	-----	12.43	13.12	14.49	14.88	15.17	15.65	-----	16.29
15	14.03	14.10	13.53	-----	12.30	13.24	14.53	14.87	15.20	15.67	-----	16.31
16	14.03	14.06	13.53	-----	12.21	13.36	14.58	14.87	15.17	15.70	-----	16.31
17	14.07	14.05	13.55	13.67	12.17	13.46	14.63	14.88	15.16	15.72	-----	16.29
18	14.08	14.05	13.56	13.67	12.11	13.55	14.67	14.90	15.15	15.75	-----	16.31
19	14.06	14.04	13.57	13.68	12.10	13.59	14.73	14.93	15.16	15.78	16.17	16.33

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
20	14.08	14.03	13.55	13.69	12.06	13.61	14.78	14.90	15.19	15.81	16.16	16.34
21	14.12	14.02	13.53	13.65	12.03	13.64	14.75	14.90	15.21	15.84	16.16	16.35
22	14.17	14.01	13.53	13.66	12.02	13.67	14.73	14.90	15.23	15.82	16.18	16.36
23	14.23	13.99	13.51	13.68	12.04	13.74	14.69	14.91	15.25	15.82	16.17	-----
24	14.26	13.94	13.53	13.69	12.09	13.81	14.67	14.95	15.25	15.87	16.02	16.31
25	14.26	13.91	13.51	13.66	12.07	13.87	14.68	14.98	15.28	15.91	16.10	16.28
26	14.25	13.86	13.51	13.67	12.04	13.92	14.70	14.99	15.32	15.95	16.08	16.25
27	14.22	13.83	13.52	13.63	12.05	13.97	14.72	14.98	15.36	16.00	16.06	16.27
28	14.18	13.82	13.52	13.63	12.07	13.99	14.74	15.00	15.40	16.03	16.05	16.21
29	14.18	13.80	13.52	13.53	12.06	14.01	14.74	15.05	15.43	16.05	16.06	16.17
30	14.18	-----	13.53	13.47	12.06	14.02	-----	15.09	15.46	16.05	16.06	16.11
31	14.23	-----	13.55	-----	12.07	-----	-----	15.11	-----	16.07	-----	16.06

(Daily highest water level from recorder graph, 1957)

1	16.02	15.34	-----	14.79	13.95	13.96	14.81	15.94	15.76	15.63	15.91	15.14
2	15.97	15.32	-----	14.79	13.87	-----	14.81	15.98	15.73	15.66	15.89	15.12
3	15.93	15.30	-----	14.78	13.79	-----	14.86	16.03	15.71	15.69	15.85	15.11
4	15.89	15.29	-----	14.77	13.74	-----	14.91	16.05	15.71	15.77	15.83	15.09
5	15.85	15.29	-----	14.75	13.69	-----	14.95	16.01	15.71	15.82	15.82	15.05
6	15.80	15.31	-----	14.75	13.67	14.13	14.95	15.97	15.71	15.86	15.80	15.05
7	15.77	15.29	-----	14.74	13.65	14.18	14.90	15.94	15.74	15.89	15.79	15.06
8	15.76	15.27	-----	14.73	13.65	14.23	14.88	15.92	15.73	14.93	15.78	15.04
9	15.76	15.25	-----	14.71	13.68	14.26	14.88	15.94	15.70	15.99	15.76	15.01
10	15.76	15.24	-----	14.69	13.73	14.27	14.94	15.99	15.69	16.03	15.73	15.00
11	15.74	15.22	-----	14.68	13.74	14.30	14.98	15.93	15.71	16.06	15.70	15.01
12	15.71	15.20	-----	14.67	13.71	14.34	15.05	15.90	15.72	16.10	15.67	15.01
13	15.69	15.18	-----	14.65	13.69	14.36	15.13	15.88	15.74	16.13	15.63	15.01
14	15.68	15.17	-----	14.64	13.67	13.38	15.20	15.89	15.70	16.14	15.60	15.00
15	15.67	15.15	-----	14.61	13.67	14.41	15.22	15.86	15.69	16.14	15.56	14.96
16	15.67	15.14	-----	14.58	13.71	14.44	15.24	15.84	15.67	16.16	15.55	14.95
17	15.65	15.12	14.88	14.56	13.72	14.46	15.29	15.84	15.66	16.15	15.51	14.94
18	15.65	15.11	14.86	14.54	13.70	14.47	15.34	15.85	15.67	16.15	15.46	14.92
19	15.63	15.10	14.86	14.51	13.69	14.51	15.39	15.83	15.65	16.18	15.43	14.92
20	15.61	15.09	14.86	14.49	13.68	14.54	15.45	15.84	15.66	16.13	15.42	14.91
21	15.59	15.07	14.85	14.49	13.70	14.56	15.59	15.88	15.68	16.11	15.40	14.88
22	15.58	15.06	14.84	14.49	13.70	14.61	15.58	15.92	15.68	16.14	15.38	14.81
23	15.55	15.05	14.84	14.47	13.73	14.68	15.59	15.96	15.67	16.15	15.35	14.72
24	15.53	15.03	14.83	14.44	13.77	14.73	15.59	16.00	15.69	16.15	15.30	14.62
25	15.50	-----	14.82	14.42	13.77	14.76	15.61	15.97	15.70	16.18	15.28	14.51
26	15.48	-----	14.82	14.38	13.77	14.78	15.63	15.93	15.70	16.16	15.26	14.43
27	15.45	-----	14.82	14.33	13.77	14.80	15.67	15.91	15.68	16.07	15.24	14.37
28	15.42	-----	14.81	14.26	13.80	14.83	15.72	15.88	15.66	16.00	15.23	14.33
29	15.40	-----	14.81	14.16	13.81	14.82	15.78	15.82	15.63	15.95	15.21	14.30
30	15.38	-----	14.81	14.04	13.84	14.82	15.84	15.79	15.62	15.93	15.18	14.27
31	15.35	-----	14.80	-----	13.90	-----	15.89	15.78	-----	15.93	-----	14.23

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

(Daily highest water level from recorder graph, 1958)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14.17	13.71	13.53	13.10	13.40	14.57	14.22	14.35	14.06	14.25	14.54	14.45
2	14.13	13.71	13.46	13.14	13.44	14.56	14.32	14.30	14.03	14.22	14.56	14.42
3	14.09	13.72	13.40	13.15	13.43	14.53	14.40	14.27	14.02	14.22	14.55	14.40
4	14.06	13.76	13.34	13.17	13.45	14.53	14.35	14.25	14.01	14.23	14.56	14.40
5	14.01	13.78	13.26	13.10	13.47	14.54	14.31	14.25	14.01	14.24	14.57	14.41
6	13.98	13.81	13.22	13.10	13.48	14.59	14.29	14.27	14.02	14.25	14.59	14.43
7	13.97	13.85	13.17	13.14	13.40	14.61	14.26	14.31	14.09	14.26	14.60	14.43
8	13.94	13.89	13.12	13.15	14.51	14.64	14.25	14.32	14.14	14.28	14.60	-----
9	13.91	13.87	13.08	13.15	13.53	14.63	14.25	14.29	14.18	14.30	14.59	-----
10	13.89	13.85	13.05	13.12	13.56	14.59	14.26	14.25	14.22	14.33	14.60	-----
11	13.88	13.84	13.02	13.12	13.61	14.57	14.27	14.23	14.26	14.35	14.61	14.40
12	13.84	13.82	13.00	13.13	13.71	14.52	14.28	14.23	14.24	14.35	14.62	14.40
13	13.81	13.82	12.96	13.13	13.79	14.49	14.30	14.25	14.23	14.33	14.64	14.41
14	13.79	13.80	12.95	13.13	13.89	14.43	14.27	14.30	14.25	14.35	14.65	14.41
15	13.77	13.79	12.93	13.17	13.98	14.38	14.30	14.20	14.27	14.38	14.67	14.39
16	13.75	13.80	12.92	13.22	14.09	14.36	14.34	14.17	14.29	14.40	14.63	14.41
17	13.74	13.80	12.90	13.25	14.15	14.35	14.37	14.11	14.27	14.42	14.61	14.40
18	13.73	13.80	12.90	13.28	14.22	14.33	14.37	14.08	14.26	14.46	14.62	-----
19	13.71	13.81	12.93	13.34	14.26	14.31	14.38	14.07	14.22	14.44	14.61	-----
20	13.70	13.82	12.93	13.39	14.27	14.31	14.38	14.07	14.19	14.43	14.59	-----
21	13.69	13.79	12.92	13.40	14.29	14.32	14.37	14.08	14.17	14.43	14.57	-----
22	13.69	13.80	12.93	13.40	14.32	14.30	14.39	14.08	14.15	14.45	14.56	-----
23	13.75	13.77	12.94	13.38	14.37	14.28	14.42	14.05	14.15	14.48	14.54	-----
24	13.75	13.74	12.93	13.37	14.32	14.26	14.47	14.02	14.15	14.50	14.54	-----
25	13.75	13.70	12.95	13.45	14.29	14.24	14.53	14.00	14.17	14.51	14.50	-----
26	13.75	13.66	12.96	13.46	14.27	14.22	14.60	13.98	14.21	14.48	14.50	-----
27	13.74	13.62	12.98	13.43	14.29	14.22	14.64	13.98	14.24	14.47	14.50	-----
28	13.74	13.58	13.04	13.41	14.39	14.22	14.63	14.00	14.24	14.48	14.47	14.45
29	13.72	-----	13.08	13.41	14.43	14.20	14.59	14.03	14.21	14.52	14.47	14.45
30	13.72	-----	13.08	13.40	14.46	14.19	14.50	14.06	14.22	14.53	14.45	14.47
31	13.70	-----	13.08	-----	14.51	-----	14.41	14.08	-----	14.54	-----	14.44

St. Joseph 10. (37/2-12P1). Formerly S_j 34. White Swan Laundry. 118 E. Sample St., South Bend. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 37 N., R. 2 E. Drilled unused artesian well in sand and gravel, diameter 12 inches, reported depth 81 feet. Land-surface datum is 726 feet above msl. Recording gage installed Feb. 15, 1945. Highest water level is 27.3 below lsd, Apr. 19, 1947; lowest 41.53 below lsd, Apr. 5, 1945. Records available: 1945-47. Affected by nearby pumping.

St. Joseph 10--continued

(Daily 2 a.m. water level from recorder graph)

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1945		Oct. 22	39.20	May 15	38.30	1947	
		Nov. 1	39.60	25	38.40	Jan. 1	40.80
Feb. 15	h41.28	4	39.90	27	38.20	15	40.70
23	h41.39	16	39.45	June 1	38.30	27	40.55
Mar. 6	h41.43	27	39.20	15	38.40	Feb. 1	40.80
16	h41.42	Dec. 1	39.25	28	37.70	15	40.65
22	h41.55	15	39.20	29	38.60	24	40.50
30	h41.53	19	39.30	July 1	38.45	Mar. 1	40.60
Apr. 5	h41.58	30	38.90	15	38.65	15	40.45
13	h41.28			31	39.15	16	41.10
20	h41.43	1946		Aug. 1	39.20	22	40.40
26	h41.14			15	39.75	Apr. 15	39.85
May 4	h41.09	Jan. 1	39.00	30	40.10	28	39.40
15	39.95	9	38.60	Sept. 1	40.05	May 3	39.45
38	39.45	13	39.30	3	39.95	13	38.95
June 1	39.40	15	39.00	15	40.35	31	38.65
10	39.90	Feb. 1	38.85	28	40.60	June 14	37.85
14	39.20	3	38.40	Oct. 7	40.65	22	37.60
28	38.80	15	38.75	15	40.80	July 1	37.60
July 1	39.05	17	39.20	26	40.90	8	37.55
15	38.85	Mar. 10	38.85	Nov. 3	40.95	14	37.55
27	39.10	14	38.80	16	40.95	25	37.75
Aug. 17	h39.47	31	38.55	17	40.20	Aug. 7	h38.53
Sept. 1	39.40	Apr. 1	38.45	22	41.00	14	h38.72
15	39.70	3	38.50	Dec. 1	40.90	22	h39.16
Oct. 1	39.50	15	37.80	15	41.00		
7	39.75	28	38.20	29	37.00		
15	39.50	May 1	38.30				

St. Joseph 11. (37/2-15C6). Formerly S_j 4T-1. City of South Bend. Olive Park pumping station, Olive St., South Bend. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 15, T. 37 N., R. 2 E. Drilled unused artesian well in sand and gravel, diameter 3 inches to 1 $\frac{1}{2}$ inches, reported depth 152 feet. Land-surface datum is 716 feet above msl. Highest water level is 15.15 below lsd, June 12, 1947; lowest 20.64 below lsd, July 26, 1945, Aug. 2, 1946. Records available: 1945-48. Affected by nearby pumping.

1945		Apr. 20	17.93	June 28	17.65	Aug. 30	18.84
		26	18.26	July 5	18.25	Sept. 6	19.28
Feb. 16	19.32	May 4	18.35	12	19.90	14	18.90
23	19.18	10	18.37	19	20.09	21	19.00
Mar. 9	18.28	17	18.24	26	20.64	27	18.76
22	18.46	24	16.82	Aug. 2	19.85	Oct. 4	18.41
30	18.82	31	16.82	9	19.14	11	18.44
Apr. 5	18.46	June 8	16.65	17	18.69	19	18.25
13	18.56	21	17.42	23	19.09	26	18.46

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 11--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1945		Apr. 11	17.31	Oct. 21	19.22	May 24	16.30
		18	17.31	25	19.46	June 2	15.27
Nov. 1	18.42	May 2	18.16	Nov. 8	19.10	12	15.15
15	18.63	14	17.13	14	19.27	27	16.09
24	18.55	21	16.99	Dec. 5	19.24	July 14	17.62
Dec. 1	18.98	31	18.20	12	19.30	Sept. 5	18.25
8	19.07	June 13	18.29	27	19.02	11	18.39
21	18.98	21	18.43			18	17.91
		28	19.72	1947		Oct. 3	17.30
1946		July 5	19.06			10	17.76
		13	20.45	Jan. 16	19.13	22	18.08
Jan. 4	19.11	19	20.50	23	18.88	31	17.72
11	18.90	26	20.50	Feb. 3	19.07	Nov. 14	18.14
18	18.67	Aug. 2	20.64	20	18.70	Dec. 1	18.11
25	18.42	10	19.27	27	18.60		
Feb. 1	18.18	16	19.40	Mar. 6	18.60	1948	
8	17.82	23	19.74	21	18.74		
Mar. 2	18.19	Sept. 3	19.40	27	18.82	Apr. 23	17.38
7	18.16	6	20.22	Apr. 3	18.68	May 27	17.50
16	17.79	13	19.43	17	16.98	June 24	17.99
22	17.85	20	19.68	May 10	16.92	July 27	18.78
29	17.67	Oct. 5	19.46	16	17.20	Dec. 23	19.93
Apr. 4	17.23	11	19.52				

St. Joseph 12. (37/2-17A1). Formerly S_j 4T-2. City of South Bend. Lombardy Dr., one block south of Sample St., South Bend. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T. 37 N., R. 2 E. Drilled unused artesian well in sand and gravel, diameter 3 inches, reported depth 152 feet. Land-surface datum is 710 feet above msl. Highest water level is 4.77 above lsd, June 2, 1947; lowest 9.57 below lsd, Nov. 29, Dec. 7, 13, 1949. Records available 1945-50.

1945		June 8	7.10	Oct. 4	8.17	Jan. 25	7.63
		21	7.25	11	8.21	Feb. 1	7.70
Feb. 16	8.56	28	7.34	19	8.23	8	7.82
23	8.31	July 5	7.50	26	8.35	Mar. 2	7.47
Mar. 9	8.20	12	7.69	Nov. 1	8.32	7	7.08
22	8.14	19	7.74	15	8.39	16	6.78
30	8.12	26	7.99	24	8.28	21	6.82
Apr. 5	7.75	Aug. 2	7.74	Dec. 1	8.14	29	6.74
13	7.76	9	7.86	8	8.19	Apr. 4	7.87
20	7.73	17	7.99	21	8.40	18	7.14
26	7.52	23	8.14			25	7.50
May 4	7.40	30	8.25	1946		May 2	7.54
10	7.20	Sept. 6	8.33			14	7.49
17	6.75	14	8.40	Jan. 4	8.28	21	7.61
24	6.65	21	8.46	11	8.18	31	7.60
31	6.82	27	8.24	18	7.55	June 21	7.80

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 12--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1946		Sept. 18	7.06	Feb. 8	7.95	Dec. 20	9.55
		Oct. 3	7.24	15	7.59	27	9.54
July 5	7.44	10	7.47	22	7.48		
13	7.77	22	7.70	Mar. 1	7.52	1950	
26	8.07	31	7.62	8	8.50		
Aug. 2	8.58	Nov. 14	7.68	15	7.58	Jan. 3	8.31
10	8.63	Dec. 1	8.02	22	7.70	10	8.32
16	8.69			29	7.89	17	8.10
23	8.71	1948		Apr. 5	7.59	24	8.02
Sept. 3	8.88			12	7.78	31	7.92
6	8.92	Apr. 23	6.50	19	7.87	Feb. 7	9.09
13	8.95	May 27	6.36	26	7.95	14	7.85
20	9.08	June 24	6.92	May 3	7.97	21	8.08
Oct. 5	9.07	July 27	7.72	10	8.24	28	8.05
11	9.16	Aug. 3	7.78	17	8.35	Mar. 7	7.63
21	8.95	10	7.81	24	7.93	15	7.50
25	8.92	17	8.05	31	8.04	22	7.45
Nov. 8	8.86	24	8.21	June 7	8.24	28	6.65
14	8.76	31	8.58	14	8.36	Apr. 4	6.00
Dec. 5	8.83	Sept. 7	8.50	21	8.12	11	5.80
12	8.40	14	8.62	July 12	8.31	18	6.07
27	8.40	21	8.65	19	8.56	25	5.89
		28	8.62	26	8.74	May 2	6.00
1947		Oct. 5	8.54	Aug. 2	9.00	10	6.45
		12	8.68	11	9.00	18	6.66
Jan. 16	8.41	19	8.68	16	8.50	23	6.96
23	8.51	26	8.72	23	9.25	30	6.80
Feb. 3	8.05	Nov. 2	8.82	31	9.27	June 6	6.26
20	8.10	9	8.72	Sept. 6	9.26	14	6.00
27	8.22	15	8.68	13	9.38	21	6.44
Mar. 6	8.17	23	8.94	20	9.28	July 11	6.64
21	8.15	30	8.80	27	9.36	19	6.81
27	7.60	Dec. 7	8.97	Oct. 4	9.28	25	6.94
Apr. 3	7.12	14	8.88	11	8.78	Aug. 1	7.18
17	5.88	21	8.79	18	9.20	8	7.25
May 10	5.62	28	8.78	25	9.27	15	7.69
16	6.05			Nov. 1	9.35	22	8.04
24	5.39	1949		8	9.38	29	8.03
June 2	4.77			15	9.38	Sept. 5	8.25
12	5.34	Jan. 4	8.48	22	9.45	12	8.28
27	6.66	11	8.42	29	9.57	19	8.44
July 14	6.66	18	8.00	Dec. 7	9.57	26	8.42
Aug. 5	7.52	26	8.00	13	9.57	Oct. 3	8.52
Sept. 11	7.40	Feb. 1	7.97			10	8.47

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 13. (38/2-35P3). Formerly Sj 87. D. W. Lynch. 1138 Kinyon St., South Bend. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 38 N., R. 2 E. Driven unused artesian well in sand and gravel, diameter 1 $\frac{1}{2}$ inches, depth 110 feet. Land-surface datum is 680 feet above msl. Highest water level is 2.54 below lsd, Mar. 9, 1945; lowest 6.01 below lsd, July 12, 1945. Records available: 1945:

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1945		Apr. 13	3.87	May 31	3.77	July 19	5.95
		19	3.36	June 8	4.11	27	5.99
Mar. 9	2.54	28	2.92	21	3.51	Aug. 2	5.96
22	3.45	May 3	3.29	28	5.40	9	5.23
30	3.36	10	3.62	July 6	4.83	17	4.86
Apr. 6	3.56	18	2.60	12	6.01		

St. Joseph 14. (38/3-25N1). Formerly Sj 90. Owner unknown. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T. 38 N., R. 3 E. Previously shown as SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 38 N., R. 4 E. Driven unused water-table well in sand and gravel, diameter 1 $\frac{1}{2}$ inches, depth 14 feet. Land-surface datum is 755 feet above msl. Highest water level is 8.45 below lsd, Mar. 29, 1946; lowest 10.72 below lsd, Sept. 7, 1946. Records available: 1945-46.

1945		July 20	10.13	Dec. 6	10.14	Apr. 12	9.17
		27	10.20	21	10.20	20	9.37
Mar. 22	10.19	Aug. 3	10.17			25	9.51
Apr. 2	9.96	9	10.26	1946		May 2	9.67
6	9.95	17	10.34			13	9.87
13	9.40	23	10.37	Jan. 4	10.20	21	9.89
19	9.55	30	10.50	12	10.18	June 8	10.04
28	9.48	Sept. 6	10.38	19	9.79	22	9.46
May 3	9.54	14	10.48	25	9.34	July 15	9.86
10	9.43	28	10.20	Feb. 1	9.61	19	10.04
18	8.59	Oct. 4	9.86	8	9.78	Aug. 2	10.35
June 1	8.77	11	9.82	Mar. 4	9.70	10	10.50
7	8.82	27	9.85	9	8.96	17	10.58
21	9.49	Nov. 3	9.80	16	9.12	27	10.70
28	9.68	16	9.83	22	8.62	Sept. 7	10.72
July 6	9.89	24	10.31	29	8.45	14	10.65
12	10.03	Dec. 1	10.36	Apr. 6	8.50	21	10.69

St. Joseph 15. (38/2-27C1). Formerly Sj 91. Owner unknown. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 38 N., R. 2 E. Dug unused water-table well in sand, diameter 42 inches, depth 10 feet. Land-surface datum is 755 feet above msl. Highest water level is 3.97 below lsd, June 28, 1945; lowest 4.99 below lsd, Mar. 6, Apr. 17, 1947. Records available: 1945-47.

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 15--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1945		Aug. 23	4.40	Mar. 1	4.64	Oct. 7	4.84
		30	4.40	8	4.61	11	4.83
Mar. 22	4.23	Sept. 6	4.38	16	4.64	21	4.87
30	4.26	14	4.48	22	4.63	24	4.86
Apr. 6	4.22	28	4.43	29	4.63	Nov. 8	4.88
13	4.24	Oct. 4	4.52	Apr. 6	4.64	14	4.88
19	4.23	11	4.48	12	4.65	23	4.90
28	4.22	26	4.50	20	4.65	28	4.91
May 3	4.23	Nov. 1	4.56	25	4.67		
10	4.25	16	4.59	May 21	4.68	1947	
18	4.24	24	4.55	June 8	4.70		
31	4.27	Dec. 1	4.60	July 22	4.68	Jan. 18	4.91
June 8	4.25	6	4.62	July 7	4.70	23	4.97
21	4.18			19	4.71	30	4.97
28	3.97	1946		Aug. 2	4.74	Feb. 20	4.97
July 6	4.32			10	4.72	Mar. 6	4.99
12	4.33	Jan. 4	4.60	17	4.74	22	4.98
19	4.32	11	4.60	27	4.77	27	4.97
27	4.32	18	4.61	Sept. 7	4.79	Apr. 3	4.97
Aug. 2	4.36	25	4.62	14	4.80	17	4.99
9	4.37	Feb. 1	4.63	21	4.80	May 23	4.97
17	4.38	8	4.63	27	4.81	June 9	4.91

St. Joseph 16. (38/2-35B5). Formerly Sj 53. St. Marys College. Notre Dame. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35 T. 38 N., R. 2 E. Previously shown as NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T. 38 N., R. 2 E. Drilled unused artesian well in sand and gravel, diameter 12 inches, depth 116 feet. Land-surface datum is 675 feet above msl. Recording gage installed Mar. 23, 1945, removed July 7, 1953. Highest water level is 0.9 below lsd, Apr. 12, 28, 30, 1950; lowest 16.0 below lsd, Mar. 11, 1953. Records available: 1945-58. Affected by nearby pumping.

(Daily 2 a.m. water level from recorder graph)

1945		Aug. 15	5.40	Dec. 15	4.80	Mar. 20	8.15
		20	8.80	31	6.55	31	4.45
Mar. 24	6.30	Sept. 1	6.05			Apr. 1	4.40
May 12	8.60	15	5.10	1946		15	4.85
14	5.00	22	8.85			30	6.05
25	4.75	30	4.80	Jan. 1	5.20	May 15	7.50
June 1	4.65	Oct. 1	8.15	12	5.05	23	4.20
3	4.60	2	4.55	31	6.25	June 1	4.35
4	8.25	15	5.45	Feb. 1	6.45	3	7.65
15	6.10	18	8.85	2	6.55	15	4.35
July 1	7.00	Nov. 1	5.10	4	5.10	July 1	5.35
15	5.25	4	5.05	15	6.15	15	8.30
17	5.25	12	5.25	Mar. 1	6.05	17	8.65
Aug. 1	5.00	14	5.15	14	5.35	28	5.05

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 16--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1946		June 14	5.45	May 15	3.05	May 2	5.10
		15	2.70	16	2.95	15	5.70
Aug. 1	5.05	July 1	4.75	June 1	4.10	June 1	5.30
14	4.50	15	4.20	15	4.50	15	5.40
15	4.60	21	4.00	21	8.10	19	5.00
17	7.90	26	7.60	July 1	4.30	28	6.90
Sept. 12	8.15	Aug. 2	4.80	15	8.30	July 1	5.30
15	5.90	14	4.85	Aug. 1	8.10	15	8.50
16	5.70	21	8.10	12	3.80	19	9.80
Oct. 1	6.00	28	4.50	15	5.00	Aug. 2	8.20
2	5.80	Sept. 1	4.80	29	9.30	14	9.50
15	6.10	5	4.35	Sept. 1	9.00	Sept. 12	9.20
27	9.05	10	7.75	15	6.60	15	9.40
Nov. 1	6.30	15	7.60	26	5.30	24	10.20
13	8.70	Oct. 1	4.60	Oct. 1	5.30	Oct. 1	9.60
14	5.60	15	4.50	15	5.60	15	9.20
15	5.80	17	7.95	19	4.30	25	5.90
Dec. 1	6.85	Nov. 1	6.55	24	9.00	Nov. 1	5.90
9	8.50	3	8.50	Nov. 1	5.80	15	9.70
15	5.60	11	4.40	7	5.30	19	9.90
30	5.25	15	5.75	13	8.80	Dec. 1	7.60
		Dec. 1	5.65	Dec. 1	6.90	15	8.00
1947		15	5.90	15	6.10	16	8.10
		18	6.00	28	7.70	24	5.70
Jan. 1	5.35	28	5.40	29	5.50		
15	6.65					1950 <u>1/</u>	
29	7.45	1948		1949 (<u>1/</u>)		Jan. 1	5.60
Feb. 1	6.20	Jan. 1	6.45	Jan. 1	6.80	4	7.00
15	7.10	7	6.60	8	7.60	15	4.90
21	7.45	15	5.40	15	6.70	29	4.30
Mar. 1	6.55	30	5.15	23	5.70	Feb. 1	5.50
11	7.70	Feb. 1	6.00	Feb. 1	6.20	6	5.70
15	6.25	13	7.55	14	7.50	14	6.60
29	5.35	15	6.55	15	6.70	21	5.30
Apr. 1	5.50	28	h4.85	20	5.80	Mar. 25	6.00
2	5.55	Mar. 6	h6.20	Mar. 1	6.30	31	4.10
15	4.15	27	4.35	11	7.20	Apr. 1	4.50
29	2.85	Apr. 3	h4.60	15	5.80	6	.20
May 1	2.75	15	4.30	Apr. 1	6.10	15	1.70
13	5.10	21	7.55	11	4.60	22	5.40
15	3.75	27	3.80	13	8.00	May 1	4.20
24	2.35	May 1	7.30	15	8.00	15	6.00
June 1	2.55	5	7.70	May 1	5.20	29	6.80
4	2.10						

1/ Daily lowest water level from recorder graph

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 16--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1950 <u>1/</u>		Oct. 25	5.40	Mar. 1	3.80	Aug. 15	8.40
		Nov. 1	8.40	15	8.00	16	5.60
June 15	6.60	4	10.70	28	8.70	30	8.80
18	6.40	5	5.40	Apr. 1	8.10	Sept. 1	8.90
23	6.90	15	8.70	4	10.40	7	9.10
July 1	6.70	Dec. 8	7.50	15	4.60	13	8.10
8	7.40	15	7.60	May 1	5.00	Oct. 1	8.30
15	7.20	19	9.30	15	7.60	4	8.50
Aug. 1	7.40			31	8.20	15	8.40
15	7.60	1951(<u>1/</u>)		June 3	8.30	26	7.50
24	4.80			14	8.70	Nov. 1	7.70
25	8.20	Jan. 1	8.20	15	8.50	8	8.20
Sept. 1	7.90	6	3.90	23	7.60	15	7.80
15	8.10	15	4.30	July 1	8.30	25	7.00
21	4.10	Feb. 1	5.50	7	8.80	Dec. 1	7.30
Oct. 1	4.90	13	8.50	15	8.50	7	6.90
2	4.70	15	4.80	18	5.60	14	7.60
15	5.30	26	3.10	Aug. 1	8.30		

(Daily lowest water level from recorder graph, 1952)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.10	5.90	7.00	-----	6.30	7.60	9.60	9.60	9.90	10.30	9.90	9.90
2	6.70	5.80	7.00	6.30	6.30	7.70	9.80	9.70	9.90	9.90	9.90	9.90
3	6.70	5.90	7.00	6.20	6.50	8.00	9.40	9.60	9.90	10.00	9.90	9.90
4	6.70	5.80	7.00	6.30	6.40	8.10	9.40	9.60	10.00	9.90	9.80	9.80
5	6.70	5.60	6.80	6.30	6.40	8.20	9.60	9.50	9.90	10.00	9.90	9.90
6	6.60	5.60	6.90	6.30	6.70	8.30	9.60	9.60	9.90	10.00	9.90	9.80
7	6.70	5.60	6.90	6.20	6.50	-----	9.90	9.60	9.90	9.90	10.00	9.90
8	6.70	5.70	6.80	6.20	12.80	-----	9.30	9.70	10.10	9.80	9.90	9.70
9	6.70	5.70	6.70	6.20	12.90	-----	9.20	9.60	9.90	10.00	9.90	9.80
10	6.70	5.80	6.70	6.20	8.60	-----	9.20	-----	10.00	9.80	10.00	9.80
11	6.60	5.80	6.60	6.20	8.60	-----	9.30	-----	9.90	9.80	9.90	9.70
12	6.70	5.90	6.20	6.20	8.70	-----	9.40	-----	10.00	9.60	9.90	9.90
13	6.70	5.90	6.10	6.00	9.20	-----	9.60	9.80	9.90	9.70	10.00	9.90
14	6.70	6.00	6.00	5.80	8.80	-----	9.60	9.70	9.80	10.10	10.00	9.80
15	6.50	6.00	6.00	5.70	8.90	-----	9.90	9.50	9.80	9.70	10.10	10.00
16	6.80	6.30	6.00	5.70	8.70	-----	9.90	9.40	9.90	9.70	10.00	9.90
17	6.10	6.30	6.00	5.60	8.70	-----	9.80	9.40	10.00	9.80	10.10	10.00
18	6.00	6.40	6.20	5.60	8.70	-----	9.80	9.40	9.90	9.70	10.10	9.90
19	5.90	6.40	5.90	5.70	8.90	-----	9.60	9.50	9.90	9.80	10.00	10.00
20	5.70	6.40	5.90	5.60	9.00	-----	9.60	9.50	9.80	9.80	10.00	10.00
21	5.50	6.40	5.80	5.70	8.90	-----	9.70	9.50	9.80	9.80	9.90	9.70
22	5.60	6.50	5.70	5.80	8.70	-----	9.50	9.60	9.80	9.70	10.00	9.70

1/ Daily lowest water level from recorder graph

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 16--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23	5.70	6.50	5.60	5.80	8.70	-----	9.30	9.50	9.90	9.70	9.80	9.70
24	5.90	6.50	5.50	5.70	8.40	-----	9.30	9.60	9.80	9.80	9.90	9.70
25	5.90	6.60	-----	5.90	7.90	-----	9.40	9.60	10.10	9.80	10.00	9.70
26	5.80	6.60	-----	6.00	7.90	-----	9.70	-----	10.10	9.80	9.80	9.70
27	5.70	6.70	-----	6.00	8.20	9.20	9.70	9.80	10.00	9.80	9.90	9.70
28	5.70	6.90	-----	6.10	7.40	9.20	9.60	9.90	9.90	10.00	9.80	9.60
29	5.90	6.80	-----	6.20	7.40	9.30	9.50	9.80	-----	9.90	9.80	9.70
30	6.00	-----	-----	6.20	7.40	9.40	9.80	9.90	9.90	9.90	9.80	9.90
31	5.90	-----	-----	-----	7.50	-----	9.70	9.90	-----	9.90	-----	9.80

(Daily lowest water level from recorder graph, 1953)

1	9.90	9.80	9.90	9.60	9.50	9.90	-----	-----	h6.39	-----	-----	h5.15
2	9.90	9.80	10.00	9.60	9.60	10.20	-----	-----	-----	-----	-----	-----
3	9.80	9.90	9.90	9.60	9.50	10.00	-----	-----	-----	-----	h5.80	-----
4	9.80	9.90	9.80	9.70	9.70	10.10	-----	h6.00	-----	-----	-----	-----
5	9.80	9.90	9.70	9.60	9.80	10.10	-----	-----	-----	-----	-----	-----
6	10.00	9.90	9.80	9.50	9.70	9.90	-----	-----	-----	h6.60	-----	-----
7	10.00	9.90	9.80	9.70	9.70	9.80	h5.80	-----	-----	-----	-----	-----
8	10.00	9.90	9.70	9.70	9.60	9.80	-----	-----	h5.90	-----	-----	h6.40
9	9.90	9.90	9.90	9.80	9.60	9.90	-----	-----	-----	-----	-----	-----
10	10.00	9.90	11.70	9.80	9.70	9.80	-----	-----	-----	-----	h6.45	-----
11	9.90	10.00	16.00	9.60	9.70	9.80	-----	h.586	-----	-----	-----	-----
12	10.00	10.00	7.40	9.60	9.80	10.10	-----	-----	-----	-----	-----	-----
13	10.00	10.00	6.80	9.70	9.70	9.90	-----	-----	-----	-----	-----	-----
14	10.10	10.10	6.80	9.70	9.80	10.00	h5.92	-----	-----	-----	-----	-----
15	9.90	10.20	6.90	9.70	9.80	10.40	-----	-----	h6.36	-----	-----	h6.41
16	9.80	10.00	9.40	9.70	9.80	10.10	-----	-----	-----	-----	-----	-----
17	9.80	10.00	9.40	9.50	9.70	10.90	-----	-----	-----	-----	h6.58	-----
18	9.70	10.00	9.30	9.60	9.80	10.10	-----	h6.13	-----	-----	-----	-----
19	9.80	9.90	9.40	9.50	9.80	10.50	-----	-----	-----	-----	-----	-----
20	9.80	9.90	9.40	9.60	9.60	-----	-----	-----	-----	-----	-----	-----
21	9.80	9.90	9.10	9.60	9.50	-----	h6.08	-----	-----	-----	-----	-----
22	9.80	9.70	6.00	9.60	9.80	-----	-----	-----	h6.65	h6.55	-----	h6.45
23	9.90	9.90	9.50	9.60	9.60	-----	-----	-----	-----	-----	-----	-----
24	10.10	9.90	9.40	9.60	9.70	-----	-----	-----	-----	-----	h6.45	-----
25	9.70	9.90	9.40	9.60	9.70	-----	-----	h6.30	-----	-----	-----	-----
26	9.70	9.80	9.60	9.50	9.80	-----	-----	-----	-----	-----	-----	-----
27	9.80	9.90	9.50	9.60	9.60	-----	-----	-----	-----	-----	-----	-----
28	9.80	9.90	9.60	9.70	9.70	-----	h6.25	-----	-----	h6.40	-----	-----
29	9.90	-----	9.50	9.50	9.70	-----	-----	-----	h6.49	-----	-----	h6.43
30	9.80	-----	9.60	9.60	9.70	-----	-----	-----	-----	-----	-----	-----
31	9.80	-----	9.70	-----	9.90	-----	-----	-----	-----	-----	-----	-----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 16--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1954		Nov. 23	5.50	Mar. 9	4.90	Jan. 22	6.55
		Dec. 1	5.70	17	4.50	29	6.15
Jan. 7	6.40	7	5.10	23	5.25	Feb. 5	6.05
13	5.70	14	5.52	30	5.28	12	5.95
19	6.60	21	5.50	Apr. 3	5.22	19	6.08
25	6.50	28	5.20	10	5.30	26	5.00
Feb. 3	6.50			17	5.25	Mar. 5	6.35
10	6.45	1955		24	5.39	12	6.25
16	6.08			May 1	3.85	19	6.10
23	6.08	Jan. 4	5.30	8	3.88	26	5.95
Mar. 2	5.10	11	4.90	15	3.44	Apr. 2	6.00
9	5.61	18	5.20	22	4.38	July 2	10.10
17	5.67	25	5.19	29	4.62	9	10.60
23	5.65	Feb. 1	5.38	June 5	4.98	16	8.50
30	5.32	8	5.43	12	6.15	23	8.60
Apr. 6	5.10	15	5.91	19	6.25	30	9.60
13	4.63	22	5.23	26	5.42	Aug. 6	9.20
21	4.62	Mar. 1	4.64	July 3	5.60	13	8.60
28	3.80	8	4.40	10	5.70	20	9.30
May 5	4.34	15	4.62	17	6.30	27	8.70
11	4.63	22	4.68	24	5.30	Sept. 3	8.57
18	5.06	29	4.57	31	5.50	10	8.65
25	5.33	Apr. 5	4.74	Aug. 8	6.45	17	7.75
June 2	4.87	26	4.79	15	5.55	24	6.75
8	5.20	May 3	5.75	22	5.70	Oct. 1	7.37
15	5.37	11	5.45	27	6.04	8	7.54
22	5.23	17	5.47	Sept. 4	5.90	15	7.35
29	5.41	24	5.50	11	6.30	22	7.45
July 5	5.50	31	5.50	18	7.05	29	6.40
13	5.33	June 7	5.61	25	6.37		
20	5.40	14	5.37	Oct. 2	7.50	1958	
27	6.40	21	5.68	9	6.50		
Aug. 4	5.88	28	5.87	16	6.60	Jan. 7	5.55
10	5.99	July 13	5.57	23	6.59	14	5.45
17	6.13	19	5.57	30	6.45	21	5.80
24	6.22	27	5.90	Nov. 6	6.59	28	5.45
25	6.88			13	6.57	Feb. 4	5.85
Sept. 7	6.41	1956		20	6.58	11	5.55
15	6.64			Dec. 4	6.52	18	5.90
21	6.70	Jan. 5	5.73	11	6.54	25	5.55
30	7.09	12	5.60	18	6.90	Mar. 4	4.90
Oct. 5	6.64	19	5.62	26	6.30	11	5.60
12	5.71	26	5.74			18	5.10
19	4.70	Feb. 2	5.88	1957		25	5.45
26	4.98	9	5.80			Apr. 1	5.40
Nov. 3	5.10	18	5.81	Jan. 2	6.50	8	5.10
9	5.31	27	4.65	8	6.51	15	6.60
16	5.38	Mar. 2	5.10	15	6.54	22	7.90

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 16--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1958		May 13	7.60	June 10	7.10	July 15	8.85
		20	8.00	17	6.60	22	8.35
Apr. 29	6.60	27	7.35	July 1	8.35	29	7.85
May 6	6.50	June 3	6.65	8	8.60		

St. Joseph 17. (37/3-7A1). Formerly Sj 89. V. D. Morgan. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 37 N., R. 3 E. Drilled and driven unused artesian(?) well in sand and gravel, diameter 2 inches, depth 138 feet. Land-surface datum is 745 feet above msl. Highest water level is 38.38 below lsd, June 4, 1947; lowest 51.54 below lsd, Aug. 24, 1957. Records available: 1945-58.

1945		1946		Oct. 24	46.64	July 1	43.20
Mar. 30	46.29	Jan. 4	45.16	Nov. 8	46.32	8	43.80
Apr. 6	46.46	12	45.14	14	46.42	15	44.40
13	46.42	19	45.28	Dec. 5	46.66	22	44.10
19	46.11	25	45.60	28	46.19	27	43.49
26	46.13	Feb. 1	45.62			29	44.15
May 3	45.92	8	45.69	1947		Aug. 5	44.05
10	45.68	Mar. 4	45.06	Jan. 18	46.28	12	44.35
18	45.46	9	45.16	23	46.30	19	44.95
June 1	45.46	16	45.04	30	46.05	25	45.44
7	45.52	22	44.92	Feb. 20	46.28	Sept. 2	45.80
21	45.25	29	44.70	Mar. 6	46.36	16	45.60
28	45.52	Apr. 6	44.64	22	46.13	23	45.00
July 7	45.61	12	44.28	27	46.10	30	45.75
12	46.07	20	44.38	Apr. 3	46.06	Oct. 7	45.00
20	46.19	25	44.38	17	44.86	14	45.05
27	46.12	May 2	44.59	May 9	43.02	21	45.15
Aug. 3	46.09	21	44.35	23	42.25	28	45.10
9	45.88	June 8	44.98	June 4	38.38	Nov. 4	45.25
17	45.57	22	44.85	12	41.13	11	45.30
23	46.14	July 6	45.73	July 3	41.53	18	44.85
30	45.96	13	46.43	10	41.88	25	45.95
Sept. 6	46.16	19	47.00	Aug. 22	43.49	Dec. 2	45.30
14	45.59	Aug. 2	47.38	Sept. 11	42.97	8	45.50
28	45.39	10	46.95	18	42.92	16	45.40
Oct. 4	45.31	17	46.93	Oct. 3	43.03	23	45.60
11	45.26	27	47.02	31	43.39	30	45.45
26	45.32	Sept. 7	47.40	Nov. 28	43.12		
Nov. 3	45.17	14	46.60			1949	
16	45.24	21	46.98	1948		Jan. 4	45.15
24	45.01	30	46.34			13	45.65
Dec. 1	45.14	Oct. 7	46.41	Apr. 23	43.05	21	45.30
6	45.26	11	46.80	May 27	43.26	27	45.25
21	45.56	18	46.41	June 24	43.24	Feb. 3	45.40

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 17--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1949		Dec. 29	46.65	Nov. 2	44.20	Sept. 13	46.30
				9	44.07	21	46.57
Feb. 10	44.90	1950		16	44.14	27	46.49
17	45.22			23	44.30	Oct. 4	46.28
24	45.20	Jan. 5	46.15	30	44.49	10	46.35
Mar. 3	45.18	12	46.22	Dec. 7	44.20	18	46.35
10	45.24	19	46.00	14	44.75	25	46.70
17	45.14	26	45.70	21	44.85	Nov. 1	45.50
24	44.91	Feb. 2	46.00	28	44.70	8	45.15
31	45.27	10	45.25			15	45.30
Apr. 7	45.30	16	45.37	1951		22	44.70
14	45.20	23	44.79			30	44.90
21	45.20	Mar. 2	44.50	Jan. 4	44.75	Dec. 6	44.71
28	45.33	9	44.50	11	45.20	13	44.60
May 5	45.50	16	44.00	18	45.15	20	44.58
12	45.75	23	43.85	25	45.23	27	44.16
19	45.75	30	43.84	Feb. 1	44.89		
26	45.35	Apr. 6	43.45	8	45.17	1952	
June 2	46.00	13	42.92	15	44.84		
8	46.29	20	42.31	22	45.79	Jan. 3	43.95
16	46.10	27	42.04	Mar. 1	44.90	10	44.10
23	46.30	May 4	41.41	8	45.23	17	43.79
30	46.50	11	41.73	15	45.32	24	43.61
July 7	46.50	18	42.07	22	45.40	31	43.31
14	47.75	25	41.70	29	45.35	Feb. 7	43.13
21	47.30	June 1	41.89	Apr. 5	45.61	14	42.96
28	47.70	8	42.10	12	45.93	21	42.92
Aug. 4	47.45	15	41.58	19	45.89	28	42.72
11	48.90	22	40.50	26	45.88	Mar. 6	42.77
18	47.95	26	40.02	May 3	46.16	13	42.53
25	48.35	29	41.43	10	46.33	20	42.38
Sept. 1	47.64	July 6	41.14	17	46.29	27	42.58
8	47.59	13	41.96	24	46.38	Apr. 3	42.52
15	47.70	20	41.17	31	45.86	10	42.66
22	47.80	27	41.56	June 7	46.10	17	42.68
29	47.70	Aug. 3	41.64	14	46.32	24	42.95
Oct. 7	47.65	10	42.09	21	46.22	May 8	43.39
13	47.80	17	42.67	28	46.19	15	43.85
21	47.75	24	43.10	July 5	45.69	23	42.73
27	47.80	31	43.10	12	45.70	29	42.80
Nov. 3	47.80	Sept. 7	42.66	19	46.34	June 6	43.33
10	47.69	14	43.15	26	46.46	13	43.52
17	47.40	21	43.01	Aug. 2	46.40	19	43.51
24	46.48	28	42.80	9	46.00	26	43.56
Dec. 1	47.15	Oct. 5	42.70	16	46.00	July 3	44.08
8	46.80	12	43.48	23	46.07	10	43.75
15	47.20	19	43.00	30	46.30	17	43.96
22	47.00	26	43.27	Sept. 6	46.14	24	43.92

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 17--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1952		July 25	50.07	July 3	49.00	May 28	46.25
July 31	43.89	Aug. 1	50.69	10	48.28	June 4	46.61
Aug. 7	44.02	8	50.36	17	48.87	11	46.46
14	43.81	15	50.44	24	48.88	July 2	46.95
21	44.06	22	50.66	Aug. 7	48.71	9	48.04
28	44.58	29	51.02	14	48.14	Aug. 20	49.10
Sept. 4	44.32	Sept. 5	50.90	21	48.38	27	49.07
10	44.58	12	50.53	25	48.51	Sept. 3	48.61
18	45.20	19	50.95	28	48.44	10	48.36
25	45.22	26	50.62	Sept. 9	48.60	17	48.58
Oct. 2	45.34	Oct. 3	51.20	11	48.55	24	48.43
9	45.20	10	50.84	18	48.52	Oct. 1	48.24
16	45.20	17	50.97	25	48.44	8	47.76
23	45.15	30	50.72	Oct. 2	47.96	15	47.48
30	45.20	Nov. 7	50.65	9	47.86	22	47.13
Nov. 6	45.47	20	50.87	16	47.48	29	48.90
13	45.63	28	50.23	23	46.76	Nov. 5	46.68
20	45.75	Dec. 5	50.55	30	46.45	12	46.20
27	45.78	12	50.47	Nov. 6	45.96	20	46.20
Dec. 4	46.20	26	49.96	13	45.94	26	46.15
13	46.03			20	45.56	Dec. 3	46.14
20	46.20	1954		27	45.50	10	46.10
27	46.23	Jan. 2	49.90	Dec. 4	45.43	17	45.99
		9	50.20	11	45.34	24	46.09
		16	50.17	18	45.26	30	46.17
		23	49.97	25	45.10		
		30	50.08			1956	
1953		Feb. 6	50.06	1955		Jan. 7	46.08
Jan. 3	46.50	13	49.92	Jan. 1	45.07	14	46.38
10	47.85	20	49.85	8	45.19	21	46.48
17	47.04	27	49.50	15	45.84	28	46.54
24	47.08	Mar. 6	49.40	29	45.75	Feb. 4	46.58
30	47.17	15	49.30	Feb. 5	45.59	11	46.61
Feb. 7	47.46	21	49.16	19	44.75	18	46.64
21	47.65	27	49.15	26	44.57	25	46.67
28	47.69	Apr. 3	49.31	Mar. 5	44.70	Mar. 3	45.64
Mar. 7	47.68	10	48.96	12	44.83	10	46.18
14	48.88	17	48.81	19	44.97	17	46.09
21	48.80	24	48.70	26	44.70	24	46.09
28	47.76	May 1	48.50	Apr. 2	44.92	31	46.09
Apr. 4	47.79	8	47.80	9	44.98	Apr. 7	46.18
11	48.06	15	47.89	16	45.01	14	46.33
25	48.26	22	46.96	23	44.84	21	46.45
May 9	48.66	29	48.06	30	45.30	28	46.50
23	48.68	June 5	47.53	May 7	45.70	May 5	46.40
June 6	49.48	19	47.20	13	45.65	12	46.27
13	49.67	26	48.30	21	46.65	19	46.08
July 10	49.98						
18	50.03						

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 17--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1956		Jan. 12	48.85	Sept. 21	50.90	May 3	47.98
		19	48.95	28	50.79	10	48.18
May 26	45.78	26	49.00	Oct. 5	51.05	17	49.03
June 2	45.70	Feb. 2	48.98	12	51.00	24	49.15
9	46.13	10	49.01	19	50.91	31	49.64
16	46.92	16	49.08	26	50.58	June 7	49.66
26	47.22	23	49.14	Nov. 2	50.06	14	49.53
30	47.34	Mar. 2	49.15	9	50.41	21	49.46
July 7	47.52	9	49.24	16	50.30	28	49.46
28	47.98	16	49.34	23	50.09	July 5	49.57
Aug. 4	48.18	23	49.35	30	49.10	12	49.59
11	48.20	30	49.37	Dec. 7	49.66	18	49.67
18	48.20	Apr. 1	49.44	14	49.64	26	49.90
25	47.90	13	49.46	21	49.51	Aug. 2	49.89
Sept. 1	48.15	20	49.49	28	49.04	9	49.88
8	48.05	27	49.60			16	49.80
15	48.22	May 4	49.49	1958		23	49.67
22	48.23	11	49.60			30	49.65
31	48.59	18	49.37	Jan. 4	48.95	Sept. 6	49.64
Oct. 6	48.76	25	49.38	11	48.84	13	49.63
13	48.85	June 1	49.41	18	48.82	20	49.60
20	49.08	8	49.60	25	48.64	27	49.59
27	48.97	15	49.57	Feb. 1	48.39	Oct. 4	49.45
Nov. 4	48.77	22	49.70	8	48.30	11	49.40
10	48.62	29	49.69	15	48.19	18	49.42
17	48.55	July 6	49.75	22	48.33	25	49.38
24	48.48	13	50.09	Mar. 1	48.25	Nov. 1	49.29
Dec. 1	48.54	20	50.55	8	48.09	8	49.25
8	48.48	27	50.57	15	47.93	15	49.20
15	48.58	Aug. 3	50.77	22	47.85	22	49.08
22	48.48	10	51.18	29	47.76	29	48.93
29	48.56	17	51.49	Apr. 5	47.68	Dec. 6	48.89
		24	51.54	12	47.85	13	48.95
1957		31	51.28	19	47.95	20	49.05
Jan. 5	48.72	Sept. 7	51.06	26	47.99	27	47.27
		14	50.88				

St. Joseph 18. (37/1-13Q1). Formerly S_j 92. Camile Sargent. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 37 N., R. 1 E. Driven unused water-table well in sand, diameter 1 $\frac{1}{2}$ inches, depth 27 feet. Land-surface datum is about 745 feet above msl. Highest water level is 23.64 below lsd, June 13, 1946; lowest 24.83 below lsd, Oct. 24, 1946. Records available: 1945-46.

1945		July 7	24.23	Aug. 4	24.02	Sept. 1	24.02
		14	24.24	11	23.95	8	24.05
June 22	24.54	21	24.06	18	24.01	15	24.08
30	24.35	28	24.03	25	23.99	22	24.10

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 18--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1945		Nov. 3	24.56	Jan. 11	23.76	July 9	23.68
		10	24.56	May 28	23.65	21	23.77
Sept. 29	24.18	17	24.56	June 4	23.69	30	24.00
Oct. 11	24.21			13	23.64	Aug. 6	24.06
22	24.25	1946		19	23.70	13	24.06
27	24.56			26	23.68	Sept. 10	24.35
						Oct. 24	24.83

St. Joseph 19. (37/3-5P2). Formerly Sj 88. Morris Park Country Club. SE $\frac{1}{2}$ SW $\frac{1}{2}$ Sec. 5, T. 37 N., R. 3 E. Drilled unused water-table well in sand and gravel, diameter 12 inches, depth 86 feet. Land-surface datum is about 745 feet above msl. Highest water level is 9.68 below lsd, June 21, 1945; lowest 10.93 below lsd, Apr. 28, 1945. Records available: 1945.

1945		Apr. 19	10.90	June 1	10.35	July 27	10.10
		28	10.93	21	9.69		
Apr. 6	10.75	May 3	10.89	July 7	9.71		
13	10.81	18	10.62	12	10.15		

St. Joseph 20. (37/2-14E1). Formerly Sj 28, Sj 28-1. Oliver Corporation. 1217 S. Walnut St., South Bend. SW $\frac{1}{2}$ NW $\frac{1}{2}$ sec. 14, T. 37 N., R. 2 E. Drilled unused water-table well in sand, diameter 12 inches, depth 72 feet. Land-surface datum is 720 feet above msl. Recording gage installed Mar. 8, 1945, removed July 19, 1945. Highest water level is 16.77 below lsd, Apr. 11, 1946; lowest 18.86 below lsd, Jan. 30, 1947. Records available: 1945-47. Affected by trains.

1945 (1/)		Sept. 21	h17.80	Jan. 25	17.55	Sept. 3	17.92
		27	h17.80	Feb. 1	17.49	13	18.06
Mar. 8	h18.32	Oct. 4	h17.82	8	17.42	20	18.15
15	18.29	11	h17.82	Mar. 16	17.32	Oct. 11	18.40
Apr. 15	18.09	19	h17.81	22	17.07	Nov. 8	18.65
30	17.91	26	h17.84	29	16.96	Dec. 6	18.80
May 1	17.90	Nov. 1	h17.84	Apr. 4	16.85	27	18.79
15	17.81	15	h17.89	11	16.77		
31	17.33	24	h17.87	May 31	16.83	1947	
June 1	17.31	Dec. 1	h17.89	June 13	16.95	Jan. 16	18.85
15	17.08	8	h17.91	21	16.96	23	18.85
20	17.05	21	h17.91	28	17.01	30	18.86
July 16	18.32			July 5	17.06	Feb. 20	18.60
Aug. 17	h17.61	1946		13	17.12	Mar. 6	18.60
23	h17.62			19	17.23	21	18.43
30	h17.68	Jan. 4	17.85	26	17.36		
Sept. 6	h17.73	11	17.75	Aug. 2	17.48		
14	h17.79	18	17.69				

1/ Daily 2 a.m. water level from recorder graph.

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 21. (37/2-13E1). Formerly Sj 10-1. Borden Co. 1225 S. Main St., South Bend. SW $\frac{1}{2}$ NW $\frac{1}{2}$ sec. 13, T. 37 N., R. 2 E. Drilled unused water-table well in sand and gravel, diameter 8 inches, reported depth 58 feet. Land-surface datum is 732 feet above msl. Recording gage installed Jan. 1, 1946. Highest water level is 35.75 below lsd, May 25-27, 1946; lowest 36.86 below lsd, Feb. 1, 1946. Records available: 1946. Affected by barometric pressure.

(Daily 2 a.m. water level from recorder graph, 1946)

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Feb. 1	h36.86	Feb. 25	36.34	Apr. 7	36.12	May 2	35.93
2	36.39	26	36.32	8	36.10	3	35.92
3	36.41	27	36.33	9	36.10	4	35.90
4	36.40	28	36.34	10	36.10	5	35.90
5	36.38	Mar. 1	36.34	11	36.09	6	35.89
6	36.36	2	36.33	12	36.10	7	35.88
7	36.38	3	36.33	13	36.09	8	35.87
8	36.39	4	36.32	14	36.07	9	35.86
9	36.39	5	36.32	15	36.05	10	35.86
10	36.40	6	36.31	16	36.05	12	35.85
11	36.39	7	36.31	17	36.05	13	35.84
12	36.39	8	36.30	18	36.03	14	35.83
13	36.37	9	36.28	19	36.02	15	35.82
14	36.36	12	36.29	20	36.02	16	35.81
15	36.39	13	36.28	21	36.01	17	35.81
16	36.37	14	36.28	22	36.00	18	35.79
17	36.38	24	36.22	23	35.99	21	35.77
18	36.38	25	36.22	24	35.98	22	35.78
19	36.36	26	36.21	25	35.97	23	35.77
20	36.35	27	36.21	27	35.97	24	35.76
21	36.37	28	36.20	28	35.96	25	35.75
22	36.35	29	36.19	29	35.95	26	35.75
23	36.35	Apr. 5	36.14	30	35.95	27	35.75
24	36.34	6	36.13	May 1	35.94		

St. Joseph 22. (37/2-13E2). Formerly Sj 10-2. Borden Co. 1225 S. Main St., South Bend. SW $\frac{1}{2}$ NW $\frac{1}{2}$ sec. 13, T. 37 N., R. 2 E. Drilled unused water-table well in sand and gravel, diameter 12 inches, depth 45 feet. Land-surface datum is 732 feet above msl. Recording gage installed Jan. 25, 1946. Highest water level is 34.22 below lsd, Aug. 13-15, 1950; lowest 39.24 below lsd, Dec. 23-25, 1949. Records available: 1946-52. Affected by barometric pressure.

(Daily 2 a.m. water level from recorder graph)

1946		Feb. 15	36.43	Mar. 30	36.24	May 1	35.97
		26	36.35	Apr. 1	36.23	27	35.81
Jan. 26	36.41	Mar. 1	36.37	15	36.10	July 27	35.96
Feb. 1	36.42	14	36.31	30	35.97	Aug. 1	36.02
3	36.45						

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 22--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1946		Oct. 15	35.13	Sept. 15	38.54	Dec. 1	35.72
		31	35.29	30	38.68	15	35.92
Aug. 15	36.18	Nov. 1	35.31	Oct. 1	38.69	31	e36.15
30	36.38	14	35.46	15	38.77		
Sept. 1	36.40			31	38.89	1951	
15	36.58	1948		Nov. 1	38.89	Jan. 1	e36.15
30	36.77			15	38.97	14	36.21
Oct. 1	36.79	Jan. 9	36.17	28	39.05	22	36.24
15	36.99	15	36.24	Dec. 1	h39.13	28	36.21
31	37.21	Aug. 27	35.98	15	39.19	Feb. 21	36.19
Nov. 1	37.23	Sept. 1	36.05	25	39.24	28	36.21
15	37.41	8	36.19			Mar. 1	36.18
29	37.58	Oct. 16	37.21	1950		10	36.26
Dec. 1	37.59	22	37.35	Jan. 1	39.20	15	36.23
15	37.74	Nov. 17	37.44	15	39.13	Apr. 1	36.21
31	37.85	29	37.54	31	38.95	15	36.17
		Dec. 1	37.57	Feb. 1	38.94	30	36.15
1947		18	37.72	15	h38.80	May 1	36.15
		30	37.75	28	38.66	15	36.05
Jan. 1	37.85			Mar. 1	38.65	31	35.87
15	37.93	1949		15	38.48	June 1	35.84
31	38.02			31	e38.20	15	35.58
Feb. 2	38.02	Jan. 11	37.80	Apr. 6	h38.06	30	35.37
15	38.06	15	37.85	13	h37.81	July 1	35.36
22	38.09	30	38.02	30	37.13	15	e35.25
Mar. 1	38.09	Feb. 1	38.03	May 1	37.09	19	35.21
15	37.99	15	38.10	15	36.51	Aug. 1	35.21
29	37.92	28	38.46	31	36.04	2	35.22
Apr. 1	37.91	Mar. 1	38.50	June 1	36.02	15	35.13
15	37.71	9	38.70	15	35.63	31	35.03
30	37.23	15	38.69	30	35.00	Sept. 1	35.03
May 1	37.20	Apr. 1	38.51	July 1	34.97	2	35.04
15	36.66	15	38.39	15	34.51	15	34.97
30	36.03	29	38.31	31	h34.29	27	34.93
June 3	35.88	May 1	38.30	Aug. 1	34.29	Oct. 1	34.99
15	35.35	15	38.20	15	e34.22	2	34.97
30	34.81	31	38.12	30	34.41	15	35.20
July 1	34.78	June 1	38.12	Sept. 1	34.42	31	35.41
15	34.52	15	38.03	15	34.64	Nov. 1	35.43
26	34.45	25	38.00	30	34.87	15	35.54
Aug. 1	34.48	July 1	38.03	Oct. 1	34.80	30	35.64
15	34.57	15	38.16	15	35.07	Dec. 1	35.64
31	34.77	30	38.24	30	35.27	4	35.63
Sept. 1	34.78	Aug. 1	e38.24	Nov. 1	35.28	15	35.64
15	34.89	15	38.33	15	35.48	16	35.68
30	35.00	30	e38.41	30	e35.69		
Oct. 1	35.01	Sept. 2	38.42				

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 22--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1952		Jan. 26	35.54	Feb. 15	35.37	May 4	35.15
		27	35.54	16	35.35	5	35.18
Jan. 2	35.64	28	35.55	17	35.33	6	35.18
3	35.63	29	35.54	18	35.33		
4	35.63	30	35.54	19	35.32		
5	35.59	31	35.53	20	35.29		
6	35.61	Feb. 1	35.51	21	35.28		
7	35.61	2	35.50	22	35.29		
8	35.60	3	35.49	23	35.28		
9	35.57	4	35.46	24	35.27		
10	35.58	5	35.47	25	35.26		
11	35.62	6	35.46	26	35.24		
12	35.60	7	35.46	27	35.22		
13	35.60	8	35.44	28	35.21		
14	35.58	9	35.45	29	35.20		
15	35.56	10	35.43	May 1	35.19		
16	35.60	11	35.40	2	35.19		
17	35.57	12	35.41	3	35.18		
25	35.57	13	35.39				

St. Joseph 23. (38/1-33R2). New York Central System. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 38 N., R. 1 E. Drilled unused water-table well in sand and gravel, diameter 12 inches, depth 56 feet. Land-surface datum is 722 feet above msl. Highest water level is 5.19 below lsd, June 21, 1956; lowest 6.05 below lsd, Jan. 19, 1957. Records available: 1956-57.

1956		Nov. 23	5.94	1957		Feb. 2	5.74
		30	5.95			9	5.80
June 21	5.19	Dec. 8	5.97	Jan. 5	6.00		
Nov. 2	5.92	15	5.99	12	6.02		
9	5.92	22	5.92	19	6.05		
16	5.98	29	5.88	26	6.02		

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 24. (36/2-32M1). Wabash Railroad Co. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 36 N., R. 2 E. Drilled unused water-table well in sand, diameter 12 inches, depth 92 feet. Land-surface datum is 824 feet above msl. Recording gage installed Aug. 8, 1957. Highest water level is 39.23 below lsd, June 22, 23, 1948; lowest 41.53 below lsd, July 17, 1957. Records available: 1957-58. Affected by barometric pressure and by trains.

(Daily highest water level from recorder graph, 1957)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	-----	-----	-----	-----	-----	-----	-----	39.74	39.81	-----	39.74
2	-----	-----	-----	-----	-----	-----	-----	-----	39.62	39.99	-----	39.91
3	-----	-----	-----	-----	-----	-----	-----	-----	39.70	40.00	-----	39.72
4	-----	-----	-----	-----	-----	-----	-----	-----	39.83	40.00	-----	39.88
5	-----	-----	-----	-----	-----	-----	-----	-----	39.91	40.00	-----	-----
6	-----	-----	-----	-----	h39.93	-----	-----	-----	39.80	39.92	39.94	-----
7	-----	-----	-----	-----	-----	-----	-----	-----	39.82	39.93	39.60	-----
8	-----	-----	-----	-----	-----	-----	-----	-----	39.84	40.04	39.47	40.01
9	-----	-----	-----	-----	-----	-----	-----	39.55	39.87	40.05	40.15	39.62
10	-----	-----	-----	-----	-----	-----	-----	39.61	39.85	40.08	40.18	39.53
11	-----	-----	-----	-----	-----	-----	-----	39.67	39.77	40.09	39.98	39.96
12	-----	-----	-----	-----	-----	-----	-----	39.73	39.76	40.04	39.87	39.78
13	h40.11	-----	-----	-----	-----	-----	-----	39.60	-----	39.99	39.75	39.68
14	-----	-----	-----	-----	-----	-----	-----	39.63	39.72	39.95	39.41	39.99
15	-----	-----	-----	h40.01	-----	-----	-----	39.68	39.67	39.92	39.88	39.81
16	-----	-----	-----	-----	-----	-----	-----	39.79	39.88	39.90	39.87	39.93
17	-----	-----	-----	-----	-----	-----	h41.53	39.71	39.92	39.97	39.84	39.71
18	-----	-----	-----	-----	-----	-----	-----	39.72	39.81	40.16	39.31	39.45
19	-----	-----	-----	-----	-----	-----	-----	39.73	39.75	40.13	39.61	-----
20	-----	-----	-----	-----	-----	-----	-----	39.77	39.81	40.12	39.93	-----
21	-----	-----	-----	-----	-----	-----	-----	39.84	39.82	39.91	40.09	40.28
22	-----	-----	-----	h39.99	-----	-----	-----	39.77	39.95	39.82	39.85	-----
23	-----	-----	-----	-----	-----	-----	-----	39.56	39.96	39.53	39.54	-----
24	-----	-----	-----	-----	-----	-----	-----	39.53	39.85	39.68	39.68	-----
25	-----	-----	-----	-----	-----	-----	-----	39.72	39.88	-----	39.77	-----
26	-----	-----	-----	-----	-----	-----	-----	39.83	40.05	-----	39.81	-----
27	-----	-----	-----	-----	-----	-----	-----	39.82	40.00	-----	39.72	-----
28	-----	-----	-----	-----	-----	-----	-----	39.76	39.94	-----	39.77	-----
29	-----	-----	-----	h39.97	-----	-----	-----	e39.77	39.86	-----	39.76	-----
30	-----	-----	-----	-----	-----	-----	-----	39.84	39.78	-----	39.76	-----
31	-----	-----	-----	-----	-----	-----	-----	39.81	-----	-----	-----	-----

Table 5.--Water levels in observation wells in St. Joseph County,--Continued

St. Joseph 24--continued

(Daily highest water level from recorder graph, 1958)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	40.10	40.16	39.74	39.81	-----	39.38	39.55	39.69	39.90	39.76	39.76
2	-----	40.09	39.98	39.71	39.77	-----	39.38	39.46	39.57	39.71	39.78	39.68
3	-----	40.17	39.98	39.71	39.76	-----	39.40	39.48	39.59	39.59	39.89	39.60
4	-----	40.00	40.05	39.71	39.88	40.18	39.36	39.57	39.67	39.54	39.75	39.61
5	-----	39.96	39.85	39.40	39.87	-----	39.42	39.54	39.53	39.66	39.64	40.00
6	-----	40.14	39.87	39.49	39.86	-----	39.50	39.51	39.53	39.65	39.98	40.15
7	-----	40.16	39.90	39.80	39.82	-----	39.47	39.46	39.62	39.62	39.81	39.86
8	-----	40.19	39.80	39.97	39.78	-----	39.50	39.53	39.71	39.61	39.59	39.80
9	-----	40.05	39.77	39.86	39.91	-----	39.45	39.53	39.37	39.65	40.22	40.01
10	-----	39.98	39.94	39.71	39.90	-----	39.42	39.47	39.49	39.86	40.06	39.94
11	-----	40.01	39.93	39.75	39.93	-----	39.46	39.52	39.69	39.92	39.87	39.79
12	-----	40.06	39.80	39.88	40.04	-----	39.52	39.50	39.67	39.79	39.88	39.83
13	-----	40.07	39.69	39.82	39.98	-----	39.50	39.55	39.64	39.77	39.80	40.07
14	-----	40.00	39.85	39.77	39.84	-----	39.50	39.46	39.55	39.81	39.84	39.92
15	-----	39.97	39.82	39.70	39.87	-----	39.52	39.53	39.67	39.69	39.78	39.84
16	-----	40.16	39.80	39.85	39.89	-----	39.45	39.48	39.67	39.70	39.85	39.66
17	-----	40.08	39.90	39.78	-----	-----	39.41	39.46	39.50	39.80	39.72	39.66
18	-----	40.06	39.91	39.78	-----	-----	39.63	39.60	39.79	39.88	39.82	39.75
19	-----	40.19	39.81	39.75	-----	-----	39.46	39.54	39.66	39.74	39.97	39.67
20	-----	40.13	39.79	39.72	-----	39.34	39.54	39.47	39.60	39.76	39.92	40.13
21	-----	39.90	39.80	39.69	-----	39.36	39.53	39.49	39.61	39.84	39.86	40.03
22	-----	40.10	39.88	39.66	-----	39.23	-----	39.64	39.77	39.79	39.88	39.76
23	-----	39.93	39.88	39.53	-----	39.23	-----	39.47	39.66	39.79	39.80	39.83
24	-----	39.84	39.82	39.53	-----	39.32	-----	39.41	39.62	39.86	39.87	40.11
25	-----	40.01	39.79	40.04	-----	39.26	-----	39.60	39.67	39.88	39.53	40.10
26	-----	39.85	39.73	39.81	-----	39.45	-----	39.61	39.74	39.90	39.83	39.92
27	-----	39.75	39.79	39.71	-----	39.44	-----	39.50	39.75	39.92	39.94	39.91
28	-----	39.88	39.79	39.70	-----	39.44	-----	-----	39.71	39.94	39.75	40.04
29	-----	-----	39.79	39.87	-----	39.35	-----	-----	39.54	39.98	39.89	40.07
30	-----	-----	39.75	39.78	-----	39.37	-----	39.55	39.54	39.89	-----	40.10
31	-----	-----	39.83	-----	-----	-----	-----	39.58	-----	39.76	-----	40.10

PUBLICATIONS OF COOPERATIVE GROUND-WATER PROGRAMS

Report

Ground-water resources of the Indianapolis area, Marion County, Ind. C. L. McGuinness. Ind. Dept. Conserv., Div. Geology. 1943.

Bulletins

No. 1 Memorandum concerning a pumping test at Gas City, Ind. J. G. Ferris, Ind. Dept. Conserv., Div. Water Resources. 1945.

Publications of cooperative ground-water programs--Continued

Bulletins--continued

- No 2 A preliminary report of the ground-water levels of the State based on records of twenty-six observation wells for which long time records are available. Anonymous. Ind. Dept. Conserv., Div. Water Resources. 1946. (Out of print.)
- 3 Ground-water resources of St. Joseph County, Ind. Part 1, South Bend area. F. H. Klaer, Jr., and R. W. Stallman. Ind. Dept. Conserv., Div. Water Resources. 1948.
- 4 Ground-water resources of Boone County, Ind. E. A. Brown. Ind. Dept. Conserv., Div. Water Resources. 1949.
- 5 Ground-water resources of Noble County, Ind. R. W. Stallman and F. H. Klaer, Jr. Ind. Dept. Conserv., Div. Water Resources. 1950.
- 7 Water-level records of Indiana. Anonymous. Ind. Dept. Conserv., Div. Water Resources. 1956.
- 8 Ground-water resources of Tippecanoe County, Ind.; Appendix, Basic Data. J. S. Rosenshein and O. J. Cosner. Ind. Dept. Conserv., Div. Water Resources. 1956.
- 8 Ground-water resources of Tippecanoe County, Ind. J. S. Rosenshein. Ind. Dept. Conserv., Div. Water Resources. 1958.
- 9 Ground-water resources of Adams County, Indiana. F. A. Watkins, Jr., and P. E. Ward. Ind. Dept. Conserv., Div. Water Resources. 1962.
- 10 Ground-water resources of Northwestern Ind., Preliminary Report: Lake County. J. S. Rosenshein. Ind. Dept. Conserv., Div. Water Resources. 1961.
- 11 Ground-water resources of West-Central Ind., Preliminary Report: Greene County. F. A. Watkins, Jr., and D. G. Jordan. Ind. Dept. Conserv., Div. Water Resources. 1961.
- 12 Ground-water resources of Northwestern Ind., Preliminary Report: Porter County. J. S. Rosenshein. Ind. Dept. Conserv., Div. Water Resources. 1962.
- 13 Ground-water resources of Northwestern Ind., Preliminary Report: LaPorte County. J. S. Rosenshein and J. D. Hunn. Ind. Dept. Conserv., Div. Water Resources. 1962.
- 14 Ground-water resources of West-Central Ind., Preliminary Report: Sullivan County. F. A. Watkins, Jr., and D. G. Jordan. Ind. Dept. Conserv., Div. Water Resources. 1962.
- 15 Ground-water resources of Northwestern Ind., Preliminary Report: St. Joseph County. J. S. Rosenshein and J. D. Hunn. Ind. Dept. Conserv., Div. Water Resources. 1962.

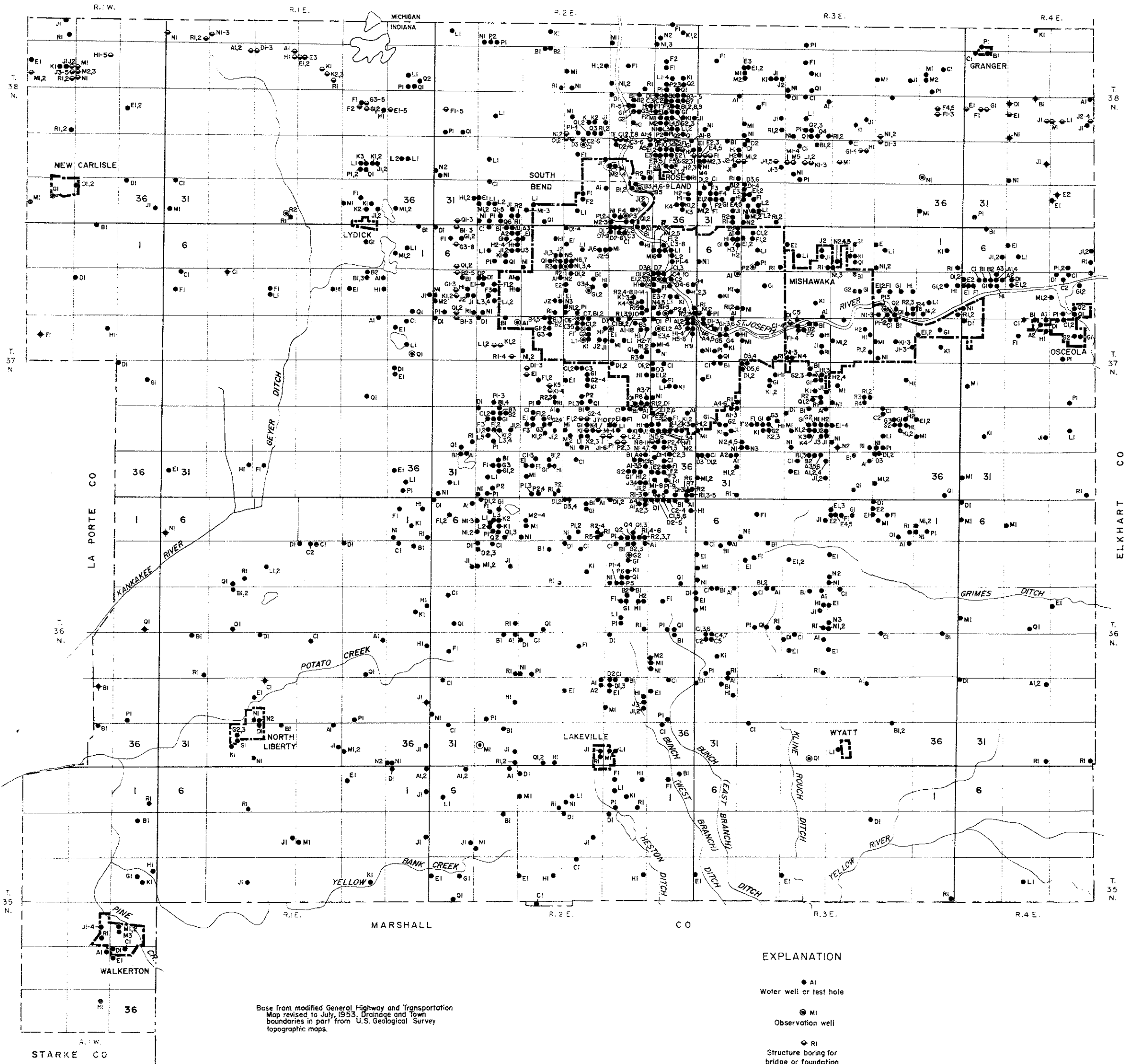
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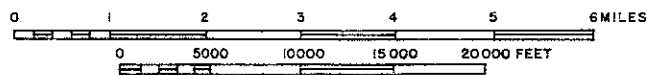


Base from modified General Highway and Transportation Map revised to July, 1953. Drainage and Town boundaries in part from U.S. Geological Survey topographic maps.

EXPLANATION

- A1 Water well or test hole
- ⊙ M1 Observation well
- ⊕ R1 Structure boring for bridge or foundation
- ◆ B1 Oil or gas exploration well

MAP OF ST. JOSEPH COUNTY, INDIANA SHOWING LOCATION OF WELLS AND TEST HOLES



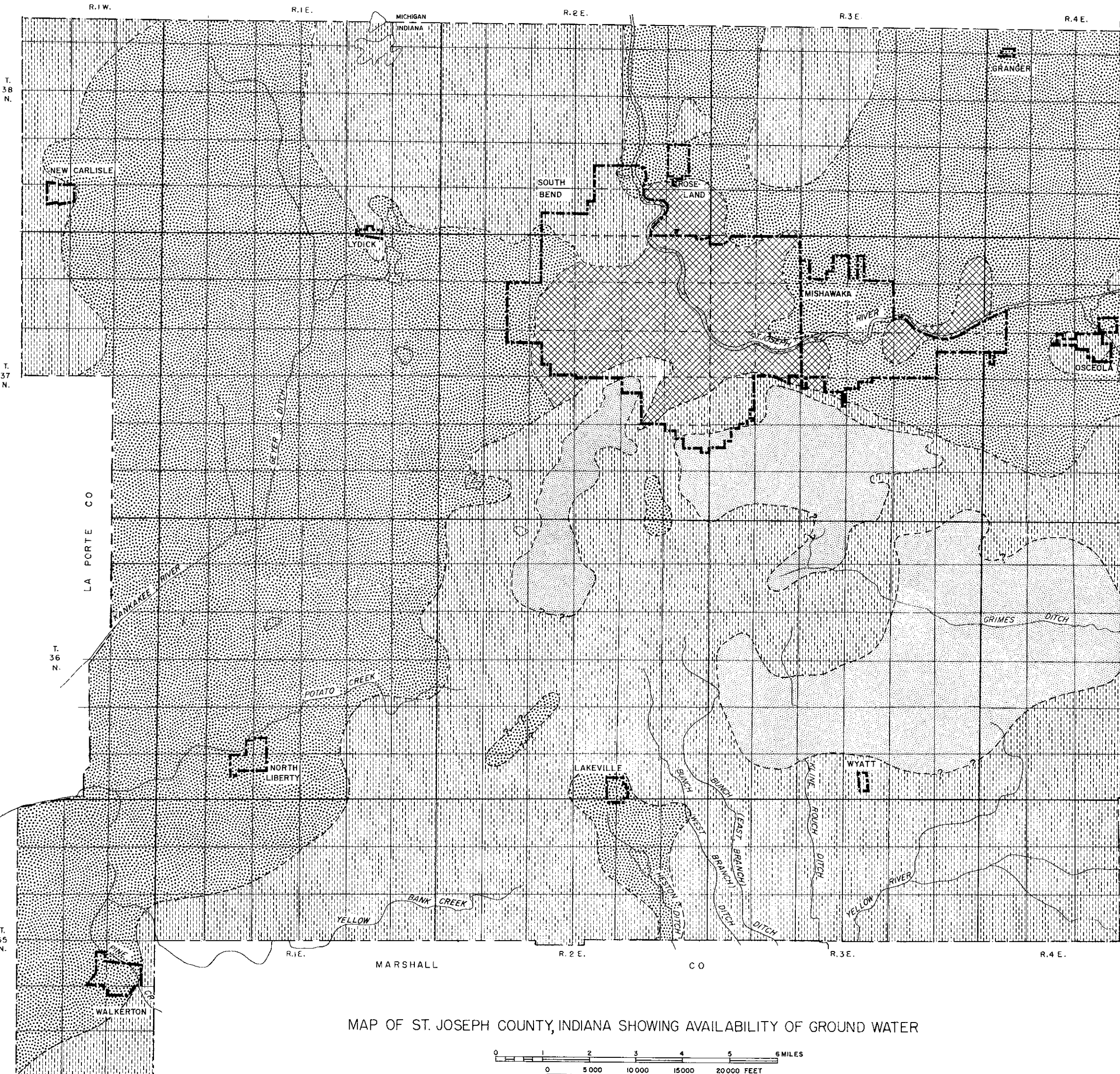
By J. S. Rosenhein and J. D. Hunn
1960

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

DIAGRAM OF TOWNSHIP

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

SECTION LETTER SYMBOLS IN WELL-NUMBERING SYSTEM.



EXPLANATION

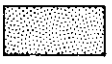
T. Production from glaciofluvial sand and gravel
38 N.



Depths of domestic wells generally less than 50 feet. Depths of industrial and public-supply wells generally deeper. Yields adequate to more than adequate for domestic use. Larger yields possible

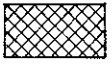


Well depths generally from 50 to 100 feet. Yields adequate to more than adequate for domestic use. Larger yields possible



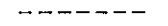
Well depths generally more than 100 feet. Yields adequate to more than adequate for domestic use. Larger yields possible locally

ELKHART CO



Well depths generally less than 200 feet. Area of industrial and public-supply pumpage and large yields

T. 36 N.



Boundary approximate



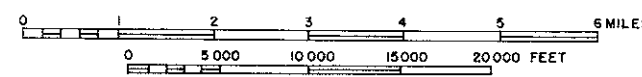
Boundary uncertain

T. 35 N.

6	5	4	3	2	1
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

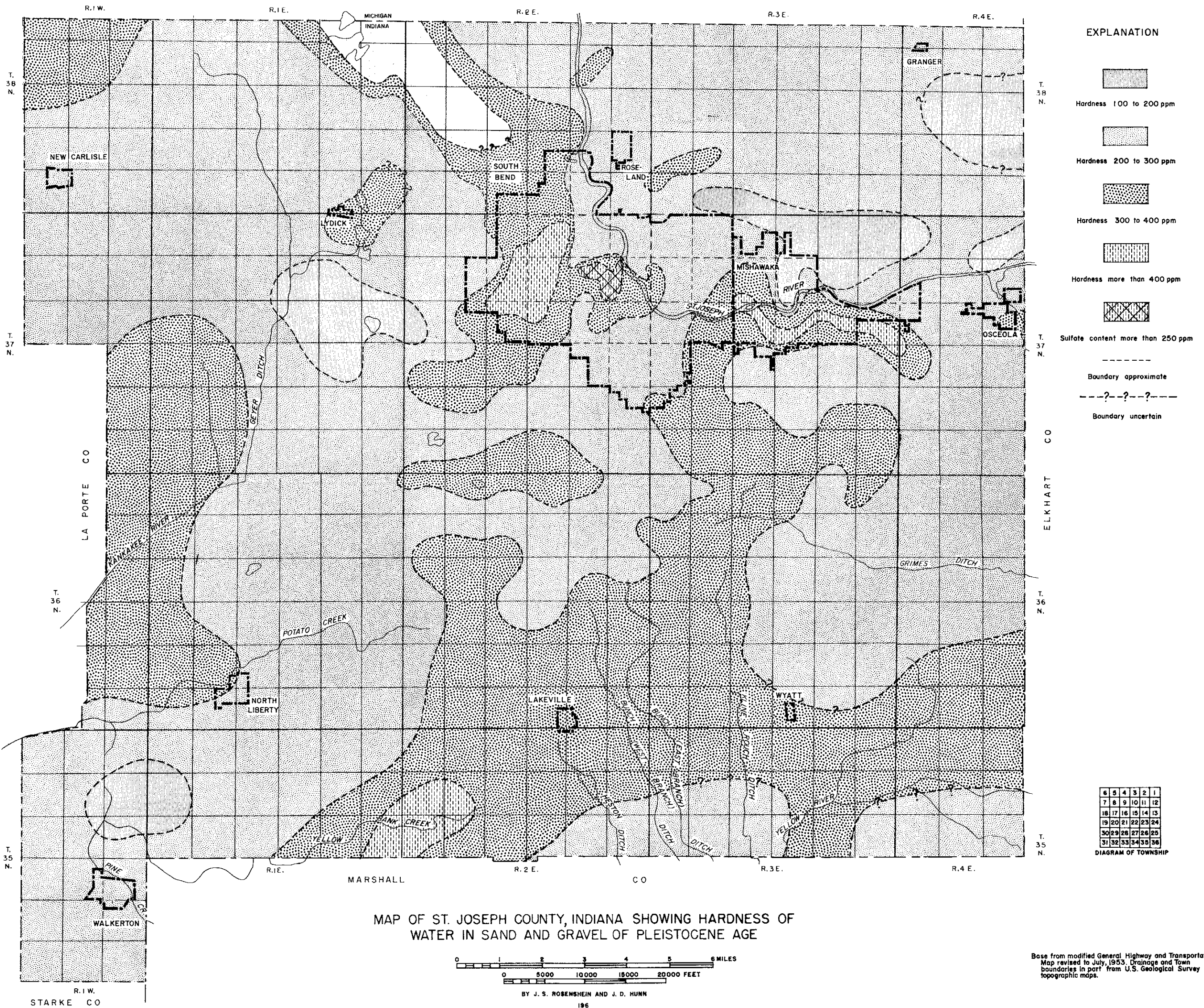
DIAGRAM OF TOWNSHIP

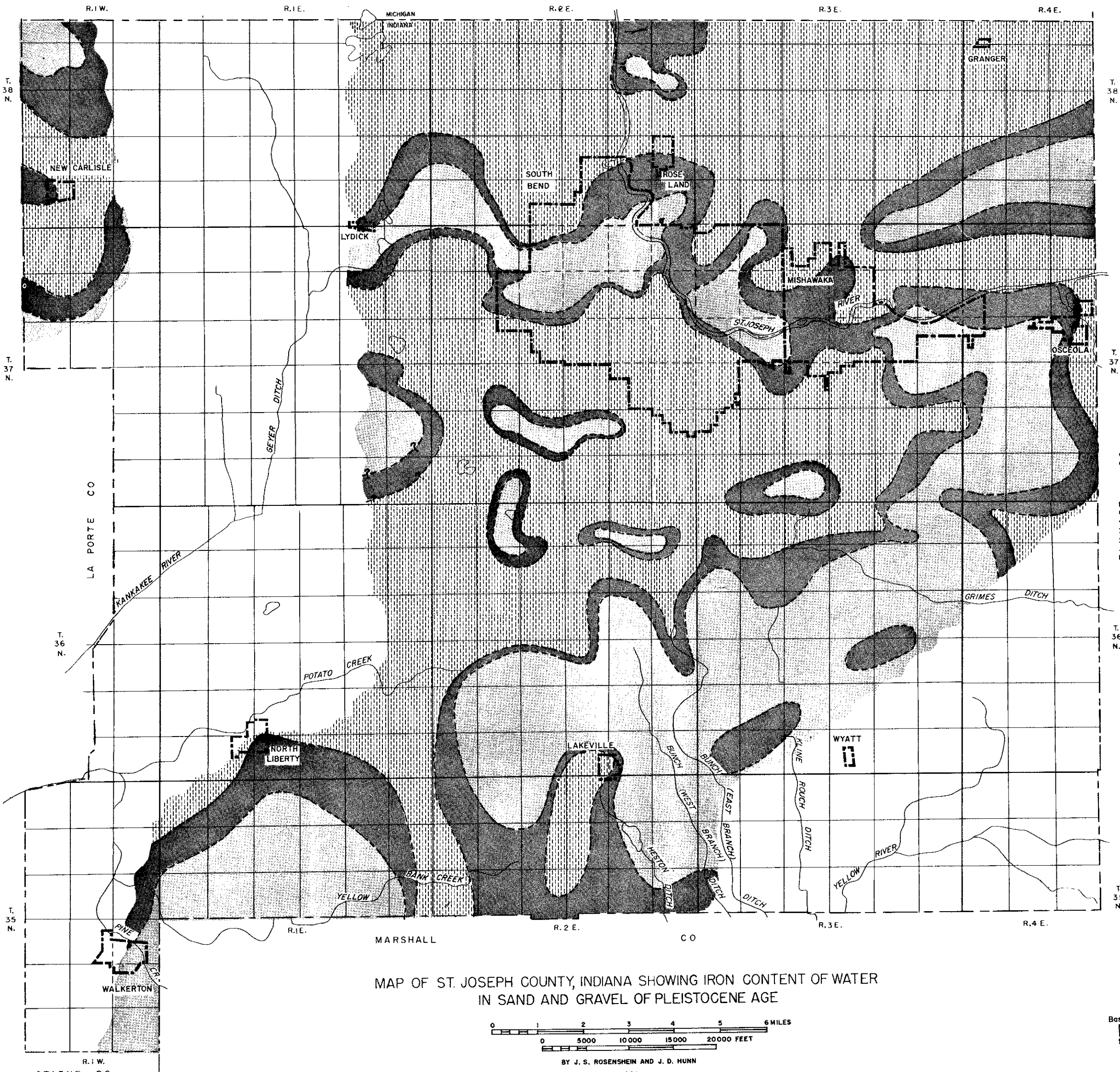
MAP OF ST. JOSEPH COUNTY, INDIANA SHOWING AVAILABILITY OF GROUND WATER









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1960

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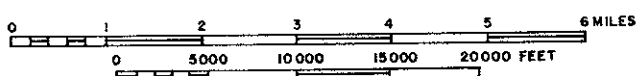
EXPLANATION

-  Iron content less than 0.3 ppm
-  Iron content 0.3 to 1.0 ppm
-  Iron content more than 1.0 ppm
-  Data not sufficient to show distribution of Iron content
-  Boundary approximate
-  Boundary uncertain

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

DIAGRAM OF TOWNSHIP

MAP OF ST. JOSEPH COUNTY, INDIANA SHOWING IRON CONTENT OF WATER
IN SAND AND GRAVEL OF PLEISTOCENE AGE



BY J. S. ROSENSHEIN AND J. D. HUNN
1960

Base from modified General Highway and Transportation Map revised to July, 1953. Drainage and Town boundaries in part from U.S. Geological Survey topographic maps.