United States Department of the Interior
Geological Survey - Water Resources Division

WATER RESOURCES DATA FOR INDIANA

1965

Part 1. Surface Water Records

Prepared in cooperation with

Indiana Department of Natural Resources
Indiana State Board of Health
Indiana State Highway Commission
Corps of Engineers, U. S. Army

Copies of this report may be obtained from
District Chief, Water Resources Division
U. S. Geological Survey
Room 516, 611 North Park Avenue
Indianapolis, Indiana 46204

CALENDAR FOR WATER YEAR 1965

OCTOBER 1964

S	M	T	W	T	F	S
				1	2	3
4	5	6	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

NOVEMBER 1964

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER 1964

S	M	T	W	T	F	
		1	2	3	4	
6	7	8	9	10	11	1
13	14	15	16	17	18	1
20	21	22	23	24	25	2
27	28	29	30	31		

JANUARY 1965

S	M	T	W	T	F	S
					1	2
3	4	5	6	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						

FEBRUARY 1965

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

MARCH 1965

S	M	T	W	T	F	
	1	2	3	4	5	
7	8	9	10	11	12	1
14	15	16	17	18	19	2
21	22	23	24	25	26	2
28	29	30	31			

APRIL 1965

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MAY 1965

S	M	T	W	T	F	S
						1
2	3	4	5	6	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					

JUNE 1965

S	M	T	W	T	F	
		1	2	3	4	
6	7	8	9	10	11	1
13	14	15	16	17	18	1
20	21	22	23	24	25	2
27	28	29	30			

JULY 1965

S	M	T	W	T	F	S
				1	2	3
4	5	6	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

AUGUST 1965

S	M	T	W	T	F	S
1	2	3	4	5	6	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				

SEPTEMBER 1965

S	M	T	W	T	F	
			1	2	3	
5	6	7	8	9	10	1
12	13	14	15	16	17	1
19	20	21	22	23	24	2
26	27	28	29	30		

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Gaging-station records--Continued

SURFACE WATER RECORDS OF INDIANA, 1965

INTRODUCTION

The surface-water records for the 1965 water year for gaging stations, partial-record stations, and miscellaneous sites within the State of Indiana are given in this report. For convenience there are also included records for a few pertinent gaging stations in bordering States. The records were collected and computed by the Water Resources Division of the U. S. Geological Survey, under the direction of Malcolm D. Hale, district chief, Water Resources Division.

Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U. S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Since 1951 there have been 20 volumes in the series; each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records in Indiana were contained in Parts 3A, 4 and 5 of that series.

Beginning with the 1961 water year, streamflow records and related data have been released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these basic-data reports is limited and primarily for local needs. Records will be published in Geological Survey water-supply papers at 5-year intervals.

COOPERATION

Cooperative agreements between the U. S. Geological Survey and organizations of the State of Indiana for the systematic collection of streamflow records began in 1930. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

State Department of Natural Resources, John E. Mitchell, director, through Bureau of Water and Mineral Resources, W. J. Andrews, deputy director; State Highway Commission, Robert F. Whitehead, chairman, Martin L. Hayes, executive director, and F. L. Ashbaucher, chief engineer; State Board of Health, A. C. Offutt, commissioner, and B. A. Poole, director, Bureau of Environmental Sanitation.

Assistance in the form of funds or services was given by the Corps of Engineers, U. S. Army, in collecting records for 64 gaging stations published in this report.

The following organizations aided in collecting records:

The city of Indianapolis, through its Board of Public Works and Sanitation and its Flood Control Board; cities of Anderson, Bloomington, Muncie, North Vernon, Richmond, and Jasper; Indianapolis Water Co.; Indianapolis Power and Light Co.; Public Service Co. of Indiana; Container Corporation of America; Continental Steel Co.; city of Ft. Wayne Filtration Plant; Indiana and Michigan Electric Co.; Sanitary District of Chicago; and city of Hammond.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

DEFINITION OF TERMS AND ABBREVIATIONS

Partial-record station is a particular site where limited streamflow data are collected systematically over a period of years for use in hydrologic analyses.

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches (in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBERS

Stations are listed in the same downstream order used in the water-supply papers. Records are listed in a downstream direction along the main stem with all stations on a tributary entering above a main stem station listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention shows which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations, so that the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete number for each station, such as 3-3355.00, includes the part number "3" and a six digit station number. In this report, the part number and only the essential digits of the station number are shown. For example, the complete number 3-3355.00 would appear as 3-3355, just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. Records of stage are obtained from a water-stage recorder that gives a continuous chart of the fluctuations (for digital recorders, a tape punched at 15-, 30-, or 60-minute intervals) or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height, to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is in effect the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information required for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. For such stations, the rate of change in stage is used as a factor in determining discharge.

At some gaging stations the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute the daily discharge. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, ajoining good record, discharge measurements, weather records, and comparison with other stations records from the same or nearby basins.

The data in this report generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the 1965 water year is shown on page II to facilitate finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage given under "Location" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Under "Records available" are given periods for which there are published records for the present station or for stations generally equivalent to the present one. Under "Gage" are given the type of gage currently in use and the datum of the gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. The references to "datum of 1929" and adjustments of other years are to the datum and adjustments of the U. S. Coast and Geodetic Survey. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations

having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height if it is significant. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and to conditions which affect the natural flow at the gaging station is given under "Remarks."

Skeleton rating tables are published for all stations except those for which the daily discharge for the greater part of the open-water period was determined by the shifting control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables generally are not published for canals, ditches or springs.

The daily table gives the discharge corresponding to the daily mean gage height unless there are large or rapid changes, discharge for the day is computed by averaging the mean discharges for several parts of a day. For digital recorders, the daily mean discharge is always the average of the discharges at each punched reading. For stations equipped with nonrecording gages, the daily discharge corresponds to once-daily readings of the gage or to the mean of twice-daily readings; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

In the table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Discharge for the month is expressed in cubic feet per second per square mile (line headed "Cfsm"), and in inches (line headed "In").

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Subsequent to July 27, 1961, all stations east of the new time-zone boundary line between Eastern Standard and Central Standard time have been operated on Eastern Standard time. Peak discharges and their times of occurrence and corresponding gage heights for most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any stream for which the peaks are subjected to substantial control by man. Time of day is expressed in 24-hour time, for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330.

Footnotes to the table of daily discharge indicate periods for which discharge was computed or estimated by unusual or special methods because of no gage-height record, ice effect, or other conditions that reduce the degree of accuracy of the records. The footnotes are either reference footnotes, with corresponding symbols used in the table of daily discharge to indicate the days included, or general footnotes, introduced by the word "Note," in which the days included are stated. The methods used in computing data for such footnoted periods have been explained in preceding paragraphs.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

GPO 826-927-1

EXPLANATION OF DATA

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

At most digital recorder stations mean daily discharges are listed to the nearest hundredth of a cfs below 1 cfs. This has been done for convenience in the computer program and is not indicative of accuracy greater than the nearest tenth of a cfs.

SUPPLEMENTAL DATA

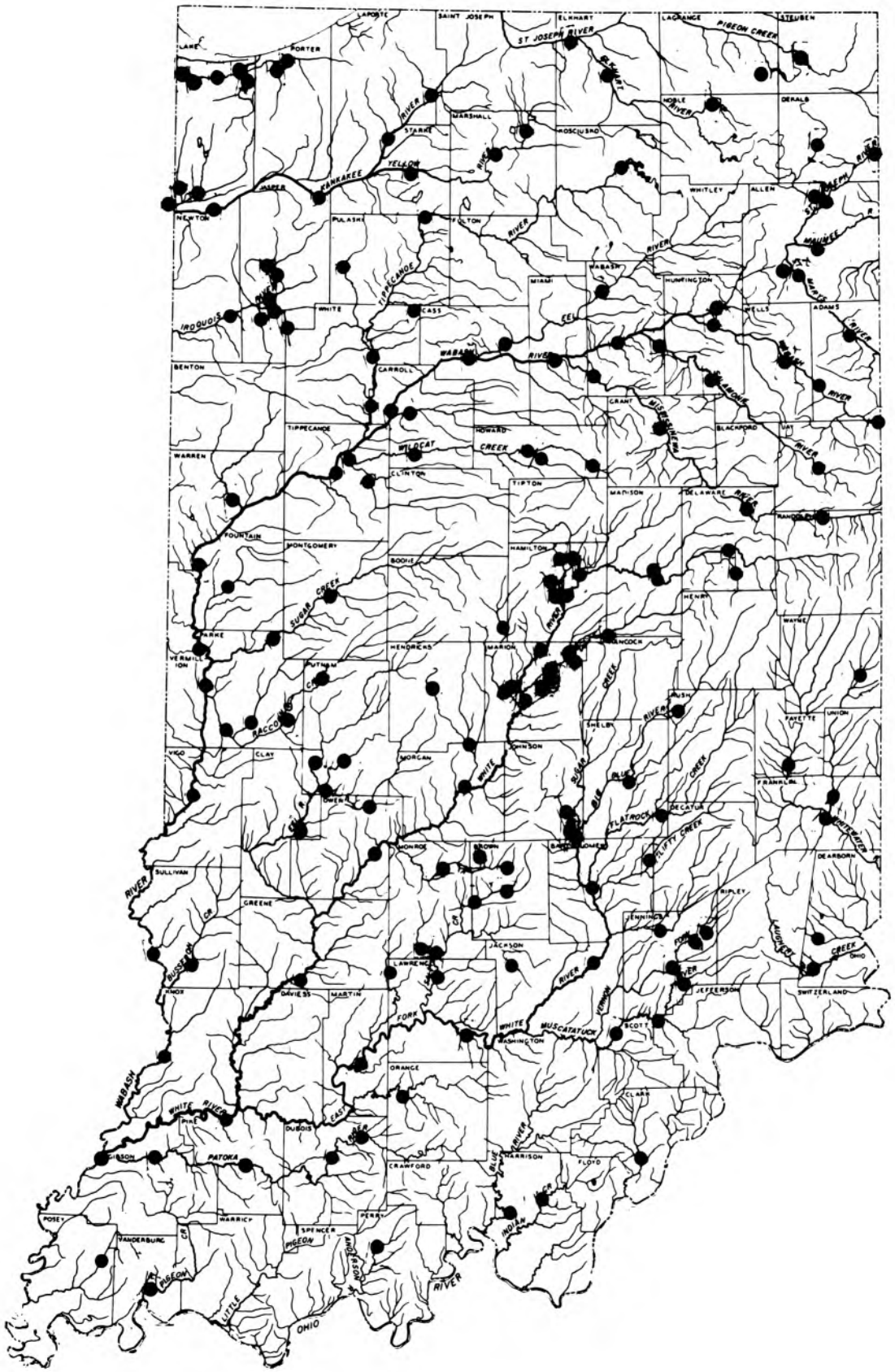
Data collected at partial-record stations and at miscellaneous sites are given at the end of this report. The data are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of discharge measurements at miscellaneous sites. Data on records available on lakes in Indiana are given in a third table.

A compilation of records for the area covered by this report through September 1950 has been published as Water-Supply Papers 1305(3A), 1307(4), and 1308(5). These reports contain a summary of monthly and annual discharges for all previously published records as well as some records as well as some records not contained in the annual

series of water-supply papers. All records were re-examined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical.

Information of a more detailed nature than that published for most of the gaging stations is on file in the district office, such as discharge measurements and recorder charts or nonrecording-gage readings. Most gaging-station records in the State through 1959 have been analyzed with an electronic computer to give: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year. At some gaging stations water samples are collected from the stream for the purpose of making chemical analyses; measuring water temperatures; or computing dissolved solids, suspended sediment loads, and particle-size distribution. For most of these samples, the results are published in Part 2 of this report. A reference is made herein, under the Remarks paragraph of the gaging station description, to water quality records collected on a regular basis.

MAP SHOWING LOCATION OF GAGING STATIONS IN INDIANA



3-2750. Whitewater River near Alpine, Ind.

Location.--Lat 39°34'23", long 85°09'27", in sec. 14, T. 13 N., R. 12 E., on right bank, 500 ft downstream from highway bridge, 0.4 mile downstream from Wilson Creek, 1.6 miles northeast of Alpine, and 4.7 miles upstream from Bear Creek.

Drainage area.--529 sq mi (revised).

Records available.--October 1928 to September 1965. Prior to October 1936, published as West Fork Whitewater River near Alpine.

Gage.--Water-stage recorder. Datum of gage is 750.19 ft above mean sea level, datum of 1929. Prior to Nov. 9, 1928, staff gage at same site and datum.

Average discharge.--37 years, 531 cfs.

Extremes.--Maximum discharge during year, 11,500 cfs Feb. 10 (gage height, 12.48 ft); minimum, 59 cfs Oct. 4, 5, 6 (gage height, 2.66 ft).
1928-65: Maximum discharge, 37,100 cfs Jan. 14, 1937 (gage height, 16.61 ft); minimum, 14 cfs Sept. 22, 1931; minimum daily, 30 cfs Aug. 6, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating table, except for periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.6	51	5.0	980
2.8	78	6.0	1,750
3.2	150	8.0	3,950
3.6	260	10.0	6,800
4.0	410	11.0	8,500
4.5	660		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	71	84	168	b 200	560	435	910	230	230	118	86
2	65	71	88	510	190	690	435	810	230	215	118	84
3	61	72	100	370	b 180	810	390	720	230	215	116	79
4	59	72	108	260	b 170	1,740	370	660	215	200	114	75
5	60	72	103	230	b 165	2,990	410	610	200	195	116	68
6	60	71	95	198	165	1,660	2,050	585	200	192	112	68
7	61	70	92	180	602	1,500	1,510	560	215	215	141	67
8	61	70	91	172	1,120	1,420	1,430	510	215	215	124	67
9	63	70	89	178	1,460	1,120	4,220	460	200	314	120	65
10	64	71	88	170	3,460	910	1,720	485	198	471	116	64
11	64	70	120	165	4,840	780	1,400	460	198	230	112	61
12	67	70	139	162	2,350	690	3,080	435	200	188	108	128
13	68	71	126	152	1,500	610	1,650	390	188	168	106	98
14	70	70	116	141	1,050	585	1,120	370	182	155	105	88
15	70	74	108	141	810	535	1,340	350	180	148	102	382
16	70	97	103	112	720	485	1,500	350	178	139	100	312
17	68	100	103	b 110	635	510	a1,120	410	175	221	97	195
18	72	89	95	b 110	585	610	a 910	330	175	170	94	152
19	72	92	91	b 110	510	485	a 780	312	172	150	92	132
20	*70	92	89	b 110	460	410	690	295	170	139	92	124
21	68	86	88	116	435	370	610	278	161	132	91	114
22	70	79	89	122	370	370	585	278	158	130	171	*110
23	70	*79	*89	200	350	460	510	260	*158	126	94	118
24	65	79	89	635	*350	*1,050	984	278	155	126	86	112
25	65	86	92	660	370	840	4,850	312	158	122	*84	108
26	70	86	98	*485	312	720	5,980	* 390	158	118	82	108
27	72	86	92	390	330	585	a2,350	370	155	*118	85	106
28	72	88	89	312	410	510	*a1,580	330	160	116	85	106
29	72	85	89	260		510	1,190	278	196	112	81	106
30	74	86	89	b 235		485	1,050	245	245	110	78	106
31	72		91	b 210		460		230		108	75	
Total	2,080	2,375	3,023	7,374	29,099	25,460	46,249	13,261	5,655	5,488	3,215	3,489
Mean	67.1	79.2	97.5	238	1,039	821	1,542	428	188	177	104	116
Cfsm	0.127	0.150	0.184	0.450	1.96	1.55	2.91	0.809	0.355	0.335	0.197	0.219
In.	0.15	0.17	0.21	0.52	2.04	1.79	3.25	0.93	0.40	0.39	0.23	0.24

Calendar year 1964: Max 11,700 Min 58 Mean 444 Cfsm 0.839 In. 11.23
Water year 1964-65: Max 8,460 Min 59 Mean 402 Cfsm 0.760 In. 10.32

Peak discharge (base, 6,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	2200 to 2400	12.48	11,500				
4-26	0400	10.94	8,320				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-2755. East Fork Whitewater River at Richmond, Ind.

Location.--Lat 38°48'24", long 84°54'26", in SE¼ sec. 7, T. 13 N., R. 1 W., on left bank, 50 ft downstream from highway bridge, three-quarters of a mile south of Richmond, and 2 miles upstream from Short Creek.

Drainage area.--121 sq mi (revised).

Records available.--April 1949 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 854.01 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to July 27, 1949, wire-weight gage at same site and datum.

Average discharge.--16 years, 116 cfs.

Extremes.--Maximum discharge during year, 2,890 cfs Apr. 25 (gage height, 6.26 ft); minimum, 5.5 cfs Oct. 4 (gage height, 0.49 ft).
1949-65: Maximum discharge, 14,100 cfs Jan. 21, 1959 (gage height, 12.44 ft), from rating curve extended above 5,000 cfs on basis of contracted-opening measurement of peak flow; maximum gage height, 12.49 ft Jan. 15, 1950; minimum discharge, 0.6 cfs Sept. 21, 1955; minimum gage height, -0.12 ft Sept. 16, 1959.
Maximum stage known, 15.0 ft in March 1913, from floodmarks (discharge not determined).

Remarks.--Records good except those for periods of ice effect, which are fair. Some regulation at low flow by powerplant above station. During periods of low flow, the City of Richmond diverts a small amount of water for municipal supply which is returned at the sewage plant below the gage.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 1 to Sept. 14, Sept. 16-30)

Oct. 1 to Feb. 10				Feb. 11 to Sept. 30			
0.5	6.0	2.0	430	0.5	4.2	1.6	233
.6	13	2.5	630	.6	9.7	2.0	365
.7	24	3.0	840	.7	19	2.5	560
.8	39	4.0	1,340	.8	33	3.0	780
1.0	82	5.0	1,960	1.0	70	4.0	1,340
1.5	245			1.2	115	5.0	1,960

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	10	10	9.1	141	22	135	86	140	37	9.7	25	15
2	11	24	14	112	b 19	143	84	120	44	9.0	12	9.7
3	9.2	20	25	69	b 18	191	72	103	38	9.7	11	8.3
4	6.6	18	30	44	b 18	609	68	90	30	8.3	14	9.0
5	8.9	16	16	34	b 18	596	86	84	27	11	17	15
6	8.9	15	13	30	18	358	329	84	47	7.7	9.0	9.7
7	9.2	16	13	27	161	345	233	76	44	11	13	9.0
8	9.2	14	12	28	168	329	250	70	35	8.3	11	9.7
9	9.3	15	12	38	332	236	560	66	27	20	11	8.3
10	8.6	16	12	32	1,500	188	269	74	22	12	9.7	7.7
11	7.8	15	57	29	520	152	408	68	22	8.3	9.7	19
12	8.0	15	29	26	520	133	840	64	19	7.7	9.7	26
13	9.3	15	22	25	266	123	319	55	16	8.3	9.7	13
14	9.2	13	19	22	179	120	210	51	14	9.0	9.7	16
15	9.7	17	16	b 20	135	110	316	46	13	9.7	11	236
16	10	54	15	b 19	110	98	296	61	11	9.0	11	62
17	10	15	15	b 19	98	110	203	120	13	26	8.3	37
18	14	11	12	b 18	88	118	161	72	13	14	9.0	29
19	*11	27	11	b 18	78	88	130	59	12	11	11	82
20	9.5	14	b 11	b 19	68	76	113	51	12	13	7.7	33
21	8.2	9.2	b 12	20	66	70	100	49	*15	13	7.1	25
22	8.7	8.5	13	26	53	* 66	93	47	15	14	7.7	*24
23	11	8.4	* 14	86	* 47	152	93	47	19	16	9.0	27
24	12	*9.8	16	284	55	292	213	47	19	26	8.3	20
25	10	19	19	135	80	176	1,620	55	19	18	* 9.0	18
26	11	11	26	* 86	51	140	897	*64	19	9.7	11	18
27	15	8.9	17	62	59	110	393	105	19	* 11	18	17
28	17	15	16	45	93	108	*276	62	20	11	7.7	18
29	14	9.1	16	38	------	115	213	47	22	11	7.1	18
30	13	9.4	17	30	------	103	173	42	13	11	7.7	19
31	13	------	16	b 23	------	88	------	40	------	11	16	------
TOTAL	322.3	468.3	545.1	1,605	4,840	5,678	9,104	2,159	676	374.4	338.1	858.4
MEAN	10.4	15.6	17.6	51.8	173	183	303	69.6	22.5	12.1	10.9	28.6
CFSM	.086	.129	.146	.428	1.43	1.51	2.50	.575	.186	.100	.090	.236
IN	.10	.14	.17	.49	1.49	1.75	2.80	.66	.21	.12	.10	.26

CALENDAR YEAR 1964 MAX 2,890 MIN 6.6 MEAN 91.5 CFSM .756 INCHES 10.29
WATER YEAR 1964-65 MAX 1,620 MIN 6.6 MEAN 73.9 CFSM .611 INCHES 8.29

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1000	5.70	2,450				
4-25	1730	6.26	2,890				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-2760. East Fork Whitewater River at Brookville, Ind.

Location.--Lat 39°26'00", long 85°00'11", in NE¼NE¼ sec. 20, T. 9 N., R. 2 W., on right bank, 65 ft downstream from bridge on State Highway 101, 0.5 mile northeast of Brookville, and 1.8 miles upstream from mouth.

Drainage area.--380 sq mi (revised).

Records available.--March 1954 to September 1965. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder. Datum of gage is 623.76 ft above mean sea level, datum of 1929. Prior to May 22, 1954, wire-weight gage at site, 65 ft upstream at same datum.

Average discharge.--11 years, 361 cfs.

Extremes.--Maximum discharge during year, 7,340 cfs Apr. 25 (gage height, 6.38 ft); minimum, 18 cfs Oct. 6 (gage height, -0.42 ft).
1954-65: Maximum discharge, 36,100 cfs Jan. 21, 1959 (gage height, 16.50 ft); minimum discharge, 15 cfs Sept. 10, 1964.

Remarks.--Records good except those for periods of ice effect, which are fair. Records of suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

-0.50	16
- .30	38
.00	86
.4	185
.8	345
1.5	710
2.0	1,070
3.0	2,040
4.0	3,300
5.0	4,800

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	30	44	336	124	515	390	680	120	65	44	49
2	31	30	46	815	b 120	565	390	590	115	63	46	44
3	27	28	60	465	b 115	710	390	490	111	62	44	39
4	26	30	94	300	b 115	2,150	322	465	108	63	44	36
5	25	33	98	256	b 118	2,400	345	415	106	68	41	36
6	19	33	72	173	132	1,320	2,110	390	108	62	49	34
7	20	33	58	139	806	1,230	1,230	390	345	58	68	34
8	21	33	52	124	955	1,150	1,260	345	188	62	90	32
9	23	31	54	150	1,600	920	3,170	322	139	111	51	32
10	21	31	52	150	3,440	780	1,230	322	111	199	42	30
11	24	34	79	129	2,040	620	1,030	300	106	102	38	39
12	21	34	155	120	1,920	590	1,810	280	102	66	37	127
13	21	32	124	113	990	515	1,110	260	94	57	37	88
14	21	31	94	102	710	490	815	236	92	52	37	42
15	23	36	72	98	590	465	1,150	220	88	55	34	620
16	23	45	66	b 90	490	440	1,150	206	79	65	32	224
17	22	60	65	b 87	440	465	885	345	75	75	30	129
18	23	52	60	b 87	390	465	710	280	72	90	32	115
19	25	46	58	b 90	345	415	620	232	72	68	32	147
20	27	62	55	b 96	300	368	540	206	66	55	32	142
21	*30	54	55	b 110	300	345	465	185	62	49	30	*81
22	27	45	*58	127	280	322	490	173	65	46	32	72
23	25	44	54	463	252	415	440	161	* 63	49	* 51	77
24	25	*37	55	1,030	228	* 1,030	1,140	150	65	52	38	72
25	27	41	62	680	b 240	780	4,230	145	58	52	34	63
26	25	46	137	565	b 270	680	4,280	164	58	* 54	32	55
27	25	49	98	415	300	565	1,600	* 220	58	46	42	51
28	25	46	79	322	*440	515	1,110	192	58	44	45	48
29	27	46	62	240		515	955	150	58	41	39	46
30	30	46	51	179	------	465	* 780	137	104	41	32	48
31	32	------	58	134	------	415	------	127	------	44	32	------
Total	769	1,198	2,227	8,185	18,050	22,620	36,147	8,778	2,946	2,016	1,267	2,652
Mean	24.8	39.9	71.8	264	645	730	1,205	283	98.2	65.0	40.9	88.4
Cfsm	0.065	0.105	0.189	0.695	1.70	1.92	3.17	0.745	0.258	0.171	0.108	0.233
In.	0.07	0.12	0.22	0.80	1.77	2.21	3.54	0.86	0.29	0.20	0.12	0.26

Calendar year 1964 : Max 9,820 Min 17 Mean 284 Cfsm 0.747 In. 10.11
Water year 1964-65 : Max 4,280 Min 19 Mean 293 Cfsm 0.771 In. 10.46

Peak discharge (base, 4,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-9	0530	4.98	4,800				
4-25	1700	6.38	7,340				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Discharge computed from twice-daily readings of wire-weight gage Oct. 1 to Feb. 9, Feb. 13 to Mar. 3, Mar. 7 to Apr. 5, Apr. 8, 11, 13-25, Apr. 28 to Sept. 30.

3-2765. Whitewater River at Brookville, Ind.

Location.--Lat 39°24'24", long 85°00'46", in NW¼ sec. 32, T. 9 N., R. 2 W., on right bank at downstream side of highway bridge, 0.3 mile downstream from East Fork Whitewater River, and 1.1 miles south of Brookville.

Drainage area.--1,224 sq mi (revised).

Records available.--June 1915 to September 1917, October 1917 to May 1920 (gage heights only), and July 1923 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage is 595.71 ft above mean sea level, datum of 1929. July 1923 to Sept. 27, 1928, chain gage at same site and datum. Prior to July 1923, chain gage at same site at datum 1.5 ft higher.

Average discharge.--44 years (1915-17, 1923-65), 1,252 cfs.

Extremes.--Maximum discharge during year, 22,800 cfs Apr. 25 (gage height, 14.10 ft, from floodmark); minimum daily, 98 cfs Oct. 4.

1915-20, 1923-65: Maximum discharge, 81,800 cfs Jan. 21, 1959 (gage height, 27.78 ft); from rating curve extended above 45,000 cfs on basis of contracted-opening measurement of peak flow; minimum, 49 cfs Jan. 5, 1935; minimum gage height, 0.12 ft Sept. 21, 1955.

Maximum stage known, 39.0 ft Mar. 25, 1913 (present datum), from floodmarks (discharge not determined).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30			
0.3	96	2.0	780	0.4	117	3.0	1,550
.5	141	3.0	1,510	.7	198	4.0	2,530
1.0	300	4.0	2,370	1.0	300	6.0	5,250
1.5	510	6.0	4,800	1.5	510	10.0	12,900
				2.0	780		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	115	131	2120	b 465	1550	1220	2020	440	320	204	154
2	107	115	141	3930	b 440	2020	1220	1730	420	282	211	168
3	100	113	199	1430	b 420	2320	1060	1460	440	282	204	149
4	98	115	292	810	b 395	6480	990	1300	420	248	201	141
5	100	119	282	635	b 390	5590	1060	1220	400	248	198	141
6	100	117	227	535	400	3560	6190	1140	439	224	204	144
7	102	115	195	485	2160	3300	3430	1140	585	230	299	136
8	102	115	189	440	2660	3080	4620	990	460	248	435	129
9	103	115	180	620	3900	2530	10300	920	420	536	265	129
10	105	113	174	585	11400	2120	3820	885	380	1710	227	129
11	105	115	358	460	10800	1730	4100	920	360	585	211	136
12	110	115	535	440	7360	1550	4910	850	360	400	195	686
13	110	113	360	400	3690	1380	3300	780	340	340	186	382
14	115	111	282	360	2420	1300	2530	690	320	300	180	248
15	115	119	248	340	1920	1220	4340	660	300	282	177	731
16	115	134	224	243	1550	1140	3690	660	300	265	168	690
17	110	168	214	b 265	1380	1380	2640	850	282	1200	165	460
18	117	154	198	b 260	1220	1550	2120	745	282	632	165	380
19	117	154	b 190	b 260	1140	1220	1820	690	282	380	177	* 380
20	117	160	b 180	b 265	990	1060	1550	610	265	320	168	320
21	*115	160	174	b 280	920	920	1380	585	265	282	165	265
22	113	146	* 174	290	780	885	1380	560	248	265	261	248
23	113	136	174	1550	710	1640	1460	510	*248	248	324	248
24	113	*131	177	2830	710	*2470	3690	510	248	248	189	230
25	113	144	227	1670	1380	2020	12000	510	248	322	*157	227
26	113	149	700	1430	920	1920	12000	585	227	*265	146	220
27	111	152	400	1110	920	1460	*4600	*610	220	230	165	214
28	115	149	282	870	* 1550	1380	3430	610	211	217	177	220
29	117	149	248	660		1380	2860	510	267	211	154	217
30	122	149	230	b 570	------	1300	2320	485	574	201	136	208
31	117	------	220	b 500	------	1220	------	460	------	201	136	------
Total	3417	3960	7805	26643	62990	62675	110030	26195	10251	11722	6250	8130
Mean	110	132	252	859	2,250	2,022	3,668	845	342	378	202	271
Cfsm	0.090	0.108	0.206	0.702	1.84	1.65	3.00	0.690	0.279	0.309	0.165	0.221
In.	0.10	0.12	0.24	0.81	1.92	1.90	3.35	0.80	0.31	0.36	0.19	0.25

Calendar year 1964: Max 35,400 Min 98 Mean 952 Cfsm 0.778 In. 10.44
Water year 1964-65: Max 12,000 Min 98 Mean 932 Cfsm 0.761 In. 10.35

Peak discharge (base, 12,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1600	11.37	16,200				
4-9	0230	12.54	18,800				
4-25	unknown	14.10	22,800				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 1-18, Apr. 25-27.

3-2767. South Hogan Creek near Dillsboro, Ind.

Location.--Lat 38°01'47", long 85°02'17", in NW¼ sec. 7, T. 4 N., R. 2 W., on left downstream abutment of bridge on county road at Dillsboro station, 1¼ miles northeast of Dillsboro, and 1½ miles downstream from Whitaker Creek.

Drainage area.--38.2 sq mi.

Records available.--July 1961 to September 1965. Occasional low-flow measurements, water year 1960.

Gage.--Water-stage recorder. Datum of gage is 571.00 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 2,820 cfs Apr. 8 (gage height, 7.10 ft); no flow for many days.
1961-65: Maximum discharge, 8,630 cfs Mar. 4, 1963 (gage height, 10.82 ft); no flow at times each year.
Flood of Jan. 21, 1959, reached a stage of 14.00 ft (discharge, 16,300 cfs, computed from contracted-opening).

Remarks.--Records good.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 1				Jan. 2 to Sept. 30			
1.14	0	1.7	8.8	1.08	0	1.8	14
1.2	.1	1.8	14	1.2	.4	2.0	30
1.3	.5	2.0	30	1.3	1.1	2.2	55
1.4	1.4	2.2	55	1.4	2.4	2.5	109
1.5	2.8	2.5	109	1.5	4.2	3.0	230
1.6	5.3	3.0	230	1.6	6.8	3.5	380
				1.7	10	4.0	590

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.1	8.6	b 11	68	26	12	0.2	0		2.9
2		0	.2	230	b 10	210	23	10	.2	0		.5
3		0	1.5	61	b 9.5	159	20	8.6	.2	0		.2
4		0	25	27	b 9.5	551	18	7.7	.1	0		.2
5		0	11	19	b 10	168	16	7.1	.1	0		.1
6		0	4.2	15	15	103	317	7.1	.1	0		.1
7		0	2.3	13	480	98	88	6.2	.4	0		0
8		0	1.7	12	168	75	239	5.7	.3	0		0
9		0	1.4	72	564	55	507	4.9	.2	.2		0
10		0	1.0	44	290	45	83	4.7	.4	.5		0
11		0	195	24	367	33	370	4.0	1.0	2.0		0
12		0	83	19	361	28	96	3.4	.4	1.6		42
13		0	21	15	67	23	48	2.9	.2	.7		8.6
14		0	11	12	40	21	34	2.4	.1	.3		3.2
15		0	6.2	10	30	20	251	2.1	.1	.2		14
16		0	4.7	8.0	24	17	205	2.1	.1	.1		50
17		0	4.4	b 7.6	21	28	64	2.1	0	77		39
18		0	2.8	b 7.5	19	45	40	2.1	0	21		10
19		0	2.2	b 7.5	16	24	30	2.0	0	4.9		4.7
20	*	0	2.0	b 7.6	14	20	24	1.6	0	2.0		*2.9
21		0	* 1.9	8.6	b 12	16	19	1.3	0	.9		2.4
22		0	2.0	26	11	16	16	1.1	0	.5		1.7
23		0	2.3	156	9.6	17	16	.9	0	.2		1.3
24		0	4.3	144	24	27	26	.7	* 0	.2	*	.9
25		* 0	36	55	222	* 26	26	* .8	0	.5		.7
26		0	44	61	75	55	36	2.0	0	* .2		.5
27		0	28	*47	* 72	36	22	1.6	0	.1		.5
28		.1	15	29	101	28	17	1.3	0	.1		.4
29		.3	11	18		82	* 15	.8	0	0		.3
30		.2	8.8	b 15	------	49	13	.5	.1	0		.4
31		------	66	13	------	32	------	.3	------	0		------
Total	0	0.6	540.6	1,192.6	3,052.6	2,175	2,705	110.0	4.2	113.2	0	187.5
Mean	0	0.02	17.4	38.5	109	70.2	90.2	3.55	0.14	3.65	0	6.25
Cfsm	0	0.00052	0.455	1.01	2.85	1.84	2.36	0.093	0.0037	0.096	0	0.164
In.	0	0.0006	0.52	1.16	2.97	2.12	2.63	0.11	0.004	0.11	0	0.18

Calendar year 1964: Max 3,460 Min 0 Mean 33.0 Cfsm 0.864 In. 11.75
Water year 1964-65: Max 564 Min 0 Mean 27.6 Cfsm 0.723 In. 9.80

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-8	2230	7.10	2,820				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-2770. Laughery Creek near Farmers Retreat, Ind.

Location (revised).--Lat 38°57'08", long 85°04'15", in sec. 2, T. 4 N., R. 3 W., on right bank, 2.4 miles southeast of Farmers Retreat and 3 3/4 miles downstream from Bear Creek.
Drainage area.--248 sq mi.
Records available.--October 1940 to September 1965.
Gage.--Water-stage recorder (digital after Aug. 24, 1965). Datum of gage is 528.54 ft above mean sea level, datum of 1929 (levels by Indiana Department of Natural Resources). Prior to Apr. 16, 1941, staff gage at same site and datum.
Average discharge.--25 years, 271 cfs.
Extremes.--Maximum discharge during year, 7,520 cfs Feb. 11 (gage height, 9.45 ft); minimum discharge, 0.2 cfs Oct. 16-19, 23-29, Nov. 5-15; minimum gage height, 0.27 ft June 27, 28.
1940-65: Maximum discharge, 47,800 cfs Jan. 21, 1959 (gage height, 21.13 ft); from rating curve extended above 14,000 cfs on basis of slope-area measurement of peak flow; no flow at times in most years.
Remarks.--Records good except those for periods of ice effect, which are fair. Some regulation at low flow by mill above the station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 11 to Dec. 3, Jan. 26, 27, Apr. 20, 21, 24, 25, 29, 30, May 1)

Oct. 1 to Jan. 1

0.1	0.2	0.8	14
.2	.5	1.0	26
.3	1.0	1.2	44
.4	2.0	1.5	86
.5	3.5	2.0	185
.6	6.0	3.0	510
.7	9.2	4.0	1,000

Jan. 2 to Sept. 30

0.1	0.2	1.2	46
.2	.5	1.5	86
.3	1.2	2.0	185
.4	2.4	3.0	510
.5	4.3	4.0	1,000
.6	7.0	5.0	1,640
.8	15	6.0	2,520
1.0	28	7.0	3,700

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.1	0.3	1.9	83	b 100	840	185	185	7.0	0.9	2.3	58
2	2.0	.3	1.7	2,460	b 95	903	163	143	7.0	1.1	2.0	27
3	1.9	.3	15	2,150	b 90	1,570	143	113	8.3	1.6	1.7	15
4	1.4	.3	114	488	b 82	2,290	135	91	8.3	1.9	1.5	12
5	1.2	.3	40	240	80	2,650	123	93	6.4	1.5	1.4	7.7
6	1.1	.2	20	163	80	1,060	917	80	6.1	1.2	1.4	5.5
7	1.0	.2	13	135	1,360	790	1,570	64	11	1.1	1.4	4.2
8	.9	.2	10	115	2,600	790	608	58	11	1.3	2.0	3.4
9	.8	.2	7.8	238	1,850	572	3,040	53	7.7	2.0	1.6	2.7
10	.7	.2	6.6	740	3,440	435	1,280	49	6.1	109	1.4	2.4
11	.6	.2	679	315	2,910	330	2,030	47	7.0	36	26	2.3
12	.5	.2	313	185	2,960	255	890	39	21	15	19	125
13	.4	.2	83	137	1,160	210	510	33	8.6	8.6	12	85
14	.4	.3	45	111	452	185	348	31	4.5	6.1	6.7	150
15	.3	.3	31	94	285	163	710	28	3.1	4.1	4.5	134
16	.2	.4	23	78	210	153	2,400	25	2.4	3.1	3.1	190
17	.2	.4	20	b 75	174	196	905	25	2.0	3.5	1.7	273
18	.2	.4	15	b 70	153	240	490	25	1.5	70	1.4	99
19	.3	.6	11	b 67	135	300	348	38	1.4	51	2.0	57
20	* .4	.8	10	b 65	111	185	255	30	1.2	28	1.9	* 41
21	.3	.8	* 9.6	b 65	103	141	198	29	1.1	28	1.4	30
22	.3	.8	9.6	87	89	125	163	24	1.1	19	1.6	23
23	.2	.8	10	364	80	121	163	20	1.1	13	1.5	19
24	.2	.8	12	2,100	107	153	185	18	* 1.0	9.3	* 1.3	15
25	.2	* .9	90	1,190	790	* 240	427	* 17	.8	18	3.8	13
26	.2	1.1	99	452	640	330	1,310	36	.6	* 9.0	2.9	10
27	.2	.9	126	*435	* 365	452	595	24	.5	5.8	2.0	9.9
28	.2	1.2	198	285	740	270	330	14	.4	3.9	2.4	15
29	.2	1.9	115	174		285	* 255	11	.5	3.3	1.7	13
30	.3	2.4	82	135	------	315	270	9.3	.8	2.9	1.4	11
31	.3	------	65	b 115	------	240	------	8.6	------	2.4	1.4	------
Total	19.2	17.9	2,276.2	13,411	21,241	16,789	20,946	1,460.9	139.5	461.6	116.4	1,453.1
Mean	0.62	0.60	73.4	433	759	542	698	47.1	4.65	14.9	3.75	48.4
Cfsm	0.0025	0.0024	0.296	1.75	3.06	2.19	2.81	0.190	0.019	0.060	0.015	0.195
In.	0.003	0.003	0.34	2.02	3.19	2.52	3.14	0.22	0.02	0.07	0.02	0.22

Calendar year 1964: Max 12,700 Min 0.2 Mean 241 Cfsm 0.972 In. 13.25
Water year 1964-65: Max 3,440 Min 0.2 Mean 215 Cfsm 0.867 In. 11.77

Peak discharge (base, 6,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	2030	9.45	7,520				
4-11	0600	8.95	6,800				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-2940. Silver Creek near Sellersburg, Ind.

Location.--Lat 38°22'15", long 85°43'35", in SW¼ lot 68, Clark Military Grant, on upstream side of Straws Mill bridge on Watson Road, 0.3 mile downstream from Pleasant Run, 2.4 miles southeast of Sellersburg, and 11.9 miles upstream from mouth.

Drainage area.--188 sq mi.

Records available.--October 1954 to September 1965.

Gage.--Wire-weight gage read twice daily. Crest-stage gage since May 11, 1959. Altitude of gage is 430 ft (from topographic map).

Average discharge.--11 years, 212 cfs.

Extremes.--Maximum discharge during year, 3,120 cfs Feb. 12 (gage height, 16.19 ft); no flow Oct. 17-19, 24-28.
1954-65: Maximum discharge, 19,600 cfs Jan. 22, 1959 (gage height, 30.89 ft from floodmarks), from rating curve extended above 6,300 cfs on basis of contracted-opening measurements of peak flow, at site 5.2 miles upstream, (drainage area, 164 sq mi), adjusted to gage site; no flow at times in most years.

Remarks.--Records fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 3, Dec. 8-11, July 20 to Sept. 1)

Oct. 1 to Feb. 6

3.5	0	4.2	12
3.6	.2	4.5	28
3.7	.7	5.0	71
3.8	1.6	5.5	134
3.9	3.1	6.0	221
4.0	5.1	7.0	421
4.1	7.9	9.0	860

Feb. 7 to Sept. 30

3.5	0	5.0	72
3.6	.2	5.5	144
3.7	.7	6.0	235
3.8	1.6	7.0	459
3.9	3.1	9.0	1,010
4.0	5.1	11.0	1,570
4.1	7.9	13.0	2,150
4.2	12	15.0	2,750
4.5	28		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	0.9	6.7	71	b 60	511	195	136	7.0	4.9	3.1	215
2	.7	1.1	4.9	246	b 53	537	161	112	8.9	4.0	3.5	120
3	.8	1.1	30	341	b 50	758	144	90	4.9	56	5.3	28
4	.1	1.3	88	173	b 50	1,180	136	72	4.9	17	*3.3	12
5	.1	2.0	114	127	51	1,180	127	60	4.4	16	1.8	8.9
6	*.8	1.7	44	107	60	702	112	56	8.2	23	1.1	6.4
7	.2	*1.0	25	88	1,050	485	*344	49	45	19	.8	6.4
8	.2	.8	*20	82	1,110	390	235	38	*215	27	7.9	*5.3
9	.1	.8	18	321	674	321	255	30	46	19	6.7	4.4
10	.1	.5	18	381	*1,570	*265	215	32	44	22	5.6	4.0
11	.1	.4	554	*231	1,150	215	650	*31	120	29	5.9	5.3
12	.1	.5	635	173	2,500	186	618	24	35	16	3.5	1,300
13	.1	.4	221	134	786	161	275	20	16	9.2	1.3	275
14	.1	.3	114	107	390	152	186	17	12	*7.0	.6	90
15	.1	.3	82	82	286	136	298	16	8.2	8.9	.2	272
16	.1	1.3	69	76	225	127	511	13	6.4	16	.1	1,490
17	0	2.7	59	b 67	195	586	255	13	4.6	12	.1	1,400
18	0	2.0	47	b 64	161	636	205	19	4.0	84	.1	275
19	0	2.7	32	b 64	144	298	1,000	32	3.8	42	.1	136
20	.1	5.6	25	b 65	120	235	563	22	2.9	14	.8	90
21	.2	3.8	25	70	112	170	321	16	3.6	7.6	1.0	70
22	.2	3.6	25	179	97	152	235	13	4.4	5.1	.7	48
23	.1	2.7	25	569	90	152	186	14	4.9	4.4	.7	38
24	0	2.2	36	657	394	152	152	13	4.6	3.1	.7	31
25	0	4.9	149	381	1,680	225	144	12	4.0	24	.6	24
26	0	19	231	251	511	413	390	14	4.0	36	.3	19
27	0	7.3	211	211	436	286	225	8.2	4.0	18	.7	19
28	0	7.3	127	149	730	225	225	7.3	3.8	9.6	.6	18
29	.1	15	100	127		344	413	7.6	5.3	4.6	.3	14
30	.2	9.6	88	107	------	321	186	8.9	5.9	3.1	.2	14
31	.5	------	71	76	-----	225	-----	7.6	-----	4.2	.2	-------
Total	6.6	102.8	3,294.6	5,777	14,735	11,726	8,962	1,003.6	645.7	565.7	57.8	6,038.7
Mean	0.21	3.43	106	186	526	378	299	32.4	21.5	18.2	1.86	201
Cfsm	0.0011	0.018	0.564	0.989	2.80	2.01	1.59	0.172	0.114	0.097	0.0099	1.07
In.	0.001	0.02	0.65	1.14	2.92	2.32	1.77	0.20	0.13	0.11	0.01	1.19

Calendar year 1964: Max 15,100 Min 0 Mean 240 Cfsm 1.28 In. 17.36
Water year 1964-65: Max 2,500 Min 0 Mean 145 Cfsm 0.771 In. 10.46

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	0730	16.19	3,120				
9-16	2000	15.02	2,750				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3025. Indian Creek near Corydon, Ind.

Location.--Lat 38°16'35", long 86,06'35", in SE¼ sec. 6, T. 3 S., R. 4 E., on upstream side of bridge on State Highway 335, 0.6 mile upstream from Raccoon Branch and 4½ miles north of Corydon.

Drainage area.--129 sq mi.

Records available.--October 1943 to September 1965. Prior to October 1961, published as Big Indian Creek near Corydon.

Gage.--Water-stage recorder. Datum of gage is 577.12 ft above mean sea level, datum of 1929. Dec. 9, 1948 to June 12, 1952, recorder records for stages above 6.3 ft. Prior to Dec. 9, 1948, wire-weight gage at same site and datum.

Average discharge.--22 years, 169 cfs.

Extremes.--Maximum discharge during year, 6,720 cfs Sept. 17 (gage height, 15.13 ft); no flow Oct. 23-25; minimum gage height, 4.07 ft Aug. 26.
1943-65: Maximum discharge, 26,700 cfs Mar. 5, 1964 (gage height, 22.64 ft); no flow at times during 1943-44, 1951-54, 1959, 1965, minimum gage height, that of Aug. 26, 1965.

Remarks.--Records fair except those below 1.0 cfs, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 26)

4.0	0	4.5	19	6.0	254
4.1	.5	4.6	29	7.0	562
4.2	2.6	4.8	53	8.0	965
4.3	6.2	5.0	80	9.0	1,450
4.4	12	5.5	157	11.0	2,760

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	.2	6.3	67	b 70	*428	174	94	6.7	2.9	3.8	191
2	2.0	.2	2.8	291	b 62	494	157	80	6.7	2.3	3.5	85
3	2.0	.2	14	368	b 58	494	140	72	6.3	2.6	2.3	22
4	1.6	.2	63	210	b 56	675	124	63	6.3	2.9	1.6	9.9
5	1.2	.2	80	166	b 56	675	116	58	5.8	3.2	1.2	6.3
6	.8	.3	29	132	67	494	124	52	15	3.2	1.0	4.6
7	.7	.3	14	109	685	383	328	45	41	3.8	2.1	3.8
8	.4	.3	9.9	102	545	338	242	39	56	3.5	3.2	3.2
9	.4	.4	7.2	317	562	280	210	33	45	3.5	4.6	2.9
10	.4	.4	5.4	383	1,050	230	183	31	21	4.6	17	3.5
11	.3	.5	495	242	715	192	174	31	13	4.6	12	11
12	.2	.7	428	192	1,490	174	148	28	17	4.6	6.3	620
13	.2	.7	183	166	597	157	124	24	24	4.2	3.8	*135
14	.2	.7	112	132	383	140	109	22	*12	3.2	2.9	63
15	.1	1.2	77	b 100	267	132	124	19	8.2	3.8	2.6	917
16	.1	2.8	56	b 90	210	116	148	18	6.7	7.7	2.1	2,390
17	.1	2.3	45	b 80	183	216	124	17	5.8	17	.8	2,190
18	.1	1.8	37	b 74	157	398	116	*17	4.9	16	.5	308
19	.1	3.8	25	b 72	140	267	394	17	4.6	44	* .8	192
20	.1	4.2	21	b 70	124	201	*323	17	3.5	*15	.8	148
21	.1	3.2	20	80	116	174	220	16	3.2	8.2	.8	116
22	.1	2.8	18	94	102	*157	174	14	3.2	5.8	.7	94
23	0	2.6	18	291	94	140	148	17	2.9	4.2	.5	80
24	0	* 2.1	19	383	94	140	132	14	3.2	3.8	.4	70
25	0	4.2	59	280	742	140	124	12	3.2	4.6	.3	62
26	.1	4.2	293	*230	398	201	166	9.9	3.2	3.8	.7	57
27	.1	3.2	230	192	338	201	132	9.3	2.9	3.5	.8	50
28	*.1	8.2	*152	166	383	183	116	8.8	2.3	6.2	.7	46
29	.1	9.9	118	140		242	124	7.2	2.1	6.7	.5	44
30	.2	8.8	97	116	------	242	109	7.2	2.9	5.0	.4	43
31	.2	------	79	b 90	------	201	------	6.7	------	4.2	.8	------
Total	13.4	70.6	2,813.6	5,425	9,744	8,505	5,027	899.1	338.6	208.6	79.5	7,968.2
Mean	0.43	2.35	90.8	175	348	274	168	29.0	11.3	6.73	2.56	266
Cfsm	0.0033	0.018	0.704	1.36	2.70	2.12	1.30	0.225	0.088	0.052	0.020	2.06
In.	0.004	0.02	0.81	1.57	2.81	2.44	1.45	0.26	0.10	0.06	0.02	2.30

Calendar year 1964: Max 11,500 Min 0 Mean 167 Cfsm 1.29 In. 17.65
Water year 1964-65: Max 2,390 Min 0 Mean 113 Cfsm 0.876 In. 11.84

Peak discharge (base, 4,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
9-17	0130	15.13	6,720				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3030. Blue River near White Cloud, Ind.

Location.--Lat 38°14'15", long 86°13'50", in NW¼SE¼ sec. 19, T. 3 S., R. 3 E., on left bank, 400 ft downstream from Spring Creek, 0.2 mile upstream from bridge on State Highway 62, and three-quarters of a mile north of White Cloud.

Drainage area.--461 sq mi.

Records available.--October 1930 to September 1965. Monthly figures only for some periods, published in WSP 1305.

Gage.--Water-stage recorder (digital). Datum of gage is 434.27 ft (revised) above mean sea level, datum of 1929 (levels by Indiana Department of Natural Resources). Prior to Nov. 16, 1938, staff gage at same site and datum.

Average discharge.--35 years, 603 cfs.

Extremes.--Maximum discharge, 5,370 cfs July 26 (gage height, 8.79 ft); minimum, 9.0 cfs Oct. 17; minimum gage height, 1.61 ft Oct. 10-14, 17.
1930-65: Maximum discharge, 28,500 cfs Jan. 22, 1959 (gage height, 23.07 ft); minimum, that of Oct. 17, 1964; minimum gage height, 1.40 ft Sept. 20, 1940, Sept. 30, 1941.

Remarks.--Records good.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 11)

1.4	6	2.5	190
1.5	12	3.0	370
1.7	29	4.0	880
1.9	53	6.0	2,460
2.1	90	9.0	5,620

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	21	47	255	b 300	* 2,370	874	635	90	127	115	147
2	22	20	41	402	b 250	2,320	778	560	85	89	99	178
3	20	17	69	880	b 240	2,610	675	490	84	73	87	285
4	21	21	168	790	b 230	2,400	610	433	80	238	77	153
5	17	27	201	570	b 230	2,880	565	394	77	208	68	95
6	16	23	186	465	266	2,060	550	362	79	211	59	69
7	15	22	145	397	826	1,530	784	336	137	158	56	55
8	14	20	100	350	2,630	1,250	745	304	144	117	57	48
9	13	15	74	615	1,950	1,100	660	274	145	101	77	43
10	11	16	59	1,240	3,950	947	625	253	141	156	124	40
11	11	18	585	947	3,560	808	600	234	113	145	110	45
12	11	17	1,160	695	4,440	720	2,750	216	97	119	88	720
13	11	17	778	570	3,010	660	1,230	203	125	90	67	* 1,430
14	10	17	470	475	1,750	600	856	189	* 148	74	55	510
15	11	20	330	406	1,260	550	750	175	100	108	47	2,670
16	11	26	259	b 350	961	505	886	167	81	447	42	2,840
17	9.6	27	220	b 300	796	665	934	166	71	259	40	1,970
18	10	25	193	b 280	695	1,310	766	* 163	64	149	38	1,120
19	11	31	166	b 280	620	1,030	1,460	187	59	723	40	710
20	11	35	153	b 280	550	784	* 2,000	355	55	* 293	* 42	540
21	13	30	133	280	495	685	1,290	212	53	179	43	429
22	14	28	123	290	456	* 615	982	172	51	126	40	362
23	12	25	118	540	406	580	802	153	50	100	34	314
24	13	* 24	118	1,310	397	550	695	148	53	85	34	280
25	15	31	163	1,320	1,100	550	660	169	89	1,320	34	255
26	21	49	397	* 968	1,490	750	715	174	71	2,290	35	227
27	11	42	705	772	1,090	968	685	141	57	528	33	199
28	*14	56	* 525	640	1,870	832	605	121	49	313	33	178
29	17	76	402	555	------	868	784	108	47	223	30	163
30	17	54	339	480	------	1,230	730	100	80	166	29	158
31	18	---- -	290	b 380	------	1,020	------	94	------	133	33	------
TOTAL	443.6	852	8,716	18,082	35,818	35,747	27,046	7,688	2,575	9,348	1,766	16,233
MEAN	14.3	28.4	281	583	1,279	1,153	902	248	85.8	302	57.0	541
CFSM	.031	.062	.610	1.26	2.77	2.50	1.96	.538	.186	.655	.124	1.17
IN	.04	.07	.70	1.46	2.89	2.88	2.18	.62	.21	.75	.14	1.31

CALENDAR YEAR 1964 MAX 26,000 MIN 9.6 MEAN 554 CFSM 1.20 INCHES 16.35
WATER YEAR 1964-65 MAX 4,440 MIN 9.6 MEAN 450 CFSM .976 INCHES 13.26

Peak discharge (base, 7,500 cfs).--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3033. Middle Fork Anderson River at Bristow, Ind.

Location.--Lat 38°08'19", long 86°43'16", in E½ sec. 27, T. 4 S., R. 3 W., on left bank at downstream side of bridge on State Highway 145 at Bristo . 2.0 miles downstream from Coon Branch, and 6.0 miles upstream from Sulphur Fork Creek.

Drainage area.--41.9 sq mi.

Records available.--August 1961 to September 1965. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder (digital). Datum of gage is 395.00 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,190 cfs Feb. 12 (gage height, 14.94 ft); no flow Oct. 1 to Dec. 2, Aug. 3 to Sept. 10.
1961-65: Maximum discharge, 6,360 cfs Mar. 9, 1964; maximum gage height, 19.33 ft Mar. 4, 1964; no flow on many days each year.
Flood of Jan. 21, 1959, reached a stage of 20.0 ft (from floodmark), discharge 15,000 cfs (from rating curve extended above 7,000 cfs on basis of logarithmic plotting). This is the maximum flood since 1905, from information by local resident.

Remarks.--Records fair except those for June through September, which are poor. Records of suspended sediment loads for water year 1965 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	20	b 22	178	66	37	1.2	4.0	0.30	0
2			0	177	b 19	370	56	32	1.5	5.0	.10	0
3			5.6	97	b 17	150	49	27	2.4	21	0	0
4			29	57	b 15	339	49	23	2.9	12	0	0
5			13	46	b 16	144	46	20	4.4	6.0	0	0
6			4.0	38	29	97	81	17	5.2	2.0	0	0
7			2.0	32	235	76	209	14	11	6.0	0	0
8			1.2	29	128	69	103	12	12	5.0	0	0
9			.80	161	215	57	77	9.4	12	20	0	0
10			.90	90	550	46	64	8.8	11	166	0	0
11			219	61	349	39	61	8.0	9.5	31	0	3.4
12			99	50	* 580	36	52	6.3	6.0	14	0	52
13			36	42	113	31	43	4.6	1.6	6.0	0	8.0
14			21	32	71	29	39	3.5	* 1.0	2.0	0	*2.4
15			12	b 30	52	26	111	3.0	1.0	41	0	a20
16			8.0	b 28	43	23	85	2.8	1.0	13	0	a 140
17			6.5	b 26	37	204	64	* 2.6	.90	4.0	0	a 80
18			3.7	b 26	31	104	60	3.4	.90	3.0	0	a 45
19			2.0	b 26	27	59	260	12	.80	2.0	*0	a 27
20			2.0	b 25	23	46	112	4.9	.80	* 1.3	0	a 15
21			1.8	34	22	38	78	4.4	.70	1.2	0	a 12
22			1.8	66	17	* 35	* 64	3.3	.70	1.1	0	a 9.0
23			2.0	123	16	34	55	2.6	2.0	1.0	0	a 6.7
24		*	2.4	148	* 49	39	49	2.0	5.0	1.0	0	a 5.1
25			14	83	241	69	78	1.8	3.0	2.0	0	a 3.8
26			312	* 76	95	140	85	3.7	1.0	3.0	0	a 2.8
27			60	60	135	71	61	4.4	2.0	3.0	0	a 2.2
28	*		* 37	52	289	58	53	2.9	3.0	1.0	0	a 1.7
29			28	42	------	256	48	1.6	3.0	.60	0	a 1.2
30			23	36	------	113	43	.80	4.0	.30	0	a 1.0
31		-	18	28	------	78	------	1.0	------	.10	0	------
TOTAL	0	0	965.70	1,841	3,436	3,054	2,301	279.80	111.50	380.60	.40	438.3
MEAN	0	0	31.2	59.4	123	98.5	76.7	9.03	3.72	12.3	.01	14.6
CFSM	0	0	.745	1.42	2.94	2.35	1.83	.216	.089	.294	.0003	.348
IN	0	0	.86	1.63	3.05	2.71	2.04	.25	.10	.34	0	.39

CALENDAR YEAR 1964	MAX 4,870	MIN 0	MEAN 52.4	CFSM 1.25	INCHES 17.03
WATER YEAR 1964-65	MAX 580	MIN 0	MEAN 35.1	CFSM .838	INCHES 11.37

Peak discharge (2,000 cfs).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.
Note.--Stage-discharge relation indefinite June 15 to Aug. 3.

3-3221. Pigeon Creek at Evansville, Ind.

Location.--Lat 37°59'45", long 87°31'30", in SW¼ sec. 15, T. 6 S., R. 10 W., on left bank at downstream side of Oak Hill Road bridge at Evansville and 7.1 miles upstream from mouth.

Drainage area.--326 sq mi.

Records available.--October 1960 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 352.24 ft above mean sea level, datum of 1929. Auxiliary water-stage recorder 1.3 miles downstream.

Extremes.--Maximum discharge during year, 3,780 cfs Feb. 12; maximum gage height, 16.41 ft Apr. 2; minimum daily discharge (unaffected by backwater), 1 cfs Oct. 11, 12, 21, 22, 26; reverse flow may have occurred during extreme stages on the Ohio River.
1960-65: Maximum discharge, 12,100 cfs May 10, 1961 (gage height, 27.94 ft); minimum daily (unaffected by backwater, 1 cfs Aug. 30 to Sept. 1, Oct. 11, 12, 21, 22, 26, 1964; reverse flow occurs at times due to extreme stages on the Ohio River.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	2.0	7.0	14	190	1,030	789	0	8.0	6.0	5.0	431
2	2.0	2.0	30	174	29	1,430	903	0	12	4.0	4.0	253
3	2.0	3.0	48	287	9.0	*1,280	930	45	12	7.0	4.0	77
4	2.0	3.0	128	161	6.0	1,400	868	119	81	7.0	4.0	32
5	2.0	4.0	90	133	5.0	1,280	760	43	33	9.0	4.0	18
6	2.0	4.0	54	21	6.0	932	879	37	45	16	4.0	13
7	2.0	4.0	26	35	166	677	859	37	244	95	4.0	11
8	2.0	4.0	20	212	601	591	652	86	140	308	6.0	10
9	2.0	3.0	14	207	995	481	459	42	68	175	21	8.0
10	2.0	4.0	20	434	2,770	380	291	29	37	560	21	8.0
11	1.0	5.0	256	175	*2,590	312	272	22	103	358	11	165
12	1.0	5.0	321	83	3,660	277	360	20	182	116	7.0	1,000
13	2.0	5.0	141	68	3,380	230	456	17	116	48	5.0	900
14	2.0	5.0	57	135	2,770	200	580	15	58	25	4.0	650
15	2.0	6.0	31	143	1,840	159	712	14	34	17	4.0	220
16	2.0	6.0	24	156	808	94	822	11	24	14	4.0	120
17	2.0	7.0	39	164	436	164	865	11	*10	28	5.0	80
18	2.0	8.0	16	153	352	191	810	*24	8.0	15	*5.0	50
19	2.0	15	10	65	308	130	828	49	7.0	14	7.0	30
20	2.0	6.0	7.0	21	232	87	701	45	6.0	14	8.0	25
21	1.0	3.0	6.0	20	178	70	537	25	6.0	10	13	*20
22	1.0	4.0	*6.0	25	99	63	431	15	6.0	*7.0	14	144
23	2.0	*6.0	7.0	108	82	63	*160	12	10	6.0	10	387
24	2.0	6.0	7.0	366	76	74	72	11	36	5.0	8.0	152
25	2.0	7.0	10	433	67	*164	480	11	29	228	8.0	67
26	*1.0	5.0	36	177	64	673	874	10	18	122	25	37
27	2.0	3.0	50	*130	109	556	659	12	10	34	122	24
28	2.0	19	45	72	763	295	256	14	7.0	13	88	18
29	2.0	5.0	23	38	------	479	74	16	5.0	8.0	25	14
30	2.0	4.0	14	72	------	526	7.0	12	9.0	6.0	12	13
31	3.0	------	10	350	------	671	------	10	------	4.0	21	------
TOTAL	59.0	163.0	1,553.0	4,632	22,591.0	14,959	17,346.0	814	1,364.0	2,279.0	483.0	4,977.0
MEAN	1.90	5.43	50.1	149	807	483	578	26.3	45.5	73.5	15.6	166
CFSM	.0058	.017	.154	.457	2.48	1.48	1.77	.081	.140	.226	.048	.509
IN	.01	.02	.18	.53	2.58	1.71	1.98	.09	.16	.26	.06	.57

CALENDAR YEAR 1964 MAX 7,970 MIN 0 MEAN 230 CFSM .706 INCHES 9.62
WATER YEAR 1964-65 MAX 3,660 MIN 0 MEAN 195 CFSM .598 INCHES 8.12

* Discharge measurement made on this day.

3-3225. Wabash River near New Corydon, Ind.

Location.--Lat 40°33'50", long 84°48'10", in SE¼ sec. 3, T. 24 N., R. 15 E., first principal meridian, on left bank, 10 ft downstream from county bridge on Indiana-Ohio State line road, 2 miles east of New Corydon and 2 3/4 miles downstream from Beaver Creek, and at mile 465.6.

Drainage area.--262 sq mi (revised).

Records available.--April 1951 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 830.10 ft above mean sea level, datum of 1929. Prior to June 23, 1953, wire-weight gage at same site and datum.

Average discharge.--14 years, 180 cfs.

Extremes.--Maximum discharge during year, 3,340 cfs Feb. 10 (gage height, 17.13 ft); minimum, 2.2 cfs Oct. 8, 9 (gage height, 6.74 ft). 1951-65: Maximum discharge, 8,720 cfs Jan. 22, 1959 (gage height, 20.47 ft, from floodmarks); minimum, 0.7 cfs Sept. 13, 1954; minimum gage height, 5.40 ft Aug. 18, 1951.

Remarks.--Records good except those below 10 cfs, which are fair. Flow slightly affected by regulation of Grand Lake Reservoir, diversion from or into St. Marys River basin, and into Miami and Erie Canal.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 3 to Nov. 19, Nov. 26-29, Dec. 11, 14-18, 22-24, Dec. 26 to Jan. 12, Jan. 22, 23, July 17 to Sept. 14)

6.6	2.0	9.0	165
6.8	6.0	10.0	280
7.0	12	12.0	620
7.3	25	14.0	1,140
7.6	42	16.0	2,240
8.0	71	17.0	3,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.4	5.8	b6.0	6.3	b12	b68	128	182	12	12	5.5	7.2
2	3.8	7.5	b5.8	12	b9.0	b 200	257	103	15	9.7	5.7	*9.1
3	4.0	8.1	b5.8	19	b7.0	* 765	135	80	16	9.7	5.4	6.5
4	3.8	9.9	b5.8	12	b7.0	1,070	84	65	14	9.0	5.6	5.7
5	4.2	9.6	b5.6	8.7	9.0	1,670	63	58	13	8.6	6.4	5.8
6	3.4	9.3	b5.5	7.5	12	867	2,010	54	14	8.3	5.8	6.1
7	3.6	9.9	b5.4	6.3	b35	808	1,400	53	17	11	5.2	5.1
8	2.6	9.0	b5.4	*6.3	b100	720	693	47	16	13	5.5	5.1
9	2.8	7.5	b5.5	8.1	183	669	1,950	42	15	9.2	6.4	6.2
10	4.8	7.2	b5.6	11	2,460	523	831	40	13	9.1	5.1	5.9
11	4.6	8.7	9.3	7.8	1,810	420	948	35	13	11	5.1	5.5
12	4.6	9.0	b10	6.3	708	367	2,420	30	12	8.1	4.5	6.3
13	3.6	8.7	b11	b5.6	274	343	1,140	28	12	7.1	5.1	6.0
14	3.6	9.6	8.1	b4.5	116	318	600	28	11	7.5	4.8	6.3
15	3.8	9.9	6.9	b3.5	70	311	498	25	11	8.0	4.9	22
16	4.2	11	5.8	b3.0	53	284	493	23	11	7.8	4.3	*24
17	3.4	13	5.6	b2.7	46	271	392	18	11	8.3	4.5	17
18	4.0	9.9	5.0	b2.7	42	290	340	17	11	9.6	6.0	14
19	4.8	8.4	b5.0	b3.0	38	229	307	18	11	6.8	7.0	11
20	6.0	b5.0	b5.0	b3.5	32	195	284	16	11	* 5.2	6.5	9.2
21	6.3	b4.5	b5.0	b4.5	34	178	268	16	10	5.9	6.3	9.5
22	5.0	b4.2	5.0	5.8	b25	130	255	15	9.8	5.7	5.4	12
23	5.0	b4.2	5.4	18	b17	187	254	17	11	5.5	4.8	14
24	5.6	*b4.2	6.9	b150	b16	416	582	29	*11	5.9	5.1	11
25	7.2	b5.0	b12	b160	b16	* 283	1,480	51	11	6.5	5.6	8.9
26	6.9	7.5	14	b100	b15	139	1,250	* 25	10	5.8	6.2	7.1
27	6.0	8.4	9.0	b50	20	80	685	36	9.2	5.4	7.1	5.8
28	* 6.9	8.7	7.5	b30	27	84	* 452	29	b.3	5.6	6.9	5.3
29	6.3	8.1	5.8	b20	------	362	361	19	10	5.3	5.9	6.8
30	5.8	b 7.0	5.4	b14	------	310	314	15	14	5.6	5.0	7.5
31	6.3	------	5.4	b13	------	174	------	14	------	5.6	4.7	------
TOTAL	146.3	238.8	209.5	705.1	6,193.0	12,731	20,874	1,228	363.3	241.8	172.3	271.4
MEAN	4.72	7.96	6.76	22.7	221	411	696	39.6	12.1	7.80	5.56	9.05
CFSM	.018	.030	.026	.087	.844	1.57	2.66	.151	.046	.030	.021	.035
IN	.02	.03	.03	.10	.88	1.81	2.96	.17	.05	.03	.02	.04

CALENDAR YEAR 1964 MAX 5,850 MIN 2.5 MEAN 169 CFSM .645 INCHES 8.79
WATER YEAR 1964-65 MAX 2,460 MIN 2.6 MEAN 119 CFSM .454 INCHES 6.16

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1930	17.13	3,340	4-12	1300	16.69	2,890
3-5	0115	15.95	2,200				
4-6	1515	16.70	2,900				
4-9	0600	16.16	2,370				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3229. Wabash River at Linn Grove, Ind.

Location.--Lat 40°39'22", long 85°01'58", in SE¼SE¼ sec. 34, T. 26 N., R. 13 E., on right bank 10 ft downstream from bridge on State Highway 118, 800 ft downstream from Shoemaker ditch, 0.8 mile north of Linn Grove and 2.2 miles upstream from Rice ditch.
Drainage area.--454 sq mi.
Records available.--September 1964 to September 1965.
Gage.--Water-stage recorder. Datum of gage is 808.00 ft above mean sea level, datum of 1929.
Extremes.--Maximum discharge during year, 2,740 cfs Apr. 8 (gage height, 10.13 ft); minimum, 4.0 cfs Oct. 7 (gage height, 3.17 ft). Flood in April 1964 reached a stage of 13.13 ft, from floodmark (discharge, about 4,300 cfs).
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow slightly affected by regulation of Grand Lake Reservoir, diversion from or into St. Marys River basin, and into Miami and Erie Canal.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 23, 1964 to Dec. 30, July 17 to Sept. 14, Sept. 26-30)

3.0	3.5	4.5	169
3.1	5.5	5.0	308
3.3	12.5	5.5	470
3.6	31	6.0	690
4.0	74	10.0	2,690

Discharge, in cubic feet per second, 1964

Sept. 23.....8.2
24.....7.5
25.....6.5
26.....6.2
27.....6.5
28.....6.5
29.....6.5
30.....6.2

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	8.8	6.8	12	a 45	110	384	368	31	14	9.2	8.2
2	5.7	9.9	6.2	19	a 30	1,130	570	235	30	16	12	* 7.5
3	5.7	9.6	6.5	33	a 34	1,490	452	158	28	14	11	7.2
4	5.3	8.8	6.5	33	a 32	*1,790	293	119	27	12	11	9.6
5	5.3	8.8	6.5	26	31	2,140	221	103	25	11	12	11
6	5.3	8.5	6.2	*21	29	2,590	1,190	94	24	10	10	7.2
7	5.3	8.5	6.2	18	41	2,290	2,040	96	83	12	10	7.2
8	5.1	8.5	6.2	16	b150	1,940	2,540	86	58	12	12	7.2
9	5.5	8.5	6.2	17	b350	1,740	2,540	76	37	12	11	7.5
10	5.7	9.2	6.0	20	1,390	1,440	2,640	68	29	14	9.6	8.2
11	6.0	8.5	6.8	21	2,020	1,140	2,190	62	24	12	10	8.2
12	5.7	8.5	8.2	19	*2,640	890	1,740	57	20	10	10	9.6
13	5.5	8.2	8.8	17	2,060	690	2,140	49	18	11	8.8	10
14	6.2	7.2	10	14	1,020	590	2,090	44	17	10	8.2	14
15	7.5	7.5	9.9	b12	368	550	1,400	41	16	9.2	7.5	26
16	7.2	8.8	9.6	b 9.0	208	510	890	39	15	9.6	7.5	* 24
17	6.8	9.2	8.5	b 8.5	158	510	690	36	14	12	7.5	27
18	7.2	8.2	8.2	b 9.0	131	740	490	33	14	14	7.5	25
19	6.8	9.2	7.2	b10	114	530	418	30	13	16	7.5	20
20	6.8	8.8	6.8	b11	94	353	368	26	12	* 14	6.5	18
21	7.5	7.8	6.8	b12	82	308	338	25	12	14	6.5	15
22	7.2	6.5	7.5	14	71	264	308	111	12	12	7.2	16
23	7.2	6.2	7.5	29	b 62	249	293	74	12	11	7.5	16
24	7.5	5.7	12	542	b 56	490	547	36	12	12	7.2	16
25	8.5	*5.7	17	b 600	b 50	*570	1,340	112	*11	11	6.8	15
26	9.2	5.7	18	b 520	a 48	400	1,790	*165	11	10	6.5	14
27	10	5.7	20	b 400	a 47	249	1,940	338	11	11	6.2	12
28	*9.2	6.2	17	*a 200	b 45	249	1,440	140	10	10	6.5	10
29	8.2	6.5	14	a 120		630	*740	78	11	9.2	6.5	9.2
30	8.5	6.8	12	a 50	------	840	470	52	12	8.8	6.8	8.5
31	8.8	------	12	a 45	------	550	------	39	------	8.8	8.5	------
Total	212.1	236.0	291.1	2,877.5	11,406	27,962	34,492	2,990	649	362.6	265.0	394.3
Mean	6.84	7.87	9.39	92.8	407	902	1,150	96.5	21.6	11.7	8.55	13.1
Cfsm	0.015	0.017	0.021	0.204	0.896	1.99	2.53	0.213	0.048	0.026	0.019	0.029
In.	0.02	0.02	0.02	0.24	0.93	2.29	2.82	0.25	0.05	0.03	0.02	0.03

Calendar year 1964: Max - Min - Mean - Cfsm - In. -
Water year 1964-65: Max 2,640 Min 5.1 Mean 225 Cfsm 0.496 In. 6.72

Peak discharge (base, 1,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	0900	10.03	2,690	4-13	2200	9.26	2,340
3-6	1330	9.86	2,640	4-27	0400	8.64	1,990
4-8	2230	10.13	2,740				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3230. Wabash River at Bluffton, Ind.

Location.--Lat 40°44', long 85°11', in sec. 4, T. 26 N., R. 12 E., on downstream side of left abutment of Main Street Bridge in Bluffton, 2 miles downstream from Sixmile Creek and at mile 434.5.

Drainage area.--506 sq mi.

Records available.--October 1930 to September 1965. Gage-height records collected at same site since December 1910 are contained in reports of U.S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 793.01 ft above mean sea level, datum of 1929. Prior to Mar. 31, 1934, chain gage at same site and datum. Mar. 31 to Dec. 5, 1934, staff gage at nearby site at same datum.

Average discharge.--35 years, 391 cfs.

Extremes.--Maximum discharge during year, 3,570 cfs Apr. 9 (gage height, 9.56 ft); minimum, 4.2 cfs Oct. 15, 16; minimum gage height, 0.85 ft Aug. 22.

1930-65: Maximum discharge, 11,800 cfs Feb. 15, 1950 (gage height, 16.07 ft); minimum, 3.9 cfs July 18, 1936; minimum gage height, that of Sept. 13, 14, 1964.

Maximum stage known, about 21.0 ft Mar. 25, 26, 1913, on basis of gage readings published in newspapers (discharge, 25,000 cfs, from rating curve extended above 11,700 cfs on basis of a rainfall-runoff relation).

Remarks.--Records good except those for periods of ice effect, which are poor. Occasional regulation by Grand Lake Reservoir, diversion from or into St. Marys River basin, and into Miami and Erie Canal.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 10, Dec. 12 to Jan. 21, Apr. 29 to May 18)

0.6	3.8	1.5	59
.7	5.2	1.7	89
.8	7.2	2.0	149
.9	9.6	2.5	265
1.0	13	3.0	410
1.1	18	6.0	1,560
1.3	35	10.0	3,800

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	7.0	*10	31	b 60	79	545	380	55	19	10	*10
2	6.6	7.6	11	51	b 40	753	720	265	51	21	10	9.9
3	6.4	8.7	12	47	b 32	1,800	650	171	48	25	10	9.0
4	6.0	8.7	12	51	b 28	*2,200	410	138	40	21	12	8.4
5	5.6	9.0	11	47	b 28	2,930	306	115	40	18	12	12
6	5.2	9.0	12	*33	b 30	3,050	1,490	100	61	17	11	12
7	5.0	9.3	12	24	b 50	3,160	2,180	98	119	23	10	11
8	6.8	8.7	12	21	b 150	2,810	2,760	94	121	20	12	9.6
9	7.6	10	12	25	395	2,240	3,450	87	75	21	12	9.0
10	7.4	10	13	22	1,980	1,800	3,220	81	54	19	12	9.0
11	7.2	8.4	b 17	24	2,080	1,440	2,990	69	43	20	9.9	8.4
12	6.2	9.0	18	24	2,760	1,120	2,300	65	35	18	9.6	8.4
13	5.2	9.3	20	19	2,760	920	2,180	57	31	16	9.6	8.7
14	5.0	9.9	21	15	1,580	800	2,470	52	26	16	9.3	9.6
15	4.4	10	22	13	615	720	1,750	47	24	16	8.7	27
16	4.4	10	22	11	306	685	1,080	46	21	15	8.2	*19
17	5.0	9.9	19	9.6	228	650	800	45	21	24	8.2	19
18	5.8	11	15	9.3	193	840	615	39	19	26	8.7	25
19	5.6	12	15	10	160	685	475	35	19	*25	8.4	24
20	5.4	12	14	10	140	440	440	31	19	22	8.0	19
21	5.8	12	13	9.9	125	350	380	29	20	19	7.6	17
22	5.8	12	13	b 15	107	306	350	72	19	17	7.8	21
23	5.8	11	15	b 80	b 90	278	350	405	19	15	7.6	17
24	6.2	11	22	296	b 70	410	705	123	19	14	7.8	15
25	5.6	10	31	685	b 66	b 500	1,560	125	*18	13	8.4	12
26	5.6	9.6	36	b 660	b 68	510	1,960	*203	17	13	8.0	13
27	5.8	9.3	40	b 500	b 66	321	2,180	680	17	13	7.8	14
28	6.2	11	42	*b 300	70	278	1,700	292	18	12	7.6	12
29	*6.6	11	34	b 180		935	*920	160	22	12	7.4	11
30	6.4	11	28	b 150	------	1,120	510	98	21	11	7.0	11
31	5.6	------	23	b 100	------	820	-----	69	----	10	9.0	-------
Total	183.0	297.4	597	3,472.8	14,277	34,950	41,446	4,271	1,112	551	285.6	411.0
Mean	5.90	9.91	19.3	112	510	1,127	1,382	138	37.1	17.8	9.21	13.7
Cfsm	0.012	0.020	0.038	0.221	1.01	2.23	2.73	0.273	0.073	0.035	0.018	0.027
In.	0.01	0.02	0.04	0.25	1.05	2.57	3.05	0.31	0.08	0.04	0.02	0.03

Calendar year 1964: Max 8,140 Min 4.4 Mean 375 Cfsm 0.741 In. 10.08
Water year 1964-65: Max 3,450 Min 4.4 Mean 279 Cfsm 0.551 In. 7.47

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	2400	8.66	3,050				
3-7	0500	9.01	3,220				
4-9	1600	9.56	3,570				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3235. Wabash River at Huntington, Ind.

Location.--Lat 40°51'20", long 85°29'53", in SW¼NE¼ sec. 27, T. 28 N., R. 9 E., on right bank at the Huntington Water and Light Co. Plant, 2 miles south of Huntington, 3½ miles upstream from Little River, and at mile 409.

Drainage area.--710 sq mi.

Records available.--January 1951 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 700.04 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to July 5, 1951, staff gage at same site and datum.

Average discharge.--14 years, 570 cfs.

Extremes.--Maximum discharge during year, 4,360 cfs Apr. 9 (gage height, 13.84 ft); minimum, 2.3 cfs Oct. 28 (gage height, 8.87 ft).
1951-65: Maximum discharge, 14,900 cfs Feb. 10, 1959; maximum gage height, 23.20 ft Feb. 10, 1959 (backwater from ice); minimum, that of Oct. 28, 1964.
Flood in March 1913 reached a stage of 22.7 ft (from high-water mark by Corps of Engineers).

Remarks.--Records good except those for periods of ice effect, which are poor. Records of water temperatures for the water year 1965 are published in Part 2 of this report.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

8.87	2.3	9.4	82
8.9	2.8	9.7	223
9.0	5.5	10.0	430
9.1	15	12.0	2,370
9.2	33	14.0	4,600

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	4.7	15	47	b120	160	1,090	690	141	40	23	27
2	15	5.5	13	82	b 60	428	1,260	583	132	40	21	31
3	13	4.4	b13	82	b 57	1,800	1,140	422	114	38	13	29
4	13	4.7	b13	77	b 70	2,980	880	321	98	33	15	31
5	12	4.7	b11	74	b 80	4,120	645	287	82	33	21	25
6	11	4.7	b10	72	b 90	3,880	1,700	255	74	29	20	21
7	9.6	5.1	b10	69	90	4,000	2,870	223	69	92	37	21
8	8.7	4.4	b11	69	114	3,880	3,090	196	160	72	49	21
9	9.6	4.1	b12	74	b250	3,090	4,240	191	196	49	40	23
10	11	3.6	b13	67	3,200	2,370	4,120	191	146	42	36	21
11	12	3.6	b20	67	3,420	1,900	3,640	202	102	36	33	21
12	12	3.6	b40	57	3,090	1,620	2,980	175	82	29	33	20
13	16	5.5	42	49	3,200	1,420	2,370	156	64	*42	31	18
14	16	9.6	31	b35	2,270	1,310	2,100	141	57	27	29	20
15	16	12	20	b30	1,140	1,200	2,300	127	52	20	25	57
16	16	13	b22	b25	645	*1,140	*1,520	114	49	23	21	*64
17	11	13	b21	b23	415	1,140	1,140	*102	52	46	21	64
18	6.0	13	*b19	b25	341	1,260	880	102	54	443	20	52
19	3.8	15	b20	b26	301	1,090	735	94	*49	301	16	42
20	*3.2	16	b21	b26	255	780	645	82	42	160	12	44
21	2.8	15	21	b26	223	574	558	77	38	82	12	42
22	2.8	12	20	b30	218	481	506	69	33	62	13	42
23	2.8	20	21	*b50	*b180	456	464	160	44	64	13	52
24	2.8	18	42	b300	b120	430	716	500	38	52	12	49
25	3.0	*16	67	b680	b 80	690	2,100	280	25	40	*9.6	42
26	3.4	15	52	b800	b100	b560	2,500	350	11	31	7.9	38
27	3.4	18	42	980	b140	574	2,600	1,000	7.9	31	7.9	29
28	2.4	21	40	735	151	415	2,300	880	6.0	31	8.7	29
29	2.4	20	40	b400		1,250	1,520	456	13	29	7.9	29
30	2.8	16	44	b250	------	1,900	930	255	31	25	7.9	40
31	3.6	------	44	b200	------	1,420	------	186	------	25	11	------
Total	262.1	321.2	810	5,527	20,420	48,318	53,539	8,867	2,061.9	2,067	626.9	1,044
Mean	8.45	10.7	26.1	178	729	1,559	1,785	286	68.7	66.7	20.2	34.8
Cfsm	0.012	0.015	0.037	0.251	1.03	2.20	2.51	0.403	0.097	0.094	0.028	0.049
In.	0.01	0.02	0.04	0.29	1.07	2.54	2.80	0.46	0.11	0.11	0.03	0.05

Calendar year 1964: Max 9,440 Min 2.4 Mean 502 Cfsm 0.707 In. 9.63
Water year 1964-65: Max 4,240 Min 2.4 Mean 394 Cfsm 0.555 In. 7.53

Peak discharge (base, 5,000 cfs).--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3240. Little River near Huntington, Ind.

Location.--Lat 40°54'14", long 85°24'22", in NE¼NW¼ sec. 9, T. 28 N., R. 10 E., on right bank on upstream side of highway bridge, 5 miles east of Huntington.

Drainage area.--266 sq mi.

Records available.--October 1943 to September 1965. Prior to January 1944 monthly discharge only, published in WSP 1305. Published as Little River at Huntington, January 1944 to September 1948, Little River near Huntington, October 1948 to September 1956, and Little Wabash River near Huntington, October 1956 to September 1961.

Gage.--Water-stage recorder (digital). Datum of gage is 728.10 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1948, wire-weight gage 4 miles downstream at datum 8.79 ft lower. Oct. 1, 1948, to Sept. 5, 1950, wire-weight gage at present site and datum.

Average discharge.--22 years, 224 cfs.

Extremes.--Maximum discharge during year, 2,910 cfs Feb. 10 (gage height, 14.08 ft); minimum, 4.4 cfs Oct. 3-5; minimum gage height, 1.50 ft Oct. 3-5.
1943-65: Maximum discharge, 5,990 cfs Jan. 4, 1950; maximum gage height, 18.43 ft Feb. 11, 1959; minimum discharge, 1.0 cfs Oct. 8, 1946, site and datum then in use; minimum gage height since October 1948, 1.30 ft Oct. 1, 1949.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	2.5	3.0	96
1.5	5.2	4.0	216
1.7	13	7.0	760
2.0	26	14.0	2,880
2.5	56		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	5.2	9.2	b 9.0	19	40	114	576	133	40	19	11	9.6
2	4.9	9.2	b 9.0	221	30	527	875	111	38	17	12	9.2
3	4.7	9.6	b 8.5	134	28	767	493	91	40	23	12	8.8
4	4.4	9.6	b 7.0	58	30	1,210	344	82	35	20	12	9.2
5	4.7	9.2	b 6.5	41	35	2,030	258	85	29	17	13	14
6	4.9	9.2	b 6.0	32	40	1,550	2,060	84	28	16	11	13
7	4.9	8.8	b 6.0	28	60	1,080	2,150	78	32	77	9.6	12
8	5.2	8.8	b 6.5	28	80	1,520	1,420	70	37	81	13	11
9	7.4	8.8	b 7.0	104	275	1,070	1,910	65	33	40	16	9.2
10	6.6	8.8	b 8.0	89	2,690	694	1,020	73	27	27	16	7.7
11	6.6	8.8	b 15	54	2,670	469	532	64	24	20	13	7.7
12	6.6	9.2	44	41	1,960	405	442	54	23	18	10	7.7
13	6.6	8.8	28	b30	919	515	306	50	21	* 16	8.1	8.1
14	6.6	8.4	19	b20	435	608	218	46	20	16	10	8.8
15	6.3	8.8	b 18	b17	266	553	227	42	19	19	10	15
16	6.3	14	b 16	b16	194	* 589	*242	41	18	14	9.2	*22
17	6.6	15	b 13	b15	156	701	189	* 38	18	65	12	20
18	6.6	12	*b 13	b15	135	1,190	158	37	*17	180	18	17
19	7.7	11	b 13	b16	117	448	133	34	16	53	16	13
20	* 8.1	b10	b 14	b16	97	233	116	32	15	30	12	11
21	8.1	b 9.0	16	*b16	b 80	160	101	30	14	21	11	10
22	8.8	b 8.5	17	b20	76	133	91	33	14	17	10	11
23	8.4	b 8.8	18	b700	* 82	142	117	116	22	17	11	16
24	8.1	b 9.0	19	1,390	73	115	441	70	26	16	8.8	16
25	8.1	*b 9.0	21	1,070	b 60	99	1,210	44	23	14	* 8.8	13
26	8.4	13	20	701	b 50	92	1,110	42	22	13	10	12
27	8.8	12	15	300	b 60	78	502	236	17	13	12	12
28	8.8	14	16	150	76	85	307	137	16	12	12	11
29	9.2	15	15	90	------	1,180	210	70	16	11	9.6	8.8
30	9.2	b10	15	50	------	1,210	163	50	19	12	8.8	8.1
31	8.8	------	15	45	------	676	------	43	------	11	9.2	------
TOTAL	215.6	305.5	453.5	5,526	10,814	20,243	17,921	2,181	719	925	355.1	351.9
MEAN	6.96	10.2	14.6	178	386	653	597	70.4	24.0	29.8	11.5	11.7
CFSM	.026	.038	.055	.669	1.45	2.45	2.24	.265	.090	.112	.043	.044
IN	.03	.04	.06	.77	1.51	2.83	2.51	.30	.10	.13	.05	.05

CALENDAR YEAR 1964 MAX 2,400 MIN 4.4 MEAN 123 CFSM .462 INCHES 6.30
WATER YEAR 1964-65 MAX 2,690 MIN 4.4 MEAN 164 CFSM .617 INCHES 8.39

Peak discharge (base, 2,800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1845	14.08	2,910				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3242. Salamonie River at Portland, Ind.

Location.--Lat 40°25'40", long 85°02'20", in SE¼ sec. 23, T. 23 N., R. 13 E., on right bank at downstream side of county road bridge, 2.4 miles downstream from Butternut Creek, 3.2 miles west of Portland, and 3.7 miles downstream from Little Salamonie River.

Drainage area.--86.0 sq mi.

Records available.--September 1959 to September 1965.

Gage.--Water-stage recorder from July 5, 1960 to date. Datum of gage is 877.59 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to Oct. 1, 1960, wire-weight gage at site, 1.4 miles upstream at 6.43 ft higher datum.

Average discharge.--6 years, 63.8 cfs.

Extremes.--Maximum discharge during year, 2,380 cfs Apr. 12 (gage height, 13.57 ft); minimum, 0.2 cfs Sept. 27 (gage height, 1.38 ft). 1959-65: Maximum discharge, 3,460 cfs Mar. 5, 1963 (gage height, 16.96 ft); minimum, that of Sept. 27, 1964; minimum gage height, 1.30 ft Oct. 31, 1960.

Remarks.--Records fair except those for periods of ice effect, which are poor.

Rating table, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.35	0.2	2.5	54
1.4	.6	3.0	95
1.5	2.0	4.0	196
1.6	4.5	7.0	682
1.8	12	10.0	1,340
2.0	22	13.0	2,190

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	1.2	b 1.8	b 5.0	b 6.0	b 150	59	30	2.2	2.7	1.3	2.2
2	1.8	.8	b 1.8	b 12	b 5.0	509	101	22	6.0	1.5	1.5	* 1.5
3	1.6	2.0	b 1.6	9.4	b 5.2	399	61	18	3.4	1.0	1.8	1.3
4	1.5	2.2	b 1.4	5.7	b 5.8	* 811	46	14	2.7	.7	2.7	1.5
5	1.5	2.5	b 1.2	3.2	b 7.0	925	37	13	2.5	.7	2.0	1.2
6	1.8	2.0	b 1.0	2.2	b 8.0	341	1,590	14	6.4	.8	1.8	1.2
7	1.5	1.8	b .9	2.5	b 25	370	621	14	5.9	2.9	1.5	1.2
8	1.6	1.5	b 1.0	*2.7	b 70	363	296	11	3.7	1.5	1.0	2.0
9	1.5	.9	b 1.2	4.2	158	172	969	9.9	2.5	2.0	1.3	2.0
10	1.8	2.0	b 1.5	3.7	1,830	127	190	8.2	2.5	1.6	.9	1.8
11	1.5	2.0	9.2	3.4	663	90	683	8.2	2.5	1.3	.9	2.0
12	.9	1.3	4.9	2.9	186	73	1,940	7.9	1.8	1.5	1.3	1.6
13	1.6	2.5	2.2	2.7	91	65	311	6.8	1.5	1.5	1.2	1.5
14	1.6	1.6	1.8	b 2.2	54	61	116	6.1	1.3	1.6	1.0	2.3
15	1.8	1.5	2.2	b 1.8	38	61	116	5.4	2.0	2.7	.8	20
16	1.6	7.0	2.0	b 1.8	31	50	121	4.8	2.2	3.2	.9	* 7.8
17	1.5	2.9	2.0	b 1.9	28	47	73	4.5	1.5	5.7	2.2	5.3
18	1.8	2.2	1.8	b 2.2	26	61	50	4.0	1.5	2.0	2.0	1.5
19	2.7	2.7	b 1.6	b 3.0	24	b 25	40	3.7	2.0	1.6	1.8	.8
20	1.6	3.2	b 1.4	b 4.0	17	b 15	31	4.0	2.0	*1.8	2.0	.6
21	1.6	2.2	1.5	b 6.1	17	b 15	25	4.0	1.6	2.5	1.3	.7
22	1.8	1.5	2.2	b10	b 15	18	21	3,7	1.5	2.7	1.2	7.9
23	2.7	1.6	2.5	b90	b 11	103	22	4.0	1.6	2.5	1.6	3.4
24	2.2	* 2.2	12	426	b 10	* 273	277	4.2	*1.5	2.2	1.6	2.7
25	1.3	2.9	11	150	b 9.0	b 70	679	* 5.7	1.5	1.5	1.8	1.0
26	1.3	2.9	3.4	118	b 10	b 35	314	4.5	1.3	.8	2.2	.5
27	2.5	1.6	2.2	*82	b 11	36	122	12	.9	2.0	2.0	.4
28	*1.8	2.9	1.3	b22	b 15	40	* 70	6.8	1.0	1.6	1.3	.5
29	1.8	2.2	1.8	b15		195	50	4.5	2.6	1.5	1.2	.7
30	2.0	1.8	2.0	b 8.0	------	125	40	3.4	15	1.5	2.0	2.9
31	1.6	------	2.0	b 7.6	------	69	-----	2.5	-----	1.6	2.5	-----
Total	53.6	65.6	84.4	1,011.2	3,376.0	5,694	9,071	264.8	84.6	58.7	47.6	80.0
Mean	1.73	2.19	2.72	32.6	121	184	302	8.54	2.82	1.89	1.54	2.67
Cfsm	0.020	0.025	0.032	0.379	1.41	2.14	3.51	0.099	0.033	0.022	0.018	0.031
In.	0.02	0.03	0.04	0.44	1.47	2.47	3.92	0.11	0.04	0.03	0.02	0.03

Calendar year 1964: Max 2,640 Min 0.8 Mean 64.1 Cfsm 0.745 In. 10.16
Water year 1964-65: Max 1,940 Min 0.4 Mean 54.5 Cfsm 0.634 In. 8.62

Peak discharge (base, 1,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1300	13.15	2,250	4-9	0230	10.54	1,470
3-4	2130	10.74	1,520	4-12	0600	13.57	2,380
4-6	1200	13.15	2,250				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Computed from twice-daily wire-weight gage readings Oct. 6-31, Nov. 3-22, 24, 28, 29, Dec. 11, 13-19, 21-23, Dec. 25-31, Jan. 1, 3-11, 15-17, 27, Feb. 1, 2, 4, 5, 20, 21, 25, 26, Mar. 20, 21, Apr. 15-24, 26, 27, May 6-25, June 17-25, July 7, 9, 10, 12-15, 17, 20, Aug. 8, 9, Aug. 20 to Sept. 2.

3-3243. Salamonie River near Warren, Ind.

Location.--Lat 40°42'45", long 85°27'13", in SW¼ sec. 12, T. 26 N., R. 9 E., on right downstream side of county road bridge, 1,700 ft downstream from unnamed tributaries entering from the right and left, 4,000 ft upstream from abandoned concrete and stone dam, and 2.4 miles northwest of Warren.

Drainage area.--422 sq. mi.

Records available.--March 1957 to September 1965. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder. Datum of gage is 784.75 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to July 28, 1960, wire-weight gage at same site and datum.

Average discharge.--8 years, 366 cfs.

Extremes.--Maximum discharge during year, 4,400 cfs Apr. 9 (gage height, 10.90 ft); minimum daily, 6.0 cfs Jan. 18, 19; minimum gage height, 5.68 ft Aug. 31.
1957-65: Maximum discharge, 13,200 cfs Feb. 10, 1959 (gage height, 17.05 ft); minimum, 5.0 cfs Sept. 18, 19, 1959; minimum gage height, 5.28 ft Dec. 22, 1963.

Remarks.--Records fair except those for periods of ice effect or indefinite stage-discharge relation, which are poor. Records of suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating table, except periods of ice effect or indefinite stage-discharge relation
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting control method used Dec. 27 to Jan. 11)

6.3	11	7.5	658
6.4	22	8.0	1,170
6.5	44	9.0	2,320
6.7	110	11.0	4,510
7.0	265		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	10	*b 16	20	b60	137	440	216	50	34	11	* 11
2	11	10	b 16	36	b 35	b1,700	658	177	59	74	11	12
3	11	10	b 15	32	b 33	*2,870	524	142	53	47	12	14
4	11	10	b 15	47	b 33	2,760	340	114	50	30	13	13
5	10	10	b 15	38	b 34	3,310	260	106	44	20	15	12
6	10	10	b 15	* 28	36	3,090	2,120	102	36	16	15	12
7	10	10	b 16	20	53	2,200	3,090	114	44	26	14	13
8	10	10	b 16	19	106	2,090	3,090	155	59	19	13	14
9	10	10	b 16	26	433	1,450	4,080	110	56	19	14	13
10	10	10	b 17	24	b 1,700	1,510	3,420	90	47	20	17	12
11	10	10	44	26	3,200	1,280	1,860	83	38	19	16	11
12	11	10	50	b 26	3,200	1,060	2,870	77	32	18	14	10
13	11	10	41	b 20	1,240	524	2,870	68	24	17	12	10
14	11	10	41	b 15	498	516	2,320	62	20	16	11	10
15	11	10	36	b 12	313	464	758	59	19	17	11	30
16	11	34	28	b 10	232	456	758	59	17	20	10	* 41
17	11	32	24	b 7.0	194	456	569	53	17	59	10	44
18	11	34	19	b 6.0	172	708	392	50	16	137	10	62
19	11	36	16	b 6.0	160	472	295	56	16	*71	10	50
20	11	36	16	b 6.5	132	243	238	50	16	47	10	44
21	11	32	16	b 7.0	128	182	199	47	17	34	10	36
22	11	30	15	b 9.0	110	146	166	64	* 19	28	10	53
23	11	26	16	b 100	b 90	142	150	182	18	22	10	62
24	11	26	19	457	b 70	470	630	110	17	16	10	50
25	11	26	22	1,280	b 65	*658	2,200	74	16	13	10	44
26	11	28	34	808	b 70	348	2,430	* 140	15	12	11	47
27	10	30	36	533	b 75	232	1,220	370	14	11	11	41
28	10	36	24	* 277	77	232	569	243	14	11	11	34
29	* 10	32	17	137		758	* 370	124	14	11	11	32
30	10	b 25	16	b 110	------	1,060	271	80	22	11	11	28
31	10	------	15	b 100	------	614	------	65	------	11	11	------
Total	329	613	702	4,242.5	12,549	32,138	39,157	3,442	879	906	365	865
Mean	10.6	20.4	22.6	137	448	1,037	1,305	111	29.3	29.2	11.8	28.8
Cfsm	0.025	0.048	0.054	0.325	1.06	2.46	3.09	0.263	0.069	0.069	0.028	0.068
In.	0.03	0.05	0.06	0.37	1.10	2.84	3.45	0.30	0.08	0.08	0.03	0.08

Calendar year 1964: Max 7,700 Min 8.0 Mean 341 Cfsm 0.808 In. 10.99
Water year 1964-65: Max 4,080 Min 6.0 Mean 264 Cfsm 0.626 In. 8.47

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1300	10.24	3,640	4-12	0530	9.77	3,200
3-5	0500	10.00	3,420				
4-9	0800	10.90	4,400				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Stage-discharge relation indefinite Oct. 1 to Nov. 15, June 18-29, July 12-16, July 25 to Sept. 14.

3-3245. Salamonie River at Dora, Ind.

Location.--Lat 40°48'42", long 85°41'02", in NE¼ sec. 12, T. 27 N., R. 7 E., on right bank, 1½ miles northwest of Dora, and 3 miles upstream from mouth.

Drainage area.--553 sq mi.

Records available.--November 1923 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage is 673.96 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to Oct. 1, 1951, wire-weight or chain gage at site 1.5 miles upstream at datum 688.59 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Oct. 1, 1951 to Oct. 8, 1961, water-stage recorder located on left bank, 2,000 ft upstream at datum 679.77 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--41 years (1924-65), 501 cfs.

Extremes.--Maximum discharge during year, 4,680 cfs Apr. 9 (gage height, 8.74 ft); minimum, 7.2 cfs Mar. 9 (gage height, 2.03 ft). 1923-65: Maximum discharge, 16,500 cfs May 18, 1943 (gage height, 14.75 ft, from graph based on gage readings, site and datum then in use); minimum, that of Mar. 9, 1965.

Remarks.--Records good except those for periods of doubtful gage-height record, which are fair, and those for periods of ice effect, which are poor. Flow is regulated at times at Corps of Engineers dam about ½ mile upstream.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 10-23)

Oct. 1 to Jan. 22		Jan. 23 to Sept. 30			
2.2	13	2.3	21	3.5	345
2.3	21	2.5	40	4.0	600
2.5	46	2.7	75	5.0	1,340
2.8	101	3.0	158	9.0	5,010
3.1	182				

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	30	b35	62	b150	b160	860	440	161	46	30	37
2	19	30	b35	155	b110	903	1,090	390	149	44	30	30
3	19	31	b34	111	b100	3,130	930	345	139	89	27	27
4	19	32	b30	80	b120	3,390	630	305	121	94	28	27
5	19	32	b27	75	b150	4,080	465	286	113	65	29	30
6	19	32	b25	86	b180	3,980	2,580	243	110	49	29	31
7	19	32	b24	69	b210	3,580	3,780	214	102	130	27	30
8	19	32	b24	64	b230	2,930	3,780	214	87	192	31	27
9	21	31	b26	80	b350	2,400	4,380	255	92	87	39	27
10	19	32	b30	76	b2,000	1,730	4,380	196	92	61	31	27
11	19	35	b45	66	4,080	1,180	3,330	161	85	46	29	27
12	19	35	54	57	3,980	930	2,620	142	69	40	28	25
13	19	32	56	b 52	3,220	860	3,220	127	63	37	27	26
14	19	32	57	b 45	d1,180	860	3,220	116	57	*39	27	28
15	19	33	52	b 40	d 600	790	1,680	99	54	39	27	*67
16	20	40	51	b 37	d 440	*720	895	89	49	34	25	50
17	20	39	*52	b 35	d 415	790	860	85	*45	332	28	55
18	21	36	b40	b 36	d 345	930	630	77	40	2,020	28	52
19	20	39	b38	b 38	d 286	825	490	73	37	630	27	46
20	*19	43	b37	b 40	d 286	465	415	69	36	305	27	55
21	19	40	b38	b 45	d 236	d325	*368	65	32	175	25	49
22	19	40	39	b 60	d 210	d255	325	63	32	110	25	48
23	20	39	40	b 600	*d 168	239	325	152	39	85	25	43
24	20	39	43	930	243	243	638	325	35	69	*25	38
25	22	*38	48	b1,100	b 100	860	2,540	286	30	57	24	40
26	23	36	46	b1,200	b 100	540	3,300	247	29	42	24	38
27	29	36	46	b 800	b 130	368	2,420	720	29	34	28	34
28	32	39	59	b 450	b 140	305	1,050	570	30	33	27	32
29	32	40	67	b 300	---	1,340	660	368	33	30	26	32
30	32	b37	60	b 200	---	1,770	515	266	45	29	24	32
31	31	---	52	b 170	---	1,260	---	203	---	29	29	---
Total	666	1,062	1,310	7,159	19,759	42,138	52,376	7,191	2,035	5,072	856	1,110
Mean	21.5	35.4	42.3	231	706	1,359	1,746	232	67.8	164	27.6	37.0
Cfsm	0.039	0.064	0.076	0.418	1.28	2.46	3.16	0.420	0.123	0.297	0.050	0.067
In.	0.04	0.07	0.09	0.48	1.33	2.84	3.53	0.48	0.14	0.34	0.06	0.07

Calendar year 1964 : Max 8,410 Min 15 Mean 446 Cfsm 0.806 In. 10.97
Water year 1964-65 : Max 4,380 Min 19 Mean 386 Cfsm 0.698 In. 9.47

Peak discharge (base, 4,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	1800	8.17	4,180				
3-5	2000	8.21	4,180				
4-9	2400	8.74	4,680				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Computed from doubtful gage-height record.

3-3250. Wabash River at Wabash, Ind.

Location.--Lat 40°47'25", long 85°49'13", in sec. 14, T. 27 N., R. 6 E., on right bank on upstream side of Wabash Street bridge in Wabash, 7 miles downstream from Salamonie River, and at mile 387.2.

Drainage area.--1,733 sq mi.

Records available.--August 1923 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage is 642.66 ft above mean sea level, datum of 1929. Prior to Jan. 16, 1934, chain gage, and Jan 16, 1934, to Sept. 30, 1954, wire-weight gage at same site and datum.

Average discharge.--42 years, 1,454 cfs.

Extremes.--Maximum discharge during year, 13,000 cfs Feb. 11 (gage height, 15.70 ft); minimum, 36 cfs Oct. 21-23; minimum gage height, 1.92 ft Oct. 23, 24.

1923-65: Maximum discharge, 49,600 cfs May 18, 1943; maximum gage height, 24.44 ft Feb. 11, 1959, (ice jam); minimum discharge observed, 17 cfs Aug. 4, 5, 9, 1934, July 21, 22, 1936; minimum gage height, 1.66 ft Aug. 4, 5, 9, 1934.

Maximum stage known, 28.7 ft Mar. 26, 1913, from floodmark, determined by Corps of Engineers (discharge, 90,000 cfs, from rating curve extended above 49,000 cfs).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 10-18, 24, 25)

1.8	26	5.0	1,150
2.1	62	8.0	3,630
2.5	138	13.0	9,130
3.0	275	17.0	15,200
4.0	650		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	44	b 60	170	300	b 400	3,170	1,430	370	120	75	78
2	46	44	b 60	964	a 170	1,840	3,820	875	352	118	g 85	67
3	45	44	b 55	740	a 170	5,260	3,080	920	335	145	g 80	70
4	45	47	b 50	422	a 250	7,740	2,200	740	305	175	g 78	72
5	44	48	b 50	305	a 400	10,800	1,640	650	260	150	g 75	75
6	43	48	b 50	290	b 500	9,930	7,260	650	245	131	g 76	87
7	42	48	b 50	245	b 550	8,880	9,660	560	245	160	g 75	73
8	42	48	b 55	245	b 700	8,880	8,750	520	335	108	g 80	68
9	43	49	b 60	422	1,240	7,260	11,000	560	388	290	g 134	65
10	44	48	b 65	460	10,300	5,530	9,930	520	335	202	g 123	62
11	42	52	b 80	320	12,400	4,200	7,620	520	275	152	g 102	62
12	42	55	b 120	260	9,930	3,450	6,050	440	230	131	g 92	59
13	43	52	157	b 190	7,860	3,260	5,740	405	202	*112	g 91	58
14	46	49	150	b 150	4,700	3,260	*5,530	370	180	116	g 83	61
15	50	55	100	b 130	2,640	3,080	4,500	335	162	118	g 80	* 120
16	50	75	*106	b 110	1,570	2,910	3,170	305	*152	94	g 78	136
17	49	82	104	b 100	1,080	3,350	2,380	290	148	185	g 70	160
18	48	73	100	b 95	875	4,200	1,870	* 260	140	2,030	g 89	152
19	44	76	90	b 95	785	3,080	1,500	260	134	1,150	g 87	125
20	39	78	89	b 100	695	1,790	1,290	245	125	605	g 78	114
21	*38	78	87	*b 100	650	1,290	1,080	230	116	352	g 68	114
22	37	72	83	b 140	520	970	920	216	106	245	g 62	114
23	37	68	87	b 1,000	*b 400	920	875	230	125	185	g 59	110
24	38	*70	94	b 3,500	b 250	875	1,770	830	131	165	*58	106
25	40	72	125	3,630	b 220	1,430	5,740	650	120	143	58	108
26	42	70	150	3,720	b 230	1,500	7,490	500	112	116	58	98
27	42	70	123	3,170	b 270	1,080	5,740	695	91	106	61	89
28	45	78	123	b 1,500	b 300	920	4,200	1,870	83	104	59	80
29	48	87	134	b 700	----------	4,220	3,000	1,020	89	92	54	78
30	46	b 70	131	b 500	----------	5,630	2,030	695	116	83	52	78
31	45	----------	127	b 400	----------	4,110	----------	500	----------	76	58	----------
Total	1,354	1,850	2,915	24,173	59,955	122,045	133,005	18,291	6,007	7,959	2,378	2,739
Mean	43.7	61.7	94.0	780	2,141	3,937	4,433	590	200	257	76.7	91.3
Cfsm	0.025	0.036	0.054	0.450	1.24	2.27	2.56	0.340	0.115	0.148	0.044	0.053
In.	0.03	0.04	0.06	0.52	1.29	2.62	2.86	0.39	0.13	0.17	0.05	0.06

Calendar year 1964 : Max 20,200 Min 31 Mean 1,145 Cfsm 0.661 In. 8.97
Water year 1964-65 : Max 12,400 Min 37 Mean 1,048 Cfsm 0.605 In. 8.22

Peak discharge (base, 11,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0500	15.70	13,000				
3-5	1500	14.37	11,100				
4-9	2000	14.60	11,300				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.
g Computed from once-daily wire-weight gage readings.

3-3255. Mississinewa River near Ridgeville, Ind.

Location.--Lat 40°17', long 85°00', on line between secs. 7 and 8, T. 21 N., R. 14 E., on right bank, 10 ft downstream from highway bridge, 0.8 mile downstream from Mud Creek, and 2 miles east of Ridgeville.

Drainage area.--130 sq mi.

Records available.--August 1946 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 965.28 ft above mean sea level, datum of 1929, (levels by Indiana Flood Control and Water Resources Commission). Prior to Oct. 4, 1950, wire-weight gage at same site and datum.

Average discharge.--19 years, 128 cfs.

Extremes.--Maximum discharge during year, 3,150 cfs Feb. 10 (gage height, 11.87 ft); minimum, 1.3 cfs Sept. 8; minimum gage height, 1.99 ft Aug. 17.
1946-65: Maximum discharge, 13,900 cfs June 10, 1958 (gage height, 16.25 ft), from rating curve extended above 5,000 cfs on basis of contracted-opening measurement of peak flow; minimum, 0.1 cfs Oct. 24, 1946; minimum gage height, 1.65 ft Sept. 11, 1953.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 6 to Jan. 1)

Oct. 1 to Jan. 23		Jan. 24 to Sept. 30			
2.16	2.0	1.98	1.4	3.5	128
2.2	2.5	2.0	1.7	4.0	202
2.3	4.5	2.1	3.6	5.0	387
2.4	7.8	2.2	6.4	8.0	1,140
2.7	23	2.3	10	10.0	1,790
3.0	49	2.5	22	11.0	2,350
		2.7	37	12.0	3,290
		3.0	67		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.8	2.6	2.6	5.8	b 12	301	118	118	25	19	4.0	4.2
2	2.8	2.6	2.9	27	b 11	*356	125	98	32	9.7	4.2	5.2
3	2.6	2.3	3.6	17	b 10	368	102	83	36	9.2	3.0	3.6
4	2.5	2.4	4.5	7.4	b 10	1,070	95	73	22	6.9	4.6	2.8
5	2.3	2.6	4.4	8.2	b 10	984	86	67	19	6.1	5.0	2.8
6	2.0	2.5	3.3	7.4	b 11	517	1,020	60	19	5.7	3.9	2.2
7	2.5	2.5	2.7	7.0	b 11	559	366	55	61	15	3.6	1.7
8	2.3	3.9	2.7	*8.2	b 30	498	561	50	43	17	4.9	1.4
9	2.4	2.9	3.0	9.8	247	301	1,550	46	27	9.6	3.9	1.8
10	2.6	2.6	3.0	9.4	2,480	230	398	43	22	24	3.0	2.8
11	2.5	2.8	4.7	7.4	971	177	426	39	19	13	3.6	2.6
12	2.3	3.2	7.8	6.7	389	159	1,440	35	19	6.8	3.2	4.4
13	2.1	3.1	4.3	b 6.0	218	150	372	32	15	5.8	2.8	5.8
14	2.0	3.0	2.9	b 6.0	158	138	220	29	12	5.8	2.8	3.9
15	2.3	3.3	3.0	b 5.5	120	129	240	28	12	6.2	2.8	*52
16	2.1	4.4	2.3	b 5.5	102	115	230	26	11	5.3	2.0	22
17	2.2	5.3	2.7	b 5.0	94	116	174	23	10	9.8	2.0	10
18	2.6	3.3	2.3	b 5.0	86	109	142	23	9.5	14	4.4	4.4
19	3.2	3.3	2.2	b 5.5	76	78	120	22	9.6	6.7	*5.6	3.0
20	3.3	4.1	2.5	b 6.0	62	67	108	20	8.7	4.9	3.4	2.2
21	2.6	3.5	2.0	b 7.0	b 45	59	96	18	7.1	*4.4	2.6	1.7
22	2.9	3.1	2.2	9.0	b 30	58	91	22	7.6	4.3	2.6	5.8
23	3.1	2.9	3.3	31	b 25	213	88	63	8.1	4.4	2.0	4.9
24	3.0	* 2.9	4.1	212	b 20	*315	476	40	* 8.2	4.6	1.7	4.2
25	3.0	3.4	6.1	152	b 20	170	1,440	* 156	6.7	4.2	2.8	2.8
26	3.0	4.4	4.5	127	b 25	132	859	81	6.5	3.6	3.4	2.4
27	2.5	3.6	2.9	*91	32	98	350	201	5.9	3.0	4.9	2.0
28	*2.6	3.2	2.5	53	65	102	* 221	86	5.1	3.6	3.9	1.8
29	2.9	3.6	2.5	38	------	223	170	52	6.3	3.6	3.0	2.4
30	2.9	3.1	3.1	24	------	161	141	38	47	3.4	2.0	3.6
31	2.6	------	3.4	b 17	------	127	------	30	------	3.4	2.0	------
TOTAL	80.5	96.4	104.0	926.8	5,370	8,080	11,825	1,757	540.3	243.0	103.6	170.4
MEAN	2.60	3.21	3.36	29.9	192	261	394	56.7	18.0	7.84	3.34	5.68
CFSM	.020	.025	.026	.230	1.48	2.01	3.03	.436	.139	.060	.026	.044
IN	.02	.03	.03	.27	1.54	2.31	3.38	.50	.15	.07	.03	.05

CALENDAR YEAR 1964 MAX 6,040 MIN 2.0 MEAN 109 CFSM .839 INCHES 11.46
WATER YEAR 1964-65 MAX 2,480 MIN 1.4 MEAN 80.3 CFSM .618 INCHES 8.38

Peak discharge (base, 2,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1215	11.78	3,150				
4-9	0200	11.29	2,580				
4-12	0630	10.78	2,210				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3260. Mississinewa River near Eaton, Ind.

Location.--Lat 40°20', long 85°19', in NE¼ sec. 31, T. 22 N., R. 11 E., on right bank at downstream side of bridge, 1½ miles upstream from Estey Creek and 2½ miles southeast of Eaton.

Drainage area.--304 sq mi.

Records available.--March 1952 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 880.60 ft above mean sea level, datum of 1929. Prior to Sept. 24, 1954, wire-weight gage at same site and datum.

Average discharge.--13 years, 273 cfs.

Extremes.--Maximum discharge during year, 4,480 cfs Feb. 11 (gage height, 10.85 ft); minimum, 3.1 cfs Oct. 13; minimum gage height, 2.30 ft Aug. 16, 17.
1952-65: Maximum discharge, 19,400 cfs June 10, 1958 (gage height, 18.53 ft) from rating curve extended above 6,000 cfs on basis of contracted-opening measurement of peak flow; minimum, 2.0 cfs Sept. 23, 27, 1954 (gage height, 2.23 ft).

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 - Jan. 13, Mar. 1-4)

Oct. 1 to Jan. 24				Jan. 25 to Sept. 30			
2.2	2.1	3.3	100	2.2	1.8	4.0	237
2.3	4.8	4.0	246	2.3	4.2	5.0	545
2.4	8.6	5.0	550	2.4	7.9	6.0	980
2.6	20	6.0	980	2.5	13	7.0	1,530
2.9	47			2.7	26	11.0	4,640
				3.0	54		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	8.6	12	19	b 35	438	264	264	57	17	6.3	8.8
2	5.1	8.6	12	46	b 30	* 1,180	264	210	56	38	6.3	8.8
3	6.5	8.6	13	63	b 25	1,080	237	162	53	25	5.5	6.7
4	6.9	9.6	13	46	b 20	1,280	185	132	56	17	5.9	6.3
5	6.5	10	12	32	b 25	2,480	174	112	48	15	6.3	6.3
6	6.2	10	12	25	56	2,160	1,880	105	39	13	6.3	7.1
7	5.8	10	13	21	109	1,340	2,320	98	42	15	5.9	6.7
8	5.4	11	14	*23	b 200	1,230	980	85	64	12	6.3	6.3
9	5.1	10	13	33	483	935	2,780	77	66	16	7.1	5.5
10	3.9	10	12	43	2,850	625	2,650	74	48	24	7.1	5.1
11	4.5	12	16	37	4,240	458	994	68	38	18	6.3	5.1
12	3.6	9.1	19	31	2,140	360	2,440	64	33	20	5.9	5.9
13	3.3	7.8	19	26	755	332	2,450	69	29	19	5.5	5.9
14	3.6	6.5	22	b22	440	304	800	66	26	15	4.8	6.6
15	4.2	6.5	18	b19	318	278	585	62	24	12	4.5	*182
16	4.5	11	14	b17	237	250	710	60	22	10	3.9	202
17	4.8	12	12	b16	198	224	510	59	21	13	3.9	77
18	5.4	10	8.2	b16	174	250	360	55	20	14	6.3	48
19	8.2	11	7.8	b16	152	174	278	59	20	14	* 9.2	31
20	7.8	13	7.3	b16	120	132	224	53	18	18	7.5	21
21	6.9	11	7.3	b20	b 100	114	185	47	17	* 15	5.9	17
22	7.8	9.1	6.5	33	b 80	104	162	45	17	12	5.1	30
23	7.8	8.2	5.8	84	b 60	185	152	45	17	9.7	5.1	46
24	7.8	* 8.6	10	643	b 50	* 890	289	76	* 15	9.2	5.1	46
25	7.8	9.6	24	710	b 40	545	1,720	* 131	13	8.8	5.1	28
26	7.3	9.6	22	405	b 37	332	2,800	250	13	7.5	6.7	20
27	* 6.2	9.1	18	*332	b 54	237	1,460	278	13	7.1	9.2	16
28	6.5	11	17	b150	96	198	* 625	318	12	7.1	8.8	13
29	7.8	13	15	b100		405	440	132	13	6.7	7.1	11
30	9.1	13	13	b 70	------	545	332	86	16	6.3	6.3	12
31	9.1	------	13	b 50	------	332	-----	68	----	5.9	7.1	-------
Total	190.2	297.5	420.9	3,164	13,124	19,397	29,250	3,410	926	440.3	192.3	891.1
Mean	6.14	9.92	13.6	102	469	626	975	110	30.9	14.2	6.20	29.7
Cfsm	0.020	0.033	0.045	0.336	1.54	2.06	3.21	0.362	0.102	0.047	0.020	0.098
In.	0.02	0.04	0.05	0.39	1.60	2.38	3.58	0.42	0.11	0.05	0.02	0.11

Calendar year 1964: Max 10,500 Min 2.8 Mean 251 Cfsm 0.826 In. 11.24
Water year 1964-65: Max 4,240 Min 3.3 Mean 196 Cfsm 0.645 In. 8.77

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	1300	10.85	4,480	4-26	1700	8.96	3,040
4-10	0300	9.61	3,520				
4-13	0430	9.23	3,200				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3265. Mississinewa River at Marion, Ind.

Location.--Lat 40°34', long 85°40', in sec. 31, T. 25 N., R. 8 E., on left bank, 12 ft downstream from Highland Avenue Bridge in Marion, 1 mile upstream from Hummels Creek, and 4 miles downstream from Lugar Creek.

Drainage area.--677 sq mi.

Records available.--September 1923 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage is 774.56 ft above mean sea level, datum of 1929. Prior to Dec. 9, 1933, chain gage at same site and datum.

Average discharge.--42 years, 635 cfs.

Extremes.--Maximum discharge during year, 7,100 cfs Feb. 10 (gage height, 7.95 ft); minimum, 15 cfs Apr. 19 (gage height, 0.73 ft), caused by taintor gates above gage being temporarily closed.
1923-65: Maximum discharge, 25,000 cfs Mar. 21, 1927 (gage height, 17.4 ft from graph based on gage readings), from rating curve extended above 18,000 cfs; minimum, 1.1 cfs Apr. 17, 1959; minimum daily, 3.8 cfs Oct. 23, 1940, Oct. 9, 1943; minimum gage height, -0.27 ft Sept. 25, 1935.
Flood of March 1913 reached a stage of 19.2 ft, from information by Indiana Flood Control and Water Resources Commission.

Remarks.--Records good except those for periods of ice effect, which are poor. Flow periodically regulated by dam above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 7-18)

0.7	13	2.0	460
0.9	30	5.0	3,350
1.1	65	8.0	7,100
1.5	195		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	38	47	94	b 100	*354	535	530	179	134	49	63
2	36	42	49	111	b 90	2,950	600	430	204	105	49	47
3	34	49	53	120	80	3,460	495	376	204	80	47	47
4	30	49	55	138	75	3,350	430	325	183	82	51	44
5	32	45	49	124	70	4,580	388	300	159	75	51	64
6	33	45	49	102	70	4,230	3,490	280	159	68	49	47
7	30	45	49	85	93	3,150	4,460	300	152	99	49	47
8	* 30	45	49	82	175	2,650	3,350	285	141	75	78	44
9	29	47	49	88	615	2,160	5,080	245	134	82	51	40
10	29	53	51	85	b 4,500	1,550	4,820	231	148	72	44	40
11	28	53	78	102	5,860	1,100	3,350	222	138	57	40	40
12	30	51	68	99	5,080	815	4,230	204	118	65	40	39
13	32	47	70	88	2,020	680	4,340	191	105	61	40	40
14	32	49	65	75	1,000	640	2,550	183	102	75	39	59
15	32	59	57	70	600	600	1,450	171	96	68	39	89
16	33	57	53	55	460	535	1,550	163	93	88	42	225
17	29	51	57	55	376	530	1,300	159	93	212	47	265
18	29	55	51	55	340	770	860	155	90	115	39	179
19	32	55	49	55	310	530	588	155	88	90	40	118
20	32	57	45	51	265	376	440	152	85	70	42	90
21	32	47	47	51	250	305	430	152	82	63	42	80
22	33	44	49	70	b 190	280	388	163	82	63	44	111
23	30	44	47	b100	b 160	320	358	163	85	63	40	115
24	33	45	57	370	b 140	1,050	943	171	82	59	40	108
25	30	44	68	1,250	105	1,350	2,750	240	80	55	40	96
26	33	42	108	950	b 125	725	3,790	310	75	49	45	90
27	38	* 44	90	600	167	495	3,350	* 600	70	47	59	78
28	39	55	* 75	* 382	187	400	1,550	535	* 70	47	40	70
29	* 42	47	68	204		495	*905	400	84	45	42	68
30	39	49	65	b 150	------	1,000	640	275	120	* 45	44	* 70
31	39	------	59	b 120	------	*770	------	213	------	45	* 73	------
Total	1,018	1,453	1,826	5,981	23,503	42,200	59,410	8,279	3,501	2,354	1,435	2,513
Mean	32.8	48.4	58.9	193	839	1,361	1,980	267	117	75.9	46.3	83.8
Cfsm	0.048	0.071	0.087	0.285	1.24	2.01	2.92	0.394	0.173	0.112	0.068	0.124
In.	0.06	0.08	0.10	0.33	1.29	2.32	3.26	0.45	0.19	0.13	0.08	0.14

Calendar year 1964: Max 16,400 Min 28 Mean 601 Cfsm 0.888 In. 12.07
Water year 1964-65: Max 5,860 Min 28 Mean 420 Cfsm 0.620 In. 8.43

Peak discharge (base, 5,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0900	7.95	7,100				
4-8	2400	7.02	5,730				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3270. Mississinewa River at Peoria, Ind.

Location.--Lat 40°42'24", long 85°57'27", in SW¼ sec. 3, T. 26 N., R. 5 E., on right bank, at Peoria, 3,000 ft downstream from flood control dam, upstream from mouth and 6½ miles southeast of Peru.

Drainage area.--810 sq mi.

Records available.--October 1952 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 660.00 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1954, wire-weight gage and crest-stage gage on highway bridge, 2,500 ft upstream at same datum. Oct. 7, 1954 to Sept. 30, 1962, recorder on right bank at site 2,500 ft upstream at same datum.

Average discharge.--13 years, 692 cfs.

Extremes.--Maximum discharge during year, 7,380 cfs Feb. 10 (gage height, 9.30 ft); minimum, 50 cfs Oct. 6 (gage height, 0.74 ft). 1952-65: Maximum discharge, 28,000 cfs June 11, 1958 (gage height, 19.26 ft, site then in use); minimum, 13 cfs Mar. 15, 1960; minimum daily, 24 cfs Mar. 14, 1960.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	46	3.0	780
1.0	81	4.0	1,380
1.5	167	6.0	3,060
2.0	295	8.0	5,370
2.5	510	10.0	8,500

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	68	72	110	b 150	*350	895	835	280	a 180	64	81
2	60	69	74	200	b 120	1,980	955	725	264	a 150	66	121
3	58	68	87	188	b 100	3,550	835	615	295	a 130	68	80
4	56	68	87	157	b 95	3,350	698	535	312	a 110	69	72
5	55	72	84	167	b 90	4,830	615	460	295	a 100	71	76
6	51	71	77	147	b 90	4,330	3,450	415	295	a 110	72	84
7	54	68	76	138	b 110	3,550	4,830	295	295	a 130	73	74
8	58	68	77	128	224	2,960	3,870	370	295	a 120	68	67
9	58	67	77	138	588	2,320	5,800	350	178	a 110	80	67
10	60	63	77	147	5,950	1,820	4,960	312	178	a 100	110	66
11	57	67	95	119	6,580	1,380	3,650	280	188	a 90	76	61
12	56	68	119	128	5,800	1,140	4,210	280	200	a 90	67	60
13	56	71	102	128	2,860	1,020	4,330	264	200	a 90	63	60
14	57	68	95	119	1,380	955	3,150	236	a 200	91	62	*61
15	60	71	91	81	1,020	895	*1,660	224	a 200	92	61	110
16	61	84	*88	81	780	835	1,520	224	200	92	58	147
17	62	102	78	102	615	895	1,520	211	188	448	68	212
18	62	85	89	102	535	895	1,200	200	138	390	71	295
19	60	85	84	95	485	895	955	200	138	178	72	224
20	*58	87	81	*95	438	615	670	211	a 130	128	60	157
21	60	87	72	95	370	485	670	178	a 130	102	60	119
22	61	80	73	102	b 300	415	588	178	a 130	89	62	110
23	61	74	74	370	b 220	415	535	200	a 130	84	63	128
24	63	*72	78	895	b 170	780	1,020	188	a 120	84	61	128
25	63	74	87	1,260	128	1,450	2,680	200	a 120	81	58	128
26	66	76	95	1,520	b 190	1,080	3,760	312	a 110	73	60	110
27	62	73	110	1,020	295	780	3,650	780	a 110	69	*71	102
28	66	74	110	725	295	642	2,070	835	a 120	68	80	95
29	68	81	95	350		1,020	1,320	698	a 140	66	68	88
30	69	78	95	b 270	------	1,140	1,020	510	a 170	62	58	81
31	71	------	91	b 200	-----	1,140	------	330	------	62	66	-------
Total	1,869	2,239	2,690	9,377	29,978	47,912	67,086	11,651	5,749	3,769	2,106	3,264
Mean	60.3	74.6	86.8	302	1,071	1,546	2,236	376	192	122	67.9	109
Cfsm	0.075	0.092	0.107	0.373	1.32	1.91	2.76	0.465	0.237	0.151	0.084	0.135
In.	0.09	0.10	0.12	0.43	1.38	2.20	3.08	0.54	0.26	0.17	0.10	0.15

Calendar year 1964: Max 16,500 Min 50 Mean 671 Cfsm 0.832 In. 11.28
Water year 1964-65: Max 6,580 Min 51 Mean 514 Cfsm 0.635 In. 8.62

Peak discharge (base, 6,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	2030	9.30	7,380				
4-9	0500	8.93	6,740				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3275. Wabash River at Peru, Ind.

Location.--Lat 40°44'35", long 86°05'45", in sec. 32, T. 27 N., R. 4 E., on right bank at upstream side of bridge on U. S. Highway 31, half a mile southwest of Peru, 4.3 miles downstream from Mississinewa River, and at mile 370.5.

Drainage area.--2,655 sq mi.

Records available.--August 1943 to September 1965. Discharge measurements only during May and July 1943.

Gage.--Water-stage recorder. Datum of gage is 617.94 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 20, 1961, wire-weight gage at same site and datum.

Average discharge.--22 years, 2,339 cfs.

Extremes.--Maximum discharge during year, 18,500 cfs Feb. 11 (gage height, 13.52 ft); minimum, 140 cfs Dec. 7 or 8 (gage height, 1.89 ft, from range line).
1943-65: Maximum discharge, 68,000 cfs May 18, 1943 (gage height, 24.46 ft, from floodmark); minimum, 62 cfs Sept. 19, 1945; minimum gage height, 1.70 ft Oct. 5, 26, 1946.
Flood of Mar. 26, 1913, reached a stage of 28.1 ft (discharge, about 115,000 cfs, from rating curve extended above 63,000 cfs).

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30			
1.9	143	4.0	1,440	1.9	143	4.0	1,530
2.1	207	6.0	3,650	2.1	210	6.0	3,950
2.5	374	8.0	6,500	2.5	398	10.0	10,600
3.0	633			3.0	695	14.0	19,900

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	237	204	bg 150	266	b700	*1,040	4,510	g 2,770	835	286	192	206
2	234	197	bg 150	1,240	b500	5,360	5,250	g 2,180	765	324	192	232
3	218	190	bg 150	1,440	b500	8,440	4,510	g 1,630	695	324	192	210
4	211	193	bg 150	876	b500	10,800	3,400	g 1,350	662	324	192	195
5	204	193	bg 150	604	b500	14,800	2,770	1,170	598	300	188	199
6	193	200	bg 150	521	b500	14,400	9,870	1,260	565	286	184	206
7	183	211	bg 150	446	548	12,800	14,400	1,080	536	398	199	214
8	190	200	bg 150	421	696	12,000	12,800	1,040	536	450	232	188
9	197	197	bg 150	470	1,200	10,400	15,500	1,080	695	565	210	164
10	193	193	bg 170	664	14,400	8,260	15,500	990	630	398	272	158
11	193	190	g 226	604	18,000	6,360	12,800	990	536	324	232	158
12	190	197	g 278	470	15,800	5,100	10,600	872	478	277	203	152
13	190	215	278	b 380	11,600	4,650	10,800	800	450	241	192	146
14	197	421	b 190	b 310	7,180	4,650	9,700	730	398	*250	199	*158
15	207	548	b 170	b 290	4,510	4,510	*7,360	662	348	272	188	245
16	211	190	*b 160	b 290	2,890	4,090	5,400	630	*348	311	184	300
17	218	200	b 160	b 290	2,180	4,650	4,650	598	324	1,260	228	348
18	218	190	b 160	b 290	1,740	4,090	3,670	*536	324	2,300	232	450
19	211	187	b 160	b 290	1,530	4,650	2,890	536	324	2,080	214	398
20	*197	g 204	b 160	*b 290	1,350	3,010	2,290	506	300	1,080	192	324
21	187	g 193	b 160	282	b 1,100	2,180	2,070	478	291	662	184	268
22	180	g 170	b 170	286	b 800	1,740	1,850	478	277	450	184	254
23	183	g 176	b 180	2,440	b 650	1,630	1,740	506	295	373	184	250
24	173	* 170	b 190	5,000	b 600	1,740	2,650	1,040	295	324	184	254
25	187	167	215	4,720	b 600	2,890	8,370	1,080	291	300	184	259
26	176	167	230	5,150	b 600	3,010	11,600	1,040	277	277	184	250
27	176	167	237	4,580	b 800	2,290	10,000	2,290	254	254	*195	232
28	176	190	249	2,930	990	1,850	7,800	3,140	236	241	188	219
29	183	190	241	2,010		4,620	g5,250	2,180	236	232	184	203
30	190	bg 160	241	1,350	------	7,180	g3,670	1,530	268	219	167	210
31	204	------	241	b 900	------	6,040	------	1,080	------	192	177	-------
Total	6,107	6,270	5,816	40,100	92,964	177,230	213,670	36,252	13,067	15,574	6,132	7,050
Mean	197	209	188	1,294	3,320	5,717	7,122	1,169	436	502	198	235
Cfsm	0.074	0.079	0.071	0.487	1.25	2.15	2.68	0.440	0.164	0.189	0.075	0.089
In.	0.09	0.09	0.08	0.56	1.30	2.48	2.99	0.51	0.18	0.22	0.09	0.10

Calendar year 1964: Max 34,300 Min 127 Mean 1,806 Cfsm 0.680 In. 9.25
Water year 1964-65: Max 18,000 Min 146 Mean 1,699 Cfsm 0.640 In. 8.69

Peak discharge (base, 18,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0130	13.52	18,500				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
g Computed from twice-daily wire-weight gage readings.

3-3280. Eel River at North Manchester, Ind.

Location.--Lat 40°59', long 85°46', in NE¼ sec. 5, T. 29 N., R. 7 E., on right bank, 200 ft downstream from Main Street Bridge at North Manchester and 1¼ miles upstream from Pony Creek, Records include flow of Pony Creek.

Drainage area.--416 sq mi, includes that of Pony Creek.

Records available.--October 1929 to September 1965. Prior to April 1930, monthly discharge only, published in WSP 1305. Gage-height records since October 1924 are available in the district office.

Gage.--Water-stage recorder. Datum of gage is 738.00 ft above mean sea level, datum of 1929. Prior to July 23, 1953, wire-weight gage or chain gage on downstream side of Second Street Bridge, 700 ft upstream at same datum.

Average discharge.--36 years, 343 cfs.

Extremes.--Maximum discharge during year, 3,520 cfs Feb. 10 (gage height, 9.45 ft); minimum daily, 47 cfs Sept. 30; minimum gage height, 1.54 ft June 28.
1929-65: Maximum discharge observed, 7,500 cfs Feb. 27, 1936 (gage height, 14.00 ft); minimum not determined, occurred Oct. 7, 1957, due to unusual regulation; minimum daily, 16 cfs Oct. 19, 1956.

Remarks.--Records good except those for periods of ice effect, which are poor. Diurnal fluctuation caused by grist mill above station.

Revisions.--Some records of daily discharge for the water year 1957 are in error and revised figures are available in the district office. Revisions will be published in the next water supply paper.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 26 to Sept. 30)

1.5	45	5.0	1,070
2.0	127	7.0	2,020
2.5	215	9.0	3,240
3.0	353		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	174	150	163	b 220	353	620	450	154	68	75	114
2	71	177	155	436	b 200	834	655	385	157	66	71	97
3	78	177	157	483	b 170	870	551	322	155	81	64	88
4	83	163	157	292	b 160	1,070	483	278	139	73	73	76
5	89	160	157	226	b 170	1,910	450	385	127	68	70	75
6	92	160	154	195	b 180	1,650	1,870	450	119	73	64	75
7	96	160	b 140	177	b 210	1,150	2,130	369	116	125	66	70
8	104	157	b 130	186	b 350	1,420	1,650	307	108	114	70	66
9	111	152	b 130	594	b 500	1,240	2,020	264	101	92	86	61
10	109	154	b 140	517	2,820	910	1,610	238	96	81	84	58
11	104	150	177	322	2,960	726	990	215	91	68	71	56
12	108	147	215	251	2,460	620	762	195	88	64	63	55
13	109	149	186	205	1,650	585	620	177	88	*61	59	51
14	111	146	172	b 170	910	655	517	168	86	75	56	*50
15	113	152	147	b 150	690	*655	517	157	83	78	56	113
16	114	157	* 158	b 130	551	655	517	149	80	75	71	144
17	114	154	149	b 120	450	1,000	450	142	*81	141	80	154
18	121	147	124	b 110	401	2,020	385	*137	76	149	99	129
19	* 127	150	142	b 130	353	1,510	353	132	71	109	102	108
20	137	154	144	*b 140	307	870	322	124	68	91	86	91
21	149	150	142	b 150	278	620	292	119	70	78	70	80
22	150	139	144	176	b 240	483	264	122	68	71	66	76
23	152	*155	150	b 1,300	b 230	450	319	304	73	73	* 64	80
24	155	155	152	1,800	*b 290	401	810	238	83	76	55	66
25	162	155	160	1,280	b 280	353	1,560	195	70	80	56	63
26	163	154	160	910	b 270	307	2,020	206	63	70	55	58
27	163	154	152	798	b 260	278	1,650	551	59	64	88	53
28	167	168	147	551	264	278	990	417	64	61	127	51
29	170	168	146	b 500		731	690	251	116	61	157	51
30	172	155	147	b 400	----------	834	551	195	78	66	132	53
31	175	----------	147	b 250	----------	690	----------	170	----------	63	127	----------
Total	3,842	4,693	4,731	13,112	17,824	25,128	26,618	7,812	2,828	2,515	2,463	2,362
Mean	124	156	153	423	637	843	887	252	94.3	81.1	79.5	78.7
Cfsm	0.298	0.376	0.368	1.02	1.53	2.03	2.13	0.606	0.227	0.195	0.191	0.189
In.	0.34	0.42	0.42	1.18	1.59	2.34	2.38	0.70	0.25	0.22	0.22	0.21

Calendar year 1964: Max 3,900 Min 40 Mean 212 Cfsm 0.510 In. 6.92
Water year 1964-65: Max 2,960 Min 50 Mean 315 Cfsm 0.757 In. 10.27

Peak discharge (base, 2,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1900	9.45	3,520				
4-6	1930	7.67	2,400				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3285. Eel River near Logansport, Ind.

Location.--Lat 40°46'55", long 86°15'50", in sec. 14, T. 27 N., R. 2 E., on right bank at downstream side of county bridge on Adamsboro Road, 5½ miles northeast of Logansport and 6.9 miles upstream from mouth.

Drainage area.--791 sq mi.

Records available.--July 1943 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder (digital). Datum of gage is 621.50 ft above mean sea level, datum of 1929. Prior to Aug. 15, 1956, wire-weight gage at same site and datum.

Average discharge.--22 years, 698 cfs.

Extremes.--Maximum discharge during year, 5,940 cfs Feb. 11 (gage height, 8.47 ft); minimum, 97 cfs Oct. 4-7 (gage height, 2.90 ft).
1943-65: Maximum discharge, 13,100 cfs Jan. 5, 1950 (gage height, 11.80 ft); minimum, 65 cfs Mar. 16, 1960, result of freezeup (gage height, 2.60 ft).
Flood of May 18, 1943, reached a stage of 13.2 ft, from floodmark (discharge, 17,000 cfs, from rating curve extended above 9,900 cfs by logarithmic plotting).

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.9	97
3.1	138
3.5	258
4.0	489
5.0	1,230
6.0	2,210
7.0	3,510
9.0	6,890

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	103	107	b 130	197	b 320	b 550	1,270	860	395	227	129	158
2	103	110	b 120	1,300	b 280	*1,470	1,390	738	395	191	131	146
3	101	110	b 120	1,430	b 220	1,720	1,160	642	390	183	131	136
4	99	110	b 120	828	b 210	1,890	980	584	367	194	131	131
5	99	110	b 120	535	b 250	2,980	876	609	326	171	129	131
6	97	110	b 120	405	b 300	2,570	3,090	717	310	163	127	125
7	99	108	b 120	339	b 550	2,050	4,160	703	322	220	125	120
8	103	108	b 110	331	b 700	2,220	2,890	616	318	339	148	120
9	103	108	b 110	844	b 1,000	2,060	3,550	559	289	293	191	120
10	105	110	b 110	1,110	4,010	1,690	2,890	518	270	217	163	116
11	105	110	b 140	703	5,520	1,370	2,070	478	251	183	131	114
12	105	110	191	489	3,790	1,180	1,580	451	241	166	120	112
13	105	108	255	385	2,770	1,120	1,260	430	223	153	134	*112
14	105	107	213	b 250	1,770	1,120	1,040	405	213	148	125	118
15	105	110	*b 150	b 170	1,230	1,160	* 996	385	* 204	148	125	146
16	107	123	b 130	b 160	980	1,090	1,050	367	197	* 156	114	146
17	105	120	b 140	b 150	820	1,580	948	*348	194	451	138	183
18	105	120	b 150	b 140	717	3,480	820	335	188	635	143	204
19	*103	120	b 130	b 160	635	2,670	724	322	183	524	143	188
20	103	118	b 120	b 200	566	1,730	668	310	180	285	143	166
21	103	116	b 130	b 210	518	1,140	616	293	177	207	143	153
22	101	b110	134	b 210	b 450	884	566	281	174	183	131	153
23	103	*b110	134	b 1,000	b 350	798	541	301	180	166	* 125	141
24	105	108	141	4,030	b 250	738	900	559	185	158	125	138
25	105	112	146	2,790	b 200	649	2,180	501	177	148	120	134
26	107	112	146	1,960	b 300	590	2,880	501	169	146	120	127
27	107	114	146	1,690	b 370	541	2,470	1,120	161	146	131	125
28	108	131	141	1,180	b 400	535	1,810	1,160	161	138	129	120
29	108	134	134	b 650	------	1,480	1,270	760	171	141	136	120
30	107	138	134	b 450	------	1,930	1,010	553	255	131	148	127
31	107	------	129	b 350	------	1,490	------	457	------	127	169	------
TOTAL	3,221	3,422	4,314	24,646	29,476	46,475	47,655	16,863	7,266	6,738	4,198	4,130
MEAN	104	114	139	795	1,053	1,499	1,589	544	242	217	135	138
CFSM	.132	.144	.176	1.01	1.33	1.90	2.01	.688	.306	.274	.171	.175
IN	.15	.16	.20	1.16	1.39	2.19	2.24	.79	.34	.32	.20	.19

CALENDAR YEAR 1964 MAX 6,900 MIN 75 MEAN 395 CFSM .499 INCHES 6.80
WATER YEAR 1964-65 MAX 5,520 MIN 97 MEAN 544 CFSM .688 INCHES 9.33

Peak discharge (base, 5,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0715	8.47	5,940				
4-7	0230	7.97	5,040				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3290. Wabash River at Logansport, Ind.

Location.--Lat 40°44'47", long 86°22'39", in NE¼ sec. 35, T. 27 N., R. 1 E., on left bank 150 ft downstream from Cicott Street Bridge in Logansport, 1,000 ft downstream from Eel River, and at mile 353.7.

Drainage area.--3,751 sq mi.

Records available.--April to September, November and December 1903, March to November 1904, March 1905 to July 1906, May 1923 to September 1965. January, February and December 1904, January and February 1905 (gage heights only). Gage-height records collected at same site December 1910 to December 1916, and since January 1926 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 573.28 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). April 1903 to July 1906, chain gage at site 150 ft upstream at datum 2.12 ft higher. May 1923 to Mar. 15, 1925, chain gage at site 150 ft upstream at datum 0.19 ft higher. Mar. 16, 1925, to Mar. 31, 1927 and Oct. 1, 1927, to Feb. 8, 1934, chain gage at site 150 ft upstream at present datum. Apr. 1 to Sept. 30. 1927, staff gage at present site at datum approximately 2.85 ft higher.

Average discharge.--42 years (1923-65), 3,220 cfs.

Extremes.--Maximum discharge during year, 27,300 cfs Feb. 11 (gage height, 11.41 ft); minimum, 218 cfs Dec. 7 (gage height, 2.62 ft).
1903-6, 1923-65: Maximum discharge, 89,800 cfs May 18, 1943 (gage height, 21.32 ft); minimum, 97 cfs Sept. 25, 1941; minimum daily, 135 cfs Sept. 26, 1941; minimum gage height, 2.27 ft July 23, 1936.
Maximum stage known, 25.3 ft Mar. 26, 1913, from floodmarks (discharge, 140,000 cfs, estimated).

Remarks.--Records good except those for periods of no recorder record, which are fair, and those for periods of ice effect or no gage-height record, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.7	270	5.0	4,120
3.1	585	6.0	6,700
3.5	1,100	9.0	17,400
4.0	2,040	12.0	30,000

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	277	319	b 310	631	b 1,100	1,840	6,120	g 4,120	1,350	513	392	400
2	284	326	b 300	2,710	b 1,100	*4,420	6,700	g 3,480	1,260	504	378	408
3	291	326	b 300	3,270	b 1,100	10,300	6,120	g 3,060	1,180	513	385	415
4	277	333	b 300	2,040	b 1,100	13,800	4,820	g 2,640	1,100	522	400	378
5	277	333	b 300	1,260	b 1,100	19,800	3,900	g 2,440	1,020	504	385	370
6	277	340	b 300	1,020	b 1,100	19,400	13,300	g 2,340	1,020	495	362	362
7	270	355	b 300	878	b 1,500	17,000	21,400	g 2,140	1,020	738	362	385
8	284	348	b 300	878	1,940	15,200	18,600	g 2,040	945	786	455	362
9	291	348	b 300	1,350	2,440	14,200	22,000	a 1,900	945	878	455	326
10	305	355	b 350	1,940	18,200	11,400	22,200	a 1,700	945	726	513	326
11	305	348	447	1,440	26,400	8,600	19,000	a 1,600	878	567	487	312
12	298	340	549	1,100	22,600	6,700	14,200	a 1,500	798	*504	423	305
13	305	348	627	878	17,400	6,120	*14,200	a 1,300	738	455	378	* 298
14	298	362	576	714	10,300	5,840	g12,000	a 1,200	669	463	362	333
15	298	362	* 504	513	6,400	5,840	g10,300	a 1,100	*627	455	348	479
16	305	423	b 400	b 650	4,340	5,580	a 9,000	a 1,100	585	479	326	540
17	305	471	b 350	b 1,000	3,270	6,120	a 7,000	1,020	558	2,530	439	596
18	305	431	b 310	b 1,000	2,850	9,960	a 5,500	945	540	3,040	471	658
19	*305	423	b 310	*b 940	2,440	8,260	a 4,500	945	531	2,600	423	702
20	298	408	b 310	b 900	2,140	5,320	a 3,500	878	513	1,350	400	606
21	277	423	b 320	b 800	1,940	3,690	g 2,850	810	495	984	378	522
22	277	423	b 350	810	b 1,600	2,850	g 2,640	945	479	786	362	504
23	270	* 362	378	b 3,000	b 1,100	2,640	g 2,540	1,100	495	616	348	463
24	277	348	408	10,300	b 800	2,540	g 3,690	1,540	504	549	326	447
25	270	333	439	8,600	b 650	3,270	g11,000	1,740	479	513	326	447
26	284	340	447	7,940	b 650	3,900	g16,600	2,000	463	479	340	439
27	277	340	471	b 5,500	b 700	3,060	g15,400	3,900	439	447	385	431
28	284	408	463	b 3,500	b 1,100	2,640	g10,600	4,580	447	431	362	415
29	291	400	447	b 2,500		5,320	g 7,620	3,270	455	415	362	400
30	305	b 330	447	b 1,700	------	9,960	g 5,580	2,240	504	392	362	g 378
31	305	------	447	b 1,100	-----	8,260	-----	1,640	----	385	392	-------
Total	8,972	11,006	12,060	70,862	137,360	244,830	302,880	61,213	21,982	24,619	12,087	13,007
Mean	289	367	389	2,286	4,906	7,898	10,096	1,975	733	794	390	434
Cfsm	0.077	0.098	0.104	0.609	1.31	2.11	2.69	0.527	0.195	0.212	0.104	0.012
In.	0.09	0.11	0.12	0.70	1.36	2.43	3.00	0.61	0.22	0.24	0.12	0.01

Calendar year 1964 : Max 39,200 Min 177 Mean 2,408 Cfsm 0.642 In. 8.74
Water year 1964-65 : Max 26,400 Min 270 Mean 2,523 Cfsm 0.673 In. 9.01

Peak discharge (base, 22,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0800	11.41	27,300				
4-9	1630	10.52	23,400				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.
g Computed from once-daily observer's readings.

3-3295. Wabash River at Delphi, Ind.

Location.--Lat 40°35'26", long 86°41'54", in SE¼ sec. 24, T. 25 N., R. 3 W., on downstream side of second pier from left abutment of highway bridge, 1 mile west of Delphi, 1.6 miles upstream from Deer Creek, 8.6 miles upstream from Tippecanoe River, and at mile 330.8.

Drainage area.--4,032 sq mi.

Records available.--October 1939 to September 1965. Prior to January 1940 monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage is 519.90 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to July 19, 1942, wire-weight gage at same site and datum.

Average discharge.--26 years, 3,340 cfs.

Extremes.--Maximum discharge during year, 23,400 cfs Feb. 11 (gage height, 17.10 ft); minimum, 256 cfs Oct. 26 (gage height, 1.09 ft).
1939-65: Maximum discharge, 85,300 cfs May 19, 1943 (gage height, 25.60 ft); maximum gage height, 27.48 ft Feb. 11, 1959 (ice jam); minimum daily discharge, 158 cfs Sept. 19, 20, 1941.
Maximum stage known, 28.4 ft Mar. 26, 1913, from information by State Highway Commission (discharge, about 145,000 cfs, from rating curve extended above 82,000 cfs by logarithmic plotting).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	260	8.0	7,700
2.0	720	11.0	12,200
3.0	1,500	14.0	17,000
5.0	3,600	17.0	23,200

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	275	275	b 320	535	a 1,100	2,250	5,670	4,330	1,680	610	410	410
2	295	280	b 310	1,520	a 1,100	3,730	6,250	3,600	1,590	638	410	385
3	290	290	b 310	3,480	a 1,100	8,080	6,390	3,120	1,500	638	410	*410
4	285	290	b 310	2,450	a 1,100	11,600	5,130	2,670	1,320	610	*438	438
5	270	290	b 310	1,680	a 1,100	15,300	4,330	2,450	1,230	610	438	410
6	265	280	b 310	1,230	a 1,100	17,000	8,650	2,350	1,140	610	410	385
7	*260	290	b 310	1,060	a 1,750	15,300	18,400	2,250	1,230	910	385	410
8	275	305	b 310	945	2,600	14,000	*17,400	2,050	1,140	1,020	385	410
9	290	295	b 320	1,140	3,960	13,200	18,600	1,860	1,140	1,020	484	385
10	285	290	b 390	1,860	11,600	10,800	20,200	1,860	1,140	1,020	510	360
11	290	295	* 460	1,770	22,600	* 8,300	17,200	1,680	1,060	810	510	360
12	285	285	510	1,320	20,800	7,100	13,700	*1,590	980	* 665	510	360
13	280	275	560	1,060	16,500	6,250	12,800	1,500	875	610	438	360
14	280	280	610	810	12,100	5,830	11,400	1,410	810	560	385	360
15	275	295	610	b 600	5,950	5,830	9,800	1,320	* 750	692	360	535
16	275	335	b 460	b 680	4,850	5,410	7,850	1,230	720	610	360	560
17	280	* 360	b 370	b 820	3,600	5,550	6,390	1,140	665	788	385	610
18	280	385	b 350	b 980	3,000	8,600	5,410	1,060	665	2,450	485	610
19	*280	385	b 350	b 960	2,670	8,450	4,460	1,060	638	2,890	485	720
20	275	385	b 350	b 880	2,350	6,110	3,840	980	610	2,250	438	665
21	275	360	b 360	b 830	b 1,900	4,200	3,240	945	610	1,410	410	585
22	260	385	b 380	a 830	b 1,400	3,360	3,000	910	610	1,230	385	610
23	265	438	410	a 880	b 1,300	3,000	2,780	1,140	585	1,320	360	610
24	260	385	460	b 3,400	b 1,300	2,780	3,360	1,230	610	840	360	510
25	260	360	460	7,100	b 1,300	2,890	8,610	1,950	585	692	335	510
26	260	335	485	a 5,800	b 1,300	3,840	14,500	2,150	560	610	335	485
27	265	335	460	a 4,500	b 1,300	3,480	14,200	3,480	535	560	385	460
28	265	410	485	a 3,200	b 1,500	2,890	11,300	4,460	535	510	410	460
29	265	438	485	a 2,300	----------	3,720	7,700	3,960	585	460	360	438
30	265	385	460	a 1,700	- - - - - -	8,750	5,690	2,780	610	460	360	*438
31	270	- - - - - -	460	a 1,100	- - - - -	8,300	- - - - -	2,050	- - -----	438	385	- - - - - - -
Total	8,500	9,996	12,735	62,420	133,230	225,900	279,250	64,565	26,708	28,541	12,721	14,249
Mean	274	333	411	2,014	4,758	7,287	9,308	2,083	890	921	410	475
Cfsm	.068	.083	.102	.499	1.18	1.81	2.31	.517	.221	.228	.102	.118
In.	.08	.09	.12	.58	1.23	2.09	2.58	0.60	.25	.26	.12	.13

Calendar year 1964 : Max 39,500 Min 224 Mean 2,320 Cfsm 0.575 In. 7.83
Water year 1964-65 : Max 22,600 Min 260 Mean 2,408 Cfsm 0.597 In. 8.13

Peak discharge (base, 24,000 cfs).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

GPO 826-027-4

3-3297. Deer Creek near Delphi, Ind.

Location.--Lat 40°36', long 86°37', on line between SE¼ sec. 22 and NE¼ sec. 27, T. 25 N., R. 2 W., on downstream side of left wingwall of highway bridge, 3 miles northeast of Delphi and 4½ miles upstream from mouth.

Drainage area.--278 sq mi.

Records available.--October 1943 to September 1965. Prior to March 1944 monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder (digital). Datum of gage 553.81 ft above mean sea level (revised) (Corps of Engineers bench mark, levels by Indiana Department of Natural Resources).

Average discharge.--22 years, 233 cfs.

Extremes.--Maximum discharge during year, 1,980 cfs Apr. 9 (gage height, 6.44 ft); minimum, 9.5 cfs Oct. 7 (gage height, 2.10 ft).
1943-65: Maximum discharge, 14,400 cfs June 10, 1958 (gage height, 18.26 ft); minimum, 5.6 cfs Sept. 27, 1954.
Flood in May 1943 reached a stage of 19.8 ft, from floodmarks (discharge, 18,000 cfs, from rating curve extended above 8,000 cfs by logarithmic plotting).

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 13-22)

2.0	9.0	3.5	269
2.2	21	4.0	479
2.4	41	5.0	1,000
2.7	79	7.0	2,400
3.0	131		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	12	25	29	42	87	201	344	280	146	60	34	28
2	12	25	27	76	79	660	362	234	177	54	33	26
3	12	25	28	89	71	735	316	199	163	53	31	* 27
4	11	25	29	68	61	800	276	177	131	46	*37	26
5	10	26	30	55	59	1,000	248	172	114	41	34	26
6	10	26	28	48	68	750	1,280	158	110	41	30	23
7	*10	26	29	43	84	645	1,570	146	193	216	28	22
8	13	26	28	45	*b 80	635	*1,010	133	138	*165	31	22
9	13	24	27	59	109	575	1,850	125	146	97	38	21
10	12	21	27	58	1,330	466	1,380	116	131	72	37	20
11	13	22	*43	54	1,500	*385	928	109	* 116	59	32	20
12	12	23	53	48	790	340	928	* 102	153	49	28	20
13	13	25	52	* 45	488	316	790	98	116	43	26	20
14	12	25	43	47	316	316	575	92	93	42	23	21
15	12	26	40	40	231	297	565	89	81	225	22	71
16	13	38	34	36	180	269	585	85	73	104	20	78
17	13	*34	28	39	155	336	475	81	66	75	43	76
18	13	33	32	39	144	650	389	78	63	131	41	60
19	*16	33	30	41	133	367	320	75	59	110	38	47
20	15	32	28	47	118	259	273	71	57	75	30	37
21	16	28	28	45	114	201	234	66	55	57	25	32
22	17	27	28	63	93	175	201	65	53	294	25	41
23	18	26	29	185	b 80	182	182	138	54	353	24	40
24	18	26	31	507	b 75	172	430	167	71	149	22	34
25	20	27	34	380	b 70	158	1,190	301	57	95	22	31
26	20	27	39	231	b 70	151	1,250	394	47	69	24	29
27	20	27	38	201	b 70	138	785	988	43	54	39	27
28	21	45	33	207	b 75	160	560	685	46	46	37	26
29	23	37	31	129	------	398	421	362	54	40	28	26
30	23	32	34	b 100	------	493	332	238	73	36	26	* 30
31	23	------	33	b 80	------	394	------	180	------	34	29	------
TOTAL	466	842	1,023	3,147	6,730	12,624	20,049	6,204	2,879	2,985	937	1,007
MEAN	15.0	28.1	33.0	102	240	407	668	200	96.0	96.3	30.2	33.6
CFSM	.054	.101	.119	.367	.863	1.46	2.40	.719	.345	.346	.109	.121
IN	.06	.11	.14	.42	.90	1.69	2.68	.83	.39	.40	.13	.13

CALENDAR YEAR 1964	MAX	3,010	MIN	7.7	MEAN	132	CFSM	.475	INCHES	6.48
WATER YEAR 1964-65	MAX	1,850	MIN	10	MEAN	161	CFSM	.579	INCHES	7.88

Peak discharge (base, 2,000 cfs).--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3305. Tippecanoe River at Oswego, Ind.

Location.--Lat 41°19'14", long 85°47'21", in NE¼NE¼ sec. 14, T. 33 N., R. 6 E., on left bank 10 ft downstream from dam at Tippecanoe Lake Outlet in Oswego and 3 miles east of Leesburg.

Drainage area.--115 sq mi.

Records available.--October 1949 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 830.00 ft above mean sea level, datum of 1929. Prior to Aug. 12, 1953, staff gage at same site and datum.

Average discharge.--16 years, 98.9 cfs.

Extremes.--Maximum discharge during year, 227 cfs May 1, 2; maximum gage height, 7.30 ft May 2; minimum discharge, 1.1 cfs October, date unknown (gage height, 4.59 ft, from range line), minimum daily 1.5 cfs Oct. 4-7; minimum gage height, 4.30 ft June 21, 22. 1949-65: Maximum discharge, 700 cfs Oct. 17, 1954 (gage height, 8.64); minimum, that of October (date unknown) 1964; minimum gage height, that of June 21, 22, 1965.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Occasional regulation by flashboards at lake outlet.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 21, Sept. 13-27)

4.2	1.2	5.0	21
4.3	2.1	5.5	46
4.4	3.3	6.0	86
4.5	5.2	7.0	194
4.7	10.3	7.5	250

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	5.4	13	32	144	117	161	227	183	4.7	16	112
2	1.7	6.0	14	36	144	112	161	227	183	4.1	16	106
3	1.6	6.2	15	36	139	112	161	216	172	4.1	15	96
4	1.5	6.6	15	36	139	117	161	216	161	4.1	15	82
5	1.5	7.0	16	37	139	128	156	216	150	5.0	16	68
6	1.5	8.0	16	38	117	134	161	216	139	6.3	16	56
7	20	13	15	38	112	144	172	205	128	12	16	52
8	20	14	16	39	106	150	172	205	112	13	21	40
9	23	14	16	43	106	156	183	194	106	13	36	34
10	33	14	16	43	117	161	194	183	96	14	56	34
11	35	14	18	44	122	172	194	172	82	13	56	34
12	35	14	19	45	128	172	194	161	45	13	52	32
13	25	14	21	46	139	172	205	150	35	*12	52	26
14	25	14	22	46	150	172	* 205	139	32	12	50	*20
15	37	14	* 24	46	161	*172	205	122	33	12	43	56
16	40	17	26	46	172	172	205	62	28	12	36	82
17	40	17	26	44	183	172	205	4.3	* 16	25	27	106
18	30	16	28	43	183	172	205	*5.6	16	39	46	106
19	17	16	29	42	183	183	194	8.3	16	56	46	101
20	13	15	29	*41	172	183	194	11	8.5	56	45	101
21	*13	14	30	40	172	183	183	13	2.3	52	46	101
22	13	13	30	42	161	194	183	22	2.1	50	36	101
23	13	12	30	52	150	194	183	52	2.1	50	26	96
24	12	*12	31	64	* 139	194	183	72	2.4	34	*22	91
25	12	12	32	72	134	194	194	86	3.0	23	13	86
26	11	12	31	77	128	194	194	128	3.0	19	12	64
27	11	12	32	86	122	194	205	194	2.9	19	53	46
28	7.0	12	31	91	117	194	216	194	3.0	19	72	43
29	5.1	13	30	101		172	216	183	4.3	17	86	40
30	5.0	13	30	122	---	172	216	194	4.5	17	101	39
31	5.0	---	30	150	---	172	---	194	---	16	106	---
Total	509.7	370.2	731	1,718	3,979	5,130	5,661	4,272.2	1,771.1	646.3	1,249	2,051
Mean	16.4	12.3	23.6	55.4	142	165	189	138	59.0	20.8	40.3	68.4
Cfsm	0.143	0.107	0.205	0.482	1.23	1.43	1.64	1.20	0.513	0.181	0.350	0.595
In.	0.16	0.12	0.24	0.56	1.28	1.65	1.83	1.38	0.57	0.21	0.40	0.66

Calendar year 1964 : Max 122 Min 1.5 Mean 32.1 Cfsm 0.279 In. 3.80
Water year 1964-65 : Max 227 Min 1.5 Mean 77.0 Cfsm 0.670 In. 9.06

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-28	1600	7.07	205				
4-15	0400	7.12	205				
5-2	2200	7.30	227				

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 2-20, Oct. 22 to Nov. 23, Sept. 28-30.

3-3315. Tippecanoe River near Ora, Ind.

Location.--Lat 41°09'26", long 86°33'49", in SE¼ sec. 6, T. 31 N., R. 1 W., on right bank at downstream side of highway bridge, 1.0 mile upstream from Bartee ditch and 1.3 miles southwest of Ora.

Drainage area.--839 sq mi.

Records available.--September 1943 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder (digital). Altitude of gage is 694 ft (by barometer). Prior to July 30, 1956, wire-weight gage on upstream side of old highway bridge 120 ft downstream from present gage. July 31, 1956 to Dec. 20, 1964, water-stage recorder on right bank at downstream side of old highway bridge and Dec. 21, 1964 to Aug. 19, 1965, staff gage on right bank 500 ft downstream from present site. All gages at same datum.

Average discharge.--22 years, 768 cfs.

Extremes.--Maximum discharge during year, 2,790 cfs Jan. 25 (gage height, 11.47 ft, from graph based on gage readings); minimum, 138 cfs Oct. 5-7, Nov. 6; minimum gage height, 4.24 ft Oct. 7.
1943-65: Maximum discharge, 7,800 cfs Apr. 5, 1950 (gage height, 14.40 ft site then in use); minimum, 103 cfs Sept. 17, 18, 1964; minimum gage height, 4.15 ft Aug. 14, 1944, Oct. 16, 17, 1946.

Remarks.--Records fair except those for January to June and those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-10, Aug. 22-27)

Oct. 1 to Dec. 20		Dec. 21 to Aug. 19		Aug. 20 to Sept. 30	
4.3	128	4.7	208	5.3	290
4.4	148	5.0	262	6.0	460
5.0	282	6.0	502	8.0	1,050
7.0	840	8.0	1,100		
9.0	1,550	10.0	1,880		
10.0	2,020	11.2	2,580		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 158	148	b 190	244	a 620	1,040	1,320	1,580	782	449	226	460
2	158	148	b 180	525	a 580	1,350	1,350	1,420	726	374	226	460
3	148	148	b 200	942	a 560	1,500	1,320	1,320	726	349	226	435
4	148	148	b 200	814	b 540	1,500	1,240	1,210	698	324	226	410
5	138	148	b 190	670	b 540	1,620	1,210	1,280	642	301	226	410
6	138	138	b 180	558	b 540	1,780	1,240	1,380	614	262	226	385
7	138	148	b 350	502	b 560	1,620	1,580	1,320	586	349	217	385
8	148	190	* 410	474	b 580	1,580	1,660	1,240	558	530	226	360
9	158	201	358	670	b 1,100	1,580	1,660	1,180	586	449	244	335
10	158	190	294	846	1,380	1,540	1,880	1,100	558	374	324	310
11	158	190	246	698	1,930	1,420	1,880	1,040	502	374	374	310
12	158	179	319	614	2,140	1,350	1,780	974	474	324	349	290
13	158	168	384	558	1,930	1,320	1,660	910	424	301	324	290
14	158	168	384	b 520	1,740	1,280	1,540	846	399	281	301	290
15	158	168	319	b 500	1,540	1,240	1,460	782	374	262	281	385
16	158	168	b 290	b 480	1,380	1,210	1,460	754	349	262	262	628
17	158	* 158	b 280	b 470	1,240	1,210	1,460	698	301	301	281	684
18	158	148	b 270	b 460	1,100	1,460	1,380	670	301	474	349	684
19	158	148	b 270	b 450	1,040	1,620	1,350	614	281	502	374	656
20	158	168	b 270	b 450	942	1,500	1,320	502	281	424	335	600
21	* 148	168	b 270	b 460	910	1,380	1,240	449	281	374	290	572
22	148	158	b 270	846	814	1,320	1,180	424	262	349	270	572
23	148	190	b 270	1,140	b 780	1,240	1,140	530	399	324	270	* 771
24	148	179	262	1,710	b 740	1,240	1,210	558	399	301	251	864
25	148	168	262	2,560	b 720	1,140	1,540	642	374	301	* 232	802
26	148	148	262	2,080	b 700	1,070	1,880	782	301	281	232	684
27	148	148	262	a 1,500	b 690	1,010	a 2,100	1,040	281	262	251	600
28	148	179	244	a 1,100	878	974	1,980	1,210	262	* 262	435	516
29	148	201	244	a 880		1,040	1,880	1,010	586	244	488	460
30	148	201	244	a 740	---	1,350	1,700	910	614	244	460	435
31	138	---	244	a 680	---	1,350	---	846	---	226	460	---
Total	4,688	5,010	8,418	25,141	28,214	41,834	45,600	29,221	13,921	10,434	9,236	15,043
Mean	151	167	272	811	1,008	1,349	1,520	943	464	337	298	501
Cfsm	0.180	0.199	0.324	0.967	1.20	1.61	1.81	1.12	0.553	0.402	0.355	0.597
In.	0.21	0.22	0.37	1.11	1.25	1.86	2.02	1.29	0.62	0.46	0.41	0.67

Calendar year 1964: Max 1,680 Min 106 Mean 361 Cfsm 0.430 In. 5.85
Water year 1964-65: Max 2,560 Min 138 Mean 649 Cfsm 0.774 In. 10.49

Peak discharge (base, 2,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-25	1200	11.47g	2,790				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3323. Little Indian Creek near Royal Center, Ind.

Location.--Lat 40°53', long 86°35', in NW¼ sec. 13, T. 28 N., R. 2 W., on right bank at downstream side of county road bridge, 2.9 miles upstream from mouth, 3.2 miles downstream from Fredericks ditch, and 4.8 miles northwest of Royal Center.

Drainage area.--35.0 sq mi.

Records available.--July 1959 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 692.73 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 22.0 cfs.

Extremes.--Maximum discharge during year, 239 cfs Jan. 23 (gage height, 4.67 ft); minimum daily, 0.6 cfs Dec. 7; minimum gage height, 0.73 ft Oct. 4-7, 20.
1959-65: Maximum discharge, about 500 cfs Mar. 5, 1963 (gage height, unknown); minimum daily, 0.5 cfs Dec. 17-22, 1963; minimum gage height, 0.63 ft Mar. 16, 1960.
Maximum stage known, 11.2 ft in Spring of 1957, from information by local residents.

Remarks.--Records good above 15 cfs and fair below except those for periods of ice effect or no gage-height record, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 22				Jan. 23 to Sept. 30			
0.7	0.6	1.3	18	0.75	1.0	1.2	20
.8	1.3	1.5	28	.8	2.6	1.5	36
.9	2.4	2.0	58	.9	5.8	2.0	64
1.0	4.2	3.0	120	1.0	9.9	5.0	260
1.1	7.4						

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	0.8	b 0.7	12	8.5	25	59	31	9.4	5.5	2.9	4.5
2	.8	.8	b .7	90	6.0	*106	56	27	12	5.8	2.6	3.9
3	.8	.8	b .7	39	5.0	88	42	23	11	5.8	2.3	3.3
4	.8	.8	b .7	16	4.5	115	39	22	9.0	5.5	2.6	3.3
5	.8	.8	b .7	9.7	11	118	34	23	8.6	5.2	2.0	3.6
6	.8	.8	b .7	6.8	b 20	76	157	22	8.6	5.5	2.0	3.3
7	.8	.8	b .6	5.8	b 30	76	118	20	9.0	24	1.7	3.3
8	1.6	.9	b .7	11	33	76	88	19	9.4	24	2.6	3.3
9	1.2	.9	b .8	67	40	58	136	17	13	12	4.2	3.3
10	.9	1.0	b .9	27	90	50	88	16	9.9	9.9	3.9	3.3
11	.8	.9	1.9	14	100	42	61	15	9.0	7.8	2.3	3.3
12	.8	.8	4.0	10	66	42	53	15	8.6	5.8	2.0	2.9
13	.8	.8	2.8	b 7.0	45	39	* 39	14	8.1	5.2	1.7	* 2.3
14	.8	.8	b 2.0	b 5.0	30	39	36	13	7.8	5.5	1.3	3.3
15	.8	1.0	*b 1.2	b 4.0	15	36	48	13	* 7.8	5.5	1.3	5.8
16	.8	1.6	b 1.3	b 3.5	11	33	48	12	7.8	* 4.5	1.3	4.9
17	.8	1.3	b 1.4	b 3.1	9.0	67	39	* 10	7.4	6.9	8.4	5.2
18	.8	1.1	b 1.4	b 3.5	8.0	82	34	9.9	7.0	5.5	7.4	4.2
19	* .9	1.2	b 1.2	*b 8.0	7.0	b36	30	9.9	6.6	4.5	4.2	3.6
20	.8	1.3	b 1.1	b 11.	6.4	b25	28	8.6	6.6	3.6	3.3	3.3
21	.8	.8	1.3	16	6.2	b21	26	8.6	6.2	3.6	2.6	2.9
22	.8	b .7	1.4	45	5.4	b20	23	9.0	6.6	48	2.6	12
23	.8	* .8	1.8	204	5.0	b19	22	9.9	6.6	56	* 2.9	21
24	.8	1.0	2.1	162	5.0	b18	50	9.9	5.8	22	2.6	9.9
25	.8	1.1	2.0	100	4.7	b19	118	17	5.2	11	2.6	6.6
26	.8	1.3	1.6	112	7.0	b17	112	28	4.9	7.4	3.6	5.2
27	.9	1.4	1.6	67	9.0	b15	70	58	4.9	5.5	5.2	4.2
28	.9	3.1	1.4	45	13	21	50	26	5.2	4.2	4.9	4.2
29	.8	1.6	1.4	22		76	42	16	6.6	3.9	3.9	3.9
30	.8	1.1	1.6	10	---------	82	35	13	7.4	3.6	3.6	4.5
31	.8	---------	1.4	9.0	---------	64	---------	11	---------	2.9	4.9	---------
Total	26.5	32.1	43.1	1,145.4	600.7	1,601	1,781	546.8	236.0	326.1	99.4	148.3
Mean	0.85	1.07	1.39	36.9	21.5	51.6	59.4	17.6	7.87	10.5	3.21	4.94
Cfsm	0.024	0.031	0.040	1.05	0.614	1.47	1.70	0.503	0.225	0.300	0.092	0.141
In.	0.03	0.03	0.05	1.21	0.64	1.70	1.90	0.58	0.25	0.35	0.11	0.16

Calendar year 1964 : Max 176 Min 0.6 Mean 11.3 Cfsm 0.323 In. 4.38
Water year 1964-65 : Max 204 Min 0.6 Mean 18.0 Cfsm 0.514 In. 7.01

Peak discharge (base, 250 cfs).--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Jan. 27 to Feb. 5, Feb. 8 to Mar. 31.

3-3324. Big Monon Creek near Francesville, Ind.

Location.--Lat 40°59', long 86°52', in NE¼ sec. 10, T. 29 N., R. 4 W., on right bank at downstream side of county road bridge, 1.1 miles east of Francesville, 1.6 miles downstream from unnamed tributary from right bank, and 10.2 miles upstream from mouth.

Drainage area.--145 sq mi.

Records available.--August 1959 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 653.17 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 116 cfs.

Extremes.--Maximum discharge during year, 1,530 cfs Jan. 23 (gage height, 11.31 ft); minimum, 4.0 cfs Oct. 3 (gage height, 1.17 ft).
1959-65: Maximum discharge, 2,100 cfs Apr. 24, 1961 (gage height, 13.27 ft); maximum gage height, 14.29 ft Mar. 6, 1963, (backwater from ice); minimum discharge, that of Oct. 3, 1964.
Maximum stage known, about 18.60 ft in Spring of 1957, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 28, June 5 to Sept. 22)

Oct. 1 to Jan. 2		Jan. 3 to Sept. 30	
1.2	13	1.1	8.8
1.5	28	1.3	16
2.0	63	1.5	25
3.0	155	2.0	59
5.0	390	3.0	147
		4.0	260
		10.0	1,280

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*13	15	b18	67	b100	b500	315	181	108	45	24	20
2	13	15	b15	391	b100	b500	320	159	117	42	24	17
3	12	15	b16	300	b100	379	251	141	*120	44	26	15
4	12	15	b17	180	b110	393	218	131	112	38	23	14
5	12	15	b15	144	b120	427	200	175	107	35	19	13
6	13	15	b14	128	b130	323	*782	*171	114	35	25	12
7	13	15	b13	117	b150	353	564	164	116	146	22	12
8	17	16	b14	129	b160	387	476	142	108	217	21	12
9	17	15	b17	264	*b150	337	850	126	243	111	29	11
10	13	15	b20	176	b700	*285	527	116	179	76	46	11
11	14	15	*b25	b110	563	244	418	107	147	46	30	10
12	16	12	b80	b100	b350	244	362	103	122	39	24	10
13	15	10	b100	*96	285	244	277	98	122	32	19	10
14	14	9.6	b60	b90	223	241	228	93	98	32	18	10
15	15	10	b40	b80	191	229	425	93	85	29	14	16
16	15	12	b30	b70	173	203	440	92	78	25	12	18
17	15	*11	b26	b68	167	326	303	88	77	46	18	22
18	16	9.6	b22	b72	165	454	282	89	72	69	36	16
19	12	10	b25	b80	155	b170	263	89	65	31	39	14
20	14	8.5	b26	b90	149	b130	214	85	61	25	31	13
21	13	13	b35	105	b130	b110	186	83	79	22	20	15
22	*13	9.6	55	168	b110	b120	166	84	77	308	17	63
23	12	12	64	1,280	b100	b120	163	81	180	365	16	*416
24	14	13	71	1,180	b90	b110	384	95	146	*137	14	243
25	15	14	46	590	b95	b100	920	112	83	60	13	170
26	15	15	b38	476	b100	b100	801	132	65	37	13	133
27	15	14	b35	347	123	b100	484	174	73	29	16	113
28	14	26	b32	b210	221	122	332	148	59	*25	20	101
29	16	b40	b33	b160	------	222	254	129	59	23	15	94
30	14	b25	35	b110	------	315	211	122	*79	21	14	92
31	15	------	34	b100	------	311	------	118	------	20	16	------
TOTAL	437	440.3	1,071	7,478	5,210	8,099	11,616	3,721	3,151	2,210	674	1,716
MEAN	14.1	14.7	34.5	241	186	261	387	120	105	71.3	21.7	57.2
CFSM	.097	.101	.238	1.66	1.28	1.80	2.67	.828	.724	.492	.150	.395
IN	.11	.11	.27	1.92	1.34	2.08	2.98	.95	.81	.57	.17	.44

CALENDAR YEAR 1964 MAX 274 MIN 8.5 MEAN 43.7 CFSM .301 INCHES 4.10
WATER YEAR 1964-65 MAX 1,280 MIN 8.5 MEAN 126 CFSM .869 INCHES 11.75

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-23	2145	11.31	1,530				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3325. Tippecanoe River near Monticello, Ind.

Location.--Lat 40°47', long 86°45', in sec. 21, T. 27 N., R. 3 W., at Norway plant of Northern Indiana Public Service Co., 2 miles north of Monticello.

Drainage area.--1,710 sq mi.

Records available.--October 1931 to September 1965.

Average discharge.--34 years, 1,427 cfs.

Extremes.--Maximum daily discharge during year, 5,820 cfs Apr. 26; minimum daily, 173 cfs Oct. 1, 4, 5.
1931-65: Maximum daily discharge, 16,800 cfs June 13, 1958; minimum daily, 103 cfs July 27, 1934.

Remarks.--Discharge computed on basis of records of operation of powerplant and flow over dam.

Cooperation.--Records of daily discharge furnished by Northern Indiana Public Service Co.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	173	196	229	695	916	2,820	3,310	2,700	1,520	718	326	685
2	238	239	229	1,920	1,310	4,160	2,850	2,640	1,320	751	369	572
3	260	196	381	1,810	959	3,140	2,700	2,120	1,020	521	413	478
4	173	239	305	1,770	1,280	3,560	2,470	2,190	1,430	521	475	478
5	173	283	305	1,430	916	4,070	2,490	1,810	1,040	554	345	521
6	195	272	305	1,280	1,430	3,640	5,110	2,360	916	653	345	521
7	238	218	229	1,170	1,620	3,640	4,230	2,290	1,340	784	348	521
8	282	218	267	1,210	1,910	3,640	3,810	2,340	537	916	434	1,910
9	260	261	229	1,510	2,510	3,640	5,660	1,810	1,580	916	413	3,180
10	260	304	343	1,690	5,340	3,350	4,470	1,810	653	784	413	2,680
11	195	304	381	1,570	4,330	3,060	3,890	1,590	1,200	686	521	1,310
12	195	261	457	1,220	3,680	2,640	4,290	1,720	826	685	521	401
13	260	196	686	1,200	4,050	2,620	3,490	1,490	809	521	434	401
14	195	239	534	562	3,630	2,620	2,950	1,540	738	521	521	401
15	282	304	419	735	2,770	2,620	3,210	1,430	603	434	434	400
16	195	478	458	304	2,620	2,500	3,640	1,280	719	326	521	400
17	238	261	496	566	2,450	2,520	3,130	1,000	521	653	602	2,000
18	390	239	223	570	2,040	3,540	2,210	1,370	652	669	636	2,000
19	260	261	260	751	1,810	2,840	2,620	916	415	834	521	2,000
20	216	196	411	784	1,810	2,620	2,100	1,220	521	735	521	1,600
21	260	218	390	669	1,920	2,620	2,350	768	521	631	521	1,600
22	238	196	412	1,160	1,430	2,070	2,060	834	521	845	521	1,400
23	260	192	412	3,680	1,430	2,310	2,080	916	702	1,320	521	2,000
24	238	230	520	5,120	980	1,980	2,770	980	653	695	456	2,400
25	208	230	625	4,110	783	1,810	5,230	1,270	637	521	391	1,400
26	282	344	390	4,500	521	1,900	5,820	1,220	620	521	456	2,000
27	195	306	380	4,250	673	1,810	4,680	2,000	521	521	500	2,000
28	238	268	451	2,990	1,060	1,560	4,080	1,760	521	521	348	600
29	218	420	390	1,390		2,410	3,800	1,720	695	310	521	1,000
30	369	230	412	1,700	---------	2,990	3,000	1,720	970	326	500	1,420
31	196	----------	412	1,260	---------	3,050	----------	1,180	----------	434	587	----------
Total	7,380	7,799	11,941	53,576	56,178	87,750	104,500	49,994	24,721	19,827	14,435	38,279
Mean	238	260	385	1,728	2,006	2,831	3,483	1,613	824	640	466	1,276
Cfsm	0.139	0.152	0.225	1.01	1.17	1.66	2.04	0.943	0.482	0.374	0.273	0.746
In.	0.16	0.17	0.26	1.16	1.22	1.91	2.28	1.09	0.54	0.43	0.31	0.83

Calendar year 1964 : Max 3,400 Min 131 Mean 594 Cfsm 0.347 In. 4.73
Water year 1964-65 : Max 5,820 Min 173 Mean 1,305 Cfsm 0.763 In. 10.36

3-3330. Tippecanoe River near Delphi, Ind.

Location.--Lat 40°37', long 86°45', in sec. 16, T. 25 N., R. 3 W., on right bank 2 miles northeast of Springboro, 2 miles downstream from Big Creek, and 5 miles northwest of Delphi.

Drainage area.--1,857 sq mi

Records available.--March to December 1903, March to December 1904, March 1905 to July 1906, November and December 1908, July 1939 to September 1965. Published as "at Springboro" 1903.

Gage.--Water-stage recorder (digital). Datum of gage if 552.01 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Mar. 14, 1903, to July 20, 1906, and Nov. 2 to Dec. 31, 1908, chain gage at site 5½ miles downstream at different datum.

Average discharge.--26 years (1939-65), 1,544 cfs.

Extremes.--Maximum discharge during year, 6,950 cfs Apr. 6 (gage height, 8.14 ft); minimum daily, 245 cfs Dec. 8.
1903-6, 1908, 1939-65: Maximum discharge, 22,600 cfs Feb. 10, 1959 (gage height, 15.10 ft); minimum daily, 1 cfs Nov. 2, 3, 1954, caused by repair work at Oakdale Dam, 6½ miles upstream.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by powerplant above station.

Rating table (gage height, in feet, and discharge, in cubic feet, per second)

2.4	225
2.7	360
3.5	945
5.0	2,430
6.0	3,580
8.0	6,700

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	265	287	261	995	a 1,500	2,910	3,600	3,040	1,980	856	510	882
2	266	288	357	2,140	a 1,300	4,480	3,210	2,580	1,590	989	702	*812
3	266	288	395	1,940	a 1,200	3,270	2,650	2,730	1,170	674	440	534
4	267	288	481	1,870	a 1,200	3,290	2,710	2,300	1,560	720	*627	726
5	265	327	267	1,500	a 1,200	4,600	2,580	1,860	1,210	673	507	844
6	265	343	369	1,320	a 1,400	3,660	5,440	2,410	1,130	900	507	531
7	*297	283	355	1,150	1,780	3,660	*4,920	2,920	1,370	1,370	509	748
8	271	283	245	1,450	*1,810	3,680	4,070	2,270	779	1,180	513	2,120
9	320	339	291	1,610	2,850	3,670	5,780	1,970	1,890	1,140	519	3,330
10	273	331	394	1,740	5,480	3,520	4,620	1,850	*814	960	513	3,090
11	274	310	*580	1,530	4,470	3,070	4,050	1,860	1,170	817	780	1,440
12	274	280	528	1,380	3,870	2,890	4,710	*1,860	1,270	* 862	578	877
13	343	283	802	* 1,250	3,990	2,560	3,650	1,860	712	676	693	2,310
14	279	280	600	604	3,700	2,820	3,030	1,530	897	705	677	2,730
15	338	416	441	865	3,100	2,580	3,310	1,750	810	490	521	2,100
16	274	527	435	490	2,550	2,550	3,920	1,350	913	428	712	2,470
17	276	*336	591	884	2,460	2,710	3,300	1,090	610	1,140	889	2,100
18	441	262	481	995	2,210	3,490	2,750	1,470	833	924	996	1,780
19	*265	264	314	972	1,960	3,190	2,700	1,290	479	952	560	1,420
20	278	264	336	813	1,800	2,550	2,640	1,380	689	1,030	678	1,230
21	317	261	336	748	2,110	2,540	2,670	1,030	661	884	714	1,070
22	274	261	507	1,330	1,580	2,430	2,120	975	660	943	746	1,050
23	321	262	478	3,650	1,540	2,490	2,250	1,050	916	1,740	623	809
24	270	263	644	5,140	1,180	2,100	3,230	1,180	573	939	652	1,030
25	270	401	620	4,110	1,180	1,800	6,010	1,760	970	663	529	780
26	337	263	528	4,300	497	1,970	6,120	1,670	639	495	802	709
27	328	343	426	4,280	681	2,020	4,990	2,690	641	766	540	1,340
28	279	627	426	3,010	1,310	1,800	4,110	1,890	651	595	720	1,130
29	319	462	426	1,690	------	2,610	3,640	1,820	1,000	503	533	893
30	331	264	427	1,920	------	2,960	3,310	2,080	1,250	507	694	*1,090
31	285	------	470	a 1,700	------	3,190	------	1,110	------	508	929	------
TOTAL	9,128	9,686	13,811	57,366	59,908	91,060	112,190	56,625	29,837	26,029	19,913	41,975
MEAN	294	323	446	1,851	2,140	2,937	3,740	1,827	995	840	642	1,399
CFSM	.158	.174	.240	.997	1.15	1.58	2.01	.984	.536	.452	.346	.753
IN	.18	.19	.28	1.15	1.20	1.82	2.25	1.13	.60	.52	.40	.84

CALENDAR YEAR	1964	MAX	3,890	MIN	172	MEAN	688	CFSM	.371	INCHES	5.04	
WATER YEAR	1964-65	MAX	6,120	MIN	245	MEAN	1,445	CFSM	.778	INCHES	10.56	

* Discharge measurement made on this day.
a No gage-height record.

3-3334.5 Wildcat Creek near Jerome, Ind.

Location.--Lat 40°26'29", long 85°55'08", on line between secs. 13 and 14, T. 23 N., R. 5 E., on right bank at downstream side of bridge on county road, 1100 East, 0.5 miles downstream from Mud Creek and 1.5 miles southeast of Jerome.

Drainage area.--148 sq mi.

Records available.--July 1961 to September 1965.

Gage.--Water-stage recorder (digital). Datum of the gage is 820.00 ft above mean sea level, datum of 1929 (unadjusted).

Extremes.--Maximum discharge during year, 1,500 cfs Feb. 10 (gage height, 7.30 ft); minimum, 1.4 cfs Oct. 5; minimum gage height, 1.52 ft Aug. 14-16.
1961-65: Maximum discharge, 4,160 cfs Apr. 20, 1964 (gage height, 11.80 ft); minimum, that of Oct. 5, 1965.
Maximum stage known, about 18 ft March 1913, from information by local residents.

Remarks.--Records fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Jan. 24)

1.3	1.1	2.2	57
1.4	2.6	3.0	183
1.5	4.9	4.0	385
1.7	12	5.0	650
1.8	18	7.0	1,380
2.0	35		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	3.0	* 3.6	7.3	b 12	124	129	137	86	17	6.0	12
2	2.1	3.3	3.2	12	b 11	* 563	126	116	162	15	6.0	10
3	2.4	*2.7	3.8	13	*b 11	636	110	97	* 231	14	* 7.0	8.6
4	1.8	2.2	3.9	11	b 10	604	109	83	147	13	8.0	7.8
5	1.5	2.3	4.1	* 9.1	b 10	712	100	76	103	12	7.0	9.3
6	1.5	2.5	3.6	7.6	b 10	525	545	70	94	11	6.0	7.6
7	1.8	2.5	3.5	6.9	21	471	628	64	160	* 13	6.0	6.1
8	2.1	3.0	3.8	7.3	32	428	436	57	115	14	6.0	5.7
9	2.2	3.0	3.8	8.7	93	350	686	53	81	14	6.0	5.9
10	1.9	2.7	4.0	8.0	1,260	271	492	49	62	12	6.0	5.9
11	1.9	3.1	5.5	7.3	957	220	540	44	50	11	6.0	6.0
12	2.1	3.2	6.7	6.9	513	197	463	40	44	9.6	6.0	6.6
13	2.1	2.8	6.7	6.6	300	178	307	38	39	9.0	6.0	7.5
14	2.1	2.6	5.8	5.9	198	173	231	35	33	8.8	6.0	9.3
15	2.0	3.4	4.9	5.6	146	154	240	33	29	9.2	6.1	414
16	1.8	5.0	4.5	4.7	111	141	240	31	26	8.9	5.7	919
17	1.7	3.7	4.3	4.2	97	153	204	29	24	30	6.4	842
18	1.8	2.8	3.9	4.4	89	156	172	30	* 22	61	7.9	561
19	1.7	2.6	3.6	4.2	77	96	141	84	20	25	7.0	336
20	2.0	2.9	4.2	4.4	64	82	121	51	19	15	6.0	216
21	1.8	2.4	4.3	4.2	65	75	105	36	18	10	6.0	152
22	1.8	2.1	4.4	4.9	45	70	91	31	18	8.0	6.0	132
23	1.9	2.2	4.8	12	45	86	84	179	18	7.0	6.0	142
24	2.2	2.5	5.3	29	39	165	153	207	17	6.2	6.0	118
25	2.2	2.7	6.8	b30	36	142	466	302	15	5.6	8.0	94
26	2.6	3.1	7.1	b20	17	116	568	314	14	6.0	11	75
27	2.6	3.4	6.3	b17	19	85	361	546	13	6.0	10	* 58
28	2.7	4.3	5.8	b16	23	80	250	407	13	5.6	7.0	46
29	3.2	4.3	5.5	b15	------	95	* 190	219	17	5.6	5.0	40
30	3.5	4.1	5.6	b13	------	117	160	150	26	5.2	* 4.5	37
31	3.1	------	5.4	b12	------	* 120	------	112	------	5.0	5.0	------
TOTAL	66.1	90.4	148.7	318.2	4,311	7,385	8,448	3,720	1,716	392.7	201.6	4,290.3
MEAN	2.13	3.01	4.80	10.3	154	238	282	120	57.2	12.7	6.50	143
CFSM	.014	.020	.032	.070	1.04	1.61	1.91	.811	.387	.086	.044	.966
IN	.02	.02	.04	.08	1.08	1.86	2.12	.93	.43	.10	.05	1.08

CALENDAR YEAR 1964 MAX 3,460 MIN 1.5 MEAN 117 CFSM .791 INCHES 10.77
WATER YEAR 1964-65 MAX 1,260 MIN 1.5 MEAN 85.2 CFSM .576 INCHES 7.81

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1800	7.30	1,500				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record July 19 to Aug. 13, Aug. 19-31.

3-3336. Kokomo Creek near Kokomo, Ind.

Location.--Lat 40°26'28", long 86°05'20", midway on line between secs. 16 and 17, T. 23 N., R. 4 E., on left bank at upstream side of county road bridge. 3.4 miles southeast of Kokomo, and 4.2 miles upstream from mouth.

Drainage area.--24.3 sq mi.

Records available.--July 1959 to September 1965.

Gage.--Water-stage recorder (digital after Aug. 30, 1965). Datum of gage is 807.68 ft above mean sea level, datum of 1929 (unadjusted).

Average discharge.--6 years, 16.3 cfs.

Extremes.--Maximum discharge during year, 335 cfs Apr. 8 (gage height, 5.77 ft); minimum, 0.3 cfs Oct. 4-7, Aug. 31, Sept. 4, 7, 8; minimum gage height, 1.44 ft Sept. 10, 11.
1959-65: Maximum discharge, 1,040 cfs Apr. 20, 1964 (gage height, 9.88 ft); minimum, that of Oct. 4-7, 1964, Aug. 31, Sept. 4, 7, 8, 1965; minimum gage height, 1.30 ft Aug. 12, 27, 1959.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.6	* 1.2	2.6	2.8	30	22	26	5.1	5.7	1.6	2.3
2	.5	.7	1.2	3.7	2.3	*86	22	22	19	4.5	1.6	.5
3	.4	* .7	1.4	2.2	* 2.2	86	20	* 18	24	3.7	* 1.3	.4
4	.3	.7	1.4	1.5	1.9	102	20	15	14	3.0	1.5	.4
5	.3	.7	1.3	* 1.3	2.0	102	19	14	12	2.3	1.4	.5
6	.3	.7	1.2	1.3	2.6	78	150	12	10	2.0	1.3	.4
7	.4	.6	1.2	1.4	4.8	70	98	12	9.5	* 4.0	1.3	.4
8	.5	.6	1.5	1.7	6.2	70	147	10	8.4	2.8	2.0	.4
9	.6	.6	1.5	2.3	18	55	226	9.5	7.2	3.0	2.6	.6
10	.6	.7	1.5	2.0	265	45	110	8.4	6.5	2.8	1.6	.8
11	.6	.8	2.3	1.7	134	38	204	7.2	5.7	2.2	1.4	.8
12	.6	.9	1.7	1.7	74	37	174	6.5	4.8	1.6	1.1	.9
13	.6	1.1	1.3	1.7	45	34	98	5.9	4.5	1.5	.8	1.1
14	.6	1.2	1.1	1.5	30	34	66	5.4	4.0	3.0	.8	1.9
15	.6	1.7	.8	1.4	20	31	70	4.8	3.4	2.8	.6	19
16	.6	2.8	.9	1.3	17	29	62	4.5	3.2	2.0	.6	20
17	.5	1.4	1.0	1.5	15	34	48	4.0	3.0	67	.7	25
18	.5	1.3	.8	1.7	14	30	40	4.0	2.8	26	.9	16
19	.6	1.4	.8	1.7	12	19	33	4.0	2.6	13	.8	9.1
20	.6	1.4	1.0	1.9	11	16	28	4.5	2.6	6.9	.6	5.4
21	.7	1.2	1.0	2.0	11	14	23	3.4	2.6	4.8	.5	3.4
22	.6	1.0	1.3	2.8	7.2	14	19	3.2	2.5	4.5	.5	4.0
23	.6	1.1	1.6	9.1	6.5	17	18	3.4	2.5	3.7	.6	4.2
24	.6	1.2	1.9	12	5.7	21	52	5.6	2.5	2.8	.6	4.8
25	.5	1.1	2.3	8.0	2.2	19	126	9.8	2.3	3.0	.6	3.0
26	.5	1.2	2.2	10	1.7	17	102	12	2.0	1.9	.6	2.8
27	.6	1.2	1.9	9.5	1.9	13	70	28	2.2	1.6	.8	* 2.8
28	.7	1.7	1.7	8.0	3.2	14	52	16	2.0	1.5	.6	2.2
29	.7	1.4	1.7	4.8		18	*38	9.8	4.6	1.4	.5	2.2
30	.7	1.1	1.7	3.4	- - - - -	20	32	7.6	13	1.3	* .4	2.0
31	.7	- - - - -	1.6	2.6	- - - - -	* 20	- - - - -	5.9	- - - - -	1.2	.8	- - - - -
Total	17.1	32.8	44.0	108.3	719.2	1,213	2,189	302.4	188.5	187.5	31.0	137.3
Mean	0.55	1.09	1.42	3.49	25.7	39.1	73.0	9.75	6.28	6.05	1.00	4.58
Cfsm	0.023	0.045	0.058	0.144	1.06	1.61	3.00	0.401	0.258	0.249	0.041	0.188
In.	0.03	0.05	0.07	0.17	1.10	1.86	3.35	0.46	0.29	0.29	0.05	0.21

Calendar year 1964: Max 685 Min 0.3 Mean 19.1 Cfsm 0.786 In. 10.70
Water year 1964-65: Max 265 Min 0.3 Mean 14.2 Cfsm 0.584 In. 7.93

Peak discharge (base, 260 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1300	5.47	305				
4-8	2030	5.77	335				
4-11	1900	5.36	295				

* Discharge measurement made on this day.

3-3337. Wildcat Creek at Kokomo, Ind.

Location.--Lat 40°28', long 86°09', in NW¼ sec. 2, T. 23 N., R. 3 E., on right bank in Kokomo, 0.3 mile downstream from Kokomo Creek, 0.4 mile upstream from Dixon Road Bridge and on property of Continental Steel Corporation.

Drainage area.--245 sq mi.

Records available.--October 1955 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 775.62 ft, levels by Indiana Department of Natural Resources (revised).

Average discharge.--10 years, 211 cfs.

Extremes.--Maximum discharge during year, 1,870 cfs Apr. 8 (gage height, 5.67 ft); minimum, 16 cfs Oct. 5, 26; minimum gage height, 1.01 ft Aug. 23, 29.
1955-65: Maximum discharge, 8,100 cfs Feb. 10, 1959 (gage height, 10.83 ft); minimum, 5.0 cfs Sept. 30, 1956; minimum gage height, 0.94 ft Sept. 7, 1964.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 7 to Sept. 16)

Oct. 1 to Jan. 4		Jan. 5 to Sept. 30			
1.0	15	1.0	12	3.0	410
1.1	20	1.3	31	4.0	840
1.3	33	1.6	57	5.0	1,420
1.7	71	2.0	107	6.0	2,100
		2.4	194		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	18	*20	46	35	a150	215	254	142	55	31	57
2	21	18	20	62	35	*a500	221	212	231	44	26	37
3	20	*19	21	29	* 35	a700	194	175	* 315	32	* 25	35
4	17	19	23	21	33	884	170	156	231	27	43	36
5	17	19	23	*22	31	972	254	149	157	24	28	45
6	18	19	20	21	30	790	846	128	138	29	26	27
7	19	19	19	21	30	670	1,040	119	163	* 92	32	34
8	20	19	19	33	36	638	1,160	106	179	41	33	34
9	20	20	20	49	a150	562	1,450	94	135	40	33	43
10	19	21	22	31	a700	486	994	93	105	38	29	49
11	18	21	67	25	a1,200	410	1,030	84	90	27	27	44
12	17	22	31	24	a900	358	1,060	80	76	26	26	44
13	18	21	23	23	a560	322	690	78	66	27	28	45
14	19	20	21	21	a400	307	530	69	63	74	27	117
15	19	40	19	21	a300	300	506	63	60	36	25	125
16	19	61	18	21	a220	268	490	54	52	47	26	651
17	19	35	19	21	153	275	426	55	42	301	47	848
18	18	25	19	21	138	275	366	59	*36	92	40	689
19	17	23	17	21	117	215	300	63	33	91	34	444
20	18	23	17	21	100	162	250	99	31	69	30	287
21	18	22	17	21	94	144	212	69	35	46	28	208
22	18	21	18	42	89	128	178	74	37	39	28	172
23	18	20	19	99	85	*181	72	117	37	37	29	140
24	18	21	34	70	74	209	203	350	41	33	30	128
25	17	21	31	54	a 50	244	610	342	35	28	32	104
26	17	20	21	51	a 32	203	906	594	33	29	46	84
27	18	19	17	50	a 32	165	670	598	22	31	64	* 76
28	18	50	17	47	a 70	144	498	594	30	28	32	58
29	20	23	18	43		162	*382	378	99	28	26	54
30	21	19	20	37	------	200	307	244	78	26	* 27	85
31	20	------	20	36	------	*206	------	178	------	23	105	------
Total	577	718	690	1,104	5,729	11,230	16,230	5,728	2,792	1,560	1,063	4,800
Mean	18.6	23.9	22.3	35.6	205	362	541	185	93.1	50.3	34.3	160
Cfsm	0.076	0.098	0.091	0.145	0.837	1.48	2.21	0.755	0.380	0.205	0.140	0.653
In.	0.09	0.11	0.10	0.17	0.87	1.70	2.46	0.87	0.42	0.24	0.16	0.73

Calendar year 1964: Max 6,320 Min 8.0 Mean 190 Cfsm 0.776 In. 10.57
Water year 1964-65: Max 1,450 Min 17 Mean 143 Cfsm 0.584 In. 7.93

Peak discharge (base, 2,100 cfs).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record.

3-3340. Wildcat Creek at Owasco, Ind.

Location.--Lat 40°27'50", long 86°38'15", in SE¼SE¼ sec. 4, T. 23 N., R. 2 W., on left bank, 500 ft downstream from State Highway 39 bridge, half a mile northwest of Owasco and 15 miles upstream from South Fork Wildcat Creek.

Drainage area.--390 sq mi.

Records available.--October 1943 to September 1965. Prior to March 1944, monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder (digital). Datum of gage is 624.63 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1950, wire-weight gage 500 ft upstream at same datum.

Average discharge.--22 years, 360 cfs.

Extremes.--Maximum discharge during year, 2,870 cfs Apr. 10 (gage height, 7.07 ft); minimum, 20 cfs Oct. 7, 8 (gage height, 0.95 ft).
1943-65: Maximum discharge, 10,200 cfs Jan. 5, 1950 (gage height, 13.3 ft), from rating curve extended above 6,700 cfs; minimum observed, 10 cfs Sept. 25, 1944.
Flood of May 18, 1943, reached a stage of 14.0 ft, from floodmarks.

Remarks.--Records fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Sept. 14				Sept. 15 to 30	
0.9	17	2.5	255	1.7	93
1.0	23	3.0	455	2.0	144
1.5	65	5.0	1,520	2.5	266
2.0	137	7.0	2,820	3.0	455
				4.0	975

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	35	41	44	73	b150	352	481	292	139	49	106
2	31	33	* 42	89	* 73	616	369	398	320	108	45	127
3	27	29	43	153	71	* 1,080	354	340	391	84	51	69
4	24	* 32	40	95	66	1,290	323	307	408	69	49	55
5	24	28	40	69	55	1,440	305	303	315	58	55	50
6	22	36	40	* 62	64	1,340	1,140	278	297	50	57	54
7	21	40	37	60	78	1,120	1,600	255	285	81	50	47
8	21	40	34	56	91	1,000	1,670	237	272	161	56	37
9	22	34	38	62	117	914	2,460	217	303	93	50	36
10	23	30	34	98	1,100	767	2,340	201	234	74	49	37
11	26	29	40	71	1,850	655	1,680	189	196	67	48	41
12	30	34	68	57	1,780	553	2,150	173	179	59	43	48
13	30	32	78	55	1,060	495	1,650	165	156	48	40	44
14	31	30	52	49	705	460	1,120	157	138	47	38	125
15	35	34	43	46	485	439	982	147	128	300	41	730
16	33	41	42	42	369	414	912	137	120	135	40	518
17	27	91	44	44	308	463	806	126	111	316	55	962
18	24	65	38	47	269	542	685	121	89	522	69	943
19	28	48	b 35	44	246	428	569	127	83	240	59	740
20	27	44	b 34	45	213	335	467	124	74	178	52	475
21	24	40	b 34	46	192	290	418	160	* 67	139	41	*355
22	23	38	b 34	51	177	266	369	139	64	131	38	298
23	* 24	34	34	122	161	260	318	142	70	190	36	257
24	30	31	39	325	b 120	306	366	248	67	108	* 33	221
25	35	32	44	247	b 70	319	992	* 462	63	92	32	205
26	35	34	54	183	b 60	325	* 1,450	678	66	* 75	36	175
27	33	36	47	161	b 70	288	1,310	1,270	59	59	51	146
28	32	47	41	137	b 100	279	964	966	56	56	70	133
29	32	56	37	101	------	* 306	725	751	51	53	52	112
30	30	60	30	95	------	341	571	489	110	50	38	101
31	29	------	36	82	------	353	------	358	------	48	38	------
TOTAL	864	1,193	1,293	2,838	10,023	17,834	29,437	10,146	5,064	3,830	1,461	7,247
MEAN	27.9	39.8	41.7	91.5	358	575	981	327	169	124	47.1	242
CFSM	.072	.102	.107	.235	.918	1.47	2.52	.839	.433	.318	.121	.621
IN	.08	.11	.12	.27	.96	1.70	2.81	.97	.48	.37	.14	.69

CALENDAR YEAR 1964	MAX 9,200	MIN 21	MEAN 318	CFSM .815	INCHES 11.10
WATER YEAR 1964-65	MAX 2,460	MIN 21	MEAN 250	CFSM .641	INCHES 8.70

Peak discharge (base, 3,000 cfs).--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3345. South Fork Wildcat Creek near Lafayette, Ind.

Location.--Lat 40°25'04", long 86°46'05", in SW¼ sec. 21, T. 23 N., R. 3 W., on right bank 40 ft upstream from bridge on State Highway 26, one-half mile upstream from Middle Fork, 4¼ miles upstream from mouth, and 5 miles east of Lafayette.

Drainage area.--246 sq mi.

Records available.--October 1943 to September 1965. Prior to March 1944 monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder (digital after Oct. 21). Datum of gage is 563.45 ft above mean sea level (State Highway Department of Indiana bench mark). Prior to July 29, 1954, wire-weight gage at site 40 ft downstream at same datum.

Average discharge.--22 years, 231 cfs.

Extremes.--Maximum discharge during year, 3,700 cfs Sept. 15 (gage height, 9.53 ft); minimum, 16 cfs Aug. 17 (gage height, 1.37 ft).
1943-65: Maximum discharge, 12,600 cfs June 10, 1958 (gage height, 15.28 ft), from rating curve extended above 6,000 cfs on basis of contracted-opening measurement at 16.8 ft; minimum, 15 cfs Sept. 18, 19, 22, 1944.
Flood in May 1943 reached a stage of 16.8 ft, from floodmarks (discharge, 17,900 cfs, by contracted-opening method).

Remarks.--Records fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.3	7.0
1.5	38
2.0	132
2.5	265
3.0	440
6.0	1,680
9.0	3,310

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	22	34	43	b 55	200	208	247	152	111	31	91
2	27	24	* 38	94	*b 52	660	211	214	512	92	29	66
3	25	20	38	98	b 48	*708	186	189	664	85	27	52
4	24	* 20	40	70	b 45	676	176	176	393	69	34	47
5	24	22	38	60	b 42	780	176	200	265	70	42	41
6	22	22	36	* 52	b 40	584	1,500	176	223	98	33	39
7	24	22	33	49	b 50	504	1,250	168	337	145	27	31
8	27	22	33	49	b 70	456	1,240	159	232	132	42	29
9	29	24	33	63	92	397	1,990	147	588	94	45	29
10	29	22	34	74	1,420	327	1,120	141	383	81	38	27
11	31	22	45	61	1,130	271	1,090	130	232	67	33	27
12	29	24	63	54	648	244	1,050	126	178	56	27	26
13	29	24	54	51	390	223	752	119	147	49	24	25
14	27	22	45	b 45	271	211	560	115	126	47	22	109
15	27	27	b 37	b 42	208	202	536	111	113	70	20	2,510
16	27	42	b 34	b 38	168	186	528	105	103	113	19	1,520
17	27	52	b 33	b 36	150	232	452	100	96	98	27	1,300
18	29	36	b 32	b 35	136	323	379	94	87	173	27	871
19	33	36	b 32	b 36	126	220	316	92	83	128	38	556
20	27	34	b 32	b 37	115	166	274	88	78	92	33	367
21	* 24	33	b 32	b 38	b 100	161	244	85	* 74	72	25	*271
22	27	34	29	b 42	b 90	147	220	92	70	58	24	232
23	27	29	33	109	b 70	164	202	92	74	* 56	24	206
24	27	29	36	192	b 60	220	214	194	70	69	* 20	173
25	29	31	43	159	b 50	205	424	*152	63	61	21	150
26	25	31	47	132	b 40	183	*824	540	58	45	32	130
27	24	31	42	b110	b 40	161	588	872	54	42	68	112
28	24	47	38	b 95	b 60	159	424	544	78	38	55	102
29	25	54	34	b 80	------	* 194	334	320	351	33	36	93
30	25	42	36	b 70	------	232	277	226	166	31	28	91
31	22	------	34	b 62	------	217	------	178	------	29	38	------
TOTAL	821	900	1,168	2,176	5,766	9,613	17,745	6,192	6,050	2,404	989	9,323
MEAN	26.5	30.0	37.7	70.2	206	310	592	200	202	77.5	31.9	311
CFSM	.108	.122	.153	.285	.837	1.26	2.41	.813	.821	.315	.130	1.26
IN	.12	.14	.18	.33	.87	1.45	2.68	.94	.91	.36	.15	1.41

CALENDAR YEAR 1964 MAX 8,410 MIN 17 MEAN 206 CFSM .837 INCHES 11.39
WATER YEAR 1964-65 MAX 2,510 MIN 19 MEAN 173 CFSM .703 INCHES 9.55

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
9-15	1345	9.53	3,700				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3350. Wildcat Creek near Lafayette, Ind.

Location.--Lat 40°26'26", long 86°49'46", on line between north half of secs. 13 and 14, T. 23 N., R. 4 W., on downstream side of county highway bridge, 2 miles east of corporate limits of Lafayette, 2½ miles upstream from mouth, and 3 miles downstream from South Fork Wildcat Creek.

Drainage area.--791 sq mi.

Records available.--May 1954 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 527.66 ft above mean sea level, datum of 1929 (Indiana Flood Control and Water Resources Commission bench mark). Prior to June 13, 1957, wire-weight gage at present site and datum.

Average discharge.--11 years, 721 cfs.

Extremes.--Maximum discharge during year, 6,950 cfs Apr. 9, Sept. 15; maximum gage height, 11.02 ft Sept. 15); minimum discharge, 61 cfs Oct. 22; minimum gage height, 2.32 ft Aug. 24, 25.
1954-65: Maximum discharge, 25,000 cfs June 10, 1958 (gage height, 21.52 ft), from rating curve extended above 18,000 cfs by logarithmic plotting; minimum, 46 cfs Sept. 27-29, 1954, Sept. 6, 7, 1964; minimum gage height, that of Aug. 24, 25, 1965.

Remarks.--Records fair. There is evidence of minor regulation or diversion above the gage.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-7)

Oct. 1 to Apr. 8		Apr. 9 to Sept. 30	
2.5	49	2.3	81
2.6	69	2.8	230
2.8	121	3.6	575
3.0	186	5.0	1,440
3.5	405	7.0	3,000
4.0	700	11.0	6,950
8.0	3,900		
11.0	6,950		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	72	107	97	170	500	732	980	575	325	129	265
2	86	76	89	166	160	1,400	732	860	944	285	129	305
3	86	76	94	265	150	2,120	668	740	1,300	248	127	192
4	74	74	94	225	140	2,440	635	658	980	206	138	159
5	69	76	92	155	130	2,760	605	658	740	195	138	141
6	67	69	86	130	150	2,440	3,410	602	630	212	138	127
7	67	76	94	121	180	2,120	3,720	550	920	281	127	129
8	72	82	82	124	210	1,880	4,060	525	*658	345	147	110
9	72	84	79	133	270	1,640	6,100	475	1,310	265	171	102
10	72	79	89	172	3,030	1,400	4,700	452	860	223	135	102
11	74	72	94	166	3,720	1,170	4,000	*408	575	192	129	102
12	74	69	116	136	3,000	960	4,400	385	475	171	121	107
13	79	72	152	121	1,960	895	*3,360	385	408	159	107	110
14	79	72	124	110	1,240	798	2,440	365	365	150	102	430
15	82	76	99	100	895	765	2,200	345	325	386	99	5,500
16	82	102	*105	96	*668	700	2,040	325	305	408	99	3,630
17	82	*124	92	94	545	830	1,720	305	285	356	*129	a3,000
18	74	143	86	94	455	*1,240	1,510	305	265	1,040	144	a2,400
19	69	113	82	96	430	830	1,230	305	248	575	141	a1,700
20	74	99	82	*100	355	635	1,100	285	226	385	124	*a1,200
21	*67	89	82	110	300	575	920	305	212	305	113	a 950
22	63	94	82	120	250	515	860	325	202	248	99	a 760
23	65	84	84	250	200	515	770	285	202	*305	97	a 660
24	65	79	89	700	160	635	800	452	206	265	91	a 560
25	72	79	97	500	120	605	1,960	712	192	223	89	a 500
26	79	79	107	350	120	635	2,840	1,280	183	192	97	a 450
27	79	82	110	280	120	545	2,440	2,840	177	165	141	a 400
28	74	118	97	230	120	515	1,880	1,880	183	150	147	a 350
29	74	118	89	200		635	1,440	1,370	456	141	147	a 320
30	74	124	86	190	------	765	1,160	920	305	132	113	a 300
31	74	------	79	180	------	732	------	712	----	127	127	------
Total	2,304	2,652	2,940	5,811	19,248	34,195	64,432	20,994	14,712	8,660	3,835	25,061
Mean	74.3	88.4	94.8	187	687	1,103	2,148	677	490	279	124	835
Cfsm	0.094	0.112	0.120	0.236	0.868	1.39	2.72	0.856	0.619	0.353	0.157	1.06
In.	0.11	0.12	0.14	0.27	0.90	1.60	3.04	0.99	0.69	0.41	0.18	1.18

Calendar year 1964 : Max 17,600 Min 47 Mean 654 Cfsm 0.827 In. 11.25
Water year 1964-65 : Max 6,100 Min 63 Mean 561 Cfsm 0.709 In. 8.57

Peak discharge (base, 6,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-9	0600	10.98	6,950				
9-15	1800	11.02	6,950				

* Discharge measurement made on this day.
a No gage-height record.
Note.--Stage-discharge relation affected by ice Dec. 18-23, Jan. 14 to Feb. 9, Feb. 21 to Mar. 2.

3-3355. Wabash River at Lafayette, Ind.

Location.--Lat 40°25'19", long 86°53'49", in sec. 20, T. 23 N., R. 4 W., on right bank 20 ft downstream from Brown Street Bridge in Lafayette, 5.1 miles downstream from Wildcat Creek, and at mile 311.9.

Drainage area.--7,247 sq mi.

Records available.--February 1901 to January 1902, March to December 1902, January to May 1903, (gage heights only), October 1923 to September 1965. Monthly discharge only for some periods, published in WSP 1305. Gage-height records collected at same site since October 1913 are contained in reports of U. S. Weather Bureau. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder. Datum of gage is 504.14 ft above mean sea level, datum of 1929. Oct. 7, 1923 to Nov. 20, 1933, chain gage at same site and datum. Prior to May 2, 1903, staff gage half a mile upstream at different datum.

Average discharge.--42 years (1923-65), 6,216 cfs.

Extremes.--Maximum discharge during year, 36,500 cfs Apr. 10 (gage height, 17.06 ft); minimum, 505 cfs Nov. 22 (gage height, 0.55 ft).
1901-3, 1923-65: Maximum discharge, 131,000 cfs May 19, 1943 (gage height, 28.47 ft); minimum, 265 cfs Jan. 12, 1954; minimum gage height, 0.24 ft Aug. 15, 18, 1901.
Maximum stage known, 32.9 ft Mar. 26, 1913, from floodmark, determined by U. S. Weather Bureau (discharge, 190,000 cfs, estimated).

Remarks.--Records good, except for periods of ice effect and no gage-height record, which are poor. Flow regulated at low stages by powerplants upstream. Records of suspended sediment loads for water year 1965 are published in Part 2 of this report.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.5	470	10.0	15,000
1.2	1,040	15.0	28,000
3.0	3,230	17.0	36,000

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	690	690	815	1,240	a 2,800	5,150	12,600	9,720	4,550	2,170	1,140	1,450
2	690	690	815	2,820	a 2,200	8,870	12,600	8,360	4,700	1,920	1,190	1,450
3	690	730	950	5,770	a 2,000	12,500	12,300	7,210	4,700	1,920	1,240	1,400
4	690	730	950	5,300	a 2,100	16,800	9,380	6,730	4,100	1,680	1,090	1,190
5	650	690	995	4,100	a 2,500	22,300	8,360	5,770	3,950	1,680	1,290	1,240
6	650	730	815	3,370	a 2,800	26,500	13,300	5,610	3,510	1,800	1,140	1,240
7	650	770	860	2,950	a 3,200	25,300	27,700	5,770	3,650	2,430	1,090	1,090
8	730	730	905	2,690	b 4,200	22,600	30,400	5,610	* 3,650	3,230	1,090	1,190
9	690	730	770	3,090	5,300	21,500	33,200	5,150	4,100	2,820	1,190	3,370
10	730	770	770	3,950	13,200	18,500	36,000	* 4,700	3,950	2,690	1,240	3,510
11	690	770	1,090	4,100	*30,800	14,600	33,200	4,550	2,950	2,170	1,240	2,560
12	690	770	1,340	3,650	34,800	12,100	28,400	4,400	3,510	1,800	1,450	1,800
13	690	730	1,450	2,950	29,600	10,600	* 24,100	4,250	2,560	1,680	1,290	1,450
14	730	690	1,680	2,430	a 21,000	9,890	20,000	4,100	2,560	1,450	1,190	3,230
15	690	770	* 1,340	1,340	13,400	10,100	17,000	3,650	2,170	1,680	1,140	7,050
16	730	995	1,190	1,240	*9,720	9,380	15,400	3,650	1,920	1,800	*1,040	6,890
17	690	* 1,090	1,240	1,450	7,690	9,210	13,000	3,090	2,170	1,800	1,290	5,930
18	690	1,040	770	1,800	6,410	* 13,000	10,900	3,090	1,800	4,400	1,560	5,000
19	* 815	860	950	2,170	5,930	a 15,000	9,210	3,090	1,800	4,400	1,680	4,250
20	690	860	905	2,300	5,300	a 12,000	8,530	2,950	1,680	4,100	1,190	3,510
21	690	815	1,040	2,300	5,000	a 9,000	7,530	2,820	1,680	3,230	1,240	* 2,820
22	690	690	1,090	2,040	a 4,000	7,210	a 6,600	2,430	1,680	2,430	1,240	2,820
23	650	860	1,290	b 3,500	a 3,000	6,570	a 6,000	2,560	1,680	3,510	1,240	2,690
24	690	815	1,140	b 10,000	a 2,500	6,250	a 6,000	3,230	1,800	2,820	1,090	2,040
25	650	815	1,340	14,800	a 2,200	5,610	14,200	4,100	1,800	2,040	1,090	2,040
26	690	860	1,450	12,300	a 2,300	6,570	24,700	5,450	1,680	1,680	1,090	1,680
27	730	730	1,140	12,300	a 4,000	6,570	26,200	9,040	1,560	1,560	1,290	1,920
28	730	1,140	1,140	9,890	5,000	5,770	21,500	9,380	1,680	* 1,340	1,190	2,170
29	690	1,190	1,140	a 8,000		6,250	15,400	8,190	2,170	1,290	1,240	1,800
30	730	1,090	1,140	a 5,000	------	11,400	11,600	6,570	2,040	1,190	1,140	1,800
31	730	------	1,140	a 3,500	------	13,000	------	5,000	------	1,190	1,240	------
Total	21,635	24,840	33,650	142,340	232,950	380,100	515,310	160,220	81,750	69,900	37,860	80,580
Mean	698	828	1,085	4,592	8,320	12,260	17,180	5,168	2,725	2,255	1,221	2,686
Cfsm	0.096	0.114	0.150	0.634	1.15	1.69	2.37	0.713	0.376	0.311	0.168	0.371
In.	0.11	0.13	0.17	0.73	1.20	1.95	2.64	0.82	0.42	0.36	0.19	0.41

Calendar year 1964 : Max 57,600 Min 505 Mean 4,140 Cfsm 0.571 In. 7.79
Water year 1964-65 : Max 36,000 Min 650 Mean 4,880 Cfsm 0.673 In. 9.13

Peak discharge (base, 30,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	1100	16.78	35,200				
4-10	1500	17.06	36,500				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3357. Big Pine Creek near Williamsport, Ind.

Location.--Lat 40°19', long 87°17', in SE¼ sec. 26, T. 22 N., R. 8 W., on upstream side of highway bridge, 1.6 miles north of city limits of Williamsport, and 2.5 miles upstream from mouth.

Drainage area.--329 sq mi.

Records available.--October 1955 to September 1965.

Gage.--Wire-weight gage, read twice daily, and crest-stage gage. Datum of gage is 511.68 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--10 years, 241 cfs.

Extremes.--Maximum discharge during year, 5,800 cfs Sept. 14 (gage height, 11.53 ft); minimum daily, 8.0 cfs Oct. 6, 7; minimum gage height observed, 3.31 ft Oct. 1.
1955-65: Maximum discharge, 12,600 cfs Feb. 10, 1959 (gage height, 16.00 ft from floodmark), from rating curve extended above 6,000 cfs on basis of contracted-opening measurement; minimum daily, 7.0 cfs Oct. 10, 1956.

Remarks.--Records fair except those for periods of ice effect or indefinite stage-discharge relation, which are poor.

Rating table, except periods of ice effect or indefinite stage-discharge relation
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 31 to Sept. 14)

Oct. 1 to Jan. 23		Jan. 24 to Sept. 30			
4.0	210	3.29	14	4.4	300
4.5	380	3.3	15	6.0	1,070
5.0	590	3.5	40	8.0	2,360
7.0	1,640	3.8	105		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	16	20	45	100	212	380	535	340	64	32	30
2	10	16	19	225	85	400	360	422	512	62	32	25
3	10	16	19	340	80	490	320	340	445	62	31	23
4	9.0	15	18	305	80	380	280	272	360	62	31	22
5	9.0	16	18	255	80	360	272	320	320	60	129	21
6	8.0	17	18	180	90	340	861	300	280	56	30	20
7	8.0	18	17	140	120	320	1,470	248	226	60	28	20
8	10	17	17	140	180	400	1,400	240	*222	111	28	*19
9	10	16	18	120	250	*490	1,520	226	219	*135	28	18
10	10	15	20	110	625	422	1,170	*219	208	111	28	17
11	11	15	22	322	720	320	820	212	205	95	26	15
12	10	15	26	255	670	280	670	198	198	82	26	17
13	10	16	34	180	535	280	490	191	177	72	*24	18
14	10	18	*27	140	400	252	*445	191	156	54	23	796
15	10	25	22	100	320	233	512	177	142	44	23	2,000
16	11	30	23	80	240	233	478	170	135	40	21	625
17	11	25	20	60	205	280	535	163	149	1,870	21	558
18	11	23	17	*54	*190	340	400	160	117	791	28	380
19	*12	*20	15	52	180	276	340	156	100	360	30	226
20	12	19	15	52	170	233	280	149	95	160	25	198
21	13	17	16	54	150	212	260	146	90	111	24	180
22	14	16	17	240	130	202	216	138	85	98	19	1,220
23	15	15	19	1,300	110	177	406	152	90	80	18	1,020
24	17	16	23	1,200	100	174	820	260	80	64	16	580
25	17	17	24	770	100	170	1,510	512	76	50	14	422
26	16	20	23	580	100	170	1,710	999	70	40	18	280
27	16	25	21	445	110	166	1,460	1,400	62	37	23	226
28	16	27	19	330	138	166	870	1,120	58	37	22	191
29	16	25	18	200		170	670	820	60	34	21	150
30	16	22	18	150	------	240	625	478	62	34	21	126
31	16	------	18	120	------	360	------	300	------	32	20	------
Total	374.0	568	621	8,544	6,258	8,748	21,550	11,214	5,339	4,968	860	9,445
Mean	12.1	18.9	20.0	276	224	282	718	362	178	160	27.7	315
Cfsm	0.037	0.057	0.061	0.839	0.681	0.857	2.18	1.10	0.541	0.486	0.084	0.957
In.	0.04	0.06	0.07	0.97	0.71	0.99	2.43	1.27	0.60	0.56	0.10	1.07

Calendar year 1964: Max 4,910 Min 78 Mean 127 Cfsm 0.386 In. 5.23
Water year 1964-65: Max 2,000 Min 8.0 Mean 215 Cfsm 0.653 In. 8.87

Peak discharge (base, 2,800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-6	Unknown	8.65	2,840				
7-17	Unknown	10.53	4,650				
9-14	Unknown	11.53	5,800				

* Discharge measurements made on this day.
Note.--Stage-discharge relation indefinite or affected by ice Oct. 1 to Jan. 1, Jan. 6-10, 13-21, Jan. 28 to Feb. 9, Feb. 18-27.

3-3360. Wabash River at Covington, Ind.

Location.--Lat 40°08'24", long 87°24'20", in sec. 35, T. 20 N., R. 9 W., near center of span on downstream side of highway bridge at Covington, 2.9 miles downstream from Oppossum Run, 3.6 miles upstream from Spring Creek, and at mile 271.1.

Drainage area.--8,208 sq mi.

Records available.--October 1939 to September 1965. Gage-height records collected at site three-eighths of a mile downstream January 1927 to December 1930 and at present site since December 1930 are contained in reports of U. S. Weather Bureau.

Gage.--Wire-weight gage read twice daily. Datum of gage is 473.97 ft above mean sea level, datum of 1929.

Average discharge.--26 years, 6,937 cfs.

Extremes.--Maximum discharge during year, 39,300 cfs Apr. 11 (gage height, 21.10 ft); minimum discharge, 630 cfs Oct. 17-20, Nov. 10, 11; minimum gage height observed, 2.88 ft Nov. 11.
1939-65: Maximum discharge, 147,000 cfs May 20, 1943 (gage height, 32.44 ft); minimum observed, 487 cfs Sept. 29, 1941 (gage height, 1.81 ft).
Maximum stage known, 35.1 ft in March 1913, from floodmark determined by U. S. Weather Bureau (discharge, 200,000 cfs estimated).

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor.

Rating tables, except periods of ice effect, (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 26 to Dec. 17, Dec. 31 to Jan. 12)

Oct. 1 to Jan. 15		Jan. 16 to Sept. 30			
2.9	630	3.5	1,350	16.0	21,600
6.0	4,000	6.0	4,300	19.0	29,600
8.0	6,700	12.0	13,700	21.0	38,800

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	820	820	1,370	1,640	3,500	5,700	14,200	13,900	5,980	3,120	1,650	1,550
2	770	820	1,170	1,970	2,500	7,380	13,200	11,000	7,380	2,760	1,550	1,850
3	770	770	1,120	4,000	2,000	11,600	12,300	9,560	7,100	2,520	1,550	1,850
4	770	770	1,120	5,810	2,000	15,100	11,200	8,440	6,400	2,400	1,750	1,650
5	770	720	1,220	5,250	2,300	13,800	10,500	8,280	5,560	2,070	1,550	1,650
6	770	720	1,170	4,480	3,000	22,000	15,700	7,960	4,720	2,180	1,450	1,550
7	720	675	1,220	3,880	4,000	24,400	* 21,100	7,660	4,720	2,520	1,450	1,550
8	770	675	1,170	3,640	6,000	24,600	26,400	7,960	4,580	2,760	1,350	1,550
9	770	675	1,170	3,520	9,560	*24,100	31,600	7,100	* 4,720	3,120	1,350	* 1,750
10	770	630	1,170	3,290	*16,300	22,900	34,800	6,400	5,000	3,480	1,550	3,360
11	720	675	1,320	3,520	19,400	20,000	37,800	5,700	5,140	3,120	1,450	3,480
12	770	720	1,530	4,480	*24,800	15,900	37,800	* 5,420	3,600	2,760	1,450	3,120
13	770	720	1,750	4,000	28,900	13,000	33,800	5,420	3,480	* 2,520	* 1,450	2,640
14	720	720	1,970	3,500	30,000	11,000	29,200	5,280	3,360	2,180	1,350	2,070
15	675	820	* 2,190	2,500	25,400	11,000	24,800	5,140	3,240	1,960	1,350	7,800
16	675	970	1,970	1,700	15,700	10,900	21,800	4,860	2,880	1,850	1,350	9,560
17	675	1,220	1,530	1,400	*10,400	10,500	19,000	4,300	2,520	3,740	1,550	8,120
18	630	1,270	1,100	1,400	9,440	10,500	15,300	4,020	2,290	4,860	1,750	6,820
19	630	* 1,120	1,100	1,800	7,380	11,200	12,600	3,880	2,070	5,420	1,750	5,700
20	630	1,070	1,200	* 2,100	6,820	14,400	10,900	3,740	2,520	5,140	1,650	4,860
21	* 720	1,020	1,300	2,500	6,400	10,900	9,880	3,480	2,400	4,580	1,450	4,020
22	720	1,020	1,400	3,000	5,840	9,240	8,440	3,240	2,290	4,020	1,350	3,480
23	720	1,020	1,500	4,580	4,500	8,600	8,120	3,000	2,400	3,120	1,650	4,580
24	675	1,020	1,500	8,600	3,500	7,380	7,960	3,360	2,180	3,600	1,550	3,880
25	675	970	1,600	15,100	2,700	7,100	12,300	4,720	2,180	3,240	1,550	3,120
26	720	970	1,600	15,000	2,700	6,680	20,900	6,960	2,070	2,520	1,550	2,520
27	820	970	1,500	13,500	3,300	6,260	25,100	10,000	1,960	2,070	1,450	2,400
28	770	1,170	1,500	12,300	4,500	5,980	26,600	11,900	1,960	1,850	1,650	2,400
29	820	1,420	1,500	9,560		6,260	24,400	11,000	2,520	1,850	1,550	2,520
30	820	1,420	1,500	6,820	---------	8,760	18,800	9,240	3,240	1,650	1,550	2,400
31	820	----------	1,530	5,000	---------	13,700	----------	7,800	----------	1,650	1,450	----------
Total	22,875	27,580	43,990	159,840	261,840	395,840	596,500	210,720	110,460	90,630	47,050	103,800
Mean	738	919	1,419	5,156	9,351	12,770	19,880	6,797	3,682	2,924	1,518	3,460
Cfsm	0.090	0.112	0.173	0.628	1.14	1.56	2.42	0.828	0.449	0.356	0.185	0.422
In.	0.10	0.12	0.20	0.72	1.19	1.80	2.70	0.95	0.50	0.41	0.21	0.47

Calendar year 1964 : Max 60,900 Min 630 Mean 4,551 Cfsm 0.554 In. 7.53
Water year 1964-65 : Max 37,800 Min 630 Mean 5,674 Cfsm 0.691 In. 9.37

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 16-22, Jan. 31 to Feb. 5, Feb. 26-28. Stage-discharge relation affected by ice Dec. 18-30, Jan. 13-15, Feb. 6-8.

GPO 826-027-6

3-3390. Vermilion River near Danville, Ill.

Location.--Lat 40°05'53", long 87°35'37", in SE¼NW¼ sec. 22, T. 19 N., R. 11 W., on left bank 1.5 miles upstream from Stony Creek and 2.5 miles southeast of Danville.

Drainage area.--1,279 sq mi.

Records available.--October 1914 to September 1921, June 1928 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder (digital). Datum of gage is 503.33 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Nov. 12, 1914, to Aug. 6, 1921, and June 13, 1928, to Jan. 9, 1935, chain gage at downstream side of Chicago & Eastern Illinois Railroad bridge 0.3 mile upstream at same datum.

Average discharge.--44 years, 887 cfs.

Extremes.--Maximum discharge during year, 7,920 cfs Apr. 6 (gage height, 12.82 ft); minimum, 47 cfs Oct. 19.
1914-21, 1928-65: Maximum discharge, 48,700 cfs Mar. 13, 1939 (gage height, 28.59 ft); minimum daily, 2 cfs Oct. 9-14, 1920, Aug. 10, 1930.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Flow regulated at times by storage at Lake Vermilion on North Fork Vermilion River, 4.5 miles above station (usable capacity, 7,440 acre-ft in 1940), and by Danville sewage-disposal plant.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	42	a70	56	b430	1,100	1,430	1,230	918	531	82	138
2	53	41	a56	81	b400	2,090	1,330	1,390	4,430	480	82	155
3	49	43	a50	830	b360	2,350	1,130	1,210	4,420	977	82	111
4	48	42	a48	889	b340	1,610	1,010	1,110	2,950	583	112	93
5	47	42	a46	525	b320	1,150	1,570	3,900	1,910	417	113	92
6	43	41	a45	395	b350	924	7,280	5,340	1,510	349	*168	80
7	42	43	*a58	342	382	861	6,290	5,190	1,280	380	111	94
8	43	42	a50	318	535	952	4,820	3,320	1,120	553	94	76
9	40	*40	a55	404	570	1,270	4,730	2,540	988	512	87	67
10	39	43	a70	588	1,960	1,520	4,230	1,880	913	493	83	64
11	35	a40	a120	510	2,880	1,330	4,180	1,460	980	355	78	63
12	37	a40	a250	* 386	2,380	1,130	3,950	1,260	793	288	74	64
13	39	a42	a270	330	1,690	987	2,970	*1,100	692	250	72	66
14	* 37	a46	a150	a230	1,150	945	2,250	1,000	594	234	68	69
15	37	a100	a90	a200	804	889	*2,550	896	519	217	65	245
16	39	a700	a74	a170	726	762	3,160	825	461	178	65	1,660
17	44	a310	a52	a150	* 708	708	2,740	758	362	188	82	1,600
18	37	a160	a45	a140	720	875	2,140	702	331	173	102	1,530
19	34	a90	a45	a130	714	994	1,730	662	322	205	97	962
20	41	a150	a45	a130	678	696	1,480	645	311	*184	89	372
21	41	a80	a60	a150	642	660	1,340	562	304	277	85	*335
22	33	a64	a80	338	564	660	1,190	540	284	203	73	1,200
23	32	a56	a130	909	480	684	1,220	572	272	160	63	3,030
24	32	a50	a140	3,140	342	672	1,630	571	254	108	58	3,360
25	44	a50	a100	3,630	282	630	4,730	1,530	* 229	95	63	1,980
26	46	a60	a120	2,540	359	*576	5,240	3,360	213	93	123	1,160
27	44	a100	a100	1,800	372	535	3,840	4,050	198	93	189	997
28	51	a180	a90	1,220	460	600	2,540	3,150	190	87	166	656
29	48	a200	a80	b620	----------	875	1,970	1,870	211	85	103	475
30	41	a110	a70	b540	------	1,320	1,640	1,230	625	79	83	454
31	43	------	a56	b470	------	1,460	------	1,030	------	78	116	------
Total	1,299	3,047	2,715	22,161	21,598	31,815	86,310	54,883	28,484	8,905	2,928	21,248
Mean	41.9	102	87.6	715	771	1,026	2,877	1,770	949	287	94.5	708
Cfsm	.033	.080	.069	.559	.603	.802	2.25	1.38	.742	.224	.074	.554
In.	.04	.09	.08	.64	.63	.93	2.51	1.60	.83	.26	.09	.62

Calendar year 1964 : Max 25,200 Min 32 Mean 700 Cfsm .547 In. 7.45
Water year 1964-65 : Max 7,280 Min 32 Mean 782 Cfsm .611 In. 8.30

Peak discharge (base, 6,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-6	1300	12.82	7,920				
4-25	1800	11.17	6,350				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3391.2 Coal Creek at Coal Creek, Ind.

Location.--Lat 40°01'42", long 87°22'30", in SW¼ sec. 6, T. 18 N., R. 9 W., on downstream side of county road bridge, 3,500 ft southeast of Coal Creek.

Drainage area.--214 sq mi.

Records available.--October 1964 to September 1965.

Gage.--Wire-weight gage read twice daily, crest-stage gage and type-A recorder. Datum of gage is 505.96 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 4,730 cfs Apr. 6 (gage height, 11.87 ft), from rating curve extended above 1,500 cfs; minimum, 7.0 cfs Oct. 6, 7; minimum gage height, 1.25 ft Sept. 12-14.

Remarks.--Records good.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5		Apr. 6 to Sept. 30	
1.34	7.0	1.28	19
1.4	10	1.3	20
1.5	15	1.5	32
1.8	40	1.8	62
2.2	93	2.0	87
3.0	240	2.5	170
4.0	490	3.0	275
6.0	1,200	5.0	830
8.0	2,170	7.0	1,650
		10.0	3,400
		11.0	4,100

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	15	58	64	b 70	363	200	220	107	101	25	68
2	11	15	42	242	b 60	550	190	190	1,680	101	25	27
3	8.5	15	35	260	a 55	375	153	190	830	101	25	27
4	7.5	16	30	180	a 52	300	144	180	375	80	28	27
5	7.5	16	28	109	a 50	260	956	475	250	51	26	27
6	7.0	16	26	78	a 55	250	3,540	350	210	117	26	27
7	7.0	16	26	78	b 70	250	* 1,480	200	325	161	28	27
8	8.5	16	22	93	153	260	770	170	240	126	28	* 27
9	8.5	16	22	171	838	250	* 1,520	161	*170	226	28	26
10	9.0	16	26	162	1,780	* 210	620	143	161	500	* 28	22
11	10	16	* 32	162	1,010	162	970	143	230	375	28	22
12	9.5	16	62	109	*550	162	1,320	*126	152	170	26	19
13	9.0	16	71	86	350	162	830	117	126	*a 95	25	19
14	8.5	16	67	b 60	240	160	650	101	87	a 80	25	21
15	9.0	16	46	a 50	180	153	530	94	74	a 70	22	213
16	9.0	88	b 30	a 43	162	144	500	a 86	74	a 63	22	400
17	9.0	220	b 25	a 40	*144	325	400	a 80	72	950	22	210
18	9.0	200	b 19	a 38	126	375	312	a 75	64	387	41	101
19	10	* 64	b 16	a 37	118	220	262	a 70	62	152	60	62
20	10	36	b 15	a 36	109	126	210	a 65	62	94	26	36
21	* 11	22	b 14	*b 40	101	118	170	a 60	62	72	25	85
22	12	18	b 14	118	93	118	170	a 56	62	56	22	425
23	12	18	b 14	273	93	144	190	a 54	217	56	22	375
24	12	18	15	1,030	78	162	350	180	200	49	22	210
25	12	15	a 25	460	71	153	1,340	385	87	41	22	101
26	14	a 15	a 30	300	64	153	880	645	56	41	62	74
27	15	16	26	190	78	153	475	740	53	39	28	68
28	15	67	26	153	126	200	325	222	51	32	22	a 65
29	15	78	24	126		375	275	134	52	28	22	a 65
30	15	67	22	93	------	300	250	a 110	134	25	22	a 70
31	15	------	28	78	------	210	------	94	------	25	251	------
Total	327.5	1,179	936	4,959	5,876	7,143	19,972	5,916	6,325	4,464	1,084	2,946
Mean	10.6	39.3	30.2	160	246	230	666	191	211	144	35.0	98.2
Cfsm	0.050	0.184	0.141	0.748	1.15	1.07	3.11	0.893	0.986	0.673	0.164	0.459
In.	0.06	0.21	0.16	0.86	1.20	1.23	3.47	1.03	1.10	0.78	0.19	0.51

Calendar year 1964: Max - Min - Mean - Cfsm - In. -
Water year 1964-65: Max 3,540 Min 7.0 Mean 170 Cfsm 0.794 In. 10.78

Peak discharge (base, 2,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	2100	10.17	3,540				
4-6	1030	11.87	4,730				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3391.5 Little Vermilion River near Newport, Ind.

Location.--Lat 39°53'32", long 87°25'42", in NW¼ sec. 27, T. 17 N., R. 9 W., on downstream side of bridge on State Road 63, 1.2 miles northwest of Newport and 6 miles upstream from mouth.

Drainage area.--240 sq mi.

Records available.--October 1964 to September 1965.

Gage.--Wire-weight gage read twice daily, crest-stage gage and type-A recorder. Datum of gage is 489.78 ft above mean sea level, datum of 1929 (Indiana State Highway Commission bench mark, levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 4,270 cfs Apr. 6 (gage height, 10.51 ft); no flow Oct. 3-6.

Remarks.--Records good.

Rating tables, except periods of ice effect (gage height, in feet, discharge, in cubic feet per second)
(Shifting-control method used Oct. 16-25)

Oct. 1 to Apr. 25

0.43	0	2.0	90
.5	.2	4.0	365
.6	1.0	6.0	850
.7	2.4	7.0	1,250
.8	4.8	8.0	1,810
1.0	13	10.0	3,650
1.4	35	11.0	4,960

Apr. 26 to Sept. 30

0.9	2.0	2.0	66
1.0	4.2	2.5	116
1.2	12	3.0	179
1.4	22	4.0	346
1.7	42	6.0	850

Note.--Same as preceding table above 6.0 ft.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.5	7.1	135	b 100	336	238	386	209	134	18	18
2	.1	.5	6.0	280	b 85	416	224	291	1,530	277	16	14
3	0	.6	22	224	b 70	336	182	274	1,750	596	14	7.5
4	0	.6	27	161	b 60	280	175	257	788	309	22	6.4
5	0	.7	17	147	b 50	252	714	519	472	194	22	7.1
6	0	.7	11	96	b 70	238	*3,910	730	366	152	14	7.5
7	.1	.7	7.9	77	b 120	224	*3,520	916	309	278	13	*5.7
8	5.3	.7	6.4	65	182	238	1,610	596	257	256	11	4.7
9	.1	.7	4.4	98	264	280	1,100	450	224	209	9.4	4.7
10	.1	.7	4.2	99	861	280	788	366	*194	257	*9.8	4.2
11	.2	.7	*14	92	*702	238	730	309	179	152	9.8	5.4
12	.1	.7	22	83	521	210	758	274	165	94	9.0	3.9
13	.1	1.0	21	73	365	196	570	240	152	*87	9.0	3.2
14	.1	1.0	21	61	294	182	476	*209	134	75	9.0	6.8
15	.1	1.2	11	49	266	182	* 652	209	122	73	7.5	87
16	.1	37	b 8.0	b 45	*224	161	1,110	194	116	69	7.1	116
17	.1	30	b 6.0	b 40	210	196	818	172	105	209	5.7	123
18	.1	11	b 5.2	b 35	196	* 210	596	165	94	152	7.5	76
19	.1	*5.4	b 4.7	b 33	196	154	476	158	92	83	12	44
20	.1	3.4	b 4.5	b 31	168	126	398	146	89	62	9.4	32
21	.1	3.0	b 4.3	*b 31	161	147	365	134	86	52	5.7	26
22	*.1	2.4	4.4	b 32	140	140	336	128	80	45	6.7	63
23	.2	1.8	5.4	251	113	164	322	122	74	39	5.7	173
24	.2	1.5	9.9	806	133	189	545	116	68	34	5.7	257
25	.2	1.7	10	567	88	175	1,020	170	64	30	4.7	179
26	.3	1.5	15	381	96	161	2,790	1,820	58	25	12	128
27	.3	2.0	15	294	72	147	1,350	1,160	54	23	14	94
28	.3	48	14	252	164	175	788	756	54	21	7.5	72
29	.3	37	11	175		252	570	472	64	19	4.5	60
30	.4	14	10	168	------	294	450	309	142	17	4.2	67
31	.4	------	9.1	b 130	------	252	------	240	------	16	8.2	------
Total	9.7	210.7	338.5	5,011	5,971	6,831	27,581	12,288	8,091	4,039	314.1	1,695.1
Mean	0.31	7.02	10.9	162	213	220	919	396	270	130	10.1	56.5
Cfsm	0.0013	0.029	0.045	0.675	0.888	0.917	3.83	1.65	1.12	0.542	0.042	0.235
In.	0.001	0.03	0.05	0.78	0.92	1.06	4.27	1.90	1.25	0.62	0.05	0.26

Calendar year 1964 : Max - Min - Mean - Cfsm - In. -
Water year 1964-65 : Max 3,910 Min 0 Mean 198 Cfsm 0.825 In. 11.19

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-6	2330	10.51	4,270	6-2	0700	8.69	2,330
4-26	1100	9.56	3,200				
5-26	0900	9.03	2,600				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3395. Sugar Creek at Crawfordsville, Ind.

Location.--Lat 40°02'56", long 86°53'58", in NW¼ sec. 32, T. 19 N., R. 4 W., on left bank 327 ft upstream from Crawfordsville Electric Light and Power Co.'s dam, half a mile upstream from bridge on State Highway 43, and 1 mile downstream from Walnut Fork Creek.

Drainage area.--509 sq mi.

Records available.--June 1938 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 657.77 ft above mean sea level, datum of 1929.

Average discharge.--27 years, 468 cfs.

Extremes.--Maximum discharge during year, 6,200 cfs May 25 (gage height, 6.04 ft); minimum daily, 12 cfs Nov. 3; no flow part of Oct. 19 (unusual regulation).
1938-65: Maximum discharge, 26,300 cfs June 28, 1957 (gage height, 14.48 ft), no flow part of Oct. 19, 1965 (unusual regulation).
Maximum stage known, 17.3 ft in March 1913, from information by local resident (discharge, about 36,000 cfs).

Remarks.--Records fair.

Rating table, except for periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	8.6
1.1	23
1.3	73
1.5	140
2.0	371
2.4	640
3.0	1,460
4.0	3,350
5.0	4,910

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	16	35	79	70	1,340	429	472	238	700	49	62
2	18	15	35	247	65	2,360	394	406	2,040	400	49	60
3	18	12	35	229	58	1,850	329	350	2,530	334	46	49
4	18	13	37	148	58	1,790	323	308	1,260	256	76	44
5	18	15	37	111	58	2,020	509	339	700	206	57	44
6	18	15	30	92	70	1,360	4,780	318	1,510	256	49	44
7	18	16	30	79	90	1,230	3,540	304	* 1,570	388	41	39
8	19	18	32	82	164	1,150	2,970	275	860	360	39	35
9	19	19	* 30	136	377	964	4,780	252	600	383	46	* 35
10	21	23	28	156	4,440	* 730	2,780	233	616	460	51	32
11	21	23	49	118	3,200	560	2,400	* 215	485	261	44	32
12	21	23	62	* 90	1,790	505	3,540	198	350	* 180	* 39	32
13	23	23	60	80	1,060	460	2,210	189	280	144	37	32
14	23	23	46	60	680	435	2,400	176	233	126	32	44
15	23	28	35	50	498	417	* 1,460	164	206	600	30	616
16	23	* 89	30	46	394	388	1,680	156	164	355	28	460
17	23	76	26	43	350	448	1,240	144	164	289	25	730
18	23	49	23	42	* 323	553	925	136	152	233	51	400
19	21	41	25	42	294	383	700	133	140	160	60	242
20	21	37	25	42	256	308	560	122	129	126	54	168
21	23	32	28	45	200	299	479	115	122	104	39	129
22	23	28	28	60	150	284	417	111	118	92	35	118
23	21	28	32	220	110	360	388	111	115	85	35	122
24	19	28	44	485	80	848	498	118	111	76	32	98
25	19	28	57	435	70	632	1,600	1,390	101	68	32	85
26	21	30	60	350	70	479	2,250	2,990	89	62	62	76
27	21	30	49	233	90	377	1,360	1,680	82	57	70	70
28	21	62	46	160	170	360	964	860	104	54	57	* 65
29	19	51	41	110	------	460	700	485	1,460	49	46	60
30	18	44	41	95	------	526	553	350	1,620	46	39	62
31	16	------	39	80	------	460	------	280	------	44	49	------
TOTAL	628	935	1,175	4,245	15,235	24,336	47,158	13,380	18,169	6,954	1,399	4,085
MEAN	20.3	31.2	37.9	137	544	785	1,572	432	606	224	45.1	136
CFSM	.040	.061	.075	.269	1.07	1.54	3.09	.849	1.19	.440	.089	.267
IN	.05	.07	.09	.31	1.11	1.78	3.45	.98	1.33	.51	.10	.30

CALENDAR YEAR 1964 MAX 19,100 MIN 12 MEAN 421 CFSM .827 INCHES 11.25
WATER YEAR 1964-65 MAX 4,780 MIN 12 MEAN 377 CFSM .741 INCHES 10.06

Peak discharge (base, 4,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1230	5.04	4,960	5-25	2300	6.04	6,200
4-6	1130	5.38	5,400	6-6	1715	4.56	4,320
4-9	0430	5.39	5,420				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 16, 17, Jan. 12-22, Jan. 28 to Feb. 7, Feb. 21-28.

3-3400. Sugar Creek near Byron, Ind.

Location.--Lat 39°55'52", long 87°07'33", in SW¼ sec. 8, T. 17 N., R. 6 W., on right bank, 30 ft upstream from highway bridge, 2½ miles northwest of Byron and 5 miles downstream from Indian Creek.

Drainage area.--668 sq mi.

Records available.--October 1940 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 538.92 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 18, 1941, staff gage at same site and datum.

Average discharge.--25 years, 636 cfs.

Extremes.--Maximum discharge during year, 8,510 cfs May 26 (gage height, 10.88 ft); minimum, 35 cfs Oct. 5, 6, 7, (gage height, 1.87 ft).
1940-65: Maximum discharge, 32,200 cfs June 28, 1957 (gage height, 22.98 ft); minimum observed, 12 cfs Sept. 21, 1941; minimum gage height observed, 1.70 ft Aug. 8, 1941.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	27
2.1	63
2.5	141
3.0	400
4.0	760
6.0	2,450
9.0	5,700
10.0	7,100

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	45	93	202	120	1,450	592	700	332	982	74	117
2	53	45	68	435	110	2,780	550	592	2,120	568	73	97
3	53	45	69	386	100	2,220	445	472	3,260	398	68	84
4	37	45	69	262	100	1,980	410	450	1,680	339	103	77
5	35	45	71	193	100	2,360	1,340	450	982	276	93	84
6	35	44	69	155	110	1,640	6,900	440	1,110	314	79	71
7	36	44	71	134	150	1,410	*4,630	425	* 2,070	430	71	71
8	39	44	65	136	200	1,390	3,410	390	1,120	538	66	66
9	42	44	* 65	225	910	1,220	6,230	356	742	420	68	* 60
10	39	44	71	255	6,010	982	3,710	332	784	688	76	59
11	39	44	88	202	4,190	796	2,820	* 318	670	370	*69	59
12	41	* 43	107	*169	2,360	706	4,230	283	466	*255	63	65
13	43	42	105	147	1,450	640	2,970	272	360	193	59	59
14	44	42	92	107	968	598	1,850	262	300	161	56	66
15	44	49	90	90	748	580	1,780	251	262	478	53	886
16	55	212	79	80	586	* 526	2,160	231	234	460	49	694
17	56	117	71	75	496	616	1,640	218	212	496	48	916
18	59	97	50	75	*450	796	1,240	205	193	346	88	622
19	59	77	45	75	410	586	982	193	178	225	127	342
20	57	71	45	75	363	420	814	181	166	169	88	231
21	56	62	50	80	300	398	700	161	155	139	77	175
22	56	65	55	130	200	374	604	155	152	122	66	184
23	56	60	60	425	160	502	550	152	163	113	63	175
24	56	56	77	961	130	989	982	141	147	105	59	149
25	45	50	101	718	120	910	2,630	1,330	136	95	56	127
26	44	50	105	574	120	700	3,080	5,080	124	86	109	113
27	45	52	93	406	210	550	1,910	2,250	115	83	101	103
28	47	141	83	325	400	502	1,320	1,270	109	77	105	97
29	47	109	79	199	------	616	1,010	748	1,110	73	81	92
30	45	95	77	170	------	736	814	508	1,710	68	69	93
31	45	------	76	140	------	652	------	386	------	66	88	------
TOTAL	1,461	1,979	2,339	7,606	21,571	30,625	62,303	19,202	21,162	9,133	2,345	6,034
MEAN	47.1	66.0	75.5	245	770	988	2,077	619	705	295	75.6	201
CFSM	.071	.099	.113	.367	1.15	1.48	3.11	.927	1.06	.442	.113	.301
IN	.08	.11	.13	.42	1.20	1.71	3.47	1.07	1.18	.51	.13	.34

CALENDAR YEAR 1964 MAX 23,300 MIN 26 MEAN 532 CFSM .796 INCHES 10.83
WATER YEAR 1964-65 MAX 6,900 MIN 35 MEAN 509 CFSM .762 INCHES 10.34

Peak discharge (base, 6,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0930	10.07	7,210	5-26	0015	10.88	8,510
4-6	0745	10.71	8,240				
4-9	0130	10.01	7,120				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 18-23, Jan. 15-22, Jan. 30 to Feb. 8, Feb. 21-28.

3-3405. Wabash River at Montezuma, Ind.

Location.--Lat 39°47'33", long 87°22'26", in sec. 35, T. 16 N., R. 9 W., in downstream side of first pier from left bank of bridge on U. S. Highway 36 at Montezuma, 2.0 miles upstream from Raccoon Creek, 4.9 miles downstream from Sugar Creek, and at mile 240.

Drainage area.--11,100 sq mi, approximately.

Records available.--October 1927 to September 1965 in reports of Geological Survey. July 1924 to September 1927 (gage heights only) in reports of Indiana Department of Conservation.

Gage.--Water-stage recorder. Datum of gage is 457.75 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Oct. 1, 1927 to Sept. 11, 1934, chain gage and Sept. 12, 1934 to July 12, 1950, wire-weight gage, at same site and datum.

Average discharge.--38 years, 9,261 cfs.

Extremes.--Maximum discharge during year, 45,300 cfs Apr. 13 (gage height, 20.89 ft); minimum, 955 cfs Oct. 5-9, 13, 14, 23-28, 31; minimum gage height, 2.04 ft Oct. 8.
1927-65: Maximum discharge, 184,000 cfs May 20, 1943 (gage height, 32.83 ft); minimum observed, 560 cfs Sept. 24, 1941; minimum gage height, 1.43 ft Aug. 3, 10, 1934.
Maximum stage known, 34.0 ft Mar. 27, 1913, from floodmarks (discharge, 230,000 cfs, estimated).

Remarks.--Records fair except for periods of no gage-height record, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 14 to July 17, July 21 to Aug. 28)

Oct. 1 to Jan. 20		Jan. 21 to Sept. 30	
2.0	910	2.4	1,550
2.5	1,480	7.0	9,110
6.0	6,650	12.0	19,000
		18.0	35,400
		21.0	45,700

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,170	1,000	1,610	2,290	a 4,000	8,210	16,700	21,500	8,930	5,400	1,910	2,190
2	1,060	1,000	1,540	3,410	a 3,000	13,300	15,900	17,500	13,100	4,720	1,910	2,330
3	1,060	1,000	1,350	3,980	a 2,500	16,500	14,700	14,100	18,500	4,890	1,790	2,330
4	1,000	1,000	1,350	6,150	a 2,700	18,800	13,900	12,300	15,500	4,720	2,050	2,190
5	955	1,000	1,420	6,150	a 3,000	21,800	14,700	13,100	11,400	3,750	2,050	2,050
6	955	1,000	1,420	5,190	a 4,000	23,800	32,700	15,500	9,470	3,590	1,910	2,050
7	955	1,000	1,480	4,430	a 5,500	25,500	36,600	16,100	9,470	3,750	*1,910	* 1,910
8	955	1,000	1,480	3,830	a 8,000	27,000	* 35,400	14,700	8,570	4,230	1,790	1,910
9	955	1,060	1,480	3,830	14,100	27,600	37,800	12,500	7,850	5,060	1,670	1,790
10	1,000	1,000	1,480	4,280	26,500	27,000	40,600	10,800	*7,490	5,740	1,670	2,630
11	1,000	1,000	1,350	4,730	26,500	25,500	41,700	9,470	7,670	5,060	1,790	3,590
12	1,000	* 1,060	1,540	4,880	* 28,200	21,800	44,400	8,750	6,590	4,230	1,790	3,590
13	1,000	1,060	1,870	4,430	29,400	17,500	44,400	8,210	6,250	3,430	1,790	2,630
14	1,000	1,060	* 1,870	3,980	30,600	14,900	41,000	* 7,850	5,740	*3,110	1,790	2,190
15	1,000	1,000	2,010	b 2,700	30,900	13,700	37,800	7,310	4,890	2,950	1,790	5,500
16	1,000	1,480	2,010	b 1,800	* 25,800	13,300	35,700	6,950	4,550	3,110	1,670	10,800
17	1,000	1,680	1,680	a 1,500	16,500	13,100	31,500	6,590	4,230	4,230	1,550	11,800
18	1,060	1,480	1,230	a 1,600	12,700	* 13,500	26,000	6,250	4,070	7,670	1,670	9,660
19	1,000	1,540	1,480	a 2,000	11,200	15,500	20,500	5,910	3,750	5,910	2,050	8,390
20	1,000	1,420	1,420	a 2,400	10,200	16,700	16,500	5,740	3,750	5,740	2,050	6,590
21	1,060	1,230	1,680	*a 2,800	9,290	14,300	14,500	5,570	3,430	5,400	1,910	5,230
22	1,000	1,170	1,680	a 3,500	7,850	11,800	12,900	5,400	3,430	4,720	1,790	4,720
23	955	1,110	1,740	a 6,000	7,310	10,400	11,900	5,060	3,590	3,910	1,670	6,770
24	1,000	1,060	1,870	a 12,000	6,590	10,400	12,300	5,060	3,430	3,750	1,790	8,210
25	955	1,170	1,870	22,200	5,570	10,000	22,500	5,570	3,270	4,070	1,670	7,310
26	1,000	1,170	1,870	*19,800	b 4,000	9,290	31,200	14,300	3,110	3,110	1,790	5,230
27	955	1,170	1,870	16,900	b 3,500	9,290	32,700	17,500	3,110	2,630	1,910	4,230
28	955	1,540	1,870	15,500	5,570	9,660	33,000	18,100	2,950	2,330	2,050	3,910
29	1,000	1,740	1,740	12,500		9,660	32,400	16,300	3,110	2,330	1,910	3,750
30	1,000	1,870	1,740	a 9,000	---------	10,600	28,800	13,300	5,060	2,050	1,790	3,590
31	955	----------	1,740	a 6,000	---------	14,700	----------	10,800	----------	1,910	1,790	----------
Total	30,960	36,070	50,740	199,760	344,980	495,110	830,700	338,090	196,260	127,500	56,670	139,070
Mean	999	1,202	1,637	6,444	12,320	15,970	27,690	10,910	6,542	4,113	1,828	4,636
Cfsm	0.090	0.108	0.147	0.581	1.11	1.44	2.49	0.983	0.589	0.371	0.165	0.418
In.	0.10	0.12	0.17	0.67	1.16	1.66	2.78	1.13	0.66	0.43	0.19	0.47

Calendar year 1964 : Max 29,600 Min 870 Mean 6,379 Cfsm 0.575 In. 7.80
Water year 1964-65 : Max 44,400 Min 955 Mean 7,797 Cfsm 0.702 In. 9.54

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3408. Big Raccoon Creek near Fincastle, Ind.

Location.--Lat 39°48'45", long 86°57'14", in SW¼ sec. 22, T. 16 N., R. 5 W., on left bank at downstream side of county road bridge, 8,350 ft upstream from Ramp Creek and 3.1 miles northwest of Fincastle.

Drainage area.--132 sq mi.

Records available.--August 1957 to September 1965. Prior to October 1963, published as Raccoon Creek near Fincastle. Sediment records collected since 1959 by the Indiana Flood Control and Water Resources Commission.

Gage.--Water-stage recorder. Datum of the gage is 686.03 ft above mean sea level, datum of 1929.

Average discharge.--8 years, 126 cfs.

Extremes.--Maximum discharge during year, 2,990 cfs Apr. 6 (gage height, 10.63 ft); minimum discharge, 1.6 cfs Oct. 5 (gage height, 1.69 ft).

1957-65: Maximum discharge, 15,100 cfs Jan. 26, 1962; maximum gage height, 15.68 ft Jan. 26, 1962 (ice jam); minimum discharge, that of Oct. 5, 1964.

Maximum flood known, 39,900 cfs June 28, 1957 (gage height, 19.10 ft), from slope-area measurement.

Remarks.--Records good except those for periods of ice effect, which are poor. Records of water temperature and suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 28 to Nov. 26, Feb. 11-20, Mar. 3-20, 23, to Apr. 5, Apr. 8, 13-25, Apr. 27 to May 25)

1.6	0.9	2.7	65
1.7	2.8	3.2	149
1.8	5.5	4.0	326
1.9	8.8	6.0	900
2.0	13	9.0	2,180
2.2	22	10.0	2,680
2.4	35		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	8.1	7.2	28	23	500	110	149	*64	29	8.5	10
2	2.2	7.8	6.8	115	21	720	107	125	333	37	8.5	8.8
3	2.0	7.8	7.2	87	19	428	89	105	255	41	7.8	* 6.8
4	2.0	7.8	8.5	48	17	481	85	90	149	41	9.6	6.8
5	1.8	7.5	9.6	36	17	428	290	*97	102	29	10	7.2
6	1.8	7.5	8.1	30	20	302	2,300	92	346	*37	*8.5	6.5
7	2.2	7.2	7.8	26	25	278	870	98	417	81	7.5	5.5
8	2.0	7.2	* 7.5	27	53	290	* 570	82	200	65	10	5.5
9	2.6	7.2	7.5	37	204	255	1,500	75	149	47	11	4.9
10	3.1	6.8	7.8	48	* 2,130	200	600	73	104	51	9.6	4.6
11	3.6	6.8	10	38	775	159	600	66	85	35	8.5	4.9
12	3.1	6.5	12	*32	481	149	600	61	71	24	7.5	8.8
13	3.6	7.5	12	28	302	140	376	58	57	20	6.8	7.5
14	3.8	6.2	13	16	233	130	268	54	48	17	6.2	8.4
15	4.1	6.2	11	13	170	128	326	50	40	15	5.8	136
16	4.1	*17	10	12	149	*119	428	49	36	15	5.5	116
17	3.8	15	9.2	12	130	140	302	45	32	115	5.2	159
18	4.6	10	7.8	12	125	169	222	44	29	72	6.2	69
19	5.5	7.8	7.8	12	112	114	169	45	27	34	7.8	37
20	5.5	6.5	7.8	12	93	93	149	41	24	22	7.8	25
21	5.8	5.8	7.5	13	78	84	125	37	23	17	7.2	20
22	6.8	5.2	7.8	14	63	80	109	36	22	15	7.2	20
23	6.5	4.9	8.1	56	50	130	114	33	20	14	6.2	20
24	6.2	4.9	9.6	244	40	290	422	34	20	13	5.5	20
25	6.5	4.9	12	159	26	190	1,160	303	18	11	4.9	16
26	6.5	4.9	13	116	20	149	810	995	17	10	9.2	14
27	6.8	5.2	12	60	20	117	454	503	15	9.2	9.2	13
28	6.8	8.8	12	45	60	114	326	233	16	8.8	7.5	*12
29	7.5	8.8	11	35		125	233	140	18	8.5	6.5	11
30	8.1	8.1	11	28	- - - - -	125	190	104	20	7.5	6.2	12
31	8.1	- - - - -	11	.25	- - - - -	112	- - - - -	79	- - - -	7.8	7.8	- - - - -
Total	139.4	225.9	293.6	1,464	5,456	6,739	13,904	3,996	2,757	948.8	235.7	796.2
Mean	4.50	7.53	9.47	47.2	195	217	463	129	91.9	30.6	7.60	26.5
Cfsm	0.034	0.057	0.072	0.358	1.48	1.64	3.51	0.977	0.696	0.232	0.058	0.201
In.	0.04	0.06	0.08	0.41	1.54	1.89	3.92	1.13	0.78	0.27	0.07	0.22

Calendar year 1964: Max 7,650 Min 1.8 Mean 121 Cfsm 0.917 In. 12.47
Water year 1964-65: Max 2,300 Min 1.8 Mean 101 Cfsm 0.765 In. 10.41

Peak discharge (base, 1,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1200	10.12	2,730				
4-6	1130	10.63	2,990				

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Jan. 14-22, Jan. 27 to Feb. 7, Feb. 21 to Mar. 1, Mar. 21, 22.

3-3409. Big Raccoon Creek at Ferndale, Ind.

Location.--Lat 39°41'44", long 87°05'01", in SW¼ sec. 33, T. 15 N., R. 6 W., on right bank, 1.2 miles southwest of Ferndale, 1.7 miles northeast of Mansfield, 2.0 miles upstream from Rocky Fork Creek, and 2.4 miles downstream from Mansfield Reservoir dam.

Drainage area.--215 sq mi.

Records available.--October 1956 to September 1965. Prior to October 1963, published as Raccoon Creek at Ferndale.

Gage.--Water-stage recorder. Datum of gage is 582.36 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Average discharge.--9 years, 223 cfs (adjusted for change in contents).

Extremes.--Maximum discharge during year, 2,100 cfs Feb. 18 (gage height, 7.63 ft); minimum daily, 13 cfs Dec. 20-23; minimum gage height, 1.20 ft Aug. 12.
1956-65: Maximum discharge, 40,500 cfs June 28, 1957 (gage height, 19.87 ft) from rating extended above 5,000 cfs on basis of records for station at Mansfield; minimum daily, 2.7 cfs Oct. 11, 1956.

Remarks.--Records good. Flow regulated since October 1960 by Mansfield Reservoir (capacity, 132,840 acre-ft).

Rating table, (gage height, in feet, and discharge in cubic feet per second)
(Shifting-control method used Oct. 1-5)

1.2	7.2
1.3	15
1.4	25
1.8	81
2.6	226
4.0	605
6.0	1,360
8.1	2,350

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	157	185	25	95	75	423	23	456	75	47	48	19
2	157	195	24	159	62	1,040	22	328	* 237	56	47	18
3	166	205	24	205	50	1,160	21	122	514	47	47	18
4	166	205	25	193	35	739	21	122	248	47	51	18
5	104	216	25	124	27	544	41	* 208	166	48	47	* 19
6	52	216	23	66	27	288	111	195	148	47	47	19
7	130	205	23	62	29	89	89	166	373	* 50	47	206
8	216	205	*23	64	54	87	89	122	485	47	59	248
9	216	195	22	70	* 122	87	* 87	122	358	56	47	205
10	216	195	22	69	179	86	89	122	139	48	47	176
11	216	195	26	68	94	504	91	110	97	47	* 32	176
12	216	195	29	68	94	811	91	84	94	47	15	185
13	216	*195	30	* 68	92	526	89	80	78	45	18	185
14	216	195	30	44	91	205	89	76	51	45	18	205
15	216	195	27	31	91	176	103	74	51	45	18	166
16	185	250	22	30	91	176	99	64	51	45	18	544
17	185	271	22	30	777	*176	92	60	51	78	18	514
18	195	260	22	30	1,710	216	92	64	51	89	19	514
19	216	229	16	30	1,800	205	92	64	51	89	18	320
20	205	216	13	29	1,700	148	91	64	50	75	18	226
21	205	195	13	27	674	122	89	64	50	54	18	226
22	205	195	13	42	89	122	89	64	48	47	18	226
23	205	195	13	80	105	166	62	64	48	47	18	226
24	195	185	14	126	122	248	56	62	47	47	18	226
25	195	200	15	157	122	428	120	78	47	47	18	195
26	195	205	24	81	113	295	95	524	47	47	23	195
27	195	205	29	230	86	195	91	729	47	47	19	195
28	185	237	29	320	108	157	94	811	54	47	19	195
29	195	205	29	232		148	92	405	51	47	18	195
30	185	152	29	78	------	148	280	135	48	47	18	205
31	185	------	29	75	------	59	------	81	------	47	20	-------
Total	5,791	6,197	710	2,983	8,619	9,774	2,590	5,720	3,855	1,622	886	6,065
Mean	187	207	22.9	96.2	308	315	86.3	185	128	52.3	28.6	202
(ƒ)	-153	-178	0	-29.3	+7	-2	+564.7	-16	-10	-4.9	-21.1	-146

Adjusted for change in contents in Mansfield Reservoir

Mean	34	29	22.9	66.9	315	313	651	169	118	47.4	7.5	56
Cfsm	0.158	0.135	0.107	0.311	1.47	1.46	3.03	0.786	0.549	0.220	0.035	0.260
In.	0.18	0.15	0.12	0.36	1.53	1.68	3.38	0.91	0.61	0.25	0.04	0.29

	Observed			Adjusted			
Calendar year 1964 :	Max 2,350	Min 11	Mean 187	Mean 190	Cfsm 0.884	In. 12.02	ƒ +3
Water year 1964-65 :	Max 1,800	Min 13	Mean 150	Mean 150	Cfsm 0.698	In. 9.50	ƒ 0

* Discharge measurement made on this day.
ƒ Change in contents, equivalent in cubic feet per second, in Mansfield Reservoir, furnished by Corps of Engineers.

3-3412. Little Raccoon Creek near Catlin, Ind.

Location.--Lat 39°40'38", long 87°13'38", in NW¼ sec. 7, T. 14 N., R. 7 W., on left bank at downstream side of county road bridge, 300 ft downstream from unnamed tributary from left bank, 0.4 mile upstream from Sunderland Branch, 1.2 miles southeast of Catlin, 2.4 miles upstream from Weisner Creek, and 3.8 miles upstream from mouth.

Drainage area.--133 sq mi.

Records available.--December 1956 to September 1965 (fragmentary prior to October 1957).

Gage.--Water-stage recorder. Datum of gage is 515.56 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--8 years (1957-1965), 118 cfs.

Extremes.--Maximum discharge during year, 4,010 cfs Apr. 6 (gage height, 13.16 ft); minimum, 4.5 cfs Sept. 11 (gage height, 1.36 ft). 1956-65: Maximum discharge, 53,400 cfs June 28, 1957 (gage height, 18.27 ft); from rating curve extended above 6,000 cfs on basis of combination contracted-opening, culvert, and flow-over-road measurement of peak flow, at site 8½ miles upstream, adjusted to drainage area at gage; minimum daily, 4.1 cfs Dec. 22, 1963; minimum gage height, 1.36 ft Sept. 11, 1965.

Remarks.--Records fair except those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 23		Jan. 24 to Sept. 30	
1.6	4.1	1.3	4.5
1.7	6.7	1.4	8.2
1.8	10	1.6	18.5
2.1	28	1.9	42
2.4	55	2.5	104
2.7	94	3.0	177
3.1	170	4.0	408
4.0	408	5.0	688
		11.0	2,450

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.6	5.4	15	382	22	500	98	145	*46	20	16	13
2	4.6	5.4	12	310	20	464	93	124	308	43	14	*10
3	4.6	5.4	12	119	18	275	77	110	166	38	13	8.7
4	4.6	5.4	12	66	17	275	77	98	98	22	19	8.2
5	4.6	5.4	12	50	17	243	*425	160	77	17	15	8.2
6	4.6	5.4	11	39	20	204	*2,300	*138	67	20	*12	6.7
7	4.6	5.4	9.9	33	25	195	632	138	67	* 42	12	6.7
8	4.9	5.4	9.6	32	50	204	408	104	58	49	12	6.4
9	4.9	5.7	9.2	62	200	186	325	93	72	40	14	5.6
10	4.9	5.7	* 9.2	59	1,500	160	253	88	56	29	14	5.2
11	4.9	5.7	13	43	548	138	287	77	47	20	13	5.6
12	4.9	5.7	17	39	436	131	275	72	41	17	12	7.1
13	4.9	* 5.7	14	*35	250	124	204	72	36	15	12	6.4
14	4.9	5.4	12	29	190	124	177	67	32	14	11	12
15	4.9	5.8	11	15	170	124	326	55	30	13	10	212
16	4.9	26	10	14	150	*110	338	58	27	12	9.6	71
17	4.9	22	9.0	14	* 130	131	233	50	25	195	9.6	75
18	5.4	12	9.0	14	120	138	186	48	24	113	9.6	46
19	6.2	9.9	8.0	14	110	93	160	53	22	45	10	27
20	5.7	9.6	8.0	14	100	82	145	42	22	29	12	20
21	5.4	8.5	8.0	15	90	75	131	39	20	23	9.6	18
22	5.4	8.1	8.0	35	80	72	117	37	20	21	9.6	17
23	5.1	7.1	8.0	170	60	179	114	35	18	20	8.7	18
24	5.1	6.7	10	410	50	220	294	32	18	18	8.7	18
25	5.1	6.7	14	170	35	152	1,110	e400	17	17	8.2	17
26	5.1	6.7	17	110	35	124	520	e1,000	16	15	15	16
27	5.4	6.7	16	70	35	104	299	186	16	15	13	15
28	5.4	32	13	50	60	110	233	104	16	14	11	14
29	5.4	26	13	35		117	195	77	31	13	8.7	13
30	5.4	17	12	28	------	104	160	67	23	13	8.7	12
31	5.4	------	11	25	-----	98	-----	59	----	14	12	-------
Total	156.7	287.9	352.9	2,501	4,538	5,256	10,192	3,828	1,516	976	363.0	718.8
Mean	5.05	9.60	11.4	80.7	162	170	340	123	50.5	31.5	11.7	24.0
Cfsm	0.038	0.072	0.086	0.607	1.22	1.28	2.56	0.925	0.380	0.237	0.088	0.180
In.	0.04	0.08	0.10	0.70	1.27	1.48	2.86	1.07	0.42	0.27	0.10	0.20

Calendar year 1964 : Max 5,210 Min 4.4 Mean 110 Cfsm 0.827 In. 11.27
Water year 1964-65 : Max 2,300 Min 4.6 Mean 84.1 Cfsm 0.632 In. 8.59

Peak discharge (base, 1,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	Unknown	12.82	3,550				
4-6	1140	13.16	4,010				

* Discharge measurement made on this day.
e No gage-height record.
Note.--Stage-discharge relation affected by ice Dec. 17-23, Jan. 15 to Feb. 10, Feb. 13 to Mar. 1, Mar. 21, 22. Gage height computed from once daily telemark readings May 7-24, May 27-31, Aug. 6 to Sept. 2.

3-3413. Big Raccoon Creek at Coxville, Ind.

Location.--Lat 39°39'09", long 87°17'37", in SW¼ sec. 15, T. 14 N., R. 8 W., on right bank at downstream side of covered bridge on county road at Coxville, 0.8 mile upstream from Rock Run, 1.5 miles downstream from Little Raccoon Creek, and 2.1 miles northwest of Rosedale.

Drainage area.--440 sq mi.

Records available.--October 1956 to September 1965. Prior to October 1963, published as Raccoon Creek at Coxville.

Gage.--Water-stage recorder. Datum of gage is 494.00 ft above mean sea level, datum of 1929 (Indiana Flood Control and Water Resources Commission bench mark).

Average discharge.--9 years, 458 cfs (adjusted for change in contents).

Extremes.--Maximum discharge during year, 3,700 cfs Feb. 10 (gage height, 11.57 ft); minimum daily, 30 cfs Dec. 20-23; minimum gage height, 1.81 ft Dec. 24.
1956-65: Maximum discharge, 108,000 cfs June 28, 1957 (gage height, 21.23 ft) from rating curve extended above 35,000 cfs on basis of an estimate made by a slope-area study; minimum daily, 6.5 cfs Oct. 10, 1956.

Remarks.--Records fair. Flow regulated since October 1960 by Mansfield Reservoir, (capacity, 132,840 acre-ft).

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 19 June 29 to Sept. 30		Feb. 20 to June 28	
1.9	51	2.3	101
2.3	100	3.0	220
3.0	209	4.0	450
4.0	411	7.0	1,330
6.0	950	10.0	2,550
10.0	2,550	11.0	3,150
11.0	3,150		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	184	200	136	461	130	1,180	220	700	200	107	107	51
2	184	200	87	535	120	1,270	210	670	517	178	94	* 48
3	184	200	80	364	100	1,540	181	* 375	* 670	167	94	46
4	184	209	77	282	90	1,330	172	327	556	121	114	43
5	184	209	72	245	75	1,000	356	495	351	107	100	44
6	104	209	64	175	70	850	2,590	529	304	107	94	44
7	94	209	61	143	70	502	908	529	356	136	87	53
8	187	209	60	136	150	476	641	375	556	* 151	94	192
9	200	200	56	167	550	425	584	351	584	186	107	200
10	200	* 200	* 54	167	2,790	375	476	327	327	185	* 94	184
11	209	200	62	143	830	392	502	282	240	128	87	184
12	218	200	67	143	660	940	502	261	210	114	70	192
13	218	200	66	* 128	485	910	400	230	190	107	62	192
14	218	200	61	100	411	502	351	210	154	100	60	227
15	218	200	58	80	* 364	425	* 586	200	138	100	55	342
16	209	245	55	60	321	400	722	190	130	94	53	560
17	184	282	51	60	410	* 425	529	172	122	567	52	560
18	192	263	42	60	1,500	450	425	163	122	342	53	510
19	218	245	35	60	1,780	400	375	163	115	200	54	435
20	218	227	30	60	1,740	327	351	154	115	167	53	301
21	218	218	30	60	1,430	282	327	146	115	143	49	263
22	209	209	30	92	425	282	304	146	108	121	48	282
23	209	209	30	150	351	366	282	138	108	114	47	282
24	209	209	34	560	327	584	502	138	108	114	46	263
25	200	209	40	364	260	584	1,930	131	101	107	45	245
26	200	218	51	263	230	641	908	656	101	107	59	227
27	200	218	53	218	220	450	641	749	101	100	55	227
28	200	263	54	364	270	375	529	970	101	100	47	227
29	200	282	54	342		375	450	635	152	100	44	227
30	200	245	54	227	- - - - -	351	450	351	121	94	42	227
31	200	- - - - - -	53	130	- - - - -	304	- - - - -	240	- - - - - - -	100	50	- - - - - - -
Total	6,052	6,587	1,757	6,339	16,159	18,713	17,404	11,003	7,073	4,564	2,116	6,878
Mean	195	220	56.7	204	577	604	580	355	236	147	68.3	229
(ƒ)	-153	-178	0	-29	+7	-2	+565	-16	-10	-5	-21.1	-146

Adjusted for change in contents in Mansfield Reservoir

Mean	42	42	56.7	175	584	602	1,145	339	226	142	-47.2	83
Cfsm	0.095	0.095	0.129	0.398	1.33	1.37	2.60	0.770	0.514	0.323	0.107	0.189
In.	0.11	0.11	0.15	0.46	1.38	1.58	2.90	0.89	0.57	0.37	0.12	0.21

	Observed			Adjusted			
Calendar year 1964 :	Max 10,300	Min 30	Mean 392	Mean 395	Cfsm 0.898	In. 12.21	ƒ +3
Water year 1964-65 :	Max 2,790	Min 30	Mean 287	Mean 287	Cfsm 0.652	In. 8.85	ƒ 0

* Discharge measurement made on this day.
ƒ Change in contents, equivalent in cubic feet per second, in Mansfield Reservoir, furnished by Corps of Engineers.
Note.--Stage-discharge relation affected by ice Dec. 18-25, Jan. 14-23, Jan. 31 to Feb. 8, 25-28. Computed from once-daily telemark readings Sept. 2-30.

3-3415. Wabash River at Terre Haute, Ind.

Location.--Lat 39°28'00", long 87°25'08", in NW¼ sec. 21, T. 12 N., R. 9 W., on left bank at upstream side of Wabash Avenue Bridge at Terre Haute, 2.2 miles upstream from Sugar Creek, 4 miles downstream from Lost Creek, and at mile 214.4.

Drainage area.--12,200 sq mi, approximately.

Records available.--August 1902 to December 1903 (gage height only), February 1905 to July 1906, October 1927 to September 1965. Gage-height records collected at site 3,300 ft upstream June 1891 to June 1897, and since December 1904 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 442.90 ft above mean sea level, datum of 1929. Aug. 3, 1902, to Dec. 31, 1903, chain gage at powerhouse 3,400 ft upstream at datum 3.0 ft higher. Feb. 25, 1905 to July 20, 1906, chain gage at Vandalia Railway bridge 2,600 ft upstream at datum 2.2 ft higher. Oct. 1, 1927 to Oct. 27, 1928, staff gage at present site and datum.

Average discharge.--38 years (1927-65), 10,200 cfs.

Extremes.--Maximum discharge during year, 43,100 cfs Apr. 13 (gage height, 20.15 ft); minimum, 920 cfs Dec. 18; minimum gage height, 3.52 ft Jan. 17.
1927-65: Maximum discharge, 189,000 cfs May 20, 1943 (gage height, 30.50 ft); minimum, 690 cfs Aug. 10, 1934 (gage height, 2.40 ft).
Maximum stage known, 31.1 ft Mar. 27, 1913, present site and datum (discharge, 245,000 cfs, estimated).

Remarks.--Records fair. Water for municipal supply for Terre Haute diverted above gage, most of which is returned below.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,330	1,190	2,130	1,960	b 3,800	9,000	17,200	27,000	10,800	6,060	2,300	1,960
2	1,330	1,190	1,960	4,400	b 3,300	13,400	17,400	20,800	11,400	7,010	2,300	2,470
3	1,330	1,190	1,710	4,580	b 3,000	17,200	16,200	17,200	* 18,800	7,200	2,130	2,470
4	1,260	1,190	1,560	6,440	b 3,300	19,400	15,400	14,600	18,600	5,060	2,300	2,300
5	1,120	1,190	1,560	7,800	b 3,700	21,600	13,800	14,000	14,600	5,120	2,470	2,130
6	1,120	1,190	1,630	6,820	b 4,000	23,400	24,600	16,400	11,600	4,580	2,300	1,960
7	1,050	1,190	*1,560	5,680	4,940	24,900	33,300	* 17,600	10,800	4,580	2,300	1,880
8	1,120	1,190	1,560	4,940	5,680	25,400	*35,500	17,200	10,400	* 4,940	2,130	*1,960
9	1,190	* 1,260	1,480	4,580	7,010	27,600	36,000	15,200	9,400	6,250	2,040	1,960
10	1,190	1,190	1,480	4,940	22,000	27,600	37,500	13,200	8,800	7,400	*2,040	2,130
11	1,190	1,190	1,480	* 5,490	27,000	27,000	39,500	11,400	8,800	6,630	2,040	3,700
12	1,260	1,260	1,560	5,870	28,500	*24,300	41,300	10,400	8,000	5,300	2,040	4,050
13	1,260	1,260	1,880	5,680	29,400	20,800	43,100	9,600	7,010	4,400	2,040	3,520
14	1,260	1,190	2,130	4,940	30,500	17,800	43,100	9,200	6,820	3,870	2,130	2,650
15	1,260	1,260	2,130	4,050	* 31,300	15,800	41,300	8,600	5,870	3,520	2,040	3,700
16	1,260	1,560	2,300	1,710	30,500	15,000	*39,500	8,000	5,490	3,520	1,880	10,600
17	1,330	1,960	2,130	1,190	22,600	14,600	37,000	7,600	4,940	4,580	1,880	12,800
18	1,260	1,960	1,260	1,630	16,400	14,800	32,500	7,200	4,580	9,600	1,710	11,800
19	1,260	1,880	1,190	2,040	14,400	15,800	25,100	6,630	4,400	7,400	2,040	10,000
20	1,260	1,880	1,120	2,470	12,800	17,600	21,000	6,440	4,220	6,820	2,300	8,400
21	1,330	1,630	1,260	2,820	12,000	15,600	17,800	6,250	4,050	6,440	2,300	6,440
22	1,330	1,480	1,400	3,170	10,400	14,000	15,600	5,870	3,870	5,870	2,130	5,680
23	1,260	1,400	1,480	3,700	9,000	12,400	14,000	5,680	3,870	4,940	1,960	6,440
24	1,260	1,330	1,790	8,800	8,000	12,200	13,600	5,490	3,870	4,220	1,880	8,800
25	1,260	1,400	1,880	17,000	7,010	12,000	17,600	5,490	3,700	4,580	1,880	8,800
26	1,260	1,400	1,880	21,800	4,050	11,200	27,300	10,400	3,520	4,050	1,960	7,200
27	1,260	1,480	1,880	*19,800	4,400	10,800	30,900	17,200	3,520	3,520	2,040	5,300
28	1,260	1,960	1,880	17,800	6,250	11,000	32,100	18,600	3,350	3,000	2,040	4,760
29	1,190	2,130	1,790	15,200		11,000	32,900	19,200	3,170	2,650	2,130	4,220
30	1,190	2,300	1,630	10,200	---------	11,400	31,700	15,600	4,580	2,470	1,960	4,220
31	1,190	----------	1,630	b 5,800	---------	14,000	----------	12,800	----------	2,470	2,040	----------
Total	38,430	43,880	52,310	213,300	365,240	530,600	844,800	379,850	222,830	159,050	64,730	154,300
Mean	1,240	1,463	1,687	6,881	13,040	17,120	28,160	12,250	7,428	5,131	2,088	5,143
Cfsm	0.102	0.120	0.138	0.564	1.07	1.40	2.31	1.00	0.609	0.421	0.171	0.422
In.	0.12	0.13	0.15	0.65	1.11	1.61	2.58	1.15	0.68	0.49	0.20	0.47

Calendar year 1964 : Max 81,300 Min 920 Mean 7,669 Cfsm 0.629 In. 7.53
Water year 1964-65 : Max 43,100 Min 1,050 Mean 8,409 Cfsm 0.689 In. 9.34

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Computed from once-daily readings of wire-weight gage Oct. 3-12, 16, 20-29, Nov. 5-9, Jan. 1-3, 9-12, 16-27, Feb. 4-6, Mar. 25, 26, May 22-25.

3-3420. Wabash River at Riverton, Ind.

Location.--Lat 39°01'13", long 87°34'07", in sec. 30, T. 7 N., R. 10 W., on left bank at downstream side of Illinois Central Railroad bridge at Riverton, 0.6 mile downstream from Turtle Creek, and at mile 162.0.

Drainage area.--13,100 sq mi, approximately.

Records available.--October 1938 to September 1965. Prior to April 1939 monthly discharge only, published in WSP 1305. June 1911 to December 1914 (gage heights only) available in the Corps of Engineers office, Louisville, Ky.

Gage.--Water-stage recorder. Datum of gage is 414.65 ft above mean sea level, datum of 1929. June 23, 1911 to Dec. 31, 1914, staff gage maintained by Illinois Central Railroad at same site and datum. Apr. 18, 1939 to July 17, 1951, wire-weight gage at same site and datum, read twice daily.

Average discharge.--27 years, 10,990 cfs.

Extremes.--Maximum discharge during year, 42,200 cfs Apr. 16 (gage height, 18.61 ft); minimum daily, 1,430 cfs Oct. 7 to Nov. 15; minimum gage height observed, 0.95 ft Oct. 9, 10.
1938-65: Maximum discharge, 201,000 cfs May 21, 1943 (gage height, 29.36 ft); minimum observed, 858 cfs Sept. 27 to Oct. 1, 1941 (gage height, 0.02 ft).
Flood of Mar. 28, 1913, reached a stage of 26.4 ft, from graph based on once-daily readings by Illinois Central Railroad Co. (discharge, 250,000 cfs, estimated).

Remarks.--Records fair above 10,000 cfs and poor below. Records of water temperatures for the water year 1965 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,630	1,430	*2,060	1,840	6,500	8,160	14,900	30,400	14,300	4,820	2,620	*2,170
2	1,630	1,430	2,060	2,170	4,800	12,100	*17,100	29,700	12,500	* 6,080	2,620	2,060
3	1,630	1,430	1,950	3,860	3,900	15,900	17,100	25,800	12,900	8,160	2,500	2,280
4	1,530	1,430	1,840	4,120	3,700	17,700	16,300	20,700	17,300	8,160	2,500	2,280
5	1,530	1,430	1,840	5,520	3,900	18,900	15,900	17,300	17,700	6,220	2,390	2,280
6	1,530	1,430	1,840	6,220	4,260	20,700	16,900	16,300	14,700	5,240	2,500	2,170
7	1,430	1,430	1,630	5,660	* 4,540	22,800	24,000	17,900	12,500	5,100	2,500	2,060
8	1,430	*1,430	1,630	4,820	5,100	24,000	27,000	18,900	11,100	5,100	2,500	1,950
9	1,430	1,430	1,630	4,400	6,220	24,900	28,800	17,900	10,300	5,240	2,390	1,950
10	1,430	1,430	1,630	* 4,120	15,800	25,500	30,000	16,300	9,600	8,000	2,280	2,060
11	* 1,430	1,430	1,630	4,400	24,600	25,800	32,400	14,300	9,440	8,000	2,280	2,740
12	1,430	1,430	1,630	4,680	26,400	25,800	34,000	12,900	9,120	6,650	2,170	3,470
13	1,430	1,430	1,630	5,100	26,700	24,900	36,000	11,300	8,320	5,520	2,170	3,470
14	1,430	1,430	1,730	4,820	27,000	21,600	37,500	10,300	7,400	4,680	2,170	3,100
15	1,430	1,430	1,840	4,400	27,300	18,100	40,500	9,780	6,950	3,990	2,170	2,860
16	1,430	1,530	1,950	3,600	28,500	16,500	42,200	9,280	6,360	3,730	2,170	3,860
17	1,430	1,630	2,060	2,500	28,500	15,700	41,600	8,960	5,940	3,600	2,170	9,120
18	1,430	1,840	1,950	1,800	24,300	15,500	40,500	8,480	5,660	4,400	2,170	11,100
19	1,430	1,950	1,950	1,900	17,100	* 15,500	37,500	8,160	5,240	8,160	2,060	9,960
20	1,430	1,840	1,840	2,100	14,900	16,300	33,200	7,700	5,100	7,400	2,060	8,800
21	1,430	1,730	1,530	2,390	13,300	17,500	28,500	7,400	4,820	6,360	2,280	7,250
22	1,430	1,630	1,530	2,620	11,900	16,500	23,100	7,250	4,680	5,940	2,280	* 5,800
23	1,430	1,630	1,730	2,980	10,500	14,500	18,500	6,950	4,540	5,520	2,170	5,800
24	1,430	1,630	1,730	3,860	9,120	12,900	16,300	6,650	4,400	4,820	2,060	6,220
25	1,430	1,530	1,840	8,960	8,320	12,900	16,500	6,500	4,400	4,260	1,950	7,700
26	1,430	1,530	1,950	17,100	6,800	12,500	22,200	6,500	4,400	4,120	2,060	7,550
27	1,430	1,530	1,950	20,700	5,100	11,700	25,500	*12,100	4,400	* 3,990	2,060	6,220
28	1,430	1,630	1,950	17,900	5,380	11,300	27,300	16,500	4,260	3,600	2,060	5,100
29	1,430	1,730	1,950	16,300		11,500	*29,100	17,300	4,260	3,220	2,060	4,540
30	1,430	1,950	1,950	13,700	---------	11,500	30,000	17,100	4,260	2,980	2,170	4,260
31	1,430	----------	1,840	9,280	---------	12,100	----------	16,100	----------	2,740	2,060	----------
Total	45,230	46,760	56,270	193,820	374,440	531,260	820,400	432,710	246,850	165,800	69,600	140,180
Mean	1,459	1,559	1,815	6,252	13,370	17,140	27,350	13,960	8,228	5,348	2,245	4,673
Cfsm	0.111	0.119	0.139	0.477	1.02	1.31	2.09	1.07	0.628	0.408	0.171	0.357
In.	0.13	0.13	0.16	0.55	1.06	1.51	2.33	1.23	0.70	0.47	0.20	0.40

Calendar year 1964: Max 77,200 Min 1,000 Mean 7,794 Cfsm 0.595 In. 8.11
Water year 1964-65: Max 42,200 Min 1,430 Mean 8,557 Cfsm 0.653 In. 8.87

*Discharge measurement made on this day.
Note.--Computed from once-daily wire-weight gage readings Oct. 1 to Jan. 2.

3-3425. Busseron Creek near Carlisle, Ind.

Location.--Lat 38°58'30", long 87°25'35", in W½ sec. 17, T. 6 N., R. 9 W., on right bank 10 ft downstream from bridge on State Highway 58, 1½ miles northwest of Carlisle, and 6 3/4 miles upstream from mouth.

Drainage area.--228 sq mi.

Records available.--October 1943 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 425.36 ft above mean sea level (Indiana State Highway Department bench mark). Prior to Nov. 8, 1950, wire-weight gage at same site and datum.

Average discharge.--22 years, 209 cfs.

Extremes.--Maximum discharge during year, 2,600 cfs Feb. 10 (gage height, 14.45 ft); minimum, 1.4 cfs Nov. 10; minimum gage height, 2.24 ft Oct. 6.
1943-65: Maximum discharge, 8,800 cfs Jan. 5, 1950 (gage height, 20.05 ft); maximum gage height, 20.30 ft May 9, 1961; no flow many days in 1954.

Remarks.--Records good above 100 cfs, fair below, except periods of ice effect and no gage-height record, which are poor. Flow regulated at times by mining operations above gage.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 10 to Dec. 2, Dec. 6-11, 13-31, Jan. 1, 4-8)

2.1	1.0	4.0	102
2.2	1.9	6.0	320
2.3	3.9	9.0	850
2.5	10	12.0	1,630
2.7	18	14.0	2,380
3.0	35		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	6.7	* 4.2	5.5	* 6.1	740	61	124	7.3	158	8.3	9.3
2	7.2	4.6	6.1	16	b 5.3	920	57	91	179	*513	9.3	10
3	8.2	3.9	28	30	b 4.7	672	50	75	310	1,060	9.7	6.9
4	8.1	3.9	33	13	b 4.1	307	48	78	73	299	8.0	6.6
5	5.0	3.8	19	* 12	b 3.5	* 291	52	63	36	126	8.0	63
6	1.8	*4.4	9.7	11	4.7	291	249	64	692	338	7.3	21
7	8.3	3.6	6.1	10	31	285	210	70	952	1,170	7.3	10
8	7.0	2.4	6.6	7.3	81	249	80	58	181	828	7.3	6.1
9	6.1	1.8	6.6	36	583	182	60	51	89	432	26	12
10	6.5	1.5	5.3	34	2,310	133	80	47	94	974	18	8.3
11	6.3	4.4	9.0	14	2,080	99	200	36	218	285	10	275
12	*5.9	4.0	17	16	1,830	93	180	31	93	140	9.3	474
13	6.1	3.6	13	13	1,000	88	95	26	57	94	6.9	115
14	6.0	4.7	6.6	5.8	246	82	61	20	40	70	6.1	57
15	7.6	7.3	4.2	b 4.7	166	77	162	20	20	71	5.8	486
16	6.9	12	3.6	3.9	129	72	411	23	20	52	5.0	222
17	6.8	14	5.8	b 3.8	105	120	224	21	16	189	5.0	102
18	7.2	8.9	2.5	b 3.7	89	270	140	21	12	460	4.7	67
19	9.9	6.9	1.8	b 3.6	77	205	100	28	11	128	119	46
20	4.2	5.8	1.5	b 3.6	66	155	80	20	9.3	65	16	34
21	8.3	7.3	1.7	b 4.0	62	100	66	18	8.3	45	8.3	30
22	9.9	5.8	1.8	6.9	52	70	57	22	7.6	36	6.6	75
23	14	5.9	2.9	28	53	90	51	124	8.3	29	6.1	79
24	5.5	4.4	13	77	46	130	47	48	10	26	5.5	50
25	4.8	4.5	37	59	21	200	589	41	8.0	19	5.5	31
26	5.7	5.9	24	47	46	470	818	* 26	5.8	14	10	23
27	6.2	6.8	10	20	59	250	230	31	4.7	* 12	*15	18
28	7.9	9.7	8.3	15	204	150	* 164	21	8.3	11	9.0	15
29	8.3	16	8.6	11	------	110	281	13	400	9.3	6.3	14
30	8.2	8.4	8.0	b 8.6	------	* 77	183	10	493	8.0	5.3	*13
31	8.0	------	6.1	6.8	------	66	------	8.3	------	7.6	5.8	------
TOTAL	221.3	182.9	311.0	530.2	9,364.4	7,044	5,086	1,329.3	4,071.6	7,668.9	380.4	2,379.2
MEAN	7.14	6.10	10.0	17.1	334	227	170	42.9	136	247	12.3	79.3
CSM	.031	.027	.044	.075	1.46	.996	.746	.188	.597	1.08	.054	.348
IN	.04	.03	.05	.09	1.53	1.15	.83	.22	.66	1.25	.06	.39

CALENDAR YEAR 1964 MAX 2,570 MIN 1.2 MEAN 81.6 CFSM .358 INCHES 4.87
WATER YEAR 1964-65 MAX 2,310 MIN 1.5 MEAN 106 CFSM .465 INCHES 6.29

Peak discharge (base, 2,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1145	14.45	2,600				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Mar. 17-29, Apr. 7-12.

3-3430. Wabash River at Vincennes, Ind.

Location.--Lat 38°40'52", long 87°32'04", near center of span on downstream side of bridge on U.S. 50 Business Route (Vigo St.) at Vincennes, Knox County, 4.8 miles downstream from Maria Creek, 5.8 miles upstream from Embarras River, and at mile 127.8.
Drainage area.--13,700 sq mi, approximately.
Records available.--October 1929 to September 1965. Prior to December 1929 monthly discharge only, published in WSP 1305. Gage-height records collected at same site since November 1904 and intermittent records since 1887 and flood peaks in 1867 and 1883 are contained in reports of U.S. Weather Bureau.
Gage.--Wire-weight gage read twice daily. Datum of gage is 394.43 ft above mean sea level, datum of 1929. Prior to Aug. 14, 1940, staff and chain gages, and Aug. 14, 1940, to Sept. 30, 1946, wire-weight gage, at same site at datum 2.00 ft higher. Since Oct. 1, 1955, auxiliary water-stage recorder 4.7 miles upstream from base gage at datum 0.80 ft lower.
Average discharge.--36 years, 11,220 cfs.
Extremes.--Maximum discharge during year, 41,500 cfs Apr. 17; maximum gage height, 17.16 ft Apr. 18; minimum daily discharge, 1,460 cfs Oct. 10 (gage height, 2.15 ft).
1929-65: Maximum discharge, 189,000 cfs May 22, 23, 1943 (gage height, 29.33 ft, present datum); minimum observed, 770 cfs Aug. 4, 5, 1934 (gage height, 1.40 ft, present datum).
Flood of Mar. 29, 1913, reached a stage of 26.3 ft, present datum, from floodmarks, determined by Corps of Engineers (discharge, 255,000 cfs, estimated).
Remarks.--Records fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge in cubic feet per second)
(Fall used as a factor Jan. 27-31, Feb. 11-21, Mar. 3-23, Apr. 2 to May 11, May 28-31, June 4-7)

Oct. 1 to June 5		June 6 to Sept. 30	
2.0	1,250	2.6	2,240
3.0	2,890	3.0	3,040
8.0	14,800	6.0	9,800
12.0	26,200	9.0	17,500
17.0	44,000		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,760	1,530	2,170	2,000	8,400	6,970	13,200	29,700	14,500	4,960	3,250	2,440
2	1,760	1,530	* 2,340	2,080	b 5,280	11,400	16,000	30,000	11,200	6,070	3,040	2,440
3	1,680	*1,530	2,340	2,520	b 4,800	15,400	15,700	28,100	12,500	9,080	3,040	2,440
4	1,680	1,530	2,170	* 4,510	b 3,800	17,300	16,400	22,600	17,300	11,000	2,840	2,640
5	*1,600	1,530	2,000	4,930	b 3,500	19,100	15,500	19,200	18,100	7,910	2,840	2,840
6	1,530	1,530	1,840	5,510	b 3,600	21,100	16,300	15,300	15,800	6,530	3,040	3,040
7	1,530	1,530	1,840	6,510	b 3,800	22,800	22,100	17,200	14,900	6,530	3,040	2,640
8	1,530	1,530	1,840	5,820	b 4,200	24,200	25,600	19,200	13,500	7,680	3,040	2,440
9	1,530	1,530	1,760	5,150	b 5,000	* 25,100	27,700	17,900	12,200	6,760	2,840	2,240
10	1,460	1,530	1,760	4,720	14,500	26,000	28,900	16,500	11,200	10,500	2,840	2,240
11	1,530	1,530	1,760	4,510	23,100	26,300	30,100	14,900	11,000	11,200	2,640	2,440
12	1,530	1,530	1,760	4,930	26,200	26,300	31,300	13,800	10,500	8,370	2,640	5,180
13	1,600	1,530	1,760	5,150	26,600	25,700	32,900	12,200	9,500	6,990	2,640	4,740
14	1,600	1,530	1,760	5,370	25,900	23,100	34,800	11,200	8,370	6,070	2,640	4,300
15	1,600	1,530	1,920	5,150	26,600	19,600	37,500	10,400	7,700	5,180	2,640	3,880
16	1,530	1,600	2,080	4,720	27,000	15,900	40,100	9,900	7,220	4,740	2,640	4,090
17	1,530	1,600	2,170	3,880	27,600	15,900	41,200	9,400	6,530	4,300	2,440	5,620
18	1,530	1,840	2,170	2,700	26,000	15,400	40,900	8,650	5,840	5,180	2,440	11,000
19	1,600	2,080	2,080	b 2,000	19,400	15,200	39,600	8,400	5,620	8,600	2,440	11,700
20	1,600	2,080	1,680	b 2,200	15,500	15,700	36,900	7,920	5,400	9,080	2,640	10,300
21	1,600	2,000	1,600	b 2,400	13,800	17,200	32,300	7,440	5,180	7,680	2,640	9,080
22	1,530	2,000	1,600	2,520	13,200	16,800	25,500	7,200	4,960	7,220	2,840	7,680
23	1,600	1,840	1,600	2,890	12,200	14,900	19,900	6,970	4,740	6,760	2,640	6,710
24	1,600	1,760	1,760	3,280	10,400	14,000	16,600	6,740	4,740	6,070	2,440	6,300
25	1,530	1,680	1,920	3,680	9,650	13,200	16,000	6,280	4,520	5,180	2,440	7,680
26	1,530	1,680	2,080	12,700	8,160	13,200	21,100	6,280	4,520	4,960	2,240	8,600
27	1,530	1,600	2,080	18,700	6,740	12,700	24,800	8,160	4,300	4,960	2,440	7,910
28	1,530	1,760	2,080	17,400	4,930	11,900	26,700	* 15,800	4,090	4,520	2,440	* 6,530
29	1,530	1,760	2,080	15,900		* 11,700	28,000	17,500	4,520	* 3,880	2,440	5,400
30	1,530	2,170	2,080	14,000	---------	11,900	* 29,100	17,600	* 4,960	3,460	*2,440	4,960
31	1,530	----------	2,000	12,000	---------	11,900	----------	15,800	----------	3,250	2,640	----------
Total	48,750	50,400	60,080	190,830	381,860	538,870	803,700	438,240	265,410	204,670	83,250	159,500
Mean	1,573	1,680	1,938	6,156	13,640	17,380	26,790	14,140	8,847	6,602	2,685	5,317
Cfsm	0.115	0.123	0.141	0.449	0.996	1.27	1.96	1.03	0.646	0.482	0.196	0.388
In.	0.13	0.14	0.16	0.52	1.04	1.46	2.19	1.19	0.72	0.56	0.23	0.43

Calendar year 1964: Max 71,100 Min 1,100 Mean 7,765 Cfsm 0.567 In. 7.71
Water year 1964-65: Max 41,200 Min 1,460 Mean 8,837 Cfsm 0.645 In. 8.77

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3455. Embarras River at Ste. Marie, Ill.

Location.--Lat 38°56'10", long 88°01'10", in NW¼NW¼ sec. 30, T. 6 N., R. 14 W., on left bank at downstream side of highway bridge at Ste. Marie.

Drainage area.--1,513 sq mi.

Records available.--October 1909 to December 1912, August 1914 to September 1965. Prior to October 1963, published as Embarrass River at Ste. Marie.

Gage.--Water-stage recorder. Datum of gage is 446.75 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to June 29, 1940, chain gage at same site and datum.

Average discharge.--54 years, 1,180 cfs.

Extremes.--Maximum discharge during year, 4,700 cfs Apr. 27 (gage height, 12.61 ft); minimum daily, 12 cfs Oct. 10.
1909-12, 1914-65: Maximum discharge, 44,800 cfs Jan. 4, 1950 (gage height, 24.95 ft), from rating curve extended above 29,000 cfs; maximum gage height, 25.54 ft June 30, 1957; minimum discharge, 1 cfs Oct. 5-9. 1914.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 10-17, Aug. 27 to Sept. 15)

-0.2	11	2.0	360
0	23	4.0	945
.2	39	6.0	1,650
.6	82	13.0	4,900
1.0	147		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	15	102	35	b 250	1,090	683	2,480	485	217	77	76
2	19	15	b 60	34	b 200	2,200	698	1,970	946	316	74	76
3	17	15	b 50	35	b 200	2,410	683	1,600	2,930	262	70	85
4	17	15	b 40	37	b 200	1,750	635	1,360	2,360	531	67	88
5	17	15	b 35	188	b 200	1,460	638	1,160	2,310	746	69	102
6	15	15	34	312	b 200	1,430	991	1,040	2,630	644	67	76
7	15	15	*34	314	b 300	1,460	2,320	1,270	2,820	604	64	69
8	14	15	29	273	b 450	1,420	2,060	1,390	2,460	638	62	75
9	13	*15	28	236	b 800	1,370	2,220	1,340	1,820	547	61	70
10	12	15	29	199	3,540	1,340	2,630	1,320	1,320	923	59	88
11	13	15	34	*209	4,010	1,220	2,820	1,330	1,080	1,000	57	107
12	13	14	35	189	2,300	1,140	2,400	1,080	970	671	56	88
13	13	15	31	b 150	1,730	1,050	1,830	910	844	485	56	71
14	13	15	29	b 100	1,590	931	1,520	784	719	372	55	69
15	13	15	44	b 80	1,410	830	1,440	707	626	*305	52	* 182
16	*13	b 15	42	b 60	1,170	755	2,200	644	550	258	50	587
17	13	b 15	38	b 50	*956	710	2,730	593	500	225	47	731
18	13	b 17	b 35	b 50	802	792	2,520	574	435	197	44	581
19	15	19	b 35	b 50	710	808	2,450	547	400	183	49	229
20	15	41	b 35	b 50	650	644	*2,390	528	365	170	*46	162
21	14	31	*b 35	b 70	604	577	2,070	496	337	155	46	170
22	14	26	b 35	b 100	571	523	1,650	448	*321	143	45	240
23	14	26	b 30	b 120	531	498	1,380	415	314	138	45	552
24	14	22	35	151	488	*517	1,170	385	302	133	44	485
25	14	22	37	610	342	574	1,080	360	291	119	44	298
26	13	21	35	1,030	b 250	574	3,000	344	267	110	58	434
27	15	19	34	* 1,080	b 300	585	4,540	332	238	104	66	680
28	16	17	34	b 900	465	585	3,500	323	217	96	174	812
29	16	133	36	b 700		590	3,060	321	203	90	117	716
30	16	204	42	b 500	---------	596	3,020	402	193	83	83	550
31	15	----------	35	b 350	---------	632	----------	478	----------	80	77	----------
Total	453	852	1,187	8,262	25,219	31,061	60,328	26,931	29,253	10,545	1,981	3,549
Mean	14.6	28.4	38.3	267	901	1,002	2,011	869	975	340	63.9	285
Cfsm	0.0096	0.019	0.025	0.176	0.596	0.662	1.33	0.574	0.644	0.225	0.042	0.188
In.	0.01	0.02	0.03	0.20	0.62	0.76	1.48	0.66	0.72	0.26	0.05	0.21

Calendar year 1964: Max 7,500 Min 12 Mean 595 Cfsm 0.393 In. 5.35
Water year 1964-65: Max 4,540 Min 12 Mean 561 Cfsm 0.371 In. 5.02

Peak discharge (base, 6,500 cfs).--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3460. North Fork Embarras River near Oblong, Ill.

Location.--Lat 39°00'35", long 87°56'45", in extreme northwest corner of sec. 35, T. 7 N., R. 14 W., on left bank at downstream side of pier of bridge on State Highway 33, 0.8 mile upstream from Illinois Central Railroad bridge, 2 miles west of Oblong, and 8.5 miles upstream from mouth.

Drainage area.--319 sq mi.

Records available.--October 1940 to September 1965. Prior to October 1963, published as North Fork Embarrass River near Oblong.

Gage.--Water-stage recorder (digital). Datum of gage is 456.19 ft above mean sea level, datum of 1929. Prior to Dec. 11, 1940, wire-weight gage at same site at datum 2.00 ft higher. Dec. 11, 1940, to Sept. 30, 1964, water-stage recorder, at datum 2.00 ft higher.

Average discharge.--25 years, 235 cfs.

Extremes.--Maximum discharge during year, 2,690 cfs Feb. 11 (gage height, 16.14 ft); no flow for many days.
1940-65: Maximum discharge, 27,100 cfs Jan. 4, 1950 (gage height, 22.38 ft), from rating curve extended above 16,000 cfs; no flow for many days in 1953-54, 1964.

Remarks.--Records good except those for periods of ice effect, which are poor.

(Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 4-25, Apr. 6-25, Sept. 15-23)

Oct. 1 to Jan. 25

1.7	0	2.6	22
1.75	.1	3.0	44
1.8	.5	3.5	78
1.9	1.5	4.0	113
2.0	3.0	6.0	330
2.3	10		

Jan. 26 to Sept. 30

1.7	0.1	2.2	12	9.0	750
1.75	.5	2.5	30	13.0	1,530
1.8	1.2	3.0	64	15.0	2,120
1.9	3.1	4.0	144	16.0	2,600
2.0	5.5	6.0	348		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.10	0.10	23	4.4	15	563	85	147	23	33	3.0	3.3
2	.10	.10	14	4.6	10	1,110	78	120	264	52	3.3	3.6
3	.10	.10	10	4.8	10	1,080	74	101	475	50	3.8	5.3
4	.10	.10	8.7	12	10	401	68	87	112	104	3.1	3.8
5	.10	.10	7.9	19	10	271	70	77	61	49	6.6	9.6
6	0	.10	7.0	13	10	402	116	73	47	34	4.3	3.8
7	0	.10	* 6.4	10	15	508	660	198	81	38	8.1	2.6
8	0	.10	5.2	9.0	30	505	310	183	71	46	5.0	1.8
9	0	* .10	4.2	8.7	314	407	155	113	48	86	3.3	1.8
10	0	.10	3.4	7.9	1,790	280	114	92	34	172	2.4	1.2
11	0	.10	3.8	* 9.2	2,530	184	100	122	143	157	1.6	5.4
12	0	.10	4.0	10	1,210	137	104	97	67	63	1.0	6.3
13	0	.10	4.6	8.0	336	121	89	73	44	39	.80	4.7
14	0	.10	5.8	7.0	200	108	71	65	30	28	.60	3.1
15	0	.20	7.4	6.0	148	102	118	58	23	* 21	.50	*30
16	* 0	.50	6.0	5.0	124	100	589	54	18	17	.40	19
17	0	.40	4.2	4.0	*109	93	571	51	15	14	.40	21
18	.10	.40	2.7	3.0	98	144	222	61	*13	11	.40	52
19	.20	1.4	2.0	3.0	88	192	147	58	11	9.6	.80	23
20	.10	2.0	1.9	3.0	80	105	* 111	54	10	8.5	.50	8.5
21	.10	1.5	1.8	3.0	73	82	93	* 44	10	7.6	.30	5.0
22	.10	1.4	1.8	4.0	68	77	81	37	9.7	6.6	.20	12
23	.10	1.2	2.0	5.0	60	75	70	34	10	5.7	.10	61
24	.10	1.1	2.2	43	55	77	64	32	8.9	5.0	.10	73
25	0	1.1	2.5	273	50	*97	81	31	8.2	4.4	.10	37
26	0	1.0	2.7	153	50	90	651	31	8.5	3.7	1.8	20
27	.10	1.1	3.1	90	55	89	943	34	7.3	3.2	2.3	12
28	.10	3.4	7.9	60	81	99	291	32	7.0	2.9	2.5	8.1
29	.10	6.4	7.2	40		120	215	32	14	2.4	7.0	6.1
30	.10	63	6.9	25	---------	119	192	26	11	2.2	4.9	5.4
31	.10	----------	5.0	20	---------	100	----------	23	----------	2.3	4.1	----------
Total	1.80	87.50	175.3	867.6	7,629	7,838	5,533	2,240	1,684.6	1,078.1	73.30	449.4
Mean	.06	2.92	5.66	28.0	272	253	218	72.3	56.2	34.8	2.37	15.0
Cfsm	.0002	.0092	.018	.088	.853	.793	.683	.227	.176	.109	.0074	.047
In.	0	.01	.02	.10	.89	.91	.76	.26	.20	.13	.01	.05

Calendar year 1964: Max 2,350 Min 0 Mean 88.6 Cfsm .278 In. 3.78
Water year 1964-65: Max 2,530 Min 0 Mean 78.5 Cfsm .246 In. 3.34

Peak discharge (base, 4,000 cfs).--No peak above base.

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 6, Jan. 12-23, Jan. 27 to Feb. 8, Feb. 23-26.

GPO 826-027-6

3-3470. White River at Muncie, Ind.

Location.--Lat 40°12', long 85°23', in sec. 10, T. 20 N., R. 10 E., on right bank 200 ft downstream from Walnut Street Bridge in Muncie and 6 miles upstream from Bell Creek.

Drainage area.--242 sq mi.

Records available.--November 1930 to September 1965. Prior to October 1948, published as West Fork White River at Muncie. Daily gage heights from October 1924 to December 1929 are available in the district office.

Gage.--Water-stage recorder (digital). Datum of gage is 917.10 ft above mean sea level (City of Muncie bench mark). Prior to Jan. 4, 1934, chain gage at highway bridge 200 ft upstream at datum 8.00 ft higher. Jan. 4, 1934, to Sept. 13, 1940, water-stage recorder and Sept. 14, 1940, to Feb. 14, 1941, staff gage, at present site at datum 7.00 ft higher. Feb. 15, 1941, to Jan. 27, 1942, wire-weight gage at bridge 200 ft upstream at datum 3.00 ft higher. Jan. 28, 1942, to Apr. 27, 1964, water-stage recorder at present site at datum 3.00 ft higher.

Average discharge.--34 years (1931-65), 216 cfs (adjusted for diversion after September 1937).

Extremes.--Maximum discharge during year, 3,590 cfs Feb. 11 (gage height, 7.66 ft); minimum, 1.7 cfs Aug. 12 (gage height, 2.43 ft).
1930-65: Maximum discharge, 14,300 cfs Apr. 21, 1964; maximum gage height, 21.07 ft Jan. 15, 1937, present datum; minimum discharge, 0.6 cfs Sept. 16, 1937; minimum daily, 1.1 cfs Sept. 16, 17, 23-25, 1954 and Oct. 10, 1956.
Maximum stage known, about 22.6 ft in March 1913, present datum (discharge, about 20,000 cfs).

Remarks.--Records good except those below 20 cfs, which are fair, and those for periods of ice effect, which are poor. City of Muncie diverts part of its water supply 2.5 miles above gage and returns it to river at sewer outlet a short distance below gage. Records of diversion available since October 1937.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	11	12	12	29	b15	b 150	147	269	75	15	17	17
2	12	14	12	55	b11	433	141	224	96	17	16	13
3	9.9	9.5	b 11	58	b10	388	126	190	126	18	7.6	14
4	12	9.0	b 11	37	b10	571	116	160	94	17	5.4	14
5	14	8.2	b 10	25	b10	1,230	116	144	75	15	3.6	20
6	27	8.8	b 8.0	21	b14	805	560	141	69	12	2.3	20
7	15	13	b 7.5	17	62	639	813	133	64	23	2.1	15
8	7.5	17	b 7.0	* 24	194	604	687	121	69	21	3.6	9.6
9	4.6	19	b 7.0	33	234	460	1,400	116	61	38	7.2	7.2
10	9.0	9.6	b 7.0	29	2,280	350	742	107	50	34	2.9	4.8
11	19	9.5	b 15	24	2,820	276	651	96	44	47	1.9	4.1
12	18	12	22	18	1,050	234	2,460	90	36	19	2.6	11
13	15	15	27	b 12	490	211	1,310	83	33	9.2	55	16
14	11	13	20	b 8.0	322	199	566	79	27	4.1	6.9	* 22
15	14	17	14	b 6.0	266	181	460	79	23	7.2	4.1	331
16	13	22	10	b 5.0	224	160	480	79	19	7.2	4.3	183
17	7.3	18	10	b 4.7	155	155	388	63	16	19	3.5	77
18	18	17	5.0	b 4.7	138	160	306	63	18	15	* 14	53
19	15	15	b 4.6	b 5.0	123	131	245	72	18	22	21	34
20	11	14	b 4.4	b 5.7	109	109	205	60	21	15	12	28
21	9.0	13	b 5.4	b 9.0	105	103	181	53	18	*7.9	7.9	73
22	8.9	16	7.0	14	b70	96	160	49	8.5	8.5	7.2	105
23	13	*13	10	54	*b30	149	155	61	*13	3.8	13	94
24	13	8.0	27	214	b25	424	202	84	11	2.6	7.2	77
25	14	9.8	34	* 214	b25	326	1,080	* 442	4.8	2.2	5.7	72
26	12	13	31	135	b23	231	2,550	273	19	2.5	10	69
27	* 8.4	17	27	133	b25	172	*1,240	406	24	2.5	17	65
28	6.5	21	18	66	b50	152	588	245	19	3.8	8.9	62
29	7.3	16	11	b50	------	* 181	415	144	16	4.5	14	62
30	10	15	11	b30	------	181	322	111	21	3.6	15	70
31	9.6	------	13	b20	------	155	------	92	------	11	13	------
Total	375.0	414.4	418.9	1,360.1	8,690	9,616	18,812	4,329	1,192.3	427.6	311.9	1,642.7
Mean	12.1	13.8	13.5	43.9	318	310	627	140	39.7	13.8	10.1	54.8
(/)	15.1	16.0	16.1	16.1	16	16	16	17	18.1	17.5	17.7	17.9

Adjusted for diversion

Mean	27.2	29.8	29.6	60.0	334	326	643	157	57.8	31.3	27.8	72.7
Cfsm	.112	.123	.122	.248	1.38	1.35	2.66	.649	.239	.129	.115	.300
In.	.13	.14	.14	.29	1.44	1.56	2.97	.75	.27	.15	.13	.33

	Observed					Adjusted					
Calendar year 1964 :	Max 11,600	Min 3.1	Mean 211			Mean 228	Cfsm .942	In. 12.82	/ 17		
Water year 1964-65 :	Max 2,820	Min 1.9	Mean 131			Mean 148	Cfsm .612	In. 8.30	/ 17		

Peak discharge (base, 2,500 cfs).-- Feb. 11 (0445) 3,590 cfs (7.66 ft); Apr. 12 (1315) 2,670 cfs (6.89 ft); Apr. 26 (0930) 2,850 cfs (7.04 ft).

* Discharge measurement made on this day.
/ Diversion above station for municipal supply, equivalent in cubic feet per second, furnished by Muncie Water Works Co.
b Stage-discharge relation affected by ice.

3-3475. Buck Creek near Muncie, Ind.

Location.--Lat 40°08'05", long 85°22'52", in SE¼ sec. 34, T. 20 N., R. 10 E., on left bank at downstream side of county highway bridge, 1 mile upstream from Muncie Water Works Co. pumping station and 4.2 miles southeast of courthouse in Muncie.

Drainage area.--36.7 sq mi.

Records available.--October 1954 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 944.67 ft above mean sea level, datum of 1929. Prior to May 5, 1955, wire-weight gage at same site and datum.

Average discharge.--11 years, 34.3 cfs.

Extremes.--Maximum discharge during year, 597 cfs Feb. 10 (gage height, 8.43 ft); minimum, 2.8 cfs June 23 (gage height, 1.94 ft).
1954-65: Maximum discharge, 1,780 cfs Apr. 21, 1964 (gage height, 13.96 ft); minimum daily, 5.6 cfs Dec. 20, 1964.
Maximum stage known about 15 ft, from information by local residents. Date unknown.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 22		Jan. 23 to Sept. 14		Sept. 15 to Sept. 30	
2.3	5.4	2.2	6.5	2.0	5.2
2.6	14	2.5	12.8	2.3	12.4
3.0	29	2.8	21.9	3.0	40.0
3.5	60	3.2	39.9	3.5	69
4.5	160	3.8	86	4.5	160
10.0	807	4.5	160	10.0	807
		10.0	807		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	8.7	9.6	b 8.0	17	b 7.8	59	22	33	17	11	9.6	8.9
2	8.8	9.6	b 7.5	29	b 7.8	63	21	30	27	12	9.6	8.7
3	8.7	9.6	b 7.5	21	b 8.0	58	20	27	20	12	9.6	8.7
4	8.6	9.6	b 7.5	16	b 9.0	120	19	27	17	11	9.4	8.5
5	8.6	9.6	b 7.5	14	b 13	111	20	26	15	11	9.4	8.5
6	8.8	9.6	b 7.2	13	23	75	92	26	16	11	9.1	8.3
7	8.9	9.6	b 7.0	13	37	72	83	25	16	14	8.9	8.3
8	9.3	9.6	b 7.2	*13	31	65	66	24	15	12	9.1	8.3
9	9.2	9.6	b 7.5	15	62	50	107	24	15	13	9.1	8.1
10	9.1	9.6	b 8.5	14	373	40	57	23	14	13	9.1	8.1
11	9.1	9.6	14	13	130	35	216	22	14	11	9.1	8.3
12	9.3	9.6	15	12	75	32	212	22	14	11	9.1	8.1
13	9.2	9.3	12	b11	49	29	91	21	13	11	9.1	8.1
14	9.1	9.3	11	b 9.0	38	28	60	20	13	11	9.1	* 8.1
15	9.2	10	12	b 8.0	31	26	66	20	13	11	9.1	51
16	9.4	15	11	b 7.0	28	25	59	20	13	11	9.1	17
17	9.3	11	8.9	b 6.8	27	25	47	19	13	12	9.1	15
18	10	10	b 8.0	b 6.8	26	24	40	19	13	11	* 8.9	13
19	9.8	11	b 6.7	b 6.8	25	21	35	18	13	11	8.9	12
20	9.3	11	b 5.6	b 7.0	23	20	33	18	13	11	8.9	12
21	9.3	10	b 5.7	b10	23	20	30	18	13	11	8.7	13
22	9.3	10	6.4	b23	22	19	29	16	12	* 10	8.7	21
23	9.3	* 9.9	6.7	32	* 20	37	28	17	*11	10	8.7	15
24	9.3	9.6	8.7	57	b 17	47	41	19	13	10	8.7	13
25	9.3	9.8	14	*32	b 14	32	225	* 19	12	10	8.7	12
26	9.3	9.7	11	28	b 13	27	145	21	12	10	8.7	12
27	* 9.3	9.5	9.1	b23	b 16	23	* 74	23	12	10	8.7	12
28	9.6	10	8.0	b17	26	23	54	17	12	10	8.7	12
29	9.6	9.7	7.6	b13	------	*24	43	16	13	9.8	8.7	12
30	9.6	9.0	7.8	b10	------	22	37	16	13	9.6	8.7	12
31	9.6	------	7.3	b 8.5	------	21	------	16	------	9.6	8.7	------
TOTAL	285.9	299.0	271.9	505.9	1,174.6	1,279	2,072	664	427	341.0	279.0	371.0
MEAN	9.22	9.97	8.77	16.3	42.0	41.3	69.1	21.4	14.2	11.0	9.00	12.4
CFSM	.251	.272	.239	.444	1.14	1.13	1.88	.583	.387	.300	.245	.338
IN	.29	.30	.28	.51	1.19	1.30	2.10	.67	.43	.35	.28	.36

CALENDAR YEAR 1964 MAX 1,260 MIN 5.6 MEAN 33.1 CFSM .902 INCHES 12.26
WATER YEAR 1964-65 MAX 373 MIN 5.6 MEAN 21.8 CFSM .594 INCHES 8.08

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0815	8.43	597				
4-10	1545	8.10	557				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3480. White River at Anderson, Ind.

Location.--Lat 40°06', long 85°41', in sec. 18, T. 19 N., R. 8 E., on left bank at municipal water-supply plant in Anderson, 1 mile upstream from Killbuck Creek.

Drainage area.--401 sq mi.

Records available.--July 1925 to September 1926, October 1931 to September 1965. Monthly discharge only for some periods, published in WSP 1305. Gage-height records collected at site 700 ft downstream December 1910 to February 1918 and at present site since February 1918 are contained in reports of U. S. Weather Bureau. Prior to October 1948, published as West Fork White River at Anderson.

Gage.--Staff gage above concrete dam. Gage read twice daily. Datum of gage is 825.02 ft above mean sea level, datum of 1929. Prior to May 12, 1934, chain gage at site 250 ft upstream at same datum.

Average discharge.--35 years, 370 cfs.

Extremes.--Maximum discharge during year, 3,230 cfs Feb. 10 (gage height, 11.08 ft); minimum, 51 cfs Oct. 1-9 (gage height, 7.30 ft).
1925-26, 1931-65: Maximum discharge, 18,700 cfs Apr. 21, 1964 (gage height, 19.41 ft); maximum gage height, 19.96 ft June 14, 1958; minimum discharge observed, 8.8 cfs Sept. 24, 1940 (gage height, 6.92 ft).
Maximum stage known, 23.6 ft Mar. 25, 1913, present site and datum, based on determination by U. S. Weather Bureau at site then in use (discharge, 28,000 cfs, estimated).

Remarks.--Records good. The city of Anderson diverts water for its municipal supply above the gage.

Cooperation.--Gage readings furnished by city of Anderson.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 23		Jan. 24 to Sept. 30			
7.3	51	7.3	50	8.5	610
7.5	110	7.5	91	9.0	1,000
7.8	245	7.7	155	10.0	1,950
		8.0	300	11.0	3,100

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	64	78	110	b 80	404	335	505	151	89	66	94
2	51	61	b 74	240	b 80	920	340	440	210	85	70	80
3	51	72	b 74	225	b 80	920	320	380	265	94	70	64
4	51	72	b 74	168	b 90	920	305	345	210	87	66	66
5	51	72	b 74	130	b 100	1,750	300	315	168	83	62	66
6	51	72	b 70	110	b 110	1,450	842	305	147	70	70	60
7	51	66	b 70	107	121	1,180	1,360	330	147	78	70	60
8	51	66	b 70	110	320	1,090	1,180	285	144	89	62	58
9	54	66	b 70	215	386	880	1,750	275	147	85	70	62
10	61	66	78	154	2,040	720	1,360	280	140	200	66	60
11	61	66	84	130	3,100	610	1,180	260	132	89	* 62	60
12	61	66	100	118	1,750	505	2,280	230	132	89	62	64
13	72	66	104	104	960	470	1,950	215	114	85	62	* 58
14	72	66	107	90	645	440	1,180	200	112	78	64	62
15	78	66	110	b 80	505	440	920	191	107	74	64	480
16	78	164	107	b 70	470	380	960	186	101	74	60	410
17	75	107	81	b 65	350	362	760	178	96	109	58	196
18	78	90	b 64	b 65	320	350	610	168	85	80	66	132
19	122	90	b 58	b 70	290	325	505	173	85	70	91	104
20	90	* 97	b 56	b 68	265	300	440	164	80	70	78	89
21	78	84	b 56	b 67	260	255	386	155	80	74	76	94
22	78	90	*b 70	94	235	225	345	147	78	*70	58	280
23	78	75	69	182	* 196	250	325	186	*78	70	54	215
24	78	72	100	440	b 170	680	374	* 151	76	70	68	151
25	75	66	235	* 470	b 150	680	880	215	74	70	62	128
26	* 69	78	150	362	b 140	*540	2,390	440	70	66	68	121
27	75	66	114	b 250	b 160	410	*1,750	440	74	64	76	109
28	78	90	97	b 190	235	368	1,090	470	78	62	76	121
29	81	104	87	b 110		362	800	270	91	62	64	91
30	78	87	84	b 90	------	404	610	205	96	62	58	96
31	66	------	78	b 83	------	356	------	173	------	64	76	------
Total	2,144	2,367	2,743	4,767	13,608	18,946	27,827	8,277	3,568	2,512	2,075	3,731
Mean	69.2	78.9	88.5	154	486	611	928	267	119	81.0	66.9	124
Cfsm	0.173	0.197	0.221	0.384	1.21	1.52	2.31	0.666	0.297	0.202	0.167	0.309
In.	0.20	0.22	0.25	0.44	1.26	1.75	2.58	0.77	0.33	0.23	0.19	0.34

Calendar year 1964: Max 15,100 Min 36 Mean 361 Cfsm 0.900 In. 12.24
Water year 1964-65: Max 3,100 Min 51 Mean 254 Cfsm 0.633 In. 8.56

Peak discharge (base, 2,700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	2200	11.08	3,230				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3481. Killbuck Creek near Anderson, Ind.

Location.--Lat 40°08'18", long 85°39'44", in SW¼ sec. 31, T. 20 N., R. 8 E., on downstream side of State Highway 109 bridge, 900 ft downstream from Little Killbuck Creek, 2.1 miles from mouth and 2.3 miles northeast of county courthouse at Anderson.

Drainage area.--98.5 sq mi.

Records available.--July 1964 to September 1965.

Gage.--Wire-weight gage, crest-stage gage and SR recorder. Gage read twice daily. Datum of gage is 833.58 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Extremes.--Maximum discharge during year, 1,340 cfs Feb. 10 (gage height, 7.08 ft); minimum daily, 8.0 cfs Dec. 6; minimum gage height, 2.17 ft Sept. 11.
1964-65: Maximum discharge, 1,340 cfs Feb. 10, 1965 (gage height, 7.08 ft); minimum daily, 8.0 cfs Dec. 6, 196 : minimum gage height, 2.17 ft Sept. 11, 1965.

Remarks.--Records good except those for periods of indefinite stage-discharge relation, ice effect or no gage-height record, which are poor.

Rating tables, except periods of indefinite stage-discharge relation or ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 29 to June 1, June 4 to Aug. 20, Aug. 22 to 28, Aug. 30 to Sept. 3)

Oct. 1 to Apr. 5				Apr. 6 to Sept. 30			
2.1	8	4.5	230	2.1	7	4.0	188
2.4	18	5.0	308	2.3	12	5.0	364
2.7	33	5.5	400	2.5	19	6.0	620
3.0	53	6.0	555	2.7	31	7.0	1,230
3.5	99	6.5	830	3.0	58		
4.0	160	7.0	1,240				

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	14	b12	110	b 26	140	84	80	40	16	12	13
2	12	13	b10	104	b 21	379	84	74	86	16	13	14
3	18	13	b11	173	b 20	379	70	69	86	14	13	13
4	18	12	b11	74	b 22	360	70	62	43	14	13	11
5	18	12	b 9.0	50	b 35	515	74	59	28	13	13	10
6	17	12	b 8.0	39	b 45	379	449	62	25	14	12	10
7	18	12	b 8.5	31	b 50	292	555	66	34	15	14	9.7
8	17	12	b10	35	b100	230	308	54	30	15	16	10
9	15	12	b13	42	128	180	641	51	36	15	22	9.4
10	17	12	17	128	813	147	450	56	33	16	22	10
11	18	12	24	66	*850	122	254	64	30	15	*18	9.7
12	18	12	29	50	308	110	326	56	20	14	16	10
13	18	12	29	b 37	215	104	307	49	18	14	15	* 10
14	18	12	22	b 27	140	99	188	46	21	15	14	10
15	18	14	20	b 20	122	79	188	41	18	17	12	43
16	11	27	17	e 15	84	70	220	43	21	20	12	25
17	17	26	14	e 14	74	79	166	38	21	19	12	15
18	17	20	b13	b 15	74	110	137	48	20	15	12	• 12
19	18	18	b11	b 16	*61	b 60	110	44	18	15	13	• 11
20	19	15	b12	b 18	61	b 45	98	43	16	14	12	• 11
21	18	b12	*b14	b 20	57	b 48	* 86	37	28	13	11	• 13
22	17	b10	16	b 22	b50	57	80	40	22	*12	12	• 25
23	16	*b11	15	35	b35	85	74	37	*22	13	12	• 19
24	14	b14	14	379	b33	234	80	*62	17	13	12	• 16
25	10	16	17	* 360	b33	134	194	41	16	12	12	• 15
26	*11	16	70	245	e34	* 99	254	36	14	13	12	• 14
27	12	16	40	b130	e35	79	173	38	14	13	14	• 13
28	11	18	30	b 70	44	70	130	37	15	12	13	• 12
29	11	20	27	b 40		128	104	43	15	12	11	• 12
30	12	b16	26	b 27	- - - - -	134	86	41	17	12	11	• 14
31	12	- - - - -	24	b 26	- - - - -	99	- - - - -	36	- - - -	12	12	- - - - -
Total	478	441	593.5	2,418	3,570	5,046	6,040	1,553	824	443	418	419.8
Mean	15.4	14.7	19.1	78.0	128	163	201	50.1	27.5	14.3	13.5	14.0
Cfsm	0.156	0.149	0.194	0.792	1.30	1.65	2.04	0.509	0.279	0.145	0.137	0.142
In.	0.18	0.17	0.22	0.91	1.35	1.90	2.28	0.59	0.31	0.17	0.16	0.16

Calendar year 1964: Max - Min - Mean - Cfsm - In. -
Water year 1964-65: Max 850 Min 8.0 Mean 60.9 Cfsm 0.618 In. 8.40

Peak discharge (base, 500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	2200	7.08	1,340	4-9	1100	6.56	890
3-5	1500	6.00	555	4-12	2000	6.15	695
4-7	0800	7.00	1,230				

* Discharge measurement made on this day.
e No gage-height record.
b Stage-discharge relation affected by ice.
• Stage-discharge relation indefinite.

3-3485. White River near Noblesville, Ind.

Location.--Lat 40°07', long 85°58', in sec. 4, T. 19 N., R. 5 E., near center of span on downstream side of highway bridge, 1 mile west of Strawtown, 7 miles northeast of Noblesville, 9.5 miles upstream from Cicero Creek, and at mile 277.4.

Drainage area.--814 sq mi.

Records available.--May 1915 to September 1926, October 1928 to September 1965. Monthly discharge only for some periods, published in WSP 1305. Published as "West Branch of White River" prior to October 1922 and as "West Fork of White River" October 1922 to September 1948. Records of daily discharge for the water year 1928, published in WSP 663, have been found to be unreliable and should not be used. (The maximum for this year is believed to be reasonably accurate.) Records of water temperatures published in WSP.

Gage.--Water-stage recorder. Datum of gage is 763.08 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to July 1, 1922, chain gage at bridge 2 miles downstream at different datum. July 1, 1922, to Nov. 21, 1933, chain gage at present site and datum.

Average discharge.--48 years, 796 cfs.

Extremes.--Maximum discharge during year, 6,780 cfs Feb. 11 (gage height, 11.89 ft); minimum, 75 cfs Sept. 11 (gage height, 3.89 ft). 1915-26, 1928-65: Maximum discharge, 27,200 cfs Mar. 21, 1927 (gage height, 16.3 ft, from graph based on gage readings); maximum gage height, 16.35 ft June 14, 1958, Apr. 22, 1964; minimum, 36 cfs Sept. 25, 1941.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Discharge measurements generally made twice a month. Records of water temperatures for the water year 1965 are published in Part 2 of this report.

Revisions.--Summaries for April 1963 and 1963 water year have been found to be in error. Correct figures are available in the district office.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 26

3.9	75	7.0	1,720
4.2	150	9.0	3,400
4.5	240	11.0	5,500
5.0	435	13.0	8,940

Apr. 27 to Sept. 30

3.8	61	5.0	450
4.0	100	5.5	690
4.5	250		

Note.--Same as preceding table above 5.5 ft.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	100	123	174	a 260	885	750	945	320	178	106	139
2	98	95	120	350	a 250	2,560	750	815	642	163	115	133
3	98	100	b 105	412	b 250	3,000	662	690	750	172	118	106
4	87	110	b 100	350	b 260	2,820	608	635	540	148	124	95
5	85	105	b 103	275	b 280	3,800	580	585	428	142	130	91
6	87	102	b 100	225	b 330	3,500	2,320	585	360	133	115	86
7	95	105	b 100	210	b 400	2,730	3,600	635	360	157	100	88
8	105	102	b 100	210	b 500	2,320	2,820	540	320	175	103	88
9	98	100	b 105	292	771	2,020	3,700	540	302	172	130	88
10	91	108	118	330	4,230	1,640	3,600	562	285	220	121	82
11	83	123	138	275	6,440	1,350	2,400	518	268	193	112	82
12	79	118	195	240	4,620	1,140	3,800	472	250	160	103	88
13	85	112	180	210	2,320	1,080	4,300	428	220	163	98	88
14	93	112	165	195	1,500	1,010	2,480	405	208	145	115	95
15	93	115	156	171	1,140	945	1,940	382	208	139	124	1,210
16	93	225	135	b 150	945	815	2,020	360	199	130	88	1,350
17	91	225	126	a 140	782	880	1,720	360	193	190	84	750
18	91	159	b 110	a 140	690	1,010	1,350	340	184	190	86	495
19	118	141	b 104	a 150	608	880	1,140	360	178	145	139	320
20	129	141	b 100	a 160	530	662	945	320	166	136	139	235
21	102	129	b 100	b 160	505	555	815	302	157	136	106	208
22	91	112	108	b 170	480	505	750	285	166	127	88	543
23	89	102	118	258	435	694	662	285	172	136	82	635
24	89	110	123	b 700	b 350	1,500	750	302	163	130	84	450
25	91	112	343	1,280	b 250	1,500	1,640	450	154	109	88	340
26	87	110	292	945	b 250	1,080	3,500	782	148	98	106	285
27	91	110	225	720	b 300	815	3,200	880	136	98	133	250
28	102	126	180	530	b 350	720	1,940	880	136	106	145	220
29	105	150	174	b 400		815	1,350	562	166	103	106	217
30	108	129	159	b 300	------	1,010	1,140	428	220	98	106	217
31	105	------	150	a 270	------	880	-----	360	----	98	91	-------
Total	2,959	3,688	4,455	10,392	30,026	45,121	57,232	15,993	7,999	4,490	3,385	9,074
Mean	95.5	123	144	335	1,072	1,456	1,908	516	267	145	109	302
Cfsm	0.117	0.151	0.177	0.412	1.32	1.79	2.34	0.634	0.328	0.178	0.134	0.371
In.	0.13	0.17	0.20	0.48	1.38	2.06	2.61	0.73	0.37	0.21	0.15	0.41

Calendar year 1964: Max 21,800 Min 80 Mean 711 Cfsm 0.873 In. 11.88
Water year 1964-65: Max 6,440 Min 82 Mean 534 Cfsm 0.656 In. 8.90

Peak discharge (base, 5,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	1500	11.89	6,780				

a No gage-height record
b Stage-discharge relation affected by ice.

3-3490. White River at Noblesville, Ind.

Location.--Lat 40°02'50", long 86°01'00", in SE¼ sec. 36, T. 19 N., R. 4 E., on right bank at downstream side of Logan Street bridge in Noblesville, 1½ miles upstream from Cicero Creek, 3½ miles downstream from dam at Clare, and at mile 269.0.
Drainage area.--837 sq mi.
Records available.--October 1946 to September 1965. Gage-height records collected at present site from December 1913 to December 1935, and at a site 400 ft downstream thereafter, are contained in reports of U. S. Weather Bureau. Prior to October 1948, published as West Fork White River at Noblesville. Records of water temperatures published in WSP.
Gage.--Water-stage recorder (digital). Datum of gage is 738.16 ft above mean sea level, datum of 1929.
Average discharge.--19 years, 827 cfs.
Extremes.--Maximum discharge during year, 6,920 cfs Feb. 11 (gage height, 12.71 ft); minimum, 22 cfs Nov. 11 (gage height, 4.46 ft, regulation by Clare dam); minimum daily, 83 cfs Oct. 31, Nov. 12.
1946-65: Maximum discharge, 26,800 cfs Apr. 22, 1964 (gage height, 21.31 ft); minimum, 0.9 cfs Sept. 24, 1964 (gage height, 3.45 ft); minimum daily discharge, 44 cfs Sept. 28, 1954.
Maximum stage known, 23.8 ft Mar. 25, 1913, present site and datum, from U. S. Weather Bureau records.
Remarks.--Records good except those for periods of ice effect, which are poor. Flow regulated by powerplant above station. Discharge measurements generally made twice a month. Records of water temperatures for water year 1965 are published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
Shifting-control method used Oct. 5, 8, 9, Oct. 12 to Dec. 4, 10-19, Dec. 21 to Jan. 15, 19-24, Aug. 20 to Sept. 15)

Oct. 1 to Feb. 11		Feb. 12 to Sept. 30	
4.1	70	3.9	75
4.2	91	4.1	102
4.5	170	4.4	171
5.0	350	5.0	402
6.0	860	6.0	960
11.0	4,900	8.0	2,500
13.0	7,300	11.0	5,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	100	93	124	167	b310	882	852	1,010	361	177	113	144
2	105	87	122	346	b310	2,860	828	888	564	168	123	147
3	98	89	124	458	b230	3,650	762	786	846	163	121	139
4	103	107	124	395	b190	3,350	703	708	617	147	142	113
5	105	98	b120	306	b170	4,140	679	645	465	137	142	106
6	96	103	b110	242	b220	3,990	2,440	645	407	130	128	98
7	96	105	b105	211	b300	3,130	4,150	714	407	147	119	101
8	122	103	b105	207	b350	2,640	3,320	606	370	174	117	95
9	112	98	b110	286	740	2,250	4,170	595	347	183	144	99
10	103	140	127	362	4,280	1,770	4,140	640	330	209	147	98
11	103	89	140	314	6,680	1,430	2,860	563	305	236	117	98
12	112	83	176	267	5,500	1,220	4,040	505	269	166	115	106
13	107	112	207	232	2,780	1,100	4,810	460	251	174	108	101
14	117	117	176	211	1,690	1,030	2,930	426	226	163	108	106
15	122	127	164	198	1,240	967	2,200	402	222	152	142	870
16	124	204	152	b140	1,030	900	2,220	379	212	137	104	1,450
17	127	249	135	b145	912	906	1,880	374	202	222	90	870
18	132	167	127	b150	792	1,080	1,470	352	202	229	104	557
19	167	155	114	161	714	948	1,200	370	183	171	133	402
20	157	143	b110	161	640	768	1,040	365	174	144	155	262
21	173	127	114	143	612	656	930	326	160	149	123	233
22	135	107	109	170	579	601	840	313	166	142	102	490
23	112	100	117	235	526	720	780	317	166	147	89	732
24	100	107	135	806	b450	1,550	822	326	160	180	85	536
25	91	109	314	1,270	b300	1,630	1,580	485	152	130	89	393
26	96	107	342	980	b290	1,190	3,540	780	147	121	113	317
27	109	105	235	776	b300	936	3,570	900	137	112	144	251
28	103	117	188	600	b450	810	2,180	924	139	115	171	258
29	112	146	167	b380	------	864	1,470	656	160	112	135	229
30	85	137	155	b320	------	1,030	1,180	480	226	108	96	216
31	83	------	143	b300	------	936	------	393	------	106	101	------
TOTAL	3,517	3,631	4,691	10,929	32,585	49,934	63,586	17,333	8,593	4,851	3,720	9,617
MEAN	113	121	151	353	1,164	1,611	2,120	559	286	156	120	321
CFSM	.135	.145	.180	.422	1.39	1.92	2.53	.668	.342	.186	.143	.384
IN	.16	.16	.21	.49	1.45	2.22	2.83	.77	.38	.22	.17	.43

CALENDAR YEAR 1964 MAX 25,200 MIN 74 MEAN 501 CFSM .599 INCHES 8.15
WATER YEAR 1964-65 MAX 6,680 MIN 83 MEAN 584 CFSM .698 INCHES 9.46

Peak discharge (base, 6,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	1815	12.71	6,920				

b Stage-discharge relation affected by ice.

3-3495. Cicero Creek near Arcadia, Ind.

Location.--Lat 40°11', long 86°00', on line between secs. 18 and 19, T. 20 N., R. 5 E., on left bank, on downstream side of county bridge, 1½ miles east of Arcadia and 10 miles upstream from Morse Dam.

Drainage area.--131 sq mi.

Records available.--October 1954 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 815.12 ft above mean sea level, datum of 1929. Prior to Dec. 7, 1955, wire-weight gage at same site and datum.

Average discharge.--11 years, 118 cfs.

Extremes.--Maximum discharge during year, 1,380 cfs Feb. 10 (gage height, 8.12 ft); minimum, 0.7 cfs in November (gage height, 1.76 ft, from range line); minimum gage height, 1.72 ft Aug. 18.
1954-65: Maximum discharge, 6,720 cfs June 29, 1957 (gage height, 11.86 ft); minimum, 0.4 cfs Oct. 10, 1956.
Maximum stage known, 15.6 ft (probably the flood of January 1937), from information by local residents.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 4, Mar. 24-27, May 17-18, May 23, June 15, July 3)

1.6	0	2.5	42
1.7	1.5	3.0	96
1.8	3.5	3.5	165
1.9	6.0	4.0	265
2.1	13	8.0	1,340

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.4	* 1.8	4.8	b 11	385	122	116	46	33	2.6	* 6.9
2	2.0	2.0	b 1.7	18	b 7.0	715	109	102	219	25	2.6	5.2
3	2.0	1.7	b 1.6	17	b 5.0	690	96	84	315	30	2.4	4.2
4	1.9	*1.5	b 2.0	9.0	b 6.0	665	90	73	158	17	3.1	3.9
5	1.7	1.4	b 1.8	6.3	b 8.0	665	90	70	102	12	4.4	5.7
6	* 1.2	1.4	b 1.6	4.9	b 11	* 515	745	66	90	10	2.8	4.2
7	1.2	1.4	b 1.5	4.2	b 25	465	665	62	102	*22	2.8	3.3
8	1.5	1.4	b 1.5	4.4	49	390	540	55	90	16	2.8	3.3
9	1.7	1.4	b 1.8	7.2	177	315	840	52	71	11	3.1	3.3
10	2.4	1.4	b 2.3	6.6	1,270	230	565	50	62	10	* 3.3	2.8
11	2.0	1.7	4.5	5.4	815	181	490	45	51	8.0	3.1	3.1
12	2.2	2.1	7.1	5.2	515	158	1,000	41	44	6.0	2.6	3.5
13	2.0	2.3	4.7	b 4.0	302	150	640	38	38	5.2	2.2	3.3
14	1.7	2.5	3.7	b 3.0	190	143	390	36	31	5.2	1.9	3.2
15	2.0	3.6	3.1	b 2.2	136	129	415	34	28	5.4	2.0	545
16	2.0	9.0	2.4	b 2.0	102	122	390	31	23	5.4	2.0	365
17	2.0	20	2.4	b 2.5	90	136	278	30	20	38	2.0	*490
18	2.6	11	2.4	b 3.5	83	143	199	27	18	75	2.9	256
19	2.6	8.2	b 2.0	4.9	70	80	158	26	17	45	5.6	143
20	4.4	5.0	b 1.7	6.8	60	60	129	20	16	18	2.8	90
21	2.0	2.7	b 1.4	6.6	b 50	50	116	19	15	10	2.4	57
22	1.5	2.0	b 1.4	7.1	b 40	60	96	18	16	7.7	2.2	63
23	1.5	1.5	* 2.0	28	b 25	105	90	45	45	16	2.0	66
24	1.5	1.5	2.8	88	b 18	241	155	55	23	9.6	2.0	49
25	2.4	1.7	4.9	84	b 17	* 181	525	157	18	5.7	2.0	36
26	2.6	1.8	4.2	b 50	b 15	143	590	173	12	* 4.2	3.0	27
27	2.0	2.0	3.5	b 35	b 20	102	340	278	10	3.9	6.2	19
28	1.9	3.5	2.6	b 30	46	96	230	*150	11	3.5	8.4	11
29	2.0	5.5	2.4	*b 25		116	165	102	49	3.1	5.2	12
30	2.6	2.5	2.6	b 17	- - - - - -	129	* 136	72	57	2.6	3.9	20
31	2.8	- - - - - -	2.8	b 13	- - - - - -	116	- - - - -	57	- - - - -	2.6	3.7	- - - - - -
Total	63.9	106.1	82.2	505.6	4,163	7,676	10,394	2,184	1,797	466.1	98.0	2,304.9
Mean	2.06	3.54	2.65	16.3	149	248	346	70.4	59.9	15.0	3.16	76.8
Cfsm	0.016	0.027	0.020	0.124	1.14	1.89	2.64	0.537	0.457	0.114	0.024	0.586
In.	0.02	0.03	0.02	0.14	1.19	2.18	2.94	0.62	0.51	0.13	0.02	0.65

Calendar year 1964: Max 3,160 Min 1.2 Mean 101 Cfsm 0.771 In. 10.45
Water year 1964-65: Max 1,270 Min 1.2 Mean 81.8 Cfsm 0.624 In. 14.22

Peak discharge (base, 1,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1300	8.12	1,380				
4-12	1100	7.27	1,120				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 5 to Dec. 1.

3-3497. Little Cicero Creek near Arcadia, Ind.

Location.--Lat 40°10', long 86°03', on line between sec. 14 and 23, T. 20 N., R. 4 E., on left bank on downstream side of county road bridge, 0.5 mile downstream from Taylor Creek, 1.3 miles west of Arcadia, 3.9 miles upstream from mouth, and 9.3 miles northwest of Noblesville.

Drainage area.--44.7 sq mi.

Records available.--October 1955 to September 1965.

Gage.--Water-stage recorder. Altitude of gage is 840 ft (by barometer).

Average discharge.--10 years, 39.4 cfs.

Extremes.--Maximum discharge during year, 819 cfs Feb. 10 (gage height, 5.54 ft); no flow Oct. 1 to Oct. 21.
1955-65: Maximum discharge, 3,980 cfs June 28, 1957 (gage height, 8.69 ft); no flow Oct. 9, 10, 1956, Sept. 14 to Nov. 6, 1963, Sept. 8-20, 28-30, Oct. 1-21, 1964.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 15-19, 25-27)

Oct. 1 to June 2

1.1	0	2.2	44
1.2	.2	2.6	87
1.3	.7	3.0	145
1.4	1.5	3.5	241
1.5	3.0	4.0	371
1.6	5.6	6.0	1,010
1.7	9.3	7.0	1,620
1.9	20		

June 2 to Sept. 30

1.0	0.1	1.6	9.1
1.1	.4	1.8	18
1.2	1.0	2.0	31
1.3	1.9	2.4	63
1.4	3.6	3.0	145
1.5	6.0		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	b 0.7	1.1	b 4.0	b 90	35	28	1.7	19	0.9	* 0.6
2	0	.2	b .6	12	b 2.0	b 200	28	21	77	9.9	1.0	.7
3	0	.2	b .6	9.3	b 1.1	199	22	17	72	9.9	.9	.8
4	0	* .2	b .8	3.9	b 1.1	232	21	14	36	5.7	1.2	.5
5	0	.2	b .6	2.6	b 1.5	* 170	21	13	23	4.4	1.4	1.0
6	* 0	.2	b .5	1.9	b 2.5	137	266	12	20	* 4.0	1.8	3.4
7	0	.2	b .4	1.6	b 10	129	150	12	24	12	1.2	2.1
8	0	.2	b .4	1.8	25	114	176	9.8	17	6.0	1.0	1.2
9	0	.2	b .5	6.3	108	94	320	8.4	19	6.2	1.2	.9
10	0	.2	.6	b 6.0	716	75	137	8	15	6.3	* 2.4	.6
11	0	.2	1.2	4.7	263	60	157	6.5	11	4.0	1.4	.5
12	0	.3	2.2	3.2	153	56	408	5.9	9.1	3.1	.9	.6
13	0	.3	1.7	b 2.0	94	52	153	5.6	7.9	2.4	.5	.4
14	0	.3	1.2	b 1.0	68	50	107	5.0	6.3	2.2	.4	.5
15	0	.6	.8	b .6	48	44	122	4.7	5.4	2.7	.3	131
16	0	1.2	.6	b .5	40	39	114	4.5	4.9	2.9	.2	69
17	0	4.2	.6	b .4	37	52	86	4.2	4.2	31	* .1	* 81
18	0	1.3	b .4	b .5	33	53	64	3.9	3.8	28	.2	37
19	0	.9	b .3	b .8	26	33	50	3.7	3.4	14	.6	29
20	0	b .6	b .3	.9	21	20	40	3.2	3.2	5.4	1.0	20
21	0	b .4	b .3	1.0	b 16	19	32	2.8	3.1	3.4	.9	12
22	.1	b .4	.4	1.6	b 7.0	17	25	3.0	4.6	2.9	.5	24
23	.2	.4	* .7	20	b 3.5	52	24	3.2	30	2.5	.4	28
24	.1	.4	1.1	87	b 2.5	100	32	3.9	8.9	2.5	.3	17
25	.1	.4	1.2	59	b 1.8	* 60	91	3.4	4.4	1.9	.2	11
26	.1	.5	1.2	b 30	b 1.6	41	76	4.5	3.1	* 1.5	.3	7.9
27	.1	.6	b .9	b 11	b 5.0	27	69	4.5	2.9	1.3	.4	5.4
28	.1	.9	.7	b 6.0	b 20	27	51	* 2.8	3.1	1.2	1.6	4.4
29	.1	1.0	.6	*b 5.0		48	40	1.9	25	1.0	1.3	* 4.0
30	.1	*1.2	.6	b 4.0	------	45	* 33	1.8	62	.9	.8	3.8
31	.2	------	.5	b 4.0	------	37	------	1.7	------	.9	.6	------
Total	1.2	18.1	23.2	289.7	1,711.6	2,372	2950	223.9	511.0	199.1	25.9	498.3
Mean	0.04	0.60	0.75	9.35	61.1	76.5	98.3	7.22	17.0	6.42	0.84	16.6
Cfsm	0.00089	0.013	0.017	0.209	1.37	1.71	2.20	0.162	0.380	0.144	0.019	0.371
In.	0.001	0.01	0.02	0.24	1.43	1.97	2.46	0.19	0.42	0.17	0.02	0.41

Calendar year 1964: Max 1,430 Min 0 Mean 38.7 Cfsm 0.866 In. 11.80
Water year 1964-65: Max 716 Min 0 Mean 24.2 Cfsm 0.541 In. 7.34

Peak discharge (base, 500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0400	5.54	819				
4-12	0530	4.92	626				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3501. Hinkle Creek near Cicero, Ind.

Location.--Lat 40°06'05", long 86°05'10", on line between secs. 9 and 16, T. 19 N., R. 4 E., on left bank on downstream side of county road bridge, 3.7 miles above mouth, 4.0 miles upstream from Morse Reservoir Dam, 4.2 miles southwest of Cicero, and 5.7 miles northwest of Noblesville.

Drainage area.--16.3 sq mi.

Records available.--October 1955 to September 1965.

Gage.--Water-stage recorder (digital). Altitude of gage is 820 ft (from topographic map).

Average discharge.--10 years, 19.7 cfs.

Extremes.--Maximum discharge during year, 715 cfs Feb. 10 (gage height, 4.06 ft); minimum, 0.3 cfs Sept. 9-11; minimum gage height, 0.96 ft Aug. 13, 14, 17.
1955-65: Maximum discharge, 4,920 cfs June 28, 1957 (gage height, 8.45 ft); minimum, 0.1 cfs Sept. 27, 28, 1956 (gage height, 1.30 ft); minimum gage height, 0.96 ft Aug. 13, 14, 17, 1965.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 30, Aug. 28 to Sept. 14)

Oct. 1 to Feb. 9

0.9	0.4	1.3	8.5
1.0	.8	1.4	16
1.1	1.4	1.6	37
1.2	3.4	1.9	84

Feb. 10 to Sept. 30

0.8	0.2	1.5	27
.9	.5	1.7	53
1.0	1.3	2.0	105
1.1	3.0	2.5	213
1.2	5.5	3.0	348
1.3	10		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.70	0.80	b0.50	12	b3.0	b 20	19	13	3.2	3.2	1.3	1.1
2	.70	.80	b .50	30	b1.4	b 90	15	11	18	3.4	* 1.2	.80
3	.70	.80	b .40	15	b1.4	94	13	*9.4	*12	3.2	.90	.60
4	.70	.80	b .40	8.5	b1.6	117	13	8.9	6.6	2.0	1.2	.60
5	.70	.70	b .50	*6.1	b3.0	74	18	8.4	5.2	1.7	1.1	.60
6	* .70	* .70	b .40	4.6	b4.5	58	174	12	5.5	1.7	.80	.50
7	.60	.60	b .40	3.7	b10	55	* 82	11	*6.2	4.4	.90	.40
8	.90	.60	b .50	4.1	19	* 47	127	8.4	4.6	* 3.0	1.7	.40
9	1.0	.60	b .60	13	70	37	139	8.4	4.6	2.8	1.6	* .30
10	.90	.60	b .90	10	319	28	64	7.9	4.1	2.4	1.1	.30
11	.80	.60	b2.0	6.7	92	22	101	7.0	3.6	2.0	* .70	.30
12	.90	.70	4.6	5.0	58	20	92	6.6	3.2	1.7	.60	.40
13	.80	.60	2.5	3.7	35	19	52	6.2	3.0	1.6	.60	.40
14	.80	.70	2.0	b2.3	25	18	37	5.5	2.6	2.2	.50	.80
15	.80	.80	1.7	*b1.7	*18	16	64	5.5	2.6	2.6	.50	58
16	.80	1.5	2.0	b1.0	15	15	53	5.2	2.4	1.7	.50	13
17	.80	.80	2.7	b1.1	15	24	37	4.9	2.4	21	.60	15
18	.90	.60	b1.6	b1.3	13	25	27	4.9	2.0	17	1.0	5.2
19	1.1	.60	b1.1	b1.5	11	15	20	4.6	2.0	5.5	1.4	4.6
20	1.0	.60	b1.5	b1.7	10	12	16	4.1	2.0	3.2	.80	3.6
21	.90	.50	b2.2	2.2	b9.0	10	14	3.9	1.9	2.4	.70	3.0
22	.90	.50	2.5	2.7	b6.0	10	13	3.9	1.9	2.0	.70	7.5
23	.90	.50	3.0	28	b3.0	46	13	3.9	2.0	2.0	.70	5.9
24	.90	.50	3.7	64	b3.0	55	19	3.9	2.0	1.6	.70	* 3.2
25	.90	.60	6.1	31	b2.8	31	53	4.4	1.6	1.6	.60	2.8
26	.90	.60	5.0	27	b2.5	20	47	5.5	1.4	1.3	1.0	2.0
27	.90	.60	3.7	b15	b3.5	15	31	6.2	1.4	1.3	* 1.3	1.7
28	.90	.70	3.0	b8.0	b9.0	16	22	3.9	1.6	1.3	1.1	2.0
29	.90	.70	*3.0	b5.0	------	29	18	3.6	4.6	1.1	1.0	2.0
30	.90	* .60	3.0	b4.5	------	24	15	3.4	9.4	1.0	.70	1.9
31	.80	------	2.5	b3.0	------	20	------	3.4	------	1.1	.80	------
TOTAL	26.10	20.30	64.50	323.4	763.7	1,082	1,408	198.9	123.6	103.0	28.30	138.90
MEAN	.84	.68	2.08	10.4	27.3	34.9	46.9	6.42	4.12	3.32	.91	4.63
CFSM	.052	.042	.128	.638	1.67	2.14	2.88	.394	.253	.204	.056	.284
IN	.06	.05	.15	.74	1.74	2.47	3.21	.45	.28	.24	.06	.32

CALENDAR YEAR 1964 MAX 1,440 MIN .40 MEAN 18.2 CFSM 1.12 INCHES 15.19
WATER YEAR 1964-65 MAX 319 MIN .30 MEAN 11.7 CFSM .718 INCHES 9.77

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0200	4.06	715				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3505. Cicero Creek at Noblesville, Ind.

Location.--Lat 40°03'20", long 87°02'30", in sec. 35, T. 19 N., R. 4 E., on right bank 150 ft downstream from bridge on State Highway 38, 1 mile northwest of Noblesville, 1½ miles downstream from Hinkle Creek, and 2½ miles upstream from mouth.

Drainage area.--219 sq mi.

Records available.--July 1950 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 750.00 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--15 years, 189 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 2,360 cfs Feb. 10 (gage height, 11.23 ft); minimum, 0.8 cfs Oct. 4, Dec. 14; minimum gage height, 3.59 ft Sept. 3.
1950-65: Maximum discharge, 9,800 cfs June 28, 1957 (gage height, 15.26 ft); minimum, 0.5 cfs Sept. 25, 1954.

Remarks.--Records good. Flow regulated by Morse Reservoir located approximately 1.2 miles upstream beginning Dec. 9, 1955 (capacity, 6,900,000,000 gal).

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 6-26, Oct. 31 to Dec. 2, Dec. 10-14)

3.5	0.8	4.2	32
3.6	1.3	4.5	73
3.7	3.3	5.0	149
3.8	6.0	6.0	360
3.9	11	8.0	978
4.0	17	11.0	2,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	20	0.90	1.5	3.5	b 18	245	205	203	61	*76	30	1.5
2	14	1.2	* 1.6	3.5	b 13	988	191	176	172	57	30	1.3
3	1.1	* 1.6	b 1.5	2.4	b 6.0	1,100	161	147	373	55	23	*1.3
4	.90	2.1	b 1.4	2.1	b 6.0	1,010	154	135	*276	32	16	1.3
5	1.0	2.1	b 1.3	* 1.9	b 8.0	1,060	170	132	176	26	16	1.5
6	*2.2	2.6	b 1.2	1.9	b 13	797	892	143	144	16	16	1.3
7	1.2	2.6	b 1.2	1.9	b 20	666	1,120	* 146	151	36	16	11
8	1.5	3.2	b 1.3	2.2	93	593	*853	117	132	29	16	21
9	1.6	2.8	b 1.4	2.6	154	506	1,360	109	111	28	16	21
10	1.8	3.0	1.6	2.1	* 1,940	404	975	103	102	32	16	21
11	1.9	3.0	2.2	1.9	1,690	336	767	90	90	13	* 16	21
12	2.2	2.6	1.9	1.8	912	284	1,290	79	69	g 9.6	16	21
13	2.6	2.8	1.8	1.8	581	258	1,060	67	44	g 6.8	82	21
14	2.6	2.6	* 2.1	b 1.7	373	254	660	60	33	g 5.3	120	21
15	2.6	3.0	1.2	*b 1.6	*273	224	614	54	36	g13	120	16
16	2.8	4.7	1.2	b 1.5	211	216	611	50	23	g 4.1	120	2.1
17	3.2	2.8	1.2	b 1.4	174	232	485	48	24	g44	120	1.8
18	4.4	2.4	1.1	b 1.4	161	262	373	48	16	g103	100	60
19	5.3	2.4	1.1	b 1.4	152	b150	291	57	7.3	g93	69	143
20	5.3	2.4	1.2	b 1.4	108	b 70	241	32	6.4	g54	51	121
21	5.3	2.2	1.2	b 1.5	b40	b 75	*205	27	9.1	g26	23	91
22	5.7	1.9	1.2	b 1.7	b15	b 80	183	29	10	g15	23	105
23	5.7	2.1	1.3	2.4	b 7.5	205	168	31	18	g14	23	102
24	5.7	1.9	2.1	2.8	b 7.5	365	199	44	52	g20	23	*76
25	6.0	2.1	2.4	10	b 7.0	320	434	102	19	g17	23	44
26	5.7	1.9	2.1	94	b 8.0	249	747	172	11	g 5.3	24	48
27	25	1.8	2.1	114	b15	181	554	243	8.6	27	* 23	22
28	52	2.1	1.9	100	45	163	390	203	9.6	51	20	15
29	40	1.8	1.9	b 60	------	201	291	136	37	44	20	13
30	27	1.5	1.9	b 25	------	209	237	99	111	*30	14	17
31	9.1	------	2.1	b 20	------	199	------	76	------	30	1.8	------
Total	265.40	70.10	49.2	471.4	7,051.0	11,902	15,881	3,158	2,332.0	1,012.1	1,226.8	1,045.1
Mean	8.56	2.34	1.59	15.2	252	384	529	102	77.7	32.6	39.6	34.8
(ℓ)	-9.39	+5.40	+9.13	+35.4	+1	+3	+1	-4	+0.6	-11.2	-38.0	+49.5
Adjusted for change in contents in Morse Reservoir												
Mean	-0.83	7.74	10.7	50.6	253	387	530	98.0	78.3	21.4	1.6	84.3
Cfsm	-0.0038	0.035	0.049	0.231	1.16	1.77	2.42	0.447	0.358	0.098	0.0073	0.385
In.	-0.004	0.04	0.06	0.27	1.21	2.04	2.70	0.52	0.40	0.11	0.008	0.43

	Observed			Adjusted				
Calendar year 1964 :	Max 5,780	Min .90	Mean 174	Mean 178	Cfsm 0.813	In. 11.04	ℓ +4	
Water year 1964-65 :	Max 1,940	Min .90	Mean 122	Mean 125	Cfsm 0.571	In. 7.78	ℓ +3	

Peak discharge (base, 2,000 cfs).--Feb. 10 (2015) 2,360 cfs (11.23 ft).

* Discharge measurement made on this day.
ℓ Change in contents, equivalent in cubic feet per second, in Morse Reservoir, furnished by Indianapolis Water Co.
b Stage-discharge relation affected by ice.
g Computed from once-daily telemark readings.

3-3510. White River near Nora, Ind.

Location.--Lat 39°54'35", long 86°06'20", in sec. 20, T. 17 N., R. 4 E., on downstream side of center pier of bridge on State Highway 100, 2 miles east of Nora, 14 miles upstream from Fall Creek and at mile 253.4.

Drainage area.--1,200 sq mi.

Records available.--October 1929 to September 1965. Prior to April 1930 monthly discharge only, published in WSP 1305. Prior to October 1948, published as West Fork White River near Nora. Records of water temperatures published in WSP.

Gage.--Water-stage recorder. Datum of gage is 710.94 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Oct. 26, 1929, to July 29, 1942, at site 200 ft downstream at same datum. Supplemental water-stage recorder 4½ miles downstream.

Average discharge.--36 years, 1,070 cfs.

Extremes.--Maximum discharge during year, 9,180 cfs Feb. 11 (gage height, 10.66 ft); minimum, 88 cfs Nov. 12 (gage height, 1.85 ft).
1929-65: Maximum discharge, 32,400 cfs May 19, 1943 (gage height, 18.19 ft); minimum, 40 cfs Sept. 2, 1934; minimum daily, 49 cfs Sept. 17, 1941.
Flood of Mar. 26, 1913, reached a stage of 22.4 ft, from floodmark, determined by State Highway Department of Indiana (discharge, 58,500 cfs, estimated).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Flow slightly regulated by Morse Reservoir. Discharge measurements generally made twice a month. Records of water temperatures for the water year 1965 are published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 28 to Nov. 4, Dec. 26, 27, Jan. 4-8, 11-13, Mar. 13-23, Mar. 27 to Apr. 1-5)

Oct. 1 to Sept. 15				Sept. 16 to Sept. 30	
1.8	90	4.0	1,100	2.3	230
1.9	120	5.0	1,900	3.0	490
2.4	277	8.0	5,230	4.0	1,060
3.0	510	12.0	11,500	5.0	1,880

7 1/2

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	159	147	156	a 250	b 390	1,140	1,320	1,560	488	386	201	153
2	153	144	147	a 400	b 350	3,590	1,250	1,320	535	330	204	171
3	135	111	159	a 500	b 250	5,230	1,180	1,180	1,250	312	207	159
4	120	108	b 150	465	b 200	4,870	1,100	1,030	1,100	277	210	159
5	114	132	b 130	386	b 200	5,360	1,100	960	780	242	210	156
6	114	135	b 120	312	b 300	5,500	3,580	900	665	226	192	144
7	108	138	b 120	277	b 450	4,510	5,630	1,030	638	242	183	132
8	117	144	b 130	277	b 600	3,810	5,230	960	585	260	186	138
9	147	144	b 140	a 350	1,040	3,370	6,460	840	535	260	186	150
10	135	141	153	a 450	5,840	2,710	6,040	960	488	277	207	150
11	123	171	177	386	8,870	2,280	4,510	840	465	294	204	153
12	114	138	a 210	330	7,950	1,900	5,110	750	425	242	186	168
13	120	117	a 230	294	4,390	1,720	6,600	665	368	226	183	171
14	114	126	a 210	260	2,710	1,640	4,630	610	349	210	260	159
15	117	138	a 190	b 210	1,900	1,560	3,480	585	312	210	277	592
16	123	226	177	b 180	1,560	1,400	3,480	535	312	201	277	1,520
17	126	260	168	b 160	1,320	1,400	3,040	510	294	277	260	1,060
18	135	242	147	b 170	1,100	1,720	2,490	488	277	611	260	665
19	141	192	a 130	b 180	1,030	1,560	2,000	488	260	406	242	590
20	162	189	a 120	b 190	840	1,250	1,640	488	242	312	260	470
21	165	177	a 110	b 200	840	1,030	1,400	445	242	260	226	350
22	138	162	a 110	242	780	960	1,250	425	226	242	189	470
23	120	141	a 130	a 350	692	1,030	1,180	406	226	226	168	810
24	126	132	a 150	a 900	b 560	2,090	1,250	425	260	242	156	690
25	126	147	a 300	a 1,700	b 350	2,380	2,000	535	260	226	150	515
26	117	147	425	1,480	b 330	1,900	4,150	840	226	186	171	410
27	111	141	294	1,180	b 350	1,560	4,750	1,180	210	180	210	350
28	141	147	242	960	610	1,250	3,370	1,250	198	226	210	312
29	165	162	226	a 600		1,250	2,280	960	242	210	204	295
30	168	174	210	a 400	------	1,480	1,800	720	406	198	177	260
31	159	------	198	b 370	-----	1,400	-----	560	------	192	156	-------
Total	4,113	4,673	5,559	14,409	45,802	72,850	93,300	24,445	12,864	8,189	6,412	11,522
Mean	133	156	179	465	1,636	2,350	3,110	788	429	264	207	384
Cfsm	0.111	0.130	0.149	0.387	1.36	1.96	2.59	0.657	0.357	0.220	0.172	0.320
In.	0.13	0.14	0.17	0.45	1.42	2.26	2.89	0.76	0.40	0.25	0.20	0.36

Calendar year 1964: Max 28,200 Min 108 Mean 1,069 Cfsm 0.891 In. 12.11
Water year 1964-65: Max 8,870 Min 108 Mean 833 Cfsm 0.694 In. 9.43

Peak discharge (base, 7,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	1930	10.66	9,180				
4-9	0100	9.60	7,500				

a No gage-height record.
b Stage-discharge relation affected by ice.

3-3515. Fall Creek near Fortville, Ind.

Location.--Lat 39°57'15", long 85°52'05", in sec. 5, T. 17 N., R. 6 E., on right bank at downstream side of bridge on State Highway 238, 1 mile downstream from Lick Creek and 2 miles northwest of Fortville.

Drainage area.--172 sq mi.

Records available.--July 1941 to September 1965. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder (digital). Datum of gage is 787.43 ft above mean sea level, datum of 1929 (levels by Indianapolis Water Co.). Prior to June 27, 1942, staff gage at same site and datum.

Average discharge.--24 years, 166 cfs.

Extremes.--Maximum discharge during year, 1,880 cfs Feb. 11 (gage height, 6.83 ft); minimum, 17 cfs Aug. 18, 22 (gage height, 1.23 ft).
1941-65: Maximum discharge, 8,750 cfs Apr. 21, 1964 (gage height, 9.88 ft); minimum observed, 5.0 cfs Sept. 23, 24, 1941 (gage height, 1.04 ft).
Maximum stage known, about 12 ft March 1913, (information by local resident).

Remarks.--Records good except those for periods of ice effect, which are poor. Discharge measurements generally made twice a month. Records of suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 10				Apr. 11 to Sept. 30			
1.3	20	3.0	320	1.2	16	3.0	315
1.5	38	5.0	920	1.5	41	5.0	920
1.7	64	6.0	1,350	2.0	109	6.0	1,350
2.0	118	7.0	2,020	2.5	200		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	28	b30	112	b 80	336	142	224	66	46	31	29
2	27	26	b32	270	b 55	609	142	196	79	47	32	27
3	27	28	b35	210	b 50	639	124	175	83	48	29	23
4	26	28	b32	146	b 55	615	124	157	72	42	30	21
5	26	28	b30	112	b 60	764	136	148	66	38	29	22
6	26	29	b26	94	b 70	536	657	144	64	37	27	23
7	26	29	b28	82	b 100	493	669	149	71	47	27	22
8	26	30	b29	80	b 170	458	630	135	66	42	30	21
9	26	31	b32	112	292	371	1,040	135	63	45	34	20
10	27	31	36	112	1,450	300	600	133	63	48	32	19
11	27	32	53	93	1,490	256	535	123	60	43	29	19
12	28	31	80	82	675	236	958	114	57	38	26	22
13	28	32	66	74	425	218	580	109	53	35	25	24
14	27	31	57	61	307	206	390	104	51	34	23	24
15	27	35	48	b 50	252	192	408	99	49	35	22	63
16	27	89	45	b 40	216	176	463	98	48	33	20	69
17	27	69	43	b 40	196	180	353	93	47	59	20	54
18	28	43	36	b 42	182	176	283	92	46	55	20	45
19	32	39	39	b 45	164	142	232	90	45	42	25	37
20	32	b36	39	b 50	142	b110	204	86	42	37	23	32
21	28	b31	38	54	b 120	b110	184	83	42	34	20	33
22	27	b32	37	58	b 90	120	173	80	41	32	20	96
23	26	33	38	146	b 80	180	162	79	42	33	20	83
24	27	33	51	542	b 90	361	283	76	41	33	20	54
25	27	34	170	369	b 95	266	791	76	38	33	19	43
26	26	35	114	266	b 90	218	1,090	83	36	29	22	39
27	26	34	84	204	b 95	178	604	98	35	28	26	36
28	26	39	67	156	b 100	168	408	85	36	28	25	34
29	28	44	60	132	------	170	315	76	43	26	22	33
30	27	38	58	b 120	------	156	260	73	59	26	20	34
31	26	------	54	b 100	------	144	------	71	------	27	22	------
TOTAL	841	1,078	1,587	4,054	7,191	9,084	12,940	3,484	1,604	1,180	770	1,101
MEAN	27.1	35.9	51.2	131	257	293	431	112	53.5	38.1	24.8	36.7
CFSM	.158	.209	.298	.762	1.49	1.7[illegible]	2.51	.651	.311	.222	.144	.213
IN	.18	.23	.34	.88	1.55	1. 6	2.80	.75	.35	.26	.17	.24

CALENDAR YEAR 1964 MAX 6,950 MIN 21 MEAN 172 CFSM 1.00 INCHES 13.65
WATER YEAR 1964-65 MAX 1,490 MIN 19 MEAN 123 CFSM .715 INCHES 9.71

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0515	6.83	1,880				

b Stage-discharge relation affected by ice.

3-3520. Lawrence Creek at Fort Benjamin Harrison, Ind.

Location.--Lat 39°52'09", long 86°01'25", in S½ sec. 36, T. 17 N., R. 4 E., on left bank 100 ft upstream from Shafter Avenue Bridge in Fort Benjamin Harrison, 600 ft east of sewage disposal plant, and a third of a mile upstream from mouth.

Drainage area.--2.86 sq mi.

Records available.--March 1952 to September 1956, October 1957 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 749.10 ft above mean sea level, datum of 1929.

Average discharge.--12 years, 5.15 cfs.

Extremes.--Maximum discharge during year, 360 cfs Apr. 8 (gage height, 5.05 ft); minimum daily, 0.2 cfs Feb. 22-24; minimum gage height, 2.18 ft Feb. 22.
1952-56, 1957-65: Maximum discharge, 2,650 cfs May 28, 1956 (gage height, 9.32 ft); minimum, 0.1 cfs Aug. 1, 2, 1952, Oct. 29, 30, 1953.

Remarks.--Records poor. City of Lawrence discharges effluent from sewage treatment plant into creek above gage.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 15, Dec. 8, 13-24, June 2 to Aug. 21, Sept. 1-4, 10, 13, 14, 21, 22, 28-30)

2.2	0.2	3.0	19
2.3	.5	3.3	36
2.4	1.0	3.6	63
2.5	1.8	4.0	127
2.6	3.1	5.0	360
2.7	5.6		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	1.3	a 8.5	a 50	a 0.5	22	6.3	5.3	1.7	1.9	2.0	1.6
2	1.4	1.4	a12	a 30	.7	a 7.0	6.0	4.7	5.4	5.3	* 1.6	1.0
3	1.4	1.4	a11	a 12	1.4	a 3.0	6.0	4.7	2.4	2.5	1.3	1.9
4	1.4	1.3	* 5.0	a 7.0	a 2.5	a 30	5.6	5.0	2.4	1.9	2.1	1.9
5	1.5	* 1.5	2.9	a 5.0	a 5.0	10	23	4.7	2.4	1.9	1.5	a 1.2
6	1.6	1.4	2.8	a 3.5	a 9.0	a 7.0	46	5.3	3.0	*2.4	1.4	a .8
7	1.5	1.4	2.5	a 3.0	a 5.0	a 6.5	a13	* 4.4	*2.4	3.8	1.6	a .8
8	1.8	1.3	2.2	a 8.0	a 5.5	a 6.5	39	4.7	1.8	1.9	1.5	a 1.1
9	* 1.6	1.6	b 2.2	a 22	a100	a 6.0	23	5.0	1.8	2.5	1.4	a 1.3
10	1.4	1.4	2.5	a 3.5	a 80	a 6.0	a 9.0	4.4	3.6	1.9	1.3	.9
11	1.5	1.4	7.1	a 2.5	a 20	*a 6.0	a70	3.9	1.8	1.7	1.3	a 1.3
12	1.8	1.6	3.5	a 2.0	* 11	6.0	*21	4.4	1.8	1.6	1.3	a 2.0
13	1.7	1.6	2.8	a 2.0	7.5	5.6	13	4.1	1.6	1.5	1.3	1.1
14	1.6	1.6	2.5	a 3.5	5.3	6.3	9.6	4.4	1.6	1.6	1.5	1.2
15	1.6	3.1	2.4	a 2.0	3.9	5.6	20	4.4	1.5	1.9	1.3	a25
16	1.7	15	2.1	a 1.7	2.1	5.3	10	4.7	1.5	1.5	1.3	3.9
17	1.7	2.8	2.1	a 1.3	1.1	7.1	5.3	3.9	1.5	3.0	1.3	a 1.8
18	2.1	2.5	3.5	a 1.0	.7	6.0	3.1	4.4	1.5	2.8	3.9	a 1.3
19	.9	2.8	2.8	a .8	.6	5.6	2.5	2.8	1.5	1.5	1.0	a 1.0
20	.9	2.1	1.9	a .9	.4	5.3	1.4	2.6	1.5	1.4	.9	a 1.0
21	1.1	1.9	1.7	a 1.0	.3	5.0	1.5	2.8	1.5	1.4	.9	5.6
22	1.3	1.8	1.6	1.1	b .2	5.0	2.8	3.5	1.5	1.4	a 1.8	11
23	1.3	1.6	1.7	a 40	b .2	16	2.8	3.9	1.6	1.5	*a .9	a 1.5
24	1.3	1.8	*16	25	b .2	10	14	7.4	1.6	1.5	a .8	a 1.0
25	1.3	1.6	13	a 7.0	b .5	8.3	38	7.5	1.5	1.4	a .7	a 1.3
26	1.3	1.4	7.9	3.7	b .7	6.7	16	6.6	1.5	1.3	a 2.0	a 1.3
27	1.5	2.0	6.0	1.0	b2.0	6.7	11	4.7	1.5	1.4	a 1.8	*a 1.6
28	1.3	a18	4.7	a .5	b3.5	6.7	8.3	3.3	3.7	1.4	a 1.0	1.6
29	1.3	a 9.0	a 2.5	a .4		6.7	5.3	2.9	5.1	1.3	a .7	1.5
30	1.6	a 8.5	a 2.5	a .4	------	6.7	5.3	2.8	3.4	1.3	a .7	1.8
31	1.5	------	3.9	a .4	------	6.3	------	1.7	------	1.3	a 2.0	-------
Total	45.2	96.3	143.8	242.2	269.8	246.9	437.8	134.9	65.6	59.7	44.1	80.3
Mean	1.46	3.21	4.64	7.81	9.64	7.96	14.6	4.35	2.19	1.93	1.42	2.68
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1964: Max 137 Min 0.9 Mean 6.21 Cfsm - In. -
Water year 1964-65: Max 100 Min 0.2 Mean 5.11 Cfsm - In. -

Peak discharge (base, 300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-8	1830	5.05	360				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3522. Mud Creek at Indianapolis, Ind.

Location.--Lat 39°53'30", long 86°00'57", in NE¼ sec. 25, T. 17 N., R. 4 E., on left bank at downstream side of Lantern Road Bridge at Indianapolis, 0.2 miles northeast of intersection of 75th Street and Sargent Road, 2.0 miles southeast of Castleton and 1.5 miles upstream from mouth.

Drainage area.--42.5 sq mi.

Records available.--May 1958 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 752.99 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--7 years, 34.7 cfs.

Extremes.--Maximum discharge during year, 854 cfs Apr. 9 (gage height, 7.02 ft); minimum, 0.8 cfs Oct. 2-7; minimum gage height, 1.74 ft Sept. 10, 11.
1958-65: Maximum discharge, 2,010 cfs Apr. 21, 1964 (gage height, 8.37 ft); minimum, 0.2 cfs Aug. 24, 1962, several days in September and Oct. 3, 1963; minimum gage height, 1.65 ft Aug. 24, 1962.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 6-29)

Oct. 1 to Apr. 6				Apr. 7 to Sept. 30			
1.7	0.4	2.6	17	1.7	0.6	3.0	54
1.8	.9	3.0	35	1.8	2.0	3.5	97
1.9	1.6	3.5	70	1.9	4.1	4.0	153
2.0	2.6	4.0	122	2.0	6.9	6.0	467
2.1	4.0	5.0	266	2.2	13	6.5	600
2.3	8.2	6.0	462	2.5	24	7.0	840

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.90	1.4	1.7	14	b 10	102	21	42	6.6	5.2	3.1	3.1
2	.90	1.4	1.8	72	b 7.0	253	19	36	7.2	6.6	* 3.1	2.9
3	.90	1.5	2.2	51	b 6.0	243	16	32	6.6	7.5	2.7	2.4
4	.80	1.3	*2.3	26	b 8.0	226	16	29	*6.0	4.9	3.1	2.2
5	.80	* 1.4	2.3	18	b 8.5	215	23	27	5.5	4.1	2.7	2.2
6	.80	1.3	b 1.8	14	b 9.0	136	337	*26	5.2	4.1	2.5	2.1
7	.80	1.4	b 1.6	11	19	132	325	28	6.0	5.2	2.7	1.8
8	.90	1.4	b 1.6	10	43	112	* 278	24	5.2	* 4.4	3.6	1.8
9	* 1.0	1.5	b 1.6	23	107	85	612	22	4.7	4.9	4.1	1.7
10	1.0	1.6	1.7	32	576	64	214	21	4.7	5.2	3.4	1.4
11	1.0	1.6	2.5	20	480	* 48	160	19	4.1	3.9	2.7	1.5
12	1.1	1.7	3.6	15	* 184	42	183	18	3.6	3.6	2.7	2.4
13	1.2	1.8	3.6	12	96	36	118	17	3.1	3.4	2.4	2.5
14	1.2	1.6	2.9	b 8.0	65	34	88	15	2.9	3.1	2.4	2.7
15	1.2	1.9	2.3	b 6.0	47	29	113	14	2.7	3.4	2.2	8.9
16	1.2	6.4	2.4	b 4.5	37	26	128	14	2.4	3.1	2.1	6.9
17	1.2	4.2	2.3	b 4.5	32	29	94	13	2.4	15	2.1	5.2
18	1.2	2.6	1.7	b 4.5	28	32	71	12	2.2	28	2.2	3.9
19	1.0	2.4	1.6	b 4.5	24	b 23	56	13	2.1	9.5	2.7	3.4
20	1.1	2.3	1.7	b 4.5	21	b 17	48	11	1.8	6.3	2.2	2.9
21	1.2	1.8	1.7	b 5.0	b 17	b 15	42	10	1.8	5.2	1.8	4.1
22	1.1	1.7	1.7	5.5	b 12	17	38	9.8	1.5	4.4	2.2	17
23	1.1	1.6	2.0	20	b 9.0	33	36	8.9	1.5	4.1	2.1	13
24	1.1	1.7	*4.5	159	b 8.0	76	48	12	1.5	3.9	1.8	8.4
25	1.3	1.8	15	112	b 8.0	48	156	11	1.7	3.9	1.7	6.0
26	1.3	1.9	10	75	b 7.0	35	175	11	1.5	3.1	2.2	5.8
27	1.4	1.7	6.1	48	b 8.0	26	105	11	1.4	3.1	2.7	* 4.7
28	1.4	2.0	4.4	31	14	24	74	9.2	1.7	2.7	2.4	4.4
29	1.4	1.9	3.5	b 20	------	25	57	8.1	2.2	2.5	2.1	4.1
30	1.3	1.8	3.0	b 12	------	22	48	7.5	13	2.4	* 1.8	4.1
31	1.4	------	2.7	b 11	------	20	------	7.2	------	2.4	2.4	------
TOTAL	34.20	58.6	97.8	853.0	1,892.5	2,225	3,699	538.7	112.8	169.1	77.7	134.1
MEAN	1.10	1.95	3.16	27.5	67.6	71.8	123	17.4	3.76	5.46	2.51	4.47
CFSM	.026	.046	.074	.647	1.59	1.69	2.89	.409	.089	.129	.059	.105
IN	.03	.05	.09	.75	1.66	1.95	3.24	.47	.10	.15	.07	.12

CALENDAR YEAR 1964 MAX 1,600 MIN .40 MEAN 35.7 CFSM .840 INCHES 11.44
WATER YEAR 1964-65 MAX 612 MIN .80 MEAN 27.1 CFSM .638 INCHES 8.66

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-9	0545	7.02	854				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3525. Fall Creek at Millersville, Ind.

Location.--Lat 39°51'05", long 86°05'20", in sec. 9, T. 16 N., R. 4 E., on left bank at downstream side of highway bridge at Millersville and 8.5 miles upstream from mouth.

Drainage area.--313 sq mi.

Records available.--October 1929 to September 1965. Monthly discharges only for some periods, published in WSP 1305. Twice-daily readings at a chain gage at same site and datum from July 1925 to September 1926 are available in the district office.

Gage.--Water-stage recorder (digital). Datum of gage is 722.16 ft above mean sea level, datum of 1929.

Average discharge.--36 years, 272 cfs (unadjusted).

Extremes.--Maximum discharge during year, 3,140 cfs Apr. 9 (gage height, 8.32 ft); minimum, 38 cfs Dec. 18 (gage height, 1.75 ft).
1929-65: Maximum discharge, 12,900 cfs May 28, 1956 (gage height, 13.53 ft); minimum, 7.0 cfs Sept. 28, 1941 (gage height, 0.84 ft).
Maximum stage known, 16.3 ft Mar. 26, 1913, from floodmarks (discharge, 22,000 cfs, by slope-area measurement).

Remarks.--Records good except those for periods of ice effect, which are poor. Discharge measurements generally made twice a month. Flow regulated by Geist Reservoir, 8.5 miles upstream, since January 1943 (capacity, 6,900,000,000 gal).

Revisions.--Revised figures of discharge for some days and the yearly maximum, March 1963 are on file in the district office.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 8				Feb. 9 to Sept. 30			
1.7	32	3.0	241	1.8	48	3.5	390
1.9	54	3.5	381	2.0	71	4.0	580
2.2	93	4.0	569	2.5	154	6.0	1,500
2.5	141			3.0	261	8.0	2,800

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	55	b 38	190	b 160	476	224	394	84	101	72	64
2	67	55	42	311	b 90	1,250	243	338	111	108	70	57
3	67	55	47	213	b 95	1,290	209	294	140	90	67	57
4	67	54	47	146	b 100	1,290	196	263	108	86	63	55
5	67	54	b 43	121	b 100	1,350	241	248	84	83	56	56
6	61	54	b 40	104	114	1,110	1,320	241	83	83	57	54
7	60	54	b 40	95	161	979	1,440	250	109	89	59	52
8	61	54	b 38	93	450	898	1,280	226	102	76	64	52
9	61	54	b 38	119	1,500	754	2,740	209	90	80	60	52
10	59	55	41	136	2,510	612	1,600	204	99	76	58	51
11	59	49	58	111	2,750	492	1,040	192	96	74	57	55
12	60	46	55	98	1,720	415	1,330	177	84	71	56	57
13	62	45	53	89	1,020	369	1,180	169	80	70	56	54
14	60	46	49	b 77	690	338	822	154	71	69	57	55
15	60	53	45	b 70	516	320	799	138	138	70	56	165
16	60	105	44	b 60	415	296	889	123	125	67	56	90
17	61	55	44	b 64	352	308	732	130	102	96	56	70
18	67	46	41	b 66	320	b 280	596	130	92	154	80	60
19	66	45	41	b 68	298	b 220	453	136	76	98	60	56
20	65	45	41	b 80	254	b 190	375	120	78	83	56	54
21	67	42	41	73	246	b 180	330	102	84	78	56	84
22	76	41	41	74	b 210	194	325	96	83	74	61	175
23	83	40	42	143	b 170	298	301	108	83	69	56	101
24	82	41	96	447	b 170	580	422	162	83	67	56	76
25	82	41	127	405	b 170	512	1,040	152	79	66	56	70
26	64	41	86	493	b 160	390	1,580	154	76	70	63	65
27	64	40	67	419	b 180	322	1,240	160	76	66	63	64
28	64	54	59	319	194	286	840	123	87	66	58	63
29	55	44	64	b 200	------	282	608	101	99	64	57	61
30	56	41	64	b 170	------	273	472	92	123	57	57	63
31	55	------	59	b 160	------	241	------	87	------	65	64	------
TOTAL	2,004	1,504	1,631	5,214	15,115	16,795	24,867	5,473	2,625	2,466	1,863	2,088
MEAN	64.6	50.1	52.6	168	540	542	829	177	94.2	79.5	60.1	69.6
CFSM	-	-	-	-	-	-	-	-	-	-	-	-
IN.	-	-	-	-	-	-	-	-	-	-	-	-
(∱)	-30.8	+2.1	+27.6	+84	0	+1	+6	-7	-23.9	-22.3	-28.9	-8.2

CALENDAR YEAR 1964 MAX 8,850 MIN 33 MEAN 288 CFSM 0.920 INCHES 12.49 ∱ +6
WATER YEAR 1964-65 MAX 2,750 MIN 38 MEAN 224 CFSM 0.716 INCHES 9.72 ∱ 0

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	2130	8.23	3,060				
4-9	1045	8.32	3,140				

∱ Change in contents, equivalent in cubic feet per second, in Geist Reservoir, furnished by Indianapolis Water Co.
b Stage-discharge relation affected by ice.

3-3530. White River at Indianapolis, Ind.

Location.--Lat 39°45'05", long 86°10'30", on downstream side of second pier from right bank of Morris Street Bridge in Indianapolis, 2½ miles downstream from Fall Creek and at mile 235.8.

Drainage area.--1,627 sq mi.

Records available.--March 1904 to July 1906 and April 1930 to September 1965. Gage-height record published in reports of U. S. Weather Bureau for site 1.1 miles upstream Feb. 8, 1911 to Mar. 25, 1913 and at site 2.3 miles upstream since Oct. 16, 1913. Prior to October 1948, published as West Fork White River at Indianapolis.

Gage.--Water-stage recorder (digital). Datum of gage is 662.26 ft (revised) above mean sea level, datum of 1929. March 1904 to July 1906, chain gage at railroad bridge three-quarters of a mile upstream at datum approximately 2.9 ft higher. April 1930 to July 20, 1931, float gage at Indianapolis sanitation plant 2½ miles downstream at datum 660 ft lower. July 21, 1931, to Mar. 2, 1932, staff gage at present site at datum 660 ft lower.

Average discharge.--36 years (1904-5, 1930-65), 1,399 cfs (adjusted for diversion and change in content since October 1955; includes sewage effluent, April 1930 to September 1931).

Extremes.--Maximum discharge during year, 12,500 cfs Apr. 9 (gage height, 11.60 ft); minimum, 45 cfs Dec. 20 (gage height, 2.00 ft).
1904-6, 1930-65: Maximum discharge, 37,200 cfs May 18, 1943; maximum gage height, 21.57 ft Jan. 16, 1937; minimum, 6.8 cfs Sept. 21, 1941.
Flood of Mar. 26, 1913, reached a stage of 30.0 ft, from floodmarks determined by Indianapolis Water Co. (discharge, 70,000 cfs, estimated).

Remarks.--Records good except those for periods of ice effect, which are poor. Discharge measurements generally made twice a month. During the year the Indianapolis Water Co. diverted 28,400,000,000 gal of water for municipal use, most of which was returned 3 miles below the gage at sanitation plant. Slight fluctuation at low flow due to this diversion. Flow slightly regulated by Morse and Geist Reservoirs (combined usable capacity, 13,800,000,000 gal).

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	97	108	1,110	b 500	1,750	1,470	1,980	626	480	214	120
2	85	101	141	1,070	b 450	4,430	1,420	1,680	730	613	162	82
3	87	90	165	853	b 400	6,180	1,300	1,470	990	392	144	86
4	84	71	141	755	b 350	6,320	1,210	1,280	1,100	286	259	82
5	84	60	b 100	619	b 350	6,570	1,620	1,210	835	238	166	103
6	71	61	b 90	482	b 450	6,570	5,490	1,170	628	270	133	95
7	66	74	b 90	394	b 550	5,480	7,030	1,270	800	432	130	95
8	71	61	b 95	382	1,110	4,680	6,760	1,170	659	259	155	82
9	71	75	b 100	573	2,190	4,080	11,000	1,010	576	397	151	68
10	72	90	112	554	9,270	3,440	8,040	1,060	570	275	130	59
11	79	82	185	619	11,400	2,800	5,800	966	558	259	137	71
12	78	97	127	515	10,300	2,400	6,080	863	468	253	123	109
13	69	84	170	430	6,040	2,130	7,470	772	380	187	109	68
14	64	75	190	346	3,590	1,950	5,680	711	358	175	130	59
15	64	180	145	328	2,610	1,840	4,380	659	325	179	191	779
16	65	833	138	268	2,030	1,670	4,320	607	352	179	209	1,090
17	59	145	101	b 240	1,740	1,710	3,770	564	314	248	170	926
18	87	206	87	b 260	1,530	1,900	3,060	546	286	510	420	552
19	87	180	81	b 270	1,360	1,820	2,480	540	275	480	325	403
20	78	150	82	b 270	1,220	1,490	2,070	534	233	308	158	363
21	101	108	87	b 300	1,110	1,260	1,770	516	229	224	148	432
22	87	112	84	412	b 900	1,170	1,610	462	196	200	120	842
23	85	115	85	879	b 850	1,410	1,490	498	200	162	109	607
24	79	103	619	1,570	b 800	2,450	1,970	588	200	175	74	626
25	72	101	541	1,890	b 700	2,920	3,460	758	204	179	58	492
26	97	101	412	2,110	b 600	2,410	5,300	934	175	151	151	363
27	97	115	352	1,720	b 700	1,870	5,970	1,300	158	109	140	308
28	82	170	280	1,420	1,030	1,560	4,340	1,270	238	84	112	248
29	72	112	217	b 770	------	1,470	3,040	1,120	450	123	100	248
30	87	108	195	b 650	------	1,580	2,370	856	510	123	97	264
31	97	------	160	b 550	------	1,600	------	704	------	130	133	------
TOTAL	2,462	3,957	5,480	22,609	64,130	88,910	121,770	29,068	13,823	8,080	4,858	9,722
MEAN	79.4	132	177	729	2,290	2,868	4,059	938	461	261	157	324
(f)	+115	+110	+107	+105	+108	+107	+110	+130	+144	+136	+137	+136
(ff)	-31	+2	+28	+119	0	+4	+7	-11	-23	-34	-67	+41

Adjusted for diversion and change in reservoir contents

Mean	163	244	312	953	2,398	2,979	4,176	1,057	582	363	227	501
Cfsm	0.100	0.150	0.192	0.586	1.47	1.83	2.57	0.650	0.358	0.223	0.140	0.308
In.	0.12	0.17	0.22	0.68	1.53	2.11	2.87	0.75	0.40	0.26	0.16	0.34

	Observed			Adjusted				
Calendar year 1964 :	Max 35,000	Min 58	Mean 1,349	Mean 1,481	Cfsm 0.910	In. 12.38	f +122	ff +10
Water year 1964-65 :	Max 11,400	Min 58	Mean 1,027	Mean 1,150	Cfsm 0.707	In. 9.61	ff +120	ff +3

Peak discharge (base, 8,500 cfs).--Feb. 11 (1945) 11,600 cfs (11.21 ft); Apr. 9 (0430) 12,500 cfs (11.60 ft)

f Diversion above station for municipal supply, equivalent in cubic feet per second, furnished by Indianapolis Water Co.
ff Change in contents, equivalent in cubic feet per second, in Morse and Geist Reservoirs, furnished by Indianapolis Water Co.
b Stage-discharge relation affected by ice.

GPO 826-827-7

3-3531.2 Pleasant Run at Arlington Avenue at Indianapolis, Ind.

Location.--Lat 39°46'33", long 86°03'50", in NW¼ sec. 2, T. 15 N., R. 4 E., on right bank 46 ft upstream from Arlington Avenue Bridge in Indianapolis, and 0.5 mile downstream from unnamed tributary.

Drainage area.--7.67 sq mi.

Records available.--December 1959 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 780.00 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--5 years (1960-65), 6.57 cfs.

Extremes.--Maximum discharge during year, 700 cfs Feb. 9 (gage height, 6.69 ft); minimum, 0.1 cfs on many days; minimum gage height, 2.97 ft Aug. 15.
1959- 5: Maximum discharge, 1,610 cfs Mar. 4, 1963 (gage height, 10.32 ft); no flow at times some years.
Flood in May 1956 reached a stage of 16.0 ft, from information by local resident.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 4				Mar. 5 to Sept. 30			
3.0	0.0	3.6	16	3.0	0.1	3.5	15
3.1	0.5	3.8	29	3.1	0.9	3.8	41
3.2	1.8	4.0	52	3.2	2.7	4.0	66
3.3	3.8	4.5	151	3.3	5.4	4.4	133
3.4	6.8	6.0	525	3.4	9.5		
3.5	10						

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.5	b 0.2	113	b 0.7	56	2.7	1.9	0.5	1.1	2.4	3.4
2	.4	.3	1.0	31	b .4	25	2.2	1.7	3.8	14	.4	.8
3	.3	.4	* 4.3	6.8	b .4	12	1.7	1.4	.8	2.0	.3	.9
4	.1	.4	4.8	3.8	b .5	44	1.7	1.1	.4	.5	4.4	.7
5	.1	* .5	1.2	*2.6	b1.5	15	45	1.2	.3	.3	* .7	.4
6	.2	.2	.5	2.8	b3.5	14	82	1.1	.3	*.8	.3	.5
7	.3	.2	b .4	1.8	b9.6	14	11	1.1	4.4	8.1	.8	.5
8	.1	.1	b .2	3.4	5.8	9.5	70	.9	.9	1.5	.3	.5
9	* .2	.1	b .2	10	158	7.2	27	.9	.5	14	.7	.7
10	.2	.2	b .4	2.8	*188	4.7	9.5	.9	.5	1.9	.4	.7
11	.2	.1	8.2	1.9	8.9	3.8	22	1.1	.8	.8	.2	3.2
12	.2	.1	2.6	1.5	6.0	* 6.5	* 24	.8	.3	.4	.2	6.8
13	.3	.2	1.5	1.2	2.8	3.4	7.2	* .3	.2	.4	.1	1.1
14	.2	.2	.8	1.0	2.1	3.8	5.4	.4	*.2	.5	.1	5.6
15	.3	4.8	.6	b .2	1.8	3.4	32	.5	.3	1.4	.1	59
16	.5	43	.7	b .1	1.6	2.7	14	.5	.3	.7	.2	10
17	.2	1.1	.6	b .1	1.6	8.0	7.2	.4	.3	4.5	.5	4.5
18	3.4	.3	b .3	b .1	1.5	3.6	4.4	4.6	.3	2.9	14	1.5
19	1.0	2.1	b .4	b .2	1.3	b 2.0	5.0	2.2	.2	1.7	4.1	.7
20	.4	1.1	.4	b .3	1.1	b 1.5	2.9	.5	.1	1.4	.4	.4
21	.2	b .3	.5	b .4	1.1	b 1.6	2.4	.5	.3	.4	.2	16
22	.2	b .2	.5	6.9	1.0	1.9	2.2	.7	.4	.4	.3	24
23	.3	b .2	1.2	61	b .5	26	2.7	6.0	.5	.5	.3	2.7
24	.1	b .2	30	31	b .4	10	35	7.6	.5	.7	.3	1.2
25	.2	b .2	8.9	9.3	b .2	6.0	116	7.6	.3	.5	.1	.8
26	.1	b .2	3.5	6.4	b .5	4.7	21	10	.2	.7	7.3	.7
27	.2	.1	1.3	4.3	b 2.0	3.8	7.2	6.0	.2	.5	3.2	.4
28	.5	b .1	1.1	b 1.5	b10	3.1	4.7	1.4	14	1.4	1.4	.3
29	.6	b .1	1.6	b .6		3.6	3.1	.8	20	.3	.2	1.1
30	.5	b .1	2.6	b .6	- - - - -	2.7	2.4	.5	12	.2	.2	.9
31	.3	- - - - -	.7	b .7	- - - - -	2.2	- - - - -	.3	- - - -	.3	*3.2	- - - - -
Total	12.2	57.6	81.2	307.3	412.8	305.7	573.6	64.9	63.8	64.8	47.3	150.0
Mean	0.39	1.92	2.62	9.91	14.7	9.86	19.1	2.09	2.13	2.09	1.53	5.00
Cfsm	0.051	0.25	0.34	1.29	1.92	1.29	2.49	0.272	0.278	0.272	0.199	0.652
In.	0.05	0.28	0.39	1.49	2.00	1.49	2.78	0.31	0.31	0.31	0.23	0.73

Calendar year 1964: Max 454 Min 0.1 Mean 6.53 Cfsm 0.852 In. 11.56
Water year 1964-65: Max 188 Min 0.1 Mean 5.87 Cfsm 0.765 In. 10.38

Peak discharge (base, 320 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-1	1230	5.68	450	4-8	1900	5.47	400
2-9	2400	6.69	700	4-25	1400	5.68	450
4-6	0200	5.23	325	9-15	0030	5.72	450

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3531.6 Pleasant Run at Brookville Road at Indianapolis, Ind.

Location.--Lat 39°45'52", long 86°05'43", in NW¼ sec. 9, T. 15 N., R. 4 E., on right bank at downstream side of Brookville Road Bridge in Indianapolis, and 2.2 miles downstream from Arlington Avenue.

Drainage area.--10.3 sq mi.

Records available.--November 1959 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 752.00 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--5 years (1960-65), 8.60 cfs.

Extremes.--Maximum discharge during year, 775 cfs Mar. 9 (gage height, 5.92 ft); no flow for many days.
1959-65: Maximum discharge, 2,010 cfs Mar. 4, 1963 (gage height, 9.22 ft); no flow at times during most years.

Remarks.--Records fair, except those for periods of ice effect or no gage-height record, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.87	0	2.4	14
1.9	0.1	2.5	21
2.0	0.8	3.0	69
2.1	2.2	3.5	137
2.2	4.7	4.0	239
2.3	8.9		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0	0	a 150	b .6	70	2.2	2.5	0.5	1.3	4.1	3.6
2	.3	.1	3.2	a 35	b .4	36	2.4	2.0	4.0	16	.8	.8
3	.1	.1	* 7.1	a 8.0	b .4	20	1.7	2.0	1.2	2.4	.2	.3
4	0	0	a 5.0	a 3.5	b .5	56	1.9	1.6	.6	.6	4.4	.1
5	0	* .1	a 3.0	* 4.0	b .8	20	41	1.9	.5	.3	* .8	.5
6	0	.1	a .1	4.5	b2.0	18	97	1.6	4.8	*1.1	.4	.2
7	0	0	a .1	2.7	b 10	19	19	1.4	4.7	11	1.1	.2
8	0	0	a .3	4.8	11	13	71	1.2	1.2	1.9	.8	.8
9	* 0	0	a .7	18	169	9.4	40	1.1	1.0	20	.5	.3
10	0	0	a 1.3	4.7	*214	6.3	10	1.2	.6	2.4	.6	.2
11	0	0	a 2.0	3.1	24	4.7	32	1.4	1.2	1.0	.1	2.0
12	0	0	a .7	2.5	14	* 7.1	*36	1.2	.5	.6	.1	5.9
13	0	0	a 1.5	2.2	7.5	3.4	8.9	.6	.2	.5	0	1.4
14	0	0	a .9	b 1.2	5.9	3.6	5.9	* .6	* 0	.8	0	3.3
15	0	11	a .6	b .3	3.6	3.4	36	.6	.1	1.6	.1	94
16	0	67	a .7	b .2	3.1	2.5	16	1.0	.1	.6	0	11
17	0	1.7	a .5	b .1	3.1	8.8	7.5	.8	.2	5.1	.6	4.4
18	6.4	.2	a .2	b .1	2.9	3.1	5.1	7.2	.1	2.7	21	1.4
19	1.9	1.9	a .2	b .2	2.7	2.0	5.6	3.7	.1	2.0	5.5	.6
20	.4	1.7	a .2	b .4	2.0	1.7	3.1	1.2	0	1.7	1.2	.1
21	.1	.5	a .3	b .7	2.4	1.6	2.7	.8	0	.6	.5	14
22	0	.2	a .7	b 6.0	1.7	1.4	2.7	.6	.3	.6	.4	38
23	0	.1	a 2.0	b 60	1.6	27	2.7	10	.6	.6	.6	2.5
24	0	.2	a 50	48	1.7	11	40	7.5	.6	1.1	.6	a 2.0
25	0	.2	a 10	17	2.2	6.3	116	9.4	.2	1.0	.2	a 1.2
26	0	.1	a 5.0	11	4.0	4.0	26	13	.1	.6	9.9	a .9
27	0	0	a 2.0	b 6.0	11	3.4	8.4	7.1	0	.6	3.4	a .6
28	0	4.6	a 1.5	b 1.5	52	2.9	5.5	1.6	18	1.3	1.9	a .5
29	.2	.6	a 2.0	b .5		3.1	3.6	1.0	23	.6	.4	a 1.5
30	.1	.1	a 3.5	b .5	- - - - - -	2.4	3.1	.6	13	0	.1	a 1.3
31	.1	- - - - - -	a 1.5	b .6	- - - - - -	2.0	- - - - - -	.6	- - - - - -	0	* 3.9	- - - - - - -
Total	9.8	90.5	106.8	397.3	554.1	373.1	653.0	87.0	77.4	80.6	64.2	193.6
Mean	0.32	3.02	3.45	12.8	19.8	12.0	21.8	2.81	2.58	2.60	2.07	6.45
Cfsm	0.031	0.293	0.335	1.24	1.92	1.17	2.12	0.273	0.250	0.252	0.201	0.626
In.	0.04	0.33	0.39	1.43	2.00	1.35	2.36	0.31	0.28	0.29	0.23	0.70

Calendar year 1964: Max 522 Min 0 Mean 9.00 Cfsm 0.874 In. 11.86
Water year 1964-65: Max 214 Min 0 Mean 7.36 Cfsm 0.715 In. 9.71

Peak discharge (base, 380 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-1	Unknown	4.86 (range line)	479	4-8	1900	4.71	423
				9-15	0130	5.77	745
2-9	2300	5.92	775				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3532. Eagle Creek at Zionsville, Ind.

Location.--Lat 39°56'56", long 86°15'22", in NW¼ sec. 1, T. 17 N., R. 2 E., on downstream side of second pier from right bank of bridge on State Highway 334 at Zionsville, and 200 ft upstream from Long Branch.

Drainage area.--102 sq mi.

Records available.--October 1957 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 816.85 ft above mean sea level, datum of 1929. Prior to Oct. 9, 1957, wire-weight gage at same site and datum.

Average discharge.--8 years, 98.5 cfs.

Extremes.--Maximum discharge during year, 4,300 cfs Apr. 8 (gage height, 10.35 ft); no flow Oct. 1-15.
1957-65: Maximum discharge, 12,400 cfs Apr. 20, 1964 (gage height, 14.64 ft); no flow for several days in September 1959, September, October 1963, September, October 1964.
Flood of June 28, 1957, reached a stage of 19.20 ft, from floodmark.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 16-30, Dec. 2-5, Dec. 10 to Jan. 1, Jan. 4-9, 11, Mar. 4-23, May 30 to June 1, June 9-15, Sept. 29, 30)

Oct. 1 to Feb. 9

2.0	0	2.8	23
2.1	.2	3.0	44
2.2	.5	3.2	75
2.3	1.4	3.5	143
2.4	3.2	4.0	290
2.5	6.0	4.5	460
2.6	10		

Feb. 10 to Sept. 30

Note.--Same as preceding table below 3.2 ft.

3.2	75	5.0	634
3.5	144	6.0	1,150
4.0	274	8.0	2,250

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.6	b 0.9	9.8	a32	564	87	68	14	93	1.3	1.0
2	0	.6	1.1	70	a15	726	75	60	22	45	*1.6	.8
3	0	.6	1.2	51	a16	474	63	47	61	91	1.4	.6
4	0	.6	* 1.3	22	a18	664	61	41	44	32	2.1	.5
5	0	.7	1.3	*15	a30	368	105	38	28	16	2.3	.5
6	0	*.7	b 1.0	12	a45	261	1,250	59	23	11	1.8	.4
7	0	.8	b .9	7.9	a60	261	550	* 79	*27	*9.6	1.3	.3
8	0	.8	b .9	12	b90	*235	1,140	52	23	12	1.4	.3
9	0	.8	b .9	22	361	183	1,430	45	18	10	2.8	.2
10	0	.8	1.0	36	2,090	126	419	44	17	10	4.5	.2
11	0	.8	1.9	20	550	100	493	38	17	8.3	3.2	.2
12	0	.8	2.6	14	*334	89	474	36	16	6.4	2.1	.4
13	0	.8	3.0	15	209	79	* 289	34	11	5.1	1.3	.5
14	0	.8	3.2	*14	152	75	209	32	8.7	4.2	.8	.4
15	0	.8	3.0	b10	109	66	304	32	8.7	4.8	.6	57
16	.1	3.6	2.8	b 7.0	89	60	289	31	8.3	5.1	.4	70
17	.1	3.6	2.1	b 7.0	85	91	209	30	7.9	6.4	.3	61
18	.2	2.6	1.3	b 7.2	79	131	149	29	7.5	13	.4	42
19	.4	2.6	1.2	b 7.4	70	66	113	28	7.1	8.7	.8	22
20	.4	2.4	1.2	b 7.6	57	47	93	26	6.7	6.0	.6	16
21	.4	1.4	1.2	b 8.7	64	38	77	24	6.7	4.8	.4	16
22	.4	1.0	1.1	9.6	b 40	35	66	23	6.4	3.6	.4	16
23	.4	.8	1.2	66	b 35	151	65	21	6.0	3.2	.4	16
24	.4	.8	1.4	275	b 40	274	104	22	6.0	3.0	.3	18
25	.5	.8	1.9	167	b 35	144	326	26	5.7	2.4	.3	15
26	.5	.8	2.3	136	b 25	116	289	36	5.1	1.9	.4	9.1
27	.5	.8	2.4	b70	b 30	81	183	54	4.5	1.9	1.7	*6.4
28	.6	.8	2.4	b50	73	83	131	30	4.8	1.6	.8	4.5
29	.6	1.0	2.4	a35		116	100	21	13	1.3	.5	3.0
30	.6	.9	2.4	a34	------	111	81	18	188	1.0	* .4	1.9
31	.6	------	2.4	a33	------	93	------	16	------	.8	.5	------
Total	6.7	34.9	53.9	1,251.2	4,833	5,908	9,224	1,140	622.1	423.1	37.1	380.2
Mean	0.22	1.16	1.74	40.4	173	191	307	36.8	20.7	13.6	1.20	12.7
Cfsm	0.002	0.011	0.017	0.396	1.70	1.87	3.01	0.361	0.203	0.133	0.118	0.125
In.	0.002	0.01	0.02	0.46	1.77	2.16	3.36	0.42	0.23	0.15	0.14	0.14

Calendar year 1964: Max 5,460 Min 0 Mean 88.2 Cfsm 0.865 In. 11.76
Water year 1964-65: Max 2,090 Min 0 Mean 65.5 Cfsm 0.642 In. 8.86

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0700	9.32	3,230				
4-6	0530	7.48	1,980				
4-8	2300	10.35	4,300				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3535. Eagle Creek at Indianapolis, Ind.

Location.--Lat 39°46'33", long 86°15'01", in NE¼ sec. 1, T. 15 N., R. 2 E., on right bank at downstream side of bridge on Lynnhurst Drive, approximately 600 ft south of intersection of West 10th Street and Lynnhurst Drive, 0.5 mile downstream from West 10th Street Bridge, 1.0 mile upstream from Vermont Street Bridge, 2.9 miles upstream from mouth of Little Eagle Creek, and 6.9 miles upstream from mouth.

Drainage area.--179 sq miles.

Records available.--November 1938 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 706.21 ft above mean sea level, datum of 1929. Temporary site during reconstruction of bridge on Lynnhurst, a wire-weight gage on downstream side of 10th Street Bridge, approximately half a mile upstream at same datum Aug. 8, 1957 to June 30, 1958.

Average discharge.--26 years (1939-65), 152 cfs.

Extremes.--Maximum discharge during year, 5,230 cfs Apr. 9 (gage height, 6.10 ft); minimum, 0.1 cfs Aug. 25 (gage height, -1.32 ft).
1938-65: Maximum discharge, 28,800 cfs June 28, 1957 (gage height, 16.38 ft), from rating curve extended above 9,000 cfs on basis of a combined current-meter measurement and slope-area measurement; no flow for several days in August 1941.
Flood of March 1913 reached a stage of 16.0 ft, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 27-30)

Oct. 1 to Apr. 8

-1.12	1.6	0.5	241
-1.1	2.0	1.0	445
-.9	7.2	2.0	1,050
-.6	21	4.0	2,800
-.3	49	5.0	3,900
.0	100		

Apr. 9 to Sept. 30

-1.2	0.4	0	153
-1.1	1.8	+.5	310
-1.0	4.0	1.0	520
-.9	8.0	2.0	1,090
-.8	13	3.0	1,850
-.7	23	5.0	3,900
-.5	53		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	3.1	b 6.0	45	b53	568	118	164	31	79	3.5	4.0
2	2.6	* 3.1	b 6.2	72	b20	1,120	114	138	* 39	*60	2.6	5.3
3	2.4	2.8	*b 6.2	84	b18	*774	88	*118	42	50	1.6	* 2.2
4	2.2	3.1	b 5.5	* 55	b22	978	84	105	55	45	3.7	2.2
5	2.2	3.1	b 4.5	41	b35	774	143	98	43	27	4.5	2.8
6	2.2	3.1	b 3.6	35	b50	493	*2,310	101	48	23	3.2	1.7
7	2.2	3.1	b 4.0	32	b100	469	1,050	133	39	23	3.7	2.0
8	2.6	3.3	b 4.5	28	259	422	788	122	36	19	5.0	1.1
9	2.4	3.6	b 4.7	35	317	336	3,160	101	33	16	4.0	1.0
10	2.6	3.3	5.0	45	*2,860	259	840	96	29	17	3.5	.3
11	2.6	3.3	16	46	*1,050	196	725	86	33	13	3.0	2.2
12	2.8	3.3	8.1	38	570	180	840	75	27	11	2.8	4.5
13	2.8	3.3	8.8	30	356	166	520	67	21	10	1.8	2.4
14	2.8	3.3	8.1	b 20	224	155	348	62	20	8.4	1.6	3.0
15	2.8	3.3	9.5	b 12	174	141	497	56	17	8.4	2.6	54
16	3.1	8.0	11	b 8.0	136	131	568	51	16	8.0	1.9	48
17	3.1	9.5	6.1	b 8.0	121	155	388	48	14	9.1	.5	47
18	3.1	9.1	15	b 11	116	259	292	43	12	8.8	5.3	37
19	3.3	9.8	11	b 13	98	155	224	40	12	8.8	4.0	29
20	2.6	9.5	9.5	b 25	78	112	189	37	11	8.4	1.1	18
21	2.4	12	8.1	b 35	b70	98	161	36	9.1	6.0	2.0	20
22	2.2	9.1	6.6	42	b35	86	146	33	8.8	5.4	3.1	32
23	2.2	8.4	7.8	64	b30	144	133	31	9.1	5.0	2.8	17
24	2.4	7.8	14	b300	b45	493	224	29	8.4	5.0	1.9	17
25	2.6	7.5	12	*b250	b60	259	685	34	8.0	5.4	1.1	17
26	2.8	7.5	11	183	b40	183	670	47	6.3	3.0	4.8	17
27	2.8	7.2	9.8	b 130	b50	136	388	77	6.3	3.0	3.0	13
28	3.1	9.1	9.0	b 60	b70	123	292	60	8.5	2.0	2.4	10
29	3.1	b 7.0	8.8	b 58		139	224	43	19	2.8	2.8	9.5
30	3.1	b 6.0	8.9	b 55	------	149	183	36	31	*2.4	4.5	11
31	3.1	------	8.8	b 55	------	123	------	31	------	3.0	4.8	------
Total	82.8	175.6	258.1	1,915.0	7,057	9,776	16,392	2,198	692.5	495.9	93.1	431.2
Mean	2.67	5.85	8.33	61.8	252	315	546	70.9	23.1	16.0	3.00	14.4
Cfsm	0.015	0.033	0.047	0.345	1.41	1.76	3.05	0.396	0.129	0.089	0.017	0.080
In.	0.02	0.04	0.05	0.40	1.47	2.03	3.40	0.46	0.14	0.10	0.02	0.09

Calendar year 1964: Max 9,100 Min 1.6 Mean 144 Cfsm 0.804 In. 10.94
Water year 1964-65: Max 3,160 Min 0.3 Mean 108 Cfsm 0.603 In. 8.22

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1500	4.77	3,680				
4-6	1100	3.80	2,600				
4-9	0800	6.10	5,230				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Computed from twice-daily wire-weight gage readings Dec. 4-24.

3-3536. Little Eagle Creek at Speedway, Ind.

Location.--Lat 39°47'15", long 86°13'41", in NW¼ sec. 32, T. 16 N., R. 3 E., on right bank at downstream side of 16th Street Bridge in Speedway, 0.5 mile east of 500-Mile Track, 0.6 mile upstream from tributary from the right and 2.4 miles upstream from mouth.

Drainage area.--18.6 sq mi.

Records available.--October 1959 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 710.82 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--6 years, 16.5 cfs.

Extremes.--Maximum discharge during year, 1,160 cfs Feb. 10 (gage height, 5.85 ft); minimum, 0.1 cfs many days; minimum gage height, 0.69 ft July 27.
1959-65: Maximum discharge, 1,940 cfs Apr. 25, 1961 (gage height, 7.44 ft); no flow at times most years.

Remarks.--Records fair except those for periods of ice effect, or no gage-height record, which are poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Oct. 9		Oct. 10 to Apr. 5				Apr. 6 to Sept. 30			
1.4	0.6	0.8	0.7	2.0	86	0.7	0.4	1.6	53
1.5	2.2	.9	3.2	2.5	160	.8	2.0	2.0	98
		1.0	7.1	3.5	358	.9	5.3	3.0	261
		1.3	23	4.5	640	1.0	10	4.0	490
		1.6	44			1.3	29		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.7	b 0.2	56	b 3.0	b 50	9.4	14	2.5	2.2	1.8	2.5
2	.6	.7	b .5	38	b 1.2	92	8.0	11	*8.1	*10	1.2	1.0
3	.6	* .7	*b 3.0	16	b 1.5	55	6.3	*9.2	5.3	8.6	.7	* .7
4	.6	.7	b 1.0	*7.6	b 2.5	*105	6.3	8.1	3.4	2.5	2.5	.7
5	.6	.7	b .5	5.0	b 5.0	55	52	8.1	3.4	1.8	1.6	1.0
6	.6	.7	b .3	3.9	b 15	42	* 322	8.6	28	3.8	.8	.7
7	.6	.5	b .2	3.2	b 25	41	84	9.7	18	6.6	1.4	.7
8	.6	.7	b .3	3.9	35	35	88	7.6	7.6	2.8	1.8	.7
9	1.0	.5	b .5	11	86	28	137	6.6	4.5	3.4	1.6	.7
10	.8	.7	b 1.0	5.4	542	21	50	6.6	5.3	2.5	1.2	.6
11	.8	.7	b 5.0	4.6	* 80	17	51	6.2	6.6	1.2	.8	2.0
12	.8	.7	4.6	4.2	45	16	74	5.3	3.8	1.0	.7	3.4
13	.8	.7	2.4	b 2.0	28	14	36	4.9	2.8	1.0	.7	1.6
14	.8	.9	1.1	b 1.0	22	14	28	4.1	2.2	1.2	.8	1.4
15	.8	2.5	.5	b .7	17	12	70	4.1	2.0	2.0	.7	75
16	.8	33	1.4	b .5	15	10	66	4.5	2.0	1.2	.7	23
17	.8	3.2	b 1.0	b .6	12	18	38	4.1	2.0	2.0	.7	11
18	2.5	1.6	b .3	b 1.0	12	16	26	4.1	2.0	1.6	13	2.8
19	5.0	b 1.0	1.1	b 2.0	10	b 7.0	19	4.5	2.0	1.0	1.8	1.8
20	1.5	b .6	2.4	b 4.0	8.0	b 5.0	14	4.1	2.0	.7	.8	1.2
21	1.0	b .3	1.8	b 8.0	b 7.0	b 6.0	13	3.4	1.8	.7	.7	6.0
22	.9	b .3	1.8	20	b 6.0	7.1	10	3.4	1.8	.6	.7	23
23	.8	b .3	2.1	35	b 5.0	31	12	3.1	1.6	.6	.8	4.5
24	.8	.5	16	49	b 5.5	33	45	2.5	1.6	.6	.8	2.5
25	.8	.7	8.5	*23	b 6.0	21	164	4.9	1.4	.5	.7	2.0
26	.8	.4	3.9	21	b 3.5	15	81	11.0	1.4	.4	4.1	1.4
27	.8	.3	2.6	b 7.0	b 4.5	12	43	17	1.2	.4	4.1	1.4
28	.9	3.9	1.8	b 3.5	b 15	12	30	4.5	14	.4	2.8	1.4
29	1.1	1.1	1.8	b 3.2		13	23	3.4	10	.4	1.0	1.6
30	.8	.2	1.8	b 3.2	------	9.9	18	2.8	12	*.5	.8	2.5
31	.7	------	1.8	b 3.2	------	8.9	------	2.8	------	.8	3.4	------
Total	30.6	59.5	71.2	346.7	1,017.7	821.9	1,624.0	194.2	160.3	63.0	55.2	178.8
Mean	0.99	1.98	2.30	11.2	36.3	26.5	54.1	6.26	5.34	2.03	1.78	5.96
Cfsm	0.053	0.106	0.123	0.602	1.95	1.42	2.91	0.337	0.287	0.109	0.096	0.320
In.	0.06	0.12	0.14	0.69	2.03	1.64	3.25	0.39	0.32	0.13	0.11	0.36

Calendar year 1964: Max 831 Min 0.1 Mean 17.0 Cfsm 0.914 In. 12.41
Water year 1964-65: Max 542 Min 0.2 Mean 12.7 Cfsm 0.683 In. 9.24

Peak discharge (base, 450 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0600	5.85	1,160				
4-6	0500	4.44	610				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 9 to Nov. 2.

3-3537. West Fork White Lick Creek at Danville, Ind.

Location.--Lat 39°45'36", long 86°30'47", in NW¼NE¼ sec. 10, T. 15 N., R. 1 W., on upstream side of U. S. 36 highway bridge, 0.1 mile east of city limits of Danville, 0.5 mile upstream from unnamed tributary from left, and 7 miles west of Avon.

Drainage area.--28.9 sq mi.

Records available.--May 1958 to September 1965.

Gage.--Wire-weight gage read twice daily. Type-A recorder since July 14, 1965 and crest-stage gage since Dec. 10, 1959. Datum of the gage is 828.83 ft above mean sea level, datum of 1929.

Average discharge.--7 years, 73.9 cfs.

Extremes.--Maximum discharge during year, 2,570 cfs Apr. 6 (gage height, 9.78 ft); no flow many days.
1958-65: Maximum discharge, 3,330 cfs July 14, 1962 (gage height, 11.32 ft); no flow many days.
Maximum flood known, 6,660 cfs June 28, 1957 (gage height, 16.0 ft, from floodmark), from contracted-opening measurement.

Remarks.--Records poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 19 to Nov. 7)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30			
0.59	0	1.0	5.0	0.5	0	1.3	20
.6	.1	1.3	16	.6	.4	1.8	54
.7	.4	1.6	34	.7	1.4	2.5	130
.8	1.2	2.0	70	.8	2.8	3.0	210
.9	2.6	2.5	135	.9	4.6	4.0	445
				1.0	7.2	5.0	770

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.1	a 1.0	2.0	*111	a 16	28	3.1	1.6	a 0.3	0.4
2		* 0	.1	a 7.0	1.7	124	14	23	*10	11	.3	.2
3		0	.2	5.0	1.6	68	14	17	5.1	8.7	.2	.1
4		0	.3	2.8	*1.5	117	14	15	3.8	a6.0	.6	.3
5		0	.2	1.7	1.5	68	99	15	3.1	a4.0	.8	a.2
6		0	.1	1.6	6.8	48	*605	19	2.6	2.4	.4	.1
7		0	.1	1.1	30	49	168	20	7.2	6.2	.8	.1
8		0	.1	1.3	23	46	99	14	5.4	2.1	a .8	0
9		0	.1	2.6	100	39	145	13	4.2	*3.4	.8	0
10		0	.1	2.3	*445	31	72	11	3.8	3.4	.6	0
11		0	1.4	1.6	124	29	82	9.5	3.2	1.7	.3	.3
12		0	.7	1.4	77	27	99	9.1	2.8	1.1	.3	.6
13		0	.5	1.0	44	23	54	7.2	2.8	.8	.2	.3
14		0	a .2	1.0	38	26	45	6.2	2.1	.9	.2	.1
15		0	.1	a .9	26	21	77	6.2	1.6	.8	.1	62
16		.2	.1	a .8	22	20	77	5.6	1.6	.8	.1	16
17		.1	.1	a .7	21	38	51	4.9	1.5	20	.1	13
18		.1	a .1	a .7	19	29	a 40	5.1	1.4	2.1	a 1.5	4.9
19		a .1	.1	a .7	15	26	31	4.4	1.1	.9	1.1	2.0
20		a .1	.1	a .7	14	27	26	3.4	1.0	.8	.5	1.1
21		.2	.1	1.2	b 13	20	21	3.4	.9	.6	.3	1.6
22		0	.1	a 4.0	b 11	14	17	3.0	.9	.4	.1	2.9
23		a 0	.2	a10	b 9.0	34	26	3.0	.9	.5	.1	2.0
24		0	.1	34	b 7.0	43	72	2.9	.9	.5	.1	.6
25		.1	a .5	21	a 5.0	29	a120	3.8	.7	a .4	.1	.4
26		a .1	1.4	25	a 4.0	24	105	4.6	.6	a .4	1.6	.3
27		0	a 1.0	11	a 3.0	18	62	40	a .6	a .3	2.4	.2
28		.4	a .5	10	20	20	a 50	15	.6	a .3	.8	*.1
29		.1	a .4	8.8		* 23	a 40	6.2	2.4	a .2	a .5	.1
30		* .1	a .3	3.2	- - - - -	19	* 36	5.1	2.1	a .2	.2	.3
31		- - - - -	a .3	a 2.5	- - - - -	18	- - - - -	a 4.0	- - - -	a .3	* 1.4	- - - - -
Total	0	1.6	9.7	166.6	1,085.1	1,229	2,377	327.6	78.0	82.8	17.6	110.2
Mean	0	0.05	0.31	5.37	38.8	39.6	79.2	10.6	2.60	2.67	0.57	3.67
Cfsm	0	0.0017	0.011	0.186	1.34	1.37	2.74	0.367	0.090	0.092	0.020	0.127
In.	0	0.002	0.01	0.21	1.40	1.58	3.06	0.42	0.10	0.11	0.02	0.14

Calendar year 1964: Max 1,060 Min 0 Mean 19.9 Cfsm 0.689 In. 9.38
Water year 1964-65: Max 605 Min 0 Mean 15.0 Cfsm 0.519 In. 7.05

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0200	5.51	955				
4-6	0130	9.78	2,570				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3538. White Lick Creek at Mooresville, Ind.

Location.--Lat 39°36'28", long 86°22'56", in SE¼ sec. 35, T. 14 N., R. 1 E., on right bank at downstream side of bridge on State Highway 42 at Mooresville, 1.0 mile downstream from McCracken Creek and 2.0 miles upstream from East Fork White Lick Creek.

Drainage area.--212 sq mi.

Records available.--August 1957 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 644.64 ft above mean sea level, datum of 1929. Dec. 10, 1963 to Sept. 30, 1964, wire-weight gage at bridge 1,950 ft upstream at datum 1.39 ft higher.

Average discharge.--8 years, 198 cfs.

Extremes.--Maximum discharge during year, 5,620 cfs Feb. 10 (gage height, 18.60 ft); minimum, 3.2 cfs Oct. 5 (gage height, 7.27 ft).
1957-65: Maximum discharge, 18,000 cfs Mar. 4, 1963 (gage height, 22.95 ft); minimum daily, 2.0 cfs Dec. 24, 25, 1960.
Flood of June 28, 1957, reached a stage of 22.5 ft, from levels to high-water mark by Indiana Flood Control and Water Resources Commission.

Remarks.--Records fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 6 to Sept. 30)

7.27	3.2	9.0	142
7.3	4.0	9.5	225
7.4	7.5	10.0	360
7.6	17.5	14.0	2,550
8.0	47	16.0	3,800
8.5	88		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 4.4	6.1	9.8	74	*b 40	*a 700	*g 136	245	*43	*47	14	13
2	4.4	6.1	11	142	37	1,150	g 136	215	51	71	*14	12
3	4.4	* 6.8	15	84	35	590	g 136	196	49	63	12	11
4	4.0	6.8	15	*59	34	1,100	g 130	178	46	42	16	11
5	3.5	6.8	14	47	b 34	650	g 162	178	43	33	14	12
6	3.5	6.8	11	39	44	360	*g 2,550	170	45	29	12	11
7	4.0	6.8	9.8	35	97	340	g 1,150	196	51	33	16	11
8	5.0	6.8	9.8	33	155	305	g 740	170	48	36	13	11
9	5.0	6.8	9.8	45	690	255	g 1,500	148	44	39	13	9.8
10	5.8	6.8	9.8	45	*g 3,270	205	g 770	148	44	39	12	8.8
11	5.4	7.2	14	39	*g 1,050	215	620	136	45	33	11	10
12	5.0	6.8	17	36	a 450	178	830	130	49	27	9.8	16
13	5.4	5.8	16	31	a 250	170	500	130	45	25	8.8	12
14	6.1	6.1	13	b 25	a 220	170	340	112	43	23	8.0	10
15	a 6.0	8.0	11	b 20	g 196	g 162	590	107	42	21	7.5	7.4
16	6.8	37	11	b 15	*g 178	g 155	g 830	102	42	21	7.2	52
17	6.1	19	11	b 14	a 160	g 187	g 470	92	41	66	7.2	53
18	a 8.0	16	12	b 13	a 140	g 196	g 305	92	41	41	7.2	30
19	12	14	8.4	b 13	a 120	g 148	g 255	88	40	25	10	21
20	8.0	13	8.4	b 13	a 110	g 136	g 235	79	40	22	10	18
21	6.8	9.8	8.8	b 14	a 100	g 136	g 215	75	39	20	8.8	18
22	6.4	8.8	11	b 17	a 90	g 130	g 215	71	40	19	7.2	28
23	a 6.4	8.4	9.8	b 59	a 85	g 189	g 215	67	40	18	6.8	23
24	a 6.4	8.4	17	205	a 80	g 278	g 650	63	39	18	6.8	18
25	a 7.0	8.8	34	148	a 76	g 196	1,550	67	36	17	7.2	16
26	a 7.0	8.8	21	130	a 72	g 178	1,150	71	34	15	10	15
27	a 7.0	8.4	16	92	a 70	g 155	620	118	30	14	10	14
28	6.8	16	14	71	a 150	g 148	440	84	34	14	8.8	14
29	6.4	11	13	b 60		g 148	360	63	49	13	8.0	13
30	* 6.1	* 9.8	12	b 50	------	g 136	* 290	53	42	12	7.5	14
31	6.1	------	11	b 45	------	g 136	------	48	------	13	* 10	------
Total	185.2	297.7	404.4	1,713	8,033	9,202	18,090	3,692	1,275	909	313.8	579.6
Mean	5.97	9.92	13.0	55.3	287	297	603	119	42.5	29.3	10.1	19.3
Cfsm	0.028	0.047	0.061	0.261	1.35	1.40	2.84	0.561	0.200	0.138	0.048	0.091
In.	0.03	0.05	0.07	0.30	1.41	1.61	3.17	0.65	0.22	0.16	0.06	0.10

Calendar year 1964: Max 10,500 Min 3.2 Mean 189 Cfsm 0.892 In. 12.10
Water year 1964-65: Max 3,270 Min 3.5 Mean 122 Cfsm 0.575 In. 7.83

Peak discharge (base, 2,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0500	18.60	5,620				
4-6	0700	15.68	3,590				
4-25	1130	14.02	2,550				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.
g Computed from twice-daily wire-weight gage readings.

3-3540. White River near Centerton, Ind.

Location.--Lat 39°30'02", long 86°24'24", in SW¼SE¼ sec. 3, T. 12 N., R. 1 E., on right bank three-eights of a mile downstream from highway bridge, 1 mile south of Centerton, 1 1/8 miles downstream from White Lick Creek, and at mile 202.6.

Drainage area.--2,435 sq mi.

Records available.--October 1930 to March 1932, October 1946 to September 1965. Prior to March 1932, published as West Fork White River at Martinsville and November 1946 to September 1948, published as West Fork White River near Centerton. Monthly discharge only for October 1947, published in WSP 1305. Daily chain-gage readings of gage height from July 1925 to September 1930 are available in the district office. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder (digital). Datum of gage is 595.44 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark), levels by Indianapolis Power and Light Co. Prior to March 1932, chain gage at site 8½ miles downstream at datum 17.72 ft lower. November 1946 to July 1953, wire-weight gage three-eights of a mile upstream at present datum.

Average discharge.--20 years (1930-31, 1946-65) 2,325 cfs (unadjusted).

Extremes.--Maximum discharge during year, 15,500 cfs Feb. 11; maximum gage-height, 12.00 ft Feb. 10 (backwater from ice); minimum discharge, 232 cfs Nov. 10; minimum gage-height, 1.04 ft Sept. 7.

1930-32, 1946-65: Maximum discharge, 50,500 cfs Apr. 22, 1964; minimum, 131 cfs Nov. 15, 1930; minimum gage height, 0.43 ft Oct. 4, 5, 1954.

Flood in March 1913 reached a stage of 22.8 ft at Martinsville site, from information by State Highway Department of Indiana (discharge, 90,000 cfs, estimated).

Remarks.--Records good. Flow slightly regulated by Morse and Geist Reservoirs (combined capacity, 13,800,000,000 gal). Records of suspended sediment loads for water year 1965 published in Part 2 of this report.

Rating tables except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 16)

Oct. 1 to Jan. 1		Jan. 2 to Feb. 9		Feb. 10 to Sept. 30			
1.4	340	1.6	420	1.0	290	7.0	7,100
2.0	780	2.0	710	2.0	980	9.0	10,200
3.0	1,940	5.0	4,380	3.0	1,920	12.0	16,200

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 304	289	340	1,030	* 1,010	* 3,850	* 2,290	3,410	* 980	* 810	426	478
2	292	* 272	352	2,970	930	7,000	2,180	2,920	1,060	940	* 459	420
3	298	307	460	1,820	834	8,110	2,100	* 2,500	1,120	1,180	413	358
4	281	306	454	* 1,340	740	9,840	1,970	2,220	1,490	750	426	346
5	267	285	454	1,150	692	9,820	1,940	2,090	1,350	660	537	335
6	295	272	382	975	714	8,930	7,820	1,970	1,160	572	433	330
7	291	272	346	836	1,360	8,360	9,550	2,020	1,430	743	420	305
8	282	271	370	757	2,120	7,180	9,040	2,010	1,150	780	420	325
9	297	243	370	896	3,990	6,190	11,800	1,840	1,030	1,020	407	320
10	285	275	358	917	b 10,000	5,290	14,100	1,730	956	1,120	400	315
11	266	309	400	902	b 15,000	4,410	9,680	1,720	948	705	388	330
12	256	295	495	885	14,800	3,780	8,630	1,610	908	615	394	517
13	280	305	412	782	12,200	3,370	8,680	1,490	810	579	382	465
14	280	302	412	689	7,060	3,050	8,680	1,390	735	524	382	376
15	279	291	424	645	4,650	2,870	7,220	1,310	705	524	366	1,410
16	282	988	400	573	3,670	2,650	7,760	1,220	683	504	420	1,230
17	293	842	394	465	3,080	2,620	6,300	1,150	675	698	446	1,940
18	280	472	364	493	2,730	2,780	5,120	1,290	638	795	426	1,310
19	349	479	340	511	2,440	2,790	4,160	1,400	608	825	728	948
20	329	483	322	507	2,230	2,450	3,480	1,120	572	705	517	818
21	304	414	310	498	2,050	2,140	3,000	1,050	530	586	433	750
22	321	361	334	503	1,950	1,960	2,650	989	537	524	394	1,770
23	306	339	340	980	1,850	1,970	2,590	948	524	498	370	1,180
24	304	354	352	3,070	1,750	3,150	3,630	893	524	472	376	1,110
25	275	355	1,150	2,790	1,610	3,910	6,250	1,280	517	478	352	964
26	244	351	726	3,000	1,410	3,730	8,320	1,390	504	439	376	810
27	294	314	682	2,680	1,450	3,020	7,880	1,730	465	* 439	498	698
28	308	358	578	2,180	1,770	2,550	7,210	1,680	459	400	472	645
29	304	421	516	1,700	------	2,370	5,340	1,590	803	382	382	593
30	283	* 340	481	1,350	------	2,340	4,090	1,340	870	394	* 340	572
31	296	------	454	1,120	------	2,410	------	1,120	------	388	376	------
TOTAL	9,025	11,165	13,772	39,014	104,090	134,690	183,860	50,420	24,741	20,049	13,181	21,968
MEAN	291	372	444	1,259	3,718	4,351	6,129	1,626	825	647	425	732
CFSM	.120	.153	.182	.517	1.53	1.79	2.52	.668	.339	.266	.175	.301
IN	.14	.17	.21	.60	1.59	2.06	2.81	.77	.38	.31	.20	.34

CALENDAR YEAR 1964 MAX 47,100 MIN 243 MEAN 2,211 CFSM .908 INCHES 12.36
WATER YEAR 1964-65 MAX 15,000 MIN 243 MEAN 1,716 CFSM .705 INCHES 9.56

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3545. Bean Blossom Creek at Bean Blossom, Ind.

Location.--Lat 39°15'45", long 86°14'55", in NW¼ sec. 31, T. 10 N., R. 3 E., on right bank, 15 ft downstream from bridge on State Highway 135, 0.3 mile south of Bean Blossom, and 2.5 miles upstream from North Fork Bean Blossom Creek.

Drainage area.--14.6 sq mi.

Records available.--October 1951 to September 1965.

Gage.--Water-stage recorder (digital to Jan. 21, 1965). Datum of gage is 673.65 ft above mean sea level, datum of 1929.

Average discharge.--14 years, 14.9 cfs.

Extremes.--Maximum discharge during year, 1,300 cfs Feb. 10 (gage height, 7.25 ft); no flow for many days.
1951-65: Maximum discharge, 8,140 cfs June 23, 1960 (gage height, 11.78 ft), from curve extended above 2,000 cfs on basis of contracted-opening measurement; no flow for many days in most years.

Remarks.--Records fair.

Rating tables, except periods of ice effect or indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 8				Feb. 9 to Apr. 15				Apr. 16 to Sept. 30			
1.6	0	2.2	6.8	0.9	0	2.2	81	0.85	0	1.4	12
1.7	.2	2.4	12	1.0	3.6	2.8	155	.9	.1	1.6	24
1.8	.8	2.6	18	1.1	6.6	3.5	275	1.0	.7	2.0	61
1.9	1.9	2.8	27	1.2	11	4.0	375	1.1	2.0	2.5	137
2.0	3.3	3.0	38	1.4	21	5.0	615	1.2	4.0	3.0	233
2.1	4.9	3.4	70	1.8	44						

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	0.3	3.0	152	10	9.3	0.8	0.2	0.1	1.7
2			.1	.3	2.0	86	*9.2	7.5	1.2	1.7	.1	1.1
3			.3	5.0	1.0	36	8.4	6.7	.9	1.1	0	.6
4			.2	3.0	e1.0	95	7.9	5.3	.7	.4	0	.6
5			.2	2.5	e6.0	38	18	5.0	.6	.2	0	1.1
6			.1	.7	e7.0	28	134	7.3	1.7	.1	.1	.8
7			.1	.7	be 55	23	43	7.1	2.4	4.1	1.1	.2
8			.1	.5	*e 30	20	178	5.0	1.4	1.1	2.9	.2
9			* .1	*2.6	237	18	* 144	3.6	1.3	.9	2.0	.1
10			.1	1.8	*403	14	* 56	3.1	1.2	1.2	.6	*0
11			.4	1.1	46	12	50	2.7	1.1	.6	.5	42
12			.5	5.0	30	10	* 50	2.4	.8	.3	.2	102
13	*		.6	.7	20	9.2	35	2.0	.5	.2	.2	8.4
14			* .5	.4	14	9.2	30	1.9	.4	.1	.1	3.6
15			.3	.3	*12	* 7.9	128	1.7	.3	0	0	62
16			.1	.2	8.8	7.0	87	1.7	.3	0	0	11
17			.1	.2	7.9	12	38	*1.3	.3	2.8	* 0	7.5
18			.1	.2	7.0	13	24	6.8	.3	14	0	3.8
19		*	.1	.2	6.0	9.7	17	3.1	.2	* 2.9	.6	2.2
20			.1	.2	5.0	9.2	13	2.0	.1	1.7	0	2.5
21		*	.1	* .4	4.7	8.4	11	1.7	.1	1.2	0	66
22			.1	.5	4.7	7.9	9.8	1.4	*.1	1.1	0	136
23		*	.2	e 35	4.4	14	8.8	1.3	.1	.8	0	16
24			.5	*be 40	b 4.1	20	9.3	1.2	0	.6	0	8.4
25			.6	e 18	b 3.8	18	* 190	1.4	0	.1	0	5.0
26			.5	9.0	b 3.6	20	68	2.2	0	.1	0	3.6
27			.3	8.0	b 3.5	16	30	2.0	0	0	16	2.9
28			.3	7.0	b 17	14	20	1.3	0	0	2.0	2.7
29			.3	6.0		15	14	1.2	.5	0	1.1	2.5
30			* .3	5.0		12	11	1.1	.4	0	.6	3.1
31			.2	4.0		11		.9		0	.6	
Total	0	0	7.5	158.8	947.5	765.5	1,452.4	101.2	17.7	37.5	28.8	497.6
Mean	0	0	0.24	5.12	33.8	24.7	48.4	3.26	0.590	1.21	0.929	16.6
Cfsm	0	0	0.016	0.351	2.32	1.69	3.32	0.223	0.040	0.083	0.064	1.14
In.	0	0	0.02	0.40	2.42	1.95	3.70	0.26	0.04	0.10	0.07	1.27

Calendar year 1964 : Max 1,110 Min 0 Mean 8.97 Cfsm 0.614 In. 8.34
Water year 1964-65 : Max 403 Min 0 Mean 11.0 Cfsm 0.753 In. 10.23

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0100	7.25	1,300				
4-8	2200	6.73	1,130				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
e Stage-discharge relation indefinite.
Note.--No gage-height record Dec. 1 to Jan. 22, Jan. 26 to Feb. 3. Discharge computed from twice-daily readings of wire-weight gage June 19-28, July 1, 5, 6, 13-16, July 25 to Aug. 6, Aug. 12-18, 20-26, Sept. 7-10.

3-3550. Bear Creek near Trevlac, Ind.

Location.--Lat 39°16'40", long 86°20'45", in NE¼ sec. 30, T. 10 N., R. 2 E., on left bank, 15 ft west of county road at footbridge, 1.1 miles northwest of Trevlac, and 1.3 miles upstream from mouth.

Drainage area.--7.00 sq mi.

Records available.--May 1952 to September 1965.

Gage.--Water-stage recorder. Altitude of gage is 640 ft (from topographic map).

Average discharge.--13 years, 6.27 cfs.

Extremes.--Maximum discharge during year, 412 cfs Feb. 10 (gage height, 4.50 ft); no flow for many days.
1952-65: Maximum discharge, 1,830 cfs June 12, 1957 (gage height, 7.62 ft), from rating curve extended above 290 cfs on basis of slope-area measurement of peak flow at gage height, 6.43 ft; no flow for many days.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.4	0	1.7	0.1	126	3.6	1.7	0	0	0.2	0.2
2	0	.3	0	2.7	.1	88	* 3.6	1.3	0	.4	.1	.1
3	0	.2	.2	1.9	.1	49	3.2	1.0	0	.1	0	.1
4	0	.2	.1	1.5	.1	117	2.9	.8	0	0	.2	.1
5	0	.1	.1	1.3	.1	74	8.6	1.0	0	0	.1	.2
6	0	.1	0	1.2	.1	21	17	1.0	0	0	.1	.1
7	0	0	0	1.2	.1	11	6.5	.8	0	.1	.7	.1
8	0	0	0	1.2	* 13	8.6	80	.8	0	.1	2.2	.1
9	0	0	0	* 1.7	109	7.6	*67	.7	0	.1	1.2	.1
10	0	0	0	1.5	* 132	6.2	*22	.6	0	0	.5	* .2
11	0	0	.1	1.3	26	4.7	22	.5	0	0	.2	19
12	0	0	.4	b .9	14	3.9	*24	.4	0	0	.2	67
13	* 0	0	.4	b .6	7.9	3.2	3.6	.4	0	0	.1	3.4
14	0	0	* .4	b .3	5.6	3.2	2.3	.4	0	0	.1	1.3
15	0	.5	.1	b .2	*4.4	*3.0	68	.4	0	0	.1	29
16	0	.8	.1	b .2	4.5	2.5	50	.4	0	0	.1	30
17	0	.7	.1	b .2	2.9	2.0	26	* .4	0	5.4	* 0	5.4
18	0	.7	.1	b .2	2.7	1.5	4.6	.5	0	6.5	.1	1.3
19	0	* .6	.1	b .2	2.2	1.3	2.5	.2	0	*2.5	.6	.7
20	0	.3	.1	b .2	1.9	1.3	2.1	.1	0	1.0	.1	.5
21	0	* .1	.1	* .5	1.8	1.2	1.3	0	0	.6	0	8.8
22	0	0	.1	.7	1.7	2.0	1.3	0	* 0	.4	0	24
23	0	0	.2	b 40	1.6	3.4	1.3	0	0	.3	0	2.5
24	0	0	1.3	*22	1.5	5.6	1.3	0	0	.2	0	1.0
25	0	0	3.4	.9	b 1.4	5.9	126	.4	0	.1	0	.6
26	0	0	2.5	.6	b 1.4	6.8	63	.5	0	0	.7	.5
27	0	0	1.7	.2	6.5	6.8	33	.4	0	0	15	.3
28	.6	0	1.0	.1	47	5.9	21	.1	0	.1	.4	.2
29	1.0	0	.7	.1		5.9	11	0	0	0	.1	.2
30	.8	0	.6	.1	- - - - -	5.0	2.5	0	.1	0	.1	.2
31	.6	- - - - -	.3	.1	- - - - -	4.2	- - - - -	0	- - - - -	0	.1	- - - - -
Total	3.0	5.0	14.2	85.5	389.7	587.7	681.2	14.8	0.1	17.9	23.3	197.2
Mean	0.10	0.17	0.46	2.76	13.9	19.0	22.7	0.48	0.003	0.58	0.75	6.57
Cfsm	0.014	0.024	0.066	0.394	1.98	2.71	3.24	0.069	0	0.083	0.107	0.939
In.	0.02	0.03	0.08	0.45	2.06	3.12	3.62	0.08	0	0.10	0.12	1.05

Calendar year 1964 : Max 230 Min 0 Mean 3.84 Cfsm 0.549 In. 7.48
Water year 1964-65 : Max 132 Min 0 Mean 5.53 Cfsm 0.790 In. 10.73

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0200	4.50	412				
4-8	2030	4.12	328				
4-25	1300	3.67	236				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 1-28, Oct. 30 to Nov. 15, Nov. 17 to Dec. 2, Dec. 4-14, Feb. 1-7, 19-24, Mar. 20-23, June 14-28.

3-3560. Bean Blossom Creek at Dolan, Ind.

Location.--Lat 39°14'30", long 86°29'57", in SW¼ sec. 2, T. 9 N., R. 1 W., on downstream side of pier of highway bridge at Dolan, 5 3/4 miles northeast of Bloomington, and 17.5 miles upstream from mouth.

Drainage area.--100 sq mi.

Records available.--April 1946 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 576.41 ft above mean sea level, unadjusted. Prior to Sept. 28, 1951, wire-weight gage at same site and datum.

Average discharge.--19 years, 112 cfs (unadjusted).

Extremes.--Maximum discharge during year, 1,500 cfs Feb. 10 (gage height, 12.17 ft); minimum, 8.8 cfs Nov. 21, 22 (gage height, 1.61 ft).
1946-65: Maximum discharge, 9,420 cfs June 2, 1947; maximum gage height, 17.9 ft Jan. 5, 1949; no flow at times during 1946-49, 1953.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated since April 1953 by Lake Lemon (capacity, 4,640,000,000 gal) 8.1 miles upstream.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9		Feb. 10 to Sept. 30	
1.7	11	1.8	16
1.8	14	2.0	27
2.0	22	2.5	65
2.5	52	3.0	110
3.0	92	4.0	215
4.0	190	5.0	335
5.0	320	7.0	610
		9.0	910
		10.0	1,060

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	24	16	15	12	401	69	105	18	18	18	18
2	14	*26	17	20	12	730	65	86	*19	25	17	16
3	13	26	18	20	12	540	73	73	18	22	16	*16
4	13	25	17	18	12	655	57	*61	18	18	*18	18
5	13	25	16	16	*13	582	53	57	18	18	16	18
6	13	26	16	16	14	322	236	55	20	18	16	18
7	13	18	16	*15	45	226	414	61	23	27	17	18
8	13	15	16	14	52	*182	322	57	20	21	20	18
9	13	16	16	13	265	140	929	51	18	*20	19	18
10	13	16	14	13	1,020	110	590	43	24	18	17	18
11	14	16	15	12	140	96	348	35	34	18	16	51
12	14	16	15	12	78	82	272	32	22	18	16	156
13	14	16	14	12	51	69	226	27	20	18	16	51
14	13	16	14	12	40	65	182	25	19	18	16	18
15	13	17	13	12	35	61	372	24	18	18	17	100
16	13	18	14	12	33	55	715	23	18	18	17	150
17	13	17	14	12	32	74	442	19	18	21	16	150
18	15	16	13	12	28	55	272	19	18	19	17	100
19	17	17	17	12	25	55	193	24	18	18	18	73
20	18	16	13	13	24	55	140	22	18	18	17	55
21	18	12	13	13	23	52	110	21	18	17	16	67
22	26	11	13	14	23	51	91	19	18	17	18	430
23	26	13	14	51	24	55	82	18	18	17	18	280
24	26	13	14	120	26	69	100	18	18	17	16	150
25	26	15	15	38	29	82	711	20	18	17	16	96
26	25	16	14	26	32	96	993	25	18	16	18	65
27	25	16	14	20	36	96	470	27	18	16	50	53
28	26	17	14	17	77	91	260	22	18	16	25	40
29	26	17	14	15		91	182	20	20	16	18	33
30	25	*16	14	14	------	*86	130	18	18	16	17	36
31	25	------	13	13	------	78	------	18	------	16	17	------
Total	550	528	456	622	2,213	5,402	9,099	1,125	581	570	569	2,330
Mean	17.7	17.6	14.7	20.1	79.0	174	303	36.3	19.4	18.4	18.4	77.7
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
(≠)	-17.7	-12.4	-1.6	+11.9	+133	-3	0	-9.8	-18.5	-9.8	-3.3	+40.3

Calendar year 1964 : Max 2,000 Min 11 Mean 65.6 Cfsm 0.656 In. 8.93 ≠ 0.4
Water year 1964-65 : Max 1,020 Min 11 Mean 65.9 Cfsm 0.659 In. 8.94 ≠ 8.2

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0600	12.17	1,500				

* Discharge measurement made on this day.
≠ Change in contents, equivalent in cubic feet per second, in Lake Lemon (formerly known as Bloomington Reservoir).
Note.--Stage-discharge relation affected by ice Jan. 9-12, 16-20, 30, Feb. 1-6, 19-21, 23-26, Mar. 19.

3-3570. White River at Spencer, Ind.

Location.--Lat 39°16'49", long 86°45'42", in sec. 29, T. 10 N., R. 3 W., on right bank at downstream side of highway bridge at Spencer, 3.3 miles upstream from McBrides Creek and at mile 165.9.

Drainage area.--2,980 sq mi.

Records available.--July 1925 to September 1965. Monthly discharge only for some periods, published in WSP 1305. Prior to October 1948, published as West Fork White River at Spencer.

Gage.--Water-stage recorder. Datum of gage is 526.04 ft above mean sea level, datum of 1929. Prior to Dec. 26, 1940, wire-weight gage at same site and datum.

Average discharge.--40 years, 3,002 cfs, (unadjusted).

Extremes.--Maximum discharge during year, 19,600 cfs Feb. 12 (gage height, 17.79 ft); minimum, 310 cfs Nov. 10, 11; minimum gage height, 2.00 ft Sept. 10, 11.
1925-65: Maximum discharge, 59,400 cfs May 15, 1933, Jan. 16, 1937 (gage height, 23.2 ft); minimum, 133 cfs Sept. 25, 30, 1941; minimum gage height, 0.88 ft Sept. 25, 30, Oct. 1, 1941.
Maximum stage known, 28.5 ft Mar. 26, 1913, from floodmarks (discharge, 100,000 cfs, estimated).

Remarks.--Records good. Flow slightly regulated by three reservoirs above station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 3 to Jan. 1, Jan. 6-23)

Oct. 1 to Jan. 24		Jan. 25 to Sept. 30			
2.2	294	2.0	430	10.0	6,920
3.0	585	3.0	810	12.0	8,950
4.0	1,110	4.0	1,360	16.0	14,800
5.0	1,840	6.0	2,900	18.0	20,200
6.0	2,800				

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	341	341	408	540	1,360	3,800	2,740	4,700	1,300	1,010	530	495
2	* 357	341	408	2,310	1,240	7,100	2,580	3,900	1,180	1,240	565	530
3	341	341	* 442	2,400	1,180	8,950	2,500	3,440	1,180	1,560	565	495
4	341	* 341	520	1,600	1,060	10,000	2,340	2,990	1,360	1,240	565	460
5	325	341	500	1,320	960	12,100	2,260	2,740	1,560	910	565	460
6	325	341	500	1,110	960	11,800	4,220	2,660	1,420	810	600	460
7	325	325	442	*990	1,120	10,300	9,520	2,500	1,490	810	565	460
8	325	325	425	880	*2,340	9,170	10,400	2,500	1,490	960	565	430
9	325	325	425	830	3,740	7,960	10,700	2,340	1,300	1,120	680	430
10	325	310	425	990	11,700	* 5,800	12,900	2,180	1,240	1,560	600	430
11	325	325	442	930	16,700	5,800	14,400	2,100	1,180	1,180	530	702
12	325	341	480	930	18,700	4,900	11,700	1,940	1,120	910	530	1,010
13	325	341	520	880	16,200	4,200	10,000	1,780	1,060	810	530	1,240
14	341	341	480	780	13,000	3,800	9,760	1,630	910	765	495	765
15	341	357	460	730	7,300	3,530	9,640	1,560	910	720	495	1,020
16	325	390	480	730	5,200	3,260	10,500	1,490	860	680	460	2,020
17	325	822	460	630	4,200	3,080	10,000	1,360	810	810	495	1,940
18	341	680	442	540	3,620	3,170	7,740	1,360	810	1,010	495	2,020
19	341	520	425	562	3,170	3,170	6,100	1,780	765	960	530	1,420
20	357	520	408	562	2,900	2,990	5,000	1,420	720	960	680	1,120
21	374	500	390	540	2,580	2,660	4,200	1,300	720	810	565	1,010
22	357	460	390	540	2,420	2,420	3,620	1,240	680	720	530	1,940
23	357	425	390	680	2,260	2,260	3,350	1,120	680	680	* 495	2,580
24	357	408	425	2,700	2,100	2,740	3,530	1,120	680	640	495	1,700
25	357	408	500	3,530	2,020	3,800	6,100	* 1,300	640	600	460	1,420
26	341	408	990	3,080	1,700	4,200	* 10,000	2,020	640	* 600	495	1,180
27	325	408	730	3,080	1,560	3,800	11,100	2,020	640	600	495	1,010
28	357	408	680	2,580	1,860	3,260	9,760	2,020	* 640	600	720	860
29	* 357	425	630	2,180		2,900	7,850	1,860	960	565	565	* 810
30	357	442	585	1,780	---------	2,740	5,800	1,700	1,010	530	495	720
31	341	----------	540	1,490	---------	* 2,740	----------	1,420	----------	530	495	----------
Total	10,556	12,260	15,342	42,424	133,150	159,400	220,310	63,490	29,955	26,900	16,850	31,137
Mean	341	409	495	1,369	4,755	5,142	7,344	2,048	998	868	544	1,038
Cfsm	0.114	0.137	0.166	0.459	1.60	1.73	2.46	0.687	0.335	0.291	0.183	0.348
In.	0.13	0.15	0.19	0.53	1.67	1.99	2.74	0.79	0.37	0.34	0.21	0.39

Calendar year 1964 : Max 47,100 Min 310 Mean 2,556 Cfsm 0.858 In. 11.68
Water year 1964-65 : Max 18,700 Min 310 Mean 2,087 Cfsm 0.700 In. 9.50

* Discharge measurement made on this day.

3-3575. Big Walnut Creek near Reelsville, Ind.

Location.--Lat 39°32'11", long 86°58'35", in NW¼SE¼ sec. 28, T. 13 N., R. 5 W., on left bank at highway bridge, 1½ miles southwest of Reelsville, and 3 miles upstream from Mill Creek.

Drainage area.--338 sq mi.

Records available.--July 1949 to September 1965. Published as Eel River near Reelsville, October 1952 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 588.24 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to Dec. 10, 1949, wire-weight gage at same site and datum.

Average discharge.--16 years, 334 cfs.

Extremes.--Maximum discharge during year, 6,600 cfs Feb. 10 (gage height, 13.48 ft); minimum, 3.1 cfs Oct. 7 (gage height, 3.26 ft); minimum gage height, 3.02 ft Aug. 25, 26, Sept. 10, 11.
1949-65: Maximum discharge, 30,700 cfs June 28, 1957 (gage height, 18.63 ft); minimum, 1.2 cfs Sept. 8, 1954 (gage height, 1.56 ft).

Remarks.--Records fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 6				Apr. 7 to Sept. 30			
3.27	3.3	4.4	210	3.03	16.9	6.0	990
3.3	3.9	4.7	340	3.1	26	8.0	2,100
3.4	6.1	5.0	490	3.5	82	12.0	4,950
3.5	9.0	6.0	990	3.9	162	14.0	7,200
3.6	15	8.0	2,100	5.0	520		
3.7	28	12.0	4,950				
3.9	75	14.0	7,200				
4.1	125						

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.7	6.6	17	369	b 55	1,340	170	355	118	98	38	30
2	4.5	6.9	17	590	b 45	1,440	175	310	224	* 408	36	25
3	4.3	6.9	21	312	b 40	940	150	280	235	283	31	22
4	3.9	7.5	24	160	b 35	940	142	* 250	* 160	138	36	21
5	3.7	7.5	26	118	b 32	890	167	364	124	95	*39	20
6	3.5	7.5	20	90	b 32	640	* 2,620	340	332	93	36	20
7	3.3	7.8	*17	65	b 85	565	1,610	355	428	88	31	17
8	5.1	8.1	16	60	*b 225	565	990	280	235	92	32	* 18
9	5.4	* 8.4	14	106	1,030	515	1,510	265	162	230	34	17
10	4.9	8.4	13	112	4,570	415	1,090	220	134	257	31	17
11	4.9	8.1	21	*88	1,600	* 335	790	190	118	124	31	26
12	4.7	7.8	36	70	990	295	940	176	110	85	27	36
13	4.3	7.2	36	b35	690	262	640	157	118	72	25	34
14	4.1	7.2	34	b15	540	238	520	145	90	63	25	26
15	3.9	8.1	23	b 9.0	440	242	784	134	85	59	23	375
16	3.7	50	b10	b 9.0	365	214	990	128	82	55	22	206
17	3.5	72	b 7.0	b 8.0	325	238	890	118	77	66	20	182
18	4.3	62	b 6.0	b 8.0	295	365	520	118	74	124	20	92
19	5.4	34	b 6.0	b 8.0	270	250	400	118	72	88	31	63
20	5.4	23	b 6.0	b 9.0	234	178	355	110	71	63	26	51
21	5.1	16	b 7.0	b12	b 180	162	310	102	66	55	25	47
22	4.9	12	10	b25	b 160	160	280	96	66	47	22	84
23	4.9	11	11	306	b 140	234	250	98	66	46	17	74
24	5.4	11	15	640	b 120	565	691	110	63	44	17	59
25	5.4	10	26	490	b 110	415	1,850	361	60	42	17	47
26	5.6	9.9	41	300	b 110	305	* 1,460	882	59	36	21	42
27	5.6	9.4	41	196	b 110	230	840	586	56	34	30	38
28	5.6	13	36	b 120	b 300	210	600	280	114	32	23	35
29	5.8	21	28	b 100		210	520	187	370	32	22	32
30	6.4	18	26	b 80	------	200	420	145	236	29	18	32
31	6.4	------	24	b 70	------	175	------	128	------	29	22	------
Total	148.6	486.3	635.0	4,580.0	13,128	13,733	22,674	7,388	4,205	3,007	828	1,788
Mean	4.79	16.2	20.5	148	469	443	756	238	140	97.0	26.7	59.6
Cfsm	0.014	0.048	0.061	0.438	1.39	1.31	2.24	0.704	0.414	0.287	0.079	0.176
In.	0.02	0.05	0.07	0.51	1.45	1.51	2.50	0.81	0.46	0.33	0.09	0.20

Calendar year 1964: Max 9,300 Min 3.2 Mean 254 Cfsm 0.751 In. 10.23
Water year 1964-65: Max 4,570 Min 3.3 Mean 199 Cfsm 0.589 In. 8.00

Peak discharge (base, 2,800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0600	13.48	6,600				
4-6	1100	9.98	3,450				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3580. Mill Creek near Cataract, Ind.

Location.--Lat 39°26', long 86°46', in SE¼ sec. 32, T. 12 N., R. 3 W., on left bank at downstream side of bridge on State Highway 43, 3 miles east of Cataract.

Drainage area.--241 sq mi.

Records available.--July 1949 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 706.40 ft above mean sea level, datum of 1929. Prior to Nov. 8, 1949, wire-weight gage at same site and datum.

Average discharge.--16 years, 251 cfs.

Extremes.--Maximum discharge during year, 4,260 cfs Feb. 11 (gage height, 15.70 ft); minimum daily, 0.4 cfs Nov. 24 (gage height, 3.20 ft).
1949-65: Maximum discharge, 11,400 cfs June 24, 1960 (gage height, 22.58 ft); minimum, 0.1 cfs Sept. 3, 6, 7, 28, 29, 1954.

Remarks.--Records good above 100 cfs and fair below, except those for October through December, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 25, Mar. 11 to Apr. 4)

2.2	0.4	5.3	164
3.0	1.0	6.0	274
3.1	2.6	8.0	730
3.2	5.0	11.0	1,780
3.5	15	14.0	3,240
3.8	28	15.0	3,830
4.5	76		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	2.4	4.5	97	b 40	1,230	110	150	48	134	13	8.4
2	* 2.8	2.6	4.3	660	b 33	1,180	112	125	68	728	15	11
3	2.8	2.8	* 8.7	298	b 27	629	92	104	79	834	13	9.0
4	2.8	* 3.1	14	126	b 24	1,090	91	90	52	216	13	7.4
5	* 2.8	3.1	15	83	*b 24	700	116	173	42	118	17	7.7
6	2.6	3.3	11	62	b 24	445	1,060	161	72	87	14	9.0
7	2.4	3.3	8.0	* 50	197	431	543	134	193	80	13	7.4
8	2.4	3.3	6.5	45	600	405	306	101	96	86	15	6.2
9	2.4	3.3	5.9	78	1,140	330	390	87	62	175	15	6.8
10	2.4	3.6	5.3	102	*3,750	* 251	229	80	48	269	14	6.5
11	2.6	3.6	6.5	63	3,830	200	217	70	a 43	107	12	10
12	2.8	3.6	14	53	1,570	188	247	63	a 35	62	8.7	35
13	3.3	3.3	16	43	492	168	181	57	a 30	43	7.4	36
14	3.6	2.8	13	24	359	157	143	50	26	36	5.9	23
15	4.0	2.6	8.7	b 16	281	153	432	44	24	32	5.3	316
16	3.8	18	5.0	b 14	229	138	1,130	42	21	30	5.6	143
17	3.6	26	5.3	b 11	210	160	442	41	20	72	5.3	125
18	3.5	10	4.8	b 9.0	192	205	288	38	20	91	5.3	159
19	3.3	4.8	1.8	b 8.0	170	116	210	42	20	48	7.4	30
20	3.3	2.6	.7	b 8.0	143	98	177	38	20	29	9.0	19
21	3.3	2.0	.6	b 13	b 110	98	145	32	a 19	23	8.0	16
22	3.1	.7	.9	b 22	b 80	97	126	29	a 19	20	5.9	122
23	2.8	.5	2.2	122	b 60	114	119	28	a 18	19	* 5.0	96
24	2.6	.4	10	961	b 50	234	413	29	a 17	18	5.3	54
25	2.6	.6	24	512	b 50	178	1,080	* 365	a 15	16	5.3	29
26	2.6	1.0	27	323	b 50	172	* 981	652	13	*14	7.4	21
27	2.8	2.0	18	176	89	140	398	642	13	13	12	16
28	2.8	3.6	12	124	353	149	279	167	*174	12	10	13
29	2.6	6.8	9.4	b 80		158	214	94	941	11	7.4	*12
30	2.2	8.0	7.7	b 60	------	137	178	69	493	9.8	5.9	12
31	2.2	------	7.7	b 45	------	* 113	------	57	------	9.4	5.9	------
Total	89.4	133.7	278.5	4,288.0	14,177	9,864	10,449	3,854	2,741	3,442.2	292.0	1,366.4
Mean	2.88	4.46	8.98	138	506	318	348	124	91.4	111	9.42	45.5
Cfsm	0.012	0.019	0.037	0.573	2.10	1.32	1.44	0.515	0.379	0.461	0.039	0.189
In.	0.01	0.02	0.04	0.66	2.19	1.52	1.61	0.59	0.42	0.53	0.04	0.21

Calendar year 1964: Max 5,680 Min 0.4 Mean 177 Cfsm 0.734 In. 9.97
Water year 1964-65: Max 3,830 Min 0.4 Mean 140 Cfsm 0.581 In. 7.84

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0130	15.70	4,260				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3590. Mill Creek near Manhattan, Ind.

Location.--Lat 39°29', long 86°55', in sec. 11, T. 12 N., R. 5 W., on left bank, 200 ft downstream from Cagles Mill, three-quarters of a mile downstream from Cagles Mill Reservoir, three-quarters of a mile upstream from Deer Creek, and 5 3/4 miles south of Manhattan.

Drainage area.--292 sq mi.

Records available.--May to September 1931 (fragmentary), October 1938 to September 1965. Monthly discharge only for some periods, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage 581.83 ft above mean sea level, datum of 1929. May 3 to Sept. 2, 1931, staff gage on upstream side of mill at datum 7 ft higher. May 3 to Sept. 25, 1939, staff gage on upstream side of mill at datum 6 ft higher. Sept. 26, 1939 to May 12, 1941, chain, wire-weight, and tape gages at present site and datum.

Average discharge.--27 years (1938-65), 286 cfs (unadjusted).

Extremes.--Maximum discharge during year, 2,930 cfs Feb. 19 (gage height, 8.36 ft); maximum gage height, 10.70 ft Feb. 10 (backwater from Deer Creek); minimum daily discharge, 1.7 cfs Oct. 26-28.
1931, 1938-65: Maximum discharge, 8,960 cfs Jan. 5, 1950 (gage height, 18.38 ft); no flow Aug. 7, 1953.

Remarks.--Records fair. Flow regulated since Dec. 20, 1952 by Cagles Mill Reservoir (capacity, 228,100 acre-ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-16, May 27 to June 29. Backwater from Deer Creek Feb. 10, 11, Apr. 6, May 25, 26)

1.16	1.7	2.5	115
1.2	2.5	3.0	232
1.3	5.0	4.0	516
1.4	8.4	6.0	1,430
1.5	12	8.4	2,930
1.7	22		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	2.1	2.1	1.9	2.5	127	* 113	585	284	980	9.6	7.0
2	2.3	2.3	2.1	1.9	2.5	129	115	585	* 284	414	9.6	7.0
3	2.3	2.3	2.1	1.9	* 2.5	123	115	550	147	117	9.6	6.7
4	2.3	2.3	* 2.1	1.9	2.5	123	115	533	79	276	23	7.0
5	2.3	* 2.3	2.1	1.9	2.5	125	218	119	80	352	* 31	7.0
6	2.1	2.3	2.1	* 1.9	6.0	127	184	262	82	* 453	22	6.4
7	2.1	2.5	2.1	1.9	84	127	129	352	80	484	20	6.7
8	2.1	2.5	2.1	1.9	293	127	123	267	220	484	20	6.4
9	2.1	2.3	2.1	2.1	566	127	123	121	205	268	19	* 6.4
10	2.1	2.3	2.1	16	95	1,030	125	121	64	117	19	7.0
11	1.9	2.1	2.1	52	95	* 1,900	125	121	41	117	12	8.4
12	1.9	2.3	2.1	79	95	2,140	127	94	41	117	7.7	15
13	1.9	2.1	2.1	79	96	1,960	127	70	40	278	7.7	19
14	1.9	2.1	2.1	79	96	875	121	70	39	338	7.4	20
15	1.9	2.1	2.1	79	96	77	137	70	31	160	7.4	82
16	210	2.5	2.1	79	96	287	121	70	18	36	7.4	269
17	585	2.5	1.9	79	1,310	180	115	70	18	36	7.4	352
18	585	2.5	1.9	56	2,580	209	115	47	13	83	7.4	352
19	585	2.5	1.9	20	2,790	170	115	39	4.5	115	7.4	110
20	344	2.5	1.9	20	2,790	110	738	37	2.1	65	7.0	6.0
21	1.9	2.5	1.9	20	2,790	110	1,430	60	2.1	33	7.0	3.2
22	1.9	2.3	1.9	20	2,580	110	1,540	68	2.1	32	7.0	4.5
23	1.9	2.1	1.9	33	1,300	110	1,540	45	2.1	17	6.7	13
24	1.9	2.1	1.9	93	121	180	946	35	2.1	9.6	6.7	18
25	1.9	2.1	2.2	112	121	300	425	40	1.9	9.6	5.0	18
26	1.7	2.1	2.5	343	113	150	131	67	1.9	9.2	3.8	61
27	1.7	2.1	1.9	553	82	110	* 123	238	1.9	9.2	5.7	103
28	1.7	2.1	1.9	622	105	110	127	298	7.4	9.2	7.0	72
29	2.1	2.1	1.9	622		220	129	298	345	8.8	6.7	11
30	2.1	2.1	1.9	366	------	180	644	284	622	9.2	6.7	8.4
31	2.1	------	1.9	6.0	------	110	------	284	------	9.6	7.4	------
Total	2,361.4	68.0	63.0	3,445.3	18,312.5	11,763	10,236	5,900	2,761.1	5,446.4	331.3	1,613.1
Mean	76.2	2.27	2.03	111	654	379	341	190	92.0	176	10.7	53.8
(ƒ)	-76.4	+8.40	+16.26	+58.5	+12.6	-8.13	+105.9	-100.8	+31.9	-32.5	0	0

Adjusted for change in contents in Cagles Mill Reservoir

Mean	-0.2	10.67	18.29	169.5	666.6	370.9	446.9	89.2	123.9	143.5	10.7	53.8
Cfsm	-0.00068	0.037	0.063	0.580	2.28	1.27	1.53	0.305	0.424	0.491	0.037	0.184
In.	-0.0008	0.04	0.07	0.67	2.37	1.46	1.71	0.35	0.47	0.57	0.04	0.21

	Observed			Adjusted				
Calendar year 1964 :	Max 2,920	Min 1.7	Mean 224	Mean 219	Cfsm 0.750	In. 10.21	ƒ -5
Water year 1964-65 :	Max 2,790	Min 1.7	Mean 171	Mean 172	Cfsm 0.589	In. 7.96	ƒ +1

* Discharge measurement made on this day.
ƒ Change in contents, equivalent in cubic feet per second, in Cagles Mill Reservoir, furnished by Corps of Engineers.
Note.--No gage-height record Dec. 18 to Jan. 5, Jan. 31 to Feb. 2, Mar. 19-31.

3-3595. Deer Creek near Putnamville, Ind.

Location.--Lat 39°34'04", long 86°52'00", in NW¼ sec. 16, T. 13 N., R. 4 W., on left bank on upstream side of bridge on State Highway 243, 0.4 mile southwest of Putnamville, 0.4 mile downstream from small tributary from left and 0.8 mile downstream from Limestone Creek.

Drainage area.--59.0 sq mi.

Records available.--October 1954 to September 1965.

Gage.--Water-stage recorder (digital). January 1959 to July 1963, wire-weight gage on downstream side of bridge read twice daily, used for gage heights below 1.7 ft. Datum of gage is 630.73 ft above mean sea level, datum of 1929. Prior to July 3, 1957, wire-weight gage at same site and datum.

Average discharge.--11 years, 61.4 cfs.

Extremes.--Maximum discharge during year, 6,080 cfs Feb. 10; maximum gage height, 13.37 ft May 25; minimum daily discharge, 0.3 cfs Oct. 1, 30, 31.
1954-65: Maximum discharge, 10,700 cfs Mar. 4, 1963 (gage height, 12.95 ft); no flow Oct. 1-10, 1954.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.4	2.3	80	b 9.5	314	*34	35	21	60	2.8	1.6
2	.4	.4	4.0	160	b 7.5	180	35	30	*40	* 200	3.5	1.8
3	.4	.4	6.0	70	b 6.5	101	30	27	30	150	3.2	* 1.1
4	.4	.5	7.0	30	b 6.5	223	29	* 25	25	100	6.8	.6
5	.4	.5	4.5	20	b 6.5	99	38	24	20	60	* 5.0	.9
6	.4	.5	3.0	17	48	78	376	23	35	80	2.4	.6
7	.4	.5	* 2.6	14	89	79	110	23	50	60	2.0	.6
8	.4	.5	2.3	21	* 93	78	73	24	35	50	1.3	.6
9	.4	* .5	3.0	28	1,200	64	74	30	25	100	3.8	.7
10	.4	.6	4.0	30	1,760	51	52	35	20	80	3.2	.8
11	.4	.6	7.0	*18	183	* 44	55	* 28	17	50	2.0	3.0
12	.5	.6	6.0	b14	126	42	52	27	15	30	1.6	6.0
13	.5	.5	4.5	b 9.0	76	39	39	24	12	20	1.2	5.0
14	.6	.5	2.5	b 3.5	59	39	35	22	10	10	1.0	4.0
15	.6	2.0	2.2	b 2.1	49	39	224	21	8.0	8.0	.8	55
16	.6	4.0	2.1	b 1.9	44	35	196	20	7.0	7.0	.8	25
17	.6	2.5	1.0	b 1.8	42	45	90	18	6.0	10	.7	40
18	.5	1.5	.6	b 1.8	38	52	67	18	6.0	15	.6	55
19	.5	.9	.6	b 1.8	34	35	54	19	5.0	8.0	5.0	7.0
20	.5	.6	.7	b 1.9	30	30	47	17	5.0	5.0	1.6	5.5
21	.5	.6	.9	b 3.5	b25	28	46	15	5.0	4.0	1.2	8.0
22	.5	.5	1.5	29	b21	28	46	14	4.0	3.8	.8	40
23	.4	.6	5.0	181	b15	50	43	21	4.0	3.2	.5	30
24	.4	.6	10	190	b14	66	65	17	4.0	2.7	.4	20
25	.4	.8	12	69	b14	49	724	150	4.0	2.6	.5	9.0
26	.4	1.4	9.0	56	b18	47	168	300	4.0	2.2	1.7	6.0
27	.4	2.7	5.0	34	b25	40	96	150	4.0	1.8	2.0	4.5
28	.4	3.5	4.0	29	232	40	65	60	10	1.6	1.8	4.0
29	.4	2.2	3.3	b18		42	50	40	100	1.4	1.4	* 3.8
30	.3	2.0	4.0	b14	------	37	40	30	150	1.0	.6	3.8
31	.3	------	15	b11	------	34	------	25	------	1.0	1.0	------
Total	13.6	33.4	135.6	1,160.3	4,271.5	2,128	3,053	1,312	681.0	1,128.3	61.2	343.9
Mean	0.44	1.11	4.37	37.4	153	68.6	102	423	22.7	36.4	1.97	11.5
Cfsm	0.007	0.019	0.074	0.634	2.59	1.16	1.73	0.717	0.385	0.617	0.033	0.195
In.	0.01	0.02	0.09	0.73	2.70	1.34	1.93	0.83	0.43	0.71	0.04	0.22

Calendar year 1964: Max 3,760 Min 0.1 Mean 56.2 Cfsm 0.953 In. 12.96
Water year 1964-65: Max 1,760 Min 0.3 Mean 39.2 Cfsm 0.664 In. 9.05

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0300	9.53	6,080				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 1 to Jan. 10 and Sept. 8-30. Gage heights from twice daily readings of wire-weight gage on upstream side of bridge June 13-27 and July 20 to Sept. 7. Stage-discharge relation indefinite Apr. 28 to Sept. 7.

GPO 826-827-6

3-3600. Eel River at Bowling Green, Ind.

Location.--Lat 39°23'02", long 87°01'12", in NW¼ sec. 24, T. 11 N., R. 6 W., on left bank, 500 ft downstream from bridge on State Highway 46, at Bowling Green, and 0.5 mile downstream from Jordan Creek.

Drainage area.--844 sq mi.

Records available.--January 1931 to September 1965. Prior to October 1934, published as "near Centerpoint."

Gage.--Water-stage recorder. Datum of gage is 548.02 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Jan. 30, 1931, to Nov. 27, 1934, chain gage at site 5½ miles downstream at datum 6.15 ft lower. Nov. 28, 1934, to Nov. 30, 1949, water-stage recorder at site 500 ft upstream from present site at datum 1 ft higher.

Average discharge.--34 years, 837 cfs (adjusted for storage December 1952 to September 1956).

Extremes.--Maximum discharge during year, 9,290 cfs Feb. 10; maximum gage height, 17.65 ft Feb. 10; minimum discharge, 16 cfs Oct. 5-9 (gage height, 0.90 ft). Maximum discharge, 34,000 cfs Jan. 4, 1950 (gage height, 23.53 ft); minimum, 11 cfs Oct. 7, 8, 1954 (gage height, 0.32 ft).
Maximum stage known, about 30.0 ft in 1875, present datum, from information by Corps of Engineers.

Remarks.--Records fair. Flow regulated since Dec. 20, 1952 by Cagles Mill Reservoir (capacity, 228,100 acre-ft).

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Feb..9, 10, 12, 17-23, Mar. 1-3, 10-14, Apr. 6-8, 10, 15, 16, 21, 24-26, May 26, July 2, 3. Stage-discharge relation indefinite Feb. 11)

0.9	16	5.0	1,100
1.0	22	9.0	2,800
1.5	71	13.0	4,950
2.0	158	18.0	8,200
3.0	400		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	21	34	47	b150	2,570	460	1,660	490	1,380	90	57
2	*18	21	34	944	b130	2,530	460	1,580	620	2,420	78	50
3	17	22	*46	520	*b110	1,680	430	1,500	620	1,520	69	45
4	17	*21	47	275	b 92	1,660	400	1,300	375	520	87	43
5	17	21	43	181	b 87	1,620	535	760	312	550	115	46
6	16	21	38	*148	b 86	1,140	3,230	795	674	655	91	45
7	16	21	38	122	247	980	2,320	1,060	1,060	760	78	40
8	16	21	34	111	712	940	1,580	830	620	725	88	38
9	17	21	33	148	2,500	865	1,580	585	585	940	87	37
10	18	21	32	192	7,730	1,160	1,680	520	400	830	78	34
11	18	22	38	181	3,000	2,450	1,140	460	325	400	75	67
12	18	21	48	204	1,760	*2,650	1,220	430	262	325	64	110
13	18	21	48	192	1,220	2,540	1,060	375	227	325	58	84
14	18	20	45	170	900	1,830	795	350	216	430	56	67
15	17	22	39	b120	760	620	1,570	312	192	350	54	743
16	17	46	37	b 70	655	655	2,630	300	170	204	52	575
17	556	67	34	b 70	1,060	690	1,300	288	158	571	49	795
18	655	55	b30	b 70	2,820	690	940	275	148	460	58	520
19	655	49	b26	b 70	3,130	795	795	262	129	312	75	375
20	588	43	b23	b 70	3,120	520	980	238	113	238	71	137
21	92	36	b23	b 76	3,020	460	1,920	216	106	158	61	113
22	37	32	b23	170	2,920	460	2,080	227	101	148	55	216
23	30	30	30	422	2,090	460	2,030	216	108	131	49	216
24	28	28	39	1,070	585	795	2,280	216	98	108	*44	158
25	27	28	44	690	b400	940	3,780	*265	90	96	43	131
26	25	28	49	585	b350	760	2,250	1,930	85	*90	52	120
27	24	28	51	725	b350	550	*1,540	1,540	81	84	56	181
28	23	32	48	795	632	520	1,140	865	*142	79	52	181
29	24	36	44	760		585	980	655	1,140	77	46	*99
30	23	37	41	690	----------	655	1,060	585	980	72	44	79
31	21	----------	39	199	----------	*460	----------	520	----------	70	45	----------
Total	3,084	892	1,178	10,087	40,616	35,230	44,165	21,115	10,627	15,028	2,020	5,402
Mean	99.5	29.7	38.0	325	1,451	1,136	1,472	681	354	485	65.2	180
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
(≠)	-76.4	+8.4	+16.3	+58	+13	-8	+106	-101	+32	-32	0	0

Calendar year 1964 : Max 12,000 Min 16 Mean 636 Cfsm 0.754 In. 10.26 ≠ -5
Water year 1964-65 : Max 7,730 Min 16 Mean 519 Cfsm 0.615 In. 8.35 ≠ +1

* Discharge measurement made on this day.
≠ Change in contents, equivalent in cubic feet per second, in Cagles Mill Reservoir; furnished by Corps of Engineers.
b Stage-discharge relation affected by ice.

3-3605. White River at Newberry, Ind.

Location.--Lat 38°55'42", long 87°01'00", in sec. 25, T. 6 N., R. 6 W., on right bank, 500 ft upstream from bridge on State Highway 57 at Newberry, 2.3 miles downstream from Doans Creek, at mile 118.0.

Drainage area.--4,696 sq mi.

Records available.--September 1928 to September 1965. Prior to October 1948, published as West Fork White River at Newberry.

Gage.--Water-stage recorder (digital). Datum of gage is 465.59 ft above mean sea level, datum of 1929. Prior to Oct. 21, 1928, staff gage at same site and datum.

Average discharge.--37 years, 4,521 cfs (unadjusted).

Extremes.--Maximum discharge during year, 22,500 cfs Feb. 13 (gage height, 16.17 ft); minimum, 341 cfs Nov. 12 (gage height, 0.80 ft).
1928-65: Maximum discharge, 76,900 cfs May 21, 1943 (gage height, 24.19 ft); minimum, 193 cfs Oct. 1, 1941; minimum gage height, 0.29 ft Sept. 30, Oct. 7, 8, 1954.
Maximum stage since at least 1875, 27.5 ft Mar. 27, 1913, from floodmarks by State Highway Department of Indiana (discharge, 130,000 cfs, estimated).

Remarks.--Records fair. Flow slightly regulated by four reservoirs above station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 5, 6, July 23-28)

Oct. 1 to July 28		July 28 to Sept. 30	
0.8	330	0.9	500
.9	385	1.0	575
1.0	445	2.0	1,350
2.0	1,150	3.0	2,240
5.0	4,000	5.0	4,310
7.0	6,350		
12.0	13,400		
17.0	24,800		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	433	409	498	585	b 2,000	5,500	3,710	7,230	2,200	*2,740	806	683
2	433	397	* 503	622	b 1,600	9,200	3,580	6,590	2,160	3,000	813	665
3	433	*403	548	2,380	b 1,400	11,300	3,430	5,870	2,570	6,030	822	690
4	439	396	569	2,780	*b 1,200	12,100	3,290	5,240	2,270	4,870	834	673
5	*445	401	596	*2,010	b 1,100	13,000	3,140	4,710	2,070	2,550	827	743
6	433	412	611	1,610	b 1,100	13,700	4,240	4,060	2,270	2,040	848	686
7	409	403	579	1,390	b 1,300	13,600	8,400	4,010	3,040	2,710	924	611
8	409	389	541	1,230	b 2,500	12,100	11,500	3,940	3,260	3,130	870	579
9	415	383	500	1,160	4,360	*10,700	11,600	3,720	2,540	2,780	1,330	543
10	397	383	486	1,110	13,800	9,190	11,600	3,360	2,200	5,200	1,280	526
11	391	374	519	1,210	19,700	8,050	13,100	3,080	2,400	3,820	959	625
12	397	358	538	1,190	21,100	7,940	14,600	2,920	2,120	2,320	832	2,510
13	397	375	542	1,160	22,400	7,500	13,700	2,740	1,770	1,720	765	2,350
14	391	370	596	1,110	20,900	7,000	11,400	2,540	1,580	1,470	731	1,870
15	397	376	549	1,010	16,900	6,180	11,100	2,360	1,440	1,480	700	2,510
16	403	408	515	883	9,670	4,820	12,700	2,220	1,340	1,360	673	2,580
17	403	433	521	b 800	6,540	4,410	14,200	2,100	1,270	1,460	650	3,100
18	433	681	483	b 700	5,640	4,310	12,800	2,020	1,200	2,420	665	3,060
19	789	813	460	b 700	6,270	4,220	9,550	2,020	1,150	2,090	876	2,820
20	853	659	486	b 700	6,260	4,260	7,470	2,300	1,090	1,630	779	2,250
21	868	608	477	b 700	6,050	3,880	6,360	2,010	1,040	1,450	899	1,790
22	761	573	394	b 750	5,680	3,480	6,290	1,820	985	1,280	810	3,360
23	531	544	387	854	5,360	3,250	6,000	1,720	955	1,160	708	3,630
24	463	508	415	1,680	4,890	3,180	5,680	*1,660	945	1,080	658	3,310
25	451	489	472	3,750	b 3,000	3,890	7,520	1,760	895	1,020	* 623	2,420
26	439	475	533	4,130	b 2,600	5,020	12,000	2,940	850	949	636	2,040
27	427	471	866	3,650	b 2,400	5,260	13,700	3,770	824	922	1,940	1,740
28	415	490	785	3,540	2,910	4,670	13,300	3,610	820	*912	1,370	*1,520
29	409	478	742	3,180	------	4,230	*11,500	3,130	3,280	884	945	1,400
30	421	471	683	2,750	------	* 4,020	9,190	2,730	3,400	837	822	1,290
31	421	------	622	2,330	------	3,890	------	2,470	------	800	710	------
TOTAL	14,706	13,930	17,016	51,654	198,630	213,850	276,650	100,650	53,934	66,114	27,105	52,582
MEAN	474	464	549	1,666	7,094	6,898	9,222	3,247	1,798	2,133	874	1,753
CFSM	.101	.099	.117	.355	1.51	1.47	1.96	.691	.383	.454	.186	.373
IN	.12	.11	.13	.41	1.57	1.69	2.19	.80	.43	.52	.21	.42

CALENDAR YEAR 1964 MAX 56,600 MIN 358 MEAN 3,554 CFSM .757 INCHES 10.30
WATER YEAR 1964-65 MAX 22,400 MIN 358 MEAN 2,978 CFSM .634 INCHES 8.61

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3610. Big Blue River at Carthage, Ind.

Location (revised).--Lat 39°44'38", long 85°34'33", in SW¼ sec. 18, T. 15 N., R. 9 E., on right bank, 300 ft upstream from highway bridge, half a mile northwest of Carthage, and 2.2 miles downstream from Three Mile Creek.

Drainage area.--187 sq mi.

Records available.--October 1950 to September 1965. Prior to October 1961, published as Blue River at Carthage, Ind.

Gage.--Water-stage recorder. Datum of gage is 859.33 ft above mean sea level, datum of 1929. Prior to July 19, 1951, wire-weight gage at site 500 ft downstream at same datum.

Average discharge.--15 years, 191 cfs.

Extremes.--Maximum discharge during year, 4,270 cfs Feb. 10 (gage height, 9.56 ft); minimum, 34 cfs Oct. 10, 13, 15, 17, 18, 21, 22, 26, Nov. 9; minimum gage height, 1.26 ft Oct. 4, 5.
1950-65: Maximum discharge, 12,900 cfs Mar. 4, 1963 (gage height, 14.62 ft, from floodmarks), from rating curve extended above 6,200 cfs; minimum, 16 cfs Sept. 18-20, 1955; minimum gage height, 1.20 ft Sept. 8, 13-15, 1964.

Remarks.--Records good, except those for periods of ice effect or no gage-height record, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 23-26, Mar. 13-22)

1.3	34
1.5	58
2.0	140
3.0	365
4.0	640
6.0	1,360
8.0	2,650
9.0	3,600

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	36	41	180	b 65	279	150	255	82	64	55	50
2	39	35	44	315	b 60	365	140	219	90	65	53	44
3	38	36	55	219	b 60	440	125	199	90	69	50	40
4	36	36	61	140	b 60	533	123	189	83	58	50	40
5	36	36	57	111	b 63	670	171	179	78	57	50	40
6	37	36	49	94	b 70	465	906	169	81	54	48	38
7	36	36	44	84	190	440	550	169	84	92	49	38
8	36	36	44	82	303	390	538	159	81	75	53	37
9	36	34	44	120	452	340	1,700	150	78	212	55	37
10	36	36	43	114	2,930	291	580	150	76	179	50	36
11	36	37	69	92	1,470	255	490	140	76	99	48	56
12	35	35	82	84	670	231	938	140	75	78	45	76
13	36	35	65	78	a490	209	490	134	71	71	44	55
14	36	35	57	69	a365	199	365	125	68	68	43	49
15	38	37	52	b62	a280	189	465	121	68	69	40	259
16	37	94	52	b55	a220	169	465	118	68	64	40	138
17	35	61	52	b50	199	189	365	116	65	119	39	134
18	35	46	48	b46	179	189	291	114	62	92	44	89
19	*37	46	46	b45	169	159	243	111	61	72	57	75
20	36	53	48	b46	150	150	219	107	61	65	45	68
21	34	44	48	b48	150	140	199	106	57	61	40	66
22	34	40	49	b50	129	* 140	189	102	*58	58	41	99
23	35	40	50	122	* 121	193	179	99	58	58	45	* 90
24	35	* 41	* 53	465	118	365	340	97	58	57	43	75
25	35	44	69	*315	b 110	243	1,290	125	54	55	40	72
26	34	48	64	219	b 106	231	1,420	116	53	52	48	65
27	36	41	58	189	111	169	640	119	52	* 52	* 50	61
28	37	46	54	150	150	159	465	*101	53	52	44	64
29	38	46	54	b110		179	365	92	72	48	39	61
30	36	44	54	b90	------	159	*291	89	92	46	37	64
31	36	------	53	b70	------	150	------	84	------	46	44	------
Total	1,120	1,270	1,659	3,914	9,440	8,280	14,692	4,194	2,105	2,307	1,429	2,116
Mean	36.1	42.3	53.5	126	337	267	490	135	70.2	74.4	46.1	70.5
Cfsm	0.193	0.226	0.286	0.674	1.80	1.43	2.62	0.722	0.375	0.398	0.246	0.377
In.	0.22	0.25	0.33	0.78	1.87	1.65	2.92	0.83	0.42	0.46	0.28	0.42

Calendar year 1964 : Max 4,510 Min 30 Mean 175 Cfsm 0.936 In. 12.74
Water year 1964-65 : Max 2,930 Min 34 Mean 144 Cfsm 0.770 In. 10.43

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1530	9.56	4,270				
4-9	0800	7.92	2,570				
4-26	0330	7.36	2,180				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3615. Big Blue River at Shelbyville, Ind.

Location.--Lat 39°31'45", long 85°46'55", in SE¼ sec. 31, T. 13 N., R. 7 E., on left bank, a quarter of a mile downstream from bridge on U. S. Highway 421 at Shelbyville and 0.6 mile downstream from Little Blue River.

Drainage area.--425 sq mi.

Records available.--September 1943 to September 1965. Prior to October 1961, published as Blue River at Shelbyville.

Gage.--Water-stage recorder (digital). Datum of gage is 737.67 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1953, wire-weight gage at bridge a quarter of a mile upstream at datum 3.5 ft higher.

Average discharge.--22 years, 454 cfs.

Extremes.--Maximum discharge during year, 6,740 cfs Feb. 11 (gage height, 13.57 ft); minimum, 55 cfs Sept. 11 (gage height, 2.49 ft).
1943-65: Maximum discharge, 15,800 cfs Mar. 5, 1963 (gage height, 17.70 ft); minimum, 23 cfs Oct. 2, 1953.
Flood of March 1913 reached a stage of about 20.2 ft, from floodmarks.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 13 to Nov. 15)

Oct. 1 to Feb. 9		Feb. 10 to July 9		July 10 to Sept. 30	
2.4	38	2.7	63	2.5	56
2.5	48	2.8	75	2.6	66
2.7	68	3.0	100	2.8	87
3.0	99	3.5	185	3.0	112
3.5	169	4.0	305	3.5	192
4.0	259	5.0	645	4.0	305
5.0	515	7.0	1,650	5.0	645
6.0	925	9.0	2,870	6.0	1,110
7.0	1,500	11.0	4,300		
		13.0	6,000		
		14.0	7,300		

Discharge, in cubic feet per second, water year October 1964 to September 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	53	56	77	133	a170	734	436	748	147	177	90	76
2	52	55	84	512	a155	1,020	422	633	149	137	95	77
3	51	54	93	627	a150	1,180	377	544	152	122	89	71
4	51	55	106	420	a153	1,300	359	488	142	107	89	67
5	50	56	109	315	*a160	1,900	368	450	133	91	86	69
6	49	56	103	262	165	1,490	1,700	422	137	86	83	65
7	50	56	94	229	275	1,350	2,010	395	144	97	85	62
8	50	56	89	211	699	1,210	1,350	371	139	161	87	60
9	48	56	87	214	935	1,040	2,590	353	130	211	89	59
10	48	55	85	274	4,520	875	2,690	356	125	1,100	88	57
11	47	56	96	249	6,320	730	1,440	335	124	569	82	79
12	45	58	121	216	3,550	657	1,790	314	117	323	78	175
13	*45	56	133	195	1,670	593	1,600	298	110	218	75	207
14	46	56	121	173	1,180	551	1,070	275	103	172	72	152
15	48	62	* 109	158	920	516	* 1,110	258	99	154	70	448
16	51	89	101	105	757	474	1,500	245	97	143	66	* 668
17	51	* 126	98	127	665	495	1,160	238	96	341	64	565
18	53	97	88	b 120	*601	* 593	895	228	94	551	64	395
19	53	91	81	*b 115	541	502	721	220	91	302	*76	256
20	52	89	88	b 118	474	425	625	* 208	88	202	79	195
21	53	89	83	b 120	446	389	551	198	85	*153	67	162
22	51	80	81	128	389	365	513	193	82	139	63	172
23	51	75	83	189	350	404	499	183	* 80	127	66	217
24	52	74	86	1,040	335	797	905	173	80	123	66	178
25	52	77	95	1,060	344	775	2,330	185	76	119	63	153
26	53	78	111	705	285	673	4,020	218	73	106	67	138
27	53	81	106	535	298	558	2,710	204	70	99	84	124
28	54	82	99	405	359	513	1,590	193	74	96	76	114
29	56	82	95	308	------	520	1,160	169	81	92	70	111
30	56	83	96	a 250	------	502	910	160	202	87	64	114
31	56	------	93	a 200	------	457	------	152	------	85	66	------
TOTAL	1,580	2,136	2,991	9,713	26,866	23,588	39,401	9,407	3,320	6,490	2,359	5,286
MEAN	51.0	71.2	96.5	313	960	761	1,313	303	111	209	76.1	176
CFSM	.120	.168	.227	.737	2.26	1.79	3.09	.713	.261	.492	.179	.414
IN	.14	.19	.26	.85	2.35	2.06	3.45	.82	.29	.57	.21	.46

Calendar year 1964 : Max 9,400 Min 42 Mean 377 Cfsm 0.887 In. 12.09
Water year 1964-65 : Max 6,320 Min 45 Mean 365 Cfsm 0.859 In. 11.65

Peak discharge (base, 3,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	1645	13.57	6,740				
4-10	0845	9.87	3,500				
4-26	1130	10.79	4,140				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3620. Youngs Creek near Edinburg, Ind.

Location.--Lat 39°25'08", long 86°00'18", in SW¼ sec. 5, T. 11 N., R. 5 E., on left bank on upstream side of highway bridge half a mile southwest of Amity, 2 miles upstream from mouth, and 5 miles northwest of Edinburg.

Drainage area.--109 sq mi.

Records available.--October 1942 to September 1965. Prior to December 1942 monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage is 670.20 ft above mean sea level, datum of 1929. Prior to June 30, 1955, wire-weight gage at same site and datum.

Average discharge.--23 years, 107 cfs.

Extremes.--Maximum discharge during year, 3,650 cfs Feb. 10 (gage height, 9.98 ft); minimum, 1.2 cfs Oct. 17; minimum gage height, 0.68 ft Oct. 5.
1942-65: Maximum discharge, 10,700 cfs Jan. 27, 1952 (gage height, 13.4 ft); minimum, 0.4 cfs Sept. 14, 1954.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 13 to Nov. 16, Feb. 13-18)

Oct. 1 to Feb. 9

0.6	0.8	1.5	103
.7	3.6	2.0	173
.8	10	3.0	322
.9	20	4.0	492
1.0	33	5.0	715

Feb. 10 to Sept. 30

0.6	1.4	3.0	388
.7	4.4	5.0	820
.8	11	7.0	1,340
.9	21	8.0	1,770
1.0	33	9.0	2,450
1.5	118	10.0	3,650
2.0	208		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	4.6	5.7	63	b35	449	84	127	21	8.9	8.2	6.8
2	2.4	4.6	6.2	247	b28	844	73	96	21	16	6.8	6.2
3	2.4	5.7	15	138	b23	612	59	77	21	40	6.2	5.6
4	1.8	6.2	10	74	b21	741	59	66	17	28	6.8	5.6
5	1.6	6.2	9.2	54	b21	548	61	62	16	56	6.8	5.0
6	1.6	6.2	7.7	43	b25	388	240	59	16	44	5.6	4.4
7	1.6	6.2	6.2	36	157	352	244	52	32	33	6.8	4.0
8	1.6	6.2	5.7	34	277	316	172	46	27	50	8.9	4.4
9	1.8	5.7	4.6	34	543	262	352	43	21	81	10	4.4
10	1.8	6.2	4.6	33	2,960	199	244	43	19	413	7.4	*4.4
11	1.6	7.0	8.5	30	1,250	154	208	37	16	154	5.6	16
12	1.6	7.0	9.2	28	508	136	*334	36	16	77	5.0	170
13	*1.6	6.2	9.2	24	316	118	244	33	13	47	5.6	77
14	1.8	6.2	7.7	20	226	109	163	29	11	33	5.0	36
15	1.6	7.0	6.2	b16	181	* 91	325	28	11	26	4.4	250
16	1.6	* 14	5.7	b13	*136	80	508	27	10	20	3.6	136
17	1.4	9.2	* 5.1	11	118	93	316	* 25	8.9	96	*4.4	100
18	2.0	8.5	4.6	b11	100	93	208	42	8.9	100	4.0	59
19	2.7	6.2	4.1	b11	84	62	154	100	8.2	41	4.4	41
20	4.1	8.5	b 3.8	*b13	69	57	118	47	7.5	*28	4.0	31
21	2.7	5.7	3.6	b14	69	54	95	36	6.8	20	3.6	30
22	3.1	5.1	3.6	16	52	50	80	29	6.8	16	3.6	370
23	3.6	4.6	4.1	43	b46	89	93	25	* 6.8	15	3.6	199
24	3.6	4.6	4.6	372	b40	154	217	22	6.8	13	3.6	109
25	3.6	4.6	9.2	262	b35	127	622	25	6.8	11	3.6	73
26	4.1	4.6	7.7	202	b31	145	799	84	6.8	8.9	5.6	52
27	4.6	4.1	7.0	131	28	109	388	62	6.2	8.2	35	41
28	4.6	6.2	5.7	89	65	109	280	44	6.2	7.5	25	34
29	4.6	7.0	5.7	b70		118	208	32	14	6.8	10	31
30	5.1	5.1	5.1	b53		100	163	28	10	5.6	5.6	29
31	5.1		4.6	b43		87		23		5.6	5.6	
Total	83.3	189.2	199.9	2,228	7,444	6,846	7,111	1,485	398.7	1,509.5	224.3	1,934.8
Mean	2.69	6.31	6.45	71.9	266	221	237	47.9	13.3	48.7	7.24	64.5
Cfsm	0.025	0.058	0.059	0.660	2.44	2.03	2.17	0.439	0.122	0.447	0.066	0.592
In.	0.03	0.06	0.07	0.76	2.54	2.34	2.42	0.51	0.14	0.51	0.08	0.66

Calendar year 1964: Max 4,130 Min 1.4 Mean 87.2 Cfsm 0.800 In. 10.89
Water year 1964-65: Max 2,960 Min 1.4 Mean 81.2 Cfsm 0.745 In. 10.12

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1530	9.98	3,650				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3625. Sugar Creek near Edinburg, Ind.

Location.--Lat 39°21'39", long 85°59'51", on line between secs. 29 and 32, T. 11 N., R. 5 E., on left bank, 50 ft upstream from highway bridge in Camp Atterbury, 1¼ miles upstream from confluence with Blue River, and 1½ miles northwest of Edinburg.

Drainage area.--462 sq mi.

Records available.--October 1942 to September 1965. Prior to February 1943 monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder (digital). Datum of gage is 646.23 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1952, wire-weight gage on downstream side of old highway bridge, 100 ft downstream at same datum.

Average discharge.--23 years, 479 cfs.

Extremes.--Maximum discharge during year, 7,090 cfs Feb. 11 (gage height, 12.73 ft); minimum, 17 cfs Oct. 18, 19; minimum gage height, 3.58 ft Oct. 4, 5.
1942-65: Maximum discharge, 27,600 cfs May 29, 1956 (gage height, 18.38 ft); minimum, 8.0 cfs Sept. 18, 1954 (gage height, 3.04 ft).

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 13 to Apr. 25, Apr. 27 to May 11, July 10-12, 18)

Oct. 1 to July 19				July 20 to Sept. 30	
3.5	15	5.0	450	3.6	31
3.6	21	6.0	975	3.7	42
3.8	40	8.0	2,200	3.8	55
4.0	73	10.0	3,740	4.0	90
4.2	125	12.0	5,870	4.2	147
4.5	230	13.0	7,680	4.4	225
				4.6	320
				4.8	420

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	23	29	37	128	b170	838	405	680	119	166	55	52
2	23	29	41	568	b160	2,330	387	565	117	166	55	50
3	23	29	57	760	b150	2,400	338	480	117	176	52	46
4	21	30	57	474	b150	2,240	320	419	111	152	53	47
5	20	30	57	333	b155	2,370	320	387	105	137	53	47
6	20	31	53	258	160	1,720	1,210	369	105	143	51	44
7	19	31	48	211	295	1,550	2,070	338	117	114	54	40
8	19	32	45	184	858	1,400	1,420	311	117	134	59	38
9	21	31	43	177	1,180	1,200	2,040	279	105	143	58	37
10	21	31	41	229	4,710	992	2,210	293	100	717	54	36
11	21	32	51	232	6,760	799	1,750	270	97	460	50	49
12	20	32	57	190	4,240	695	1,610	246	92	262	47	247
13	21	31	58	168	2,210	625	1,440	230	85	173	45	137
14	*21	30	61	147	1,260	575	*1,110	210	80	137	43	83
15	21	34	54	b 138	953	525	1,170	194	75	117	40	*316
16	23	54	49	b 130	*755	470	1,720	183	73	97	38	251
17	22	58	* 46	b 125	655	*460	1,360	176	71	125	36	216
18	21	*61	41	*b 120	580	525	1,020	* 180	69	266	35	151
19	21	55	39	b 119	520	450	777	242	67	234	38	116
20	23	50	b 38	b 119	446	378	630	183	64	*140	* 36	95
21	23	43	38	b 120	414	347	535	162	* 60	115	38	82
22	22	39	39	120	360	320	470	149	60	95	39	399
23	22	36	39	148	320	365	485	140	58	84	37	353
24	22	35	42	910	302	685	788	134	60	77	35	255
25	25	36	49	1,540	320	772	1,840	134	56	70	35	176
26	24	36	57	1,090	254	711	3,490	198	56	65	39	133
27	24	35	70	791	266	585	2,500	183	65	62	63	111
28	26	39	64	532	275	515	1,550	159	53	59	77	99
29	27	39	59	379	------	515	1,090	140	62	55	55	91
30	28	39	56	b 270	------	490	838	131	60	52	46	85
31	28	------	53	b 210	------	432	------	125	------	51	47	------
TOTAL	695	1,117	1,539	10,920	28,878	28,279	36,893	7,890	2,476	4,844	1,463	3,882
MEAN	22.4	37.2	49.6	352	1,031	912	1,230	255	82.5	156	47.2	129
CFSM	.049	.081	.107	.762	2.23	1.97	2.66	.552	.179	.338	.102	.279
IN	.06	.09	.12	.86	2.32	2.26	2.97	.64	.20	.39	.12	.31

Calendar year 1964 : Max 10,900 Min 18 Mean 385 Cfsm 0.833 In. 11.32
Water year 1964-65 : Max 6,760 Min 19 Mean 353 Cfsm 0.764 In. 10.37

Peak discharge (base, 4,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0930	12.73	7,090				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3630. Driftwood River near Edinburg, Ind.

Location.--Lat 39°20'21", long 85°59'11", in sec. 4, T. 10 N., R. 5 E., on left bank just downstream from highway bridge, 0.8 mile downstream from confluence of Blue River and Sugar Creek and 1½ miles southwest of Edinburg.

Drainage area.--1,054 sq mi.

Records available.--October 1940 to September 1965. Prior to July 1941 monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder (digital after Aug. 25, 1965). Datum of gage is 636.99 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1941, wire-weight gage at same site and datum.

Average discharge.--25 years, 1,112 cfs.

Extremes.--Maximum discharge during year, 13,300 cfs Feb. 11 (gage height, 14.20 ft); minimum, 95 cfs Oct. 14; minimum gage height, 1.82 ft Sept. 11.
1940-65: Maximum discharge, 40,500 cfs Mar. 6, 1963 (gage height, 16.97 ft); minimum observed, 36 cfs Sept. 23, 1941.
Maximum stage known, 20.3 ft in March 1913, from information by local residents.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 1-6, 8, 9, 12-22)

Oct. 1 to Feb. 10				Feb. 11 to Sept. 30			
1.9	84	6.0	2,230	1.8	115	10.0	5,400
2.0	111	8.0	3.660	2.0	180	12.0	7,860
2.5	295	10.0	5,400	2.5	420	13.0	9,600
3.0	510	12.0	7,860	3.0	670	14.0	12,400
4.0	1,030			4.0	1,200	15.0	17,500
				7.0	3,150		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	106	164	295	a 620	1.640	1.080	1.860	445	420	180	156
2	106	106	168	920	510	3.780	1.020	1.620	445	370	184	155
3	103	106	200	1.630	b 480	4.060	970	1.380	445	420	184	151
4	100	106	204	1.210	b 450	4.060	920	1.200	420	370	184	146
5	100	106	215	865	420	4.480	870	1.140	420	345	180	145
6	103	106	215	710	420	4.060	2.120	1.080	395	320	180	143
7	103	106	204	610	585	3.570	4.340	1.020	420	320	192	137
8	103	108	193	535	1.450	3.220	3.570	970	420	320	196	134
9	103	108	185	510	2.300	2.800	4.130	870	395	370	192	130
10	103	108	178	585	7.300	2.310	5.310	870	370	1.270	188	128
11	100	108	196	610	12.900	1.920	4.630	870	370	645	184	149
12	98	111	208	535	11.200	1.740	3.710	795	345	745	180	469
13	98	111	231	488	6.280	1.560	3.780	770	345	520	170	449
14	*98	111	243	442	3.430	1.440	* 2.940	720	320	420	166	370
15	98	117	227	398	2.590	1.320	2.730	695	295	370	162	605
16	98	154	* 215	315	*2.100	1.200	3.640	670	295	320	159	830
17	98	178	204	295	1.800	*1.200	3.220	645	270	370	152	*832
18	103	* 215	182	335	1.620	1.320	2.450	* 645	270	720	148	720
19	103	204	171	315	1.440	1.260	1.920	695	260	695	159	569
20	103	193	182	*315	1.320	1.080	1.620	620	250	*495	156	458
21	103	182	178	291	1.200	970	1.440	595	* 235	395	159	390
22	103	174	174	295	1.080	920	1.260	570	225	345	148	668
23	103	168	171	355	970	970	1.260	545	220	295	145	667
24	103	160	178	1.440	920	1.440	1.680	520	212	270	142	599
25	103	160	189	3.050	870	1.800	3.490	520	212	255	*136	481
26	100	160	200	2.350	795	1.680	6.880	595	208	240	141	410
27	100	157	227	1.750	795	1.440	7.020	595	212	220	164	358
28	103	168	227	a 1.300	870	1.260	4.480	545	204	212	203	322
29	106	168	215	a 920		1.260	3.010	520	216	196	162	297
30	106	164	208	a 780	------	1.200	2.310	495	212	188	148	284
31	106	------	204	a 690	------	1.080	------	470	------	180	144	------
Total	3.163	4.229	6.156	25.139	66.715	62.040	87.800	25.105	9.351	12.621	5.188	11.352
Mean	102	141	199	811	2,883	2,001	2,927	810	312	407	167	378
Cfsm	0.097	0.134	0.189	0.769	2.26	1.90	2.78	0.769	0.296	0.386	0.158	0.359
In.	0.11	0.15	0.22	0.89	2.35	2.19	3.10	0.89	0.33	0.44	0.18	0.40

Calendar year 1964 : Max 21,300 Min 98 Mean 944 Cfsm 0.896 In. 12.18
Water year 1964-65 : Max 12,900 Min 98 Mean 874 Cfsm 0.829 In. 11.25

Peak discharge (base, 7,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	1300 to 2200	14.20	13,300				
4-26	2330	11.97	7,860				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3635. Flatrock River at St. Paul, Ind.

Location.--Lat 39°25'03", long 85°38'03", in NE¼ sec. 9, T. 11 N., R. 8 E., on right bank 500 ft downstream from highway bridge, 0.8 mile southwest of St. Paul, and 1½ miles downstream from Mill Creek.

Drainage area.--298 sq mi.

Records available.--October 1930 to September 1965. Prior to October 1958, published as Flatrock Creek at St. Paul.

Gage.--Water-stage recorder (digital). Datum of gage is 764.84 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to Oct. 21, 1938, chain gage at site 500 ft upstream at same datum.

Average discharge.--35 years, 311 cfs.

Extremes.--Maximum discharge during year, 6,560 cfs Feb. 10 (gage height, 7.07 ft); minimum, 5.4 cfs Oct. 10-14, 17; minimum gage height, 0.25 ft Oct. 10, 11.

1930-65: Maximum discharge, 18,500 cfs Jan. 5, 1949; maximum recorded gage height, 12.17 ft Mar. 5, 1963; minimum discharge, 0.5 cfs Aug. 7, 9, 1931.

Flood in March 1913 reached a stage of approximately 20.5 ft, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are fair. Slight diversion occasionally by quarry above gage.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 12-15)

0.2	4.2	1.1	170
.3	8.6	1.5	355
.4	14	2.0	670
.5	22	3.0	1,440
.6	32	4.0	2,360
.7	46	5.0	3,440
.8	66	7.0	6,400
.9	94		

Discharge, in cubic feet per second, water year October 1964 to September 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	7.7	10	20	141	b 100	470	316	547	73	101	22	18
2	7.8	10	23	477	b 90	567	300	452	70	69	23	18
3	8.0	11	35	530	b 90	706	255	376	67	71	23	19
4	7.5	11	43	344	b 92	898	242	318	62	53	22	16
5	6.8	11	41	240	b 100	1,200	242	291	57	39	22	18
6	6.6	11	36	190	128	1,130	1,060	274	56	32	21	17
7	6.5	11	31	155	326	964	1,280	267	57	65	177	16
8	6.3	11	30	140	734	903	1,120	237	56	62	103	14
9	6.1	11	27	147	1,120	773	1,360	219	51	334	48	14
10	6.0	*12	25	148	4,980	639	1,440	230	47	856	34	12
11	6.0	12	44	148	4,620	532	1,120	229	44	326	26	16
12	5.8	12	61	133	2,520	476	1,040	203	42	171	23	79
13	5.8	11	68	118	1,350	434	1,000	190	40	104	21	84
14	5.9	11	57	97	848	398	740	174	37	75	19	59
15	*6.2	14	* 46	92	646	367	*960	163	33	60	17	118
16	6.1	22	37	b 60	526	329	1,190	156	32	52	18	174
17	6.0	*31	b 35	b 55	466	344	907	162	31	210	17	152
18	6.4	25	b 32	b 54	*421	*445	677	150	29	319	15	109
19	6.6	25	b 30	*b 54	370	397	536	136	28	166	*16	*82
20	6.4	24	b 28	b 58	301	311	449	119	27	97	15	63
21	7.3	23	b 27	b 65	288	270	384	* 108	25	* 68	14	51
22	7.4	20	27	95	245	250	344	102	24	55	18	43
23	6.1	18	27	164	220	318	390	100	* 24	46	18	43
24	5.8	17	30	736	209	600	690	94	24	42	20	41
25	7.5	19	33	753	b 185	600	2,680	90	22	106	19	38
26	8.0	21	34	553	b 180	535	2,800	123	21	40	16	35
27	8.0	22	33	423	b 190	445	2,220	150	21	33	18	32
28	8.9	24	31	313	286	391	1,310	118	20	30	19	30
29	9.9	23	31	b 210	------	415	866	101	23	27	18	29
30	11	22	30	b 140	------	385	669	87	219	24	16	31
31	9.9	------	30	b 115	------	338	------	80	------	22	15	------
TOTAL	220.3	505	1,082	6,948	21,631	16,830	28,587	6,046	1,362	3,755	873	1,471
MEAN	7.11	16.8	34.9	224	773	543	953	195	45.4	121	28.2	49.0
CFSM	.024	.056	.117	.752	2.59	1.82	3.20	.654	.152	.406	.095	.164
IN	.03	.06	.14	.87	2.70	2.10	3.57	.75	.17	.47	.11	.18

Calendar year 1964: Max 7,520 Min 3.8 Mean 251 Cfsm 0.842 In. 11.51
Water year 1964-65: Max 4,980 Min 5.8 Mean 245 Cfsm 0.822 In. 11.15

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0715	7.07	6,560				
4-25	1930	5.67	4,380				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3640. East Fork White River at Columbus, Ind.

Location.--Lat 39°12'00", long 86°55'32", in NW¼ sec. 25, T. 9 N., R. 5 E., on left bank at abutment of abandoned bridge at west end of Second Street in Columbus, 0.6 mile downstream from confluence of Driftwood River and Flatrock River, and 1.3 miles upstream from Haw Creek.

Drainage area.--1,692 sq mi.

Records available.--October 1947 to September 1965. Prior to January 1948 monthly discharge only, published in WSP 1305.

Gage.--Water-stage recorder. Datum of gage is 603.12 ft above mean sea level, datum of 1929. Prior to Oct. 22, 1952, wire-weight gage, 600 ft upstream at same datum.

Average discharge.--18 years, 1,825 cfs.

Extremes.--Maximum discharge during year, 20,400 cfs Feb. 12 (gage height, 10.00 ft); minimum, 108 cfs Oct. 4-8 (gage height, 0.97 ft).
1947-65: Maximum discharge, 52,300 cfs Mar. 6, 1963 (gage height, 16.23 ft); minimum, 87 cfs Sept. 29, Oct. 7, 1954.

Remarks.--Records good, except those for periods of no gage-height record, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.9	80	2.5	2,400
1.0	120	3.0	4,120
1.2	230	4.0	7,400
1.5	435	6.0	11,100
1.8	810	8.0	14,800
2.0	1,120	10.0	20,400

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	155	212	278	a 850	2,560	1,550	3,230	566	435	278	248
2	130	155	236	822	a 750	4,700	1,550	2,560	540	579	278	236
3	125	155	272	1,960	a 670	5,250	1,320	2,250	540	540	272	230
4	116	155	284	1,820	a 640	5,600	1,220	1,960	519	498	272	224
5	116	150	284	1,320	a 600	6,270	1,220	1,680	508	435	266	230
6	116	155	284	1,060	a 630	5,950	2,630	1,680	498	411	254	218
7	116	155	278	900	915	5,250	5,950	1,550	508	411	364	218
8	112	160	266	810	2,100	4,890	5,600	1,550	498	395	516	212
9	116	160	254	754	3,820	4,320	6,270	1,320	488	466	498	206
10	120	160	266	768	11,800	3,580	6,870	1,220	466	1,270	363	188
11	116	155	284	825	19,100	3,060	7,150	1,220	435	1,820	329	218
12	135	155	284	768	19,100	2,560	5,600	1,120	419	1,220	296	648
13	* 140	155	296	782	12,400	2,250	5,600	1,060	395	855	278	644
14	140	155	310	644	5,950	2,100	* 4,520	1,010	379	657	266	566
15	140	170	316	605	4,120	1,960	4,520	960	355	540	248	895
16	140	165	*290	403	3,230	*1,820	5,950	915	355	477	236	976
17	140	224	284	446	*2,730	1,680	5,250	885	342	477	224	*1,020
18	145	* 254	254	530	2,400	1,960	4,120	*855	336	770	230	976
19	145	272	224	477	2,100	1,960	3,230	885	322	1,040	284	825
20	150	260	242	477	1,820	1,680	2,560	840	322	782	230	670
21	145	236	236	*427	1,680	1,440	2,250	768	* 316	605	230	566
22	150	224	236	427	1,550	1,320	1,960	740	310	508	224	757
23	155	218	230	466	1,320	1,320	1,820	698	303	* 435	218	825
24	155	206	236	1,290	1,220	1,960	2,250	670	296	403	212	782
25	155	206	248	3,940	1,220	2,730	5,060	644	290	379	* 212	644
26	155	206	260	3,400	1,040	2,730	11,800	698	272	395	218	566
27	155	194	278	2,730	1,060	2,250	11,700	768	272	355	236	508
28	160	212	284	1,960	1,220	1,960	8,750	740	278	322	260	466
29	155	218	284	a 1,600		1,960	5,250	670	290	310	260	435
30	155	218	272	a 1,300	------	1,960	3,940	618	296	290	236	435
31	155	------	266	a 1,000	-----	1,680	-----	592	-----	278	230	------
Total	4,283	5,663	8,250	34,989	106,035	90,710	138,460	36,356	11,714	18,358	8,518	15,632
Mean	138	189	266	1,129	3,787	2,926	4,615	1,173	390	592	275	521
Cfsm	0.082	0.112	0.157	0.667	2.24	1.73	2.73	0.693	0.230	0.350	0.163	0.308
In.	0.09	0.12	0.18	0.77	2.33	1.99	3.05	0.80	0.26	0.40	0.19	0.34

Calendar year 1964: Max 27,800 Min 104 Mean 1,457 Cfsm 0.861 In. 11.71
Water year 1964-65: Max 19,100 Min 112 Mean 1,312 Cfsm 0.775 In. 10.52

Peak discharge (base, 10,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	0700 to 0800	10.00	20,400				
4-26	1900	7.12	13,000				

* Discharge measurement made on this day.
a No gage-height record.

3-3645. Clifty Creek at Hartsville, Ind.

Location.--Lat 39°16'25", long 85°42'10", in NW¼ sec. 36, T. 10 N., R. 7 E., at downstream side of left abutment of highway bridge, a quarter of a mile north of Hartsville and 5 miles upstream from Duck Creek.

Drainage area.--88.8 sq mi.

Records available.--February 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 677.34 ft above mean sea level, datum of 1929. Prior to Sept. 24, 1952, wire-weight gage at same site and datum.

Average discharge.--17 years, 99.7 cfs.

Extremes.--Maximum discharge during year, 3,160 cfs Feb. 9 (gage height, 8.25 ft); no flow for many days.
1948-65: Maximum discharge, 11,300 cfs Jan. 21, 1959 (gage height, 14.29 ft); no flow at times most years.
Flood in 1913 reached a stage of 25.1 ft, from floodmarks.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30			
1.21	0	1.7	28	1.2	0.4	2.0	105
1.25	.2	1.9	55	1.3	2.4	2.2	165
1.3	.7	2.2	118	1.4	7.4	2.5	265
1.4	3.4	2.5	198	1.5	16	3.0	465
1.5	9.0	3.0	382	1.6	28	5.0	1,400
1.6	18	5.0	1,280	1.8	60	7.0	2,440

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	63	b26	240	90	126	8.1	54	2.4	3.2
2			0	462	b24	223	82	98	8.1	28	2.0	3.2
3			0	214	b23	265	68	80	8.8	22	1.7	2.4
4			0	106	b23	386	68	68	8.8	18	1.7	2.8
5			2.4	71	b25	445	68	64	7.4	11	1.7	3.2
6			4.3	52	b27	325	528	58	8.1	7.4	1.4	2.4
7			2.6	43	b140	305	405	68	8.8	7.4	55	2.4
8			2.0	37	b250	305	352	55	8.8	20	85	1.7
9			1.7	43	830	234	1,010	46	8.1	34	56	1.7
10			1.4	60	2,360	186	365	47	7.4	351	29	1.7
11			6.2	46	578	150	305	51	7.4	159	14	2.0
12			17	35	*555	135	305	39	7.4	54	8.1	29
13	*		13	31	305	117	*209	34	5.6	32	5.1	52
14			11	24	220	108	159	32	4.1	21	3.6	32
15			* 7.4	21	168	98	459	29	3.2	14	2.8	70
16			4.8	16	141	85	510	26	2.8	10	2.4	* 76
17		*	3.4	b14	126	100	285	28	2.4	46	1.7	58
18			2.0	b14	114	*150	202	26	2.4	141	1.7	42
19			1.4	b15	98	105	153	24	2.0	58	8.8	28
20			1.2	b16	80	85	123	21	1.4	30	*4.1	19
21			1.2	b18	78	72	98	* 18	1.4	*19	2.4	15
22			1.2	*b21	58	66	85	16	1.2	11	1.4	12
23			1.4	122	b54	79	88	14	1.0	8.1	1.2	10
24			1.7	b350	b48	229	209	13	* .8	7.4	8.6	9.5
25			2.6	208	b46	171	1,150	11	.6	12	4.6	8.1
26			4.8	153	b46	174	1,030	13	.4	45	3.2	7.4
27			5.7	111	b60	138	385	14	.4	18	3.2	6.8
28			6.8	b75	154	120	262	13	.4	8.8	2.4	6.2
29			6.8	b45	--------	129	198	11	1.0	5.1	4.1	5.6
30			6.8	b38	------	120	156	10	11	3.6	3.6	6.2
31		------	5.7	b30	-----	100	-----	8.8	----	2.4	2.4	-------
Total	0	0	126.5	2,554	6,657	5,445	9,407	1,161.8	139.3	1,258.2	325.3	519.5
Mean	0	0	4.08	82.4	238	176	314	37.5	4.64	40.6	10.5	17.3
Cfsm	0	0	0.046	0.928	2.68	1.98	3.54	0.422	0.052	0.457	0.118	0.195
In.	0	0	0.05	1.07	2.79	2.28	3.95	0.49	0.06	0.53	0.14	0.22

Calendar year 1964 : Max 4,760 Min 0 Mean 74.2 Cfsm 0.836 In. 11.35
Water year 1964-65 : Max 2,360 Min 0 Mean 75.6 Cfsm 0.851 In. 11.58

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	2400	8.25	3,160				
4-9	0300	5.57	1,700				
4-25	2400	6.60	2,220				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3650. Sand Creek near Brewersville, Ind.

Location.--Lat 39°05'03", long 85°39'32", in NW¼ sec. 5, T. 7 N., R. 8 E., on left bank at downstream side of county highway bridge, 2½ miles west of Brewersville, and 5.2 miles upstream from Bear Creek.

Drainage area.--156 sq mi.

Records available.--February 1948 to September 1965.

Gage.--Water-stage recorder (digital). Altitude of gage is 630 ft (by barometer). Prior to Oct. 6, 1952, wire-weight gage at site 1.7 miles upstream at datum approximately 8 ft higher.

Average discharge.--17 years, 170 cfs.

Extremes.--Maximum discharge during year, 3,950 cfs Feb. 10 (gage height, 10.51 ft); no flow for many days.
1948-65: Maximum discharge, 19,900 cfs Jan. 21, 1959 (gage height, 21.70 ft inside, 22.20 ft outside), from rating curve extended above 6,500 cfs on basis of contracted-opening measurement of peak flow; no flow many times.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 29 to Sept. 11, Sept. 24-30)

0.4	0	2.0	143
.5	.3	2.5	235
.6	1.4	3.0	360
.7	3.6	4.0	675
.8	7.2	6.0	1,420
1.0	17	8.0	2,420
1.2	32	9.0	2,950
1.5	65		

Discharge, in cubic feet per second, water year October 1964 to September 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*	0	9.6	19	b 60	421	106	151	10	11	3.3	10
2		0	11	709	b 50	375	102	123	9.8	23	*3.1	8.5
3		0	17	528	b 45	474	87	101	9.8	20	2.6	6.8
4		0	30	209	b 43	764	77	83	11	12	2.1	5.0
5		0	39	141	42	744	76	73	11	11	1.9	4.7
6		0	29	110	45	519	*333	70	9.8	9.8	1.9	4.7
7		0	19	87	837	478	413	68	*10	9.4	7.6	*3.6
8		0	14	73	893	464	257	64	10	7.6	145	3.1
9		0	12	152	1,210	332	1,550	54	9.8	12	65	2.8
10		* .30	10	188	2,800	255	500	48	30	20	35	2.6
11		2.0	* 27	122	969	*195	381	46	24	82	20	2.8
12		2.2	60	88	*1,390	164	384	44	9.8	49	11	21
13		2.5	58	* 72	458	145	268	38	6.8	26	7.6	69
14		2.6	33	60	276	127	188	*34	6.1	16	5.6	58
15		2.8	24	48	211	117	730	31	5.8	12	4.3	122
16		3.6	18	b 40	169	103	1,080	29	5.0	8.5	3.3	119
17		3.6	16	b 36	145	104	418	68	4.7	11	2.8	87
18		3.3	14	b 35	127	214	258	77	4.3	50	2.3	54
19		8.2	13	b 34	110	157	189	48	3.3	*57	16	33
20		11	11	b 34	92	115	154	36	2.8	25	20	22
21		9.7	10	b 36	84	96	124	28	3.0	15	18	15
22		8.2	9.8	37	81	86	99	23	3.0	11	13	12
23		7.7	10	181	66	88	84	20	2.8	8.5	7.6	11
24		8.3	11	1,030	69	153	136	18	2.8	6.5	5.0	9.4
25		8.4	16	437	b 75	156	600	16	2.6	6.1	3.6	8.9
26		8.1	61	274	b 100	255	1,100	34	2.1	21	2.8	7.6
27		6.9	53	263	b 150	184	385	35	2.1	9.4	3.6	7.6
28		7.6	37	157	453	143	245	22	2.6	5.4	3.3	6.5
29		9.2	26	105	------	150	262	17	4.0	4.3	4.7	5.8
30		11	22	b 85	------	147	190	13	6.5	4.0	4.3	5.8
31		---- -	20	b 70	------	120	------	11	------	3.3	7.2	------
TOTAL	0	127.20	740.4	5,460	11,050	7,845	10,776	1,523	225.3	566.8	433.7	729.2
MEAN	0	4.24	23.9	176	395	253	359	49.1	7.51	18.3	14.0	24.3
CFSM	0	.027	.153	1.13	2.53	1.62	2.30	.315	.048	.117	.090	.156
IN	0	.03	.18	1.30	2.63	1.87	2.57	.36	.05	.14	.10	.17

Calendar year 1964 : Max 9,360 Min 0 Mean 128 Cfsm 0.821 In. 11.19
Water year 1964-65 : Max 2,800 Min 0 Mean 108 Cfsm 0.692 In. 9.41

Peak discharge (base, 2,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1245	10.51	3,950				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3655. East Fork White River at Seymour, Ind.

Location.--Lat 38°58'57", Long 85°53'57", in NW¼ sec. 7, T. 6 N., R. 6 E., on left bank 1,700 ft downstream from highway bridge, 1 mile north of Seymour, 9.6 miles downstream from Sand Creek, and at mile 219.2.
Drainage area.--2,333 sq mi.
Records available.--October 1927 to September 1965. Yearly maximum discharge only for water years 1924-27, published in WSP 1305. Daily gage heights from May 1923 to September 1927 are available in the district office. Periodic sediment samples collected since 1963. Records of water temperature published in WSP.
Gage.--Water-stage recorder (digital after July 11, 1965). Datum of gage is 550.67 ft above mean sea level, datum of 1929. Oct. 1, 1927, to July 2, 1931, chain gage 1,700 ft upstream and 500 ft upstream from dam at datum 7.61 ft higher. July 3, 1931, to July 16, 1934, staff gage at site 100 ft downstream at present datum.
Average discharge.--38 years, 2,365 cfs.
Extremes.--Maximum discharge during year, 25,600 cfs Feb. 12 (gage height, 16.58 ft); minimum, 162 cfs Oct. 26 (gage height, 0.40 ft).
1923-65: Maximum discharge, 78,500 cfs Jan. 5, 1949 (gage height, 19.67 ft).
1927-65: Minimum, 84 cfs Sept. 15, 1941.
Maximum stage known, 21.0 ft Mar. 26, 1913, from information by Corps of Engineers and State Highway Department of Indiana (discharge, 120,000 cfs).
Remarks.--Records good except those for periods of ice effect, which are fair. Some regulation of low flow by Seymour Water Co. at dam above station. Records of water temperatures and suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 13 to July 13)

Oct. 1 to Jan. 3		Jan. 4 to Sept. 30			
0.5	186	0.6	265	10.0	7,300
0.7	242	0.7	295	12.0	9,600
1.0	335	1.0	400	14.0	13,800
2.0	740	2.0	800	15.0	17,000
4.0	1,850	4.0	1,920	17.0	28,000
5.0	2,550	6.0	3,420		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	212	199	242	318	b 1,100	3,760	2,270	4,840	760	365	423	334
2	199	199	257	528	b 1,000	4,840	2,130	3,940	720	560	*411	325
3	199	199	302	2,280	b 950	6,420	1,990	3,340	720	640	406	316
4	199	199	302	2,480	b 900	6,970	1,860	2,940	680	600	400	311
5	199	199	302	1,920	b 900	8,520	1,800	2,550	680	560	397	309
6	*199	199	318	1,560	1,000	8,400	2,130	2,340	640	480	387	304
7	186	199	* 318	1,260	1,400	7,740	5,300	2,340	680	480	401	296
8	186	199	302	1,150	* 4,120	6,970	6,640	2,200	640	460	602	296
9	186	*199	287	1,050	4,480	6,310	7,960	1,990	640	480	850	290
10	186	199	287	1,150	10,300	5,400	9,120	*1,860	* 640	640	693	*283
11	186	199	318	1,150	23,200	4,660	8,760	1,800	600	1,840	558	283
12	186	199	335	1,100	25,000	3,850	8,290	1,740	600	* 1,860	480	369
13	199	199	352	1,000	21,400	3,420	* 7,080	1,620	560	1,380	433	684
14	199	199	370	* 900	12,700	3,180	6,420	1,500	520	1,000	394	699
15	199	199	370	850	7,350	2,940	5,500	1,380	480	850	377	740
16	199	212	352	680	5,300	* 2,700	8,520	1,320	480	728	359	1,190
17	199	227	352	600	4,300	2,480	8,640	1,260	460	699	347	1,280
18	199	242	318	680	3,670	2,700	6,640	1,260	440	774	332	1,240
19	199	272	287	b 640	3,260	2,860	5,020	1,260	420	1,190	388	1,070
20	199	287	287	b 600	2,940	2,550	4,120	1,200	420	1,150	403	887
21	199	257	287	b 610	2,620	2,270	3,420	1,100	400	916	368	756
22	199	257	287	640	2,340	2,060	3,020	1,100	382	768	353	685
23	199	242	272	680	2,130	1,920	2,700	1,000	382	683	337	847
24	199	242	287	1,880	1,990	2,200	2,700	950	365	621	325	816
25	186	242	287	3,940	b 1,700	3,100	3,960	900	348	573	316	765
26	199	242	302	4,390	b 1,550	3,940	9,920	900	348	547	316	678
27	199	227	335	3,760	b 1,600	3,760	15,300	1,000	330	563	322	612
28	199	242	352	2,940	2,340	2,940	12,900	1,000	330	528	331	578
29	199	242	352	2,200		2,700	9,000	900	365	485	348	530
30	199	242	335	1,620	------	2,700	6,200	850	365	455	324	505
31	199	------	318	1,260	------	2,480	------	800	------	434	319	------
Total	6,091	6,660	9,672	45,816	151,540	126,740	179,310	53,180	15,395	23,309	12,700	18,278
Mean	196	222	312	1,478	5,412	4,088	5,977	1,715	513	752	410	609
Cfsm	0.084	0.095	0.134	0.634	2.32	1.75	2.56	0.735	0.220	0.322	0.176	0.261
In.	0.10	0.11	0.15	0.73	2.42	2.02	2.86	0.85	0.25	0.37	0.20	0.29

Calendar year 1964: Max 44,800 Min 186 Mean 1,991 Cfsm 0.853 In. 11.61
Water year 1964-65: Max 25,000 Min 186 Mean 1,777 Cfsm 0.762 In. 10.35

Peak discharge (base, 12,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	1530 to 1800	16.58	25,600				
4-27	0900	14.64	15,600				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3660. Graham Creek near Vernon, Ind.

Location.--Lat 38°56', long 85°34', in SE¼ sec. 30, T. 6 N., R. 9 E., on right bank 10 ft upstream from State Highway 7, 4.7 miles southeast of Vernon, and 8.0 miles downstream from Little Graham Creek.

Drainage area.--77.6 sq mi.

Records available.--June 1955 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 677.47 ft above mean sea level, datum of 1929 (unadjusted). Prior to June 10, 1955, wire-weight gage at same site and datum.

Average discharge.--10 years, 88.6 cfs.

Extremes.--Maximum discharge during year, 3,360 cfs Apr. 9 (gage height, 9.14 ft); no flow for many days.
1955-65: Maximum discharge, 18,600 cfs June 23, 1960 (gage height, 21.37 ft) from rating curve extended above 6,000 cfs on basis of contracted-opening measurements of peak flow; no flow at times during most years.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 2, May 13 to June 30, Aug. 16-26, Sept. 7-10)

1.02	0	1.6	6.2	2.4	66
1.1	.2	1.7	9.2	2.8	134
1.2	.5	1.8	13	3.2	230
1.3	1.2	1.9	18	4.0	510
1.4	2.4	2.0	24	5.0	960
1.5	4.0	2.1	32	6.0	1,500

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.5	17	b 17	247	66	21	0.4	3.7	0.3	2.9
2		0	.9	251	b 14	212	58	17	.9	3.1	.3	2.4
3		0	1.7	273	b 11	402	50	14	3.0	2.8	* .2	2.4
4		0	2.6	84	b 10	522	44	12	2.5	1.7	.2	2.6
5		0	2.5	50	10	505	43	10	2.4	1.6	.1	1.8
6	*	0	3.2	37	12	260	* 206	8.6	1.5	1.1	0	* 1.4
7		0	3.8	28	668	218	253	8.0	1.9	1.0	.6	1.4
8		0	3.0	23	510	218	122	7.1	1.7	1.0	.6	1.4
9		* 0	2.5	202	655	146	1,430	6.5	* 1.3	1.1	.8	1.0
10		0	* 1.7	180	* 1,060	107	259	7.7	2.0	3.6	1.0	.7
11		0	17	80	378	* 76	1,490	7.4	3.1	15	1.0	.8
12		0	82	50	879	61	510	6.2	1.3	10	.7	19
13		0	52	* 41	205	53	180	* 6.5	.5	6.4	.4	84
14		0	25	30	107	46	101	5.2	.3	4.8	.3	35
15		0	15	18	72	41	346	4.6	.3	3.6	.2	50
16		0	10	b 15	57	37	631	4.6	.2	* 2.2	.1	92
17		0	7.7	b 13	46	42	192	4.4	.1	2.8	.2	182
18		0	5.7	b 11	41	80	105	5.0	.1	14	.1	74
19		.1	5.2	b 11	35	62	72	5.4	0	26	.9	33
20		.1	3.4	b 11	29	41	56	4.4	.1	14	.7	21
21		0	3.0	13	26	42	43	4.0	0	8.0	.5	15
22		0	2.8	16	23	29	37	4.0	0	5.0	.4	14
23		0	2.8	266	19	29	37	3.0	0	3.2	.5	12
24		0	3.0	490	23	39	41	3.0	0	2.4	.3	10
25		.1	11	205	426	56	57	2.2	0	3.2	.2	8.0
26		.1	130	134	184	112	70	1.6	0	1.9	.2	6.5
27		.1	122	168	151	98	57	1.4	0	1.1	.2	5.4
28		.1	51	74	413	65	40	1.0	0	.8	.1	4.4
29		.1	31	54		101	31	.7	0	.6	.1	3.1
30		.1	23	35	------	136	26	.6	.4	.5	0	3.0
31		------	18	b 22	------	85	------	.5	------	.3	.1	------
Total	0	0.8	643	2,902	6,081	4,168	6,653	187.6	24.0	146.5	11.3	690.2
Mean	0	0.03	20.7	93.6	217	134	222	6.05	0.80	4.73	0.36	23.0
Cfsm	0	0.00039	0.267	1.21	2.80	1.73	2.86	0.078	0.010	0.061	0.0046	0.296
In.	0	0.0004	0.31	1.40	2.92	1.99	3.19	0.09	0.01	0.07	0.005	0.33

Calendar year 1964: Max 5,160 Min 0 Mean 68.7 Cfsm 0.885 In. 12.05
Water year 1964-65: Max 1,490 Min 0 Mean 58.9 Cfsm 0.759 In. 10.32

Peak discharge (base, 2,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-9	0630	9.14	3,360				
4-11	1030	7.98	2,700				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3665. Muscatatuck River near Deputy, Ind.

Location.--Lat 38°48'15", long 85°40'26", in NE¼ sec. 7, T. 4 N., R. 8 E., on left bank at downstream side of highway bridge, 1.4 miles northwest of Deputy, 1.9 miles upstream from Coffee Creek, and 2.4 miles downstream from confluence of Graham Creek and Big Creek.

Drainage area.--296 sq mi.

Records available.--November 1947 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 541.17 ft above mean sea level, datum of 1929. Prior to June 22, 1955, wire-weight gage at same site and datum.

Average discharge.--17 years (1948-65), 346 cfs.

Extremes.--Maximum discharge during year, 9,180 cfs Apr. 11 (gage height, 19.81 ft); no flow for several days.
1947-65: Maximum discharge, 52,200 cfs Jan. 21, 1959 (gage height, 33.1 ft, from floodmarks), from rating curve extended above 25,000 cfs on basis of contracted-opening measurement of peak flow; no flow at times in most years.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect or indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 20, Dec. 4-6, 11-20, Dec. 25 to Jan. 22)

Oct. 1 to Jan. 22

0.84	0	1.5	22
.9	.1	1.7	36
1.0	.6	2.0	65
1.1	2.4	2.5	120
1.2	5.5	3.0	187
1.3	10	5.0	532
1.4	16	8.0	1,110

Jan. 23 to June 7

1.1	10	7.0	985
1.2	15	9.0	1,460
1.4	28	13.0	2,650
1.6	45	15.0	3,750
2.0	93	17.0	5,500
3.0	235	18.0	6,600
5.0	585		

June 8 to Sept. 30

0.8	1.0	1.6	46
.9	2.4	2.0	100
1.0	5.0	2.5	174
1.1	8.6	3.0	254
1.2	14	4.0	420
1.4	28	5.0	600

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.10	0.10	11	76	b 110	1,000	315	e 165	11	74	2.7	141
2	.10	.10	10	509	b 90	806	264	e 145	10	28	2.4	122
3	.10	.10	19	960	b 80	1,010	222	e 125	17	66	2.1	32
4	.10	.10	37	379	b 72	1,390	197	e 105	27	43	*1.9	17
5	* .10	.20	69	228	70	1,780	182	e 95	26	22	1.6	11
6	.10	.20	31	170	83	991	* 371	e 82	18	14	1.7	8.2
7	.10	.20	17	138	1,390	784	851	e 72	17	24	2.6	6.5
8	0	.10	*b 13	118	2,340	717	448	e 62	*25	28	6.9	* 5.6
9	0	*.10	12	256	1,330	550	2,010	e 54	47	21	3.8	5.2
10	0	.20	12	585	2,780	420	1,030	e 48	25	29	4.2	4.8
11	0	*.10	99	* 284	* 1,630	*327	5,820	*e 42	20	114	3.2	5.0
12	0	.10	316	203	3,520	270	2,520	39	27	60	2.6	426
13	0	.10	237	160	1,080	233	931	34	27	31	2.5	233
14	0	.10	138	130	501	207	509	30	15	*24	2.4	140
15	0	.20	86	109	354	189	627	27	11	33	2.1	191
16	0	.60	56	b 95	281	171	1,800	25	8.6	19	1.9	297
17	0	1.0	43	b 80	236	261	838	30	7.4	72	1.6	574
18	0	1.5	32	b 74	206	404	491	41	6.7	61	1.5	332
19	0	2.7	b 24	b 70	182	293	917	53	6.1	26	6.6	179
20	0	3.5	b 20	b 70	158	210	e 450	45	5.7	20	4.4	104
21	0	3.5	b 17	b 75	146	174	e 330	34	5.3	23	2.6	63
22	0	4.8	18	105	130	153	267	27	5.0	17	2.1	47
23	0	6.4	18	649	116	147	313	23	5.0	12	2.9	35
24	0	5.5	19	1,380	134	160	399	20	5.0	18	2.8	28
25	0	6.9	55	816	1,410	201	356	18	4.6	111	2.5	23
26	0	9.1	193	466	827	403	435	21	4.5	13	2.2	19
27	0	9.1	347	495	608	417	e 320	33	4.1	12	2.1	15
28	.10	9.1	202	333	1,470	291	e 260	20	3.9	7.2	1.9	13
29	.10	11	137	228	------	1,600	e 220	16	4.4	5.0	1.6	11
30	.10	10	106	b 170	------	711	e 190	14	9.8	3.9	1.2	10
31	.10	------	86	b 140	------	420	------	12	------	3.3	1.3	------
TOTAL	1.10	86.70	2,480	9,554	21,334	16,688	23,983	1,557	409.1	1,034.4	82.1	3,100.3
MEAN	.04	2.89	80.0	308	762	538	796	50.2	13.6	33.4	2.65	103
CFSM	.0001	.0098	.270	1.04	2.57	1.82	2.69	.170	.046	.113	.0090	.348
IN	0	.01	.31	1.20	2.68	2.10	3.00	.20	.05	.13	.01	.39

CALENDAR YEAR 1964 MAX 20,900 MIN 0 MEAN 276 CFSM .932 INCHES 12.67
WATER YEAR 1964-65 MAX 5,820 MIN 0 MEAN 220 CFSM .743 INCHES 10.08

Peak discharge (base, 7,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-11	1415	19.81	9,180				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
e Stage-discharge relation indefinite.

3-3670. Muscatatuck River near Austin, Ind.

Location (revised).--Lat 38°46'13", long 85°49'21", in SW¼ sec. 23, T. 4 N., R. 6 E., on right bank 15 ft downstream from bridge on U. S. Highway 31, 2 miles northeast of Austin, and 5.5 miles upstream from W. L. McClain ditch.

Drainage area.--365 sq mi.

Records available.--August 1932 to September 1965 (high-water records only since October 1943).

Average discharge.--10 years (1932-35, 1936-43), 387 cfs.

Gage.--Water-stage recorder. Datum of gage is 513.96 ft above mean sea level, datum of 1929. Prior to June 22, 1934, chain gage at same site and datum. Nov. 8 to Dec. 30, 1939, staff gage approximately half a mile upstream at different datum. Aug. 1, 1940, to Sept. 30, 1943, auxiliary gage (for low flows) at Slate-Ford bridge 2¼ miles upstream at different datum.

Extremes.--Maximum discharge during year, 7,100 cfs Apr. 12 (gage height, 21.53 ft).
1932-65: Maximum discharge, 53,900 cfs Jan. 22, 1959 (gage height, 29.20 ft).

Remarks.--Records good. Daily discharge not computed when gage height is below 13.0 ft.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						1,400						
2						985						
3				925		1,040						
4						1,330						
5						2,160						
6						1,770						
7					775	1,140						
8					2,060							
9					1,810		1,240					
10					2,480		1,910					
11					*2,940		2,540					
12					3,090		6,340					
13					3,420		3,510					
14					1,540		1,400					
15							905					
16							1,650					
17							1,550					
18												
19							1,140					
20												
21												
22												
23												
24				1,160								
25				1,040	1,110							
26					1,250							
27												
28					1,340							
29						1,440						
30					------	1,260						
31		------			------		------		------			-------
Total	-	-	-	-	-	-	-	-	-	-	-	-
Mean	-	-	-	-	-	-	-	-	-	-	-	-
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1964: Max 7,100 Min - Mean - Cfsm - In. -
Water year 1964-65: Max 6,340 Min - Mean - Cfsm - In. -

Peak discharge (base, 5,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-12	1030	21.53	7,100				

* Discharge measurement made on this day.

3-3680. Brush Creek near Nebraska, Ind.

Location.--Lat 39°04', long 85°29', in NE¼ sec. 11, T. 7 N., R. 9 E., on right bank at downstream side of county road bridge, 1.5 miles northwest of Nebraska, 2.9 miles northeast of Butlerville, and 3.6 miles upstream from Brush Creek Dam.

Drainage area.--11.7 sq mi.

Records available.--May 1955 to September 1965. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder. Datum of gage is 717.17 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--10 years, 13.0 cfs.

Extremes.--Maximum discharge during year, 1,710 cfs Apr. 8 (gage height, 8.50 ft, from rating curve extended above 440 cfs as explained below); no flow for many days.
1955-65: Maximum discharge, 3,120 cfs July 15, 1962 (gage height, 10.90 ft), from rating curve extended above 440 cfs on basis of contracted-opening measurement of peak flow at gage height, 9.70 ft; no flow at times in most years.

Remarks.--Records good except those above 600 cfs, or no gage-height record, which are fair. Records of suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 3-10)

Oct. 1 to Feb. 6

2.0	0	2.6	12
2.1	.4	2.8	22
2.2	1.2	3.0	37
2.3	3.0	4.0	164
2.4	5.2		

Feb. 7 to Sept. 30

1.95	0.0	2.6	15
2.1	.4	2.8	27
2.2	1.2	3.0	42
2.3	3.1	3.4	82
2.4	6.0	4.0	164

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	3.4	3.0	24	5.3	4.7	0.2	0.3	0	0.1
2	*		0	58	2.5	43	5.0	3.8	.2	.2	0	.1
3			3.5	14	2.2	25	4.4	3.4	.2	.2	* 0	0
4			4.0	7.0	2.1	78	4.1	2.6	.2	0	0	0
5			2.6	5.0	2.1	40	* 6.8	2.4	.1	0	0	0
6			.6	4.2	2.5	30	95	2.2	.1	0	0	0
7			.3	3.6	100	33	21	1.8	.1	0	7.2	0
8			.3	3.4	45	25	149	1.6	.1	0	9.1	0
9			* .2	52	* 145	* 19	144	1.6	* .1	0	8.3	* 0
10		*	.2	12	91	12	23	1.6	0	0	.8	0
11			30	6.4	104	8.4	50	1.1	0	0	.2	0
12			16	* 5.5	57	7.2	22	* 1.0	0	0	.1	16
13			4.4	4.2	17	6.4	14	.9	0	0	0	1.8
14			3.0	3.2	12	5.7	10	.9	0	0	0	.7
15			2.0	2.8	8.4	5.0	96	.8	0	*0	0	18
16			b 1.1	2.4	6.8	4.4	49	.8	0	0	0	5.0
17			b .5	b 2.1	6.0	8.5	19	1.2	0	7.2	0	5.2
18			b .3	b 1.8	5.3	8.4	14	1.0	0	1.5	0	1.6
19			b .3	b 1.6	4.7	4.7	9.6	1.1	0	.2	1.1	.8
20			b .3	1.6	4.1	3.8	7.6	.8	0	0	1.1	.8
21			b .3	1.6	b 3.8	3.6	6.4	.8	0	0	.2	.9
22			b .4	1.8	b 3.5	3.6	5.6	.6	0	0	0	3.6
23			b .7	40	3.1	5.4	5.6	.6	0	0	0	4.1
24			1.4	80	11	7.6	8.8	.5	0	0	0	1.6
25			21	26	46	8.0	21	.4	0	9.0	0	.8
26			57	20	b 14	19	17	.4	0	.4	0	.6
27			9.3	10	35	8.4	10	.4	0	.1	0	.5
28			5.2	10	41	6.8	7.6	.3	0	0	0	.4
29			4.2	7.5		14	6.4	.3	0	0	0	.4
30			3.6	5.0	- - - - -	8.4	5.3	.2	2.3	0	0	.4
31		- - - - -	3.2	3.5	- - - - -	5.6	- - - - -	.2	- - - - -	0	0	- - - - -
Total	0	0	175.9	399.6	778.1	481.9	842.5	40.0	3.6	19.1	28.1	63.4
Mean	0	0	5.67	12.9	27.8	15.5	28.1	1.29	0.12	0.62	0.91	2.11
Cfsm	0	0	0.485	1.10	2.38	1.32	2.40	0.110	0.010	0.053	0.078	0.180
In.	0	0	0.56	1.27	2.48	1.52	2.68	0.12	0.01	0.06	0.09	0.21

Calendar year 1964: Max 1,260 Min 0 Mean 9.77 Cfsm 0.835 In. 11.37
Water year 1964-65: Max 149 Min 0 Mean 7.76 Cfsm 0.663 In. 9.00

Peak discharge (base, 950 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-7	Unknown	7.05	1,030				
4-8	2300	8.50	1,710				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Jan. 20 to Feb. 9.

GPO 826-827-0

3-3690. Vernon Fork near Butlerville, Ind.

Location.--Lat 39°02'55", long 85°32'40", in SE¼ sec. 17, T. 7 N., R. 9 E., on left bank 0.3 mile downstream from Muscatatuck State School dam, 1¼ miles downstream from Brush Creek, and 2 miles northwest of Butlerville.

Drainage area.--87.3 sq mi.

Records available.--February 1942 to September 1965. Prior to October 1960, published as North Fork of Vernon Fork near Butlerville, Ind.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 669.40 ft above mean sea level, datum of 1929. Prior to Aug. 19, 1942, staff gage at same site and datum.

Average discharge.--23 years, 93.9 cfs (unadjusted).

Extremes.--Maximum discharge during year, 2,750 cfs Apr. 9 (gage height, 8.47 ft); minimum, 0.5 cfs Oct. 11 (gage height, 1.65 ft). 1942-65: Maximum discharge, 26,200 cfs Jan. 21, 1959 (gage height, 25.41 ft), from rating curve extended above 10,000 cfs on basis of slope-area measurement of peak flow; no flow at times in most years.

Remarks.--Records good except those for periods of ice effect, which are fair. Water supply for the Muscatatuck State School is diverted and the sewage effluent returned above station. Flow regulated by Brush Creek Reservoir (capacity, 668,000,000 gal), 1 3/4 miles upstream. Storage began November 1953.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 23				Jan. 24 to Sept. 30			
1.7	.7	2.5	17	1.7	0.7	2.8	42
1.8	1.2	2.7	32	1.8	1.2	3.0	76
1.9	1.8	2.9	55	1.9	2.0	3.5	225
2.0	2.9	3.2	116	2.0	3.1	4.0	424
2.1	4.4	3.5	221	2.2	6.7	5.0	900
2.3	9.2	5.0	900	2.4	12	6.0	1,400
				2.6	24		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.3	3.2	1.3	14	b 23	248	51	61	2.4	1.5	1.9	1.9
2	* 2.3	1.9	1.6	450	b 19	285	48	64	2.4	4.8	1.8	1.7
3	2.1	1.5	3.3	141	b 17	300	41	47	2.2	3.2	* 1.6	1.5
4	2.1	1.5	9.4	58	b 16	546	38	34	1.9	2.0	1.5	1.5
5	2.0	1.4	16	40	16	370	40	29	1.7	2.2	1.3	1.4
6	1.8	1.3	9.8	32	20	265	427	23	1.7	1.6	1.4	1.4
7	1.5	1.0	6.6	27	776	271	223	25	2.1	2.5	30	1.4
8	1.4	.80	4.8	24	469	241	* 221	23	2.2	1.8	85	1.2
9	1.3	.80	3.7	153	868	* 170	982	20	* 1.9	1.7	37	* 1.2
10	.80	* 1.0	* 3.3	83	817	132	229	19	2.3	1.6	16	1.3
11	.70	1.5	23	47	420	94	227	18	2.2	1.2	8.7	1.5
12	1.1	1.4	55	35	837	76	184	* 16	1.7	3.0	4.3	34
13	1.2	1.4	29	29	199	72	120	14	1.4	3.5	2.7	39
14	31	1.3	17	* 22	121	71	87	11	1.4	2.5	2.2	17
15	19	1.3	11	20	85	59	489	7.9	1.3	10	2.0	102
16	3.3	1.4	8.7	17	66	39	559	8.3	1.2	1.7	1.9	46
17	3.7	1.3	b 7.0	14	* 56	45	199	8.8	1.1	2.8	1.7	39
18	4.6	1.3	b 5.6	b 13	49	117	131	11	1.1	34	1.7	22
19	4.1	1.4	4.6	b 12	42	58	96	11	1.1	* 13	36	14
20	3.8	1.3	3.7	b 12	36	43	73	8.9	.90	6.5	23	11
21	4.3	1.2	3.3	b 13	b 31	37	59	7.3	.90	3.1	11	7.4
22	3.8	1.2	3.3	15	b 28	35	52	6.1	.90	2.0	5.7	7.1
23	3.8	1.2	4.1	305	25	38	49	5.3	.90	1.5	3.2	8.5
24	3.9	1.2	5.6	613	29	81	77	4.4	.90	1.3	2.2	9.8
25	3.9	1.4	11	207	244	67	295	4.1	.90	2.5	2.0	7.7
26	4.2	1.2	148	166	115	172	289	4.2	.80	6.4	1.9	6.0
27	4.2	1.2	56	129	131	100	132	7.3	.70	2.8	2.0	4.1
28	4.4	1.4	31	76	300	74	95	5.8	1.6	2.2	1.7	3.1
29	4.2	1.2	22	47	------	86	109	3.9	1.7	2.1	1.4	2.9
30	3.8	1.3	18	b 35	------	80	73	3.0	3.3	2.0	1.4	2.8
31	3.7	------	14	b 28	------	59	------	2.8	------	1.9	1.4	------
TOTAL	134.30	40.50	540.7	2,877	5,855	4,333	5,695	514.1	46.80	128.9	295.4	401.4
MEAN	4.33	1.35	17.4	92.8	209	140	190	16.6	1.56	4.16	9.53	13.4
CFSM	-	-	-	-	-	-	-	-	-	-	-	-
IN	-	-	-	-	-	-	-	-	-	-	-	-
∱	-5.20	-0.71	+6.2	+8.6	+2	-1	0	-2.7	-1.82	-0.59	+0.59	-0.6

CALENDAR YEAR 1964	MAX	6,390	MIN	.40	MEAN	66.4	CFSM	0.761	IN	10.35	∱	0.4
WATER YEAR 1964-65	MAX	982	MIN	.70	MEAN	57.2	CFSM	0.655	IN	8.89	∱	0.3

Peak discharge (base, 4,000 cfs).--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
∱ Change in contents, equivalent in cubic feet per second, in Brush Creek Reservoir; furnished by the Indiana Department of Natural Resources.

3-3695. Vernon Fork at Vernon, Ind.

Location (revised).--Lat 38°58'34", long 85°37'13", in SE¼ sec. 10, T. 6 N., R. 8 E., on right bank just downstream from highway bridge, 1 mile southwest of Vernon and 3.1 miles downstream from South Fork Vernon Fork.
Drainage area.--201 sq mi.
Records available.--October 1939 to September 1965. Monthly discharge only for some periods, published in WSP 1305.
Gage.--Water-stage recorder (digital). Datum of gage is 587.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1944 (levels by Indiana Flood Control and Water Resources Commission). Prior to Jan. 14, 1940, staff gage at same site and datum.
Average discharge.--26 years, 218 cfs.
Extremes.--Maximum discharge during year, 6,000 cfs Apr. 9 (gage height, 11.64 ft); minimum, 1.2 cfs Aug. 4 (gage height, 0.11 ft).
1939-65: Maximum discharge, 56,800 cfs Jan. 21, 1959 from rating curve extended above 24,000 cfs on basis of slope-area measurement of peak flow (gage height, 32.83 ft from high-water mark). No flow at times in 1940, 1943-44.
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversion above station for municipal water supply of North Vernon and Vernon. Part of this diversion returned above gage as sewage effluent by North Vernon Sewage Treatment Plant.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 15 to Dec. 11, May 8 to June 13)

Oct. 1 to Jan. 23

0.04	1.0	0.8	22
.2	2.7	1.0	34
.3	4.2	1.5	80
.4	6.5	2.0	167
.5	9.5	3.0	410
.6	13	4.0	735

Jan. 24 to Sept. 30

0.04	1.0	1.2	50
.1	1.6	1.5	80
.2	2.7	2.0	170
.3	4.2	2.5	285
.4	6.5	3.0	435
.5	9.5	4.0	770
.6	13	6.0	1,650
.8	22	8.0	2,880
1.0	34		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	4.4	3.3	3.1	45	b 63	649	124	112	5.9	6.8	2.1	11
2	3.3	3.1	3.8	720	b 53	516	114	102	5.8	8.5	*1.9	13
3	2.5	3.1	13	569	b 46	835	101	88	5.6	13	1.6	8.5
4	2.1	3.4	22	202	b 43	1,160	90	65	4.2	12	1.5	6.5
5	1.9	2.9	20	125	43	1,050	87	57	3.6	6.5	1.7	4.6
6	*1.7	2.3	20	93	49	648	917	49	4.0	4.6	1.7	3.4
7	1.7	2.0	14	76	1,640	583	*650	44	4.7	4.4	3.1	*3.2
8	1.9	1.8	9.5	67	1,250	577	322	42	5.9	4.8	113	2.8
9	1.5	1.7	9.2	428	1,770	390	2,590	37	* 5.7	4.0	145	2.8
10	1.9	*1.7	7.6	359	2,220	304	579	36	4.7	22	69	2.8
11	2.2	1.6	* 59	170	844	216	1,400	33	22	21	48	3.7
12	2.0	1.7	167	114	*2,150	* 176	614	30	14	4.6	25	49
13	2.1	1.5	122	* 88	524	150	340	*28	7.5	2.7	15	153
14	2.0	1.6	65	72	288	141	232	25	4.8	2.3	8.2	93
15	8.4	1.9	42	59	206	127	808	21	3.4	2.3	6.5	162
16	23	2.4	30	b 52	160	99	1,550	21	3.0	* 2.3	4.8	265
17	5.7	2.7	24	b 45	131	94	508	21	2.6	10	3.5	149
18	2.8	2.2	20	b 38	112	186	315	28	3.9	12	2.6	96
19	2.6	2.4	16	b 35	96	144	229	50	3.2	50	25	a45
20	1.7	3.0	13	b 35	81	95	178	33	2.9	41	62	a35
21	3.0	2.9	11	b 38	b 70	80	142	24	2.5	24	35	a27
22	4.1	2.0	10	44	b 64	73	119	21	2.4	14	25	a23
23	3.8	1.7	10	456	59	75	110	17	2.4	8.9	17	a32
24	3.5	1.5	11	1,540	62	120	119	13	2.9	7.9	9.9	a45
25	3.6	2.2	32	584	715	149	214	11	3.0	18	6.0	a55
26	4.3	3.6	464	348	355	297	668	9.4	2.6	8.9	4.4	a40
27	3.4	3.2	265	372	313	241	265	8.6	3.6	4.2	4.2	a31
28	4.2	3.5	118	193	833	162	187	8.1	3.4	3.5	7.6	a23
29	5.1	5.1	78	127	------	197	173	9.0	3.5	4.4	4.6	18
30	3.8	4.0	62	102	------	232	148	7.4	5.0	3.5	3.5	15
31	3.4	------	50	78	------	155	------	6.4	------	2.2	3.5	------
TOTAL	117.6	76.0	1,791.2	7,274	14,240	9,921	13,893	1,056.9	148.7	334.3	661.9	1,418.3
MEAN	3.79	2.53	57.8	235	509	320	463	34.1	4.96	10.8	21.4	47.3
CFSM	.019	.013	.288	1.17	2.53	1.59	2.30	.170	.025	.054	.107	.235
IN	.02	.01	.33	1.35	2.63	1.84	2.57	.20	.03	.06	.12	.26

CALENDAR YEAR 1964 MAX 13,700 MIN 1.1 MEAN 160 CFSM .796 INCHES 10.80
WATER YEAR 1964-65 MAX 2,590 MIN 1.5 MEAN 140 CFSM .697 INCHES 9.42

Peak discharge (base, 6,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-9	0615	11.64	6,000				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3715. East Fork White River near Bedford, Ind.

Location.--Lat 38°46'10", long 86°24'30", in NE¼ sec. 21, T. 4 N., R. 1 E., on downstream side of center pier of bridge on county road, 0.4 mile upstream from Mill Creek, 2.9 miles downstream from Sugar Creek, 3.9 miles northeast of Mitchell, and 7.8 miles southeast of Bedford.

Drainage area.--3,870 sq mi.

Records available.--May 1939 to September 1965 (high-water records only October 1943 to September 1957).

Gage.--Water-stage recorder (digital). Datum of gage is 473.59 ft above mean sea level, datum of 1929. Prior to Feb. 6, 1940, wire-weight gage and Feb. 6, 1940 to Sept. 24, 1957, water-stage recorder, at site 9.7 miles downstream at datum 4.39 ft lower. Since Sept. 24, 1957, auxiliary water-stage recorder 9.7 miles downstream from base gage.

Average discharge.--12 years (1939-43, 1957-65), 3,469 cfs.

Extremes.--Maximum discharge during year, 31,600 cfs Feb. 14; maximum gage height, 24.86 ft Feb. 15; minimum 245 cfs Oct. 14, 18 (gage height, 2.40 ft).
1939-65: Maximum discharge, 75,700 cfs Mar. 12, 1964; maximum gage height, 35.97 ft May 11, 1961.
Flood in March 1913 reached a stage of 47.5 ft, from floodmark determined by Corps of Engineers (discharge, 155,00 cfs) at former site.

Remarks.--Records good.

Rating tables, except periods of ice effect or fall used as a factor (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 3-5, Aug. 2 to Sept. 12, Sept. 24-30)

Oct. 1 to Apr. 11				Apr. 12 to Sept. 30			
2.4	245	11.0	7,080	2.7	395	7.0	3,480
2.6	345	15.0	11,000	3.0	585	11.0	7,080
3.0	565	21.0	18,800	3.5	910	15.0	11,000
5.0	1,860	27.0	31,200	4.0	1,240	19.0	15,900
7.0	3,480			5.0	1,930	20.0	17,400

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	283	270	* 322	734	a 2,100	7,750	5,710	11,800	* 1,240	816	720	* 557
2	284	270	334	753	a 1,700	* 8,670	4,660	8,560	1,200	879	* 696	591
3	282	* 265	380	1,360	a 1,500	9,390	3,980	6,460	1,170	965	661	642
4	277	270	426	* 2,750	a 1,400	10,200	3,600	5,330	1,140	1,040	636	654
5	271	270	459	3,840	a 1,400	11,100	3,300	*4,570	1,100	1,010	618	602
6	265	270	469	3,000	a 1,500	11,500	3,520	4,020	1,090	957	602	542
7	264	275	466	2,310	a 2,100	12,200	4,750	3,620	1,080	*936	668	503
8	261	275	474	1,930	a 4,100	12,400	6,570	3,350	1,060	876	702	477
9	256	275	469	1,760	7,130	11,900	8,320	3,160	1,050	891	869	455
10	255	275	451	1,900	12,600	10,900	9,350	2,950	1,090	932	1,050	436
11	252	275	570	2,290	12,100	9,540	12,900	2,730	1,120	921	1,040	445
12	252	275	714	2,440	k 13,600	7,750	k 16,700	2,580	1,100	1,170	951	663
13	250	275	848	2,080	k 21,900	6,360	k 16,100	2,460	1,080	1,670	837	1,210
14	249	275	948	1,770	k 30,200	5,510	k 15,900	2,330	999	1,610	747	1,370
15	253	280	928	1,570	k 30,300	4,940	k 16,000	2,190	932	2,130	682	1,530
16	255	298	822	1,440	k 24,400	4,510	k 15,000	2,070	880	1,900	630	1,470
17	250	303	724	a 1,150	k 17,600	4,210	k 13,300	1,980	843	1,310	591	1,620
18	252	303	648	a 850	12,000	4,240	k 13,700	1,930	808	2,220	558	1,880
19	258	315	588	a 850	8,260	4,520	k 14,000	2,190	770	1,940	561	1,960
20	261	322	625	b 900	5,820	4,470	12,000	2,250	744	1,360	617	1,720
21	265	332	631	b 1,000	4,840	4,150	10,100	2,060	721	1,430	624	1,450
22	265	334	538	b 1,150	4,250	3,670	8,190	1,860	702	1,320	601	1,260
23	270	327	489	1,560	3,810	3,320	6,110	1,710	693	1,170	568	1,120
24	265	319	465	2,310	3,510	3,110	5,030	1,600	678	1,090	550	1,070
25	265	326	471	3,830	b 3,500	3,100	4,920	1,510	658	2,060	526	1,090
26	265	327	534	5,530	b 3,600	3,760	6,370	1,430	638	1,530	513	1,060
27	265	324	778	6,110	b 4,500	4,770	7,960	1,390	621	1,310	501	998
28	265	332	994	5,590	6,120	5,240	10,500	1,370	607	1,040	516	* 925
29	270	324	1,170	a 4,700	------	* 5,860	13,300	1,390	638	895	519	864
30	270	325	1,010	a 3,600	------	6,320	14,000	1,360	1,290	810	490	831
31	270	------	830	a 2,700	------	6,350	------	1,300	------	753	508	------
TOTAL	8,165	8,906	19,575	73,757	245,840	211,710	285,840	93,510	27,742	38,941	20,372	29,997
MEAN	263	297	631	2,379	8,780	6,829	9,528	3,016	925	1,256	657	1,000
CFSM	.068	.077	.163	.615	2.27	1.76	2.46	.779	.239	.325	.170	.258
IN	.08	.09	.19	.71	2.36	2.03	2.75	.90	.27	.37	.20	.29

CALENDAR YEAR 1964 MAX 73,100 MIN 235 MEAN 3,431 CFSM .887 INCHES 12.07
WATER YEAR 1964-65 MAX 30,300 MIN 249 MEAN 2,916 CFSM .754 INCHES 10.23

Peak discharge (base, 13,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-14	2200 to 2400	24.86	31,600				
4-12	0600 to 1000	18.88	16,900				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.
k Fall used as a factor.

3-3716. South Fork Salt Creek at Kurtz, Ind.

Location.--Lat 38°57'46:, long 86°12'12", in SW¼ sec. 9, T. 6 N., R. 3 E., on right bank at downstream side of county road bridge, at the north edge of Kurtz, 0.8 mile upstream from unnamed tributary from the right, and 6.1 miles upstream from Little Salt Creek.

Drainage area.--38.1 sq mi.

Records available.--October 1960 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 568.00 ft above mean sea level, datum of 1929 (unadjusted).

Average discharge.--5 years, 35.6 cfs.

Extremes.--Maximum discharge during year, 5,500 cfs Feb. 10 (gage height, 13.44 ft, from floodmark); no flow for many days.
1960-65: Maximum discharge, 5,500 cfs Feb. 10, 1965 (gage height, 13.44 ft, from floodmark); no flow at times in most years.
Flood of January 1959 reached a stage of approximately 15 ft, from floodmarks.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 25 to Sept. 30)

2.3	0	3.0	16
2.4	.1	3.2	32
2.5	.5	3.5	72
2.6	1.5	4.0	165
2.7	3.3	5.0	400
2.8	6.2	7.0	1,050
2.9	10	9.0	1,830

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			*0	5.2	b6.6	242	27	31	0.3	0.2	0	0
2			0	52	*b6.5	265	23	24	.8	.2	*0	0
3			0	23	b6.5	*47	21	19	*4.6	.2	0	0
4		*	0	*12	b6.5	319	19	*16	.8	.4	0	0
5			0	9.2	b6.6	140	25	15	.5	.2	0	0
6			0	8.0	b8.6	96	150	16	.6	*.1	0	0
7			0	6.9	458	75	90	18	1.6	.1	0	0
8			0	6.6	119	64	73	14	1.0	.1	12	0
9			0	32	1,100	50	190	12	.7	.1	7.1	0
10			0	20	1,670	37	78	31	.7	2.3	1.2	0
11			38	13	276	30	258	23	.7	.8	.4	0
12			16	10	226	27	124	17	.6	.3	.2	20
13			8.0	8.8	84	23	68	14	.3	.2	.1	4.2
14			4.8	6.6	53	21	48	11	.2	.1	0	1.2
15			3.3	6.2	36	18	101	9.2	.2	.1	0	12
16			2.7	4.2	29	16	90	9.2	.1	0	0	6.0
17			2.5	4.0	25	31	63	9.2	.1	3.6	0	2.9
18			2.0	b4.0	21	34	48	8.8	.1	58	0	1.5
19			1.2	b4.2	16	22	36	9.2	.1	2.9	17	1.0
20			1.2	b4.5	b13	20	29	6.2	0	1.1	2.1	.6
21			1.1	4.8	b11	18	23	5.8	0	.6	.4	.4
22			1.0	8.8	10	17	20	4.5	0	.4	.2	.6
23			1.4	140	10	22	22	3.3	0	.3	.1	.7
24			2.0	146	12	29	54	2.5	0	.2	0	.6
25			3.8	48	16	35	608	2.0	0	.1	0	.4
26			10	39	32	68	187	1.6	0	.1	0	.3
27			10	25	67	43	87	1.6	0	.1	0	.2
28			6.9	18	398	38	63	1.0	0	0	0	*.2
29			5.8	b12		*52	54	.7	.1	0	0	.2
30			5.5	b10	------	37	41	.8	.4	0	0	.8
31		------	4.8	b 7.6	------	31	------	.4	------	0	*0	------
Total	0	0	132.0	699.6	4,723.3	1,967	2,720	337.0	14.5	72.8	40.8	53.8
Mean	0	0	4.26	22.6	169	63.5	90.7	10.9	0.483	2.35	1.32	1.79
Cfsm	0	0	0.112	0.593	4.44	1.67	2.38	0.286	0.013	0.062	0.035	0.047
In.	0	0	0.13	0.68	4.62	1.92	2.66	0.33	0.01	0.07	0.04	0.05

Calendar year 1964: Max 3,870 Min 0 Mean 34.2 Cfsm 0.898 In. 12.23
Water year 1964-65: Max 1,670 Min 0 Mean 29.5 Cfsm 0.774 In. 10.51

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	Unknown	13.44	5,500				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3716.5 North Fork Salt Creek at Nashville, Ind.

Location.--Lat 39°12'05", long 86°14'50", in SW¼ sec. 19, T. 9 N., R. 3 E., near center of stream at downstream side of bridge on State Highway 46, 700 ft downstream from Greasy Creek and 0.4 mile south of center of Nashville, Brown County.

Drainage area.--75.9 sq mi.

Records available.--July 1962 to September 1965.

Gage.--Water-stage recorder (digital after Jan. 21, 1965). Datum of gage is 579.576 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 4,220 cfs Feb. 10 (gage height, 14.21 ft); no flow for many days.
1962-65: Maximum discharge, 7,500 cfs Mar. 4, 1963; maximum gage height, 15.93 ft (from floodmark) Mar. 9, 1964; no flow at times during most years.

Remarks.--Records good.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 19 to Sept. 11, Sept. 13-30)

Oct. 1 to Dec. 30		Dec. 31 to Sept. 30			
2.46	0	2.3	0.3	3.2	59
2.5	0.2	2.4	1.0	3.5	109
2.6	1.3	2.5	2.4	4.0	215
2.7	3.2	2.6	4.8	5.0	465
		2.7	8.5	7.0	1,050
		2.8	14	9.0	1,700
		3.0	32	11.0	2,500

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	11	b11	722	78	76	4.9	1.2	2.2	5.4
2			0	8.0	b 9.5	483	68	60	5.0	4.0	2.0	4.5
3			0	22	b 8.0	264	55	47	4.7	6.3	2.4	3.8
4			1.4	14	b 7.0	497	49	38	4.1	3.3	2.8	2.8
5			.6	12	b 7.0	306	50	34	3.6	1.7	2.8	3.8
6			.3	9.4	b 8.0	188	476	49	4.3	1.0	3.0	3.2
7			.1	8.0	200	143	325	129	11	5.4	15	3.0
8			.1	7.2	189	117	212	73	9.1	7.9	89	2.2
9			.1	8.5	703	96	799	54	5.5	5.8	59	1.9
10			.1	11	* 2,380	76	259	42	4.5	8.6	19	*1.7
11			2.6	11	338	62	230	32	3.8	4.7	9.9	12
12			2.0	10	217	53	*242	25	3.2	2.7	6.0	192
13	*		1.0	8.5	129	45	164	22	2.5	1.8	4.5	73
14			* .5	7.6	92	40	123	19	1.9	2.0	3.5	41
15			.2	5.7	69	*37	523	16	1.7	2.4	2.8	125
16			.2	b 4.5	54	33	530	14	1.6	1.7	2.6	65
17			.5	b 3.8	44	39	251	*14	1.6	14	*2.2	52
18			.2	b 3.6	37	61	164	14	1.5	61	2.4	36
19		*	0	b 3.5	*31	48	117	17	1.4	*32	16	26
20		*	0	b 3.5	27	42	90	11	1.3	21	6.8	20
21			0	b 3.7	26	38	72	9.3	1.2	10	4.2	32
22			0	* 4.5	21	35	60	9.6	* 1.3	7.6	3.0	129
23			.1	45	20	45	52	8.9	1.1	5.7	2.6	53
24			.4	314	20	111	60	7.8	.9	4.8	1.6	36
25			.5	107	19	97	1,290	8.2	.8	4.0	1.3	26
26			.3	69	21	117	573	16	.9	3.5	2.0	20
27			.2	45	27	95	245	16	1.0	3.2	5.0	16
28			.1	34	230	89	156	12	1.4	2.8	8.5	13
29			.1	22		133	113	8.0	1.9	2.8	4.0	11
30			.3	b 18	- - - - -	106	88	6.5	1.6	2.6	2.4	12
31		- - - - -	19	b 14	- - - - -	86	- - - - -	5.6	- - ----	2.4	2.6	- - - - - -
Total	0	0	30.9	849.0	4,944.5	4,304	7,514	893.9	89.3	237.9	291.1	1,022.3
Mean	0	0	0.997	27.3	177	139	250	28.8	2.98	7.67	9.39	34.1
Cfsm	0	0	0.013	0.360	2.33	1.83	3.29	0.379	0.039	0.101	0.124	0.449
In.	0	0	0.02	0.42	2.43	2.11	3.67	0.44	0.04	0.12	0.14	0.50

Calendar year 1964: Max 5,030 Min 0 Mean 59.6 Cfsm 0.785 In. 10.68
Water year 1964-65: Max 2,380 Min 0 Mean 55.3 Cfsm 0.729 In. 9.89

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0700	14.21	4,220				
4-9	0245	9.38	1,840				
4-25	1430	10.96	2,500				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3720. North Fork Salt Creek near Belmont, Ind.

Location.--Lat 39°09'00", long 86°20'14", in NW¼ sec. 5, T. 8 N., R. 2 E., on right bank 15 ft downstream from bridge on State Highway 46, 100 ft upstream from Schooner Creek, 0.7 mile northeast of Belmont, 6½ miles upstream from Brummett Creek, and 20 miles upstream from mouth. Records include flow of Schooner Creek.

Drainage area.--120 sq mi, includes that of Schooner Creek.

Records available.--April 1946 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 543.62 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to Oct. 9, 1951, wire-weight gage at same site and datum.

Average discharge.--19 years, 129 cfs.

Extremes.--Maximum discharge during year, 5,280 cfs Feb. 10 (gage height, 19.42 ft); no flow for many days.
1946-65: Maximum discharge, 13,300 cfs June 23, 1960 (gage height, 23.10 ft); no flow at times in most years.
Flood in March 1913 reached a stage of 25.7 ft, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 1 to Dec. 11)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
2.4	0	3.2	18	2.5	1.2	4.0	76
2.5	.2	3.5	38	2.6	2.6	6.0	311
2.6	.6	4.0	79	2.7	4.6	10.0	837
2.7	1.4	5.0	184	2.8	7.3	14.0	1,460
2.8	3.0	6.0	311	2.9	11	16.0	1,930
3.0	8.5	8.0	571	3.0	14	18.0	3,040
				3.2	25	19.0	4,480
				3.5	43		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.2	18	b18	1,130	112	112	14	8.0	2.6	9.9
2		*0	.4	19	b15	977	107	102	*13	7.0	2.4	11
3		0	.9	19	b13	*480	84	80	12	21	2.1	*11
4		0	.7	32	*b10	809	76	*64	9.9	15	*2.4	9.0
5		0	.4	24	b 9.0	584	76	60	8.3	10	2.1	9.9
6		0	.2	*16	11	311	643	60	8.3	6.5	1.8	9.0
7		0	.2	12	247	208	636	160	14	17	6.6	8.3
8		0	.2	10	363	172	324	117	23	27	74	6.2
9		0	.2	11	756	144	915	88	19	*28	172	5.7
10		0	.2	14	3,640	112	441	72	31	25	54	4.9
11		0	1.3	16	1,280	92	363	57	39	22	28	25
12		0	2.4	16	363	80	428	46	18	14	17	429
13		0	4.9	14	184	72	285	38	12	9.6	12	184
14		0	3.6	11	127	64	184	32	8.6	7.6	9.3	84
15		0	2.4	9.6	97	60	641	27	7.0	6.0	7.3	136
16		0	1.8	b 8.0	76	54	977	22	6.0	4.6	6.0	138
17		C	1.6	b 5.5	68	60	467	21	4.9	11	4.9	102
18		0	.9	b 5.0	57	88	285	42	4.3	66	4.3	72
19		0	.6	b 4.5	57	80	184	46	3.8	64	18	50
20		0	.6	4.9	41	58	138	33	3.4	39	3.4	39
21		0	.5	5.2	41	60	112	21	3.1	23	12	48
22		0	.4	6.1	34	57	92	16	2.9	13	9.6	363
23		0	.6	55	28	60	88	14	2.9	9.6	9.3	127
24		0	.7	454	b27	127	92	13	2.6	7.6	7.3	76
25		0	.9	160	b27	132	1,290	19	2.2	6.5	6.0	50
26		0	.7	97	28	160	1,690	37	1.8	5.4	6.0	37
27		0	.5	66	25	144	532	54	1.8	4.1	8.6	30
28		.1	.4	52	204	127	272	36	1.6	3.4	16	26
29		.2	.9	38		184	184	25	2.1	3.1	15	19
30		* .3	.9	34	------	*160	138	17	7.8	2.6	11	20
31		------	.7	25	------	127	------	14	------	2.4	8.3	------
Total	0	0.6	31.1	1,261.8	7,846.0	6,983	11,856	1,545	288.3	489.0	539.3	2,139.9
Mean	0	0.02	1.00	40.7	281	225	395	49.8	9.61	15.8	17.4	71.3
Cfsm	0	0.00017	0.0083	0.339	2.34	1.87	3.29	0.415	0.080	0.132	0.145	0.594
In.	0	0.002	0.01	0.39	2.44	2.16	3.67	0.48	0.09	0.15	0.17	0.66

Calendar year 1964: Max 4,610 Min 0 Mean 94.6 Cfsm 0.788 In. 10.72
Water year 1964-65: Max 3,640 Min 0 Mean 90.4 Cfsm 0.753 In. 10.22

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1630	19.42	5,280				
4-25	2400	--	2,560				
4-26	0200	17.38	--				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3725. Salt Creek near Harrodsburg, Ind.

Location.--Lat 39°00'16", long 86°30'31", in NW¼ sec. 34, T. 7 N., R. 1 W., on right bank 1,300 ft downstream from Monroe Reservoir dam site, 0.9 mile upstream from Clear Creek, 2.2 miles southeast of Harrodsburg, and 25.1 miles upstream from mouth.

Drainage area.--441 sq mi.

Records available.--May 1955 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 480.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1960, wire-weight gage at site 3,500 ft upstream at datum 2.41 ft higher.

Average discharge.--10 years, 482 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 3,710 cfs Feb. 10 (gage height, 21.94 ft); no flow Oct. 1 to Dec. 2.
1955-65: Maximum discharge, 22,000 cfs June 25, 1960 (gage height, 32.76 ft, from graph based on gage readings at site and datum then in use); maximum gage height at present site and datum, 35.35 ft May 9, 1961; no flow Sept. 29 to Dec. 2, 1964.

Remarks.--Records good except those for periods of ice effect or backwater, which are fair. Flow regulated by Monroe Reservoir (capacity, 418,700 acre-ft), since January 1963.

Rating tables, except periods of ice effect or backwater (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 3				Jan. 4 to Sept. 30			
4.2	0	4.8	3.4	4.8	10	7.0	142
4.3	.1	5.0	7.0	5.0	14	8.0	280
4.4	.3	5.2	12	5.3	20	9.0	450
4.5	.6	5.5	25	5.6	28	11.0	815
4.6	1.2	5.8	44	5.9	43	13.0	1,240
4.7	2.1	6.2	81	6.2	64	17.0	2,140
				6.5	90	21.0	3,350

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	24	b 45	1,770	*265	1,650	24	24	18	26
2		*	* 0	38	b 18	3,180	376	152	24	27	19	* 26
3			20	71	*b 10	3,190	416	*131	*27	24	* 20	22
4			33	126	b 10	3,000	294	114	25	25	22	24
5			23	*126	b 10	* 2,960	249	180	24	22	24	25
6			15	109	21	2,300	900	199	24	*21	21	25
7			12	95	250	1,500	2,330	192	64	20	18	24
8			11	81	188	878	2,100	236	70	21	20	24
9			11	86	500	679	1,400	250	37	21	20	24
10			10	90	3,280	590	1,920	228	25	21	20	24
11			11	109	1,710	427	1,190	192	50	21	21	25
12			14	109	432	218	1,120	192	57	22	20	160
13			16	104	154	166	1,640	142	54	21	23	220
14			18	86	100	166	1,190	68	41	21	24	260
15			55	b 65	80	160	868	40	24	21	21	450
16			57	b 52	65	217	1,780	28	21	20	20	600
17			50	b 45	57	360	2,090	25	20	18	18	540
18			38	b 41	52	352	1,860	23	19	20	18	439
19			29	b 39	43	297	1,020	25	19	21	18	170
20			24	b 38	37	280	357	27	17	20	20	32
21			19	37	35	192	147	27	16	20	21	32
22			17	37	30	154	142	27	16	20	23	100
23			18	120	30	115	54	26	17	20	25	250
24			18	800	53	135	190	25	17	19	24	548
25			20	1,150	104	233	1,100	26	16	19	24	133
26			20	1,020	274	461	3,330	26	16	19	26	37
27			21	715	1,060	525	3,050	26	21	19	26	55
28			22	467	605	607	2,920	26	21	19	26	79
29			22	282		625	2,830	25	21	19	25	32
30			25	b 170	------	463	2,770	25	22	19	25	32
31		------	24	b 90	------	* 365	------	25	--------	19	25	-------
Total	0	0	673	6,422	9,253	25,565	39,898	4,378	849	643	675	4,438
Mean	0	0	21.7	207	330	857	1,330	141	28.3	20.7	21.8	148
(f)	+1.3	-2.2	+8.1	+1	+1,150	-18	+23	-15	-18.2	-19.7	-27.3	+11

Adjusted for change in contents in Monroe Reservoir

Mean	+1.3	-2.2	+29.8	+208	+1,480	+839	+1,353	+126	+10.1	+1.0	-5.5	+159
Cfsm	0.0029	-0.0050	0.068	0.472	3.36	1.90	3.07	0.283	0.023	0.0023	-0.012	0.361
In.	0.003	-0.006	0.08	0.54	3.50	2.19	3.42	0.33	0.03	0.003	-0.01	0.40

	Observed			Adjusted			
Calendar year 1964 :	Max 7,050	Min 0	Mean 394	Mean 415	Cfsm 0.941	In. 12.67	
Water year 1964-65 :	Max 3,330	Min 0	Mean 257	Mean 344	Cfsm 0.780	In. 10.48	

* Discharge measurement made on this day.
/ Change in contents, equivalent in cubic feet per second, in Monroe Reservoir, furnished by Corps of Engineers
b Stage-discharge relation affected by ice.
Note.--Backwater from East Fork White River or Clear Creek Dec. 3, 11-12, 25-27, Jan. 2, 3, 23, 24, Feb. 7, 9, 14-17, Mar. 4-7, Apr. 6, 25, May 17-19, 26-28, June 2, 7, 10, 11, 29, 30, July 2, 3, 7-11, 17, 18, Aug. 1, 7-10, 19, 20, 27, 28, Sept. 1, 5, 11, 12, 15, 16, 21.

3-3727. Clear Creek near Harrodsburg, Ind.

Location.--Lat 39°02'03", long 86°34'01", in NW¼ sec. 19, T. 7 N., R. 1 W., on left bank at downstream side of county road bridge, 1.9 miles northwest of Harrodsburg, 3.9 miles upstream from Little Clear Creek, and 5.1 miles upstream from mouth.

Drainage area.--55.2 sq mi, of which 6.4 sq mi does not contribute directly to surface runoff.

Records available.--September 1960 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 517.00 ft above mean sea level, datum of 1929.

Average discharge.--5 years, 62.0 cfs.

Extremes.--Maximum discharge during year, 3,240 cfs Feb. 10 (gage height, 9.78 ft); minimum, 4.3 cfs Nov. 27 (gage height, 3.25 ft). 1960-65: Maximum discharge, 6,380 cfs Mar. 9, 1964; minimum, 4.3 cfs Nov. 27, 1964; minimum gage height, 3.20 ft Oct. 3, 1960. Flood of June 1960 reached a stage of 16.47 ft, from floodmarks (discharge, 10,200 cfs on basis of contracted-opening measurement).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by effluent from the sewage treatment plant of the city of Bloomington and possibly by pumpage from several rock quarries.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 8 to Aug. 7, Aug. 10-18, 20-26)

Oct. 1 to Dec. 10

3.2	4.1
3.3	6.5
3.4	9.5
3.6	19
3.8	30

Dec. 11 to Sept. 30

3.1	3.5	4.5	124
3.2	5.9	5.0	230
3.4	13	5.5	375
3.6	23	6.0	570
3.8	37	7.0	1,090
4.0	55	8.0	1,800
4.2	78		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	10	11	8.9	17	a 26	262	65	77	*19	16	17	40
2	11	9.0	23	66	a 22	268	60	66	32	53	11	* 24
3	10	* 11	*62	50	a 21	194	52	* 60	24	43	* 11	20
4	9.3	11	30	35	a 21	*420	50	55	21	19	19	18
5	7.3	11	21	* 32	*a 22	254	61	56	19	15	12	39
6	9.3	11	15	27	a 25	175	352	55	41	*14	11	23
7	9.9	12	12	25	b250	138	217	52	43	126	30	20
8	11	11	12	25	187	121	158	44	26	33	124	21
9	12	8.9	11	45	839	106	152	41	21	38	153	20
10	11	11	11	35	1,500	90	116	39	31	27	46	18
11	10	11	83	30	420	79	126	37	29	16	24	90
12	8.3	10	52	28	243	74	142	35	21	13	15	200
13	10	11	31	25	156	65	113	33	16	12	12	73
14	11	11	25	22	123	62	98	31	14	11	9.8	48
15	11	26	21	b 21	100	57	200	29	14	11	7.1	182
16	10	21	19	b 19	86	52	236	28	14	10	6.5	105
17	11	12	20	b 18	78	67	174	32	13	39	8.0	79
18	10	9.3	17	b 18	70	61	137	36	12	21	7.4	52
19	11	17	15	b 18	62	49	111	33	11	12	79	40
20	9.0	15	14	b 18	55	44	94	29	9.8	12	13	36
21	11	9.6	13	b 19	53	41	82	27	10	12	8.3	172
22	9.8	7.3	13	35	45	41	74	24	12	13	9.4	432
23	10	7.5	14	267	43	50	68	21	13	14	13	129
24	9.9	8.6	18	295	b 43	48	73	20	12	14	9.0	82
25	9.6	9.7	38	151	b 45	47	321	59	12	13	9.0	* 60
26	7.6	8.2	25	115	b 47	60	241	72	11	13	18	46
27	9.4	5.4	20	79	51	53	163	54	9.8	14	133	40
28	11	22	17	66	166	54	123	30	14	14	56	37
29	12	11	17	52	------	72	101	24	22	14	23	33
30	11	8.4	16	a 42	------	63	89	22	43	14	19	33
31	11	------	15	a 32	------	* 61	------	20	------	13	24	------
TOTAL	314.4	347.9	708.9	1,727	4,801	3,228	4,049	1,241	589.6	689	937.5	2,212
MEAN	10.1	11.6	22.9	55.7	171	104	135	40.0	19.7	22.2	30.2	73.7
CFSM	.183	.210	.415	1.01	3.10	1.88	2.45	.725	.357	.402	.547	1.34
IN	.21	.23	.48	1.16	3.23	2.17	2.73	.84	.40	.46	.63	1.49

CALENDAR YEAR 1964 MAX 3,650 MIN 5.4 MEAN 56.4 CFSM 1.02 INCHES 13.91
WATER YEAR 1964-65 MAX 1,500 MIN 5.4 MEAN 57.1 CFSM 1.03 INCHES 14.04

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0445	9.78	3,240				
9-22	0115	7.62	1,510				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3730. Salt Creek near Peerless, Ind.

Location.--Lat 38°56'35", long 86°30'38", in NW¼ sec. 22, T. 6 N., R. 1 W., on downstream side near center of Monon Railroad bridge, 3,400 ft downstream from Little Salt Creek, 1.5 miles north of Peerless, 6.5 miles downstream from Monroe Reservoir, and 18.6 miles upstream from mouth.

Drainage area.--582 sq mi.

Records available.--February 1939 to September 1950, February 1957 to September 1965.

Gage.--Wire-weight gage read twice daily. Datum of gage is 476.02 ft above mean sea level, datum of 1929. Feb. 1-10, 1939 chain gage and Feb. 11, 1939 to Sept. 30, 1950, water-stage recorder, at same site and datum.

Average discharge.--19 years, 651 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 5,180 cfs Feb. 10 (gage height, 23.25 ft); minimum, 6.9 cfs Oct. 6, 7 (gage height, 1.48 ft).
1939-50, 1957-65: Maximum discharge, 25,100 cfs May 10, 1961 (gage height, 35.33 ft, from graph based on gage readings); minimum, 0.7 cfs Aug. 18, 1940.
Flood of January 1937 reached a stage of 34.3 ft (information by Corps of Engineers).

Remarks.--Records fair. Stage-discharge relation affected at times by backwater from East Fork White River or return flow from overbank storage. Flow regulated by Monroe Reservoir (capacity, 418,700 acre-ft), since January 1963.

Rating table, except periods of ice effect and backwater (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 9-12, 17-20, Mar. 25 to Apr. 6)

1.4	6.5	2.1	57	9.0	1,060
1.5	8.7	2.5	97	13.0	1,900
1.6	12	3.0	142	17.0	3,000
1.7	18	4.0	230	21.0	4,300
1.9	36	6.0	500	23.0	5,100

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	12.0	12	35	b170	1,830	500	2,400	50	87	30	52
2	8.7	12.0	*13	76	b110	3,300	485	616	55	72	32	*59
3	8.7	*8.7	76	174	b 85	3,480	470	*210	*67	112	*28	57
4	9.0	7.8	65	182	b 77	3,810	410	274	57	67	44	45
5	8.3	8.0	39	*191	77	*3,840	379	241	53	50	46	102
6	7.2	7.8	25	166	100	3,540	1,070	274	52	*43	36	63
7	7.6	8.3	20	150	593	2,880	2,250	298	125	158	113	45
8	8.7	8.5	17	125	789	1,580	2,520	285	116	97	139	45
9	10	8.0	17	142	1,320	1,090	1,560	311	82	63	222	46
10	11	7.6	16	166	4,780	960	2,100	298	59	82	92	46
11	10	7.8	59	166	3,450	603	1,690	252	102	59	56	59
12	11	11	120	174	1,470	568	1,520	230	97	49	38	337
13	10	8.3	60	158	998	324	1,900	220	82	47	39	311
14	11	7.8	41	134	c500	274	1,850	142	77	42	41	285
15	13	11	48	116	c300	263	1,410	87	46	40	40	639
16	12	44	72	b103	c240	263	1,950	62	87	38	31	789
17	13	23	65	b 94	c190	365	2,490	65	37	46	28	694
18	14	13	49	b 87	c160	455	2,220	65	36	92	29	534
19	9.7	16	37	b 80	c140	365	1,630	77	34	59	46	348
20	14	21	35	b 76	c125	365	884	61	32	45	65	97
21	11	16	29	72	c110	311	470	61	29	42	44	82
22	14	11	30	72	c100	337	337	57	28	40	44	719
23	13	10	27	130	92	269	274	52	28	40	49	621
24	14	9.0	27	1,060	92	200	241	50	28	39	42	713
25	14	11	44	1,350	158	296	1,710	50	39	36	42	364
26	14	13	45	1,270	200	470	3,510	125	26	34	45	272
27	11	11	39	998	779	534	3,270	87	32	34	60	97
28	11	9.7	35	713	922	675	3,060	67	34	34	77	150
29	13	29	34	470		694	3,000	57	52	30	57	107
30	13	14	35	337	------	694	2,970	52	300	30	49	*66
31	12	------	36	b250	------	*549	------	53	-------	34	49	-------
Total	345.6	385.3	1,267	9,317	18,127	35,184	48,130	7,179	1,942	1,741	1,753	7,844
Mean	11.1	12.8	40.9	301	647	1,135	1,604	232	64.7	56.2	56.5	261
(ℓ)	+1.3	-2.2	+8.1	+1	+1,150	-18	+23	-16	-18.2	-19.7	+27.3	+11

Adjusted for change in contents in Monroe Reservoir

Mean	+12.4	+10.6	+49.0	+302	+1,797	+1,117	+1,627	+216	+46.5	+36.5	+83.8	+272
Cfsm	0.021	0.018	0.084	0.519	3.09	1.92	2.80	0.371	0.080	0.063	0.144	0.467
In.	0.02	0.02	0.10	0.60	3.22	2.21	3.12	0.43	0.09	0.07	0.17	0.52

	Observed			Adjusted		
Calendar year 1964 :	Max 8,910	Min 5.7	Mean 474	Mean 495	Cfsm 0.851	In. 11.44
Water year 1964-65 :	Max 4,780	Min 7.2	Mean 365	Mean 452	Cfsm 0.777	In. 10.57

* Discharge measurement made on this day.
ℓ Change in contents, equivalent in cubic feet per second, in Monroe Reservoir, furnished by Corps of Engineers.
b Stage-discharge relation affected by ice.
c Backwater from East Fork White River or return flow from overbank storage.

3-3732. Indian Creek near Springville, Ind.

Location.--Lat 38°57'01", long 86°40'30", in SW¼ sec. 18, T. 6 N., R. 2 W., on left bank at downstream side of State Highway 54 bridge, ¼ mile downstream from Popcorn Creek, and 4 miles northwest of Springville.

Drainage area.--60.9 sq mi.

Records available.--September 1961 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 580.00 ft above mean sea level, datum of 1929, unadjusted.

Extremes.--Maximum discharge during year, 3,520 cfs Feb. 10 (gage height, 9.56); no flow for many days.
1961-65: Maximum discharge, 6,450 cfs Mar. 9, 1964 (gage height, 12.95 ft); minimum, no flow in some years.
Flood of Spring 1950 or 1951 reached a stage of 18.4 ft, from information by local resident.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 22

1.43	0
1.5	.2
1.6	.7
1.7	1.7
1.8	3.6
1.9	6.0
2.0	10
2.2	25
2.4	45

Jan. 23 to June 29

1.6	0.9	2.6	75
1.7	2.1	3.0	165
1.8	4.1	3.5	325
1.9	7.0	4.0	520
2.0	11	5.0	930
2.2	26	6.0	1,380
2.4	46	7.0	1,900

June 30 to Sept. 30

1.5	0.3
1.6	1.0
1.7	2.2
1.8	4.2
1.9	7.0

Note.--Same as preceding table above 1.9 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1		0	0.50	2.1	b16	* 235	33	48	2.1	18	0.90	*5.5
2		0	* 2.2	37	b13	264	* 31	38	22	65	* .80	4.4
3		*0	9.4	35	*b12	160	27	31	20	60	.70	3.1
4		0	8.9	19	b12	374	26	*27	* 8.3	23	.70	2.4
5		0	4.7	* 13	b13	180	28	29	5.0	13	.80	77
6		0	2.2	9.3	28	117	368	30	12	7.8	.70	14
7		0	1.2	7.9	378	89	176	36	30	65	1.6	7.4
8		0	.90	6.7	188	72	98	27	16	* 33	32	5.5
9		0	.70	23	1,070	60	95	23	9.3	28	20	4.0
10		0	.80	22	1,610	47	70	20	35	32	5.8	3.3
11		0	18	15	274	39	77	17	31	15	2.7	13
12		0	21	12	179	35	101	14	15	10	1.8	91
13		0	8.2	9.3	103	30	68	12	9.0	7.0	1.3	34
14		0	4.5	7.3	75	29	54	10	6.2	5.2	1.0	20
15		0	2.7	b 6.0	58	27	176	9.0	4.7	4.7	.70	151
16		.10	1.9	b 5.0	49	24	174	8.1	3.7	3.5	.60	70
17		.10	1.6	b 4.5	43	28	101	7.0	3.0	13	.50	60
18		.10	1.1	b 4.1	38	32	70	6.8	2.5	19	.50	30
19		.30	.70	b 4.0	34	25	53	6.2	2.1	10	13	20
20		.30	.70	b 4.0	31	22	42	5.7	1.6	5.8	3.3	16
21		.10	.70	b 4.0	29	20	35	5.3	1.4	4.2	2.1	111
22		.10	.70	14	25	19	32	4.6	1.4	3.5	1.5	367
23		.10	1.0	278	23	21	28	3.9	1.4	3.1	1.2	87
24		.10	1.5	291	24	25	25	3.3	1.4	2.6	.80	46
25		.10	4.1	118	26	25	403	3.3	1.3	1.9	.60	32
26		.20	5.3	77	25	37	283	6.7	1.0	1.6	1.0	24
27		.20	4.2	55	34	33	126	7.9	.90	1.4	125	18
28		.80	3.2	43	230	32	109	5.0	1.3	1.2	20	16
29		.40	2.6	34	------	53	94	3.3	13	1.0	6.1	14
30		.20	2.4	b 27	------	44	64	2.7	89	.80	3.5	*12
31		-	2.0	b 20	------	36	------	2.4	------	.80	3.8	------
TOTAL	0	3.20	119.60	1,207.2	4,640	2,234	3,067	453.2	350.60	460.10	255.00	1,358.6
MEAN	0	.11	3.86	38.9	166	72.1	102	14.6	11.7	14.8	8.23	45.3
CFSM	0	.0018	.063	.639	2.73	1.18	1.67	.240	.192	.243	.135	.744
IN	0	0	.07	.74	2.83	1.36	1.87	.28	.21	.28	.16	.83

CALENDAR YEAR 1964 MAX 4,770 MIN 0 MEAN 42.3 CFSM .695 INCHES 9.45
WATER YEAR 1964-65 MAX 1,610 MIN 0 MEAN 38.8 CFSM .637 INCHES 8.64

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0215	9.56	3,520				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3735. East Fork White River at Shoals, Ind.

Location.--Lat 38°40'02", long 86°47'32", in sec. 30,T. 3 N., R. 3 W., in first pier from left bank on highway bridge at Shoals, 400 ft upstream from Baltimore and Ohio Railroad bridge, 1 mile upstream from Beaver Creek, and at mile 107.6.

Drainage area.--4,954 sq mi.

Records available.--June 1903 to July 1906, October 1908 to September 1916, June 1923 to September 1965. Monthly discharge only for some periods, published in WSP 1305. Published as East Branch White River at Shoals, 1903-6, 1908-16. Gage-height records collected at same site since May 1908 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 442.25 ft above mean sea level, datum of 1929. Prior to Jan. 1, 1909, chain gage at same site at datum 61.00 ft lower. Jan. 1, 1909 to July 26, 1927 and Dec. 10, 1929 to Oct. 26, 1932, chain gage at present site and datum.

Average discharge.--51 years (1903-5, 1906-16, 1923-65), 5,336 cfs.

Extremes.--Maximum discharge during year, 25,800 cfs Feb. 11 (gage height, 17.68 ft); minimum, 272 cfs Oct. 22, 23; minimum gage height, 2.02 ft Oct. 8, 12.
1903-6, 1908-16, 1923-65: Maximum discharge, 160,000 cfs Mar. 28, 1913 (gage height, 42.2 ft), from rating curve extended above 100,000 cfs by logarithmic plotting; minimum, 44 cfs Oct. 6, 1935, as a result of filling Williams Reservoir.

Remarks.--Records good.

Rating table, except for periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 20 to Dec. 12, Mar. 10 to Apr. 11, Apr. 21-28, May 2 to June 5, June 8, 9)

1.9	250	5.0	4,470
2.1	365	7.0	8,900
2.3	510	13.0	18,900
2.7	850	19.0	27,900
3.5	1,800		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	347	294	400	950	b 2,250	9,480	7,170	17,000	1,600	1,800	850	628
2	335	294	407	900	b 1,900	12,500	6,210	13,400	1,600	1,220	805	670
3	329	294	510	1,060	bg 1,700	14,000	5,310	9,700	1,660	1,280	760	670
4	329	294	585	1,660	bg 1,650	15,100	4,680	6,680	1,660	1,340	715	715
5	323	294	585	3,130	bg 1,600	16,600	4,270	5,530	1,530	1,220	715	760
6	317	294	585	3,690	g 1,800	15,400	4,270	4,890	1,460	1,170	670	805
7	311	294	548	3,130	g 2,430	16,300	5,680	4,470	1,400	1,120	805	760
8	311	294	548	2,600	5,100	16,000	8,500	4,070	1,530	1,120	1,460	670
9	311	294	548	2,260	8,070	15,000	10,100	3,880	1,530	1,120	1,400	585
10	311	294	548	2,260	20,800	13,800	11,000	3,690	1,400	1,120	1,530	585
11	305	294	628	2,430	25,200	12,400	14,500	3,500	1,400	1,120	1,220	585
12	305	300	805	2,770	21,300	10,100	17,900	3,130	1,400	1,120	1,120	900
13	305	305	950	2,770	18,900	8,070	18,800	3,130	1,400	1,280	1,060	1,460
14	305	305	1,000	2,430	20,900	6,680	18,500	2,950	1,340	1,660	900	1,730
15	300	311	1,060	2,100	23,800	5,750	18,000	2,770	1,220	1,730	850	2,600
16	300	335	1,000	1,800	g25,500	5,310	17,900	2,600	1,170	2,260	760	2,950
17	294	341	950	1,460	*g24,300	4,890	17,500	2,430	1,060	1,880	715	2,770
18	300	347	850	1,060	19,400	4,890	16,600	2,260	1,000	1,600	670	2,600
19	294	359	715	1,000	12,900	4,890	16,600	2,430	1,000	2,770	670	2,600
20	288	372	585	1,120	8,290	4,890	15,600	2,600	950	1,950	760	2,430
21	283	365	585	1,170	5,980	4,890	13,300	2,600	900	1,530	760	1,880
22	278	372	628	1,280	5,100	4,470	10,700	2,430	900	1,460	760	1,880
23	278	386	628	1,460	4,680	4,070	8,290	2,260	850	1,400	715	2,430
24	278	379	628	3,130	4,270	3,690	6,210	* 2,100	850	1,280	670	1,950
25	278	379	585	5,100	4,070	3,690	6,210	1,950	805	1,400	628	1,800
26	278	386	585	5,980	4,270	*3,880	* 10,800	1,880	760	1,880	628	1,460
27	278	* 386	628	7,170	5,310	4,890	12,000	1,900	760	1,600	628	* 1,220
28	* 283	421	*850	6,930	6,680	5,750	12,900	1,730	* 715	1,340	628	1,170
29	288	421	1,060	* 5,980		7,170	15,200	1,660	760	1,120	715	1,120
30	300	407	1,220	4,890	---------	7,400	17,200	1,660	1,380	* 1,000	* 670	1,060
31	300	----------	1,120	3,500	---------	7,400	----------	1,660	----------	900	628	----------
Total	9,342	10,111	22,324	87,170	288,150	270,350	352,900	121,840	35,990	44,790	25,865	43,443
Mean	301	337	720	2,812	10,290	8,721	11,760	3,930	1,200	1,445	834	1,448
Cfsm	0.061	0.068	0.145	0.568	2.08	1.76	2.37	0.793	0.242	0.292	0.168	0.292
In.	0.07	0.08	0.17	0.65	2.17	2.03	2.64	0.91	0.27	0.34	0.19	0.33

Calendar year 1964: Max 61,400 Min 266 Mean 4,196 Cfsm 0.847 In. 11.53
Water year 1964-65: Max 25,500 Min 278 Mean 3,600 Cfsm 0.727 In. 9.85

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
g Discharge computed from twice-daily readings of wire-weight gage.

3-3737. Lost River near West Baden, Ind.

Location.--Lat 38°35'10", long 86°38'03", in SE¼ sec. 21, T. 2 N., R. 2 W., on left bank 20 ft downstream from bridge on U. S. Highway 150, 1.7 miles northwest of West Baden, Orange County, and 3.8 miles downstream from Lick Creek.

Drainage area.--287 sq mi.

Records available.--December 1964 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 457.92 ft above mean sea level, datum of 1929 (levels by Indiana Department of Natural Resources).

Extremes.--Maximum discharge during period December to September, 3,020 cfs Feb. 10 (gage height, 22.08 ft); minimum, 12 cfs Aug. 30, 31, Sept. 9, 10 (gage height, 2.63 ft).
Flood in March 1964 reached a stage of 28.1 ft, from floodmark.

Remarks.--Records good except those for periods of ice effect, no gage-height or doubtful record, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 9 to Jan. 2, Jan. 4-8, 11-15, 21-23, Jan. 28 to Feb. 1, Feb. 6, 7. Backwater from return flow of overbank storage Feb. 15, 16)

2.5	7.5	7.0	340
2.6	13	9.0	540
2.8	25	13.0	1,080
3.0	37	17.0	1,820
3.5	67	21.0	2,750
4.0	100	22.0	3,000
5.0	170		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				58	170	*1,500	420	400	42	39	26	25
2				193	b 140	1,640	370	350	42	62	25	29
3				450	b 115	1,640	331	310	43	170	23	29
4				331	b 100	1,680	304	280	*45	142	23	24
5				234	b 95	1,780	286	240	45	163	20	20
6				170	100	1,380	380	210	45	128	26	19
7				128	483	982	510	190	53	*95	28	16
8				107	912	772	440	170	62	128	114	15
9			* 19	311	1,210	660	390	155	75	90	77	14
10			17	470	2,750	576	350	140	60	93	52	14
11			220	370	* 2,900	510	1,680	130	300	67	33	23
12			360	277	2,600	470	1,940	120	250	49	25	173
13			226	226	2,400	440	1,400	110	270	41	22	156
14			121	170	1,400	400	870	103	130	37	20	90
15			74	142	* 950	370	688	100	75	49	18	688
16			52	b125	750	340	744	140	52	142	18	535
17			40	b110	* 600	331	564	200	46	100	16	340
18			33	b100	* 460	350	564	200	43	52	14	226
19			24	b 92	460	331	940	200	39	77	17	135
20			21	b 88	430	295	842	200	37	64	20	100
21			19	86	390	268	630	200	35	39	19	77
22			18	100	350	250	530	160	34	33	15	67
23			18	344	322	242	450	120	35	30	14	61
24			19	660	322	242	380	95	37	26	13	55
25			30	*636	410	250	550	75	34	55	13	46
26			93	490	460	* 420	* 758	62	32	250	13	42
27			186	410	440	430	588	70	29	121	14	* 38
28			*142	340	878	380	460	70	28	52	14	35
29			100	286		480	490	55	28	39	13	33
30			80	242	------	564	440	50	35	*32	*12	35
31		------	64	194	------	480	------	45	------	28	15	------
Total				7,940	22,597	20,453	19,289	4,950	2,081	2,493	772	3,160
Mean			-	256	807	660	643	160	69.4	80.4	24.9	105
Cfsm			-	0.892	2.81	2.30	2.24	0.557	0.242	0.280	0.087	0.366
In.			-	1.03	2.93	2.65	2.50	0.64	0.27	0.32	0.10	0.41

Calendar year 1964 : Max - Min - Mean - Cfsm - In. -
Water year 1964-65 : Max - Min - Mean - Cfsm - In. -

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	2100	22.08	3,020				
4-12	0700	18.08	2,040				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Feb. 12-14, Apr. 21-25, May 1 to June 16. Doubtful gage-height record Apr. 1-20.

3-3740. White River at Petersburg, Ind.

Location.--Lat 38°30'39", long 87°17'22", in SW¼ sec. 15, T. 1 N., R. 8 W., on left bank, 300 ft downstream from bridge on State Highway 61, three-eighths of a mile upstream from Prides Creek, 1 mile north of Petersburg, and at mile 47.7.

Drainage area.--11,139 sq mi.

Records available.--October 1927 to September 1965. Monthly discharges only for some periods, published in WSP 1305. Published as "at Hazleton" October 1927 to September 1938. Records published for both sites October 1937 to September 1938. Gage-height records collected at present site and datum since January 1935 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 400.00 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1937, water-stage recorder at bridge, 29 miles downstream at datum 16.77 ft lower. Oct. 1, 1937, to Apr. 1, 1941, wire-weight gage at site 300 ft upstream at present datum.

Average discharge.--38 years, 11,310 cfs.

Extremes.--Maximum discharge during year, 48,000 cfs Feb. 17 (gage height, 20.37 ft); minimum daily, 785 cfs Nov. 12 (gage height, 0.86 ft).

1927-65: Maximum discharge, 183,000 cfs Jan. 22, 1937 (gage height, 28.3 ft, present datum, 31.58 ft site and datum then in use); minimum, 553 cfs Oct. 2, 1941 (gage height, 0.05 ft).

Maximum stage known, 29.5 ft (present site and datum) in March 1913, from floodmarks, by Corps of Engineers (discharge, 235,000 cfs, estimated).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Record of water temperatures for the water year 1965 are published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 21 to Jan. 4)

Oct. 1 to Dec. 20		Dec. 21 to Sept. 30			
0.8	750	1.2	1,520	10.0	15,700
1.1	970	2.0	2,480	16.0	30,000
2.0	1,800	6.0	8,550	21.0	51,500

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,000	855	a1,000	2,240	a 7,000	14,400	12,700	31,200	4,990	5,780	2,360	2,120
2	970	855	a1,100	2,240	a 5,500	20,400	12,100	29,400	4,840	5,940	2,240	1,880
3	970	855	a1,100	2,360	a 5,000	25,400	11,100	23,300	4,680	6,420	2,240	1,760
4	930	855	a1,200	2,860	a 4,500	28,200	10,100	17,600	4,990	7,700	2,120	1,760
5	930	820	a1,300	4,400	a 4,200	30,900	9,400	14,400	4,990	7,870	2,120	1,880
6	a 900	820	a1,400	5,300	a 4,500	32,400	10,200	12,500	4,540	6,100	2,000	2,000
7	a 900	820	a1,400	5,460	b 5,000	33,400	12,100	11,100	4,840	5,620	2,720	2,120
8	890	820	a1,400	4,990	6,900	33,800	15,100	10,400	5,300	5,460	3,840	1,880
9	890	820	a1,400	4,680	10,800	33,000	13,800	9,740	5,620	5,620	3,420	1,760
10	a 900	820	a1,300	4,680	22,200	30,900	21,300	9,230	5,300	7,220	3,140	1,640
11	a 900	820	a1,300	4,400	36,200	27,600	25,100	8,720	5,620	9,230	3,280	1,640
12	a 900	820	a1,400	4,400	41,000	23,600	30,900	8,040	4,990	7,220	2,860	2,860
13	a 850	820	a1,500	4,680	44,000	20,200	33,400	7,540	4,840	5,300	2,600	3,420
14	a 850	785	a1,600	4,540	44,000	17,600	35,800	7,220	4,400	4,400	2,360	4,260
15	a 850	820	a1,700	b 4,000	45,000	15,700	36,600	6,740	3,980	4,260	2,240	5,940
16	* 855	855	a1,800	b 3,300	47,000	14,000	35,400	6,420	3,700	4,120	2,120	7,870
17	820	855	a1,800	a 2,700	47,500	12,500	34,200	6,100	3,420	4,400	2,000	7,380
18	855	855	a1,700	a 2,300	43,000	11,300	34,200	5,780	3,280	4,540	1,880	6,580
19	855	a1,000	a1,600	a 2,100	35,400	10,800	34,600	5,940	3,000	4,540	2,000	6,260
20	855	a1,200	a1,500	a 2,100	24,900	10,600	33,800	5,620	3,000	5,300	2,000	5,940
21	1,050	a1,100	1,400	2,400	17,800	10,600	30,000	5,940	2,860	4,680	2,120	5,460
22	1,050	a1,100	1,300	2,700	14,200	10,300	* 24,600	5,780	2,720	3,980	2,000	6,100
23	a1,100	*a1,000	1,300	3,420	12,500	9,600	20,000	5,300	2,860	3,700	2,000	6,100
24	a1,000	1,010	1,400	4,540	*11,600	8,890	16,800	* 4,990	2,720	3,420	1,880	*6,740
25	a 950	1,010	1,400	* 6,100	10,900	8,380	15,300	4,680	2,600	3,140	1,760	6,260
26	a 900	1,010	1,400	8,550	9,570	*8,720	15,700	4,540	2,480	3,000	*1,760	5,300
27	a 900	970	1,400	10,200	9,230	9,740	22,600	5,300	2,480	* 3,420	1,760	4,540
28	a 900	1,050	1,520	10,800	10,600	10,900	25,900	5,940	2,360	3,280	2,000	3,840
29	a 900	1,050	1,880	a 11,000		12,300	28,200	6,100	* 3,000	3,000	2,720	3,560
30	855	a1,000	2,120	a 10,000	------	13,000	30,300	5,780	4,400	2,720	2,240	3,280
31	855	------	2,240	a 9,000	------	13,000	------	5,300	------	2,480	2,120	------
Total	28,330	27,470	45,860	151,440	580,000	562,130	697,300	296,640	118,800	153,860	71,900	122,130
Mean	914	916	1,479	4,885	20,710	18,130	23,240	9,569	3,960	4,963	2,319	4,071
Cfsm	0.082	0.082	0.133	0.439	1.86	1.63	2.09	0.859	0.356	0.446	0.208	0.365
In.	0.09	0.09	0.15	0.51	1.94	1.88	2.33	0.99	0.40	0.51	0.24	0.41

Calendar year 1964 : Max 108,000 Min 700 Mean 8,966 Cfsm 0.805 In. 10.95
Water year 1964-65 : Max 47,500 Min 785 Mean 7,824 Cfsm 0.702 In. 9.54

Peak discharge (base, 30,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-17	0500	20.37	48,000	5-1	0800	16.42	31,200
3-8	1400	17.20	33,800				
4-15	0800	17.88	36,600				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3745. Patoka River near Ellsworth, Ind.

Location.--Lat 38°26'29", long 86°43'31", in SE¼ sec. 10, T. 1 S., R. 3 W., on right bank, 200 ft upstream from county road bridge 1.0 mile northwest of Ellsworth, 2.9 miles upstream from Dillon Creek, and 4 miles east of Dubois.

Drainage area.--171 sq mi.

Records available.--June 1961 to September 1965. Discharge measurements only during May 1961.

Gage.--Water-stage recorder (digital). Prior to Oct. 1, 1961, wire-weight gage on downstream side of bridge, 200 ft downstream at same datum. Datum of gage is 477.00 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Extremes.--Maximum discharge during year, 1,950 cfs Feb. 12 (gage height, 13.14 ft); minimum daily, 0.2 cfs Oct. 9-18, 20, 21, 23-28; minimum gage height, 1.73 ft Aug. 6, 7.
1961-65: Maximum discharge, 14,700 cfs Mar. 10, 1964 (gage height, 20.02 ft); minimum, no flow Oct. 30, 1964.
Flood of March 1913 reached a stage of 19.1 ft (discharge about 12,300 cfs) according to information by local resident.

Remarks.--Records fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 26, Dec. 28 to Jan. 2, Mar. 21-24)

1.6	0.2	2.5	72
1.7	.5	3.0	178
1.8	1.4	4.0	385
1.9	3.3	6.0	719
2.0	7.0	10.0	1,240
2.2	24	14.0	2,610

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.60	0.30	1.8	37	b 80	1,200	249	200	3.6	19	2.0	7.0
2	.60	.30	2.4	209	b 65	* 1,310	209	160	3.6	14	2.0	4.8
3	.50	.40	3.9	369	b 55	1,270	176	130	4.8	39	1.5	3.3
4	.40	.40	7.0	268	b 50	1,220	156	103	5.6	40	1.5	2.8
5	.30	.40	9.9	171	49	1,200	145	86	4.5	451	1.4	2.6
6	.30	.50	5.6	128	63	871	167	72	4.5	239	1.3	2.4
7	.30	.50	3.9	103	508	490	187	59	5.2	230	2.0	2.0
8	.30	.40	2.8	86	866	365	174	49	5.6	185	2.6	1.8
9	.20	.40	3.3	477	1,010	293	158	40	6.5	121	3.3	1.7
10	.20	.40	3.0	656	1,770	237	138	37	4.8	141	1.8	1.4
11	.20	.30	126	351	1,630	196	145	33	82	92	.90	4.2
12	.20	.30	224	211	1,890	174	224	28	68	59	1.0	158
13	.20	.30	196	163	1,650	154	241	24	74	39	1.2	92
14	.20	.30	88	126	1,250	138	191	20	37	28	1.3	44
15	.20	.30	40	103	430	126	222	17	*16	23	1.3	* 652
16	.20	.40	21	b 95	257	113	311	15	9.9	18	1.3	644
17	.20	.40	14	b 90	193	156	275	* 21	6.5	15	* 1.2	401
18	.20	.40	8.5	b 85	167	315	218	20	4.5	16	.90	209
19	.30	.80	5.2	b 82	145	258	647	22	3.6	13	1.7	100
20	.20	.90	4.2	b 80	124	171	750	21	2.8	9.2	1.8	61
21	.20	.80	3.6	82	111	136	*418	18	2.4	*6.5	1.7	40
22	.30	.70	3.3	132	94	119	266	14	2.2	5.2	1.4	33
23	.20	.60	3.6	333	84	* 109	211	11	23	4.8	1.3	25
24	.20	.50	4.2	716	88	113	176	9.2	49	4.2	1.3	20
25	.20	.60	9.9	582	351	176	249	6.5	22	3.6	1.3	17
26	.20	.80	145	355	616	568	415	5.2	11	3.3	1.5	14
27	*.20	*.80	303	264	418	532	325	6.0	6.0	2.8	1.5	11
28	.20	1.3	171	* 207	996	325	228	6.0	4.2	2.4	1.4	14
29	.30	1.4	* 82	165	------	443	215	4.8	65	2.0	1.0	7.7
30	.30	2.0	67	128	------	488	243	4.2	40	2.0	.90	5.6
31	.30	------	47	b 100	------	333	------	3.9	------	2.2	1.4	------
TOTAL	8.40	17.90	1,610.1	6,954	14,992	13,601	7,729	1,245.8	579.8	1,830.2	46.70	2,582.3
MEAN	.27	.60	51.9	224	535	439	258	40.2	19.3	59.0	1.51	86.1
CFSM	.0016	.0035	.304	1.31	3.13	2.57	1.51	.235	.113	.345	.0088	.504
IN	0	0	.35	1.51	3.26	2.96	1.68	.27	.13	.40	.01	.56

CALENDAR YEAR 1964 MAX 13,500 MIN .20 MEAN 197 CFSM 1.15 INCHES 15.68
WATER YEAR 1964-65 MAX 1,890 MIN .20 MEAN 140 CFSM .819 INCHES 11.13

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	1300	13.14	1,950				
3-2	2100	11.01	1,370				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3755. Patoka River at Jasper, Ind.

Location.--Lat 38°24'49", long 86°52'36", in SE¼ sec. 20, T. 1 S., R. 4 W., on left bank 0.3 mile upstream from unnamed outlet of Jasper Lake, 1.0 mile downstream from Coon Seitz bridge, 1.2 miles downstream from Beaver Creek, and 3.3 miles northeast of Jasper.

Drainage area.--257 sq mi.

Records available.--November 1947 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 446.19 ft above mean sea level, datum of 1929. Prior to Sept. 18, 1956, wire-weight gage at bridge 5.6 miles downstream at datum 0.34 ft lower (now used as a supplementary gage for high-water periods in excess of 1,500 cfs).

Average discharge.--17 years (1948-65), 355 cfs.

Extremes.--Maximum discharge during year, 3,020 cfs Feb. 13 (gage height, 9.91 ft at supplementary gage); maximum gage height at base gage, 15.29 ft Feb. 11; no flow Oct. 29; minimum gage height, 2.98 ft Oct. 30.
1947-65: Maximum discharge, 14,100 cfs Mar. 11, 1964; maximum gage height at base gage, 21.20 ft Mar. 11, 1964; no flow at times during 1948, 1952-56, 1963-65.
Maximum stage known, 15.9 ft (at former site) in March 1913, from floodmark furnished by local residents (discharge, 16,000 cfs).

Remarks.--Records fair below 1,500 cfs, poor above. Flow slightly regulated by Beaver Creek Reservoir, whose outlet enters the Patoka River 1.2 miles above the base gage. Records prior to Oct. 18, 1956, when gage was relocated, affected by diversion of about 0.7 million gallons a day by city of Jasper for municipal supply.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 26-29)

Periods below 1,500 cfs				Periods above 1,500 cfs	
2.93	0	3.5	7.5	7.0	1,450
3.0	0.2	3.8	20	8.0	1,800
3.1	0.7	6.0	200	10.0	3,100
3.2	2.0	9.0	565		
3.4	5.3	14.0	1,500		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	1.9	2.6	76	b 120	1,120	406	286	6.0	56	2.8	29
2	7.7	.4	3.5	142	b 100	*1,310	310	220	6.2	47	9.9	17
3	3.2	4.0	21	443	b 90	1,410	241	173	6.4	64	5.0	10
4	1.0	17	26	430	b 80	1,570	200	138	6.2	56	2.6	7.5
5	1.0	1.9	22	298	b 70	1,720	182	114	5.5	312	10	6.2
6	1.2	5.2	18	182	68	1,800	200	99	8.8	466	5.3	5.1
7	1.5	2.2	15	130	363	1,480	263	84	17	298	2.6	4.4
8	2.0	.5	13	106	928	1,240	252	72	11	274	2.0	4.3
9	7.8	.6	9.7	283	1,160	737	220	60	7.5	173	7.1	4.1
10	3.0	6.9	8.1	704	1,500	443	191	52	7.3	138	3.1	3.9
11	.7	1.0	88	672	1,950	322	350	49	10	130	2.8	10
12	.3	.2	263	394	2,860	252	430	44	72	84	2.5	142
13	4.9	4.9	263	230	3,020	210	358	37	68	64	8.4	173
14	2.1	2.1	200	164	2,780	182	322	30	68	48	4.3	106
15	.4	.5	114	130	2,540	164	286	26	*45	48	1.8	*365
16	5.2	.3	72	b 110	1,500	146	406	21	24	33	1.5	771
17	2.3	6.0	49	b 110	1,000	138	418	*19	14	41	*9.1	625
18	.3	3.0	35	b 110	469	210	358	21	10	41	5.0	396
19	.2	1.1	28	b 100	263	358	530	32	7.3	19	*2.8	191
20	4.5	.9	21	b 100	182	286	874	28	6.0	15	6.8	99
21	2.1	.8	17	b 100	155	200	* 805	25	5.1	*13	4.4	68
22	.6	.8	15	146	130	164	509	21	4.4	10	1.8	52
23	5.3	.6	14	335	114	*146	346	18	5.7	8.1	1.4	48
24	1.9	5.2	16	771	106	138	252	14	14	6.8	9.0	39
25	.4	3.1	21	892	155	164	308	12	38	6.4	5.0	30
26	.1	1.4	66	704	495	393	610	11	29	5.7	2.6	26
27	* .1	*1.1	208	482	640	580	580	12	15	5.3	9.1	20
28	.1	2.3	322	* 358	856	551	418	9.0	11	9.9	4.8	17
29	0	3.1	*210	274		495	310	7.5	158	5.5	1.5	14
30	2.2	3.4	130	210	---------	595	286	7.1	80	3.6	1.1	16
31	15	----------	99	155	---------	537	----------	6.6	----------	3.1	18	----------
Total	79.4	82.4	2,389.9	9,341	23,694	19,061	11,221	1,748.2	766.4	2,484.4	154.1	3,299.5
Mean	2.56	2.75	77.1	301	846	615	374	56.4	25.5	80.1	4.97	110
Cfsm	0.010	0.011	0.300	1.17	3.29	2.39	1.46	0.219	0.099	0.312	0.019	0.428
In.	0.01	0.01	0.35	1.35	3.43	2.76	1.63	0.25	0.11	0.36	0.02	0.48

Calendar year 1964: Max 13,500 Min 0 Mean 294 Cfsm 1.14 In. 15.54
Water year 1964-65: Max 3,020 Min 0 Mean 204 Cfsm 0.794 In. 10.76

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3762.6 Flat Creek near Otwell, Ind.

Location.--Lat 38°26'12", long, 87°07'52", in SE¼ sec. 12, T. 1 S., R. 7 W., on the right bank at the upstream side of bridge on State Road 56, 2.15 miles west of intersection of State Road 56 and State Road 257, 2.5 miles southwest of Otwell, Ind., and 6.2 miles east of junction of State Road 56 and State Road 61.

Drainage area.--21.4 sq mi.

Records available.--October 1964 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 448.00 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,320 cfs Feb. 9 or 10 (gage height, 11.89 ft, from recorded range in stage); no flow for many days.
Maximum stage known, 12.58 ft in March 1964.

Remarks.--Records fair except those below one cfs, which are poor.

Rating table except for period of ice effect (gage height, in feet, and discharge in cubic feet per second)
(Shifting-control method used Mar. 17 to May 9)

2.01	0	4.8	35
2.2	.3	6.0	77
2.3	.6	7.0	138
2.4	1.2	8.0	231
2.5	1.9	9.0	360
2.7	3.8	10.0	560
3.7	15	11.0	880

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	0.9	a 2.5	103	5.4	6.4	0.4	0.9	0	13
2			.3	4.0	a 2.0	314	4.8	4.7	.4	11	0	.8
3			2.5	12	a 1.9	56	4.2	3.4	.5	16	0	.2
4			9.2	8.1	a 1.8	111	4.2	2.6	.5	2.2	0	.1
5			5.9	5.2	a 1.8	44	4.7	2.4	.4	23	0	.2
6			3.2	3.7	a 2.4	38	37	2.1	3.2	4.3	0	.4
7			1.4	2.8	a 20	38	13	1.8	5.3	99	0	.1
8			.8	2.4	a 80	29	8.1	1.6	1.3	12	0	0
9			.6	19	a 400	17	5.9	1.3	.8	3.2	0	0
10			.5	15	*a 880	12	5.3	1.3	2.5	10	0	0
11			17	9.2	* 145	9.8	219	1.3	1.8	3.4	0	22
12			14	7.0	* 106	9.2	48	1.1	7.2	1.0	0	43
13			7.0	6.1	22	8.1	20	1.0	.9	.6	0	4.9
14			3.5	4.7	16	7.6	13	.8	.5	.5	0	1.4
15			1.8	3.8	13	6.4	37	.8	* .3	.4	0	*63
16			1.0	b 3.0	11	5.9	25	.7	.2	.3	0	19
17			.6	b 2.4	9.8	9.1	16	* .8	.2	8.0	* 0	10
18			.4	b 2.2	8.6	7.0	16	.9	.1	.6	0	2.6
19	*		.3	b 2.2	7.6	3.8	* 40	1.4	.1	* .2	1.8	1.3
20			.2	b 2.2	5.9	2.9	20	1.0	.1	.1	.1	1.1
21			* .3	b 2.6	5.9	2.7	13	.8	.1	.1	.1	.6
22			.3	6.3	4.9	3.0	9.2	.7	12	.1	0	20
23			.4	*26	* 4.5	3.6	7.6	.6	22	0	0	5.3
24			.5	35	5.5	* 4.0	6.4	.5	12	0	0	1.8
25		*	.8	17	5.5	9.7	99	.5	1.5	0	0	1.0
26			1.7	15	5.9	18	41	.5	.9	0	.1	.6
27			2.1	12	21	8.6	18	.6	.6	0	.4	.5
28	*		1.9	8.7	140	7.0	14	.6	.7	0	.1	.4
29			1.4	a 6.0		13	15	.5	17	0	0	.4
30			1.3	a 4.5	- - - - -	8.1	9.8	.4	1.7	0	0	.3
31		- - - - - -	1.0	a 3.0	- - - - -	5.9	- - - - -	.4	- - - - -	0	2.9	- - - - - - -
Total	0	0	81.9	252.0	1930.5	915.4	779.6	43.5	95.2	196.9	5.5	214.0
Mean	0	0	2.64	8.13	68.9	29.5	26.0	1.40	3.17	6.35	0.18	7.13
Cfsm	0	0	0.123	0.380	3.22	1.38	1.21	0.065	0.148	0.297	0.0084	0.333
In.	0	0	0.14	0.44	3.35	1.59	1.35	0.07	0.16	0.34	0.01	0.37

Calendar year 1964 : Max - Min - Mean - Cfsm - In. -
Water year 1964-65 : Max 880 Min 0 Mean 12.4 Cfsm 0.579 In. 7.82

Peak discharge (base, 350 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9 or 10	Unknown	11.89	1,320	4-11	0500	9.82	535
3-2	0400	9.84	511				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

GPO 888-827-10

3-3763. Patoka River at Winslow, Ind.

Location.--Lat 38°22'48", long 87°13'00", in SW¼ sec. 32, T. 1 S., R. 7 W., on right bank at abandoned bridge abutment, 65 ft upstream from State Road 61 bridge, 100 ft downstream from dam of Winslow Water Company and 41.3 miles above mouth.

Drainage area.--603 sq mi.

Records available.--October 1963 to September 1965. Discharge measurements and gage readings June 1961 to Sept. 1963, obtained by Indiana Flood Control and Water Resources Commission are available in the district office.

Gage.--Water-stage recorder. Prior to Nov. 21, 1963, wire-weight gage on downstream side of bridge, 65 ft downstream at same datum. Datum of gage is 400.00 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Extremes.--Maximum discharge during year, 4,360 cfs Feb. 15 (gage height, 24.27 ft); minimum, 0.5 cfs Oct. 29 (gage height, 5.60 ft). 1963-65: Maximum discharge, 15,500 cfs Mar. 13, 1964 (gage height, 28.84 ft); minimum daily, 0.5 cfs Aug. 5, 1964. Maximum stage known, 28.9 ft in January 1937, from floodmarks, information from Indiana Flood Control and Water Resources Commission.

Remarks.--Records poor. An average of 0.13 cfs is diverted for municipal water supply 100 ft above gage.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1, Mar. 24, 25, June 16-21. Stage-discharge relation indefinite Oct. 2-13)

Oct. 1 to Jan. 20

5.6	.6
5.7	1.6
5.8	3.3
5.9	6.0
6.2	20
8.0	149
16.0	900

Jan. 21 to Sept. 30

8.0	147	21.0	2,120
12.0	520	23.0	3,210
16.0	1,000	24.0	4,000
19.0	1,520	25.0	5,500

Note.--Same as preceding table below 8.0 ft.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	2.6	50	262	361	1,480	986	686	11	298	7.4	149
2	8.0	2.6	50	280	300	1,780	874	580	9.2	217	6.4	157
3	6.0	2.1	103	496	250	1,810	734	500	8.7	157	8.2	133
4	5.0	2.1	133	613	220	1,880	620	400	13	149	8.7	68
5	4.0	*2.3	173	613	200	1,960	530	325	44	222	8.2	32
6	3.0	2.8	157	559	180	2,000	530	262	46	540	7.8	17
7	2.5	3.6	117	469	430	2,040	642	226	58	675	6.4	12
8	2.0	4.1	75	361	930	2,080	746	190	36	820	6.0	10
9	1.7	6.4	50	520	1,400	*2120	698	165	82	664	5.5	9.2
10	1.8	6.9	40	810	2,880	2,120	610	133	96	560	5.2	8.2
11	2.5	4.6	188	888	2,880	2,120	631	117	110	570	5.0	27
12	3.0	3.3	433	876	3,070	2,080	746	103	86	460	4.8	461
13	3.0	2.6	523	800	3,490	1,960	782	82	110	289	4.6	653
14	3.0	2.1	469	631	3,900	1,720	698	75	149	173	4.0	510
15	3.0	2.3	397	478	4,240	1,420	675	64	117	117	3.6	420
16	2.3	2.3	325	370	4,240	1,100	770	54	* 78	125	3.3	* 631
17	1.8	1.6	235	289	4,000	940	770	* 45	44	165	3.3	746
18	1.5	1.5	165	220	3,720	800	746	39	21	96	3.3	794
19	1.3	4.9	103	210	3,420	640	* 930	44	14	* 58	* 4.6	686
20	1.3	10	60	200	3,140	500	1,080	44	9.6	38	5.5	520
21	2.0	13	* 45	190	2,820	450	1,090	33	7.4	27	6.0	334
22	3.0	13	43	289	2,400	380	1,090	44	15	21	11	253
23	3.3	14	42	492	*1,920	340	1,040	40	86	16	11	181
24	3.2	12	45	944	1,500	*307	860	44	298	15	8.2	149
25	3.0	*11	50	* 1,090	1,170	325	807	89	271	15	6.0	110
26	2.0	10	78	1,120	916	710	1,180	68	165	13	9.2	82
27	1.5	8.2	208	1,140	860	916	1,180	61	75	10	8.2	61
28	1.0	17	316	1,080	1,200	958	1,120	61	50	10	7.8	44
29	* .6	21	361	888		1,030	1,000	32	46	8.7	8.2	34
30	.7	41	406	675	---------	1,060	833	27	173	8.2	10	27
31	.9	----------	343	470	---------	1,030	----------	15	----------	7.8	34	----------
Total	87.9	230.9	5,783	18,323	56,037	40,056	24,998	4,648	2,328.9	6,544.7	231.4	7,318.4
Mean	2.84	7.70	187	591	2,001	1,292	833	150	77.6	211	7.46	244
Cfsm	0.0047	0.013	0.310	0.980	3.32	2.14	1.38	0.249	0.129	0.350	0.012	0.405
In.	0.005	0.01	0.36	1.13	3.46	2.47	1.54	0.29	0.14	0.40	0.01	0.45

Calendar year 1964 : Max 15,200 Min 0.5 Mean 597 Cfsm 0.990 In. 13.46
Water year 1964-65 : Max 4,240 Min 0.6 Mean 456 Cfsm 0.756 In. 10.26

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 14-28, Mar. 16-23, Aug. 9-14. Stage-discharge relation affected by ice Dec. 20-24, Jan. 18-21, Feb. 2-6.

3-3763.5 South Fork Patoka River near Spurgeon, Ind.

Location.--Lat 38°17'50", long 87°15'39", on line between secs. 35 and 36, T. 2 S., R. 8 W., on the right bank at the downstream side of bridge on State Road 61, 0.5 mile north of Enos Corner, and 3.1 miles north of Spurgeon.

Drainage area.--43.0 sq mi.

Records available.--October 1964 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 420.88 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,320 cfs Feb. 10 (gage height, 12.32 ft); minimum, 1.8 cfs Aug. 25 (gage height, 1.21 ft). Maximum stage known, 13.09 ft March 1964, from floodmark.

Remarks.--Records fair. Some slight regulation by coal washing operation and strip mining above gage.

Rating table, except for periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 15 to Nov. 28)

1.15	2.3	2.1	78
1.2	3.8	3.0	225
1.3	7.8	4.0	349
1.5	19	8.0	772
1.8	43		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a 5.0	2.9	15	19	b 15	151	30	28	6.5	7.4	6.5	44
2	a 4.5	3.2	43	105	b 14	294	27	22	8.8	12	5.7	12
3	a 4.0	3.5	49	44	b 13	110	27	19	8.8	9.4	4.9	9.9
4	a 3.8	3.2	46	31	b 12	186	30	17	6.5	9.6	4.9	9.4
5	a 3.5	2.6	23	26	b 13	104	31	16	6.1	88	4.9	8.8
6	a 3.2	*2.9	16	23	b 22	80	45	15	46	17	3.8	7.8
7	a 3.0	2.3	15	21	b 60	71	88	15	29	108	4.9	6.9
8	a 2.8	2.6	14	21	75	62	51	13	15	28	5.7	6.5
9	a 2.6	2.6	12	188	455	50	42	12	12	41	6.1	6.9
10	a 2.4	2.3	17	54	*710	42	44	15	12	182	4.5	6.1
11	a 2.4	2.6	166	39	*329	38	44	13	12	32	4.1	99
12	a 2.5	2.9	48	34	*226	36	38	11	14	20	3.5	147
13	a 2.6	2.6	31	29	108	32	28	9.9	8.3	15	3.2	28
14	a 2.8	2.3	23	22	81	32	23	9.4	6.9	15	3.8	23
15	2.9	3.2	18	b 20	64	30	67	8.8	6.1	14	3.5	31
16	3.2	4.1	16	b 19	56	28	48	9.9	*6.1	10	2.9	*29
17	3.2	4.1	14	b 18	50	46	36	*9.9	6.1	12	2.6	24
18	3.2	4.5	12	b 17	46	52	55	12	5.3	11	* 3.2	16
19	3.8	20	10	b 17	41	42	* 134	11	4.9	* 9.4	12	15
20	3.5	7.4	9.0	b 17	39	32	51	10	4.5	7.8	3.5	14
21	3.5	3.8	* 8.5	36	38	28	37	9.9	4.9	7.4	2.6	18
22	4.1	4.9	8.0	67	38	26	29	9.9	16	6.5	2.3	24
23	3.8	3.8	8.0	*114	*29	28	26	9.4	30	6.5	2.6	17
24	3.2	3.5	10	107	b 30	*32	23	8.3	22	6.1	2.3	12
25	3.2	*8.3	18	48	b 38	98	216	7.4	9.4	5.7	2.3	12
26	3.5	6.1	52	41	b 50	99	110	17	6.5	4.9	24	12
27	3.8	4.1	24	30	111	49	56	19	5.7	5.3	5.7	11
28	3.8	41	20	25	188	44	51	9.9	5.3	5.3	3.5	10
29	* 3.8	16	18	b 21		63	45	7.8	5.7	4.9	2.9	10
30	3.2	15	17	b 18	------	39	35	6.5	11	4.5	2.6	13
31	3.2	------	14	b 16	------	32	------	6.1	------	4.5	72	-------
Total	104.0	188.3	794.5	1,287	2,951	2,056	1,567	388.1	341.4	710.2	217.0	683.3
Mean	3.35	6.28	25.6	41.5	105	66.3	52.2	12.5	11.4	22.9	7.0	22.8
Cfsm	0.078	0.146	0.595	0.965	2.44	1.54	1.21	0.291	0.265	0.533	0.163	0.530
In.	0.09	0.16	0.69	1.11	2.54	1.78	1.35	0.34	0.30	0.61	0.19	0.59

Calendar year 1964: Max - Min - Mean - Cfsm - In. -
Water year 1964-65: Max 710 Min 2.3 Mean 30.9 Cfsm 0.719 In. 9.75

Peak discharge (base, 500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0230	12.32	1,320				
2-11	1830	7.23	676				
4-5	1500	5.84	512				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

3-3765. Patoka River near Princeton, Ind.

Location.--Lat 38°23'30", long 87°32'55", in NE¼NW¼ sec. 32, T. 1 S., R. 10 W., on left bank 75 ft upstream from dam of Princeton Water and Lighting Co., 270 ft upstream from bridge on State Highway 65, half a mile downstream from Indian Creek, and 2 miles northeast of Princeton.

Drainage area.--815 sq mi.

Records available.--August 1934 to September 1965. Published as "at Patoka" August 1934 to September 1940. Records published for both sites October 1939 to September 1940 (monthly discharge only at present site, for October, November 1939, published in WSP 1305). Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 394.14 ft (revised) above mean sea level, datum of 1929, Parkersburg-Uniontown supplementary adjustment of 1944 (levels by Indiana Flood Control and Water Resources Commission). Aug. 29, 1934 to Sept. 30, 1940, chain gage at site 3 miles downstream at datum 387.15 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Dec. 1, 1939, to Jan. 21, 1941, staff gage at present site and datum.

Average discharge.--31 years, 981 cfs.

Extremes.--Maximum discharge during year, 3,900 cfs Feb. 20, 21 (gage height, 14.51 ft); minimum, 1.5 cfs Oct. 23 (gage height, 0.77 ft).

1934-65: Maximum discharge, 18,700 cfs Jan. 26, 1937 (gage height, 26.80 ft, site and datum then in use); no flow Aug. 29 to Sept. 12, 1936.

Remarks.--Records good except those for periods of ice effect, which are poor. Records of suspended sediment loads for water year 1965 published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 14-22, Oct. 26 to Nov. 29, Sept. 20-23)

Oct. 1 to Nov. 30		Dec. 1 to Sept. 30			
0.72	2.4	0.7	1.5	2.0	380
.8	8.7	.8	8.7	9.0	1,900
.9	25	.9	22	13.0	3,180
1.1	71	1.2	93	14.5	3,890
		1.5	190		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	5.9	39	314	522	2,330	1,140	1,220	37	198	13	274
2	9.9	9.2	70	318	314	2,330	1,120	1,030	30	230	13	214
3	9.9	20	154	437	b 280	*2,280	1,070	787	28	166	13	162
4	8.7	13	158	520	b 250	2,290	964	560	28	129	11	123
5	7.7	*7.8	158	612	b 250	2,320	795	407	30	182	11	80
6	6.7	8.9	150	624	246	2,360	612	338	53	342	14	53
7	5.8	11	129	566	407	2,410	789	286	115	806	132	39
8	4.3	14	98	445	749	2,450	825	250	96	838	93	30
9	3.6	25	72	572	1,260	2,460	857	214	67	829	24	24
10	3.0	33	60	789	2,200	2,450	821	182	93	774	16	20
11	2.4	38	250	867	2,200	2,450	899	158	126	676	14	115
12	2.4	34	365	924	2,470	2,440	943	141	120	566	13	720
13	3.0	28	443	952	2,790	2,420	918	126	93	392	11	728
14	3.6	23	475	933	3,120	2,410	907	115	109	246	11	726
15	4.3	23	413	797	3,320	2,380	943	104	120	158	9.8	660
16	5.0	22	350	534	3,460	2,330	945	90	104	115	8.7	540
17	5.0	25	278	342	3,610	2,240	943	83	*90	144	*7.7	672
18	5.0	35	194	266	3,770	2,050	931	*75	77	141	7.7	766
19	5.0	41	126	242	3,850	1,760	1,010	75	60	96	8.7	804
20	4.3	57	93	b 240	3,890	1,400	1,070	72	45	77	19	668
21	4.3	41	75	b 240	3,850	1,120	1,130	67	35	70	15	604
22	3.6	24	*72	b 250	3,690	914	1,160	60	28	* 57	11	*867
23	*6.6	19	65	419	3,600	747	*1,170	62	45	41	14	346
24	9.7	21	77	781	3,440	606	1,160	57	178	35	17	190
25	10	22	104	958	3,220	* 566	1,240	65	270	28	15	129
26	8.0	29	101	1,040	2,950	741	1,290	88	214	22	37	98
27	8.2	31	144	* 1,090	2,690	859	1,270	83	123	19	70	77
28	8.9	40	226	1,120	2,480	952	1,300	83	72	17	30	60
29	7.5	66	286	1,140	------	1,030	1,330	67	60	16	17	48
30	4.9	*47	334	1,090	------	1,090	1,310	53	65	14	16	43
31	5.1	------	353	903	------	1,120	------	45	------	13	50	------
TOTAL	190.4	813.8	5,912	20,325	64,888	55,305	31,062	7,043	2,611	7,437	742.6	9,902
MEAN	6.14	27.1	191	656	2,317	1,784	1,035	227	87.0	240	24.0	330
CFSM	.0075	.033	.234	.805	2.84	2.19	1.27	.279	.107	.295	.029	.405
IN	.01	.04	.27	.93	2.96	2.52	1.42	.32	.12	.34	.03	.45

CALENDAR YEAR 1964	MAX	15,100	MIN	2.4	MEAN	756	CFSM	.928	INCHES 12.62
WATER YEAR 1964-65	MAX	3,890	MIN	2.4	MEAN	565	CFSM	.693	INCHES 9.41

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3775. Wabash River at Mount Carmel, Ill.

Location.--Lat 38°24'07", long 87°45'10", in sec. 28, T. 1 S., R. 12 W., on right bank on downstream side of Southern Railway bridge at Mount Carmel, Wabash County, and 0.1 mile downstream from Patoka River and at mile 94.5.

Drainage area.--28,600 sq mi, approximately.

Records available.--January 1908 to September 1913 (gage heights only), October 1927 to September 1965. Gage-height records collected in this vicinity November 1874 to December 1878, are contained in files of Louisville office of the Corps of Engineers and since June 1884 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder (digital after Aug. 31). Datum of gage is 371.46 ft above mean sea level, datum of 1929. Prior to Dec. 21, 1928, staff gage at same site and datum. Oct. 1, 1933 to Feb. 8, 1935, chain gage and Feb. 9, 1935 to Sept. 30, 1949, water-stage recorder at New York Central Railroad bridge 3.0 miles downstream at datum 0.17 ft higher.

Average discharge.--38 years, 26,270 cfs.

Extremes.--Maximum discharge during year, 81,400 cfs Apr. 19 (gage height, 18.36 ft); minimum daily, 2,500 cfs Oct. 9-21, Oct. 27 to Nov. 17; minimum gage height, 0.15 ft Nov. 14, 15.
1927-65: Maximum discharge, 305,000 cfs May 25, 1943 (gage height, 27.54 ft, present site and datum); minimum, 1,620 cfs Sept. 27, 28, 30, 1941.
Maximum stage known, 31.0 ft Mar. 30, 1913, present site and datum (discharge, 428,000 cfs, from rating curve extended above 310,000 cfs).

Remarks.--Records good.

Rating table, except periods of ice effect, (gage height, in feet, and discharge, in cubic feet per second)

0.10	2,200
2.0	8,240
14.0	58,000
19.0	85,000

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,120	2,500	3,760	4,720	b 17,000	23,000	28,600	65,500	21,400	9,260	5,000	5,040
2	3,120	* 2,500	3,760	5,040	b 14,000	32,200	30,600	66,500	19,000	11,000	5,680	5,040
3	3,120	2,500	4,400	5,040	b 11,000	42,600	31,800	65,000	17,400	12,700	5,680	4,720
4	2,800	2,500	4,080	* 6,640	b 10,000	49,000	31,000	57,000	21,800	16,600	5,360	4,720
5	2,800	2,500	4,080	7,920	b 9,000	53,000	29,400	44,500	26,600	16,600	5,360	5,040
6	2,800	2,500	3,760	10,300	b 9,000	56,000	29,400	36,200	25,800	15,200	5,360	5,040
7	2,800	2,500	3,760	11,600	b 10,000	59,000	34,200	32,600	23,800	15,200	6,000	5,040
8	2,800	2,500	3,760	12,000	b 11,000	*62,000	40,600	32,200	22,600	15,500	6,960	5,040
9	2,500	2,500	3,440	11,000	b 14,000	64,000	46,500	32,200	20,600	14,400	6,960	4,720
10	2,500	2,500	3,440	10,300	33,000	64,500	52,000	30,600	19,000	15,800	6,320	4,400
11	2,500	2,500	3,760	9,940	54,000	64,000	56,500	28,200	18,600	21,400	6,000	5,040
12	2,500	2,500	3,760	9,940	64,000	61,000	62,000	25,400	17,800	19,800	6,000	7,600
13	2,500	2,500	4,080	10,300	69,500	57,500	65,500	23,000	15,800	15,800	5,680	8,920
14	2,500	2,500	4,400	10,600	72,000	53,000	68,500	20,600	14,400	12,400	5,360	8,580
15	2,500	2,500	4,400	10,600	72,500	46,500	72,000	19,400	12,700	10,300	5,040	9,260
16	2,500	2,500	4,720	9,600	73,600	40,200	75,400	17,800	12,000	9,600	5,040	10,600
17	2,500	2,500	4,720	8,240	75,400	35,800	77,800	17,000	11,000	8,920	4,720	12,700
18	2,500	2,800	4,400	b 6,400	77,200	33,400	80,200	15,800	10,300	9,260	4,720	16,600
19	2,500	3,120	4,080	b 5,000	74,200	31,400	80,800	15,200	9,600	11,000	4,720	18,600
20	2,500	3,440	3,760	b 5,000	65,000	30,200	* 80,200	14,800	8,920	13,400	4,720	17,400
21	2,500	3,440	3,440	b 5,200	51,000	31,000	77,800	14,100	8,580	13,000	4,720	15,800
22	2,800	3,440	3,120	b 5,400	38,600	31,400	72,000	13,800	8,240	11,600	5,040	15,200
23	2,800	3,120	3,120	6,000	33,000	29,800	60,000	13,400	8,240	10,600	4,720	13,800
24	2,800	3,120	3,440	7,280	29,400	26,600	47,000	12,700	7,920	9,940	4,720	13,000
25	2,800	3,120	3,440	9,260	27,000	26,600	39,400	12,000	7,920	8,920	4,400	13,800
26	2,800	2,800	3,760	16,200	24,600	23,800	39,800	* 11,600	7,600	7,920	4,720	14,400
27	2,500	2,800	3,760	25,800	21,800	23,800	47,000	12,000	7,280	7,920	4,720	*13,400
28	2,500	3,120	3,760	28,200	19,800	24,600	* 55,000	17,800	6,960	7,920	4,400	11,600
29	2,500	3,120	4,080	30,200		*25,800	60,000	23,000	7,280	* 7,600	4,400	10,300
30	2,500	*3,440	4,400	28,200	---------	27,000	63,000	24,600	* 7,920	6,960	5,360	9,260
31	2,500	----------	4,400	b 22,000	---------	27,800	----------	23,800	----------	6,320	* 5,040	----------
Total	82,360	83,380	121,040	353,920	1,080,600	1,256,500	1,634,000	838,300	427,060	372,840	163,920	294,660
Mean	2,657	2,779	3,905	11,420	38,590	40,530	54,470	27,040	14,240	12,030	5,288	9,822
Cfsm	0.093	0.097	0.137	0.399	1.35	1.42	1.90	0.945	0.498	0.421	0.185	0.343
In.	0.11	0.11	0.16	0.46	1.41	1.64	2.12	1.09	0.56	0.49	0.21	0.38

Calendar year 1964 : Max 149,000 Min 1,800 Mean 18,370 Cfsm 0.642 In. 8.75
Water year 1964-65 : Max 80,800 Min 2,500 Mean 18,380 Cfsm 0.643 In. 8.74

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3780. Bonpas Creek at Browns, Ill.

Location.--Lat 37°22'50", long 87°58'35", in SW¼SE¼ sec. 33, T. 1 S., R. 14 W., at Browns, on left bank 30 ft upstream from concrete dam of Albion municipal water plant, 100 ft upstream from Nigger Creek, 300 ft upstream from bridge on Browns road, and 0.2 mile upstream from Southern Railway bridge.

Drainage area.--228 sq mi.

Records available.--October 1940 to September 1965.

Gage.--Water-stage recorder (digital) and concrete dam. Datum of gage is 374.92 ft above mean sea level, datum of 1929. Auxiliary wire-weight gage near mouth on Wabash River at Grayville read twice daily.

Average discharge.--25 years, 218 cfs.

Extremes.--Maximum discharge during year, 1,940 cfs Feb. 12 (gage height, 14.86 ft); no flow for many days.
1940-65: Maximum discharge, 7,500 cfs May 9, 1961 (gage height, 24.04 ft); no flow at times in most years.

Remarks.--Records good except those for periods of ice effect, which are poor. Albion municipal water plant diverts about 0.1 cfs at gage; diversion not included in record.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	1.8	b 0.50	408	48	49	6.6	80	1.0	1.8
2			0	6.7	b .30	710	37	34	37	24	.40	1.1
3			0	15	b .20	727	30	26	24	16	.20	2.1
4			0	14	b .10	695	29	20	13	15	.10	2.1
5			0	6.8	b .10	517	27	17	7.5	8.2	.10	2.1
6			0	3.6	.30	417	218	14	48	231	.10	1.9
7			0	2.1	2.9	454	453	15	254	667	.50	3.1
8			0	1.8	12	445	417	15	118	805	3.0	4.5
9			0	4.0	378	388	228	13	46	866	.60	4.6
10			0	5.1	1,470	289	102	12	87	776	.10	3.1
11			* .10	6.2	1,750	175	349	16	405	400	.10	159
12		*	.40	4.5	1,900	106	309	15	349	83	0	644
13			1.0	2.8	1,620	84	119	11	121	29	0	506
14			1.5	1.8	1,220	69	62	8.9	32	18	0	*177
15			1.0	* 1.2	735	60	135	7.4	17	*12	0	251
16	*		.80	.80	297	51	235	7.2	9.8	7.2	0	318
17			.60	.30	87	50	210	7.1	* 6.8	41	0	121
18			.20	.30	*46	46	100	12	5.4	72	0	20
19			.20	.20	34	41	229	8.7	4.0	17	* .10	8.1
20			.10	.20	27	39	210	13	3.6	7.1	0	4.0
21			.10	.10	24	33	* 90	*15	3.0	4.0	0	2.2
22			.10	.20	21	29	53	14	2.6	2.8	0	2.0
23			.10	1.4	b17	29	39	10	7.6	2.2	0	8.3
24			.20	16	b14	27	31	7.8	23	1.7	0	12
25			.30	23	b12	31	36	11	9.4	1.3	0	9.7
26			.40	18	b11	* 50	167	38	4.8	1.2	156	5.5
27			.80	12	b10	48	140	95	3.5	1.0	195	3.5
28			1.8	7.5	103	50	58	75	2.6	.80	35	2.5
29			2.1	b 3.0		246	52	33	15	.70	12	2.1
30			2.1	b 1.5	---------	139	56	16	62	.50	4.6	1.7
31		---------	1.8	b .90	---------	72	---------	9.0	---------	.60	2.0	---------
Total	0	0	15.70	162.80	9,792.40	6,525	4,269	645.1	1,728.2	4,191.30	410.90	2,284.0
Mean	0	0	.51	5.25	350	210	142	20.8	57.6	135	13.3	76.1
Cfsm	0	0	.0022	.023	1.54	.921	.623	.091	.253	.592	.058	.334
In.	0	0	0	.03	1.60	1.06	.70	.11	.28	.68	.07	.37

Calendar year 1964: Max 3,760 Min 0 Mean 113 Cfsm 0.496 In. 6.77
Water year 1964-65: Max 1,900 Min 0 Mean 82.3 Cfsm 0.361 In. 4.90

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

3-3785.50 Big Creek near Wadesville, Ind.

Location.--Lat 38°05'00", long 87°46'10", in SW¼ sec. 16, T. 5 S., R. 12 W., on left bank at downstream side of bridge on U. S. Highway 460 (S.R. 66), 0.6 mile northwest of Blairsville and 1.6 miles southeast of Wadesville.

Drainage area.--104 sq mi.

Records available.--July to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 370.00 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during period, 2,500 cfs July 10 (gage-height, 16.21 ft); no flow many days.

Remarks.--Records fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.82	0	4.5	119
1.9	.1	6.0	251
2.0	.8	10.0	500
2.3	6.1	11.5	700
2.7	17	14.0	1,450
3.5	50		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										*0	.10	144
2										0	0	12
3										.30	0	3.3
4										0	0	1.3
5										3.1	0	.50
6										3.0	0	.20
7										216	9.6	.10
8										26	7.0	0
9										16	.90	0
10										1,130	.20	0
11										45	0	433
12										12	0	881
13										5.9	0	28
14										3.6	0	10
15										2.5	0	5.9
16										1.6	0	3.9
17										194	0	2.9
18										29	*0	1.4
19										4.9	11	1.1
20										2.4	8.2	.90
21										1.3	3.0	*123
22										*.70	.90	404
23										.40	.20	36
24										.20	.10	17
25										7.7	0	9.7
26										14	27	6.2
27										3.3	13	4.1
28										1.2	3.6	3.2
29										.30	1.0	2.8
30										.10	.20	2.8
31										.10	169	------
TOTAL										1,724.60	255.00	2,138.30
MEAN										55.6	8.23	71.3
CFSM										.535	.079	.686
IN										.62	.09	.76

Calendar year : Max Min Mean Cfsm In.
Water year : Max Min Mean Cfsm In.

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-10	0600	16.21	2,500				
9-11	2400	15.90	2,330				
9-22	0215	12.71	1,010				

* Discharge measurement made on this day.

3-3815. Little Wabash River at Carmi, Ill.

Location.--Lat 38°03'40", long 88°09'35", near center of E½ sec. 25, T. 5 S., R. 9 E., on right bank at upstream side of Possum Bridge, 2.3 miles south of Main Street Bridge in Carmi and 7.8 miles downstream from Skillet Fork.

Drainage area.--3,111 sq mi.

Records available.--October 1908 to December 1912 (gage heights only), October 1939 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 339.91 ft above mean sea level, datum of 1929. October 1908 to December 1912, chain gage at site 3.1 miles upstream at datum 0.4 ft higher. Oct. 1 to Nov. 8, 1939, wire-weight gage at present site and datum. Since Nov. 14, 1939, auxiliary water-stage recorder 3.1 miles upstream.

Average discharge.--26 years, 2,449 cfs.

Extremes.--Maximum discharge during year, 9,070 cfs Feb. 15; maximum gage height, 22.35 ft Feb. 16; minimum daily discharge, 2.9 cfs Oct. 22, 23.
1939-65: Maximum discharge, 46,900 cfs May 12, 1961; maximum gage height, 36.70 ft May 13, 1961; no flow Sept. 15-17, 1952, result of temporary dam upstream; minimum unregulated discharge, 0.6 cfs Sept. 9, 1953, July 31, 1954.

Remarks.--Records good. At extremely high stages, there is diversion six miles above the gage through McHenry Slough to the Wabash River.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.0	7.0	36	19	266	1,770	726	2,020	172	1,600	37	152
2	8.6	7.0	98	174	214	4,040	641	2,180	470	2,650	40	165
3	7.8	7.0	183	230	176	5,190	642	1,910	980	3,530	36	201
4	7.0	7.4	161	352	140	5,510	648	1,220	322	3,680	32	193
5	6.6	8.2	203	307	108	5,640	763	826	550	2,720	28	175
6	5.8	8.6	226	211	94	5,560	1,990	619	1,220	1,420	26	603
7	5.4	9.0	196	142	106	5,530	3,210	434	1,760	1,080	560	1,360
8	5.0	8.6	151	108	131	5,530	3,760	337	1,880	2,270	322	1,380
9	5.0	8.6	113	181	1,580	5,320	3,620	338	1,690	3,040	127	919
10	4.7	8.6	86	154	5,980	4,820	3,030	427	1,260	3,360	58	* 479
11	4.4	8.6	* 108	163	7,330	4,250	2,560	402	1,610	3,240	37	1,880
12	4.4	* 9.0	80	200	7,780	3,250	2,000	399	1,480	2,620	27	2,760
13	4.7	10	70	186	8,180	2,350	1,460	343	1,210	2,120	23	2,480
14	5.0	11	61	142	8,660	1,550	1,170	286	966	* 1,640	23	1,830
15	5.4	11	53	* 115	9,000	1,110	1,320	266	646	1,090	23	1,070
16	* 5.8	11	53	102	* 9,000	877	1,530	267	405	620	23	1,160
17	5.8	13	58	70	8,770	717	1,480	238	282	346	23	1,200
18	5.8	14	52	58	7,900	553	1,430	255	208	225	26	750
19	4.4	25	40	50	6,650	468	1,700	335	163	173	* 63	737
20	3.5	26	35	47	4,810	426	1,770	310	131	140	72	989
21	3.2	20	30	46	3,140	386	1,430	* 261	110	112	79	988
22	2.9	17	25	46	1,730	353	* 1,120	223	95	92	77	804
23	2.9	14	24	66	1,010	326	790	304	95	79	51	698
24	3.2	14	28	119	679	318	640	319	111	69	38	589
25	3.2	17	35	791	430	343	389	255	140	67	35	495
26	3.5	19	39	1,070	303	* 594	628	205	124	60	75	568
27	4.7	17	31	748	295	653	1,050	188	91	49	93	843
28	5.4	64	24	527	582	538	1,770	300	70	43	141	826
29	6.2	40	20	459		555	2,020	299	63	36	150	578
30	6.6	35	20	413	---------	676	1,990	202	513	30	115	368
31	7.0	---------	19	316	---------	743	---------	139	---------	29	107	---------
Total	162.9	475.6	2,358	7,612	95,044	69,946	47,277	16,107	13,817	38,230	2,567	27,240
Mean	5.26	15.9	76.1	246	3,394	2,256	1,576	520	627	1,233	82.8	908
Cfsm	.0017	.0051	.025	.079	1.09	.725	.507	.167	.202	.396	.027	.292
In.	0	.01	.03	.09	1.14	.84	.57	.19	.22	.46	.03	.33

Calendar year 1964: Max 14,900 Min 2.9 Mean 1,394 Cfsm 0.448 In. 6.10
Water year 1964-65: Max 9,000 Min 2.9 Mean 893 Cfsm 0.287 In. 3.90

* Discharge measurement made on this day.

4-0875. Hart ditch at Munster, Ind.

Location.--Lat 41°33'40", long 87°28'50", in N½ sec. 20, T. 36 N., R. 9 W., on left bank at city limits of Munster, a quarter of a mile downstream from U. S. Highway 6 and 0.4 mile upstream from mouth.

Drainage area.--69.2 sq mi.

Records available.--September 1942 to September 1965.

Gage.--Water-stage recorder and concrete control. Datum of gage is 591.27 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Since Sept. 11, 1959, auxiliary water-stage recorder 1,200 ft upstream from base gage.

Average discharge.--23 years, 54.7 cfs.

Extremes.--Maximum discharge during year, 1,160 cfs Apr. 26 (gage height, 4.21 ft); minimum, 1.3 cfs Oct. 23-25; minimum gage height, 0.44 ft July 12.
1942-65: Maximum discharge, 2,670 cfs Apr. 28, 1958; maximum gage height, 7.83 ft Oct. 11, 1954; minimum discharge, 0.8 cfs Sept. 5, 6, 1964; minimum gage height, 0.44 ft Sept. 5, 6, 1964, July 12, 1965.

Remarks.--Records good except those for periods of ice effect and backwater, which are fair. Flow from this ditch discharges into Little Calumet River near Munster. Practically all of this flow discharges into the Calumet Sag Canal or Grand Calumet River.

Rating table, except periods of ice effect and backwater (gage height, in feet, and discharge in cubic feet per second)

0.4	0.1	1.0	70
.5	3.0	1.5	220
.6	9.4	2.0	395
.7	19	3.0	745
.8	33	4.0	1,100

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.9	4.6	* 3.5	15	*26	210	116	88	14	4.0	6.4	64
2	7.9	5.2	4.0	78	16	325	122	66	* 13	5.2	5.8	38
3	7.2	5.8	5.2	52	b13	255	88	52	13	5.2	8.0	23
4	5.8	5.2	4.0	26	b12	182	70	46	11	4.6	7.2	18
5	5.8	6.4	3.5	23	12	125	* 78	60	10	4.0	4.6	16
6	5.8	6.4	3.5	*18	14	92	500	64	9.4	10	4.6	12
7	5.8	6.4	b 3.5	17	35	72	412	58	9.4	17	5.2	11
8	7.2	6.4	b 3.6	22	78	* 64	255	50	8.6	15	8.9	9.4
9	5.8	7.2	b 3.7	32	107	122	500	46	8.6	9.4	21	33
10	4.6	8.6	4.0	20	360	155	272	38	7.9	6.4	20	23
11	4.0	9.4	16	16	220	131	173	32	6.4	5.8	10	15
12	4.0	9.4	26	12	158	110	134	29	5.8	3.5	7.2	12
13	4.0	7.9	23	10	88	95	95	26	5.8	4.6	5.2	10
14	3.5	8.6	15	b 7.2	54	90	72	23	5.2	6.4	4.6	156
15	3.0	10	9.4	b 6.0	50	88	202	23	5.2	4.6	4.0	1,060
16	3.0	5.8	7.9	b 5.0	43	82	202	29	5.2	4.0	3.5	c 650
17	2.5	5.2	6.4	b 4.7	33	304	125	23	5.2	20	7.2	c 350
18	2.5	5.2	4.6	b 4.5	29	675	82	26	5.2	5.8	14	220
19	2.5	5.2	3.0	b 4.5	26	272	64	93	4.6	5.2	9.4	125
20	2.5	5.2	3.0	b 4.5	22	b 135	54	50	5.8	4.6	6.4	130
21	2.5	4.6	3.0	4.6	22	80	45	32	6.4	4.0	5.2	c 250
22	2.0	4.6	3.5	71	16	58	39	24	8.6	4.6	4.6	c 500
23	2.0	4.0	4.6	535	b13	52	41	20	32	4.0	4.0	1,060
24	1.6	4.6	8.6	640	b11	39	214	38	18	4.0	4.0	c 400
25	2.0	4.6	9.4	342	b 8.0	36	* 876	24	9.4	4.0	8.6	c 280
26	2.5	5.2	7.9	b 250	6.4	32	*c 1,060	30	7.2	4.0	6.4	173
27	2.5	5.8	6.4	b 150	7.2	30	*c400	54	5.8	*4.6	168	* 107
28	*2.7	12	5.8	b 90	17	63	c215	32	* 5.8	4.0	106	80
29	2.5	4.6	5.8	b 60		155	c140	23	5.8	3.5	44	62
30	3.0	3.5	6.4	41	- - - - -	185	107	19	5.2	3.5	* 35	140
31	4.0	- - - - -	6.4	35	- - - - -	128	- - - - -	17	- - ----	4.0	60	- - - - - -
Total	122.6	187.6	220.6	2,596.0	1,496.6	4,442	6,753	1,235	263.5	189.5	609.0	6,027.4
Mean	3.95	6.25	7.12	83.7	53.4	143	225	39.8	8.78	6.11	19.6	201
Cfsm	0.057	0.090	0.103	1.21	0.772	2.07	3.25	0.575	0.127	0.088	0.283	2.90
In.	0.07	0.10	0.12	1.40	0.80	2.39	3.63	0.66	0.14	0.10	0.33	3.24

Calendar year 1964 : Max 395 Min 1.6 Mean 19.3 Cfsm 0.279 In. 3.79
Water year 1964-65 : Max 1,060 Min 1.6 Mean 66.1 Cfsm 0.955 In. 12.98

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-26	0300 to 0600	4.21	1,160	9-23	1700 to 2000	3.96	1,100
9-16	0100 to 0200	4.11	1,130				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
c Backwater from Little Calumet River or return flow from overbank storage.

4-0876. Little Calumet River at Munster, Ind.

Location.--Lat 41°34'07", long 87°31'18", in NW¼ sec. 13, T. 36 N., R. 10 W., on left bank 200 ft upstream from Hohman Street Bridge, a quarter of a mile south of intersection of Hohman Street and 173rd Street, 0.4 mile upstream from Indiana-Illinois State line, 1 mile north of intersection of Hohman Street and Ridge Road, and 4.6 miles upstream from mouth of Thorn Creek.

Drainage area.--Indeterminate.

Records available.--June 1958 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 580.72 ft above mean sea level, datum of 1929.

Average discharge.--7 years, 56.5 cfs.

Extremes.--Maximum discharge, 780 cfs Sept. 23 (gage height, 10.71 ft); minimum, 3.0 cfs July 31 (gage height, 2.96 ft).
1958-65: Maximum discharge, 1,510 cfs Apr. 28, 1959 (gage height, 13.67 ft); minimum, 0.7 cfs Oct. 10, 1963; minimum gage height, 2.87 ft Oct. 10, 1963, Sept. 4, 1964.

Remarks.--Records fair.

Rating table, except for periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 25, Aug. 27 to Sept. 4, Sept. 7-10, 14, 17-22, 24-30)

3.0	3.0	5.0	92
3.2	7.5	6.0	175
3.5	15	8.0	400
4.0	32	10.0	655
4.5	59	11.0	840

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	9.0	* 6.4	28	30	260	157	139	16	5.4	7.5	68.0
2	12	7.0	6.4	122	27	316	157	106	*15	6.1	6.4	42
3	12	8.2	8.0	88	23	247	139	*78	15	5.7	14	25
4	9.8	6.8	7.5	47	21	183	99	70	13	5.0	14	20
5	9.5	6.4	6.8	31	21	139	97	96	13	5.0	9.0	17
6	9.2	5.9	b 6.5	*28	35	114	357	85	13	33	5.5	13
7	7.3	5.7	b 6.4	25	55	92	436	68	12	37	9.4	22
8	9.2	5.7	b 6.2	32	126	*105	316	56	12	19	18	21
9	8.8	5.7	b 6.2	44	157	210	400	50	12	12	45	36
10	7.5	5.9	b 6.2	30	352	185	328	40	11	7.8	33	24
11	7.3	6.6	b 23	26	304	122	236	30	10	6.6	15	16
12	6.6	9.6	30	20	215	99	185	26	8.8	5.7	10	13
13	7.0	8.2	29	18	130	96	139	23	7.5	5.7	7.5	11
14	6.8	7.5	22	17	90	106	114	21	7.3	12	6.1	94
15	6.4	18	19	15	75	102	*179	20	6.6	6.4	4.8	640
16	6.8	9.0	14	14	62	85	236	50	6.6	5.0	4.5	723
17	8.8	7.0	12	13	47	238	166	24	6.6	38	12	496
18	12	5.7	9.8	12	42	580	122	33	6.8	9.5	37	304
19	10	5.2	8.2	14	37	460	92	82	6.6	7.0	18	175
20	7.0	5.2	8.2	13	32	250	71	56	7.0	5.7	10	185
21	6.4	4.3	7.5	12	b 29	160	59	31	11	4.8	7.0	316
22	6.8	4.1	8.8	144	26	110	53	22	8.0	5.7	6.1	496
23	7.0	4.3	9.2	424	28	95	56	20	37	5.7	5.0	760
24	6.8	4.3	14	590	25	80	176	46	25	5.2	4.5	655
25	6.8	4.8	15	440	25	72	*487	34	12	4.5	12	448
26	6.6	5.0	13	414	26	66	* 706	34	8.8	4.8	9.0	280
27	6.8	7.6	10	300	28	60	532	53	7.0	5.9	255	*185
28	*6.8	28	10	180	81	80	*376	37	*6.1	*6.6	185	130
29	6.8	7.5	10	100		175	269	23	7.4	7.0	95	99
30	6.6	6.8	11	50	---------	225	195	20	6.6	4.1	40	185
31	8.5	----------	10	37	---------	185	----------	18	----------	4.5	*65	----------
Total	252.9	225.0	360.3	3,328	2,149	5,297	6,935	1,491	334.7	296.4	970.3	5,499
Mean	8.16	7.50	11.6	107	76.8	171	231	48.1	11.2	9.56	31.3	217
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1964: Max 405 Min 1.9 Mean 23.6 Cfsm - In. -
Water year 1964-65: Max 760 Min 4.1 Mean 77.1 Cfsm - In. -

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Jan. 13-21, Jan. 27 to Feb. 7, Feb. 13-15, 22-27, Mar. 19-28.

4-905. Thorn Creek at Thornton, Ill.

Location.--Lat 41°34'05", long 87°36'30", near center of N½ sec. 34, T. 36 N., R. 14 E., on right bank at downstream side of Ridge Road Bridge in Thornton, 1 mile downstream from North Creek, and 1.5 miles upstream from Grand Trunk Railway.

Drainage area.--104 sq mi.

Records available.--May 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 586.43 ft above mean sea level, datum of 1929. Prior to Dec. 18, 1948, wire-weight gage at same site and datum.

Average discharge.--17 years, 87.8 cfs.

Extremes.--Maximum discharge during year, 1,290 cfs Mar. 18 (gage height, 10.12 ft); minimum daily, 18 cfs Nov. 8.
1948-65: Maximum discharge, 4,700 cfs July 13, 1957 (gage height, 16.00 ft); minimum daily, 4.4 cfs Sept. 11, 1949.
Flood of Apr. 5, 1947, reached a stage of 14.34 ft, from floodmark (discharge, 4,200 cfs).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Some diurnal fluctuation caused by pumping operations above station. Figures of discharge include about 9 cfs pumped from ground-water sources for minicipal supply of Chicago Heights and undetermined amount of ground-water pumpage for industrial use above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 19 to Nov. 28, Jan. 3-8)

Oct. 1 to Jan. 22				Jan. 23 to Sept. 30			
2.1	17	3.0	149	2.1	15	4.0	247
2.3	33	4.0	306	2.3	31	6.0	498
2.5	59	5.0	414	2.5	57	8.0	800
				3.0	135	10.0	1,250

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	23	29	52	57	404	249	98	35	31	51	134
2	38	28	29	350	a 54	337	231	80	41	37	30	82
3	32	* 32	* 30	192	a 50	* 274	179	77	41	28	28	66
4	28	26	38	64	a 52	187	142	79	39	20	45	68
5	27	24	34	44	54	144	150	135	36	21	* 27	63
6	32	25	30	* 38	70	115	706	98	30	47	31	47
7	32	22	27	35	114	101	534	80	32	* 124	31	* 47
8	38	18	28	55	244	140	334	70	37	46	44	53
9	34	20	28	113	* 223	274	450	58	41	37	127	383
10	29	23	27	75	577	205	282	56	38	29	62	192
11	24	24	154	62	326	135	209	54	* 37	23	38	91
12	23	25	128	58	234	115	173	51	30	26	27	63
13	29	26	117	45	132	107	* 130	49	25	26	25	56
14	* 33	21	75	a 43	88	122	110	49	27	46	24	98
15	35	29	59	a 42	78	122	259	43	28	31	22	731
16	35	26	52	34	72	104	234	73	29	29	26	563
17	34	24	45	33	68	336	156	49	28	76	29	301
18	32	24	38	35	63	1,160	112	49	32	34	118	188
19	33	28	33	37	58	a 600	93	49	29	27	60	110
20	32	24	28	37	56	a 210	86	47	24	29	39	112
21	33	23	30	35	51	a 150	78	46	28	26	27	192
22	33	21	32	246	47	a 120	70	41	31	29	21	420
23	32	21	38	806	50	112	69	32	31	30	22	858
24	31	25	51	774	46	94	286	46	31	29	25	518
25	27	25	55	378	42	91	804	49	31	21	38	262
26	29	20	43	442	43	82	* 980	53	29	25	29	157
27	31	21	44	282	46	82	* 412	51	23	28	517	102
28	28	120	38	183	148	117	236	42	28	29	295	85
29	31	38	43	102		301	169	35	37	29	130	74
30	33	29	44	80	------	390	126	31	33	29	80	255
31	27	------	40	60	------	280	------	30	------	32	231	------
Total	979	835	1,487	4,832	3,143	7,011	8,049	1,800	961	1,074	2,299	5,371
Mean	31.6	27.8	48.0	156	112	226	268	58.1	32.0	34.6	74.2	212
Cfsm	0.304	0.267	0.462	1.50	1.08	2.17	2.58	0.559	0.308	0.333	0.713	2.04
In.	0.35	0.30	0.58	1.73	1.12	2.51	2.88	0.64	0.34	0.38	0.82	2.28

Calendar year 1964 : Max 605 Min 18 Mean 53.7 Cfsm 0.516 In. 7.03
Water year 1964-65 : Max 1,160 Min 18 Mean 106 Cfsm 1.02 In. 13.88

Peak discharge (base, 900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-23	2200	8.57	914				
3-18	1030	10.12	1,290				
4-26	0230	9.88	1,220				

* Discharge measurement made on this day.
a No gage-height record.

4-910. Little Calumet River at South Holland, Ill.

Location.--Lat 41°36'05", long 87°34'38", in SW¼SW¼ sec. 13, T. 36 N., R. 14 E., on right bank at downstream side of bridge on U. S. Highway 6, 0.6 mile downstream from Thorn Creek, and 1.6 miles east of South Holland.

Records available.--October 1947 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 575.00 ft above mean sea level. Prior to Oct. 27, 1947, wire-weight gage at same site and datum. Auxiliary water-stage recorder at Dixmoor, 6.1 miles downstream; prior to Nov. 17, 1947, auxiliary wire-weight gage at same site read twice daily.

Average discharge.--18 years, 156 cfs.

Extremes.--Maximum discharge during year, 1,710 cfs Apr. 26 (gage height, 13.52 ft); minimum daily, 28 cfs Oct. 26, Nov. 9, Aug. 23.
1947-65: Maximum discharge, 4,440 cfs July 14, 1957 (gage height, 20.11 ft); minimum daily, 7.9 cfs Oct. 6, 1950.
Flood of Apr. 6, 1947, reached a stage of 19.24 ft, from floodmarks (discharge, 4,760 cfs).

Remarks.--Records good except those for period of ice effect, which are fair. Flow from about 330 sq mi of upper Little Calumet River basin above a point in Gary, Ind., is diverted to Lake Michigan by Burns ditch. Calumet Sag Channel, 8 miles below station, usually diverts the entire low flow to the Mississippi River basin.

Rating tables, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 30 to Nov. 28, Jan. 2, Jan. 27 to Feb. 10))

Oct. 1 to Jan. 2				Jan. 3 to Sept. 30			
5.0	24	7.0	194	5.0	24	7.0	225
5.5	53	8.0	330	5.2	36	9.0	520
6.0	90	9.0	510	5.5	66	11.0	950
				6.0	116	14.0	1,900

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	32	36	64	100	606	382	255	58	46	65	213
2	45	32	35	348	88	603	368	202	63	53	41	140
3	41	39	36	296	75	*505	293	164	58	51	42	93
4	37	34	39	178	68	*366	239	168	58	38	73	78
5	34	32	39	*133	69	284	235	248	56	34	*38	78
6	38	*32	35	114	105	226	856	195	54	58	34	53
7	37	32	*34	105	172	190	956	161	50	*171	44	53
8	41	29	34	118	342	209	590	140	56	83	56	55
9	41	28	34	163	*345	396	738	123	54	68	144	281
10	36	33	34	124	826	366	585	110	49	52	119	*226
11	32	34	113	96	740	260	416	98	*48	40	59	119
12	32	34	148	88	534	214	339	91	43	39	41	78
13	*38	35	128	79	376	196	*267	84	34	44	34	61
14	38	32	95	69	230	215	221	81	34	73	33	100
15	39	40	69	66	190	219	378	77	38	48	30	947
16	37	45	60	60	160	193	440	134	37	39	31	1,140
17	36	36	54	54	140	510	324	84	36	114	49	734
18	34	34	47	53	130	1,510	235	76	39	62	128	462
19	32	38	43	58	120	1,020	188	111	40	40	113	301
20	38	36	39	55	110	461	164	110	38	40	54	244
21	34	34	38	51	100	290	149	83	40	38	39	402
22	33	30	41	249	90	228	134	71	44	40	30	773
23	34	30	43	1,140	97	209	133	59	60	44	28	1,380
24	34	33	54	1,420	87	176	343	76	88	43	31	1,160
25	30	33	66	906	83	158	1,140	91	58	34	58	670
26	28	32	52	835	86	146	1,620	84	50	33	47	426
27	33	31	50	630	91	136	*989	103	44	39	602	293
28	32	116	44	353	234	181	597	91	50	40	507	225
29	34	53	47	272		407	429	70	59	36	242	181
30	34	36	50	178	---------	549	328	59	57	36	142	382
31	34	----------	49	120	---------	445	----------	54	----------	39	265	----------
Total	1,113	1,115	1,686	8,475	5,788	11,474	14,076	3,553	1,493	1,615	3,219	11,348
Mean	35.9	37.2	54.4	273	207	370	469	115	49.8	52.1	104	378
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1964 : Max 955 Min 27 Mean 73.3 Cfsm - In. -
Water year 1964-65 : Max 1,620 Min 28 Mean 178 Cfsm - In. -

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Feb. 14-27.

4-0930. Deep River at Lake George Outlet at Hobart, Ind.

Location.--Lat 41°32'10", long 87°15'25", in NW¼ sec. 32, T. 36 N., R. 7 W., on left bank at upstream side of highway bridge, 300 ft upstream from Duck Creek and 400 ft downstream from Lake George Dam.

Drainage area.--125 sq mi.

Records available.--April 1947 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 588.17 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to July 29, 1952, staff gage, and July 30, 1952 to July 20, 1955, water-stage recorder at site 400 ft upstream at 11.80 ft higher.

Average discharge.--18 years, 90.7 cfs.

Extremes.--Maximum discharge during year, 1,080 cfs Apr. 26 (gage height, 10.02 ft); minimum, 4.4 cfs July 26, 29; minimum gage height, 3.60 ft Nov. 14.
1947-65: Maximum discharge, 3,880 cfs Oct. 11, 1954 (gage height, 19.48 ft, present datum, site then in use); minimum, 2.0 cfs (regulated) Oct. 8, 1956; minimum gage height, 3.35 ft Sept. 21, 1956.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 6 to Nov. 11, July 5, Aug. 9-11, Aug. 27 to Sept. 14)

Oct. 1 to Jan. 22		Jan. 23 to Apr. 24		Apr. 25 to Sept. 14		Sept. 15 to Sept. 30	
3.6	7.2	4.0	30	3.7	3.6	5.5	158
3.8	14	4.5	70	3.8	6.4	6.0	232
4.0	24	5.0	115	3.9	11	7.0	400
4.5	58	6.0	220	4.1	24	8.0	590
5.0	110	8.0	505	4.5	58	9.0	820
6.0	243	10.0	960	5.0	110		
				6.0	243		
				8.0	590		
				10.0	1,080		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	27	14	22	24	82	238	192	271	53	12	12	*70
2	22	14	* 22	82	* 68	411	201	198	45	13	13	53
3	18	14	21	133	56	396	185	154	43	12	16	37
4	13	13	22	101	46	295	163	*126	41	10	18	34
5	13	14	19	69	40	228	149	139	36	8.0	15	30
6	11	16	17	52	52	191	* 307	141	33	10	14	23
7	13	14	16	46	72	165	470	128	26	34	14	20
8	15	14	16	* 50	105	165	420	115	25	34	24	15
9	12	17	15	62	139	*245	400	102	* 24	24	58	21
10	10	14	15	69	261	265	403	87	24	15	72	16
11	11	17	29	52	333	226	340	71	20	11	42	16
12	10	19	58	41	258	196	266	63	17	8.1	21	13
13	10	9.2	72	35	179	221	213	52	16	7.7	13	12
14	11	10	59	26	136	217	181	47	16	8.6	9.4	46
15	11	15	39	24	114	198	196	44	14	7.2	7.2	486
16	10	17	32	21	98	170	244	50	12	8.2	6.8	800
17	10	18	26	18	89	256	233	40	10	20	7.6	625
18	8.9	15	19	b 16	81	754	193	46	11	16	12	426
19	11	17	15	b 15	75	695	161	66	13	12	14	304
20	11	21	13	b 15	72	453	138	54	16	7.2	13	232
21	11	14	13	b 15	67	317	123	43	12	6.4	9.4	226
22	10	14	13	55	56	221	110	47	29	16	7.6	357
23	11	14	16	327	b 50	176	103	62	61	11	7.2	776
24	10	14	22	673	b 45	149	154	75	81	8.0	7.6	809
25	11	15	26	629	b 40	129	544	100	48	5.6	16	605
26	8.7	16	26	446	36	115	*1,040	114	28	5.6	14	420
27	*12	17	22	334	36	102	865	142	19	* 7.2	110	304
28	11	36	19	221	54	100	626	126	14	6.8	163	230
29	14	32	18	152	------	128	*466	93	* 11	5.3	116	*178
30	14	26	19	120	------	193	353	74	12	6.1	66	201
31	13	------	18	100	------	204	------	61	------	8.0	67	------
TOTAL	383.6	500.2	759	4,023	2,740	7,821	9,439	2,931	830	364.0	985.8	7,387
MEAN	12.4	16.7	24.5	130	97.9	252	315	94.5	27.7	11.7	31.8	246
CFSM	.099	.134	.196	1.04	.783	2.02	2.52	.756	.222	.094	.254	1.97
IN	.11	.15	.23	1.20	.82	2.33	2.81	.87	.25	.11	.29	2.20

CALENDAR YEAR 1964 MAX 378 MIN 4.6 MEAN 37.1 CFSM .297 INCHES 4.04
WATER YEAR 1964-65 MAX 1,040 MIN 5.3 MEAN 105 CFSM .840 INCHES 11.35

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	1930	9.18	768	9-16	1215	9.06	845
3-18	2230	9.46	840	9-23, 24	2400 to 0045	9.16	870
4-26	1145	10.02	1,080				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

4-0932. Little Calumet River at Gary, Ind.

Location.--Lat 41°34'19", long 87°19'13", in SE¼ sec. 15, T. 36 N., R. 8 W., on right bank at upstream side of Pennsylvania Railroad bridge at Gary, 1.3 miles downstream from bridge on State Highway 53 and 1.5 miles upstream from confluence with Deep River.

Drainage area.--Indeterminate.

Records available.--June 1958 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 580.00 ft above mean sea level, datum of 1929.

Average discharge.--7 years, 15.0 cfs.

Extremes.--Maximum discharge during year, 94 cfs Apr. 28, 29; maximum gage height, 8.45 ft Apr. 29; minimum daily, 0.4 cfs July 30, 31.
1958-65: Maximum discharge, 196 cfs May 1, 1959 (gage height, 9.63 ft); no flow at times during most years.
Flood in October 1954 reached a stage of 13.09 ft, from floodmark.

Remarks.--Records poor. During times of flood on Deep River, reverse flow may occur at the gage.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 28-31, Aug. 2, 3, 6, 24, Sept. 15-18, 20-27)

6.2	0.4
6.3	1.5
6.5	5.7
6.7	11
7.0	21
7.5	41
8.0	67
8.5	101

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	3.0	* 2.6	8.5	21	33	33	67	13	2.2	0.6	11
2	9.6	2.8	2.8	16	*17	35	33	58	11	2.4	.9	9.9
3	9.0	2.8	2.8	16	14	39	31	50	10	2.4	.5	8.5
4	8.2	2.8	2.4	15	12	41	31	45	10	1.9	3.9	8.2
5	7.4	2.8	2.6	16	15	41	29	45	9.2	1.5	1.9	7.3
6	7.0	3.0	2.4	15	21	39	* 39	43	8.6	1.8	.7	6.7
7	6.4	3.3	2.2	*15	29	37	41	41	* 7.8	4.5	2.2	5.7
8	6.4	3.3	2.1	15	31	35	45	37	6.8	3.5	4.0	4.8
9	6.2	3.5	2.1	16	31	* 35	52	31	5.5	2.5	9.0	5.2
10	5.7	3.5	2.2	15	39	35	52	29	4.8	1.6	8.0	5.0
11	5.0	3.5	6.4	14	37	35	50	27	4.1	1.1	5.2	4.6
12	4.8	3.5	9.3	13	39	35	52	25	3.9	.8	4.4	3.5
13	4.8	3.0	9.3	12	39	35	50	22	3.5	.8	3.0	2.4
14	4.6	2.8	9.0	9.5	35	35	45	20	3.0	.7	2.2	2.2
15	4.6	3.5	8.2	8.2	33	33	48	20	3.0	.7	1.8	16
16	4.4	3.5	7.2	7.2	29	31	45	20	2.6	.8	1.5	16
17	4.4	2.8	6.0	6.5	27	33	43	20	2.6	1.6	2.2	21
18	4.1	2.6	5.2	5.7	25	39	39	21	2.6	1.6	4.6	24
19	3.7	2.6	4.7	5.3	25	41	37	27	2.6	1.2	5.0	26
20	3.5	2.4	4.5	5.2	24	45	35	21	2.2	.8	2.8	29
21	3.5	2.2	4.5	5.4	23	45	33	17	2.6	.6	2.1	33
22	3.5	2.1	4.8	14	18	45	33	19	3.3	1.2	1.6	41
23	3.3	2.1	6.7	33	15	41	37	19	11	1.5	1.1	50
24	3.3	2.2	8.2	48	14	37	43	19	7.0	.8	.7	55
25	3.3	2.2	8.2	50	12	35	58	19	4.4	.6	3.0	58
26	3.0	2.2	7.4	58	11	31	64	21	3.3	.5	2.8	56
27	3.0	2.2	7.0	50	11	31	80	22	2.8	* .7	12	55
28	* 2.8	5.0	6.4	40	15	31	94	20	* 2.4	.5	10	56
29	2.8	4.4	7.2	33		33	* 94	19	2.2	.5	9.2	* 58
30	3.0	3.5	7.4	28	---------	33	87	16	2.1	.4	8.5	55
31	3.0	----------	7.0	25	---------	33	----------	14	----------	.4	*11	----------
Total	154.3	89.1	168.8	618.5	662	1,127	1,453	874	157.9	42.1	126.4	733.0
Mean	4.98	2.97	5.45	20.0	23.6	36.4	48.4	28.2	5.26	1.36	4.08	24.4
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1964 : Max 41 Min 0 Mean 6.92 Cfsm - In. -
Water year 1964-65 : Max 94 Min 0.4 Mean 17.0 Cfsm - In. -

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 15-21, Jan. 13-22, Jan. 27 to Feb. 6, Feb. 22-28, June 2-8, June 29 to July 27, Aug. 1, 8, 15, 22, 29, Sept. 5, 12, 19, 26. Discharge computed from twice-daily readings of outside staff gage July 28, 31, Aug. 2-7, 9-14, 16-21, 23-28, Aug. 30 to Sept. 4, Sept. 6-11, 13-18, 20-25, 27, 28.

4-0935. Burns ditch at Gary, Ind.

Location.--Lat 41°34'30", long 87°17'20", in N½ sec. 13, T. 36 N., R. 8 W., on left bank on downstream side of bridge on Central Avenue, 0.4 mile east of Gary and 0.4 mile downstream from confluence of Deep River and Little Calumet River.

Drainage area.--About 160 sq mi.

Records available.--October 1943 to September 1965 (October 1950 to September 1955, high-water records only).

Gage.--Water-stage recorder. Datum of gage is 577.04 ft above mean sea level, datum of 1929. Prior to July 28, 1955, wire-weight gage at same site and datum.

Average discharge.--17 years (1943-50, 1955-65), 127 cfs.

Extremes.--Maximum discharge during year, 1,090 cfs Apr. 27 (gage height, 9.65 ft); minimum daily, 10 cfs July 31.
1943-65: Maximum discharge, 3,430 cfs Oct. 11, 1954; maximum gage height, 16.44 ft Mar. 16, 1944, from graph based on gage readings; minimum discharge determined, 1.8 cfs, Oct. 14, 1946.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Burns ditch is an artificial channel which reverses the direction of flow of part of Little Calumet River and flows into Lake Michigan at Wickliffe.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 20, 21, 29, 30)

Oct. 1 to Jan. 22		Jan. 23 to Sept. 30	
3.3	10	3.2	7.5
3.4	17	3.4	22
3.6	35	3.6	42
4.0	82	4.0	91
4.5	166	5.0	247
5.0	268	7.0	607
		10.0	1,170

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	18	* 32	43	b 120	301	283	427	64	18	a 11	*91
2	37	20	29	107	*b 105	535	301	319	60	19	a 13	81
3	28	21	29	186	b 85	571	283	247	55	18	a 14	63
4	22	19	29	166	b 70	499	247	205	50	17	24	55
5	18	20	26	120	b 60	391	221	213	52	14	22	53
6	17	19	23	92	b 80	319	* 355	213	46	18	18	42
7	16	20	21	* 81	112	265	589	197	42	50	18	37
8	20	18	20	83	149	247	625	173	* 38	42	21	32
9	19	18	20	98	205	*337	589	149	34	40	75	37
10	17	20	21	106	373	391	589	149	30	32	91	34
11	15	19	48	90	481	355	535	112	26	22	69	29
12	15	21	89	76	427	319	445	98	23	18	43	27
13	15	21	109	65	319	337	355	85	21	14	27	23
14	15	15	95	54	229	337	283	77	19	18	19	56
15	15	17	73	46	181	319	301	73	18	17	15	364
16	15	23	58	b 38	149	265	355	78	18	14	a 14	697
17	15	23	49	35	133	301	373	71	18	29	a 16	733
18	15	22	39	b 30	119	769	319	81	18	30	a 23	553
19	15	21	27	b 28	105	859	247	98	18	22	28	391
20	15	23	23	b 28	98	751	205	85	20	17	22	283
21	14	23	22	30	98	535	98	72	19	a 14	18	265
22	14	18	22	94	b 85	391	157	66	25	24	14	391
23	15	17	28	445	b 75	301	141	61	75	23	a 13	697
24	15	18	39	751	b 66	238	205	73	83	17	a 15	859
25	15	18	48	859	b 60	197	481	98	59	14	17	769
26	15	20	48	733	b 55	165	932	112	40	a 13	20	607
27	16	21	41	535	52	141	1,050	133	30	*a 14	113	463
28	* 18	49	38	b 350	83	141	* 841	141	25	a 14	181	355
29	18	51	37	b 240		173	661	105	* 21	a 13	157	*265
30	18	42	37	b 180	---	265	535	84	20	a 11	98	283
31	18	---	35	b 150	---	301	---	72	---	a 10	98	---
Total	562	675	1,255	5,939	4,188	11,316	12,601	4,167	1,067	636	1,327	8,635
Mean	18.1	22.5	40.5	192	150	365	420	134	35.6	20.5	42.8	288
Cfsm	0.113	0.141	0.253	1.20	0.938	2.28	2.62	0.838	0.222	0.128	0.268	1.80
In.	0.13	0.16	0.29	1.38	0.98	2.63	2.92	0.97	0.25	0.15	0.31	2.01

Calendar year 1964 : Max 520 Min 5.2 Mean 53.7 Cfsm 0.336 In. 4.56
Water year 1964-65 : Max 1,050 Min 10 Mean 143 Cfsm 0.894 In. 12.18

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

4-0940. Little Calumet River at Porter, Ind.

Location.--Lat 41°37'18", long 87°05'13", in NE¼ sec. 34, T. 37 N., R. 6 W., near center of span on downstream side of highway bridge, three-quarters of a mile northwest of Porter and 4.5 miles upstream from Salt Creek.

Drainage area.--62.9 sq mi.

Records available.--May 1945 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 603.48 ft above mean sea level, datum of 1929. Prior to June 26, 1952, wire-weight gage at same site and datum.

Average discharge.--20 years, 67.8 cfs.

Extremes.--Maximum discharge during year, 680 cfs Mar. 18 (gage height, 7.44 ft); minimum, 17 cfs Aug. 24, 25; minimum gage height, 2.77 ft Feb. 22.
1945-65: Maximum discharge, 3,110 cfs Oct. 10, 1954 (gage height, 11.66 ft); minimum, 15 cfs Dec. 6, 1958, result of freezeup; minimum gage height, 2.14 ft Aug. 22, 1949.

Remarks.--Records fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 12 to Sept. 2, Sept. 20, 27-30)

Oct. 1 to Jan. 1		Jan. 2 to Sept. 30			
2.8	23	2.4	17	5.0	137
3.0	28	2.5	18	6.0	276
3.5	44	3.0	28	7.0	525
4.0	67	3.5	44	8.0	930
4.5	100	4.0	67		
5.0	155				

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	32	*46	42	a 37	128	128	64	30	23	22	*29
2	30	32	b 50	109	a 37	224	128	57	30	23	23	26
3	29	32	46	180	*a 37	180	108	52	30	24	22	25
4	26	32	42	116	b 38	168	90	*52	*28	23	23	26
5	26	32	42	78	b 40	224	84	120	26	23	21	29
6	26	32	40	67	54	180	156	137	28	30	21	25
7	25	32	b 39	*62	87	137	*316	90	26	35	21	25
8	28	32	b 39	64	128	137	194	70	28	28	22	25
9	32	32	39	97	120	156	208	60	26	28	30	32
10	30	32	39	84	194	*146	208	52	26	28	34	29
11	28	32	64	62	296	116	128	46	25	25	24	26
12	28	32	155	54	168	100	100	44	24	24	24	25
13	28	29	142	46	120	104	81	42	24	24	23	24
14	26	30	100	38	81	104	70	40	24	28	21	33
15	26	32	62	b 36	70	97	97	40	24	25	21	230
16	26	37	54	b 35	64	87	116	44	24	24	20	460
17	26	35	46	b 35	60	108	97	42	24	29	20	194
18	26	34	35	b 35	57	460	78	42	24	28	21	87
19	28	34	b 35	b 35	52	434	67	42	24	25	22	108
20	29	37	b 35	b 36	50	240	62	39	24	23	20	87
21	30	32	b 35	39	50	116	60	37	25	22	19	112
22	30	34	37	67	37	87	57	35	25	22	19	137
23	30	34	39	296	b 35	87	54	35	29	22	18	384
24	30	35	46	560	b 34	78	81	40	28	22	17	360
25	30	37	54	384	34	70	180	54	25	21	19	168
26	30	37	50	224	40	64	316	50	24	20	19	100
27	30	37	44	b160	46	60	194	57	23	19	54	75
28	32	76	40	b110	60	62	120	42	24	*19	37	62
29	32	88	39	a80		90	87	37	*23	19	29	55
30	32	54	42	a55	---------	112	75	35	24	19	26	*79
31	32	---------	42	a40	---------	128	---------	32	---------	19	34	---------
Total	895	1,116	1,618	3,326	2,126	4,484	3,740	1,629	769	744	746	3,077
Mean	28.9	37.2	52.2	107	75.9	145	125	52.5	25.6	24.0	24.1	103
Cfsm	0.459	0.591	0.830	1.70	1.21	2.31	1.99	0.835	0.407	0.382	0.383	1.64
In.	0.53	0.66	0.96	1.96	1.26	2.66	2.22	0.96	0.45	0.44	0.44	1.83

Calendar year 1964 : Max 264 Min 19 Mean 40.2 Cfsm 0.639 In. 8.69
Water year 1964-65 : Max 560 Min 17 Mean 66.5 Cfsm 1.06 In. 14.37

Peak discharge (base, 700 cfs).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

4-0945. Salt Creek near McCool, Ind.

Location.--Lat 41°35'48", long 87°08'40", in SE¼ sec. 6, T. 36 N., R. 6 W., on left bank on downstream side of highway bridge, 50 ft downstream from New York Central Railroad bridge, 1¼ miles north of McCool and 1.5 miles upstream from Little Calumet River.

Drainage area.--78.7 sq mi.

Records available.--May 1945 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 594.10 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to July 25, 1955, wire-weight gage at same site and datum.

Average discharge.--20 years, 67.1 cfs.

Extremes.--Maximum discharge during year, 700 cfs Mar. 18 (gage height, 8.68 ft); minimum, 20 cfs Oct. 8, July 29-31, Aug. 17; minimum gage height, 2.37 ft July 30, 31, Aug. 17.
1945-65: Maximum discharge, 3,180 cfs Oct. 11, 1954 (gage height, 14.12 ft); minimum, 6.3 cfs Aug. 24, 1955 (gage height, 2.31 ft).

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 23 to Nov. 10, Jan. 22-27, Feb. 8-13, Feb. 8-13, Feb. 28 to Mar. 17, Apr. 24-28)

Oct. 1 to Mar. 17				Mar. 18 to Sept. 30			
2.5	19	5.0	166	2.3	20	4.0	114
3.0	32	6.0	266	2.5	26	6.0	325
3.5	55	8.0	530	3.0	46	8.0	590
4.0	86	9.0	700	3.5	74		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	24	*34	34	31	215	114	70	38	23	23	44
2	25	26	34	139	30	278	122	61	38	23	23	* 36
3	24	25	34	139	*30	215	102	56	* 36	24	22	28
4	23	25	34	79	32	148	86	* 54	34	23	28	28
5	22	25	32	55	34	157	82	94	30	23	23	36
6	22	25	31	50	40	115	211	78	30	23	22	28
7	22	25	31	*47	55	100	* 313	70	30	38	22	26
8	22	25	31	50	123	115	210	61	30	28	24	26
9	25	25	31	90	100	185	221	56	32	26	45	30
10	24	26	31	67	235	* 131	168	51	30	26	50	30
11	23	26	66	50	255	100	131	46	28	24	30	26
12	23	26	131	42	148	100	106	44	26	23	24	24
13	23	25	100	36	90	166	94	42	26	23	23	24
14	23	26	66	31	61	195	78	40	24	23	23	42
15	23	26	45	30	52	148	114	40	24	23	22	254
16	23	29	35	28	47	107	140	40	24	22	22	424
17	23	26	32	28	44	156	110	38	24	30	22	277
18	22	26	30	28	42	590	90	38	24	32	23	140
19	22	26	29	28	42	470	78	42	24	23	24	78
20	22	25	29	29	40	260	70	38	23	23	22	61
21	22	25	29	31	35	115	67	36	24	22	22	82
22	22	25	29	66	31	86	64	34	26	26	22	139
23	23	26	32	356	28	82	61	34	36	30	22	265
24	22	28	36	562	26	70	114	47	38	23	22	289
25	22	28	42	419	26	64	301	94	26	23	22	168
26	22	28	40	215	32	61	463	70	24	22	22	90
27	*22	29	36	131	38	58	* 337	90	23	22	79	67
28	23	55	32	70	54	61	168	64	23	* 22	70	56
29	23	64	32	50	--------	95	* 102	48	* 24	20	40	51
30	23	42	34	36	------	131	82	44	26	20	34	* 94
31	23	------	32	32	------	122	------	42	------	20	48	-------
Total	709	862	1,260	3,048	1,801	4,896	4,399	1,662	845	753	920	2,963
Mean	22.9	28.7	40.6	98.3	64.3	158	147	53.6	28.2	24.3	29.7	98.8
Cfsm	0.291	0.365	0.516	1.25	0.817	2.01	1.87	0.681	0.358	0.309	0.377	1.26
In.	0.34	0.41	0.59	1.44	0.85	2.32	2.09	0.79	0.40	0.36	0.43	1.41

Calendar year 1964: Max 266 Min 14 Mean 35.7 Cfsm 0.454 In. 6.16
Water year 1964-65: Max 590 Min 20 Mean 66.1 Cfsm 0.840 In. 11.43

Peak discharge (base, 600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	0830	7.97	594				
3-18	1430	8.68	700				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 7-9, 13-17, 19, Jan. 15-20, Jan. 28 to Feb. 4, Feb. 21-24.

GPO 826-857-11

4-0985. Fawn River near White Pigeon, Mich.

Location.--Lat 41°47'00", long 85°35'00", in SW¼ sec. 10, T. 8 S., R. 11 W., on right bank a quarter of a mile downstream from bridge on county highway, 3.1 miles east of White Pigeon and 3½ miles upstream from outlet of Klinger Lake.

Drainage area.--192 sq mi.

Records available.--July 1903 to July 1904 (gage height and discharge measurements only), October 1957 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 805.4 ft above mean sea level, datum of 1929.

Average discharge.--8 years, 132 cfs.

Extremes.--Maximum discharge during year, 312 cfs Apr. 17 (gage height, 3.61 ft); minimum daily, 34 cfs Oct. 4, 5; minimum recorded gage height, 1.78 ft Oct. 8.
1957-65: Maximum discharge, 488 cfs Mar. 15, 1962 (gage height, 4.37 ft); minimum, 26 cfs Aug. 5, 1964; minimum gage height, 1.72 ft Jan. 10, Sept. 10, 1964.
A daily mean discharge of 750 cfs occurred Mar. 15, 1904.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Small diurnal fluctuation caused by powerplants above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.7	30
2.0	52
2.5	111
3.0	190
3.6	310

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	50	60	80	100	150	219	275	125	*75	45	164
2	37	50	55	90	100	170	*216	273	137	65	51	166
3	35	54	55	100	*111	*188	218	261	130	65	*47	159
4	34	*62	55	100	104	195	212	*251	143	63	51	143
5	34	54	55	*110	94	212	210	253	130	68	54	138
6	35	65	55	110	107	221	218	259	130	70	60	132
7	*35	49	55	110	126	237	225	261	124	71	54	*119
8	43	51	55	110	153	257	235	263	*143	74	59	126
9	55	48	55	110	180	265	251	263	136	81	69	132
10	50	56	55	120	195	265	251	259	130	79	90	130
11	40	48	60	120	208	259	259	247	136	75	94	121
12	48	54	70	110	216	253	282	237	122	68	70	115
13	45	47	80	110	219	247	273	221	118	60	70	111
14	39	40	90	100	197	243	275	206	110	60	65	107
15	45	40	*95	90	176	235	282	197	115	61	64	115
16	55	60	90	80	180	229	292	188	110	60	61	117
17	45	70	85	80	168	218	308	190	83	68	77	126
18	52	49	80	75	154	221	292	178	92	64	98	118
19	46	57	70	75	153	221	282	173	97	69	114	110
20	55	53	65	75	145	212	282	159	81	66	119	98
21	48	44	65	75	143	197	271	145	72	62	124	111
22	39	51	65	80	101	201	265	159	83	57	112	137
23	51	50	65	90	100	214	271	134	89	57	104	146
24	48	68	65	120	100	204	282	137	97	59	98	137
25	40	56	65	140	100	210	299	142	95	57	102	124
26	49	46	65	150	103	204	303	143	70	49	115	112
27	47	62	65	150	108	194	303	158	69	49	154	117
28	45	65	65	140	128	199	297	142	72	47	170	104
29	47	78	65	130		199	288	136	70	49	182	106
30	47	70	65	120	---	194	280	132	74	46	173	101
31	46	---	70	110	---	221	---	112	---	47	164	---
Total	1,375	1,647	2,060	3,260	3,969	6,735	7,941	5,154	3,183	1,941	2,910	3,742
Mean	44.4	54.9	66.5	105	142	217	265	199	106	62.6	93.9	125
Cfsm	0.232	0.287	0.348	0.550	0.743	1.14	1.39	1.04	0.555	0.328	0.492	0.654
In.	0.27	0.32	0.40	0.63	0.77	1.31	1.55	1.20	0.62	0.38	0.57	0.73

Calendar year 1964: Max 180 Min 27 Mean 69.8 Cfsm 0.365 In. 4.98
Water year 1964-65: Max 308 Min 34 Mean 123 Cfsm 0.644 In. 8.75

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Jan. 14 to Feb. 2, Feb. 9, 23-25. No gage-height record Oct. 1-7, Nov. 30 to Feb. 2, Mar. 1, 2.

4-990. St. Joseph River at Mottville, Mich.

Location.--Lat 41°48'05", long 85°45'15", in SW¼ sec. 6, T. 8 S., R. 12 W., Michigan meridian, on right bank 500 ft upstream from bridge on U. S. Highway 112 at Mottville, 0.4 mile downstream from Michigan Gas and Electric Co. hydroelectric plant, 4 miles upstream from Pigeon River, and at mile 96.

Drainage area.--1,866 sq mi.

Records available.--October 1923 to September 1965. Monthly discharge only for some periods, published in WSP 1307.

Gage.--Water-stage recorder (digital). Datum of gage is 755.3 ft above mean sea level (Michigan Gas and Electric Co. benchmark). Prior to Oct. 1, 1951, at site 0.4 mile upstream at datum 4.2 ft higher.

Average discharge.--42 years, 1,466 cfs.

Extremes.--Maximum discharge during year, 3,840 cfs Apr. 9 (gage height, 5.88 ft); minimum, 104 cfs Aug. 7 (gage height, 0.98 ft); minimum daily, 350 cfs Nov. 26.
1923-65: Maximum discharge, 10,700 cfs Apr. 27, 1950 (gage height, 6.56 ft, site and datum then in use); minimum daily, 39 cfs Oct. 19, 1963.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by powerplant above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-10, Sept. 5-10)

1.7	330
2.0	470
3.0	1,160
6.0	3,970

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	500	395	720	566	b1,100	1,620	2,050	2,440	1,310	797	445	846
2	460	405	632	986	b1,100	1,370	*2,200	2,350	1,300	*727	*500	839
3	450	405	626	832	*b1,100	1,560	2,200	2,240	1,340	542	494	916
4	400	*430	692	1,060	b1,100	1,850	2,290	2,060	1,240	548	482	748
5	385	450	440	993	b1,100	2,080	2,390	2,260	1,060	482	512	832
6	395	470	415	958	1,020	*2,430	2,650	2,080	1,080	881	554	930
7	390	375	644	*965	1,050	3,000	2,650	*2,180	1,350	916	420	867
8	*420	375	614	1,010	1,380	3,140	2,880	1,850	*1,100	909	445	*916
9	512	450	602	1,060	1,480	3,180	2,950	1,840	1,180	902	542	853
10	455	692	578	1,020	1,970	3,200	2,970	2,030	1,160	524	584	839
11	366	494	602	1,190	2,080	3,020	2,970	1,940	1,090	494	584	755
12	410	455	500	1,140	2,350	2,970	2,880	1,900	818	804	626	818
13	518	602	614	1,010	2,360	2,830	2,790	1,840	965	874	614	783
14	578	375	937	853	2,370	2,580	2,660	1,720	1,150	741	440	783
15	465	358	867	b 900	2,360	2,520	2,880	1,490	1,000	699	470	832
16	425	572	*755	b 600	2,360	2,480	2,980	1,480	867	727	620	951
17	390	678	832	b 600	2,120	2,460	3,060	1,730	797	518	657	909
18	410	657	734	b 650	2,080	2,340	3,210	1,690	846	542	797	769
19	410	590	542	b 750	1,960	2,110	3,180	1,300	494	734	874	769
20	400	506	1,020	769	1,940	2,190	3,070	1,330	560	720	783	888
21	410	358	664	811	1,520	2,080	2,830	1,300	965	720	614	958
22	410	358	797	951	1,750	2,150	2,740	1,070	860	671	482	1,080
23	410	506	626	1,060	1,430	1,990	2,810	1,060	874	720	678	1,350
24	400	572	678	1,140	1,380	1,990	2,770	1,410	874	530	769	1,310
25	370	578	530	1,250	1,110	1,960	2,740	1,270	860	500	790	1,040
26	380	350	734	1,340	1,340	2,100	2,580	1,220	460	644	839	825
27	385	512	632	1,200	1,330	1,850	2,640	1,220	542	566	937	1,300
28	410	410	881	1,300	944	1,750	2,610	1,230	818	572	783	1,050
29	435	500	811	1,100		1,920	2,460	853	832	542	560	832
30	548	608	762	958	---------	2,040	2,440	1,020	790	554	344	1,210
31	435	----------	797	909	---------	1,970	----------	797	----------	450	825	----------
Total	13,332	14,486	21,278	29,931	45,184	70,730	81,530	50,200	23,582	20,550	19,664	27,798
Mean	430	483	686	966	1,614	2,282	2,718	1,619	953	663	634	927
Cfsm	0.230	0.259	0.368	0.518	0.865	1.22	1.46	0.868	0.511	0.355	0.340	0.497
In.	.27	.29	.42	.60	.90	1.41	1.62	1.00	.57	.41	.39	.55

Calendar year 1964 : Max 1,610 Min 57 Mean 596 Cfsm 0.319 In. 4.35
Water year 1964-65 : Max 3,210 Min 350 Mean 1,160 Cfsm 0.622 In. 8.44

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

4-0995. Pigeon Creek at Hogback Lake Outlet near Angola, Ind.

Location.--Lat 41°37'24", long 85°05'44", in NE¼NW¼ sec. 36, T. 37 N., R. 12 E., on right bank 200 ft north of lake outlet, 2 miles southeast of Flint, and 5.1 miles west of Angola.

Drainage area.--102 sq mi.

Records available.--October 1945 to September 1965. Prior to October 1947, published as "near Flint."

Gage.--Water-stage recorder. Datum of gage is 940.00 ft above mean sea level, datum of 1929. Prior to October 1947, wire-weight gage at site 1½ miles downstream at different datum. October 1947 to Aug. 3, 1953, staff gage at site 600 ft downstream at same datum.

Average discharge.--20 years, 72.3 cfs.

Extremes.--Maximum discharge during year, 241 cfs Mar. 10 (gage height, 12.92 ft); minimum, 3.4 cfs Oct. 25-27; minimum gage height, 7.62 ft Oct. 6-8.
1945-65: Maximum discharge, 744 cfs Apr. 8, 1950 (gage height, 14.95 ft); minimum, 3.4 cfs Oct. 25-27, 1964; minimum gage height, 7.24 ft Sept. 9, 10, 1953.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Rating tables (gage height, in feet, and discharge in cubic feet per second)
(Shifting-control method used Oct. 7 to Dec. 29, Jan. 14-19)

Oct. 1 to Jan. 13		Jan. 14 to Sept. 30	
7.4	3.4	7.8	8.6
7.5	4.4	8.0	12
7.6	5.5	8.4	22
7.8	8.0	9.0	42
8.0	11	10.0	82
8.4	21	11.0	131
8.8	32	13.0	247
9.4	49		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	3.9	*5.6	15	86	70	*136	193	44	22	11	* 27
2	5.6	4.0	6.0	18	82	66	141	181	46	20	11	27
3	5.4	4.1	6.5	20	74	74	141	169	44	20	11	27
4	5.1	4.1	6.8	24	70	86	141	157	42	18	11	27
5	5.0	4.1	7.1	26	66	126	141	151	42	18	*12	28
6	4.8	4.1	7.2	31	58	169	146	151	40	18	12	27
7	4.7	4.1	7.4	32	58	205	151	151	40	18	12	27
8	4.6	4.1	7.5	35	62	223	163	146	38	18	12	27
9	4.5	4.1	7.5	37	66	235	175	136	38	18	14	27
10	4.3	4.1	7.5	40	82	241	181	131	37	17	14	27
11	4.2	4.2	8.1	43	106	229	187	121	37	16	13	26
12	4.1	4.2	8.4	46	131	217	193	116	33	16	13	24
13	4.0	4.2	9.0	46	151	205	193	106	32	14	12	22
14	3.9	4.2	9.3	46	165	193	187	96	30	14	12	22
15	3.8	4.3	9.7	46	165	181	187	91	28	14	12	26
16	3.7	4.4	10	44	160	175	187	82	27	13	12	26
17	3.6	4.4	11	42	150	169	187	78	27	14	13	27
18	3.6	4.5	11	40	140	162	181	74	26	14	14	28
19	3.6	4.6	11	38	133	170	175	70	24	14	14	28
20	3.7	4.7	11	37	125	175	169	66	22	13	14	27
21	3.6	5.0	11	35	118	178	163	62	22	13	14	27
22	3.6	4.8	*11	35	110	178	157	58	21	13	14	27
23	3.6	4.8	12	40	103	172	151	58	*21	13	14	27
24	3.5	4.8	12	48	*95	165	157	54	21	12	13	24
25	3.4	5.0	13	58	88	160	175	50	20	12	14	22
26	3.4	5.0	13	70	83	155	193	50	20	12	14	21
27	*3.4	5.0	13	*82	78	152	199	*50	18	11	17	20
28	3.5	5.5	13	91	74	149	205	50	18	11	18	18
29	3.7	5.5	14	96		144	*205	48	21	11	20	18
30	3.9	5.5	14	96	---------	142	199	48	21	10	22	18
31	4.0	----------	14	91	---------	140	----------	46	----------	10	26	----------
Total	127.8	135.3	307.6	1448	2879	5106	5166	3040	900	457	435	749
Mean	4.12	4.51	9.92	46.7	103	165	172	98.1	30.0	14.7	14.0	25.0
Cfsm	0.040	0.044	0.097	0.458	1.01	1.62	1.69	0.962	0.294	0.144	0.137	0.245
In.	0.05	0.05	0.11	0.53	1.05	1.87	1.89	1.11	0.33	0.17	0.16	0.27

Calendar year 1964 : Max 92 Min 3.4 Mean 19.5 Cfsm 0.191 In. 2.59
Water year 1964-65 : Max 235 Min 3.4 Mean 56.9 Cfsm 0.558 In. 7.59

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 29 to Feb. 6, Feb. 14-27, Mar. 17-31.

4-0996.20 Pretty Lake Inlet near Stroh, Ind.

Location.--Lat 41°34'50", long 85°15'00", in NW¼ sec. 15, T. 36 N., R. 12 E., on left bank 400 ft upstream from mouth, and 2.6 miles west of Stroh.

Drainage area.--1.96 sq mi (revised).

Records available.--June 1963 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 960.00 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 3.4 cfs Feb. 10 (gage height, 6.83 ft); no flow for many days.
1963-65: Maximum discharge, 3.4 cfs Feb. 10, 1965; no flow for many days in most years.

Remarks.--Records poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 3		Mar. 4 to June 1		June 2 to Sept. 30	
6.03	0.00	5.8	0.05	6.1	0.01
6.1	.03	5.9	.14	6.2	.05
6.2	.10	6.0	.30	6.3	.13
6.3	.22	6.1	.49	6.4	.29
6.4	.39	6.2	.73	6.5	.54
6.5	.74	6.3	1.0	6.6	1.1
6.6	1.4	6.4	1.4	6.7	2.0
6.7	2.3	6.5	1.8	6.8	3.3
		6.6	2.3		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	0.02	0.39	0.89	0.76	0.07	0.03	0.03	0.40
2				.19	.01	.43	.79	.68	.25	.03	.02	.23
3				*.06	.01	.59	.86	.61	.20	.03	.02	.17
4				.02	.01	2.3	.83	.76	.15	.02	.06	.15
5				.02	.03	a2.0	.73	1.9	.11	.03	.03	.12
6				.02	.05	a1.8	*1.8	1.2	.10	.03	.03	.09
7				*.04	.33	a1.7	1.4	*.99	.09	.05	.02	.08
8				.12	.31	1.6	1.4	.83	.09	.03	.32	.08
9				.33	.48	1.4	1.7	.73	.10	.03	.31	.08
10				.19	2.1	1.2	1.2	.68	.08	.02	.09	.08
11				.13	1.0	1.0	1.0	.59	.07	.02	.06	.07
12				.10	.46	1.0	1.2	.47	.06	.02	.04	.06
13				.08	.37	.95	.99	.43	.06	.02	.03	.06
14				.03	.35	.95	.86	.38	.06	.02	.03	.10
15				.02	.28	.95	.95	.43	.05	.02	.02	*1.2
16				.01	.25	.99	.86	.47	* .05	.03	.03	.58
17				.01	.25	1.3	.76	.36	.04	.04	.40	* .37
18				.01	.22	1.4	.95	.30	.04	.02	.23	.25
19				.01	.15	.89	.83	.24	.04	.02	.17	.19
20				.02	.15	.56	.66	.19	.04	.02	.10	.13
21				.02	a .12	.49	.61	.20	* .04	.01	.06	.11
22				.15	a .08	.49	.59	.17	.03	.02	.05	.15
23				2.1	a .05	.66	1.4	.11	.04	* .20	.04	.15
24				1.2	a .08	.45	1.6	.20	.03	.03	.04	.11
25				*.74	a .60	.45	1.8	.11	.03	.02	.20	.10
26				.74	a .50	.43	1.4	.24	.03	.02	.25	.09
27				.25	a .45	.49	1.1	*.27	.03	.02	1.6	.08
28				.08	a .40	.63	.99	.11	.05	.02	.89	.08
29				.03		.92	.89	.08	.04	.02	.37	.06
30				.02	---	.95	.83	.06	.04	.02	.23	.09
31		---		.02	---	.95	---	.05	---	.02	.42	---
Total	0	0	0	6.76	9.11	30.31	31.87	14.60	2.11	0.93	6.19	5.51
Mean	0	0	0	0.218	0.325	0.978	1.06	0.471	0.070	0.030	0.200	0.184
Cfsm	0	0	0	0.111	0.166	0.499	0.541	0.240	0.036	0.015	0.102	0.094
In.	0	0	0	0.13	0.17	0.58	0.60	0.28	0.04	0.02	0.12	0.10

Calendar year 1964: Max 0.85 Min 0 Mean 0.057 Cfsm 0.029 In. 1.30
Water year 1964-65: Max 2.3 Min 0 Mean 0.294 Cfsm 0.150 In. 2.04

* Discharge measurement made on this day.
a No gage-height record.
Note.--Stage-discharge relation affected by ice Jan. 14-22, Jan. 27 to Feb. 6, Feb. 12, 13, 19, 20, Mar. 18-27.

4-1002.2 North Branch Elkhart River near Cosperville, Ind.

Location.--Lat 41°29'32", long 85°26'54", in SW¼NE¼ sec. 14, T. 35 N., R. 9 E., at downstream side of county road bridge over outlet of Waldron Lake at extreme west end of lake, 1.5 miles northeast of Cosperville, and 6.6 miles northwest of Albion.

Drainage area.--133 sq mi.

Records available.--October 1950 to September 1965.

Gage.--Wire-weight gage read twice daily. Datum of gage is 880.00 ft above mean sea level, datum of 1929. Prior to Aug. 7, 1956, staff gage at same site and datum.

Average discharge.--15 years, 107 cfs.

Extremes.--Maximum discharge during year, 337 cfs Apr. 27, 28 (gage height, 7.66 ft); minimum, 3.8 cfs Oct. 7 (gage height, 4.50 ft). 1950-65: Maximum discharge observed, 717 cfs May 13, 1956 (gage height, 8.78 ft); minimum, 2.2 cfs Sept. 17, 18, 21, 1959; minimum gage height, 4.43 ft Aug. 11, Sept. 17, 1964.

Remarks.--Records fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 14-30, Feb. 4-24, Mar. 1 to Apr. 17, May 26-29; stage-discharge relation affected by ice Jan. 31 to Feb. 3, Feb. 26-28)

4.4	3.2	5.0	42
4.5	6.6	5.5	93
4.6	12	6.0	148
4.7	18	7.0	258
4.8	25	7.7	337

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	6.6	* 17	34	96	115	*192	302	120	26	30	*48
2	5.1	6.2	18	47	86	*126	192	302	115	24	28	49
3	4.8	6.6	20	59	80	137	192	291	115	26	25	47
4	4.8	6.6	20	61	76	159	181	280	104	24	27	47
5	4.4	7.5	20	61	71	192	181	291	98	23	*26	47
6	4.1	7.9	20	61	68	214	192	302	93	21	25	45
7	3.8	7.9	20	59	71	225	214	313	88	24	24	42
8	4.4	7.9	20	61	82	225	225	302	82	24	28	40
9	5.1	7.9	20	71	88	225	247	302	82	23	36	40
10	5.5	7.9	21	71	126	225	247	291	71	23	42	40
11	5.1	8.4	24	68	181	225	247	291	70	22	40	36
12	5.1	8.4	27	62	203	225	247	280	67	21	38	32
13	4.8	8.4	30	56	203	225	247	269	63	20	34	30
14	5.1	8.4	30	50	192	214	247	258	58	18	32	29
15	5.1	8.4	31	45	181	214	247	247	56	18	30	61
16	5.5	9.3	34	41	170	214	236	236	51	17	28	115
17	5.1	9.9	35	38	170	214	236	236	46	23	33	132
18	5.1	9.9	33	35	159	225	236	214	43	24	47	132
19	5.5	10	32	32	159	236	236	192	40	25	53	132
20	5.5	11	30	31	148	247	225	181	38	24	51	120
21	5.1	10	30	30	142	236	225	159	35	23	49	115
22	5.5	9.9	26	31	126	236	214	148	32	20	47	110
23	5.5	9.3	26	76	115	236	225	159	*33	30	43	104
24	5.1	9.9	28	115	110	225	269	159	33	45	40	93
25	5.1	10	32	132	110	214	302	159	32	56	40	82
26	5.5	10	35	137	110	203	325	159	30	55	40	76
27	* 5.5	11	37	*137	110	192	325	* 148	27	53	43	69
28	5.5	12	* 38	137	115	192	337	148	29	48	49	63
29	5.8	17	34	126	---------	181	*325	142	30	42	48	57
30	6.2	18	33	115	---------	192	313	132	29	34	47	56
31	6.6	----------	31	105	---------	192	----------	126	----------	29	49	----------
Total	160.8	282.2	852	2,184	3,548	6,381	7,327	7,019	1,810	885	1,172	2,089
Mean	5.19	9.41	27.5	70.5	127	206	244	226	60.3	28.5	37.8	69.6
Cfsm	0.039	0.071	0.207	0.530	0.955	1.56	1.83	1.70	0.453	0.214	0.284	0.523
In.	0.04	0.08	0.24	0.61	0.99	1.79	2.04	1.96	0.51	0.25	0.33	0.58

Calendar year 1964: Max 170 Min 3.8 Mean 36.4 Cfsm 0.274 In. 3.72
Water year 1964-65: Max 337 Min 3.8 Mean 92.4 Cfsm 0.695 In. 9.42

* Discharge measurement made on this day.

4-1005. Elkhart River at Goshen, Ind.

Location.--Lat 41°35'36", long 85°50'55", near line between secs. 8 and 9, T. 36 N., R. 6 E., on right bank 20 ft downstream from River Avenue Bridge at Goshen and half a mile upstream from Rock Run.

Drainage area.--580 sq mi.

Records available.--April 1931 to September 1965. Periodic sediment samples collected since 1963.

Gage.--Water-stage recorder. Datum of gage is 769.43 ft above mean sea level, datum of 1929. Prior to Nov. 20, 1931, chain gage at same site and datum.

Average discharge.--34 years, 490 cfs.

Extremes.--Maximum discharge during year 1,840 cfs Apr. 26 (gage height, 5.40 ft); minimum, 67 cfs Oct. 17-20; minimum gage height, 1.80 ft Nov. 14, 15.
1931-65: Maximum discharge, 5,440 cfs Apr. 4, 1950 (gage height, 10.15 ft); maximum gage height, 10.33 ft July 10, 1951; minimum discharge, 6.6 cfs Aug. 11, 1964 (gage height, 1.38 ft).

Remarks.--Records good. The flow is regulated by three powerplants above station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 25 to Sept. 15)

Oct. 1 to Nov. 24		Nov. 25 to Sept. 30			
1.7	59	1.8	80	3.0	530
1.9	100	1.9	104	5.0	1,620
2.1	154	2.0	132	6.0	2,160
		2.5	305		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	82	104	121	b410	480	900	1,120	458	162	144	265
2	98	87	104	206	b390	708	845	1,060	458	182	153	*251
3	89	85	112	305	b370	790	790	1,010	435	169	162	230
4	85	98	118	285	b360	845	790	955	412	156	150	220
5	80	116	121	285	b350	1,120	735	1,230	390	153	141	220
6	78	103	104	254	345	1,180	955	*1,280	368	156	147	209
7	74	96	97	248	390	1,010	*1,280	1,180	368	195	132	206
8	74	93	b95	237	435	1,010	1,180	1,060	345	192	153	188
9	72	93	b100	285	480	1,120	1,180	1,010	345	185	258	198
10	70	89	104	345	900	1,060	1,280	955	305	159	305	172
11	70	91	138	305	1,450	*1,010	1,120	900	*305	144	248	178
12	70	100	178	265	1,180	955	1,060	845	285	141	206	172
13	68	89	212	b220	955	900	1,010	845	285	132	202	162
14	68	78	198	b190	790	900	955	790	265	126	185	178
15	68	80	135	b170	790	900	955	735	251	132	172	656
16	68	89	143	b165	735	845	1,010	708	223	126	172	1,230
17	67	93	169	b160	708	900	955	680	240	144	206	1,010
18	70	89	138	b165	680	1,180	955	655	220	156	390	790
19	67	100	110	b170	655	1,280	955	630	206	147	412	680
20	67	105	121	b180	630	1,060	900	605	202	144	305	630
21	68	98	132	b190	b585	955	845	555	188	147	244	580
22	68	89	*129	204	b490	955	845	580	198	132	230	630
23	72	85	129	531	b420	955	955	630	188	104	209	735
24	80	93	141	955	b360	900	1,230	655	178	150	202	790
25	76	*97	156	955	b300	845	1,560	605	178	153	202	680
26	*78	92	165	735	265	845	1,780	580	182	*153	195	630
27	82	92	144	680	325	790	1,620	605	162	175	216	505
28	82	118	129	*605	368	735	1,400	605	159	178	237	458
29	82	132	144	555	---	735	1,280	530	185	159	237	458
30	87	124	156	b500	---	900	1,180	505	*185	150	220	435
31	82	---	144	b450	---	955	---	480	---	153	265	---
Total	2,353	2,876	4,170	10,921	16,116	28,823	32,505	24,583	8,169	4,755	6,700	13,746
Mean	75.9	95.9	135	352	576	930	1,083	793	272	153	216	458
Cfsm	0.131	0.165	0.233	0.607	0.993	1.60	1.87	1.37	0.469	0.264	0.372	0.790
In.	0.15	0.18	0.27	0.70	1.03	1.84	2.09	1.58	0.52	0.30	0.43	0.88

Calendar year 1964: Max 775 Min 7.0 Mean 193 Cfsm 0.333 In. 4.53
Water year 1964-65: Max 1,780 Min 67 Mean 427 Cfsm 0.736 In. 9.97

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

4-1010. St. Joseph River at Elkhart, Ind.

Location (revised).--Lat 41°41'30", long 85°58'30", in NE¼ sec. 5, T. 37 N., R. 5 E., on left bank 200 ft downstream from mouth of Elkhart River, 200 ft upstream from Main Street Bridge in Elkhart, and 2,000 ft downstream from Christiana Creek, and ½ mile downstream from Elkhart Hydroelectric Plant.

Drainage area.--3,339 sq mi.

Records available.--August 1947 to September 1965. Gage heights at site three-quarters of a mile downstream at different datum for September 1924 to March 1926 are available in the district office.

Gage.--Water-stage recorder (digital). Datum of gage is 700.00 ft above mean sea level, datum of 1929.

Average discharge.--18 years, 2,899 cfs.

Extremes.--Maximum discharge during year, 7,070 cfs Apr. 26 (gage height, 21.92 ft); minimum daily, 650 cfs Oct. 26.
1947-65: Maximum discharge, 18,400 cfs Apr. 5, 1950 (gage height, 27.82 ft); minimum daily, 336 cfs Aug. 5, 1964.

Remarks.--Records fair. The flow is regulated by Elkhart Hydroelectric Plant, 2,400 ft upstream, and by a hydroelectric plant on Elkhart River at Goshen.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 6, May 22 to June 13, Aug. 16 to Sept. 18)

17.5	600
18.0	1,090
19.0	2,350
20.0	3,890
21.0	5,540
22.0	7,240

Discharge, in cubic feet per second, water year October 1964 to September 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1,010	702	1,300	1,370	b 2,200	2,840	4,200	5,220	2,520	1,540	1,160	*1,930
2	842	681	1,260	1,780	b 2,350	3,740	4,420	5,120	2,590	1,480	1,150	1,900
3	872	694	1,200	2,000	b 2,350	3,270	4,410	4,790	2,660	1,350	1,140	1,870
4	837	699	1,220	2,090	b 2,350	4,090	4,390	4,680	2,460	1,220	1,250	1,810
5	735	802	1,070	2,040	2,250	4,630	4,550	* 4,910	2,200	1,210	1,100	1,790
6	734	881	913	1,920	2,450	5,260	5,150	5,290	2,310	1,500	1,120	1,740
7	750	741	1,070	1,900	2,280	5,580	5,420	4,850	2,400	1,880	1,050	1,880
8	757	679	1,180	1,960	2,950	5,760	* 5,610	4,580	2,400	1,770	1,120	1,700
9	866	752	1,050	2,110	3,220	6,010	5,980	4,270	2,270	1,720	1,370	1,910
10	978	980	1,140	2,350	4,240	5,920	5,990	4,320	2,220	1,370	1,610	1,660
11	778	973	1,240	2,170	5,170	*5,750	5,660	4,200	* 2,200	1,260	1,570	1,750
12	763	787	1,290	2,100	5,280	5,430	5,890	3,970	1,830	1,440	1,480	1,700
13	813	876	1,540	2,070	4,910	5,420	5,690	3,940	1,890	1,550	1,420	1,630
14	983	860	1,690	1,740	4,690	5,250	5,260	3,750	2,200	1,440	1,240	1,700
15	928	819	1,730	1,410	4,500	4,890	5,470	3,460	1,940	1,360	1,180	2,130
16	758	740	1,590	1,290	4,470	4,910	5,770	3,130	1,680	1,440	1,150	2,990
17	766	1,100	1,630	1,210	4,210	4,850	5,640	3,410	1,560	1,480	1,450	2,820
18	745	1,030	1,300	b 1,250	3,880	5,120	5,850	3,400	1,540	1,090	1,810	2,490
19	728	1,050	1,060	b 1,350	4,000	5,160	5,730	3,100	1,260	1,400	2,080	2,290
20	739	933	1,670	b 1,500	3,750	4,640	5,740	2,690	1,240	1,460	1,840	2,330
21	761	811	1,270	1,630	3,470	4,640	5,310	2,630	1,610	1,430	1,540	2,340
22	802	711	*1,560	1,880	3,180	4,410	5,110	2,420	1,580	1,380	1,320	2,650
23	754	753	1,450	2,860	3,020	4,510	5,600	2,340	1,640	1,440	1,360	3,320
24	714	846	1,410	3,610	2,660	4,250	5,820	2,860	1,640	1,270	1,370	3,370
25	713	*1,040	1,280	3,630	2,000	4,150	6,260	2,760	1,570	1,280	1,540	2,790
26	*650	768	1,570	3,380	2,000	4,160	6,680	2,610	1,230	*1,330	1,560	2,180
27	711	854	1,330	b 2,950	2,510	4,130	6,250	2,640	1,210	1,250	2,040	2,510
28	740	916	1,530	*b 2,500	2,830	3,700	6,080	2,690	1,470	1,270	1,880	2,430
29	818	1,070	1,530	b 2,100	------	3,960	5,630	2,160	1,630	1,220	1,720	2,000
30	931	1,120	1,490	b 2,100	------	4,160	5,300	2,350	* 1,550	1,190	1,910	2,240
31	798	------	1,480	b 2,200	------	4,480	------	2,050	------	1,150	1,920	------
TOTAL	24,774	25,668	42,043	64,450	93,170	145,070	164,860	110,590	56,500	43,170	45,450	65,850
MEAN	799	856	1,356	2,079	3,328	4,680	5,495	3,567	1,883	1,393	1,466	2,195
CFSM	.239	.256	.406	.623	.997	1.40	1.65	1.07	.564	.417	.439	.657
IN	.28	.29	.47	.72	1.04	1.62	1.84	1.23	.63	.48	.51	.73

CALENDAR YEAR 1964 MAX 3,730 MIN 336 MEAN 1,298 CFSM .389 INCHES 5.29
WATER YEAR 1964-65 MAX 6,680 MIN 650 MEAN 2,415 CFSM .723 INCHES 9.82

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

4-1015. St. Joseph River at Niles, Mich.

Location.--Lat 41°49'45", long 84°15'35", in SW¼ sec. 26, T. 7 S., R. 17 W., on right bank 100 ft upstream from Main Street Bridge at Niles, 0.6 mile downstream from dam of French Paper Co., 1 mile upstream from Dowagiac River, and at mile 44.

Drainage area.--3,666 sq mi.

Records available.--October 1930 to September 1965. Monthly discharge only for some periods, published in WSP 1307.

Gage.--Water-stage recorder (digital). Datum of gage is 635.02 ft above mean sea level, datum of 1929. Oct. 1, 1930 to Feb. 11, 1931, tape gage on Main Street Bridge, and Feb. 12 to June 30, 1931, staff gage 50 ft upstream from present site (gage heights referred to mean sea level). Since Oct. 1, 1943, auxiliary gage is headwater gage at hydroelectric plant at Buchanan Dam, 8 miles downstream.

Average discharge.--35 years, 3,025 cfs.

Extremes.--Maximum discharge during year, 7,650 cfs Apr. 7 (gage height, 6.70 ft); minimum daily discharge, 700 cfs Nov. 8, 22.
1930-65: Maximum discharge, 20,200 cfs Apr. 5, 1950 (gage height, 13.10 ft); minimum daily, 420 cfs Aug. 30, 1931.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by powerplants above station.

Cooperation.--Gage-height record at auxiliary gage furnished by Indiana and Michigan Electric Co.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,440	1,000	1,500	1,670	b 2,200	3,090	* 4,710	5,410	2,390	1,690	1,090	2,140
2	965	1,000	1,200	1,760	b 2,300	4,020	4,600	5,050	2,860	1,530	1,380	2,120
3	1,030	800	1,300	2,350	b 2,300	* 3,420	5,070	5,000	2,730	1,500	* 1,290	2,050
4	1,170	800	1,500	2,080	b 2,300	4,450	4,140	4,890	2,630	1,210	1,410	1,920
5	1,240	*850	1,300	2,160	b 2,300	5,200	4,900	5,030	2,530	1,210	1,480	1,700
6	1,050	950	1,000	* 2,070	b 2,300	5,450	5,370	5,330	2,370	1,310	1,100	1,860
7	1,060	800	1,100	1,900	2,380	5,760	5,720	* 5,360	2,300	2,290	1,100	2,140
8	* 1,280	700	1,300	2,000	3,080	5,430	6,120	5,010	2,840	1,880	957	* 1,910
9	909	900	1,500	2,180	3,530	6,320	6,240	4,200	* 2,320	1,530	1,550	2,180
10	1,130	800	1,200	2,330	4,090	6,240	6,640	4,530	2,570	1,660	1,610	1,910
11	1,060	1,100	1,600	2,240	* 5,770	5,920	5,420	4,330	2,120	1,460	1,640	1,610
12	1,110	900	1,300	2,240	5,610	5,780	7,010	4,110	2,010	1,660	1,410	1,700
13	1,180	800	1,500	2,230	5,150	5,260	6,080	4,040	2,130	1,540	1,400	1,870
14	1,090	800	1,700	1,850	4,760	5,280	5,690	4,000	1,980	1,470	1,390	1,850
15	1,210	750	1,800	1,660	4,420	5,480	5,490	3,610	2,840	* 1,610	1,310	2,560
16	1,060	1,000	1,900	1,490	4,470	5,050	5,690	3,270	2,200	1,470	1,820	3,480
17	1,000	900	1,700	1,510	4,280	5,130	5,930	3,590	1,920	1,530	1,430	3,200
18	973	1,000	*1,630	1,920	3,920	5,340	5,860	3,500	1,770	1,090	1,850	2,570
19	1,230	1,200	1,390	1,940	3,920	5,330	5,830	3,580	1,700	1,760	2,350	2,140
20	1,040	1,200	1,160	1,820	3,870	4,870	5,690	3,010	1,350	1,350	2,260	2,440
21	1,070	1,000	1,810	1,760	3,550	4,860	5,720	2,880	1,610	1,350	1,790	2,460
22	1,220	700	1,530	2,050	2,970	4,510	4,980	3,090	1,410	1,400	1,290	2,920
23	1,040	800	1,630	3,100	3,010	5,000	5,750	2,370	1,660	1,420	1,510	3,470
24	1,200	900	1,390	4,330	2,890	4,160	6,890	2,980	1,860	1,390	1,560	3,680
25	1,000	1,000	1,410	3,870	2,360	4,330	6,890	3,100	1,670	901	1,970	3,900
26	900	800	1,600	3,570	2,160	4,180	7,050	3,020	1,540	1,470	1,910	2,600
27	850	1,000	1,420	b 3,200	2,750	4,460	7,040	2,620	1,090	1,130	2,260	2,660
28	850	1,300	1,640	2,800	3,090	3,750	6,130	2,870	1,740	1,260	1,900	2,670
29	850	1,000	1,680	2,480		4,010	6,270	2,610	1,610	1,270	1,520	2,350
30	900	1,200	1,580	b 2,000	---	4,260	5,490	2,340	1,620	1,210	2,080	2,390
31	1,000	---	1,400	b 2,000	---	4,790	---	2,570	---	1,070	2,480	---
Total	33,107	27,950	45,670	70,560	95,730	152,130	174,410	117,300	61,370	44,621	50,097	72,450
Mean	1,068	932	1,473	2,276	3,419	4,907	5,814	3,784	2,046	1,439	1,616	2,415
Cfsm	0.291	0.254	0.402	0.621	0.933	1.34	1.59	1.03	0.558	0.393	0.441	0.659
In.	0.34	0.28	0.46	0.72	0.97	1.54	1.77	1.19	0.62	0.45	0.51	0.73

Calendar year 1964 : Max 3,800 Min 678 Mean 1,464 Cfsm 0.399 In. 5.43
Water year 1964-65 : Max 7,050 Min 700 Mean 2,590 Cfsm 0.706 In. 9.59

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 25 to Dec. 17.

4-1790. St. Joseph River et Cedarville, Ind.

Location.—Let 1*1*12', long 85*01', In SEi sec. 28, T. 32 N., R. 13 E., on left bank 500 ft upstream from highway bridge, 0.1* mile south of Cedervllle, 2,700 ft downstream from Cedarville Dam, and 0.5 mile upstream from mouth of Cedar Creek.

Dralnaoe area.—762 sq mi (revIsed).

Records ava11abIe.—January 1931 to May 1932, October 1955 to September 1965.

Gage.—Water-stage recorder (digital after Aug. I*, 1965). Datum of gage Is 757.96 ft above mean sea level, datum of 1929. Jan. I, 1931 to May 31, <932, tape gage on downstream side of highway bridge 500 ft downstream from present site at datum approximately 20 ft lower.

Average discharge.—10 years (1955-65), 525 cfs.

Extremes.—Maximum dally discharge during year, 6,210 cfs Mar. 9; maximum gage height, 12.61 ft Mar. 5; minimum dally, 16 cfs Oct. 31, Nov. I.
1931-32, 1955-65: Maximum discharge, 10,100 cfs May I, 1956 (gage height, 18.07 ft, from floodmarks); minimum dally, 1.6 cfs May 22, 27, 1958.

Remarks.—Records good. Flow regulated by reservoir above station.

Rating table, except for periods of Indefinite stage-discherge relation
(gage height, In feet, and discharge, in cubic feet per second)
(Discharge of Cedar Creek near Cedarville used as a factor
Jan. 26, Feb. 9-19, Mar. 3-26, Mar. 29 to May I,
May 5-10, Sept. 15, 16. Stage-dlscherge
relation affected by Ice Jan. 16,
17, Feb. 2, 3)

1.3	12	2.5	190	7.0	2,260
1.6	19	3.0	305	9.0	3,600
1.6	37	6.0	660	10.0	6,360
2.0	92	5.0	1,200		

Discharge, in cubic feet per second, water year

Day	Oct.	Nov.	Dec.		Feb.	Mar.	Apr.	May	June	July	Auk.	Sept.
1	46	14	12	121	530	* 305	1.590	1.080	270	87	57	108
2	54	20	* 59	212	410	600	1.480	840	246	97	52	86
3	-29	28	70	168	360	1.150	1.510	650	212	148	*43	82
4	29	31	76	168	300	2.570	1.440	610	190	76	58	87
5	29	37	73	379	265	3.800	1.290	i470	212	56	57	138
6	29	38	69	461	246	3.660	2.120	2.790	270	62	43	101
7	a 35	39	66	395	363	3.890	2.230	1.700	270	212	39	22
8	34	39	68	318	550	4.120	* 2.180	1.420	235	152	47	84
9	31	39	66	348	965	4.210	2.640	1.240	201	57	95	92
10	28	39	68	363	3.800	4.00b	2.360	890	190	56	75	96
11	28	41	66	602	3.380	3.390	2.120	750	201	63	40	90
12	28	39	66	640	3.380	2.660	1.890	650	201	76	33	86
13	28	45	66	480	3.330	1.770	1.720	566	179	72	38	76
14	29	45	70	212	3.390	1.590	1.360	428	138	70	39	76
15	38	47	73	160	3.360	1.510	1.520	379	138	68	39	1.060
16	33	49	127	160	asso	1.090	1.400	348	116	63	40	710
17	33	49	179	170	2.180	1.250	1.350	332	89	86	45	610
18	a 33	49	129	185	1.280	1.300	1.140	293	87	63	78	340
19	a 34	50	105	201	1.010	1.580	1.020	258	92	54	73	278
20	a 34	45	101	190	670	1.290	1.320	224	106	54	46	238
21	a 33	48	84	168	620	1.120	1.160	224	97	45	40	149
22	a 33	50	75	209	510	945	1.030	235	*81	38	80	144
23	a 30	49	76	838	258	950	1.270	305	82	105	114	138
24	a 28	52	78	1.430	258	915	2.240	201	105	116	77	115
25	a 28	50	82	1.300	348	1.020	2.850	*212	62	73	60	112
26	a 28	50	86	*1.150	270	865	2.760	314	54	47	60	117
27	a 35	50	89	1.220	332	700	* 2.650	379	63	38	400	111
28	* 38	57	84	1.050	348	520	2.250	293	94	59	690	98
29	26	69.	* 99	840		591	1.810	270	127	73	258	92
30	17	63	148	750		1.290	1.290	332	99	64	212	91
31	14		90	610		*1.440		246		59	* 179	
Total	972	1.321	2.647	15.498	35.593	56.091	52.990	20L929	4.507	2.389	3.212	5.677
Mean	31.4	1)4.0	85.6	500	1,271	1,809	1,766	675	150	77.1	101*	189
Cfsm	0.0I*1	0.058	0.112	0.656	1.67	2.37	*1.32*	0.886	0.197	0.101	0.136	0.21*8
In.	0.05	0.06	0.13	0.76	1.76	2.73	2.59	1.02	0.22	0.12	0.16	0.28

Calendar year 1966: Max 1,880 Min |I* Mean 203 Cfsm 0.266 I"- 3.55
Hater year 1966-65: Max i»,2IO Min |I* Mean $53 Cfsm 0.726 In. 9.86

* Discharge measurement made on this day.
a No gage-height record.
Note.—Stage-discharge relation Indefinite Jan. 23, Jan. 25 to Feb, I, Feb. 9, 20-22, Mar. 2, 27, 28, May 24, II, 12, Aug.27,2
Sept. 17, 18.

4-1795. Cedar Creek at Auburn, Ind.

Location (revised).--41°21'57", long 85°03'08", in N½ sec. 32, T. 34 N., R. 13 E., on right bank, 15 ft downstream from Ninth Street Bridge in Auburn, and 2 miles upstream from John Diehl ditch.

Drainage area.--87.3 sq mi (revised).

Records available.--July 1943 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 847.14 ft above mean sea level (City of Auburn bench mark). Prior to Aug. 28, 1946, staff gage, and Aug. 28, 1946, to Sept. 30, 1953, wire-weight gage at same site and datum.

Average discharge.--22 years, 67.0 cfs.

Extremes.--Maximum discharge during year, 940 cfs May 6 (gage height, 8.42 ft); minimum, 1.4 cfs Oct. 25; minimum gage height, 0.57 ft Oct. 4.
1943-64: Maximum discharge, 1,520 cfs Apr. 5, 1950 (gage height, 9.90 ft) minimum, 0.5 cfs Nov. 12, 1953; minimum gage height, 0.57 ft Oct. 4, 1964.

Remarks.--Records fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 19 to Nov. 15, Feb. 14-21, Mar. 3, Mar. 11 to Apr. 6, Apr. 11-23)

Oct. 1 to Jan. 23				Jan. 24 to Sept. 30			
0.5	1.3	1.2	22	0.7	4.3	2.5	132
.6	2.5	1.5	41	.8	6.8	3.0	192
.7	4.3	2.0	85	1.0	14	4.0	312
.8	6.8	3.0	185	1.2	22	6.0	562
1.0	14	4.0	300	1.6	46	8.0	840

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.3	2.1	* 4.7	7.9	32	28	138	126	28	11	8.4	10
2	3.1	3.1	4.7	29	27	*120	114	104	30	12	6.8	8.1
3	2.8	3.7	4.9	39	23	180	156	84	28	11	6.8	7.1
4	2.2	3.1	5.4	26	21	458	126	79	26	9.0	* 10	6.8
5	2.1	3.0	4.7	22	20	780	109	737	24	8.4	7.8	6.8
6	3.1	2.8	4.3	19	21	601	354	750	23	11	6.2	6.8
7	3.1	2.1	4.2	17	50	497	372	523	24	16	5.1	7.1
8	3.1	1.7	4.2	24	109	458	300	384	23	12	13	6.8
9	3.3	2.6	4.3	52	99	360	372	288	21	11	13	7.1
10	3.3	3.1	4.5	45	602	288	276	228	20	10	9.4	7.4
11	2.8	3.3	14	33	588	216	204	168	19	8.7	7.8	6.5
12	3.1	3.1	17	27	420	168	156	132	18	8.7	6.8	5.9
13	3.5	3.1	13	20	300	138	120	104	16	8.7	6.8	5.9
14	3.5	2.6	11	16	192	126	93	88	16	8.7	5.4	9.8
15	3.5	4.4	9.5	12	138	120	93	74	15	8.7	4.5	220
16	3.7	4.3	8.8	11	98	120	88	66	14	12	7.3	228
17	3.3	4.3	8.0	10	79	156	79	58	14	9.7	16	180
18	2.6	4.1	7.0	10	66	336	93	52	14	7.4	12	114
19	2.8	4.5	6.2	10	54	252	114	48	12	7.4	8.4	79
20	3.3	4.7	5.6	10	45	168	93	42	11	7.1	6.8	58
21	3.0	3.7	6.5	11	39	120	79	38	12	6.8	5.4	43
22	2.8	2.8	6.8	27	34	98	66	39	*11	6.8	4.9	41
23	2.6	3.7	7.5	194	28	114	274	36	14	12	5.9	40
24	2.2	4.1	5.9	204	24	84	432	40	13	7.8	5.9	31
25	1.7	4.1	5.6	150	21	70	510	34	11	9.1	7.5	25
26	2.6	3.3	5.4	126	20	62	445	34	11	11	6.8	21
27	*2.8	3.7	5.4	*110	20	53	348	* 50	10	10	41	20
28	2.8	6.6	* 5.3	84	20	58	*264	41	11	9.4	20	18
29	3.1	5.1	5.2	58		192	204	34	14	9.0	12	17
30	3.7	4.9	5.2	47	------	204	156	30	12	9.0	9.0	18
31	2.6	------	5.4	40	------	* 168	------	27	------	7.8	* 10	------
Total	92.4	107.7	210.2	1,490.9	3,190	6,793	6,228	4,538	515	297.2	296.7	1,255.1
Mean	2.98	3.59	6.78	48.1	114	219	208	146	17.2	9.59	9.57	41.8
Cfsm	0.034	0.041	0.078	0.551	1.31	2.51	2.38	1.67	0.197	0.110	0.110	0.479
In.	0.04	0.05	0.09	0.64	1.36	2.89	2.66	1.92	0.22	0.13	0.13	0.53

Calendar year 1964: Max 348 Min 1.5 Mean 24.2 Cfsm 0.277 In. 3.56
Water year 1964-65: Max 780 Min 1.7 Mean 68.5 Cfsm 0.785 In. 10.66

Peak discharge (base, 700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-5	1530	7.75	810				
5-6	0100	8.42	940				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 7-10, 17-19, 25-30, Jan. 14-20, 27, 30, Feb. 2, 3, Feb. 22 to Mar. 2.

4-1800. Cedar Creek near Cedarville, Ind.

Location (revised).--Lat 41°13'08", long 85°04'35", in NW¼ sec. 19, T. 32 N., R. 13 E., on left bank at downstream side of bridge on State Highway 427, 3 miles northwest of Cedarville, 5.8 miles upstream from mouth, and 10 miles south of Auburn.

Drainage area.--270 sq mi (revised).

Records available.--October 1946 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 780.09 ft above mean sea level, datum of 1929. Prior to Nov. 4, 1947, wire-weight gage at same site and datum.

Average discharge.--19 years, 232 cfs.

Extremes.--Maximum discharge during year, 2,200 cfs Mar. 5 (gage height, 7.16 ft); minimum discharge, 18 cfs Oct. 4-8, 19, 22, 27; minimum gage height, 1.28 ft Oct. 5, 6.
1946-65: Maximum discharge, 4,870 cfs Apr. 5, 1950 (gage height, 11.67 ft); minimum, 12 cfs Oct. 3, 1949; minimum gage height, 1.22 ft Sept. 7, 8, 9, 1965.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 25 to Nov. 9)

Oct. 1 to Jan. 22		Jan. 23 to Sept. 30	
1.2	14	1.3	25
1.3	21	1.5	49
1.4	31	1.9	121
1.6	60	2.3	215
2.0	138	3.0	430
		4.0	820
		5.0	1,220
		7.0	2,120

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	21	* 26	31	160	* 106	430	345	87	40	35	83
2	20	20	25	64	140	315	345	300	92	42	37	67
3	20	20	25	69	125	520	412	240	89	46	34	58
4	18	20	25	60	112	976	378	215	81	39	*41	52
5	18	21	26	55	105	2,020	330	1,060	76	36	41	49
6	19	21	25	49	96	1,940	975	1,660	76	36	36	44
7	19	20	25	43	132	1,260	1,440	1,220	72	60	34	42
8	19	20	24	44	240	1,260	940	780	71	48	36	42
9	20	20	24	89	255	1,020	1,260	580	67	41	89	41
10	20	21	24	106	1,380	780	900	430	64	39	50	40
11	19	22	31	76	2,070	580	660	330	60	35	41	39
12	19	21	50	69	1,400	465	500	270	56	33	37	37
13	20	23	44	58	860	430	395	228	54	34	34	36
14	20	23	39	54	580	430	315	202	50	34	33	41
15	20	23	34	53	395	412	300	178	50	34	30	399
16	21	31	32	52	315	430	315	158	49	34	29	660
17	21	27	31	52	255	520	270	143	48	48	64	465
18	20	27	30	54	215	1,220	285	134	46	40	79	315
19	19	27	31	55	190	940	345	123	46	34	55	215
20	20	28	32	52	161	580	300	115	44	34	42	165
21	22	27	31	49	154	395	255	106	42	33	36	128
22	20	25	31	59	121	315	228	108	* 42	33	34	113
23	20	24	31	560	115	330	482	128	45	247	33	125
24	20	25	31	740	110	285	1,220	121	48	190	33	100
25	20	26	35	482	105	240	1,710	117	44	104	35	85
26	19	26	34	* 345	102	215	1,800	* 117	41	67	37	74
27	* 18	25	31	345	98	190	1,100	178	40	56	369	66
28	20	28	* 29	275	95	190	* 740	150	39	46	395	62
29	21	31	29	240		499	580	117	48	41	202	60
30	20	26	31	210	------	580	430	102	42	39	125	60
31	21	------	30	180	------	* 482	------	92	------	36	* 98	-------
Total	613	719	946	4,670	10,086	19,925	19,640	10,047	1,709	1,679	2,274	3,763
Mean	19.8	24.0	30.5	151	360	643	655	324	57.0	54.2	73.4	125
Cfsm	0.073	0.089	0.113	0.559	1.33	2.38	2.43	1.20	0.211	0.201	0.272	0.463
In.	0.08	0.10	0.13	0.64	1.38	2.74	2.71	1.38	0.24	0.23	0.31	0.52

Calendar year 1964: Max 1,180 Min 18 Mean 85.4 Cfsm 0.316 In. 4.18
Water year 1964-65: Max 2,070 Min 18 Mean 208 Cfsm 0.770 In. 10.46

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0830	7.07	2,160				
3-5	1730	7.16	2,200				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 22, Dec. 6, 7, 9, 18, 19, Jan. 14-17, 23, 28, Feb. 1-5, 23-28.

4-1815. St. Marys River at Decatur, Ind.

Location.--Lat 40°50'55", long 84°56'16", in SW¼ sec. 27, T. 28 N., R. 14 E., on right bank 10 ft downstream from bridge on U.S. Highway 27, half a mile upstream from Holthouse ditch, and 1.3 miles north of Decatur.

Drainage area.--621 sq mi (revised).

Records available.--October 1946 to September 1965. Monthly discharge only for some periods, published in WSP 1307. Gage-height records collected at site half a mile upstream January 1932 to November 1954, and at present site thereafter are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder (digital). Datum of gage is 760.44 ft above mean sea level, datum of 1929. Prior to July 27, 1948, wire-weight gage at same site and datum.

Average discharge.--19 years, 494 cfs.

Extremes.--Maximum discharge during year, 3,570 Mar. 5, 6 (gage height, 17.31 ft); minimum, 6.5 cfs Nov. 4 (gage height, 2.06 ft); minimum gage height, 1.97 ft Aug. 30.
1946-65: Maximum discharge, 11,300 cfs Feb. 10, 11, 1959; maximum gage height, 24.22 ft Feb. 10, 1959 (ice jam); minimum discharge, 4.7 cfs Oct. 19, 1960; minimum gage height, 1.73 ft Sept. 12, 1955.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by Grand Lake Reservoir. Slight diversion from or into Wabash River and into Miami and Erie Canal.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*14	7.8	16	35	85	119	1,000	762	104	23	18	26
2	14	8.4	18	204	58	751	1,400	564	89	21	*19	22
3	14	7.8	16	204	50	1,620	932	418	79	19	18	21
4	13	7.0	18	110	46	2,440	701	305	61	20	22	20
5	12	7.7	16	76	45	3,490	589	240	52	20	21	29
6	12	8.9	14	60	45	3,480	2,180	187	50	20	19	26
7	13	8.4	16	51	70	3,310	2,600	164	181	35	19	23
8	12	8.2	17	47	240	3,410	1,840	144	163	26	20	20
9	13	8.8	19	71	439	3,230	2,500	131	100	31	24	18
10	13	9.0	20	70	2,550	2,720	2,540	124	77	29	24	17
11	13	12	*28	50	2,880	2,140	2,190	109	71	24	21	15
12	13	13	31	44	2,090	1,720	2,200	94	66	20	19	14
13	12	14	36	38	1,580	1,540	1,830	83	57	18	18	14
14	12	15	26	31	1,500	1,360	1,290	74	48	19	17	18
15	12	16	24	29	1,270	1,170	1,070	69	38	18	16	77
16	12	19	22	28	938	1,030	1,080	64	32	19	17	73
17	11	17	20	26	657	994	1,020	59	28	23	18	41
18	12	17	19	25	461	1,270	845	53	24	18	20	30
19	12	18	18	24	317	691	656	48	22	17	18	24
20	11	19	18	24	208	441	508	43	21	17	16	24
21	11	16	18	25	155	322	396	39	*21	17	15	24
22	10	16	18	35	125	243	293	45	20	19	15	29
23	9.3	16	21	200	*114	215	265	339	57	19	16	35
24	9.0	16	33	650	117	205	832	*133	50	18	18	27
25	8.6	16	61	*800	158	203	1,750	400	29	18	20	21
26	9.0	17	66	600	146	233	*1,630	249	22	18	18	18
27	9.5	17	49	380	119	297	1,130	1,440	19	21	18	16
28	8.6	22	37	210	96	364	1,050	757	19	19	16	17
29	* 8.5	17	* 29	160	------	1,600	1,040	264	21	18	15	17
30	8.2	*16	28	200	------	*1,770	946	160	22	17	*14	20
31	8.5	------	25	155	------	1,170	------	130	------	17	20	------
TOTAL	350.2	411.0	797	4,662	16,559	43,548	38,303	7,691	1,643	638	569	776
MEAN	11.3	13.7	25.7	150	591	1,405	1,277	248	54.8	20.6	18.4	25.9
CFSM	.018	.022	.041	.242	.952	2.26	2.06	.399	.088	.033	.030	.042
IN	.02	.02	.05	.28	.99	2.61	2.29	.46	.10	.04	.03	.05

CALENDAR YEAR 1964 MAX 6,310 MIN 7.0 MEAN 393 CFSM .633 INCHES 8.61
WATER YEAR 1964-65 MAX 3,490 MIN 7.0 MEAN 318 CFSM .512 INCHES 6.94

Peak discharge (base, 2,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10, 2-11	2400 to 0200	16.02	3,050				
3-5, 3-6	2200 to 0100	17.31	3,570				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 16-19, Jan. 15-19, Jan. 22 to Feb. 8, Feb. 21, 22.

4-1820. St. Marys River near Fort Wayne, Ind.

Location (revised).--Lat 40°59'16", long 85°06'03", in NE¼ sec. 12, T. 29 N., R. 12 E., on left bank, 130 ft downstream from highway bridge, 5 miles south of Fort Wayne, and 10.8 miles upstream from confluence with St. Joseph River.

Drainage area.--762 sq mi (revised).

Records available.--October 1930 to September 1965. Monthly discharge only for some periods published in WSP 1307. Fragmentary gage-height records for period November 1924 to October 1927 are available in the District office. Sediment records collected since 1953 by the Indiana Flood Control and Water Resources Commission.

Gage.--Water-stage recorder. Datum of gage is 748.97 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission (revised). Prior to Apr. 13, 1939, chain gage on highway bridge at same datum.

Average discharge.--35 years, 549 cfs.

Extremes.--Maximum discharge during year, 4,230 cfs Mar. 5 (gage height, 11.30 ft); minimum discharge, 8.0 cfs Oct. 26 to Nov. 1; minimum gage height, 0.60 ft Oct. 19.
1930-65: Maximum discharge, 13,600 cfs Feb. 11, 1959; maximum gage height, 19.42 ft Feb. 11, 1959 (ice jam); minimum observed, 3.4 cfs Oct. 19, 1934 (gage height, 0.28 ft).

Remarks.--Records good except those for periods of ice effect, which are fair. The flow is sometimes regulated by Grand Lake. There slight diversion from or into Wabash River basin and into Miami and Erie Canal. Records of water temperatures and suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 20 to Dec. 11, Dec. 16)

Oct. 1 to Feb. 9

0.4	6.6	1.5	93
.5	10	2.0	164
.6	15	3.0	375
.8	28	5.0	1,020
1.0	43		

Feb. 10 to Sept. 30

0.5	10	3.0	375
.6	15	5.0	1,020
.8	28	7.0	1,850
1.0	43	9.0	2,850
1.5	93	12.0	4,650
2.0	164		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*14	8.0	20	41	100	182	1,280	945	132	26	18	18
2	14	8.4	20	141	70	486	1,800	735	112	26	*20	28
3	14	8.8	20	250	60	1,750	1,320	545	99	30	20	24
4	15	10	22	164	55	2,970	945	400	82	25	22	23
5	14	11	22	105	52	4,230	770	312	67	22	24	24
6	14	8.8	22	77	52	4,170	2,420	260	60	22	24	29
7	13	11	20	68	85	4,050	3,270	210	78	154	22	28
8	12	14	18	60	*290	4,110	2,550	182	230	134	21	26
9	14	14	21	72	700	3,990	2,850	156	156	61	23	23
10	14	14	22	88	3,510	3,570	2,970	148	99	47	25	20
11	14	18	*26	77	3,690	2,750	2,650	132	82	38	26	18
12	14	18	32	59	*2,910	2,150	2,450	118	77	30	23	17
13	14	18	38	53	1,950	1,850	2,250	99	69	24	20	16
14	14	18	40	40	1,650	1,700	1,560	93	61	24	18	18
15	14	19	30	37	1,480	1,520	1,240	82	53	23	17	26
16	14	21	28	36	1,120	1,360	1,200	77	43	22	16	77
17	14	22	26	33	805	1,320	1,160	72	37	34	18	82
18	14	22	25	31	575	1,700	1,020	67	33	38	18	52
19	12	22	24	30	425	1,080	805	62	29	25	19	40
20	17	23	22	30	300	635	635	55	26	20	20	33
21	16	22	21	31	220	455	515	49	*25	18	17	30
22	13	20	20	43	170	350	400	45	23	18	15	35
23	12	18	*20	230	*140	312	400	148	25	21	14	37
24	12	18	19	750	116	270	891	*260	58	22	14	39
25	11	18	27	920	105	270	2,200	224	54	20	16	38
26	9.6	18	50	700	95	260	2,100	375	35	19	19	30
27	8.0	18	80	480	90	300	*1,520	966	27	19	20	24
28	8.0	20	65	250	90	375	1,240	1,200	22	20	18	22
29	* 8.0	23	48	190		1,660	1,160	455	22	20	17	21
30	8.0	*22	41	240	------	*2,700	1,120	240	25	18	*16	22
31	8.0	------	40	190	------	1,750	------	164	------	18	16	------
Total	392.6	506.0	929	5,516	20,905	54,275	46,691	3,876	1,941	1,038	596	920
Mean	12.7	16.9	30.0	178	747	1,751	1,556	286	64.7	33.5	19.2	30.7
Cfsm	0.017	0.022	0.040	0.234	0.980	2.30	2.04	0.375	0.084	0.044	0.025	0.040
In.	0.02	0.02	0.05	0.27	1.02	2.65	2.28	0.43	0.09	0.05	0.03	0.04

Calendar year 1964: Max 6,450 Min 8.0 Mean 445 Cfsm 0.584 In. 8.04
Water year 1964-65: Max 4,230 Min 8.0 Mean 391 Cfsm 0.513 In. 6.95

Peak discharge (base, 4,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	1630	10.91	3,990				
3-5	1800	11.30	4,230				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 12-15, 17-31, Jan. 14 to Feb. 9, Feb. 21-28.

4-1825.90 Harber ditch at Fort Wayne, Ind.

Location.--Lat 41°00'27", long 85°10'58", in SW¼ sec. 33, T. 30 N., R. 12 E., at Ft. Wayne city limits, on left bank 50 ft upstream from State Highway 3 bridge and 3.2 miles upstream from mouth. The stream name changes to Fairfield ditch 3,850 ft downstream at bridge on lower Huntington Road.

Drainage area.--21.9 sq mi.

Records available.--May 1964 to September 1965. Discharge measurements available October 1960 to May 1964 and gage heights January 1961 to May 1964 at site 3,850 ft downstream.

Gage.--Water-stage recorder. Datum of gage is 757.00 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 429 cfs Feb. 10 (gage height, 9.25 ft), from rating curve extended above 150 cfs; minimum, 0.1 cfs several days in Oct., Nov.; minimum gage height, 1.59 ft Nov. 1.
1964-65: Maximum discharge, 429 cfs Feb. 10, 1965 (gage height, 9.25 ft), from rating curve extended above 150 cfs; minimum, 0.1 cfs Sept. 7, 1964, several days in Oct., Nov., 1964; minimum gage height, 1.59 ft Nov. 1, 1964.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	0.1	3.0	42
1.7	.5	3.5	67
1.8	1.6	4.0	93
1.9	3.4	5.0	153
2.0	5.8	6.0	213
2.2	11	8.0	345
2.5	21		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.1	0.4	7.4	3.0	15	66	10	4.2	0.8	a 0.5	1.7
2	.3	.1	.7	31.0	3.0	30	72	8.4	5.6	2.2	a .5	1.4
3	.3	.1	1.0	7.1	3.1	62	40	6.8	2.8	1.4	* .4	.9
4	.2	.2	1.0	3.6	3.3	176	28	6.3	1.8	1.3	2.4	.8
5	.2	.2	.5	2.0	3.6	144	21	9.2	1.4	.5	.5	2.6
6	.4	.1	.4	1.8	4.5	82	222	6.3	3.4	.5	.5	.8
7	.4	.2	.4	1.3	6.2	113	77	5.8	6.1	21	.6	1.8
8	.3	.1	.4	5.1	10	116	79	5.1	3.4	14	1.5	1.8
9	.4	.1	.6	7.4	*44	72	114	6.6	2.4	4.6	.9	1.2
10	.3	.1	.8	3.2	335	45	52	7.9	2.0	2.4	.8	1.2
11	.2	.2	12	1.6	*123	34	34	5.8	1.6	1.3	.6	.8
12	.2	.1	3	1.0	72	31	31	4.6	1.3	.9	.6	.5
13	.4	.1	2	.8	34	42	20	4.1	.8	.9	.6	.8
14	.4	.1	1	.6	19	45	17	3.9	1.4	3.0	.4	2.1
15	.3	.7	.9	.5	14	42	21	2.8	.8	1.3	.3	8.7
16	.3	.8	.8	.5	11	50	19	2.4	.8	7.8	2.4	6.4
17	.2	.2	.7	.5	8.5	66	17	2.4	.8	8.8	9.6	2.4
18	.2	.2	.7	.5	7.0	62	14	2.4	.7	2.8	.9	1.7
19	.2	.3	.7	.5	5.5	32	12	2.0	.5	1.3	.8	.9
20	.3	.8	.7	.6	4.5	18	14	2.0	.4	.8	.5	1.0
21	.3	.4	1.8	3.0	3.8	12	11	1.6	*.5	.6	.5	1.2
22	.3	.3	3.2	43	3.4	9.8	10	1.7	.8	.6	.5	8.6
23	.4	.4	1.6	100	* 3.2	8.8	21	1.6	3.8	1.2	.5	3.2
24	.2	.3	1.6	105	3.2	7.8	75	*1.3	1.9	.4	.5	1.3
25	.1	.2	1.7	*50	3.2	7.0	94	6.1	.8	.4	1.0	1.0
26	.1	.2	1.2	67	3.3	6.4	* 62	19	.5	.4	.8	.5
27	.3	.2	.7	48	3.5	6.0	14	25	.4	.5	2.9	.5
28	.3	2.4	.8	21	7.0	11	21	7.9	.5	a .5	.5	.8
29	* .2	.2	* .5	10		130	16	4.1	1.6	a .5	.3	.8
30	.2	* .3	1.3	4.0	- - - - - -	*77	13	2.8	1.3	a .5	* .4	3.6
31	.1	- - - - - -	.6	3.2	- - - - - -	54	- - - - -	2.0	- - - - -	a .5	.6	- - - - - -
Total	8.3	9.7	43.7	531.2	744.8	1606.8	1307	177.9	54.3	83.7	33.8	61.0
Mean	0.27	0.32	1.41	17.1	26.6	51.8	43.6	5.74	1.81	2.70	1.09	2.03
Cfsm	0.012	0.015	0.064	0.781	1.21	2.37	1.99	0.262	0.083	0.123	0.050	0.093
In.	0.01	0.02	0.07	0.90	1.26	2.73	2.22	0.30	0.09	0.14	0.06	0.10

Calendar year 1964 : Max - Min - Mean - Cfsm - In. -
Water year 1964-65 : Max 335 Min 0.1 Mean 12.8 Cfsm 0.584 In. 7.90

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-10	0600	9.25	429				
3-4	1700	7.45	303				
4-6	0300	8.90	408				

* Discharge measurement made on this day.
a No gage-height record.
Note.-- Stage-discharge relation affected by ice Dec. 7-9, 17-19, Jan. 11-21, Jan. 29 to Feb. 8, Feb. 17 to Mar. 2, Mar. 23-27.

4-1830. Maumee River at New Haven, Ind.

Location.--Lat 41°05', long 85°01', in SW¼ sec. 1, T. 30 N., R. 13 E., in center of span on downstream side of county road bridge, a quarter of a mile upstream from Wabash Railroad bridge, half a mile north of New Haven, and 6 miles downstream from confluence of St. Marys and St. Joseph Rivers.

Drainage area.--1,966 sq mi (revised).

Records available.--December 1946 to September 1956 (high-water records only), October 1956 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 724.51 ft above mean sea level, datum of 1929. Prior to Sept. 7, 1956, wire-weight gage at same site and datum.

Average discharge.--9 years (1956-65), 1,388 cfs.

Extremes.--Maximum discharge during year, 10,900 cfs Mar. 6 (gage height, 16.35 ft); minimum daily, 54 cfs Nov. 1, 2.
1946-65: Maximum discharge, 19,100 cfs Feb. 16, 1950 (gage height, 21.4 ft); minimum daily since Sept. 7, 1956, 48 cfs Oct. 6, 13, 1963.

Remarks.--Records good except those for periods of ice effect, no gage-height record or indefinite stage-discharge relation, which are fair. Flow regulated at low stage by powerplant above station. Flow slightly regulated by upstream reservoirs.

Rating tables except periods of ice effect or indefinite stage-discharge relation
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-4,
July 21, 22, July 26 to Aug. 17)

Oct. 1 to Nov. 15		Nov. 16 to Sept. 30			
1.9	43	2.2	90	9.0	4,060
2.0	62	2.5	160	13.0	7,430
2.8	235	3.0	295	15.0	9,430
3.0	295	3.5	480	17.0	11,700
		5.0	1,340		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	75	54	121	204	1,150	764	3,640	2,680	468	160	135	270
2	77	54	*116	974	b960	1,120	3,940	2,200	640	185	185	214
3	77	65	129	595	b850	3,000	3,580	1,790	472	280	*117	175
4	74	70	139	462	b720	6,410	3,070	1,420	376	222	172	205
5	76	84	147	404	b640	10,500	2,680	2,750	344	172	185	214
6	87	87	129	554	b580	10,700	6,260	4,910	412	92	148	246
7	*88	89	123	542	517	10,200	7,910	3,880	494	600	101	180
8	96	93	122	511	986	10,300	6,820	2,740	507	470	148	149
9	97	101	122	764	1,720	10,000	7,350	2,350	530	280	235	205
10	87	98	117	542	8,630	9,300	7,050	2,140	372	222	235	168
11	83	96	302	612	10,300	7,600	6,020	1,420	337	160	198	177
12	85	102	250	720	9,160	5,910	5,240	1,230	330	160	110	168
13	88	103	169	686	6,810	4,650	4,630	1,060	312	126	112	168
14	87	99	160	384	5,600	4,270	3,760	894	268	185	103	172
15	91	129	121	261	5,210	3,650	3,220	653	225	185	94	950
16	116	185	127	237	4,450	3,350	3,200	633	232	198	112	1,850
17	86	117	172	b220	3,510	3,630	2,930	636	180	330	148	1,200
18	64	101	179	b220	2,560	4,760	2,710	560	142	235	230	740
19	78	108	136	b220	1,950	4,290	2,320	493	175	148	190	515
20	84	127	123	b220	1,420	2,990	2,400	459	170	172	127	405
21	84	98	124	237	1,220	2,310	2,390	416	165	121	107	*382
22	85	87	114	332	946	1,920	1,630	423	*110	103	153	360
23	84	91	94	2,210	723	1,660	2,100	546	210	750	174	334
24	79	97	118	3,640	*521	1,680	4,270	717	198	500	153	255
25	66	100	198	3,720	494	1,600	7,020	*642	198	230	164	260
26	70	97	169	*3,280	737	1,620	7,640	914	185	185	139	266
27	287	95	163	3,380	544	1,370	*6,170	1,460	132	160	290	205
28	*80	163	169	2,390	774	1,270	4,660	2,100	148	160	1,160	190
29	60	139	*150	1,680	------	2,800	3,970	1,210	210	160	540	212
30	60	127	188	1,430	------	5,070	3,280	828	265	148	390	210
31	62	------	181	1,320	------	*4,400	------	650	------	148	*335	------
TOTAL	2,713	3,056	4,672	32,951	73,682	143,094	131,860	44,804	8,807	7,247	6,690	11,045
MEAN	87.5	102	151	1,063	2,632	4,616	4,395	1,445	294	234	216	368
CFSM	.045	.052	.077	.541	1.34	2.35	2.24	.735	.150	.119	.110	.187
IN	.05	.06	.09	.62	1.39	2.71	2.49	.85	.17	.14	.13	.21

CALENDAR YEAR 1964	MAX	9,530	MIN	54	MEAN	864	CFSM	.440	INCHES	5.98
WATER YEAR 1964-65	MAX	10,700	MIN	54	MEAN	1,289	CFSM	.656	INCHES	8.90

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Aug. 23 to Sept. 7, Sept. 14-24, Stage-discharge relation indefinite July 7, 8, 17, 23-25, Aug. 18-22, Sept. 8-13, 25-30.

GPO 826-627-18

4-1835. Maumee River at Antwerp, Ohio

Location.--Lat 41°11'56", long 84°44'40", in sec. 22, T. 3 N., R. 1 E., on left bank 425 ft downstream from bridge on State Highway 49, 1 mile north of Antwerp, Paulding County, 7 miles downstream from Indiana State line, and 10 miles upstream from Marie DeLarme Creek.

Drainage area.--2,128 sq mi (revised).

Records available.--September 1921 to December 1935, April 1939 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 694.90 ft above mean sea level, datum of 1929, supplementary adjustment of 1951. Prior to Sept. 13, 1925, chain gage at site 400 ft upstream at same datum.

Average discharge.--40 years, 1,631 cfs.

Extremes.--Maximum discharge during year, 11,400 cfs Mar. 6 (gage height, 14.06 ft); minimum, 58 cfs Nov. 3, 4 (gage height, 0.65 ft).
1921-35, 1939-65: Maximum discharge, 26,200 cfs May 20, 1943 (gage height, 20.29 ft); minimum, 24 cfs Oct. 17, 1930, June 21, 22, 1933 (gage height, 0.32 ft).
Flood of Mar. 27, 1913, estimated as 40,000 cfs.

Remarks.--Records good except those for periods of ice effect, which are fair. Low flow slightly regulated by powerplant at Fort Wayne, Ind. Flow slightly regulated by upstream reservoir.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 10				Feb. 11 to Sept. 30			
0.6	48	4.0	1,430	0.7	93	4.0	1,430
1.0	136	7.0	3,470	1.0	153	7.0	3,530
1.5	271	11.0	7,140	1.5	280	11.0	7,400
2.0	440	14.0	11,000	2.0	440	14.0	11,400

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	69	148	235	1,100	850	3,860	2,760	600	239	144	359
2	87	69	153	524	900	950	3,770	2,320	550	184	156	278
3	91	65	165	900	750	1,880	3,810	1,900	644	194	180	229
4	87	63	160	614	600	8,180	3,250	1,510	461	258	137	212
5	84	67	160	480	* 500	10,600	2,780	1,830	397	210	168	222
6	71	73	185	456	470	11,400	5,060	4,430	393	178	184	232
7	*78	89	168	556	600	11,300	8,030	4,400	496	*173	170	252
8	84	91	165	556	1,300	11,200	7,320	2,990	466	661	131	197
9	89	93	153	691	1,700	10,700	7,480	2,430	559	487	147	183
10	93	98	162	750	3,400	9,870	7,290	2,310	501	261	230	197
11	91	109	168	565	10,900	* 8,400	6,330	1,610	392	219	* 234	189
12	80	102	378	655	10,000	6,520	5,390	1,320	357	164	195	188
13	71	93	313	700	7,700	5,170	4,720	1,140	346	179	134	180
14	73	106	215	500	5,760	4,470	* 4,020	1,000	332	142	119	178
15	78	111	209	330	5,150	4,070	3,220	810	294	187	116	235
16	76	* 124	212	270	4,690	3,510	3,080	710	266	193	111	1,270
17	102	201	175	260	3,830	3,510	2,840	664	260	279	124	1,580
18	91	150	210	270	2,850	4,800	2,690	633	221	423	213	1,100
19	73	129	220	270	1,990	4,700	2,350	574	185	236	240	729
20	65	131	200	270	1,700	3,420	2,210	520	200	171	212	521
21	71	138	* 180	260	1,340	2,520	2,240	460	195	150	178	* 414
22	80	136	150	300	1,160	2,030	2,030	452	195	154	126	419
23	82	113	130	1,200	850	1,770	1,750	456	159	242	151	401
24	82	115	120	3,500	600	1,650	3,520	610	211	724	165	346
25	80	113	170	4,800	500	1,580	6,690	* 720	212	496	178	286
26	76	113	247	3,600	550	1,580	8,100	622	214	294	161	261
27	67	118	204	3,200	600	1,450	6,770	1,150	194	198	191	269
28	263	122	207	2,700	700	1,310	5,110	1,740	145	178	387	235
29	131	160	209	1,800		1,740	4,120	1,590	156	165	967	221
30	80	162	193	1,600	------	4,500	3,430	993	208	156	532	213
31	69	------	224	1,300	-----	4,850	-----	751	------	167	401	-------
Total	2,736	3,323	5,953	34,112	72,190	150,480	133,260	45,405	9,809	7,962	6,782	11,596
Mean	88.3	111	192	1,100	2,578	4,854	4,442	1,465	327	257	219	387
Cfsm	.042	.052	.090	.517	1.21	2.28	2.09	.688	.154	.121	.103	.182
In.	.05	.06	.10	.60	1.26	2.63	2.33	.79	.17	.14	.12	.20

Calendar year 1964 : Max 9,820 Min 63 Mean 892 Cfsm 0.419 In. 5.70
Water year 1964-65 : Max 11,400 Min 63 Mean 1,325 Cfsm 0.623 In. 8.45

Peak discharge (base, 8,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-11	0700	13.81	11,100	4-7	1000 to 1100	11.59	8,120
3-6	0300 to 0500	14.06	11,400	4-26	0500	11.78	8,360

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 18-25, Jan. 13 to Feb. 10, Feb. 23 to Mar. 2.

5-5150. Kankakee River near North Liberty, Ind.

Location.--Lat 41°33'50", long 86°29'50", on line between secs. 14 and 23, T. 36 N., R. 1 W., on left bank at downstream side of bridge on St. Joseph County highway named "New Road," 4 miles northwest of North Liberty.

Drainage area.--152 sq mi.

Records available.--January 1951 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 680.04 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to June 26, 1956, wire-weight gage at same site and datum.

Average discharge.--14 years, 136 cfs.

Extremes.--Maximum discharge during year, 430 cfs Apr. 25 (gage height, 6.86 ft); minimum, 46 cfs Aug. 24, 25 (gage height, 1.95 ft). 1951-65: Maximum discharge, 686 cfs Oct. 10, 1954; maximum gage height, 8.64 ft Oct. 12, 1954 (backwater from return of overbank flow); minimum discharge, 44 cfs Sept. 9, 10, 1964; minimum gage height, 1.60 ft Aug. 19, 1957.

Remarks.--Records fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge in cubic feet per second)
(Shifting-control method used Oct. 6-19)

Oct. 1-19 June 27 to Sept. 14		Oct. 20 to June 26 Sept. 15-30	
2.0	48	2.3	51
3.0	89	3.0	73
4.0	158	4.0	142
		5.0	230
		7.0	442

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89	64	100	107	b 120	157	210	210	114	76	64	89
2	84	68	100	190	b 120	230	210	200	* 114	76	76	84
3	84	68	90	210	*b 130	250	200	190	107	76	60	80
4	80	66	86	181	121	290	190	181	100	76	64	80
5	80	66	82	157	107	371	190	* 200	93	76	56	76
6	76	62	82	149	114	330	*260	200	100	76	56	76
7	76	58	79	142	135	300	300	190	100	120	60	76
8	80	61	79	142	165	300	270	173	100	101	56	72
9	80	62	79	173	181	* 300	330	165	90	95	76	80
10	80	58	* 79	165	320	280	300	157	82	89	76	84
11	76	60	114	142	330	260	280	157	86	80	68	80
12	76	61	200	* 135	290	250	382	149	79	68	68	80
13	76	56	230	128	250	250	340	142	76	64	60	76
14	72	51	210	121	210	240	290	142	70	80	52	83
15	72	54	165	114	190	230	300	142	66	68	50	250
16	68	56	149	b 100	173	220	300	135	73	72	50	240
17	68	56	135	b 100	165	230	270	128	79	76	60	181
18	68	* 58	121	b 100	157	300	250	128	73	72	80	142
19	68	65	114	b 95	149	270	230	128	60	60	84	128
20	* 70	73	107	93	142	230	220	121	70	60	80	114
21	73	62	100	93	142	210	200	121	66	64	72	*114
22	70	74	100	102	135	190	190	135	62	64	72	168
23	70	64	100	270	b 110	190	210	128	88	64	68	300
24	70	64	114	330	b 90	181	270	121	114	60	60	250
25	70	64	128	290	b 85	173	371	128	86	56	* 50	190
26	70	64	135	260	b 85	173	406	128	70	56	56	157
27	70	64	128	240	107	165	340	128	80	* 56	99	142
28	68	97	114	210	114	157	300	107	* 80	56	95	135
29	68	128	107	173		173	260	114	84	52	84	128
30	64	114	107	b 135	---	190	240	114	89	52	80	142
31	60	---	107	b 100	---	200	---	114	---	56	84	---
Total	2,276	2,018	3,641	4,947	4,437	7,290	8,109	4,576	2,551	2,197	2,116	3,897
Mean	73.4	67.3	117	160	158	235	270	148	85.0	70.9	68.3	130
Cfsm	0.483	0.443	0.770	1.05	1.04	1.55	1.78	0.974	0.559	0.466	0.449	0.855
In.	0.56	0.49	0.89	1.21	1.08	1.79	1.99	1.12	0.62	0.54	0.52	0.95

Calendar year 1964 : Max 276 Min 46 Mean 98.4 Cfsm 0.647 In. 8.81
Water year 1964-65 : Max 406 Min 50 Mean 132 Cfsm 0.868 In. 11.76

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

5-5155. Kankakee River at Davis, Ind.

Location.--Lat 41°24', long 86°42', in sec. 13, T. 34 N., R. 3 W., on left bank at downstream side of bridge on U. S. Highway 30 at Davis, half a mile downstream from Mill Creek and 4 miles east of Hanna.

Drainage area.--508 sq mi.

Records available.--July 1905 to July 1906 and October 1924 to September 1965. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Water-stage recorder. Datum of gage is 664.68 ft above mean sea level, datum of 1929. July 13, 1905 to July 21, 1906, staff gage at site, 50 ft downstream at different datum. July 28, 1925 to May 18, 1929, chain gage on bridge half a mile downstream at different datum. Apr. 19, 1931 to Mar. 11, 1942, chain gage at present site and datum. Mar. 12, 1942 to Nov. 3, 1953, wire-weight gage at present site and datum.

Average discharge.--41 years (1924-65), 473 cfs.

Extremes.--Maximum discharge during year, 1,100 cfs Apr. 27, 28; maximum gage height, 10.42 ft Apr. 27; minimum discharge, 173 cfs Aug. 16, 17; minimum gage height, 5.92 ft Aug. 16.
1905-6, 1924-65: Maximum discharge observed, about 1,700 cfs Dec. 15, 1927 (gage height, 9.50 ft, site and datum then in use), from rating curve extended above 520 cfs; maximum gage height at present site and datum, 11.76 ft Oct. 16-18, 1954; minimum discharge observed, 154 cfs Aug. 30 to Sept. 3, 1941; minimum gage height observed, 2.97 ft Aug. 14, 1934.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 11 to Nov. 18)

5.0	173
7.0	455
9.0	780
11.0	1,260

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	293	209	365	410	b450	578	762	928	425	293	196	321
2	279	223	350	578	b430	708	780	862	*425	279	223	307
3	265	223	335	708	*b440	820	780	800	410	279	223	293
4	251	223	321	674	b500	862	762	744	410	265	223	279
5	251	223	321	642	562	976	744	*762	395	265	209	279
6	237	209	321	594	562	1,020	*820	820	395	251	196	265
7	237	209	307	562	578	1,000	928	800	395	335	196	251
8	251	196	307	546	642	1,000	952	762	395	365	196	251
9	265	209	307	594	690	*1,000	976	708	395	335	237	265
10	251	209	293	626	884	1,000	1,000	674	380	335	265	279
11	251	209	365	578	1,020	976	1,000	642	350	307	251	279
12	237	196	562	*546	1,020	952	1,000	610	350	279	223	265
13	237	209	658	515	1,000	928	1,020	578	335	265	209	251
14	237	196	674	470	952	928	1,000	562	335	251	196	268
15	223	196	610	455	884	906	1,000	546	321	265	184	703
16	223	209	562	b400	840	884	1,000	546	307	251	173	862
17	223	209	515	b390	780	862	1,000	530	321	251	184	820
18	209	*209	470	b390	744	928	952	515	321	265	209	726
19	209	209	515	b380	708	952	906	500	307	251	237	626
20	*223	223	500	b380	674	928	862	485	307	223	237	546
21	223	223	410	395	658	884	820	470	307	223	223	*515
22	223	223	395	425	610	840	780	470	293	223	209	578
23	223	237	395	800	b540	800	744	470	293	223	209	862
24	223	223	410	1,050	b500	780	780	455	350	223	196	928
25	223	223	455	1,050	b430	744	952	455	350	209	*184	862
26	223	223	470	1,020	440	708	1,080	455	321	196	184	780
27	223	237	470	1,000	485	690	1,100	500	307	*196	272	690
28	223	321	440	928	515	674	1,100	485	293	196	321	642
29	223	395	425	b700		690	1,050	455	307	196	307	578
30	223	395	410	b580	---	726	1,000	440	307	184	279	578
31	209	---	410	b400	---	744	---	425	---	184	307	---
Total	7,291	6,898	13,348	18,786	18,538	26,488	27,650	18,454	10,407	7,863	6,958	15,149
Mean	235	230	431	606	662	854	922	595	347	254	224	505
Cfsm	0.463	0.453	0.848	1.19	1.30	1.68	1.81	1.17	0.683	0.500	0.441	0.994
In.	0.53	0.51	0.98	1.37	1.35	1.94	2.02	1.35	0.76	0.58	0.51	1.11

Calendar year 1964: Max 699 Min 158 Mean 310 Cfsm 0.610 In. 8.30
Water year 1964-65: Max 1,100 Min 173 Mean 487 Cfsm 0.959 In. 13.01

* Discharge measurement made on this day.
b Stage-discharge relationship affected by ice.

5-5160. Yellow River near Bremen, Ind.

Location.--Lat 41°25'11", long 86°10'14", on line between secs. 3 and 10, T. 34 N., R. 3 E., on left bank at downstream side of bridge, 0.5 mile downstream from Bunch ditch, 2 miles southwest of Bremen, and 4 miles upstream from Dausman ditch.

Drainage area.--132 sq mi.

Records available.--August 1955 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 784.63 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Average discharge.--10 years, 89.6 cfs.

Extremes.--Maximum discharge during year, 1,030 cfs Jan. 24 (gage height, 11.53 ft); minimum, 6.2 cfs Oct. 17 (gage height, 1.56 ft). 1955-65: Maximum discharge, 1,380 cfs May 13, 1956; maximum gage height, 13.07 ft Mar. 30, 1960; minimum, 6.2 cfs Aug. 23 and Oct. 11, 12, 13, 1957, Oct. 17, 1965; minimum gage height, 0.81 ft Sept. 10, 1955.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 4 to Dec. 1, Dec. 10, 11)

1.3	5.8
1.4	7.3
1.7	14
2.0	26
3.0	85
6.0	380
11.0	969
11.5	1,030

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	6.8	11	22	b 54	280	220	142	*26	14	10	15
2	9.0	7.2	b 8.0	265	b 50	501	190	116	26	14	9.8	15
3	8.7	7.2	b 7.4	273	*b 52	391	200	92	26	13	9.4	12
4	8.2	7.2	b 8.0	133	b 56	481	190	*82	25	13	9.6	11
5	8.2	7.0	b 8.0	92	58	801	*170	259	24	12	9.2	10
6	8.0	7.2	b 7.5	71	68	537	594	190	23	13	9.0	10
7	7.8	7.2	b 7.2	61	b 100	402	609	151	24	34	9.0	10
8	9.0	7.0	b 7.5	68	b 150	435	380	116	25	28	10	10
9	8.3	7.2	b 7.8	230	179	*413	597	100	25	19	11	10
10	8.0	7.3	* 8.0	162	814	314	391	85	23	18	12	10
11	7.5	7.3	34	92	825	230	270	71	21	15	11	10
12	7.5	7.3	b 60	*68	549	210	230	61	20	13	9.4	10
13	7.3	7.3	100	55	338	230	180	55	20	12	8.8	10
14	7.0	7.5	b 45	b 45	220	230	151	46	19	12	8.7	17
15	6.6	8.2	b 30	b 35	160	210	180	46	19	12	8.5	506
16	6.4	8.7	b 25	b 30	133	190	210	46	18	12	9.0	501
17	6.2	8.5	b 20	b 27	116	250	170	41	18	15	14	250
18	6.6	* 8.3	b 15	b 30	108	633	160	38	18	12	18	142
19	6.4	8.5	b 15	b 33	96	293	151	35	17	11	22	92
20	* 6.7	8.5	b 15	b 37	85	b 130	124	32	17	11	12	68
21	6.7	7.8	b 16	41	82	b 80	108	30	18	10	9.8	* 74
22	6.8	8.0	22	77	b 60	b 90	92	32	17	11	9.6	190
23	6.8	8.5	18	858	b 45	100	253	32	18	11	9.2	597
24	6.7	8.5	22	1,020	b 30	b 80	558	30	20	10	*8.8	413
25	6.8	8.3	25	801	b 29	b 60	873	30	18	10	9.2	220
26	7.0	8.5	30	573	b 29	b 60	885	31	16	9.8	9.2	142
27	7.0	8.8	b 17	435	b 35	b 60	561	34	15	*10	16	100
28	7.0	21	b 13	281	46	64	347	30	*14	10	13	78
29	7.0	22	b 14	b 150		143	230	28	15	9.6	13	64
30	7.0	15	21	b 90	------	260	180	26	15	9.6	11	58
31	6.8	------	20	b 45	------	260	------	26	----	9.2	13	-------
Total	228.4	267.8	657.4	6,200	4,567	8,418	9,454	2,133	600	413.2	342.2	3,655
Mean	7.37	8.93	21.2	200	163	272	315	68.8	20.0	13.3	11.0	122
Cfsm	0.056	0.068	0.161	1.52	1.23	2.06	2.39	0.521	0.152	0.101	0.083	0.924
In.	0.06	0.08	0.19	1.75	1.28	2.38	2.67	0.60	0.17	0.12	0.10	1.03

Calendar year 1964: Max 933 Min 6.2 Mean 49.2 Cfsm 0.373 In. 5.08
Water year 1964-65: Max 1,020 Min 6.2 Mean 101 Cfsm 0.765 In. 10.43

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	0400	11.53	1,030	4-6	1900	9.62	801
2-10	2200	10.82	945	4-26	0200	10.86	957
3-5	0500	10.07	861				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

5-5165. Yellow River at Plymouth, Ind.

Location.--Lat 41°20'25", long 86°18'16", in NW¼ sec. 13, T. 33 N., R. 2 E., on left bank 50 ft upstream from LaPorte Street footbridge in Plymouth, 1.1 miles downstream from Elmer Seltenright (formerly Baker) ditch and 8.1 miles upstream from Wolf Creek.

Drainage area.--284 sq mi.

Records available.--July 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 764.78 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to Aug. 27, 1959, wire-weight gage at same site and datum.

Average discharge.--17 years, 234 cfs.

Extremes.--Maximum discharge during year, 1,680 cfs Jan. 25 (gage height, 11.25 ft); minimum, 12 cfs (gage height, 3.73 ft) from recorded range in stage in the period of recorder stoppage, Nov. 20 to Dec. 9.
1948-65: Maximum discharge, 5,390 cfs Oct. 12, 13, 1954 (gage height, 17.13 ft); minimum, 12 cfs in the period Nov. 20 to Dec. 9, 1964; minimum gage height observed, 3.49 ft Jan. 11, 14, 1954.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are fair.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-8)

Oct. 1 to Dec. 16		Dec. 17 to Sept. 30			
3.8	18	3.8	18	8.0	790
4.0	36	4.0	36	11.0	1,620
4.5	88	4.5	86	11.2	1,680
5.0	156	5.0	145		
5.5	250				

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	22	25	48	b120	374	508	382	*114	55	30	81
2	25	21	17	235	b110	868	466	298	114	52	33	76
3	23	21	13	487	b100	894	466	235	119	53	34	64
4	21	21	15	256	*114	790	424	*205	119	48	35	54
5	21	21	15	161	102	1,080	*403	340	108	47	30	48
6	22	21	14	125	108	1,240	646	445	108	50	30	40
7	22	20	13	114	b150	1,020	1,100	340	108	92	26	37
8	25	20	15	119	b250	868	1,100	277	97	92	28	37
9	28	20	17	298	319	*868	1,020	235	108	76	46	37
10	27	20	*21	382	868	742	1,100	195	97	66	55	35
11	25	19	50	195	1,320	550	816	169	92	61	46	32
12	23	19	b80	*145	1,380	466	550	153	86	55	37	32
13	24	19	164	125	1,020	466	445	138	86	53	32	30
14	25	18	126	76	550	487	361	125	81	52	26	44
15	26	16	b50	b 66	361	466	382	125	81	49	21	489
16	27	19	b45	b 60	298	445	487	125	81	47	21	894
17	27	22	b40	b 56	256	445	424	114	81	81	35	816
18	24	22	35	b 58	235	790	382	108	76	81	81	445
19	22	*19	b30	b 60	205	920	382	108	76	62	71	235
20	*24	17	32	b 62	177	478	340	102	71	51	47	161
21	24	15	32	63	169	298	277	97	76	48	32	*131
22	24	15	32	97	b100	246	235	97	71	47	29	245
23	23	16	36	790	b 80	b210	259	102	71	48	26	766
24	23	16	46	1,500	b 70	b170	694	102	71	46	24	946
25	22	16	49	1,680	b 60	b160	1,150	108	66	38	*23	670
26	22	15	51	1,560	b 60	b150	1,530	114	62	38	22	340
27	22	15	b48	1,210	b 70	153	1,590	138	58	*37	124	225
28	22	22	b40	790	97	153	1,260	131	* 54	35	125	169
29	22	56	b41	424		246	766	119	62	34	76	138
30	22	44	b42	b200	---	508	487	114	61	32	62	125
31	22	---	40	b110	---	550	---	108	---	30	71	---
Total	735	627	1,274	11,552	9,749	17,101	20,050	5,449	2,555	1,656	1,378	7,442
Mean	23.7	20.9	41.1	373	312	552	668	176	85.2	53.4	44.5	248
Cfsm	0.083	0.074	0.145	1.31	1.10	1.94	2.35	0.620	0.300	0.188	0.157	0.873
In.	0.10	0.08	0.17	1.51	1.14	2.24	2.62	0.71	0.34	0.22	0.18	0.97

Calendar year 1964: Max 1,440 Min 13 Mean 120 Cfsm 0.423 In. 5.76
Water year 1964-65: Max 1,680 Min 13 Mean 215 Cfsm 0.757 In. 10.28

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 20 to Dec. 9.

5-5170. Yellow River at Knox, Ind.

Location.--Lat 41°18'10", long 86°37'14", in sec. 14, T. 33 N., R. 2 W., on right bank 40 ft upstream from bridge on U. S. Highway 35 in Knox, 1½ miles downstream from Eagle Creek, and 9 miles upstream from mouth.

Drainage area.--425 sq mi.

Records available.--August 1905 to July 1906, August 1943 to September 1965.

Gage.--Water-stage recorder (digital since Aug. 17). Datum of gage is 679.93 ft above mean sea level, datum of 1929, Lafayette supplementary adjustment of 1951 (levels by Indiana Flood Control and Water Resources Commission). August 1905 to July 1906, chain gage at same site at different datum. August 1943 to July 17, 1952, wire-weight gage at same site and datum.

Average discharge.--22 years (1943-65), 369 cfs.

Extremes.--Maximum discharge during year, 1,700 cfs Apr. 28 (gage height, 8.18 ft); minimum, 59 cfs Nov. 22 (gage height, 4.48 ft). 1905-6, 1943-65: Maximum discharge, 5,660 cfs Oct. 15, 16, 1954 (gage height, 13.75 ft); minimum, 39 cfs Jan. 11, 1957, result of freezeup; minimum gage height, 4.26 ft Jan. 12, 1954.

Remarks.--Records good except those for periods of ice effect which are fair, and those for period of no gage-height record, which are poor. Low flow is affected by pumpage at times.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 27 to July 6)

4.5	61
5.0	114
5.5	200
6.0	355
7.0	780
8.0	1,500
9.0	2,500

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 86	76	b 100	120	a310	336	680	680	176	148	98	176
2	86	77	b 90	193	a290	685	680	590	* 166	140	98	168
3	81	77	b 92	385	a270	960	635	510	166	140	98	151
4	81	78	b 94	510	a275	1,030	590	450	156	133	98	136
5	81	78	b 90	372	a290	1,100	590	* 510	156	126	98	124
6	81	78	b 86	275	b280	1,170	* 635	590	156	127	98	116
7	81	79	b 84	245	290	1,250	840	635	156	140	92	112
8	86	79	b 86	215	390	1,170	1,030	550	156	188	92	111
9	86	79	b 88	290	*470	1,030	1,250	470	176	166	103	112
10	86	79	* 92	450	635	*960	1,170	430	176	140	114	109
11	81	80	103	450	960	900	1,170	372	156	126	114	105
12	80	79	156	* 320	1,170	730	1,030	338	148	120	108	103
13	79	79	215	b 240	1,330	680	730	320	140	108	98	103
14	78	78	230	b 200	1,250	680	635	290	133	108	92	107
15	79	81	b 190	b 140	780	680	590	275	133	108	92	184
16	80	86	b 150	b 120	590	635	635	290	126	103	92	560
17	76	92	b 110	b 110	490	635	680	260	126	114	99	798
18	74	*86	b 100	b 115	450	680	590	245	126	133	121	808
19	70	86	b 100	b 120	410	900	590	245	120	133	142	566
20	69	86	120	b 130	372	960	590	230	120	114	134	385
21	* 70	b70	114	140	338	635	510	215	120	103	117	305
22	69	b75	108	166	320	490	450	200	120	103	107	* 311
23	71	b80	114	b 350	b240	450	430	200	126	103	102	531
24	73	81	114	b 900	b130	430	538	215	200	103	*98	797
25	73	81	120	1,250	b100	390	960	215	215	103	96	915
26	73	86	120	1,500	b100	355	1,250	230	166	103	93	785
27	74	86	120	1,600	b150	338	1,500	230	148	*98	203	526
28	75	98	120	1,330	245	320	1,600	245	140	103	335	408
29	74	114	114	a900		355	1,500	215	*156	98	268	339
30	75	114	114	a500	------	490	1,030	188	156	98	190	304
31	76	------	114	a300	------	680	------	176	------	98	172	------
Total	2,404	2,498	3,648	13,936	12,925	22,104	25,108	10,609	4,515	3,728	3,862	10,255
Mean	77.5	83.3	118	450	462	713	837	342	150	120	125	342
Cfsm	0.182	0.196	0.278	1.06	1.09	1.68	1.97	0.805	0.353	0.282	0.294	0.805
In.	0.21	0.22	0.32	1.22	1.14	1.94	2.20	0.93	0.39	0.33	0.34	0.90

Calendar year 1964: Max 1,030 Min 62 Mean 180 Cfsm 0.424 In. 5.75
Water year 1964-65: Max 1,600 Min 69 Mean 317 Cfsm 0.746 In. 10.14

Peak discharge (base, 1,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-27	0230	8.11	1,600				
4-28	1730	8.18	1,700				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

5-5175. Kankakee River at Dunns Bridge, Ind.

Location.--Lat 41°13'17", long 86°57'52", in sec. 15, T. 32 N., R. 5 W., on left bank at downstream side of county highway bridge at Dunns Bridge, 1.8 miles north of Tefft, and 3.5 miles upstream from Davis ditch.

Drainage area.--1,308 sq mi.

Records available.--July 1948 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 649.65 ft above mean sea level, datum of 1929, Lafayette supplementary adjustment of 1951 (levels by Indiana Flood Control and Water Resources Commission). Prior to July 17, 1956, wire-weight gage at same site and datum.

Average discharge.--17 years, 1,202 cfs.

Extremes.--Maximum discharge during year, 3,000 cfs Apr. 30 (gage height, 10.01 ft); minimum, 319 cfs Nov. 21 (gage height, 1.99 ft). 1948-65: Maximum discharge, 5,300 cfs Oct. 22, 1954 (gage height, 13.20 ft); minimum, 280 cfs Jan. 25-29, 1963, result of freezeup; minimum gage height, 1.87 ft Sept. 9-19, 1964.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	321
3.0	560
5.0	1,090
7.0	1,780
10.0	3,000

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*508	369	593	823	*b1,700	1,300	1,920	2,890	894	609	401	721
2	479	369	589	1,030	b1,500	1,620	1,990	2,670	853	593	*421	*711
3	455	395	571	1,300	b1,500	1,930	2,010	2,430	846	582	470	695
4	448	396	564	1,440	b1,600	2,160	1,990	2,220	824	560	437	648
5	426	388	537	1,470	b1,700	2,350	* 1,950	2,090	806	543	426	615
6	415	374	544	1,400	b1,700	2,460	2,020	2,060	796	542	413	591
7	413	370	528	1,300	b1,700	2,550	2,170	2,070	* 793	653	395	563
8	414	372	534	1,240	1,640	* 2,650	2,330	2,020	791	* 819	393	555
9	432	368	538	1,270	1,620	2,700	2,530	1,910	844	793	439	539
10	431	372	536	1,340	1,960	2,680	2,670	* 1,770	831	733	520	539
11	421	367	600	*1,370	2,290	2,650	2,720	1,620	791	661	515	526
12	413	371	855	1,300	2,460	2,590	2,740	1,490	759	625	484	513
13	408	364	1,090	1,200	2,560	2,510	2,690	1,400	706	600	428	503
14	405	348	1,190	1,010	2,620	2,440	2,590	1,320	690	571	401	498
15	397	347	1,150	939	2,580	2,380	2,530	1,260	674	546	376	755
16	400	366	1,030	902	2,400	2,320	2,500	1,220	653	523	361	1,240
17	390	378	1,010	918	2,210	2,300	2,470	1,180	639	544	365	1,540
18	377	366	884	968	2,030	2,330	2,440	1,140	639	561	395	1,620
19	372	370	843	1,110	1,870	2,330	2,370	1,100	633	563	438	1,600
20	366	370	b 830	1,210	1,730	2,330	2,280	1,070	607	519	461	1,430
21	373	340	817	1,180	1,610	2,300	2,190	1,040	620	486	439	1,260
22	376	332	760	1,130	1,430	2,160	2,070	1,010	616	516	426	1,280
23	372	380	769	1,520	1,330	2,030	1,960	998	641	542	416	1,680
24	372	427	814	2,090	1,270	1,910	1,940	994	679	507	393	1,940
25	385	426	839	2,340	1,100	1,780	2,250	997	736	471	380	2,030
26	*373	423	863	2,510	924	1,660	2,640	999	694	444	365	2,030
27	369	421	867	2,650	938	1,560	2,820	1,020	645	423	479	1,930
28	372	514	840	*2,710	1,060	1,500	2,920	1,010	607	412	745	1,770
29	383	631	818	b1,800	------	1,510	2,980	968	605	404	797	* 1,590
30	374	* 622	825	b1,600	------	1,610	3,000	933	623	394	721	1,470
31	365	------	815	b1,750	------	1,780	------	916	------	392	693	------
TOTAL	12,484	11,936	24,043	44,820	49,032	66,380	71,680	45,815	21,535	17,131	14,393	23,380
MEAN	403	398	776	1,446	1,751	2,141	2,389	1,478	718	553	464	1,113
CFSM	.308	.304	.593	1.11	1.34	1.64	1.83	1.13	.549	.423	.355	.851
IN	.35	.34	.68	1.27	1.39	1.89	2.04	1.30	.61	.49	.41	.95

CALENDAR YEAR	1964	MAX	1,700	MIN	301	MEAN	649	CFSM	.496	INCHES	6.75	
WATER YEAR	1964-65	MAX	3,000	MIN	332	MEAN	1,130	CFSM	.864	INCHES	11.73	

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

5-5180. Kankakee River at Shelby, Ind.

Location.--Lat 41°10'56", long 87°20'33", in NE¼ sec. 33, T. 32 N., R. 8 W., on left bank 25 ft downstream from Monon Railroad bridge, 1 mile south of Shelby and 9 miles upstream from Beaver Lake Creek.

Drainage area.--1,753 sq mi.

Records available.--October 1922 to September 1965. Monthly discharge only for some periods, published in WSP 1308. Periodic sediment samples have been collected since 1963.

Gage.--Water-stage recorder. Datum of gage is 628.13 ft above mean sea level, datum of 1929. Prior to Dec. 19, 1934, chain gage at highway bridge about 400 ft upstream at same datum.

Average discharge.--43 years, 1,497 cfs.

Extremes.--Maximum discharge during year, 3,760 cfs Apr. 27-30; maximum gage height, 9.23 ft Jan. 25 (ice jam); minimum discharge, 480 cfs Nov. 23 (gage height, 2.29 ft).

1922-65: Maximum discharge, 7,200 cfs Dec. 21, 1927 (gage height, 11.40 ft, present datum, site then in use), from rating curve extended above 3,000 cfs by gage-height relation study with that of present site; minimum daily, 260 cfs Jan. 13-15, 1954, result of freezeup; minimum gage height, 0.80 ft (present datum, site then in use) Aug. 4, 5, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Records of suspended sediment loads for the water year 1965 are published in Part 2 of this report.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.4	505
5.0	1,310
7.0	2,260
10.0	4,440

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*715	505	745	1,080	2,200	1,820	2,380	3,690	1,210	830	595	925
2	685	505	745	1,280	2,000	2,260	2,500	3,620	1,170	800	*595	*925
3	655	505	745	1,620	b2,000	2,440	2,570	3,410	1,140	770	595	925
4	625	535	745	1,770	b2,100	2,040	2,570	3,200	1,100	750	625	895
5	625	535	715	1,820	b2,300	2,850	* 2,500	3,060	1,100	720	595	865
6	595	505	715	1,820	b2,300	2,990	2,710	2,920	1,050	720	565	805
7	595	505	715	1,720	2,380	3,060	2,990	2,850	*1,050	850	595	805
8	595	505	745	1,620	2,710	*3,200	3,060	2,780	1,050	980	565	775
9	595	505	715	1,620	2,850	3,410	3,340	2,710	1,100	* 985	595	775
10	595	505	715	1,670	2,990	3,480	3,480	*2,500	1,150	955	685	745
11	595	505	745	*1,670	3,200	3,410	3,480	2,380	1,100	895	715	745
12	565	505	925	1,670	3,200	3,340	3,550	2,140	1,050	835	685	745
13	565	505	1,210	1,620	3,270	3,340	3,550	1,980	970	805	625	715
14	565	505	1,340	1,450	3,270	3,270	3,410	1,820	930	775	595	715
15	565	505	1,340	1,310	3,200	3,200	3,410	1,720	910	745	565	955
16	565	505	1,310	1,210	3,200	3,130	3,480	1,620	880	715	535	1,380
17	565	505	1,240	b1,200	2,990	3,060	3,410	1,580	860	715	535	1,620
18	565	505	1,170	b1,200	2,850	3,270	3,340	1,490	840	745	565	1,720
19	535	505	1,110	b1,500	2,640	3,340	3,270	1,450	830	745	595	1,770
20	535	505	1,110	1,620	2,440	3,130	3,130	1,420	810	715	625	1,720
21	535	505	1,170	1,720	2,320	3,060	3,060	1,380	810	685	625	1,620
22	505	565	1,140	1,720	2,090	2,920	2,920	1,340	820	685	625	1,620
23	535	535	1,080	2,200	1,980	2,850	2,780	1,310	830	715	595	2,090
24	535	595	1,040	3,200	1,870	2,640	2,710	1,340	880	715	595	2,380
25	535	595	1,080	3,620	1,620	2,500	2,990	1,340	970	685	565	2,440
26	*505	595	1,080	3,480	1,450	2,380	3,620	1,340	980	655	565	2,440
27	505	595	1,080	*3,410	1,420	2,260	3,760	1,420	970	595	565	2,380
28	535	625	1,080	b3,150	1,450	2,140	3,760	1,380	870	565	805	2,260
29	505	715	1,040	2,600		2,090	3,760	1,310	820	565	925	*2,090
30	535	*775	1,040	2,000	---------	2,140	3,760	1,280	820	565	925	2,000
31	535	----------	1,040	2,200	---------	2,260	----------	1,240	----------	565	925	----------
Total	17,665	16,260	30,670	59,770	68,290	87,280	95,250	63,020	29,070	23,045	19,765	41,845
Mean	570	542	989	1,928	2,439	2,815	3,175	2,033	969	743	638	1,395
Cfsm	0.325	0.309	0.564	1.10	1.39	1.61	1.81	1.16	0.553	0.424	0.364	0.796
In.	0.37	0.34	0.65	1.27	1.45	1.86	2.02	1.34	0.62	0.49	0.42	0.89

Calendar year 1964: Max 2,100 Min 405 Mean 824 Cfsm 0.470 In. 6.38
Water year 1964-65: Max 3,760 Min 505 Mean 1,512 Cfsm 0.863 In. 11.72

* Discharge measurement made on this day.
b Stage-discharge relationship affected by ice.
Note.--No gage height record Jan. 29 to Feb. 2, June 4 to July 8, Sept. 30.

5-5190. Singleton ditch at Schneider, Ind.

Location.--Lat 41°12'44", long 87°26'44", on line between NE¼ sec. 21 and NW¼ sec. 22, T. 32 N., R. 9 W., on left bank 15 ft upstream from bridge on Ackerman Anenue, half a mile upstream from Bruce ditch, 1½ miles downstream from Cedar Creek, and 1 2/3 miles north of Schneider.

Drainage area.--122 sq mi.

Records available.--July 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 623.67 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1949, wire-weight gage at same site at datum 2.00 ft higher. Oct. 1, 1949, to Aug. 13, 1951, wire-weight gage at same site and datum.

Average discharge.--17 years, 89.3 cfs.

Extremes.--Maximum discharge during year, 978 cfs Apr. 25 (gage height, 9.24 ft); minimum, 7.2 cfs Oct. 19 (gage height, 1.40 ft). 1948-65: Maximum discharge, 1,120 cfs Feb. 14, 1959 (gage height, 10.45 ft); minimum, 3.0 cfs Sept. 7, 1964 (gage-height, 1.13 ft).

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 17 to Aug. 27, Aug. 30, Sept. 2-30)

1.4	7.2
1.7	15.7
2.0	31
2.5	63
3.0	106
4.0	228
9.0	948

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	8.1	19	27	b58	424	214	228	40	38	17	*116
2	14	8.8	* 20	122	*b58	382	228	200	43	34	16	79
3	12	8.8	24	132	b60	284	200	174	43	35	* 15	56
4	12	8.8	25	92	b70	228	186	150	36	33	16	42
5	11	8.8	26	75	b90	200	174	138	32	30	16	37
6	10	8.8	26	67	127	174	520	150	32	28	16	30
7	17	9.0	25	60	132	162	*494	174	30	*33	16	26
8	20	9.8	26	63	174	a 260	396	174	*29	33	16	25
9	12	17	27	75	192	a 340	550	162	33	29	30	25
10	10	13	27	71	522	* 256	452	144	36	25	49	24
11	9.3	10	39	b 54	340	214	368	*127	37	21	39	21
12	9.0	12	60	*b 46	284	186	312	116	36	18	30	19
13	9.0	11	b 65	b 45	214	186	256	106	36	18	26	18
14	9.3	9.0	b 60	b 45	162	186	228	96	34	22	24	20
15	9.0	9.8	b 55	b 28	132	174	270	87	33	20	22	182
16	9.0	12	60	b 26	111	162	a 370	83	33	18	20	200
17	9.0	12	46	b 26	101	386	298	83	33	29	20	150
18	8.1	12	43	b 36	92	858	256	75	33	24	32	111
19	7.7	11	46	b 45	83	564	214	71	34	19	42	92
20	8.8	12	52	b 52	79	396	174	63	35	17	29	79
21	8.4	16	52	56	b 76	270	150	60	37	16	24	79
22	7.9	16	49	99	b 74	a 210	150	56	39	19	22	204
23	7.9	16	52	b550	b 72	a 160	144	49	41	21	22	550
24	8.8	17	46	708	b 74	a 130	214	49	41	19	21	424
25	9.3	15	34	494	b 80	a 100	785	52	40	16	19	284
26	* 8.6	12	31	382	80	a 90	858	67	36	15	19	200
27	8.8	11	b 30	312	111	a 90	620	a 82	34	15	167	144
28	9.0	16	34	b200	148	a 90	452	67	33	14	228	* 106
29	8.6	22	24	b100		a 190	340	56	40	14	127	106
30	8.4	20	23	b 70	------	a 250	284	46	42	13	79	176
31	8.6	------	21	b 56	------	214	------	42	------	15	106	------
Total	314.5	372.7	1,167	4,214	3,796	7,816	10,157	3,227	1,081	701	1,325	3,625
Mean	10.1	12.4	37.6	136	136	252	339	104	36.0	22.6	42.7	121
Cfsm	0.083	0.102	0.308	1.11	1.11	2.07	2.78	0.852	0.295	0.185	0.350	0.992
In.	0.10	0.11	0.36	1.28	1.16	2.39	3.10	0.98	0.33	0.21	0.40	1.11

Calendar year 1964: Max 174 Min 3.6 Mean 26.8 Cfsm 0.220 In. 2.99
Water year 1964-65: Max 858 Min 7.7 Mean 104 Cfsm 0.852 In. 11.53

Peak discharge (base, 730 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	0800	7.70	753				
3-18	0200	8.96	948				
4-25	2230	9.24	978				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

5-5195. West Creek near Schneider, Ind.

Location.--Lat 41°12'52", long 87°29'36", in NW¼NE¼ sec. 19, T. 32 N., R. 9 W., on left bank at downstream side of county highway bridge, 1.2 miles upstream from Singleton ditch and 2 3/4 miles northwest of Schneider.

Drainage area.--54.5 sq mi.

Records available.--July 1948 to December 1951, January 1954 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 627.86 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service). Prior to Mar. 17, 1950, staff gage 75 ft below bridge at same datum. Mar. 17, 1950, to Dec. 31, 1951, Jan. 1, 1954, to June 10, 1956, wire-weight gage at same site and datum.

Average discharge.--14 years, 37.1 cfs.

Extremes.--Maximum discharge during year, 1,000 cfs Jan. 23 (gage height, 6.38 ft); minimum, 2.9 cfs Nov. 20, result of freezeup (gage height, 0.86 ft).
1948-51, 1954-65: Maximum discharge, 1,840 cfs Oct. 10, 11, 1954 (gage height, 8.06 ft, from graph based on gage readings); minimum, 1.3 cfs Feb. 17, 1957 (gage height, 0.32 ft), result of freezeup.

Remarks.--Records fair except those for periods of ice effect, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 26 to May 6, Aug. 21 to Sept. 14)

0.8	2.3
1.0	4.5
1.2	8.0
1.4	15
1.6	26
2.0	64
4.0	348
5.0	580
6.0	880

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.8	4.4	5.0	5.7	b 16	234	51	60	14	7.4	6.8	* 32
2	5.7	4.4	*b 5.0	27	*b 15	136	52	46	13	7.6	6.6	22
3	5.4	4.4	b 5.0	18	b 15	96	40	38	13	7.8	*6.2	17
4	5.4	4.5	b 5.0	11	b 14	60	32	31	13	6.6	6.2	14
5	5.4	4.4	b 5.4	8.9	b 15	41	32	28	13	7.4	6.0	13
6	5.4	4.4	b 5.2	7.6	b 15	32	*231	28	11	7.6	6.0	11
7	5.1	4.4	b 5.0	6.6	15	24	170	27	12	*8.3	5.8	9.8
8	5.6	5.0	b 5.0	6.8	67	37	151	25	12	8.3	6.2	8.9
9	5.2	4.3	b 5.6	9.2	84	* 96	226	24	*11	8.6	9.8	11
10	5.1	4.1	b 7.0	8.0	221	65	156	22	9.8	7.6	11	10
11	5.0	4.4	b 8.0	b 5.5	96	46	116	*20	9.8	7.2	8.0	8.6
12	5.0	4.5	b 8.2	*b 3.3	90	37	85	17	8.9	6.4	7.4	7.8
13	4.8	4.6	8.9	b 3.2	56	35	62	16	8.9	6.8	7.0	7.4
14	4.8	4.5	b 7.0	b 3.1	33	42	48	14	8.6	11	6.4	8.0
15	4.8	4.6	b 5.2	b 3.1	23	37	78	14	8.6	6.8	5.8	292
16	4.6	4.8	b 5.0	3.2	18	30	96	14	8.0	7.2	5.7	256
17	4.6	5.0	b 5.0	3.5	15	223	64	13	8.6	23	17	241
18	4.6	5.4	b 4.8	4.5	14	302	46	13	8.6	12	36	198
19	4.6	4.8	b 5.0	7.0	12	180	33	22	8.3	7.8	24	142
20	4.5	b 3.8	b 5.2	10	10	96	27	22	8.3	6.8	11	110
21	4.5	b 3.3	b 7.0	13	10	51	23	16	8.3	6.4	8.0	110
22	4.4	b 3.3	7.8	106	b 10	34	20	14	8.0	6.8	7.6	272
23	4.5	5.2	7.2	b350	9.0	28	18	13	8.0	6.4	7.6	498
24	4.4	5.0	5.8	436	9.7	22	55	13	8.3	6.4	6.8	301
25	4.8	4.6	5.6	177	b 10	18	625	13	10	6.0	6.4	212
26	*4.8	4.6	b 5.2	b100	b 12	15	391	18	9.8	6.0	6.0	156
27	4.5	4.6	b 4.5	*b 78	27	14	226	46	9.2	5.8	135	116
28	4.6	5.2	b 4.0	b 40	104	15	156	30	9.2	5.7	62	* 90
29	4.6	b 5.2	4.5	b 25		52	110	22	8.0	5.8	32	73
30	4.5	b 5.0	4.5	b 20	------	74	80	18	7.6	5.7	22	140
31	4.4	------	4.5	b 17	-----	57	-----	15	------	5.8	34	--------
Total	151.4	136.7	176.1	1517.2	1035.7	2229	3500	712	294.8	239.0	526.3	3387.5
Mean	4.88	4.56	5.68	48.9	37.0	71.9	117	23.0	9.83	7.71	17.0	113
Cfsm	0.090	0.084	0.104	0.897	0.679	1.32	2.15	0.422	0.180	0.141	0.312	2.07
In.	0.10	0.09	0.12	1.03	0.71	1.52	2.40	0.49	0.20	0.16	0.36	2.31

Calendar year 1964 : Max 151 Min 3.3 Mean 11.0 Cfsm 0.202 In. 2.73
Water year 1964-65 : Max 625 Min 3.1 Mean 38.1 Cfsm 0.699 In. 9.49

Peak discharge (base, 500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-23	2100	6.38	1,000	9-23	0500	5.15	640
3-17	2230	5.24	640				
4-25	1600	6.12	910				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

5-5200. Singleton ditch at Illinoi, Ill.

Location.--Lat 41°11'20", long 87°31'35", in SW¼NW¼ sec. 8, T. 31 N., R. 15 E., on left bank 50 ft downstream from county highway bridge at Illinoi, beside the Cleveland, Cincinnati, Chicago and St. Louis Railway, and at Indiana-Illinois State line.

Drainage area.--219 sq mi.

Records available.--October 1944 to September 1965.

Gage.--Water-stage recorder (digital since Sept. 28). Datum of gage is 620.33 ft above mean sea level, datum of 1929. Prior to Aug. 28, 1953, wire-weight gage at same site and datum.

Average discharge.--21 years, 159 cfs.

Extremes.--Maximum discharge during year, 1,800 cfs Apr. 25 (gage height, 9.10 ft); maximum gage height, 9.17 ft Jan. 23 (ice jam); minimum discharge, 7.0 cfs Nov. 20 (gage height, 1.37 ft).
1944-65: Maximum discharge, 2,040 cfs Feb. 14, 23, 1959; maximum gage height, 10.11 ft Mar. 4, 1963 (backwater from ice); minimum, 4.5 cfs Sept. 8, 1964; minimum gage height, 0.71 ft Oct. 21, 1948.

Remarks.--Records fair except those for periods of ice effect, which are poor.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	14	22	40	b 110	663	277	297	68	50	27	* 148
2	23	14	*23	156	*b 120	542	297	257	68	52	26	119
3	20	15	25	156	b 120	404	277	218	68	51	* 26	94
4	19	14	28	119	b 150	297	247	190	64	49	26	78
5	18	15	33	100	b 180	257	228	181	60	47	26	73
6	17	14	33	88	218	237	* 805	190	56	47	26	60
7	17	14	32	83	247	208	782	208	56	* 52	24	60
8	24	15	33	83	b 350	257	590	199	*56	50	24	60
9	19	17	33	94	332	*449	888	190	64	48	44	60
10	17	20	35	94	809	360	638	164	60	47	68	56
11	15	15	44	b 66	495	297	495	*156	60	43	64	52
12	16	13	64	*b 46	404	257	404	140	60	40	56	48
13	16	13	b 70	b 42	297	257	318	133	60	40	48	47
14	16	12	64	b 37	228	257	277	119	56	44	44	48
15	17	13	64	b 36	190	247	418	112	56	42	41	347
16	16	14	64	b 36	164	228	495	112	56	33	38	404
17	16	15	60	b 37	148	428	382	106	60	54	46	382
18	16	16	54	b 45	133	1,390	318	100	60	51	73	297
19	13	14	56	b 60	126	850	257	106	56	40	78	228
20	15	14	60	b 78	119	592	208	100	60	35	56	181
21	15	19	64	88	b 110	382	190	94	60	34	48	172
22	13	21	60	161	b 100	297	172	88	60	35	44	406
23	14	21	64	b 1,100	b 100	257	164	83	60	35	44	1,050
24	15	22	68	1,260	b 100	218	248	83	60	35	40	700
25	17	20	64	788	b 120	199	1,300	83	56	29	39	562
26	*17	19	56	688	b 130	181	1,520	88	55	28	38	404
27	16	17	48	638	b 150	164	1,010	119	53	26	252	297
28	16	19	56	b 450	231	156	688	106	51	26	242	* 237
29	15	24	52	b 250		228	472	88	56	25	141	190
30	15	23	40	b 130	- - - - - -	318	382	78	56	24	106	250
31	15	- - - - - -	34	b 110	- - - - - -	297	- - - - - -	73	- - - - - -	24	130	- - - - - -
Total	523	496	1,503	7,159	5,981	11,174	14,747	4,261	1,771	1,236	1,985	7,110
Mean	16.9	16.5	48.5	231	214	360	492	137	59.0	39.9	64.0	237
Cfsm	0.078	0.075	0.221	1.05	0.977	1.64	2.25	0.626	0.269	0.182	0.292	1.08
In.	0.09	0.08	0.25	1.21	1.02	1.89	2.51	0.72	0.30	0.21	0.34	1.20

Calendar year 1964: Max 356 Min 6.0 Mean 43.7 Cfsm 0.200 In. 2.71
Water year 1964-65: Max 1,520 Min 12 Mean 159 Cfsm 0.726 In. 9.82

Peak discharge (base, 1,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	0700	7.71	1,380				
3-18	0500	8.30	1,560				
4-25	2100	9.10	1,800				
9-23	1030	6.78	1,110				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

5-5205. Kankakee River at Momence, Ill.

Location.--Lat 41°09'36", long 87°40'07", in NE¼ sec. 24, T. 31 N., R. 13 E., on right bank a quarter of a mile downstream from highway bridge in Momence and 1.2 miles upstream from Tower Creek.

Drainage area.--2,340 sq mi, approximately.

Records available.--February to December 1905, February to July 1906, December 1914 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 610.18 ft above mean sea level, datum of 1929. Prior to Aug. 1, 1938, chain gage at bridge a quarter of a mile upstream at same datum.

Average discharge.--50 years (1915-65), 1,808 cfs.

Extremes.--Maximum discharge during year, 5,670 cfs Apr. 26 (gage height, 3.20 ft); maximum gage-height, 7.23 ft Jan. 30 (ice jam); minimum discharge, 428 cfs Nov. 7.
1905-6, 1914-65: Maximum discharge, 10,100 cfs Apr. 25, 1950 (gage height, 5.06 ft); maximum gage height observed, 8.09 ft Jan. 25, 1930, site then in use (ice jam); minimum discharge observed, 306 cfs Sept. 1, 16, 17, 1919.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 20, Nov. 28, 29, Jan. 5-8, July 17-25)

-0.3	390	1.0	1,620
0	560	2.0	3,320
.5	940	4.0	7,400

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	648	530	b 660	1,180	b1,900	2,630	3,090	4,400	1,470	916	669	1,530
2	614	524	b 620	1,540	b1,700	2,910	3,160	4,260	1,400	800	690	1,440
3	578	484	b 600	1,880	b1,600	3,000	3,210	4,160	1,350	808	732	1,360
4	566	484	b 580	1,990	b1,500	3,100	3,250	4,030	1,290	776	732	1,280
5	548	484	b 560	2,120	b1,400	3,230	3,270	3,960	1,250	760	*732	1,190
6	542	484	b 520	*2,220	b1,400	3,340	4,130	3,860	1,210	746	690	1,130
7	530	428	b 520	2,270	b1,400	3,430	4,280	3,770	1,180	760	690	1,060
8	536	484	b 520	*2,270	b1,600	3,600	4,160	3,690	1,150	808	690	1,020
9	542	484	b 520	2,250	b2,000	3,990	4,660	3,650	1,180	910	718	1,020
10	536	*484	b 520	2,180	b4,500	4,030	4,500	*3,540	1,180	920	792	1,020
11	530	484	b 600	2,130	4,750	4,030	4,380	3,370	1,170	900	816	984
12	530	472	b 800	2,120	3,940	4,030	4,320	3,250	1,120	832	824	940
13	*530	472	1,050	2,070	3,750	4,010	4,180	3,050	1,050	792	800	910
14	530	472	*1,290	b1,600	3,690	3,980	4,090	2,910	995	792	746	910
15	530	484	1,380	b1,300	*3,650	3,900	4,260	2,730	962	753	718	1,590
16	530	484	1,420	b1,100	3,600	3,780	4,460	2,630	920	725	690	1,290
17	530	484	b 1,200	b1,000	3,560	4,050	4,260	2,490	890	753	704	1,520
18	530	484	b 1,000	b 900	3,500	5,140	4,110	2,410	880	768	910	1,540
19	530	484	900	b 860	b3,200	4,660	3,960	2,390	850	732	930	1,540
20	530	484	800	b 860	b2,800	4,300	*3,800	2,220	860	725	840	1,540
21	530	b480	750	b 860	b2,400	3,990	3,730	2,070	880	690	816	1,480
22	530	b480	700	b1,300	b2,100	3,780	3,600	2,000	* 880	676	800	2,780
23	530	b480	700	b3,500	b1,900	*3,670	3,520	1,880	890	*676	792	3,840
24	530	b500	b1,400	b4,000	b1,700	3,520	3,670	1,780	880	690	760	3,610
25	530	b540	1,520	b4,200	b1,600	3,340	4,940	1,760	880	690	768	3,460
26	530	b520	1,240	b4,000	b1,500	3,290	5,460	1,830	880	676	732	3,370
27	530	b520	1,140	b3,900	b1,500	3,100	5,140	1,880	880	655	1,360	3,300
28	530	560	1,140	*b3,700	b1,600	2,890	4,960	1,780	850	634	1,480	3,210
29	530	584	1,140	b3,000		2,870	4,740	1,720	840	620	1,340	*3,070
30	530	b620	1,130	b2,500	---------	3,000	4,540	1,620	832	620	1,310	3,190
31	530	---------	1,100	b2,100	---------	3,000	---------	1,530	---------	627	1,440	---------
Total	16,770	14,958	28,020	66,900	69,740	111,590	123,830	86,620	31,049	23,130	25,711	56,124
Mean	541	499	904	2,158	2,491	3,600	4,128	2,794	1,035	746	862	1,871
Cfsm	0.231	0.213	0.386	0.922	1.06	1.54	1.76	1.19	0.442	0.319	0.368	0.800
In.	0.27	0.24	0.45	1.06	1.11	1.77	1.97	1.38	0.49	0.37	0.42	0.89

Calendar year 1964: Max 2,390 Min 355 Mean 895 Cfsm 0.382 In. 5.20
Water year 1964-65: Max 5,460 Min 428 Mean 1,796 Cfsm 0.768 In. 10.42

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice (no gage-height record Feb. 1-6).

5-5210. Iroquois River at Rosebud, Ind.

Location.--Lat 41°02', long 87°11', in SW¼ sec. 24, T. 30 N., R. 7 W., 100 ft downstream from bridge on county road, half a mile north of Rosebud, half a mile downstream from confluence of Swain and Dexter ditches, 1.5 miles upstream from Davidson ditch, and 2 miles east of Parr.

Drainage area.--30.3 sq mi.

Records available.--July 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 661.47 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to Oct. 1, 1953, wire-weight gage on downstream side of county bridge at same datum.

Average discharge.--17 years, 22.9 cfs.

Extremes.--Maximum discharge during year, 173 cfs Jan. 23 (gage height, 5.55 ft); minimum, 0.2 cfs Oct. 11 (gage height, 0.75 ft).
1948-65: Maximum discharge, 422 cfs Apr. 4, 1950; maximum gage height, 8.86 ft Feb. 10, 1959; minimum discharge, that of Oct. 11, 1964.

Remarks.--Records poor.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-15, Oct. 23 to Dec. 4, Dec. 11-13, 15, 16, 18, 22-25, Jan. 1-12, 22, 25, May 26, 27, Sept. 23, 24)

.6	.3	1.8	15.2
.7	.6	2.5	34
.8	1.1	3.0	51
.9	1.8	5.0	138
1.0	2.7	6.0	197
1.4	8.1		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.6	1.4	13	13	a 45	63	42	21	5.8	4.6	11
2	1.1	1.6	1.4	63	11	a 65	59	37	20	6.3	3.9	8.3
3	1.2	1.5	* 1.4	37	10	a 60	51	34	19	6.3	3.4	6.8
4	1.1	1.4	1.8	22	10	* 59	49	34	16	5.8	4.2	6.5
5	2.3	* 1.0	1.6	19	10	55	43	55	15	5.6	3.5	6.5
6	.7	1.2	1.5	18	12	51	63	51	14	5.7	3.3	5.9
7	1.1	1.4	1.4	*13	16	49	79	47	14	13	3.8	6.0
8	1.6	1.4	1.1	15	20	63	82	42	13	11	3.3	5.9
9	1.3	1.4	1.1	29	35	63	118	37	18	8.7	7.0	5.8
10	1.4	1.3	1.7	22	90	55	83	32	18	7.6	8.8	5.8
11	.5	1.5	2.9	18	70	49	71	30	14	6.3	4.8	5.6
12	.5	1.0	4.6	14	50	47	63	26	12	5.8	4.2	6.0
13	.6	2.0	5.3	12	35	47	51	24	11	5.3	3.8	5.9
14	.6	2.2	5.0	9.0	30	45	47	24	9.9	5.2	3.1	6.6
15	.8	2.4	3.9	7.5	26	47	75	22	9.4	4.9	3.3	11
16	a 1.4	2.2	3.5	6.0	24	42	79	21	8.9	4.8	3.3	13
17	a 1.0	2.1	3.0	5.5	22	51	63	21	8.3	13	4.0	16
18	a .8	1.8	2.6	5.5	21	65	63	21	8.4	18	5.9	11
19	a .5	1.8	2.5	5.5	18	45	59	20	7.6	9.2	6.6	9.1
20	a 1.0	2.0	2.7	5.6	17	35	49	19	7.5	6.3	4.7	8.7
21	a 1.4	1.7	3.5	9.0	14	32	43	18	10	5.8	4.2	11
22	a 1.3	1.8	4.3	29	14	28	37	18	8.1	6.3	4.2	36
23	* 1.3	2.0	4.7	152	14	27	36	23	8.3	5.2	3.7	* 71
24	1.4	2.1	4.3	138	14	26	81	49	11	4.6	3.5	43
25	1.4	2.1	3.8	87	14	24	143	38	8.7	4.2	3.7	31
26	1.0	2.1	3.6	65	a18	23	123	56	7.4	3.8	* 3.7	25
27	1.4	2.2	3.3	45	a25	23	* 87	* 75	6.6	3.7	8.8	20
28	1.5	3.7	3.1	35	a35	25	67	45	6.3	3.4	7.5	18
29	1.8	1.9	2.8	27		40	55	32	* 6.2	* 3.4	5.5	15
30	1.8	1.6	2.6	20	------	* 59	49	26	6.2	3.3	5.3	20
31	1.7	------	2.6	17	------	63	------	24	------	3.5	9.4	------
Total	36.9	54.0	89.0	963.6	688	1,408	2,031	1,043	343.8	201.8	149.0	451.4
Mean	1.19	1.80	2.87	31.1	24.6	45.4	67.7	33.6	11.5	6.51	4.81	15.0
Cfsm	0.039	0.059	0.095	1.03	0.812	1.50	2.23	1.11	0.380	0.215	0.159	0.495
In.	0.04	0.07	0.11	1.19	0.85	1.73	2.49	1.28	0.42	0.25	0.18	0.55

Calendar year 1964: Max 79 Min 0.5 Mean 6.22 Cfsm 0.205 In. 2.80
Water year 1964-65: Max 152 Min 0.5 Mean 20.4 Cfsm 0.673 In. 9.16

Peak discharge (base, 150 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-23	1600	5.55	173				

* Discharge measurement made on this day.
a No gage-height record
Note.--Stage-discharge relation affected by ice, Dec. 5-10, 14, 17, 19-21, 26-31, Jan. 13-21, Jan. 26 to Feb. 25, Mar. 18-20, 22-28.

5-5220. Iroquois River near North Marion, Ind.

Location.--Lat 40°58', long 87°07', in S½ sec. 9, T. 29 N., R. 6 W., on left bank at upstream side of county highway bridge, 1¼ miles upstream from Ryan ditch, 2 miles east of North Marion, and 3½ miles northeast of Rensselaer.

Drainage area.--134 sq mi.

Records available.--December 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 646.68 ft above mean sea level, datum of 1929. Prior to Sept. 6, 1955, wire-weight gage at same site and datum.

Average discharge.--16 years (1949-65) 109 cfs.

Extremes.--Maximum discharge during year, 680 cfs Jan. 24 (gage height, 9.38 ft); minimum, 3.0 cfs Oct. 29 (gage height, 1.13 ft). 1948-65: Maximum discharge, 2,040 cfs June 10, 1958 (gage height, 15.09 ft); minimum, 1.5 cfs Sept. 8, 1964.

Remarks.--Records fair except those for periods of ice effect, which are poor. Water is diverted from Oliver ditch, a tributary, into Ryan ditch. Ryan ditch enters the Iroquois River 1½ miles below this station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 6-20, Apr. 25-29)

1.1	2.4	2.0	30
1.2	4.3	3.0	83
1.3	6.2	5.0	240
1.5	11	9.2	660
1.7	17.4		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	5.6	12	35	95	280	320	213	76	16	12	52
2	8.0	5.2	9.0	209	80	380	320	173	73	18	13	44
3	7.8	5.1	9.0	280	70	370	290	141	67	20	13	34
4	6.4	5.1	11	231	66	330	250	133	59	21	14	30
5	5.6	6.7	12	157	66	320	222	199	54	20	21	28
6	6.7	5.6	10	118	104	300	360	213	52	20	14	25
7	6.2	4.3	7.0	104	141	290	520	205	49	97	34	26
8	7.4	5.4	6.0	104	181	330	430	181	77	80	34	25
9	7.6	5.2	6.0	173	213	360	530	157	250	52	49	25
10	7.4	7.1	7.0	173	450	330	550	133	149	42	104	23
11	6.9	4.7	25	125	530	280	470	111	90	26	64	21
12	5.2	5.4	44	97	480	250	400	97	64	17	42	20
13	6.4	5.4	50	83	360	240	320	90	52	20	30	18
14	6.4	5.2	40	64	260	231	260	83	44	20	25	21
15	6.7	4.7	32	50	197	222	* 290	76	37	15	20	42
16	7.5	4.7	32	43	165	205	390	73	34	13	18	46
17	5.8	3.5	25	41	149	240	380	64	32	34	21	70
18	5.6	* 3.5	*23	39	*141	*390	320	62	29	52	30	56
19	4.7	3.7	22	* 39	125	350	300	62	25	32	46	46
20	5.6	3.5	21	39	118	250	260	56	29	22	37	37
21	6.1	2.5	22	40	110	189	222	54	44	19	28	52
22	5.6	2.7	23	112	90	149	189	52	52	40	26	126
23	*5.6	3.1	25	440	80	141	165	56	42	64	23	* 280
24	5.6	3.7	32	650	80	141	240	118	38	39	19	340
25	5.2	4.5	26	660	80	125	490	118	24	26	18	280
26	4.7	5.3	25	600	85	125	590	* 149	31	12	* 25	181
27	5.2	7.1	23	520	100	118	540	213	30	* 8.5	33	125
28	4.1	16	20	*420	173	125	* 430	189	26	10	52	97
29	3.4	18	17	250		181	320	125	* 21	8.0	37	83
30	8.3	16	16	170	------	290	260	97	16	7.6	29	93
31	6.2	------	16	120	------	320	------	80	------	7.6	39	------
Total	191.7	178.5	648.0	6,186	4,789	7,852	10,628	3,763	1,666	878.7	970	2,336
Mean	6.18	5.95	20.9	200	171	253	354	121	555	28.3	31.3	77.9
Cfsm	0.046	0.044	0.156	1.49	1.28	1.89	2.64	0.903	0.414	0.211	0.234	0.581
In.	0.05	0.05	0.18	1.72	1.33	2.18	2.94	1.04	0.46	0.24	0.27	0.65

Calendar year 1964: Max 296 Min 1.6 Mean 25.6 Cfsm 0.191 In. 2.59
Water year 1964-65: Max 660 Min 2.5 Mean 110 Cfsm 0.821 In. 11.11

Peak discharge (base, 420 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	2300	9.38	680	4-10	0230	8.28	570
2-11	0700	8.41	580	4-26	1200	8.97	600
3-18	1900	6.78	420				

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 15-18, 26-28, Jan. 31 to Feb. 4, Feb. 26. Stage-discharge relation affected by ice Nov. 20-26, Nov. 30 to Dec. 10, Dec. 13-23, Dec. 27-29, Jan. 1, Jan. 14-21, Jan. 29, 30, Feb. 5, Feb. 21-27, Mar. 20.

5-5225. Iroquois River at Rensselaer, Ind.

Location.--Lat 40°56', long 87°08', in NE¼NW¼SE¼ sec. 29, T. 29 N., R. 6 W., on right bank, 20 ft downstream from bridge on State Highway 114, three-quarters of a mile east of Rensselaer, 1.5 miles downstream from Ryan ditch and 5.5 miles upstream from Big Slough Creek.

Drainage area.--194 sq mi.

Records available.--July 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 642.29 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission). Prior to July 8, 1949, wire-weight gage at same site and datum.

Average discharge.--17 years, 145 cfs.

Extremes.--Maximum discharge during year, 888 cfs Jan. 24 (gage height, 10.12 ft); minimum, 1.7 cfs Oct. 29, 30; minimum gage height, 3.15 ft Oct. 29, 30.
1948-65: Maximum discharge, 2,550 cfs June 10, 1948 (gage height, 16.54 ft); minimum, that of Oct. 29, 30; minimum gage height, 2.73 ft Sept. 15, 1948.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 15, Dec. 1-11, Jan. 4-10, Aug. 16)

2.8	1.1	3.6	33
2.9	2.8	4.5	100
3.0	5.0	6.0	250
3.1	8.0	10.0	870
3.2	12		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.6	6.1	18	62	b 130	338	380	250	96	20	18	64
2	8.4	6.1	*10	286	110	425	366	205	96	23	20	53
3	8.0	4.7	10	366	95	425	324	175	88	26	17	42
4	6.1	5.5	11	286	80	*380	286	155	76	25	20	37
5	5.0	* 6.6	12	185	80	380	250	216	72	25	26	35
6	5.0	7.3	10	145	117	352	471	238	68	25	19	31
7	5.3	4.2	8.0	*117	165	338	583	238	64	124	38	32
8	6.3	5.0	7.3	117	227	395	535	205	106	108	39	31
9	7.6	6.1	7.3	216	298	410	683	185	425	68	53	25
10	7.0	9.2	8.0	216	649	380	700	155	238	56	117	20
11	7.0	5.5	23	175	717	324	599	135	145	34	80	18
12	4.7	6.1	56	145	632	286	471	117	108	23	50	18
13	4.7	7.0	68	117	471	274	366	112	84	24	33	16
14	5.0	6.6	50	b 80	338	262	298	104	68	23	24	20
15	4.7	5.5	50	b 65	262	262	338	96	56	19	20	46
16	7.7	b 8.4	50	b 50	216	238	471	96	50	16	16	53
17	4.7	b 4.2	38	b 48	205	286	440	84	45	39	21	84
18	4.7	b 3.9	32	b 45	195	455	366	80	40	68	32	68
19	4.2	b 4.7	25	b 45	185	380	338	80	34	40	56	56
20	3.7	b 3.7	24	b 45	165	286	298	72	37	26	46	43
21	6.1	b 2.6	25	b 46	b 140	216	250	68	53	20	33	56
22	5.0	b 3.0	26	128	b 115	175	216	64	64	42	28	*155
23	*5.0	b 3.5	32	632	b 105	165	185	68	53	80	23	324
24	6.3	b 3.9	40	870	b 105	165	282	135	50	46	19	366
25	5.5	b 5.0	37	853	b 105	145	683	155	31	31	18	298
26	4.2	b 6.0	32	751	b 110	145	853	*185	35	18	24	195
27	4.2	b 9.2	28	599	126	145	*768	262	34	13	* 33	135
28	4.4	b 28	b 23	*471	185	145	599	227	34	*15	60	108
29	2.4	b 31	b 20	311		216	425	155	*26	*12	42	92
30	11	b 24	b 17	200	------	324	311	117	22	12	34	88
31	8.4	------	b 17	150	------	*380	------	104	------	12	43	-------
Total	178.9	232.6	814.6	7,822	6,328	9,097	13,135	4,538	2,398	1,113	1,102	2,609
Mean	5.77	7.75	26.3	252	226	293	438	146	79.9	35.9	35.5	87.0
Cfsm	0.030	0.040	0.136	1.30	1.16	1.51	2.26	0.752	0.412	0.185	0.183	0.448
In.	0.03	0.04	0.16	1.50	1.21	1.74	2.52	0.87	0.46	0.21	0.21	0.50

Calendar year 1964: Max 391 Min 2.2 Mean 31.2 Cfsm 0.161 In. 2.19
Water year 1964-65: Max 870 Min 2.4 Mean 135 Cfsm 0.696 In. 9.46

Peak discharge (base, 650 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-24	2100	10.12	888				
2-11	0330	9.25	734				
4-26	0900	9.97	870				

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

5-5230. Bice ditch near South Marion, Ind.

Location.--Lat 40°52', long 87°06', on line between secs. 15 and 22, T. 28 N., R. 6 W., on left bank at upstream side of bridge on State Highway 16, 2 miles upstream from Big Slough Creek, 3 miles southeast of South Marion, and 5 miles southeast of Rensselaer.

Drainage area.--22.6 sq mi.

Records available.--December 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 653.30 ft above mean sea level, datum of 1929. Prior to Aug. 5, 1955, wire-weight gage at same site and datum.

Average discharge.--16 years (1949-65), 16.0 cfs.

Extremes.--Maximum discharge during year, 221 cfs June 9 (gage height, 6.04 ft); minimum daily, no flow for many days.
1948-65: Maximum discharge, 780 cfs June 13, 1958 (gage height, 12.02 ft); no flow at times during 1952, 1955, and 1964.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating tables, except for periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 7-19, Nov. 11 to Dec. 9)

Oct. 1 to Apr. 24
Sept. 23 to 30

0.76	0	1.2	4.2
.80	.1	1.4	10
.90	.4	2.0	32
1.0	1.0	3.0	70
1.1	2.2	4.0	113

Apr. 25 to Sept. 22

0.84	0.3	1.2	5.6
.90	.7	2.0	36
1.0	1.8	5.0	163
1.1	3.5		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	0	4.5	2.6	35	38	13	4.3	3.9	0.7	1.2
2	.1	.1	0	33	2.0	30	32	9.7	4.5	3.7	.7	.8
3	.1	.1	0	15	1.4	33	23	7.4	4.1	13	.6	.7
4	.1	.1	0	9.0	1.4	32	20	6.2	3.5	6.2	.8	.6
5	.1	.1	0	6.8	1.4	28	20	8.2	3.3	3.9	.7	.5
6	.1	.1	0	5.6	2.0	23	115	9.0	3.1	3.3	.6	.5
7	.1	.1	0	5.0	4.0	32	62	9.3	2.9	49	1.0	.5
8	.1	.1	0	7.4	7.1	42	54	7.1	10	30	.8	.4
9	.1	.1	0	18	22	40	70	5.6	152	13	.8	.4
10	.1	.1	0	8.0	82	30	42	4.7	52	6.8	.8	.4
11	0	0	.3	5.0	37	23	50	4.1	34	4.5	.6	.4
12	.1	0	.5	3.5	33	24	38	3.5	21	3.5	.5	.4
13	0	.1	.5	2.5	17	23	26	3.3	11	2.7	.5	.3
14	0	.1	.3	2.0	12	21	19	2.9	7.1	2.3	.5	.7
15	0	.1	.2	1.7	11	19	* 50	2.9	5.1	2.0	.4	3.7
16	0	.1	.2	1.6	11	15	38	2.9	4.3	1.8	.4	4.3
17	.1	* .1	* .2	1.6	* 12	35	24	2.5	3.7	29	1.2	5.6
18	.1	.1	.1	* 1.6	13	26	17	2.3	3.1	17	1.9	3.7
19	.1	.1	.1	1.6	12	* 11	13	2.9	2.9	6.5	1.5	2.0
20	* .1	.1	.1	1.6	11	7.7	11	2.3	2.5	3.9	.9	1.5
21	.1	.1	.1	1.6	8.0	6.2	9.0	2.0	2.2	2.9	.7	1.6
22	.1	.1	.2	11	5.0	5.4	7.1	1.9	2.0	2.3	.6	22
23	.1	.1	.3	86	4.0	5.2	6.8	2.0	2.0	1.9	.5	* 38
24	.1	.1	.3	62	2.5	4.5	60	2.3	1.8	1.6	.4	14
25	.1	.1	.3	33	.5	4.0	133	* 13	1.5	1.4	* .4	7.1
26	.1	.1	.3	35	1.2	4.0	96	26	1.3	1.3	.4	4.0
27	.1	.1	.3	20	2.5	4.0	60	36	1.2	1.0	1.0	2.9
28	.1	.2	.2	13	20	5.0	* 40	15	1.5	1.0	1.6	2.2
29	.1	.1	.2	*10		20	27	9.0	2.0	.9	1.0	1.9
30	.1	.1	.3	6.2	---	38	18	6.5	* 7.4	* .6	1.3	1.9
31	.1	---	.2	3.3	---	38	---	5.1	---	.6	1.2	---
Total	2.6	2.9	5.2	416.1	338.6	664.0	1,218.9	228.6	357.3	221.5	25.0	124.2
Mean	0.08	0.10	0.17	13.4	12.1	21.4	40.6	7.37	11.9	7.14	0.81	4.14
Cfsm	0.0035	0.0044	0.0075	0.593	0.535	0.947	1.80	0.326	0.526	0.316	0.036	0.183
In.	0.004	0.005	0.01	0.68	0.56	1.09	2.01	0.38	0.59	0.36	0.04	0.20

Calendar year 1964: Max 98 Min 0 Mean 3.47 Cfsm 0.154 In. 2.09
Water year 1964-65: Max 152 Min 0 Mean 9.88 Cfsm 0.437 In. 5.93

Peak discharge (base, 340 cfs).--No peak above base.

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 10-14, Jan. 10-22, 27, 28, Feb. 1-7, 13-15, 21-27, Mar. 22-29.

GPO 820-687-18

5-5235. Big Slough Creek near Collegeville, Ind.

Location.--Lat 40°52', long 87°09', in SW¼NW¼ sec. 7, T. 28 N., R. 6 W., on right bank on downstream side of bridge on State Highway 53, 1½ miles south of Collegeville, 2½ miles upstream from mouth, and 2 3/4 miles downstream from Bice ditch.

Drainage area.--84.1 sq mi.

Records available.--July 1948 to December 1951, October 1952 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 634.75 ft above mean sea level, datum of 1929. Prior to Aug. 5, 1955, wire-weight gage and Aug. 5, 1955, to Oct. 8, 1958, water-stage recorder, at same site at datum 3.00 ft higher.

Average discharge.--16 years, 60.9 cfs.

Extremes.--Maximum discharge during year, about 1,200 cfs Jan. 23 (gage height, 10.76 ft, backwater from ice); minimum, 1.5 cfs Nov. 12, may have been less during period of ice effect.
1948-51, 1952-65: Maximum discharge, 2,030 cfs June 13, 1958; maximum gage height, 16.46 ft Mar. 5, 1963 (backwater from ice); minimum daily discharge, 0.7 cfs Dec. 20-26, 1963.

Remarks.--Records fair except for periods of ice effect, no gage-height record, and backwater from Iroquois River, which are poor.

Rating table, except for period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 5-8, Mar. 2-18, May 1 to June 8, June 14 to July 7)

3.3	1.8	4.4	42
3.4	3.1	5.0	100
3.6	6.8	6.0	231
3.8	12	7.0	385
4.0	20	9.0	760

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	2.2	2.2	9.0	21	190	180	50	13	19	8.2	11
2	2.3	2.2	2.1	147	21	124	160	28	14	18	7.7	7.7
3	2.3	2.1	*2.3	90	18	*136	130	19	14	31	7.0	7.0
4	2.2	*2.1	2.6	46	15	124	120	16	12	24	9.1	6.6
5	2.2	2.2	3.0	36	14	118	110	18	12	17	7.5	6.4
6	2.2	2.2	2.6	*32	15	79	210	20	12	18	6.6	6.2
7	2.2	2.2	2.5	30	20	100	430	20	12	135	9.1	6.0
8	3.4	2.2	2.8	34	40	161	350	17	20	112	7.3	6.0
9	2.9	2.2	2.8	79	90	161	300	14	339	64	8.0	5.8
10	2.4	2.2	2.8	51	c 400	124	350	12	175	40	7.5	5.6
11	2.4	2.2	4.5	30	c 300	74	240	11	94	30	6.8	5.6
12	2.4	2.2	7.0	22	c 220	60	260	10	64	24	6.2	5.6
13	2.4	2.3	9.1	17	c 190	50	150	9.4	42	21	5.6	5.4
14	2.3	2.3	6.8	14	c 130	43	110	8.2	32	20	5.2	6.4
15	2.3	2.9	6.2	12	74	39	160	8.2	26	18	5.0	12
16	2.3	3.4	5.5	10	54	29	250	8.2	23	17	5.0	17
17	2.2	2.7	5.0	9.0	54	81	203	7.7	20	86	7.7	19
18	2.2	2.3	4.5	9.0	54	124	124	7.4	20	75	12	15
19	2.2	2.0	4.2	9.0	52	95	79	8.4	18	35	9.4	11
20	2.2	1.8	4.2	9.0	43	50	55	7.0	18	22	6.8	8.9
21	2.2	1.7	4.5	10	35	35	44	6.8	17	17	5.8	10
22	*2.2	1.8	4.8	60	25	25	36	6.8	16	15	5.6	*42
23	2.2	2.0	6.0	750	17	24	34	7.0	15	16	5.2	154
24	2.2	2.3	9.1	640	16	22	162	11	15	13	4.8	84
25	2.2	2.7	5.6	400	16	20	578	33	14	11	4.8	45
26	2.2	3.2	5.0	250	17	20	*c 300	* 69	13	9.7	5.0	30
27	2.2	3.7	4.5	150	21	20	c 210	89	12	* 9.1	* 9.7	23
28	2.2	4.5	3.8	* 90	90	25	*c 150	44	12	8.4	9.1	19
29	2.2	3.0	3.2	60		75	c 90	23	*15	8.0	8.0	17
30	2.2	2.4	3.0	45	---------	*150	161	18	22	7.7	7.5	17
31	2.2	----------	3.0	35	---------	180	----------	14	----------	7.7	9.7	----------
Total	71.5	73.2	135.2	3,185.0	2,062	2,558	5,736	621.1	1,131	948.6	222.9	615.2
Mean	2.31	2.44	4.36	103	73.6	82.5	191	20.0	37.7	30.6	7.19	20.5
Cfsm	0.027	0.029	0.052	1.22	0.875	0.981	2.27	0.238	0.448	0.364	0.085	0.244
In.	0.03	0.03	0.06	1.41	0.91	1.13	2.53	0.27	0.50	0.42	0.10	0.27

Calendar year 1964: Max 439 Min 0.9 Mean 15.6 Cfsm 0.185 In. 2.51
Water year 1964-65: Max 750 Min 1.7 Mean 47.6 Cfsm 0.566 In. 7.66

* Discharge measurement made on this day.
c Backwater from Iroquois River.
Note.--Stage-discharge relation affected by ice Nov. 18 to Dec. 12, Dec. 15-23, Dec. 27 to Jan. 1, Jan. 11 to Feb. 9, Feb. 22 to Mar. 1, Mar. 19-28. No gage-height record Mar. 30 to Apr. 16.

5-5240. Carpenter Creek at Egypt, Ind.

Location.--Lat 40°52', long 87°12', on line between SW¼ sec. 15 and NW¼ sec. 22, T. 28 N., R. 7 W., on left bank on downstream side of bridge on State Highway 16, 0.5 mile north of Egypt, 2 3/4 miles upstream from mouth and 4 miles southwest of Collegeville.

Drainage area.--48.1 sq mi.

Records available.--July 1948 to December 1951, October 1952 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 641.79 ft above mean sea level, datum of 1929. Prior to Sept. 6, 1955, wire-weight gage at same site and datum.

Average discharge.--16 years, 34.3 cfs.

Extremes.--Maximum discharge during year, 514 cfs Apr. 24 (gage height, 8.67 ft); no flow for many days.
1948-51, 1952-65: Maximum discharge, 3,720 cfs June 10, 1958 (gage height, 11.66 ft); no flow at times during 1953, 1955-56, 1959, 1963-65.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October to September

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	1.0	8.8	15	132	84	51	17	3.0	0.5	1.2
2	0	.2	.8	147	11	84	79	40	18	3.0	.8	.6
3	0	.2	.8	97	9.0	74	61	31	15	9.0	.6	.4
4	0	.2	.9	49	8.0	60	53	26	14	4.5	1.0	.4
5	0	.2	.9	36	8.0	[illegible]	49	34	13	3.0	1.3	.4
6	0	.2	.8	26	10	45	[illegible]3	34	11	5.0	.7	.3
7	0	.2	.7	24	15	57	170	36	11	30	.9	.2
8	0	.2	.8	25	20	99	120	30	10	15	1.2	.2
9	0	.2	.9	98	50	109	150	23	186	8.0	.9	.2
10	0	.2	1.2	61	230	79	89	19	75	4.0	.9	.2
11	0	.1	1.9	37	114	61	94	17	46	3.0	.6	.2
12	0	.2	5.3	30	89	57	79	14	46	2.5	.5	.2
13	0	.2	3.5	22	51	53	53	13	28	2.0	.4	.2
14	0	.1	2.0	17	38	53	46	12	20	1.6	.3	.4
15	0	.3	1.5	13	31	48	* 84	12	14	1.5	.3	6.6
16	0	.9	1.1	10	26	43	79	12	10	6.0	.3	3.7
17	0	1.0	* .7	8.5	* 28	68	57	11	7.0	20	7.6	5.9
18	0	* .5	.3	* 8.0	31	66	44	10	5.5	8.0	3.5	1.6
19	0	.4	.2	7.5	31	* 25	37	12	4.0	4.0	2.0	1.0
20	* .1	.4	.2	7.5	25	19	31	9.5	3.0	3.3	.7	.6
21	.1	.3	.2	7.5	17	17	26	8.5	2.5	2.1	.5	1.1
22	0	.1	.4	39	14	15	24	9.0	2.0	* 1.6	.4	24
23	0	.1	1.5	260	13	15	22	28	1.5	1.4	.4	42
24	0	.3	1.3	238	13	14	210	11	1.3	1.2	.3	17
25	.1	.4	1.0	138	13	13	400	* 47	1.1	.8	* .2	6.8
26	.2	.8	.6	100	15	13	296	79	1.0	.9	.4	3.2
27	.2	.9	.5	65	35	13	177	104	.9	.9	1.8	1.9
28	.2	4.5	.4	45	85	13	* 126	48	1.3	.8	1.3	1.4
29	.2	3.6	.3	30		54	89	31	2.0	.7	.5	1.2
30	.2	1.9	.3	22	---	84	69	24	* 5.5	.6	.4	1.2
31	.2	---	.7	18	---	84	---	19	---	.6	1.2	---
Total	1.5	19.0	32.7	1,694.8	1,045.0	1,617	3,171	855.0	572.6	148.0	32.4	124.3
Mean	0.05	0.63	1.05	54.7	37.3	52.2	106	27.6	19.1	4.77	1.05	4.14
Cfsm	0.0010	0.013	0.022	1.14	0.775	1.09	2.20	0.574	0.397	0.099	0.022	0.086
In.	0.001	0.01	0.03	1.31	0.81	1.26	2.46	0.66	0.44	0.11	0.03	0.10

Calendar year 1964 : Max 274 Min 0 Mean 9.49 Cfsm 0.197 In. 2.69
Water year 1964-65 : Max 400 Min 0 Mean 25.5 Cfsm 0.530 In. 7.22

Peak discharge (base, 600 cfs).--No peak above base.

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-19, May 9-22, 24, May 31 to June 8, June 14 to July 21. Stage-discharge relation affected by ice Nov. 23, Dec. 13-18, 24-30, Jan. 13-21, Jan. 26 to Feb. 9, Feb. 20-27, Mar. 4-6, 18-28.

5-5245. Iroquois River near Foresman, Ind.

Location.--Lat 40°52', long 87°18', on line between secs. 14 and 15, T. 28 N., R. 8 W., on right bank at downstream side of bridge on State Highway 55, a quarter of a mile north of intersection of Highway 16 and 55, 0.6 mile west of Foresman, and 3 miles east of Brook.

Drainage area.--452 sq mi.

Records available.--December 1948 to September 1965.

Gage.--Water-stage recorder. Datum of gage is 624.00 ft above mean sea level, datum of 1929. Prior to Sept. 7, 1955, wire-weight gage 2.5 miles upstream at datum 3.54 ft higher.

Average discharge.--16 years (1949-65), 325 cfs.

Extremes.--Maximum discharge during year, 1,670 cfs Apr. 26; maximum gage height, 15.15 ft Apr. 27; minimum discharge, 8.2 cfs Oct. 16 (gage height, 3.28 ft).
1948-65: Maximum discharge, 5,930 cfs June 14, 1958 (gage height, 24.42 ft); minimum discharge, 6.1 cfs Sept. 10, 1964; minimum gage height, 2.92 ft Sept. 27-29, 1956.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	16	24	72	300	596	803	957	202	69	35	69
2	11	15	22	489	200	763	820	728	186	61	39	77
3	12	15	19	631	170	843	764	541	177	73	39	69
4	12	14	19	486	150	870	693	426	155	77	41	57
5	11	14	20	443	130	828	619	413	139	69	55	53
6	10	14	20	346	179	764	1,010	468	128	61	45	49
7	10	15	19	285	276	740	1,250	390	122	176	70	45
8	10	14	18	256	399	861	1,300	482	119	302	100	45
9	12	14	18	376	543	938	1,400	428	471	201	130	45
10	12	14	18	424	1,190	926	1,400	355	636	141	200	41
11	12	15	24	359	1,340	835	1,370	295	506	95	160	41
12	11	14	45	280	1,320	749	1,280	250	357	73	120	39
13	10	14	76	218	1,190	680	1,130	220	250	61	80	37
14	9.1	15	71	141	1,020	623	*1,090	197	200	57	60	37
15	8.9	14	56	110	797	585	945	184	160	57	45	61
16	8.4	16	56	90	609	568	1,010	172	140	49	38	91
17	9.1	16	*56	80	*490	580	995	157	120	107	60	121
18	8.9	*16	43	80	427	732	883	147	100	216	80	127
19	8.6	14	39	80	387	*706	761	141	85	145	100	105
20	*9.6	16	35	80	355	595	666	134	80	85	90	85
21	9.3	14	31	103	326	472	550	123	90	65	70	81
22	9.8	14	35	171	264	376	450	118	120	57	55	181
23	11	14	39	993	232	322	384	124	140	85	50	454
24	12	15	51	1,490	180	291	576	183	90	89	45	513
25	12	15	56	1,530	160	260	1,310	291	75	69	* 38	491
26	12	16	51	1,540	159	248	1,660	460	80	53	45	392
27	12	16	39	1,500	159	240	*1,600	* 640	73	43	50	276
28	13	26	38	* 1,100	302	236	1,460	619	* 65	* 35	61	193
29	14	31	37	* 800		402	1,300	466	65	35	69	155
30	14	26	37	550	---------	582	1,150	340	73	32	61	141
31	14	----------	41	420	---------	705	----------	25	----------	32	61	----------
Total	339.7	482	1,153	15,523	13,254	18,916	30,629	10,700	5,204	2,770	2,192	4,171
Mean	11.0	16.1	37.2	501	473	610	1,021	345	173	89.4	73.9	139
Cfsm	0.024	0.036	0.082	1.11	1.05	1.35	2.26	0.763	0.383	0.198	0.163	0.308
In.	0.03	0.04	0.09	1.28	1.09	1.56	2.52	0.88	0.43	0.23	0.19	0.34

Calendar year 1964: Max 1,300 Min 6.3 Mean 78.7 Cfsm 0.174 In. 2.36
Water year 1964-65: Max 1,660 Min 8.4 Mean 289 Cfsm 0.639 In. 8.68

* Discharge measurement made on this day.
Note.--No gage-height record June 13-26, Aug. 5-27. Stage-discharge relation affected by ice Dec. 28-31, Jan. 15-20, Jan. 27 to Feb. 5, Feb. 24, 25.

5-5250. Iroquois River at Iroquois, Ill.

Location.--Lat 40°49'25", long 87°34'55", in SE¼ sec. 15, T. 27 N., R. 11 W., on left bank at upstream side of bridge on U. S. Highway 52 at Iroquois, 500 ft upstream from Cleveland, Cincinnati, Chicago & St. Louis Railway bridge and 4.5 miles downstream from Indiana-Illinois State line.

Drainage area.--682 sq mi.

Records available.--October 1944 to September 1965.

Gage.--Water-stage recorder (digital). Datum of gage is 614.34 ft above mean sea level, datum of 1929. Prior to Aug. 5, 1945, chain gage at same site and datum.

Average discharge.--21 years, 490 cfs.

Extremes.--Maximum discharge during year, 2,240 cfs Apr. 28 (gage height, 15.22 ft); minimum, 11 cfs Oct. 18, 19.
1944-65: Maximum discharge, 10,400 cfs June 13, 1958 (gage height, 26.31 ft); minimum, 5.2 cfs Sept. 13, 1964.

Remarks.--Records good except those for periods of ice effect, no gage-height record, or indefinite stage-discharge relation, which are poor.

Rating table, except periods of ice effect or indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 9-25)

2.5	11	7.0	396
3.0	30	10.0	870
4.0	85	13.0	1,500
5.0	166	16.0	2,550

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	13	13	55	a 700	702	960	1,510	399	89	33	65
2	16	13	13	482	b 600	911	1,030	1,210	337	89	33	66
3	14	12	13	669	b 500	1,040	1,040	955	303	85	35	74
4	13	12	13	884	b 450	1,080	1,010	744	276	85	*42	72
5	13	12	13	827	b 410	1,070	949	696	248	92	43	64
6	13	12	13	710	402	1,030	1,240	*710	224	91	45	54
7	13	12	13	580	427	987	1,500	775	203	272	48	49
8	13	13	13	488	600	1,030	1,580	753	192	405	45	45
9	13	14	14	542	771	1,170	1,810	696	239	443	51	41
10	13	15	16	661	*1,400	1,200	1,880	614	495	360	60	40
11	14	14	* 19	671	1,580	1,150	1,860	523	641	243	81	37
12	* 14	13	23	588	1,640	1,080	1,830	445	594	168	110	35
13	14	12	28	b 400	1,600	1,010	1,690	387	459	122	97	33
14	13	12	32	b 300	1,460	944	* 1,480	344	337	96	75	34
15	13	13	35	b 220	1,260	888	1,370	312	252	84	57	44
16	12	13	30	b 170	1,060	830	1,330	288	199	76	45	64
17	12	13	24	b 140	884	809	1,290	264	166	74	42	104
18	11	13	18	b 120	742	872	1,230	246	145	122	41	123
19	11	13	16	b 100	661	898	1,150	228	131	225	47	133
20	12	12	15	b 90	b 500	880	1,040	210	119	187	59	* 120
21	12	12	14	b 80	b 400	818	926	200	110	127	70	105
22	12	12	14	b 110	b 350	* 688	805	187	110	*92	67	136
23	12	12	14	1,100	b 280	572	692	184	*121	73	57	347
24	12	12	36	1,720	b 230	480	977	209	127	86	48	491
25	13	12	43	1,880	b 210	424	1,690	300	117	101	43	538
26	13	12	45	2,020	b 200	388	2,010	564	104	84	39	526
27	13	14	43	*2,070	b 220	364	2,160	906	88	67	41	456
28	14	17	42	2,000	408	362	2,230	888	83	51	42	352
29	14	14	39	a 1,400		417	2,110	798	86	40	50	264
30	13	13	41	a 1,000	---------	596	1,840	661	85	35	66	216
31	13	----------	38	a 850	---------	552	----------	510	----------	33	71	----------
Total	406	386	743	22,927	19,945	25,242	42,709	17,317	5,990	4,197	1,683	4,728
Mean	13.1	12.9	24.0	740	712	814	1,424	559	233	135	54.3	158
Cfsm	.019	.019	.035	1.09	1.04	1.19	2.09	.820	.342	.198	.080	.232
In.	.02	.02	.04	1.25	1.09	1.38	2.33	.94	.38	.23	.09	.26

Calendar year 1964: Max 1,530 Min 5.5 Mean 121 Cfsm 0.177 In. 2.42
Water year 1964-65: Max 2,230 Min 11 Mean 403 Cfsm 0.591 In. 8.03

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.
Note.--Stage-discharge relation indefinite Oct. 26 to Jan. 1.

5-5255. Sugar Creek at Milford, Ill.

Location.--Lat 40°37'50", long 87°43'25", in N½ sec. 16, T. 25 N., R. 12 W., near right bank on downstream side of highway bridge, 200 ft downstream from Mud Creek and 1 mile west of Milford.

Drainage area.--430 sq mi.

Records available.--July 1948 to September 1965.

Gage.--Wire-weight gage read twice daily, and crest-stage gage. Datum of gage is 622.00 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 322 cfs.

Extremes.--Maximum discharge during year, 2,240 cfs Jan. 24 (gage height, 14.09 ft, from graph based on gage readings); minimum, 5.1 cfs Oct. 6-8.
1948-65: Maximum discharge, 22,900 cfs Feb. 21, 1951 (gage height, 20.90 ft), from rating curve extended above 8,200 cfs; maximum gage height, 23.74 ft Feb. 10, 1959 (ice jam); minimum discharge observed, 2.8 cfs Dec. 14, 1952, result of freezeup.

Remarks.--Records poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 16; stage-discharge relation affected by ice Nov. 17 to Dec. 24, Jan. 8-12, 14-22, Jan. 28 to Feb. 8, Feb. 16-27)

1.5	4.7	3.0	65	10.0	1,050
1.7	8.9	4.0	141	13.0	1,860
2.0	18	5.0	245	14.0	2,200
2.5	38	7.0	513		

Discharge, in cubic feet per second, water year October 1964 to September 1965

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	6.0	9.0	17	260	930	735	608	307	46	17	19
2	7.1	6.0	7.0	815	220	1,050	660	450	601	55	16	16
3	6.2	6.0	6.8	1,280	200	928	516	374	679	60	16	13
4	5.8	6.0	6.6	891	190	724	427	328	624	53	* 19	13
5	5.3	6.0	6.4	566	180	638	550	* 590	460	44	19	14
6	5.1	6.0	6.0	431	170	611	1,470	1,280	374	44	18	14
7	5.1	6.0	5.8	319	200	672	2,000	1,580	291	171	16	14
8	5.1	6.0	5.6	350	270	731	1,560	1,110	280	154	16	13
9	8.0	5.8	6.0	450	348	844	1,980	692	269	101	16	12
10	6.4	* 5.8	7.0	540	1,180	782	1,540	576	225	91	16	12
11	5.8	6.0	* 17	450	* 1,500	571	1,300	490	189	72	14	12
12	* 5.6	6.0	20	350	1,110	500	1,200	262	167	56	14	11
13	5.4	6.2	16	* 265	769	450	* 845	352	151	47	13	11
14	5.2	6.4	13	220	576	401	700	287	143	42	12	11
15	5.2	6.6	9.0	160	516	371	845	240	111	38	12	306
16	5.2	14	8.0	120	400	361	1,010	226	108	37	12	630
17	5.2	11	7.0	100	320	427	904	216	103	35	11	778
18	5.2	8.0	6.0	85	280	506	728	198	100	36	15	622
19	5.2	7.0	6.0	75	250	486	564	194	92	44	14	249
20	5.2	6.4	6.0	65	210	431	516	172	86	60	13	*121
21	5.2	6.0	6.0	60	190	277	441	157	84	* 30	12	87
22	5.2	6.0	6.0	80	170	*251	380	258	67	26	12	345
23	5.2	6.0	6.0	1,180	160	220	398	470	* 70	23	13	1,160
24	5.2	6.0	20	2,120	150	186	689	543	67	21	12	1,740
25	5.2	6.0	27	1,950	140	168	1,540	800	63	20	12	1,160
26	5.5	6.0	29	1,540	130	159	1,560	1,280	55	20	16	493
27	6.4	16	28	1,090	150	154	1,280	1,680	54	18	17	300
28	6.0	28	24	750	520	240	922	1,380	52	16	15	207
29	6.8	20	20	540		378	830	898	52	16	13	161
30	6.4	13	18	400	---------	798	675	576	49	16	12	145
31	6.2	----------	18	320	---------	846	----------	419	----------	16	20	----------
Total	180.4	250.2	376.2	17,579	10,759	16,091	28,765	18,686	5,973	1,508	453	8,689
Mean	5.82	8.34	12.1	567	384	519	959	603	199	48.6	14.6	290
Cfsm	0.014	0.019	0.028	1.32	0.893	1.21	2.23	1.40	0.463	0.113	0.034	0.674
In.	0.02	0.02	0.03	1.52	0.93	1.39	2.49	1.62	0.52	0.13	0.04	0.75

Calendar year 1964 : Max 5,020 Min 4.5 Mean 146 Cfsm 0.340 In. 4.61
Water year 1964-65 : Max 2,120 Min 5.1 Mean 299 Cfsm 0.695 In. 9.46

Peak discharge (base, 2,500 cfs).--No peak above base.

* Discharge measurement made on this day.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations and miscellaneous sites are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in the second table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1965

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Miami River Basin				
3-2748.00	Martindale Creek near Cambridge City, Ind.	Lat 39°49', long 85°09', on line between secs. 13 and 24, T. 16 N., R. 12 E., 1¼ miles upstream from U.S. Highway 40, and 1 3/4 miles northeast of Cambridge City.	58.1	1960-65	11-10-64	3.52
3-2752.00	Salt Creek near Metamora, Ind.	Lat 39°26'45", long 85°11'01", in SW¼ sec. 34, T. 12 N., R. 12 E., three-tenths of a mile south of U.S. Highway 52 and 2 3/4 miles west of Metamora.	115	1954 1960-65	10-1-64 11-7-64 11-7-64	0.69 0.64 0.67
3-2757.00	Silver Creek near Liberty, Ind.	Lat 39°39'36", long 84°55'39", on line between sec. 31, T. 12 N., R. 1 W., and sec. 36, T. 12 N., R. 2 W., at bridge on U.S. Highway 27, 1½ miles north of Liberty.	9.67	1960-65	11-10-64	0.02
		Laughery Creek Basin				
3-2767.50	Laughery Creek near Ballstown, Ind.	Lat 39°14'42", long 85°14'52", in SW¼NE¼ sec. 12, T. 9 N., R. 11 E., at bridge on State Highway 229, six-tenths of a mile south of Ballstown.	a 37	1961-65	11-7-64	0
		Indian Kentuck Creek Basin				
3-2918.00	Indian Kentuck Creek at Manville, Ind.	Lat 38°47'10", long 85°16'58", in SE¼ sec. 15, T. 4 N., R. 11 E., at Manville, below mouth of West Fork Indian Kentuck Creek.	a 121	1954 1961-64	11-7-64	0
		Fourteenmile Creek Basin				
3-2924.00	Fourteenmile Creek near Charlestown, Ind.	Lat 38°27'58", long 85°37'04", in SE¼SE¼ of lot 120 of Clark Military Grant, at bridge on State Highway 62, 2 miles northeast of Charlestown.	a 97	1954 1962-65	11-7-64	0
		Indian Creek Basin				
3-3026.00	Little Indian Creek near Corydon, Ind.	Lat 38°11'59", long 86°05'44", in NE¼ sec. 5, T. 4 S., R. 4 E., at bridge on county highway, two-tenths of a mile south of State Highway 62, 1 3/4 miles east of Corydon, and 2.4 miles upstream from mouth.	32.5	1960-65	11-6-64	0.39
		Blue River Basin				
3-3027.00	Middle Fork Blue River near Salem, Ind.	Lat 38°32'36", long 86°05'37", in NE¼ sec. 8, T. 1 N., R. 4 E., 1.7 miles upstream from confluence with West Fork Blue River, at bridge on State Highway 135, 4½ miles south of Salem.	38.4	1954 1961 1965	11-6-64	0
3-3029.00	Spring Creek near White Cloud, Ind.	Lat 38°14'20", long 86°13'45", in SE¼ sec. 19, T. 3 S., R. 3 E., at county highway bridge, north of White Cloud and at mouth of Harrison Spring.		1951-52 1954-65	11-26-64 12-28-64 1-26-65 3-1-65 3-22-65 4-20-65 5-18-65 6-14-65 7-20-65 8-20-65 9-13-65	7.99 141 87.0 277 149 207 47.0 47.7 50.9 9.65 122

Discharge measurements made at low-flow partial-record stations during water year 1965--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Little Pigeon Creek Basin				
3-3040.00	Little Pigeon Creek near Tennyson, Ind.	Lat 38°02'45", long 87°07'05", in NE¼ sec. 31, T. 5 S., R. 6 W., at county highway bridge, 1½ miles downstream from East Fork, and 2½ miles south of Tennyson.	150	≠1944-47 1961-65	11-10-64	0
		Pigeon Creek Basin				
3-3220.50	Pigeon Creek near Buckskin, Ind.	Lat 38°11'44", long 87°25'42", at corner of secs. 4, 5, 8, and 9, T. 4 S., R. 9 W., at bridge on State Highway 68 at Rosebud, 3 miles south of Buckskin, and 8.3 miles west of Lynnville.	a 184	1961-63 1965	11-10-64	0
		Wabash River Basin				
3-3228.00	Bear Creek near Bryant, Ind.	Lat 40°31', long 84°58', on line between secs. 19 and 20, T. 24 N., R. 14 E., at bridge on U.S. Highway 27, 5 miles north of Portland, 1¼ miles south of Bryant.	a 14	1957 1961-65	11-10-64	0
3-3232.00	Rock Creek near Markle, Ind.	Lat 40°47'47", long 85°21'28", in NE¼ sec. 14, T. 27 N., R. 10 E., at bridge on State Highway 3, 2¼ miles southwest of Markle.	a 92	1954 1960-65	11-10-64	0.69
3-3238.00	Eight Mile Creek at Zanesville, Ind.	Lat 40°55', long 85°17', in sec. 4, T. 28 N., R. 11 E., at bridge on State Highway 3, 0.7 mile southwest of Zanesville.	a 46	1954 1961-65	11-10-64	0.14
3-3261.00	Big Lick Creek near Wheeling, Ind.	Lat 40°23', long 85°27', in NE¼ sec. 12, T. 22 N., R. 9 E., at county highway bridge, 3/8 mile upstream from mouth and 1¼ miles northeast of Wheeling.	a 83	1954 1961-65	11-10-64	3.21
3.3275.20	Pipe Creek near Bunker Hill, Ind.	Lat 40°40'06", long 86°05'44", in SE¼ sec. 29, T. 26 N., R. 4 E., at bridge on county highway, ½ mile northeast of Bunker Hill.	a 168	1953-54 1960-65	11-9-64	6.59
3-3277.70	Blue River near Columbia City, Ind.	Lat 41°10'52", long 85°27'24", in SW¼ sec. 35, T. 32 N., R. 9 E., at county highway bridge, 0.6 mile east of State Highway 9, 2¼ miles northeast of Columbia City and 2.5 miles downstream from Thorn Creek.	a 60	1961-65	11-10-64	3.01
3-3293.00	Rock Creek at Rockfield, Ind.	Lat 40°39'10", long 86°33'30", in SE¼ sec. 32, T. 26 N., R. 1 W., at bridge on State Highway 25, 1¼ miles northeast of Rockfield.	a 81	1954 1960-65	11-9-64	1.46
3-3296.00	Bachelor Run near Flora, Ind.	Lat 40°32'50", long 86°29'30", on line between secs. 2 and 11, T. 24 N., R. 1 W., at bridge on State Highway 18, 1¼ miles east of Flora.	a 13	1960-65	11-9-64	0.37
3-3314.30	Mud Creek near Bruce Lake, Ind.	Lat 41°03'10", long 86°19'39", on line between secs. 8 and 17, T. 30 N., R. 2 E., at bridge on State Highway 14, 4½ miles east of Bruce Lake, and 5½ miles west of Rochester.	a 69	1960-65	11-6-64	4.39
3-3343.00	Kilmore Creek at Kilmore, Ind.	Lat 40°21', long 86°30', in SW¼ sec. 14, T. 22 N., R. 1 W., at county highway bridge, 0.7 mile upstream from State Highway 75, at south edge of Kilmore.	a 62	1954 1960-65	11-10-64	0.03
3-3356.70	Wea Creek near Lafayette, Ind.	Lat 40°21'46", long 86°54'17", in SE¼ sec. 7, T. 22 N., R. 4 W., at bridge on State Highway 43, 2 3/4 miles south of Lafayette.	a 103	1960-65	11-10-64	11.0
3-3391.00	Coal Creek near Veedersburg, Ind.	Lat 40°08'33", long 87°15'00", on line between secs. 30 and 31, T. 20 N., R. 7 W., at bridge on county road, 2.2 miles northeast of Veedersburg.	77.6	1962-65	11-12-64	6.56
3-3392.00	Sugar Creek near Kirklin, Ind.	Lat 40°12', long 86°22', in SE¼NW¼ sec. 1, T. 20 N., R. 1 E., at bridge on U.S. Highway 421, 1 mile north of Kirklin.	a 41	1960-65	11-10-64	0.55
3-3414.50	Otter Creek at Burnett, Ind.	Lat 39°32'17", long 87°17'44", on line between secs. 27 and 28, T. 13 N., R. 8 W., at county highway bridge, 0.3 mile south of Burnett.	a 69	1961-65	11-10-64	4.30
3-3416.00	Honey Creek near Prairieton, Ind.	Lat 39°23'51", long 87°27'07", at center of sec. 18, T. 11 N., R. 9 W., at bridge on State Highway 63, 2.4 miles northeast of Prairieton.	a 86	1960-65	11-10-64	1.37
3-3418.00	Prairie Creek at Prairie Creek, Ind.	Lat 39°16'50", long 87°29'54", on line between secs. 26 and 27, T. 10 N., R. 10 W., at bridge on State Highway 63, ½ mile north of Prairie Creek.	a 24	1960 1962-65	11-10-64	0
3-3419.50	Turman Creek near Fairbanks, Ind.	Lat 39°09'18", long 87°31'22", in NW¼NE¼ sec. 9, T. 8 N., R. 10 W., at bridge on State Highway 63, 4.6 miles south of Fairbanks.	a 69	1954 1961-63 1965	11-10-64	0

Discharge measurements made at low-flow partial-record stations during water year 1965--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Wabash River Basin--Continued				
3-3427.00	Maria Creek near Emison, Ind.	Lat 38°46'25", long 87°28'21", in N½ sec. 24, T. 4 N., R. 10 W., at bridge on U.S. Highway 41, 2 miles south of Emison.	a 88	1954 1960-65	11-10-64	0.63
3-3467.00	White River near Harrisville, Ind.	Lat 40°11', long 84°53', in sec. 19, T. 20 N., R. 15 E., at bridge on State Highway 32, 1 mile west of Harrisville.	21.3	1961-65	11-9-64	0.78
3-3483.00	Pipe Creek near Alexandria, Ind.	Lat 40°16'40", long 85°38'34", on line between secs. 8 and 17, T. 21 N., R. 8 E., at bridge on State Highway 28, 1½ miles east of State Highway 9, and 2 miles northeast of Alexandria.	44.7	1960-65	11-9-64	2.69
3-3507.00	Stoney Creek near Noblesville, Ind.	Lat 40°01'44", long 85°59'42", in NE¼NE¼ sec. 7, T. 18 N., R. 5 E., at bridge on State Highway 37, 1.4 miles southeast of Post Office in Noblesville, and 1.4 miles upstream from mouth.	a 51	1946 1960-65	11-6-64	4.48
3-3513.00	Crooked Creek at Augusta, Ind.	Lat 39°53'43", long 86°12'53", in NE¼NW¼ sec. 29, T. 17 N., R. 3 E., at bridge on U.S. Highway 421, 0.4 mile north of Augusta.	7.22	1960-65	11-6-64	0.03
3-3519.00	Indian Creek at Oaklandon, Ind.	Lat 39°51'51", long 85°58'07", in SW¼NW¼ sec. 3, T. 16 N., R. 5 E., at bridge on old State Highway 67, 0.2 mile northeast of State Highway 67 and Sunnyside Road intersection, and 1 mile southwest of Oaklandon.	a 18	1960-65	11-6-64	0.04
3-3536.30	Little Buck Creek at Southport, Ind.	Lat 39°39'55", long 86°06'06", on line between secs. 8 and 17, T. 14 N., R. 4 E., at bridge on Southport Road, 200 ft east of Sherman Drive - Southport Road intersection, and ½ mile east of Southport.	a 9	1960-65	11-6-64	0.04
3-3536.50	Pleasant Run at Greenwood, Ind.	Lat 39°37'53", long 86°06'58", in NW¼ sec. 29, T. 14 N., R. 4 E., at bridge on State Highway 431, 0.2 mile south of Marion-Johnson county line, and 0.5 mile north of Greenwood.	a 5	1960-65	11-6-64	0
3-3536.70	White Lick Creek near Brownsburg, Ind.	Lat 39°51'56", long 86°23'42", on line between sec. 2, T. 16 N., R. 1 E., and sec. 34, T. 17 N., R. 1 E., at bridge on county highway, 350 ft west of State Highway 267, and 1½ miles north of Brownsburg.	a 30	1960-65	11-10-64	0
3-3541.00	Sycamore Creek near Centerton, Ind.	Lat 39°30'49", long 86°25'55", on line between sec. 33, T. 13 N., R. 1 E., and sec. 4, T. 12 N., R. 1 E., at county highway bridge, 2 miles west of Centerton.	17.2	1960-65	11-9-64	5.80
3-3542.00	Indian Creek near Morgantown, Ind.	Lat 39°22'08", long 86°13'50", in NW¼ sec. 29, T. 11 N., R. 3 E., at bridge on county highway, 100 ft upstream from Barnes Creek, 1.6 miles east of Morgantown.	a 20	1961-65	11-9-64	0
3-3571.00	Rattlesnake Creek near Spencer, Ind.	Lat 39°15'36", long 86°48'20", in S½ sec. 36, T. 10 N., R. 4 W., at county highway bridge, 400 ft upstream from State Highway 67 and U.S. Highway 231 bridge, and 2½ miles southwest of Spencer.	a 25	1960-65	11-9-64	0.74
3-3573.00	Big Walnut Creek near Barnard, Ind.	Lat 39°49'50", long 86°41'12", in NW¼ sec. 18, T. 16 N., R. 2 W., at bridge on Putnam-Hendricks county line, 1½ miles southeast of Barnard.	a 120	1961-65	11-10-64	4.46
3-3602.00	Lattas Creek at Switz City, Ind.	Lat 39°02'40", long 87°02'38", in SE¼ sec. 14, T. 7 N., R. 6 W., at bridge on State Highway 67, 0.9 mile north of Switz City.	a 32	1954 1960-65	11-9-64	0
3-3603.00	Richland Creek near Bloomfield, Ind.	Lat 39°01'38", long 86°55'05", in SE¼SE¼ sec. 24, T. 7 N., R. 5 W., at bridge on State Highway 54, 1.9 miles east of Bloomfield.	a 96	1960-65	10-7-64 11-9-64	0.88 1.33
3-3607.00	Black Creek near Sanborn, Ind.	Lat 38°52'38", long 87°11'12", at intersection of secs. 9, 10, 15, 16, T. 5 N., R. 7 W., at bridge on State Highway 58, 1.3 miles south of Sanborn.	a 101	1960-63 1965	11-10-64	6.46
3-3608.00	Prairie Creek near Washington, Ind.	Lat 38°43'01", long 87°10'00", in SW¼SW¼ sec. 2, T. 3 N., R. 7 W., at bridge on State Highway 57, 4 miles north of Washington.	a 117	1954 1960-63 1965	10-8-64 11-10-64	0 0.94
3-3614.00	Little Blue River near Rays Crossing, Ind.	Lat 39°33'16", long 85°43'08", on line between secs. 23 and 26, T. 13 N., R. 7 E., at county highway bridge, 2.8 miles west of Rays Crossing.	a 94	1960-65	10-1-64 11-11-64	1.07 2.59
3-3616.00	Brandywine Creek near Maxwell, Ind.	Lat 39°51'30", long 85°44'17", on line between secs. 3 and 10, T. 16 N., R. 7 E., at county highway bridge, 1.6 miles east of Maxwell and 4.5 miles northeast of Greenfield.	a 25	1960-65	11-10-64	0.21

Discharge measurements made at low-flow partial-record stations during water year 1965--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Wabash River Basin--Continued				
3-3617.00	Sugar Creek near Pleasant View, Ind.	Lat 39°38'49", long 85°55'09", in E½ sec. 24, T. 14 N., R. 5 E., at bridge on Interstate Highway 74, 1 3/4 miles southeast of Pleasant View.	a 121	1954 1960-65	11-11-64	9.45
3-3618.00	Buck Creek near New Bethel, Ind.	Lat 39°43'34", long 85°48'20", on line between secs. 21 and 28, T. 15 N., R. 5 E., at bridge on E. Troy Ave., 7.7 miles east of corporate limits of Indianapolis.	49.5	1960-65	11-11-64	0.44
3-3619.00	Hurricane Creek at Franklin, Ind.	Lat 38°29'53", long 86°01'34", on line between sec. 7, T. 12 N., R. 5 E., and sec. 12, T. 12 N., R. 4 E., at county highway bridge, 1.0 mile northeast of Franklin.	a 13	1960-65	11-11-64	0
3-3632.00	Flatrock River at Lewisville, Ind.	Lat 39°48'24", long 85°21'29", in NW¼SE¼ sec. 25, T. 16 N., R. 10 E., at bridge on U.S. Highway 40 at Lewisville.	a 49	1954 1960-65	11-10-64	2.91
3-3643.00	Haw Creek near Columbus, Ind.	Lat 39°14'44", long 85°52'51", in W½SE¼ sec. 5, T. 9 N., R. 6 E., at county highway bridge, 1.1 miles north of corporate limits of Columbus.	a 50	1960-65	10-1-64 11-7-64	0 0
3-3648.00	Sand Creek near Greensburg, Ind.	Lat 39°20'55", long 85°26'51", in NE¼ sec. 6, T. 10 N., R. 10 E., at county highway bridge, 1½ miles northeast of Greensburg.	a 9	1960-65	11-7-64	0
3-3656.00	White Creek near Cortland, Ind.	Lat 38°58'46", long 86°00'58", on line between secs. 6 and 7, T. 6 N., R. 5 E., at bridge on State Highway 258, 3 miles west of Cortland.	a 94	1954 1961-65	11-7-64	0
3-3663.00	Big Creek near Volga, Ind.	Lat 38°46'47", long 85°32'57", in NE¼NW¼ sec. 20, T. 4 N., R. 9 E., at county highway bridge, 1.7 miles west of Volga, and 5.5 miles east of Deputy.	a 96	1954 1961-65	11-7-64	0.09
3-3673.00	Stucker Fork at Scottsburg, Ind.	Lat 38°41'41", long 85°45'24", on line between secs. 16 and 17, T. 3 N., R. 7 E., at county highway bridge, 0.6 mile north of State Highway 56, and 1 mile east of Scottsburg.	a 74	1961-65	11-7-64	0.18
3-3715.50	Middle Fork Salt Creek at Story, Ind.	Lat 39°05'37", long 86°12'29", in SE¼SE¼ sec. 29, T. 8 N., R. 3 E., at bridge on State Highway 135, 0.5 mile southeast of Story.	a 37	1954 1961-65	11-5-64	0
3-3733.20	Indian Creek near Trinity Springs, Ind.	Lat 38°44'15", long 86°46'14", in W½ sec. 32, T. 4 N., R. 3 W., at bridge on county road, 1.3 miles south of Trinity Springs, and 2.3 miles above mouth.	a 240	1963-65	11-6-64	1.78
3-3736.00	Lick Creek near Paoli, Ind.	Lat 38°32'42", long 86°26'56", in SW¼ sec. 6, T. 1 N., R. 1 E., at bridge on county road, 1.3 miles southeast of Paoli.	a 16	1954 1962-65	11-6-64	0.48
3-3786.00	Big Creek at Solitude, Ind.	Lat 38°01'06", long 87°54'01", in SW¼ sec. 8, T. 6 S., R. 13 W., at bridge on State Highway 69 at Solitude.	a 204	1954 1960-63 1965	11-10-64	0
		Streams Tributary to Lake Michigan				
4-0984.00	Fawn River near Howe, Ind.	Lat 41°44'55", long 85°25'05", in SW¼ sec. 18, T. 38 N., R. 10 E., at county highway bridge, 1½ miles north of Howe.	a 161	1960-65	11-10-60	14.1
4-1004.90	Turkey Creek at New Paris, Ind.	Lat 41°30'00", long 85°50'40", in SW¼ sec. 9, T. 35 N., R. 6 E., at county highway bridge, 0.4 mile west of New Paris.	a 160	1960-65	11-9-64	19.0
		Illinois River Basin				
5-5163.00	Dausman ditch near Bremen, Ind.	Lat 41°22'58", long 86°07'02", at section line on east side of sec. 24, T. 34 N., on range line between R. 3. E., and R. 4 E., at bridge on State Highway 331, 4½ miles southeast of Bremen.	a 48	1956 1961-65	11-6-64	2.38
5-5175.50	Reeves ditch near LaCrosse, Ind.	Lat 41°19'03", long 86°55'49", on line between secs. 12 and 13, T. 33 N., R. 5 W., at bridge on State Highway 8, 2.0 miles west of LaCrosse.	a 44	1961-65	11-6-64	9.06

a About.
/ Operated as a continuous-record gaging station.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1965

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Fourteenmile Creek basin						
Fourteenmile Creek	Ohio River	Lat 38°33'30", long 85°34'48", in east corner lot 198, Clark Military Grant, at county road bridge, 2 miles west of New Washington, Ind.			11-8-63	0.16
...Do.....	...do.....	Lat 38°32'27", long 85°35'48", in west corner lot 180, Clark Military Grant, 200 feet below mouth of Rogers Run Creek, 1 mile ENE of New Market, Ind.			11-8-63	0.49
Indian Creek basin						
Georgetown Creek tributary	Georgetown Creek	Lat 38°17'31", long 87°58'15", in N½ SW¼ sec. 33, T. 2 S., R. 5 E., at toe of dam of Georgetown, Ind. reservoir, 700 feet south of State Highway 64, at southeast edge of Georgetown, Ind.			9-20-65 9-20-65 9-30-65	a0.35 a0.40 a0.28
...Do.....	...do.....	Lat 38°17'32", long 87°58'15", in N½ SW¼ sec. 33, T. 2 S., R. 5 E., 5 feet upstream from confluence with Georgetown Creek, at southeast edge of Georgetown, Ind.			9-20-65 9-30-65	a0.17 a0.25
Wabash River basin						
White River	Wabash River	Lat 40°11'21", long 85°27'42", on line between secs. 13 and 14, T. 20 N., R. 10 E., at bridge on county road 400 W., 1½ miles west of Muncie, Ind.			9-13-65	23.0
...Do.....	...do.....	Lat 40°10'42", long 85°29'42", in SW¼ sec. 15, T. 20 N., R. 9 E., at bridge on county road out of Yorktown, Ind., ¼ mile north of Yorktown, Ind.			9-13-65	26.6
...Do.....	...do.....	Lat 40°12'28", long 85°31'48", in S½ sec. 20, T. 20 N., R. 9 E., at bridge on county road 175 S., ½ mile north of State Highway 32, and 2 miles west of Yorktown, Ind.			5-13-65 6-23-65 7-22-65 8-11-65 9-14-65	167 55.4 50.6 39.0 47.0
...Do.....	...do.....	Lat 40°07'02", long 85°34'34", on line between NW¼ sec. 12, Delaware County, and NE¼ sec. 11, Madison County, at bridge on county road 500 E., ½ mile north of State Highway 32, and 3/4 mile east of Chesterfield, Ind.			9-13-65	51.8
...Do.....	...do.....	Lat 40°06'49", long 85°37'34", in W½ sec. 9, T. 19 N., R. 8 E., at bridge on State Highway 32, in Indian Mounds State Park, and 2 miles east of Anderson, Ind.			9-13-65	56.2
...Do.....	...do.....	Lat 40°07'56", long 85°47'11", on line between sec. 6, T. 19 N., R. 7 E., and sec. 1, T. 19 N., R. 6 E., at bridge on county road 600 W., 4 miles east of Perkinsville, Ind.			5-13-65 6-22-65 7-30-65 8-10-65 9-13-65	301 153 95.9 98.9 83.3
...Do.....	...do.....	Lat 40°07'27", long 85°56'32", E½ sec. 3, T. 19 N., R. 5 E., at bridge on State Highway 37, at Strawtown, Ind.			6-1-65 6-14-65 7-15-65 8-12-65 9-13-65	282 183 125 102 945
...Do.....	...do.....	Lat 40°00'01", long 86°01'24", in S½ sec. 13, T. 18 N., R. 4 E., at bridge on State Highway 234, 2 miles south of Noblesville, Ind.			5-11-65 5-13-65 6-15-65 7-14-65 8-23-65 9-9-65	788 579 302 195 143 140
...Do.....	...do.....	Lat 39°49'57", long 86°11'03", in E½ sec. 15, T. 16 N., R. 3 E., at bridge on U. S. Highway 421 (Northwestern Avenue), in Indianapolis, Ind.			5-6-65 6-15-65 7-14-65 8-23-65 9-9-65	858 271 112 67.4 42.4

Discharge measurements made at miscellaneous sites during water year 1965--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wabash River basin--Continued				
Fall Creek	White River	Lat 39°54'12", long 85°59'19", in SW¼ sec. 20, T. 17 N., R. 5 E., 1200 feet below Geist Reservoir dam, and 3½ miles west of McCordsville, Ind.			6-15-65	110
...Do.....	...do.....	Lat 39°52'59", long 86°00'16", in N½ sec. 31, T. 17 N., R. 5 E., 125 feet below the bridge on 71st Street, 2 3/4 miles northwest of Castleton, Ind.			6-15-65	108
...Do.....	...do.....	Lat 39°52'09", long 86°02'18", in SE¼ sec. 35, T. 17 N., R. 4 E., at bridge on Shafter Avenue, at Fort Benjamin Harrison Military Reservation, and 1 mile north of Lawrence, Ind.			6-15-65	124
...Do.....	...do.....	Lat 39°50'02", long 86°05'00", in NE¼ sec. 18, T. 16 N., R. 4 E., at restriction 200 feet downstream from bridge on Keystone Avenue, in Indianapolis, Ind.			6-16-65	51.0
...Do.....	...do.....	Lat 39°48'25", long 86°08'46", in NE¼ sec. 25, T. 16 N., R. 3 E., 400 feet below College Avenue bridge in Indianapolis, Ind.			6-16-65	57.4
...Do.....	...do.....	Lat 39°46'50", long 86"11'12", in N½ sec. 3, T. 15 N., R. 3 E., 600 feet above mouth to White River, 800 feet east of 10th Street bridge, in Indianapolis, Ind.			6-17-65	86.6
White River	Wabash River	Lat 39°39'47", long 86°14'12", on line between secs. 7 and 18, T. 14 N., R. 3 E., at Southport Road bridge, 2½ miles east of West Newton, Ind.	1950		10-29-64 2-11-65 2-12-65 2-15-65 2-17-65 2-22-65 3-3-65 5-7-65 6-2-65 7-6-65 7-28-65 8-4-65 9-21-65	a244 a12,200 a11,700 a3,400 a2,180 a1,380 a7,770 a1,810 a1,040 a454 a331 a643 a611
...Do.....	...do.....	Lat 39°33'35", long 86°16'29", in NE¼ sec. 23, T. 13 N., R. 2 E., at bridge on State Highway 144, ¼ mile northwest of Waverly, Ind.			5-7-65 6-25-65 7-28-65 8-5-65 9-21-65	1,780 442 349 471 699
East Fork White Lick Creek	White River	Lat 39°38'47", long 86°20'47", in SE¼ SE¼ sec. 18, T. 14 N., R. 2 E., 50 feet above Mooresville Road bridge, .9 mile west of Friendswood, Ind.			10-30-64	1.10
White River	Wabash River	Lat 39°26'02", long 86°27'00", in W½ sec. 32, T. 12 N., R. 1 E., at State Highway 39 bridge, 1¼ miles northwest of Martinsville, Ind.		1925-27, c1931-32, 1946, 1948. d1956-58, d1963	7-27-65	468
...Do.....	...do.....	Lat 39°22'22", long 86°33'23", in NW¼ SW¼ sec. 20, T. 11 N., R. 1 W., 1,000 feet above county road bridge, 1½ miles southeast of Paragon, Ind.			10-29-65	307
...Do.....	...do.....	Lat 39°19'33", long 86°43'35", in NW¼ NW¼ sec. 11, T. 10 N., R. 3 W., at mouth of Mill Creek, 4 miles east of Ramona, Ind.			10-29-65	359
Richland Creek	White River	Lat 39°07'02", long 86°47'56", in SW¼ NW¼ sec. 23, T. 8 N., R. 3 W., at county road bridge, 3.2 miles northeast of Solsberry, Ind.			10-7-65	0.09
...Do.....	...do.....	Lat 39°04'58", long 86°50'43", in SE¼ SW¼ sec. 34, T. 8 N., R. 4 W., at county road bridge, 4 3/4 miles west of Solsberry, Ind.			10-7-65	0.46

Discharge measurements made at miscellaneous sites during water year 1965--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wabash River basin--Continued				
Richland Creek tributary	Richland Creek	Lat 39°03'46", long 86°51'07", in NE¼ NE¼ sec. 4, T. 7 N., R. 4 W., at county road bridge, 5¼ miles west of Solsberry, Ind.			10-7-65	0.41
Beech Creek	...do.....	Lat 39°03'31", long 86°44'47", in SW¼ NE¼ sec. 9, T. 7 N., R. 3 W., on State Highway 43 bridge, 1.8 miles southeast of Solsberry, Ind.			10-7-65	0.03
Richland Creek	White River	Lat 39°03'30", long 86°51'29", in NW¼ SW¼ sec. 9, T. 7 N., R. 4 W., at county road bridge, 5.8 miles southwest of Solsberry, Ind.			10-7-65	0.67
...Do.....	...do.....	Lat 38°59'50", long 86°56'05", in SE¼ SW¼ sec. 35, T. 7 N., R. 5 W., 200 feet below county road bridge, 2 miles south of Bloomfield, Ind.	109	1949	10-7-65	0.94
White River	Wabash River	Lat 38°47'42", long 87°14'28", in E½ sec. 12, T. 4 N., R. 8 W., at bridge on State Highway 358, and 1¼ miles southeast of Edwardsport, Ind.		1943-45 1947-50 1964	2-19-65 3-1-65 4-13-65 4-30-65	a6,370 a4,340 a14,200 a12,400
Big Blue River	East Fork White River	Lat 40°00'14", long 85°20'47", on line between secs. 23 and 24, T. 18 N., R. 10 E., 100 feet downstream from U. S. Highway 36 bridge, 5.2 miles north of New Castle, Ind.	17		6-24-65	4.32
...Do.....	...do.....	Lat 39°55'18", long 85°23'03", in W½ sec. 10, T. 17 N., R. 10 E., at State Highway 3 bridge, 0.3 mile northwest of New Castle, Ind.	45		6-24-65	11.0
...Do.....	...do.....	Lat 39°52'26", long 85°26'19", in SW¼ sec. 31, T. 17 N., R. 10 E., 500 feet upstream from county road bridge, 2¼ miles north of Spiceland, Ind.	69		6-24-65	24.4
...Do.....	...do.....	Lat 39°47'47", long 85°31'10", in SW¼ sec. 34, T. 16 N., R. 9 E., at U. S. Highway 40 bridge 0.1 mile east of Knightstown, Ind.	134		6-24-65	43.9
...Do.....	...do.....	Lat 39°42'41", long 85°39'07", on line between secs. 32 and 33, T. 15 N., R. 8 E., at county road bridge, 3.3 miles northeast of Morristown, Ind.	193		6-24-65	57.3
...Do.....	...do.....	Lat 39°36'28", long 85°45'02", in NE¼ sec. 4, T. 13 N., R. 7 E., 400 feet upstream from county road bridge, 6.1 miles northeast of Shelbyville, Ind.	296		6-24-65	71.4
...Do.....	...do.....	Lat 39°33'40", long 85°46'16", center sec. 20, T. 13 N., R. 7 E., 60 feet upstream from county road bridge, 2 miles north of Shelbyville, Ind.	302		6-24-65	73.2
Little Blue River	Big Blue River	Lat 39°31'42", long 85°46'02", in SE¼ sec. 32, T. 13 N., R. 7 E., 200 feet downstream from Morris Avenue bridge, in Shelbyville, Ind.	106		6-24-65	4.44
Flatrock River	East Fork White River	Lat 39°55'01", long 85°17'34", in NE¼ NE¼ sec. 20, T. 17 N., R. 11 E., 100 feet below county road 100 S. bridge, and 3 miles east of New Castle, Ind.			11-10-64	0.84
...Do.....	...do.....	Lat 39°25'30", long 85°34'11", in SW¼ SW¼ sec. 6, T. 11 N., R. 8 E., 800 feet above county road bridge, and 3 miles north of Adams, Ind.			11-10-64	9.80
Muscatatuck River	...do.....	Lat 38°48'22", long 85°40'34", in SW¼ sec. 7, T. 4 N., R. 8 E., 800 feet below county road bridge and Deputy gage, and 1¼ miles northwest of Deputy, Ind.			11-11-64	a0.13
...Do.....	...do.....	Lat 38°48'56", long 85°41'02", on line between sec. 1, T. 4 N., R. 7 E., and sec. 6, T. 4 N., R. 8 E., at Jefferson, Jennings, and Scott County lines, and 2¼ miles northwest of Deputy, Ind.		1964	11-11-64	a0.10

Discharge measurements made at miscellaneous sites during water year 1965--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wabash River basin--Continued				
Muscatatuck River	East Fork White River	Lat 38°49'29", long 85°43'41", in S½ sec. 34, T. 5 N., R. 7 E., 400 feet upstream from Crooked Creek, and 4 3/4 miles northwest of Deputy, Ind.		1964	10-21-64	a0.38
					11-10-64	a0.32
...Do.....	...do.....	Lat 38°48'52", long 85°45'33", in E½ sec. 5, T. 4 N., R. 7 E., 2.6 miles upstream from Cana Creek, and 4½ miles northeast of Crothersville, Ind.		1964	10-21-64	a0.51
					11-10-64	a0.81
...Do.....	...do.....	Lat 38°48'25", long 85°54'37", in N½ sec. 7, T. 4 N., R. 7 E., 0.4 mile upstream from Cana Creek, and 3 miles northwest of Crothersville, Ind.		1964	10-20-64	a0.73
					11-10-64	a0.97
...Do.....	...do.....	Lat 38°47'22", long 85°48'25", in NE¼ sec. 13, T. 4 N., R. 6 E., at bridge on county road, 1,000 feet downstream from White Oak Branch, and 1 3/4 miles east of Crothersville, Ind.		1964	11-9-64	a1.37
...Do.....	...do.....	Lat 38°45'44", long 85°56'09", in E½ SW¼ sec. 23, T. 4 N., R. 5 E., at county road bridge, 2.7 miles southeast of Tampico, Ind.			11-8-63	3.92
Rider ditch	Muscatatuck River	Lat 38°47'36", long 85°53'03", in SW¼ sec. 8, T. 4 N., R. 6 E., at county road bridge, 3.9 miles east of Tampico, Ind.			11-8-63	4.39
Smart ditch	...do.....	Lat 38°45'56", long 85°56'40", in SW¼ sec. 23, T. 4 N., R. 5 E., 500 feet below county road bridge, 2.4 miles southeast of Tampico, Ind.			11-8-63	1.55
Mud Creek	East Fork White River	Lat 38°29'12", long 87°07'30" in center sec. 28, T. 1 N., R. 7 W., at State Highway 356 bridge, and 1 mile west of Algiers, Ind.			11-5-64	0.03
Flat Creek	Patoka River	Lat 38°27'30", long 87°10'24", in center sec. 3, T. 1 S., R. 7 W., at bridge on unimproved road, 2 miles south of Algiers, Ind.			11-5-64	0.05
...Do.....	...do.....	Lat 38°27'55", long 87°09'40", in N½ NW¼ sec. 2, T. 1 S., R. 7 W., at bridge on unimproved road, 1½ miles southeast of Algiers, Ind.			11-5-64	0.03
...Do.....	...do.....	Lat 38°28'03", long 87°08'50", on line between SW¼ sec. 36 and SE¼ sec. 35, T. 1 N., R. 7 W., at bridge on county road 2 miles southeast of Algiers, Ind.			11-5-64	0
...Do.....	...do.....	Lat 38°27'31", long 87°07'51", on line NE¼ and SE¼ sec. 1, T. 1 S., R. 7 W., at bridge on county road, 2 miles west of Otwell, Ind.			11-5-64	0
Little Flat Creek	Flat Creek	Lat 38°25'43", long 87°04'25", in SE¼ NE¼ sec. 9, T. 1 S., R. 6 W., at bridge on Old Petersburg Road, 1½ miles southeast of Otwell, Ind.			11-5-64	b0.05
...Do.....	...do.....	Lat 38°26'13", long 87°03'59", on line SW¼ sec. 10 and NW¼ sec. 15, T. 1 S., R. 7 W., at bridge on State Highway 56, 2 miles southeast of Otwell, Ind.			11-5-64	0.02
...Do.....	...do.....	Lat 38°25'50", long 87°04'06", on line SW¼ sec. 15 and NW¼ sec. 22, T. 1 S., R. 6 W., at bridge on Dubois County road 300 N., 2½ miles southeast of Otwell, Ind.			11-5-64	b0.01
...Do.....	...do.....	Lat 38°24'01", long 87°03'36", in E½ sec. 27, T. 1 S., R. 6 W., at bridge on Dubois County road 155 N., 2 miles northeast of White Sulphur Springs, Ind.		1964	10-19-64	0
Flat Creek tributary	Flat Creek	Lat 38°23'39", long 87°02'41", in S½ sec. 26, T. 1 S., R. 6 W., at bridge on Dubois County road 750 W., 2 3/4 miles southwest of Ireland, Ind.		1964	10-19-64	b0.02
					11-5-64	0

Discharge measurements made at miscellaneous sites during water year 1965--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Wabash River basin--Continued						
Flat Creek	Patoka River	Lat 38°23'08", long 87°03'30", in E½ sec. 34, T. 1 S., R. 6 W., at bridge on Dubois County road 50 N., 1 3/4 miles east of White Sulphur Springs, Ind.		1964	10-19-64 11-5-64	b0.03 0.05
Cup Creek	...do.....	Lat 38°19'00", long 87°07'14", in NW¼ sec. 30, T. 2 S., R. 6 W., at State Highway 257 bridge, ½ mile southwest of Pikeville, Ind.		1964	10-19-64	0
Beadens Creek	Cup Creek	Lat 38°18'46", long 87°08'45", in E½ sec. 26, T. 2 S., R. 7 W., at culvert on State Highway 64, 2½ miles southeast of Augusta, Ind.		1964	11-6-64	0.07
Cup Creek	Patoka River	Lat 38°19'58", long 87°07'21", 200 feet above confluent to the Patoka River, just off an unimproved county road, 1 mile northwest of Pikeville, Ind.			10-19-64	b0.05
Patoka River	Wabash River	Lat 38°19'54", long 87°07'28" in NW¼ NW¼ sec. 19, T. 2 S., R. 6 W., just below mouth of Cup Creek, ½ mile downstream from State Highway 257 covered bridge, 1 mile northwest of Pikeville, Ind.			10-19-64	1.12
...Do.....	...do.....	Lat 38°19'40", long 87°07'00", in center sec. 19, T. 2 S., R. 6 W., at covered bridge on State Highway 257, ½ mile north of Pikeville, Ind.			11-5-64 11-6-64	6.04 6.23
Patoka River tributary	Patoka River	Lat 38°19'40", long 87°09'10", in SE¼ sec. 14, T. 2 S., R. 7 W., near Pike County State Forest at bridge on unimproved road, and 2 miles east of Augusta, Ind.			10-19-64	0.08
Lick Creek	...do.....	Lat 38°23'34", long 87°09'30", on line secs. 26 and 35, T. 1 S., R. 7 W., at bridge on Bruster Branch Road, 1½ miles southwest of White Oak, Ind.			10-19-64	0
Lick Creek tributary	Lick Creek	Lat 38°23'13", long 87°09'20", on line NE¼ and NW¼ sec. 35, T. 1 S., R. 7 W., 1 3/4 miles south White Oak, Ind.			10-19-64	0
Bruster Branch	Patoka River	Lat 38°08'26", long 87°11'02", in NE¼ NE¼ sec. 33, T. 1 S., R. 7 W., at bridge on Bruster Branch Road, 1 3/4 miles east of Winslow, Ind.			10-19-64	0
Mill Creek	...do.....	Lat 38°21'20", long 87°10'51", in W½ sec. 10, T. 2 S., R. 7 W., at culvert on State Highway 364, 1 3/4 miles northeast of Augusta, Ind.			10-19-64	0.28
Stone Coe Creek	...do.....	Lat 38°23'40", long 87°13'12", on line secs. 29 and 30, T. 1 S., R. 7 W., at bridge on State Highway 61, 1 mile north of Winslow, Ind.		1964	10-19-64 11-6-64	0.60 0.20
Barren ditch	...do.....	Lat 38°20'15", long 87°13'11 , on line secs. 17 and 18, T. 2 S., R. 7 W., at bridge on Scottsburg Road, 1½ miles east of Arthur, Ind.			11-6-64	0.27
...Do.....	...do.....	Lat 38°21'16", long 87°14'12", in NW¼ SW¼ sec. 7, T. 2 S., R. 7 W., at bridge on State Highway 61, 1¼ miles northeast of Arthur, Ind.			11-6-64	0.45
...Do.....	...do.....	Lat 38°22'06", long 87°15'58", on line secs. 1 and 2, T. 2 S., R. 8 W., at bridge on unimproved county road, ½ mile east of Muren, Ind.			10-19-64 11-6-64	0.68 0.74
Barren ditch tributary	Barren ditch	Lat 38°22'01", long 87°16'19", in SW¼ sec. 2, T. 2 S., R. 8 W., at bridge on county road 0.2 mile west of Muren, Ind.			11-6-64	0.05
Flat Creek	Patoka River	Lat 38°25'49", long 87°18'32", in NW¼ sec. 16, T. 1 S., R. 8 W., at bridge on State Highway 57, 1 mile north of Glezen, Ind.		1964	10-19-64	0
South Fork Patoka River	...do.....	Lat 38°14'37", long 87°12'17", in SE¼ sec. 20, T. 3 S., R. 7 W., at bridge on county road, 2.1 miles north of Scalesville, Ind.			10-20-64	0.17

Discharge measurements made at miscellaneous sites during water year 1965--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Wabash River basin--Continued				
South Fork Patoka River tributary	South Fork Patoka River	Lat 38°13'44", long 87°10'19", in N½ sec. 27, T. 3 S., R. 7 W., at bridge on county road, 2½ miles northwest of Scalesville, Ind.			10-20-64	b0.01
...Do.....	...do.....	Lat 38°14'18", long 87°10'55", on line between SE¼ and NE¼ sec. 21, T. 3 S., R. 7 W., at bridge on county road, 2 3/4 miles northeast of Scalesville, Ind.			10-20-65	0.22
South Fork Patoka River	Patoka River	Lat 38°14'45", long 87°11'24", on line between secs. 16 and 21, T. 3 S., R. 7 W., at county road bridge, 2 3/4 miles southwest of Stendall, Ind.			10-20-64	0.44
...Do.....	...do.....	Lat 38°15'56", long 87°13'26", on line between secs. 5 and 6. T. 3 S., R. 7 W., at bridge on Scottsburg Road, at Scottsburg, Ind.			10-20-64	0.44
South Fork Patoka River tributary	South Fork Patoka River	Lat 38°18'10", long 87°13'20", on line between SE¼ sec. 30 and NE¼ sec. 31, T. 2 S., R. 7 W., at bridge on Liberty Road, 1 mile north of Scottsburg, Ind.			10-20-64	1.18
Rough Creek	...do.....	Lat 38°17'08", long 87°14'32", on line between sec. 6, T. 3 S., R. 7 W., and sec. 1, T. 3 S., R. 8 W., at county road bridge, 1¼ miles west of Scottsburg, Ind.			10-20-64	1.30
Honey Creek	...do.....	Lat 38°17'22", long 87°15'47", on line between sec. 35, T. 2 S., R. 8 W., and sec. 2, T. 3 S., R. 8 W., at county road bridge, ¼ mile west of Enos Corner and 2½ miles north of Spurgeon, Ind.			10-20-64	0.03
Hat Creek	..do.....	Lat 38°18'48", long 87°16'12", in center sec. 26, T. 2 S., R. 8 W., at bridge on county road ½ mile northwest of Coe, Ind. and 4 miles north of Spurgeon, Ind.			10-20-64	0.01
Wheeler Creek	...do.....	Lat 38°17'40", long 87°17'16", in SE¼ sec. 34, T. 2 S., R. 8 W., at bridge on mine company road, 1½ miles west of Enos Corner, Ind., and 3 miles northwest of Spurgeon, Ind.			10-20-64	0
Lick Creek	Patoka River	Lat 38°18'37", long 87°18'26", in S½ sec. 28, T. 2 S., R. 8 W., at bridge on Kays Road, 3 miles southeast of Oakland City, Ind.			10-20-64 11-6-64	1.57 0.48
South Fork Patoka River	...do.....	Lat 38°20'32", long 87°18'09", in W½ sec. 16, T. 2 S., R. 8 W., at bridge on State Highway 64, 1 3/4 miles east of Oakland City, Ind.			10-19-64 11-6-64	5.31 3.77
Patoka River	Wabash River	Lat 38°22'38", long 87°22'14", in SE¼ sec. 31, T. 1 S., R. 8 W., below mouth of South Fork Patoka River, at bridge on Miller Road, 3 miles north of Oakland City, Ind.			10-19-64 11-5-64	7.64 7.31
East Fork Keg Creek	Keg Creek	Lat 38°19'40", long 87°22'02", in NW¼ sec. 24, T. 2 S., R. 9 W., at bridge on State Highway 64, 1 mile southwest of Oakland City, Ind.			10-20-64	0
Patoka River	Wabash River	Lat 38°24'16", long 87°27'13", in N½ sec. 30, T. 1 S., R. 9 W., at intake into Houchins ditch, 0.6 mile south of Wheeling, Ind.			11-5-64	6.68
...Do.....	...do.....	Lat 38°24'08", long 87°35'09", in NW¼ sec. 25, T. 1 S., R. 11 W., at bridge on old U. S. Highway 41, at the edge of Patoka, Ind., and at former gaging house.	830	c1934-40	11-5-64	8.14

Discharge measurements made at miscellaneous sites during water year 1965--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Illinois River basin						
Horace Miller ditch	Kankakee River	Lat 41°32'05", long 86°29'48", in S½ sec. 26, T. 36 N., R. 1 W., at Pierce Road bridge, 3¼ miles west of North Liberty, Ind.			11-5-64	1.70

a Made by Indiana Department of Natural Resources.
b Estimate.
c Operated as a continuous record station.
d High-water measurements for "White River near Centerton, Ind." gage.

GPO 826-027-14

For several years records of the water-surface elevations of many of the lakes in Indiana have been collected by the Geological Survey under cooperative agreement with the Indiana Department of Natural Resources. Basic data for a few selected lakes have been published in WSP 1363, entitled "Hydrology of Indiana Lakes." Records which have not been published are available in the files of the District Office of the Geological Survey in Indianapolis, Indiana. In general, the records are based on once-daily readings of a staff gage by a local observer and consist of daily, monthly, and yearly mean water-surface elevations as well as graphs showing the fluctuation in elevation. Discharge measurements, made at the outflow, are also available in some instances.

The lakes for which records have been collected are listed in the following table. The established level, sometimes referred to as the legal level, is that elevation set by the courts to which the average level of the lake is to be held; it is normally set at about the average level that has prevailed for a number of years prior to the establishment of the level.

Lakes in the Ohio River basin for which records are available

Lake	County	Drainage area (square miles)	Surface area (acres)	Established level**	Records available
Bayou drain basin					
Hovey Lake near Mt. Vernon	Posey	6.34	253	-	1950-64
Wabash River basin					
Banning Lake near North Webster	Kosciusko	0.58	12	837.50	1945-65
Baugher Lake near Washington Center	Noble	36.4	32	878.52	1945-51
Beaver Dam Lake near Silver Lake	Kosciusko	1.89	146	868.95	1947-53
Big Barbee Lake near North Webster	Kosciusko	44.8	302	837.50	1945-65
Big Chapman Lake near Warsaw a/	Kosciusko	4.59	474	827.75	1945-65
Big Lake near Wolflake	Noble	6.77	228	897.83	1943-65
Blue Lake near Churubusco	Whitley	3.47	239	850.28	1946-65
Bruce Lake at Lake Bruce	Pulaski	5.19	245	723.69	1943-53
Carr Lake near Claypool	Kosciusko	2.56	79	848.88	1947-53
Cedar Lake at Tri-Lakes	Whitley	1.62	131	901.90	1943-49
Center Lake at Warsaw	Kosciusko	0.75	120	803.86	1945-65
Crooked Lake near Wolflake	Noble	1.32	206	905.69	1943-53
Crystal Lake near Atwood	Kosciusko	0.38	76	789.69	1945-51
Diamond Lake near Silver Lake	Kosciusko	5.35	79	-	1954-65
Everett Lake near Levert	Allen	2.13	43	835.13	1946-65
Fish Lake near Warsaw	Kosciusko	3.59	15	845.52	1951-65
Fletcher Lake at Fletcher	Fulton	0.62	45	783.20	1946-53
Gilbert Lake near Washington Center	Noble	0.39	*37	-	1954-65
Goose Lake near Lorane	Whitley	1.42	84	910.96	1945-53
Hill Lake near Silver Lake	Kosciusko	0.56	67	871.50	1952-65
Hoffman Lake at Atwood	Kosciusko	7.14	180	785.85	1945-53
Horseshoe Lake near Washington Center	Noble	1.39	18	901.80	1945-65
Irish Lake near North Webster	Kosciusko	50.8	135	837.50	1945-65
James Lake at Oswego	Kosciusko	-	271	836.40	1943-65
Kuhn Lake near North Webster	Kosciusko	3.74	121	837.50	1945-65
Lake Manitou at Rochester	Fulton	38.1	631	778.41	1943-65
Langenbaum Lake near Monterey	Starke	0.98	48	717.96	1954-65
Little Barbee Lake near North Webster	Kosciusko	48.8	56	837.50	1945-65
Little Chapman Lake near Warsaw	Kosciusko	7.78	128	827.75	1945-65
Little Wilson Lake near Larwill	Whitley	0.59	8	865.39	1946-52
Long Lake at Laketon	Wabash	0.64	48	751.19	1946-51, 1959-65
Loon Lake at Ormas	Whitley	11.2	222	895.14	1943-65
Loon Lake near Silver Lake	Kosciusko	2.70	40	865.74	1947-53
Lost Lake near Culver d/	Marshall	10.2	40	732.00	1954-65
Lukens Lake near Disko	Wabash	0.99	46	-	1948-49, 1959-65
McClures Lake near Silver Lake	Kosciusko	0.45	32	865.85	1945-52
Maxinkuckee Lake at Culver	Marshall	9.48	1,650	733.12	1943-65
Muskelonge Lake near Warsaw	Kosciusko	11.1	32	842.67	1943-53, 1959-65
New Lake near Etna	Whitley	0.49	50	903.91	1945-53
North Little Lake at Silver Lake	Kosciusko	2.81	12	861.73	1947-65
Nyona Lake near Greenoak	Fulton	6.47	104	793.91	1946-65
Ogle Lake near Nashville	Brown	1.03	20	-	1954-65
Old Lake near Etna	Whitley	3.13	32	898.07	1949-65
Oswego Lake at Oswego	Kosciusko	115.0	47	836.40	1943-65
Palestine Lake at Palestine	Kosciusko	29.9	290	-	1954-65
Pike Lake at Warsaw	Kosciusko	40.4	203	805.64	1954-65
Ridinger Lake near Pierceton	Kosciusko	34.9	136	843.12	1943-65
Robinson Lake near Pierceton	Kosciusko	6.95	59	851.09	1946-51
Rock Lake near Akron	Kosciusko	1.78	56	847.29	1949-65
Round Lake at Tri-Lakes	Whitley	0.83	125	901.90	1946-53
Sawmill Lake near North Webster	Kosciusko	51.9	23	837.50	1945-65

Lakes in the Ohio River basin for which records are available--Continued

Lake	County	Drainage area (square miles)	Surface area (acres)	Established level**	Records available
Wabash River basin--Continued					
Sechrist Lake near North Webster	Kosciusko	0.42	81	837.50	1945-65
Sherburn Lake near Pierceton e/	Kosciusko	5.42	15	-	1954-65
Shoe Lake near Oswego	Kosciusko	0.47	40	841.57	1946-53
Shriner Lake at Tri-Lakes	Whitley	1.12	111	907.04	1943-65
Silver Lake at Silver Lake	Kosciusko	4.47	102	861.73	1947-65
Smalley Lake near Washington Center	Noble	32.6	69	-	1943-65
South Mud Lake near Fulton	Fulton	4.74	94	793.42	1946-65
Starve Hollow Lake near Vallonia	Jackson	6.14	145	-	1946-61, 1963-65
Tippecanoe Lake at Oswego	Kosciusko	115.0	816	836.40	1943-65
Town Lake near Akron	Fulton	1.74	23	-	1949-50
Troy Cedar Lake near Lorane	Whitley	5.51	93	905.41	1945-52
Versailles Lake near Versailles	Ripley	167.0	232	-	1957-65
Webster Lake at North Webster	Kosciusko	54.0	774	852.75	1943-65
Wilmot Pond at Wilmot b/	Noble	39.7	10	-	1945-51
Wilson Lake near Larwill	Whitley	0.49	29	865.39	1946-52
Winona Lake at Warsaw	Kosciusko	32.1	529	811.06	1943-65
Yellow Creek Lake near Silver Lake	Kosciusko	8.50	151	860.50	1945-53
Zink Lake near Rochester	Fulton	0.26	19	810.68	1952-55
Lakes in the St. Lawrence River basin for which records are available					
Streams tributary to Lake Michigan					
Adams Lake near Wolcottville	Lagrange	5.69	267	953.59	1964-65
Atwood Lake near Wolcottville	Lagrange	1.31	170	899.99	1948-53
Bass Lake near Angola	Steuben	0.60	61	979.68	1954-65
Bear Lake at Wolflake	Noble	6.12	136	894.60	1943-65
Big Long Lake near Stroh	Lagrange	4.13	388	956.21	1954-65
Big Otter Lake near Fremont	Steuben	19.8	69	965.18	1946-53
Big Turkey Lake at Stroh	Lagrange	34.6	450	926.61	1945-65
Bixler Lake at Kendallville	Noble	3.63	120	963.65	1945-65
Blackman Lake near Wolcottville	Lagrange	1.4	67	974.20	1953-59
Bower Lake near Pleasant Lake	Steuben	87.5	25	948.50	1946-65
Cedar Lake near Ontario	Lagrange	1.66	120	871.90	1948-51
Cedar Lake near Waterloo	DeKalb	23.4	28	896.76	1943-56
Cree Lake near Kendallville	Noble	4.90	58	945.23	1949-65
Crooked Lake at Crooked Lake	Steuben	11.9	733	988.17	1946-65
Dallas Lake near Wolcottville	Lagrange	39.4	283	897.36	1945-65
Dewart Lake near Leesburg	Kosciusko	7.88	551	867.70	1945-65
Diamond Lake near Wawaka	Noble	2.82	105	-	1946-65
Duely Lake near Cromwell c/	Noble	11.2	21	876.68	1953-65
Eagle Lake near Kimmel	Noble	1.77	81	-	1946-48
Emma Lake near Emma	Lagrange	14.8	42	880.87	1954-65
Engle Lake near Ligonier	Noble	3.22	48	-	1956-65
Fish Lake near Plato	Lagrange	10.8	100	936.50	1945-65
Fish Lake near Scott	Lagrange	6.14	139	814.42	1954-65
Flatbelly Lake near Syracuse	Kosciusko	4.4	326	-	1964-65
Fox Lake near Angola	Steuben	1.13	142	1,018.83	1946-53
Golden Lake near Pleasant Lake	Steuben	92.4	119	948.50	1946-65
Gordy Lake near Cromwell	Noble	8.82	31	876.68	1953-65
Hackenburg Lake near Wolcottville	Lagrange	54.8	42	897.36	1945-65
Harper Lake near Washington Center	Noble	2.67	11	878.25	1946-65
Heaton Lake near Elkhart	Elkhart	8.78	87	767.30	1946-53
High Lake near Wolflake	Noble	4.75	123	896.35	1961-65
Hindman Lake near Washington Center	Noble	8.00	13	878.25	1946-65
Hogback Lake near Angola	Steuben	102.0	146	948.50	1946-65
Howard Lake near Angola	Steuben	3.94	27	977.34	1954-63
Hunter Lake near Middlebury	Elkhart	0.72	99	856.90	1946-53
Indian Lake near Corunna	DeKalb	3.76	56	-	1957
Indiana Lake near Bristol	Elkhart	0.53	122	759.73	1946-53
Jimmerson Lake at Nevada Mills f/	Steuben	47.0	283	964.66	1946-65
Knapp Lake near Washington Center	Noble	5.64	88	878.25	1946-65
Lake Gage at Panama	Steuben	17.2	324	954.25	1946-65
Lake George at Hobart	Lake	125.0	282	602.23	1946-65
Lake George at Jamestown	Steuben	12.3	488	985.28	1946-65
Lake James at Lake James	Steuben	43.0	1,034	964.96	1943-49
Lake of the Woods near Helmer	Lagrange	5.36	136	951.09	1951-65
Lake Pleasant near Nevada Mills	Steuben	2.51	424	-	1954-65
Latta Lake near Rome City	Noble	4.37	42	918.71	1954-65
Lime Lake at Panama	Steuben	17.4	44	954.25	1946-65
Little Long Lake at Kendallville	Noble	4.34	71	-	1954-65
Little Otter Lake near Fremont	Steuben	14.3	34	965.18	1946-53

Lakes in the St. Lawrence River basin for which records are available--Continued

Lake	County	Drainage area (square miles)	Surface area (acres)	Established level**	Records available
Streams tributary to Lake Michigan--Continued					
Little Turkey Lake at Elmira	Lagrange	56.0	135	925.72	1945-65
Long Lake at Moonlight	Steuben	70.8	92	-	1946-65
Long Lake near Burr Oak	Noble	12.0	40	-	1954-65
Loon Lake near Angola	Steuben	2.73	138	1,011.98	1954-65
Lower Long Lake near Albion	Noble	3.96	66	889.81	1946-52
McClish Lake near Helmer	Lagrange	1.36	35	951.09	1951-65
Martin Lake near Valentine	Lagrange	5.36	26	-	1945-65
Messick Lake near Wolcottville	Lagrange	55.8	68	897.36	1945-65
Moss Lake near Washington Center	Noble	5.90	9	878.25	1946-65
Mud Lake near Orland	Steuben	1.64	25	939.01	1956-65
Muncie Lake near Burr Oak	Noble	43.4	47	-	1954-65
North Twin Lake near Howe	Lagrange	1.99	135	843.56	1953-65
Olin Lake near Valentine	Lagrange	6.12	103	899.45	1945-65
Oliver Lake near Valentine	Lagrange	11.3	362	899.45	1945-65
Otter Lake near Flint	Steuben	6.82	118	934.15	1954-65
Papakeechie Lake near Syracuse	Kosciusko	5.3	300	-	1964-65
Pigeon Lake near Angola	Steuben	30.6	61	988.24	1954-63
Pleasant Lake at Pleasant Lake	Steuben	0.94	53	963.52	1946-65
Pleasant Lake near Wolflake	Noble	0.30	20	-	1952-53
Pretty Lake near Stroh	Lagrange	2.91	184	965.50	1949-53, 1963-65
Rider Lake near Cromwell	Noble	9.12	5	876.68	1953-65
Rivir Lake near Burr Oak	Noble	18.7	24	-	1954-65
Round Lake at Kendallville	Noble	3.60	99	-	1954-65
Royer Lake near Plato	Lagrange	4.91	69	936.50	1952-65
Sacarider Lake near Kendallville	Noble	2.42	33	-	1954-63
Sand Lake near Burr Oak	Noble	15.0	47	893.56	1946-51
Sanford Lake near Cosperville	Noble	104.0	114	-	1948-65
Shipshewana Lake near Shipshewana	Lagrange	4.00	202	852.04	1951-65
Silver Lake near Angola	Steuben	3.72	238	959.40	1945-53
Silver Lake near Wolflake	Noble	0.32	34	-	1953-63
Simonton Lake near Elkhart	Elkhart	4.37	282	772.19	1946-65
Skinner Lake near Albion	Noble	13.8	125	927.74	1945-65
Snow Lake near Lake James	Steuben	36.3	310	964.96	1943-49
South Twin Lake near Howe	Lagrange	3.13	116	843.56	1953-65
Sparta Lake at Kimmel	Noble	0.26	31	888.50	1946-51
Steinbarger Lake near Cosperville	Noble	25.3	73	-	1948-65
Stone Lake near Scott	Lagrange	1.32	152	-	1954-65
Story Lake near Hudson	DeKalb	2.48	77	942.20	1946, 1954-65
Sylvan Lake at Rome City	Noble	31.5	575	916.20	1943-65
Syracuse Lake at Syracuse	Kosciusko	37.4	414	858.87	1943-65
Tamarack Lake near Cosperville	Noble	15.1	50	-	1948-65
Upper Long Lake near Wolflake	Noble	2.03	86	-	1956-65
Village Lake near Cromwell	Noble	11.9	12	876.68	1953-65
Wabee Lake near Milford	Kosciusko	13.4	187	829.79	1946-53
Waldron Lake near Cosperville	Noble	131.0	216	-	1948-65
Wall Lake near Orland	Lagrange	1.43	141	942.25	1953-54
Wawasee Lake near Wawasee	Kosciusko	36.1	3,060	858.89	1943-65
Westler Lake near Wolcottville	Lagrange	37.3	88	897.36	1945-65
Witmer Lake near Wolcottville	Lagrange	35.8	204	897.36	1945-65
Wolf Lake at Hammond	Lake	5.72	999	-	1946-49
Wolf Lake near Goshen	Elkhart	0.87	100	813.00	1947-57
Streams tributary to Lake Erie					
Ball Lake near Hamilton	Steuben	11.6	87	-	1961-65
Clear Lake at Clear Lake	Steuben	6.86	800	1,037.38	1943-65
Hamilton Lake at Hamilton	Steuben	16.5	802	898.83	1943-65
Long Lake near Ray	Steuben	2.80	154	-	1961-63
Round Lake at Clear Lake	Steuben	7.25	30	1,037.38	1943-65
Lakes in the Upper Mississippi River basin for which records are available					
Illinois River basin					
Bass Lake at Bass Lake	Starke	3.66	1,405	713.65	1943-65
Cedar Lake at Cedar Lake	Lake	8.05	781	-	1943-65
Clear Lake at LaPorte	LaPorte	0.35	106	798.20	1942-49, 1952-65
Dalecarlia Lake near Creston	Lake	19.4	193	-	1947-52
Eagle Lake near Ober	Starke	26.2	24	713.25	1946-53
Eliza Lake near Beatrice	Porter	2.69	45	-	1954-65

Lakes in the Upper Mississippi River basin for which records are available--Continued

Lake	County	Drainage area (square miles)	Surface area (acres)	Established levels**	Records available
Illinois River basin--Continued					
Flint Lake near Valparaiso	Porter	2.88	86	-	1946-65
Hudson Lake at Hudson Lake	LaPorte	3.06	432	763.09	1946-65
J. C. Murphy Lake near Morocco	Newton	16.7	1,515	-	1952-61
Koontz Lake at Koontz Lake	Starke	6.46	346	714.56	1943-65
Lake of the Woods near Bremen	Marshall	11.6	416	803.85	1945-65
Long Lake near Valparaiso	Porter	1.25	65	797.66	1947-52
Lower Fish Lake near Stillwell	LaPorte	10.5	134	688.22	1946-53
Mill Pond Lake and Kreighbaum Lake near Twin Lakes.	Marshall	4.86	168	767.75	1945-53
Myers Lake near Twin Lakes	Marshall	1.66	96	768.69	1945-53
North Chain Lake at Lydick	St. Joseph	4.50	88	721.17	1946-53
Pine Lake at LaPorte	LaPorte	5.88	564	796.20	1946-65
Pretty Lake near Plymouth	Marshall	0.91	97	787.36	1954-65
Riddles Lake near Lakeville	St. Joseph	13.5	77	817.50	1946-65
Ringneck Lake near Medaryville	Jasper	-	1,400	-	1949-55
Saugany Lake near Rolling Prairie	LaPorte	0.82	74	781.21	1946-50
Silver Lake near Rolling Prairie	LaPorte	0.82	54	795.20	1946-65
Skitz Lake near Knox	Starke	-	1,000	-	1949-53
South Chain Lake at Westfield	St. Joseph	6.00	90	717.04	1946-53
Spectacle (Loomis) Lake near Valparaiso	Porter	0.89	62	812.82	1946-53
Stone Lake at LaPorte	LaPorte	5.88	140	796.20	1946-65
Upper Fish Lake near Stillwell	LaPorte	9.71	139	688.22	1946-53
Wauhob Lake near Valparaiso	Porter	0.29	21	-	1946-65
Wharton Lake near South Bend	St. Joseph	1.75	-	-	1960-65

* Revised.
** Elevation, in feet, above mean sea level.
a Formerly published as Chapman Lake near Warsaw.
b Formerly published as Rider Lake at Wilmot.
c Formerly published as Duley Lake near Cromwell, Druley Lake near Cromwell and Druely Lake near Cromwell.
d Formerly published as Hawks Lake near Culver.
e Formerly published as Johnson Lake near Pierceton.
f Formerly published as Jimerson Lake at Nevada Mills.

United States Department of the Interior
Geological Survey-Water Resources Division

WATER RESOURCES DATA FOR INDIANA

1965

Part 2. Water Quality Records

Prepared in cooperation with

Indiana Department of Natural Resources
Indiana Board of Health
Indiana State Highway Commission
Ohio River Valley Water Sanitation Commission

[*Symbols after station name designate type of data: c, chemical; t, water temperature; s, sediment*]

Part 2. Water Quality Records

INTRODUCTION

The quality-of-water investigations of the U.S.Geological Survey are concerned with the chemical and physical characteristics of surface- and ground-water supplies of the Nation. The basic records for the 1965 water year for quality of surface waters within the State of Indiana are given in this report. For convenience and interest, there are also records for a few water quality stations in bordering states. The data were collected and computed by the Water Resources Division of the U.S. Geological Survey, under the direction of George W. Whetstone, district chemist, and Charles R. Collier, acting district engineer, Quality of Water Branch, succeeded by John J. Molloy, district chief, Water Resources Division, Columbus, Ohio. The records of stream discharge and many of the temperature records were provided by Malcolm D. Hale, district chief, Indianapolis, Indiana.

The Geological Survey began publishing annual basic records of chemical quality, water temperatures, and suspended sediment for the 1941 through 1963 water years in the water-supply paper series, "Quality of Surface Waters of the United States." Each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records for Indiana are contained in Parts 3 and 4 and Parts 5 and 6 of the water-supply series. These publications are available in most public libraries. The water-quality records for Indiana were released in "Water Quality Records in Indiana and Illinois, 1964." The records for the 1964 and 1965 water years will be published in Geological Survey Water-Supply Papers Nos. 1956, 1957, and 1958.

COOPERATION

The work was done under cooperative agreements between the U.S. Geological Survey and the following organizations:

Indiana Department of Natural Resources, John E. Mitchell, director, through Bureau of Water and Mineral Resources W. J. Andrews, deputy director.

Indiana Board of Health, A. C. Offutt, commissioner, and B. A. Poole, director, Bureau of Environmental Sanitation.

Indiana State Highway Commission, Robert F. Whitehead, chairman, Martin L. Hayes, executive director, F. L. Ashbaucher, chief engineer.

Ohio River Valley Water Sanitation Commission, E. J. Cleary, executive director and chief engineer.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms and abbreviations of water-quality and hydrologic data, as used in the text and tabular data of this report, are defined as follows:

Acre-foot (ac-ft) is a quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or 325,851 gallons. The term is commonly used in measuring volumes of water used or stored.

Discharge, in its simplest concept, means outflow; therefore, the use of this term is not restricted as to course or location, and it can be applied to describe the flow of water from a pipe or from a drainage basin. It is also correct to speak of the discharge of a canal or stream into a lake, a stream, or an ocean.

Daily mean discharge is the mean discharge for one day.

Mean daily discharge is the arithmetic mean discharge for the same day during a specific period of years.

Mean discharge is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge (at time of sampling). If the discharge value at the time of sampling is reported instead of daily mean value, the heading of the discharge column will be "Discharge (cfs)."

Equivalents per million (epm) is a unit for expressing the concentration of chemical constituents in terms of the interreacting values of the electrically charged particles, or ions, in solution. One equivalent per million of a positively charged ion will react with one equivalent per million of a negatively charged ion. Parts per million is converted to equivalents per million by multiplying by the reciprocal of the combining weight of the ion.

Conversion factors: Parts per million to equivalents per million

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3}).....	0.11119	Hydroxide (OH^{-1})....	0.05880
Arsenic (As^{+3}).....	.04004	Iodide (I^{-1}).....	.00788
Barium (Ba^{+2}).....	.01456	Iron (Fe^{+3}).....	.05372
Beryllium (Be^{+2})....	.22192	Lead (Pb^{+2}).....	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1}).....	.14411
Bromide (Br^{-1}).....	.01251	Magnesium (Mg^{+2})....	.08226
Cadmium (Cd^{+2}).....	.01779	Manganese (Mn^{+2})....	.03640
Calcium (Ca^{+2}).....	.04990	Nickel (Ni^{+2}).....	.03406
Carbonate (CO_3^{-2})...	.03333	Nitrate (NO_3^{-1}).....	.01613
Chloride (Cl^{-1}).....	.02821	Phosphate (PO_4^{-3})...	.03159
Chromium (Cr^{+6}).....	.11539	Potassium (K^{+1}).....	.02557
Cobalt (Co^{+2}).....	.03394	Sodium (Na^{+1}).....	.04350
Copper (Cu^{+2}).....	.03148	Strontium (Sr^{+2})....	.02282
Fluoride (F^{-1}).....	.05264	Sulfate (SO_4^{-2}).....	.02082
Hydrogen (H^{+1}).....	.99209	Zinc (Zn^{+2}).....	.03060

Hardness of water is the property of water attributable to the presence of alkaline earths and is expressed as equivalent calcium carbonate ($CaCO_3$). Hardness is a physical-chemical characteristic, not a substance.

Particle size is the diameter, in millimeters (mm) of suspended sediment or bed material determined by sieve and sedimentation methods.

Particle-size classification is the classification recommended by the American Geophysical Union Subcommittee on sediment terminology (Lane and others, 1947, p. 937). According to this classification, a particle having a diameter:

Less than 0.004 mm is clay.
Between 0.004 and 0.062 mm is silt.
Between 0.062 and 2.0 mm is sand.

Parts per million (ppm) is a unit for expressing the concentration of chemical constituents by weight, usually as grams of constituents per million grams of a solution. In the laboratory the results are expressed in weights of solutes in a given volume of water. To express the results

in parts per million, the data must be converted. For most waters this conversion is made by assuming that a liter of water weighs 1 kilogram; and thus milligrams per liter is equivalent to parts per million. Parts per million, for suspended sediment, is computed as 1 million times the ratio of the weight of sediment to the weight of the mixture of water and sediment.

Sediment is solid material both mineral and organic that is transported by, suspended in, or deposited by water. The amount, characteristics and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are: degree of slope, length of slope, soil characteristics, land usage, and amount and intensity of precipitation.

Sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks and dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the concentration of dissolved solids in the water. The following general relations are applicable:

$$\text{Specific conductance} \times (0.65 \pm 0.05) = \text{ppm dissolved solids;}$$

$$\frac{\text{Specific conductance}}{100} = \frac{\text{total epm}}{2}$$

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Thermograph is a thermometer for continuously recording variations of temperature automatically on a chart. The term "temperature recorder" is used to indicate the location of the thermograph in station descriptions in the table headings.

Tons per day is a quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

COLLECTION AND EXAMINATION OF SAMPLES

Water samples for chemical and physical analyses usually are collected at or near points on streams where gaging stations are maintained by the Geological Survey for measurement of discharge. These discharge records are in Part 1 of this volume and are used in the computation of the chemical and sediment loads.

Solutes

The methods of collecting and analyzing water samples are described by Rainwater and Thatcher in Water-Supply Paper 1454. Outside of analysis of each daily samples, no single analytical program is applicable to all problems related to the study of water quality. For daily sampling stations the analyses reported in this publication were made for days of maximum dissolved-solids content occurring during each 10-day period of each month, and the minimum dissolved-solids content for each month, as indicated by measurements of the specific conductance of each daily sample. Samples collected at miscellaneous water-quality sites were analyzed individually.

Temperature

Water temperatures are measured at most of the water-quality stations. For daily stations, the water temperatures are taken at about the same time each day in order that the data will be relatively unaffected by diurnal variations in temperature. Most large swiftly flowing streams have a small diurnal variation in water temperature, whereas sluggish or shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. The thermometers used for determining the water temperature are accurate to plus or minus 0.5°F.

At stations where thermographs are located, the records consist of maximum and minimum temperatures for each day and the monthly averages of maximum daily and minimum daily temperatures.

Sediment

To obtain a continuous record of sediment discharge, suspended-sediment samples are collected daily with U.S. depth-integrating samplers from a fixed sampling point at one vertical in the cross section. Depth-integrated samples are collected periodically at three or more verticals in the cross section to determine the ratio of the cross-sectional distribution of the concentration to the concentration at the daily sampling vertical. During periods of high or rapidly changing flow, samples are taken two or more times throughout the day.

During periods of inadequate sampling, daily loads of suspended sediment are estimated on the basis of water discharge, sediment concentrations observed immediately preceding and following the periods, and suspended-sediment loads for other periods of similar water discharge. The estimates are further guided by weather conditions prior to and during the questionable periods.

For some of the sediment stations in Indiana, samples are collected periodically, mostly during periods of high streamflow. For these stations, the instantaneous sediment discharge data are given and no attempt is made to determine the daily sediment discharges.

In addition to records of quantities of suspended sediment transported, records of particle sizes of sediment are included. The particle sizes of the suspended sediment for many of the stations and the particle sizes of the bed material for some of the stations are determined periodically.

WATER QUALITY RECORDS

PART 3. OHIO RIVER BASIN

OHIO RIVER MAIN STEM

3-2772. OHIO RIVER AT MARKLAND DAM, NEAR WARSAW, KY.

LOCATION.--About 1,000 feet upstream from Dam (mile 531.5), 0.2 mile upstream from site of lock and dam 39, 0.4 mile upstream from Stevens Creek, 1.4 miles downstream from Craigs Creek, and 3.5 miles west of Warsaw, Gallatin County.
DRAINAGE AREA.--83,200 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1959 to September 1965.
Water temperatures: October 1959 to September 1965.
EXTREMES, 1964-65.--Specific conductance: Maximum daily, 777 micromhos Dec. 4; minimum daily, 206 micromhos Mar. 29.
Water temperatures: Maximum, 84°F July 25-26; minimum, 34°F Feb. 4-7.
EXTREMES, 1959-65.--Specific conductance: Maximum daily, 810 micromhos Oct. 21, 1962; minimum daily, 167 micromhos Mar. 3, 1962.
Water temperatures: Maximum, 88°F July 14, 1962; minimum, freezing point on many days during winter months.
REMARKS.--Daily samples were collected at this station and samples were selected for analysis on the following basis: (1) Maximum daily specific conductance for each month, (2) minimum daily specific conductance for each month, and (3) maximum daily specific conductance for each 10-day period. No discharge records available.

Chemical analyses, in parts per million, water year October 1964 to September 1965

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphorus as PO_4	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Alkyl benzene sulfonate (ABS)
Oct. 9, 1964.						63	16				46	0	171	63	0.3	12	--	420	223	186		658	7.5	--
Oct. 11.....						--	--				--	--	167	--	--	--	0.16	--	--	--		646	7.1	0.1
Oct. 21.....						--	--				--	--	140	--	--	--	.18	--	--	--		651	6.8	.1
Oct. 31.....						54	15				52	0	144	60	.3	2.6	--	372	196	154		591	7.2	--
Nov. 7.....						65	11				53	0	120	100	.3	10	--	415	207	164		676	7.6	--
Nov. 11.....						--	--				--	--	109	--	--	--	.22	--	--	--		616	7.2	.1
Nov. 21.....						36	10				54	0	94	36	.2	7.2	--	246	131	87		411	7.5	--
Nov. 27.....						--	--				--	--	130	--	--	--	.21	--	--	--		552	7.0	.1
Dec. 4.....						69	12				44	0	172	102	.4	8.5	--	470	222	186		777	7.1	--
Dec. 11.....						--	--				--	--	130	--	--	--	.17	--	--	--		490	7.3	.1
Dec. 26.....						--	--				--	--	90	--	--	--	.14	--	--	--		355	7.5	.1
Dec. 30.....						29	7.9				36	0	68	22	.2	4.6	--	180	105	76		297	7.3	--
Jan. 2, 1965.						--	--				--	--	77	--	--	--	.08	--	--	--		311	7.2	.0
Jan. 12.....						--	--				--	--	79	--	--	--	.07	--	--	--		291	7.2	.0
Jan. 15.....						21	7.2				27	0	61	16	.1	4.3	--	152	82	60		231	7.0	--
Jan. 31.....						31	11				37	0	78	26	.3	7.3	--	236	123	92		343	7.1	--
Feb. 1.....						34	8.8				34	0	80	26	.1	5.8	--	215	121	93		334	6.6	--
Feb. 11.....						--	--				--	--	60	--	--	--	.84	--	--	--		314	7.0	.0
Feb. 14.....						31	7.3				52	0	55	22	.1	6.1	--	173	108	65		278	6.9	--
Feb. 26.....						--	--				--	--	60	--	--	--	.41	--	--	--		325	6.9	.0

OHIO RIVER MAIN STEM--Continued

3-2772. OHIO RIVER AT MARKLAND DAM, NEAR WARSAW, KY.--Continued

Chemical analyses, in parts per million, water year October 1964 to September 1965--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphorus as PO_4	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Alkyl benzene sulfonate (ABS)
																			Calcium, magnesium	Noncarbonate				
Mar. 9, 1965.						--	--				--	--	63	--	--	--	0.16	--	--	--		333	6.9	0.1
Mar. 12.....						35	9.9				51	0	74	26	0.1	6.4	--	226	128	86		336	7.6	--
Mar. 25.....						--	--				--	--	60	--	--	--	.12	--	--	--		321	7.6	.1
Mar. 29.....						21	5.4				30	0	44	18	.1	3.4	--	154	74	50		206	6.7	--
Apr. 1.....						23	7.5				42	0	44	12	.2	3.2	--	144	88	54		230	7.1	--
Apr. 10.....						33	11				74	0	66	15	.2	4.8	--	207	128	67		316	7.2	--
Apr. 11.....						--	--				--	--	65	--	--	--	.20	--	--	--		308	7.7	.0
Apr. 26.....						--	--				--	--	63	--	--	--	.18	--	--	--		298	7.6	.0
May 4.....						30	9.0				62	0	55	16	.1	4.4	--	173	112	61		272	7.9	--
May 10.....						--	--				--	--	66	--	--	--	.22	--	--	--		320	7.3	.1
May 20.....						--	--				--	--	83	--	--	--	--	--	--	--		376	--	--
May 30.....						41	12				76	0	84	26	.2	4.6	--	251	152	90		394	7.1	--
June 2.....						41	12				72	0	83	22	.2	4.4	--	236	152	92		386	7.2	--
June 8.....						--	--				--	--	89	--	--	--	.36	--	--	--		404	--	.0
June 19.....						--	--				--	--	81	--	--	--	.37	--	--	--		433	--	.1
June 30.....						45	12				78	0	88	34	.3	5.3	--	257	162	98		442	7.7	--
July 1.....						46	12				78	0	91	40	.3	6.2	--	290	165	101		448	7.6	--
July 10.....						--	--				--	--	98	--	--	--	.27	--	--	--		485	7.0	.1
July 17.....						--	--				--	--	99	--	--	--	.25	--	--	--		497	7.8	.1
July 27.....						57	14				86	0	110	58	.4	7.0	--	322	200	129		561	7.6	--
Aug. 1.....						--	--				--	--	87	--	--	--	.24	--	--	--		469	--	.0
Aug. 9.....						37	8.8				66	0	72	34	.3	6.2	--	240	129	75		380	7.0	--
Aug. 20.....						52	13				80	0	101	58	.4	8.0	--	334	183	118		560	7.1	--
Aug. 21.....						--	--				--	--	103	--	--	--	.24	--	--	--		554	--	.0
Sept. 3.....						--	--				--	--	102	--	--	--	.28	--	--	--		564	--	.0
Sept. 7.....						42	7.8				68	0	75	38	.3	6.7	--	286	137	82		416	7.6	--
Sept. 20.....						--	--				--	--	95	--	--	--	.28	--	--	--		551	--	.0
Sept. 27.....						59	13				84	0	114	88	.5	8.8	--	372	201	132		622	7.6	--

OHIO RIVER MAIN STEM--Continued

3-2772. OHIO RIVER AT MARKLAND DAM, NEAR WARSAW, KY.--Continued

Specific conductance, in micromhos at 25°C, water year October 1964 to September 1965

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	649	577	615	294	334	318	230	285	388	448	469	526
2.....	642	578	662	311	308	318	242	278	386	450	468	564
3.....	618	583	700	308	303	313	242	274	387	451	464	564
4.....	617	610	777	289	296	308	244	272	388	452	464	--
5.....	615	631	775	274	296	308	263	278	388	455	468	420
6.....	605	656	765	258	306	316	277	287	394	465	462	420
7.....	644	676	584	287	311	330	273	302	400	471	435	416
8.....	655	676	546	241	325	330	--	307	404	476	393	426
9.....	658	670	479	238	334	333	313	312	403	480	380	434
10.....	654	--	462	255	331	324	316	320	400	485	388	446
11.....	646	616	490	270	314	333	308	323	402	490	398	474
12.....	640	575	489	291	314	336	295	329	404	493	443	486
13.....	636	544	481	280	289	336	--	326	412	489	459	542
14.....	638	528	462	257	278	336	281	326	416	476	488	531
15.....	629	512	456	231	--	327	240	335	--	476	523	487
16.....	624	506	396	264	--	318	233	338	419	493	536	425
17.....	624	494	419	255	311	321	254	348	423	497	543	440
18.....	628	482	--	257	311	321	261	351	428	--	545	497
19.....	628	460	--	253	303	324	271	358	433	495	556	537
20.....	643	433	355	255	298	321	277	376	431	493	560	551
21.....	651	411	307	270	298	305	279	381	428	486	554	559
22.....	648	--	302	272	306	302	271	393	429	484	552	572
23.....	630	440	320	276	306	313	263	393	425	495	546	588
24.....	611	460	329	264	291	313	267	384	420	495	541	588
25.....	609	487	351	296	294	321	277	379	421	512	549	590
26.....	609	528	355	--	325	316	298	383	--	536	542	610
27.....	609	552	351	280	316	316	298	386	427	561	549	622
28.....	616	503	309	325	319	--	281	388	430	556	550	606
29.....	607	516	302	319	--	206	281	393	431	556	553	591
30.....	612	551	297	319	--	220	279	394	442	513	552	610
31.....	591	--	297	343	--	211	--	--	--	477	533	--
Average	628	544	463	277	308	309	271	339	412	490	498	521

OHIO RIVER MAIN STEM--Continued

3-2772. OHIO RIVER AT MARKLAND DAM, NEAR WARSAW, KY.--Continued

Temperature (°F) of water, water year October 1964 to September 1965
(Once-daily measurement between 1600 and 2000)

Month	Day																													Average
	1	2	3	4	5	6	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	
October	72	72	71	71	71	71	69	69	69	69	65	66	65	65	65	65	65	65	64	64	64	64	64	64	62	61	61	61	61	61	60	66
November	60	60	61	61	61	60	60	60	60	--	60	60	60	60	60	60	60	60	60	58	56	--	55	55	55	54	54	54	50	52	--	58
December	50	50	51	51	50	49	47	47	47	47	47	47	47	46	46	45	46	--	--	42	42	42	42	43	44	43	43	44	43	46	45	46
January	45	44	44	44	44	44	44	44	45	43	43	44	43	42	42	42	41	39	38	40	39	39	39	39	40	--	39	38	38	38	38	41
February	37	37	35	34	34	35	35	36	37	38	38	38	38	38	--	--	38	38	40	41	41	41	41	41	41	41	41	39	--	--	--	38
March	40	41	41	41	40	40	40	40	40	41	42	41	42	42	42	42	42	42	42	42	43	44	45	44	44	45	45	--	45	45	45	42
April	46	46	47	48	49	44	49	--	59	53	53	59	--	57	57	57	59	59	56	56	59	59	60	60	59	59	59	59	59	60	--	55
May	61	62	60	60	62	62	63	63	61	66	68	68	68	68	68	71	71	71	71	72	76	76	73	74	74	74	74	75	75	75	--	69
June	75	76	76	75	75	75	75	78	78	78	78	79	76	76	--	76	76	78	78	79	77	77	77	77	77	--	77	77	78	78	--	77
July	78	79	79	80	80	81	81	81	81	82	82	82	82	--	82	83	82	--	83	83	82	82	83	83	84	84	--	--	--	--	--	--
August	81	81	81	79	80	80	80	80	80	78	78	79	79	79	81	82	82	82	82	80	80	81	81	81	82	82	82	81	81	80	80	80
September	80	78	78	--	78	75	75	78	74	80	80	75	75	77	75	75	72	72	75	76	76	75	76	75	75	74	74	75	75	74	--	76

3-3235. WABASH RIVER AT HUNTINGTON, IND.

LOCATION.--Temperature recorder at gaging station on right bank at the Huntington Water and Light Company Plant, 2 miles south of courthouse in Huntington, Huntington County, 3.2 miles upstream from mouth of Little River, and at mile 409.
DRAINAGE AREA.--710 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1963 to September 1965.
EXTREMES, 1964-65.--Water temperatures: Maximum, 88°F July 24; minimum, freezing point Dec. 17, 18, Jan. 22, Feb. 9, 10.
EXTREMES, 1963-65.--Water temperatures: Maximum, 90°F July 27, 1964; minimum, freezing point several days during winter months.

Temperature (°F) of water, water year October 1964 to September 1965
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	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	
October																																
Maximum	66	65	64	63	62	60	58	56	56	54	54	54	57	58	59	60	60	60	56	55	53	54	53	54	54	54	56	58	58	56	54	57
Minimum	60	64	60	60	58	56	54	55	54	52	52	52	53	54	55	56	56	56	55	52	51	52	52	50	52	52	54	56	56	54	52	55
November																																
Maximum	54	56	58	58	60	58	54	54	54	54	57	57	57	54	54	56	56	52	51	48	42	43	43	44	43	44	44	45	44	40	--	51
Minimum	52	54	56	56	57	54	53	53	52	52	54	56	54	50	52	54	52	50	48	42	38	38	38	39	40	42	44	44	40	38	--	48
December																																
Maximum	38	38	38	37	37	37	36	36	35	35	35	34	34	34	33	37	33	35	35	35	37	37	35	36	33	35	36	36	35	37	37	36
Minimum	38	38	37	37	37	36	36	35	35	35	34	34	34	33	33	33	32	32	35	33	34	33	33	33	33	33	33	33	33	35	35	34
January																																
Maximum	37	37	37	36	35	37	38	44	44	39	35	34	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	35	35	35	35
Minimum	36	37	36	34	34	35	37	38	39	35	33	33	33	33	33	33	33	33	33	33	33	32	33	33	33	33	33	33	33	33	33	34
February																																
Maximum	34	34	34	34	34	34	33	33	33	37	38	40	39	38	37	39	40	40	40	41	41	38	38	38	37	37	37	37	--	--	--	37
Minimum	33	34	34	34	34	33	33	33	32	32	37	38	37	36	35	37	38	39	38	39	37	37	38	37	37	37	37	37	--	--	--	36
March																																
Maximum	37	37	37	36	37	37	38	38	39	39	40	41	42	42	42	43	43	43	41	40	40	41	41	40	40	39	41	42	43	42	44	40
Minimum	37	37	36	36	36	37	37	38	38	39	39	40	41	41	41	41	42	41	38	37	37	38	38	38	38	38	37	40	42	41	42	39
April																																
Maximum	44	44	44	44	45	50	53	53	53	53	54	54	54	54	53	53	52	52	54	56	58	61	60	60	54	52	52	53	56	60	--	53
Minimum	43	42	42	44	44	45	50	53	53	52	52	54	53	53	53	50	50	50	51	52	55	56	58	54	52	52	52	52	53	56	--	51
May																																
Maximum	63	66	68	68	70	70	74	74	74	73	72	72	74	74	73	74	73	74	76	76	76	80	80	80	74	72	72	70	65	64	70	72
Minimum	58	60	62	66	66	68	67	71	71	71	66	66	66	67	70	70	68	68	70	70	68	74	76	70	72	71	70	65	62	62	64	68
June																																
Maximum	72	72	70	72	76	78	77	76	77	80	80	80	80	80	78	76	75	76	78	78	80	80	79	80	81	82	84	84	83	81	--	78
Minimum	68	70	66	66	69	74	73	72	74	76	76	73	73	73	72	72	70	68	70	72	74	73	76	76	73	73	76	80	78	76	--	73
July																																
Maximum	80	80	80	80	82	82	81	81	81	81	83	84	84	82	80	79	80	80	74	76	77	81	84	88	85	84	84	84	81	78	77	81
Minimum	75	74	72	74	76	76	78	75	78	76	76	77	78	76	73	73	75	72	72	71	70	76	80	83	80	78	80	78	76	72	73	76
August																																
Maximum	76	75	76	78	84	86	85	80	77	76	78	80	81	84	86	87	87	84	83	81	80	75	77	78	76	79	79	78	73	70	68	79
Minimum	72	69	67	72	74	80	80	77	72	70	70	72	76	78	80	82	80	80	78	74	73	72	70	68	70	72	74	71	64	66	66	73
September																																
Maximum	72	72	74	76	78	76	78	79	80	80	78	70	73	76	76	73	72	77	79	78	77	76	74	71	64	63	62	64	68	69	--	74
Minimum	68	66	66	71	73	70	72	76	76	77	68	66	69	71	72	66	65	72	74	76	75	74	70	64	60	60	59	59	62	64	--	69

WABASH RIVER BASIN--Continued

3-3408. BIG RACCOON CREEK NEAR FINCASTLE, IND.

LOCATION.--At gaging station at county road bridge, 8,350 feet upstream from Ramp Creek, and 3.1 miles northwest of Fincastle, Putnam County.
DRAINAGE AREA.--132 square miles.
RECORDS AVAILABLE.--Water temperatures: July to September 1965.
Sediment records: August 1959 to September 1965.
EXTREMES, 1964-65.--Water temperatures (July to September 1965): Maximum, 82°F July 13, 24, Aug. 15.
Sediment concentrations: Maximum daily, 1,600 ppm Apr. 6; minimum daily, 3 ppm Jan. 11, May 2.
Sediment loads: Maximum daily, 9,940 tons Apr. 6; minimum daily, less than 0.50 ton on many days during October to January, May, July, and September.
EXTREMES, 1959-65.--Sediment concentrations: Maximum daily, 19,100 ppm Mar. 21, 1962; minimum daily, 3 ppm on several days in 1961, 1963, and 1965.
Sediment loads: Maximum daily, 260,000 tons Mar. 21, 1962; minimum daily, less than 0.50 ton on many days during 1959-65.
REMARKS.--Flow affected by ice Jan. 14-22, 27-31, Feb. 1-7, 21-28, Mar. 1, 21, 22. Sediment discharges computed from field and laboratory data supplied by Indiana Flood Control and Water Resources Commission, from October through March.

Temperature (°F) of water, July to September 1965
(Once-daily measurement between 1500 and 1800)

Month	Day																													Average
	1	2	3	4	5	6	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	
July.....	78	75	80	78	80	78	76	75	74	78	72	81	82	79	80	80	72	73	75	78	79	80	80	82	76	78	81	76	74	72	72	77
August.....	72	67	63	72	74	80	76	79	70	75	77	76	80	81	82	78	78	78	75	71	73	70	70	72	70	—	73	70	66	64	69	73
September.....	70	69	66	69	74	74	76	70	69	68	73	70	68	73	68	72	68	75	74	73	74	72	71	68	70	68	67	72	73	71	--	71

WABASH RIVER BASIN--Continued

3-3408. BIG RACCOON CREEK NEAR FINCASTLE, IND.--Continued

Particle-size analyses of suspended sediment, water year October 1964 to September 1965
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
July 7, 1965.....	1100			117	1180		35	49	69	87	98	100	--					SBWC
Sept. 15.....	0600			233	1070		55	75	87	96	98	99	100					SBWC
Sept. 15.....	0600			233	1070		10	26	53	86	93	93	95	100				SBN

WABASH RIVER BASIN--Continued

3-3408. BIG RACCOON CREEK NEAR FINCASTLE, IND.--Continued

Suspended sediment, water year October 1964 to September 1965
(Where no daily concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	2.4	16	T	8.1	30	1	7.2	42	1
2	2.2	18	T	7.8	26	1	6.8	30	1
3	2.0	22	T	7.8	33	1	7.2	34	1
4	2.0	37	T	7.8	41	1	8.5	38	1
5	1.8	51	T	7.5	33	1	9.6	26	1
6	1.8	53	T	7.5	32	1	8.1	16	T
7	2.2	52	T	7.2	43	1	7.8	52	1
8	2.0	57	T	7.2	42	1	7.5	70	1
9	2.6	51	T	7.2	53	1	7.5	75	2
10	3.1	47	T	6.8	44	1	7.8	75	2
11	3.6	42	T	6.8	37	1	10	76	2
12	3.1	35	T	6.5	39	1	12	76	2
13	3.6	35	T	7.5	63	1	12	80	2
14	3.8	35	T	6.2	64	1	13	88	3
15	4.1	35	T	6.2	42	1	11	70	2
16	4.1	35	T	17	52	2	10	52	1
17	3.8	35	T	15	64	3	9.2	60	1
18	4.6	35	T	10	53	1	7.8	52	1
19	5.5	35	1	7.8	42	1	7.8	78	2
20	5.5	35	1	6.5	28	T	7.8	58	1
21	5.8	35	1	5.8	18	T	7.5	46	1
22	6.8	35	1	5.2	15	T	7.8	67	1
23	6.5	35	1	4.9	15	T	8.1	73	2
24	6.2	35	1	4.9	30	T	9.6	56	1
25	6.5	35	1	4.9	17	T	12	96	3
26	6.5	35	1	4.9	15	T	13	104	4
27	6.8	35	1	5.2	22	T	12	99	3
28	6.8	35	1	8.8	18	T	12	54	2
29	7.5	48	1	8.8	34	1	11	26	1
30	8.1	47	1	8.1	35	1	11	21	1
31	8.1	36	1	---	---	---	11	17	1
Total	139.4	--	18	225.9	--	27	293.6	--	48

	JANUARY			FEBRUARY			MARCH		
1	28	16	1	23	29	2	500	130	176
2	115	10	3	21	35	2	720	82	159
3	87	11	3	19	47	2	428	35	40
4	48	14	2	17	74	3	481	68	S 97
5	36	16	2	17	62	3	428	82	95
6	30	17	1	20	48	3	302	66	54
7	26	18	1	25	22	1	278	62	46
8	27	19	1	53	11	2	290	55	43
9	37	18	2	204	117	S 154	255	35	24
10	48	12	2	2130	1300	7480	200	26	14
11	38	3	T	775	590	1230	159	21	9
12	32	12	1	481	510	662	149	19	8
13	28	27	2	302	373	304	140	8	3
14	16	42	2	233	254	160	130	6	2
15	13	45	2	170	219	100	128	9	3
16	12	24	1	149	197	79	119	11	4
17	12	45	1	130	154	54	140	43	16
18	12	58	2	125	98	33	169	145	66
19	12	56	2	112	96	29	114	98	30
20	12	82	3	93	88	22	93	28	7
21	13	67	2	78	105	22	84	7	2
22	14	48	2	63	64	11	80	7	2
23	56	91	S 15	50	34	5	130	13	5
24	244	278	183	40	40	4	290	46	36
25	159	188	81	26	39	3	190	44	22
26	116	110	34	20	24	1	149	62	25
27	60	54	9	20	19	1	117	40	13
28	45	32	4	60	43	7	114	40	12
29	35	46	4	---	---	---	125	22	7
30	28	37	3	---	---	---	125	19	6
31	25	33	2	---	---	---	112	28	8
Total	1464	--	373	5456	--	10379	6739	--	1034

S Computed by subdividing day.
T Less than 0.50 ton.

WABASH RIVER BASIN--Continued

3-3408. BIG RACCOON CREEK NEAR FINCASTLE, IND.--Continued

Suspended sediment, water year October 1964 to September 1965--Continued
(Where no daily concentrations are reported, loads are estimated)

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	110	22	7	149	8	3	64	25 B	4
2	107	22	6	125	3	1	333	--	240
3	89	14	3	105	8	2	255	--	70
4	85	31	7	90	14	3	149	40 B	16
5	290	294 S	575	97	7	2	102	30 B	8
6	2300	1600	9940	92	4	1	346	--	2500
7	870	411	965	98	12	3	417	--	1400
8	570	400	616	82	20	4	200	--	10
9	1500	980	3970	75	12	2	149	--	7
10	600	539	873	73	6	1	104	--	4
11	600	500 A	800	66	5	1	85	--	3
12	600	460 A	750	61	6	1	71	--	3
13	376	370	376	58	7	1	57	--	2
14	268	324	234	54	12	2	48	--	2
15	326	555	488	50	21	3	40	--	2
16	428	525	607	49	19	3	36	--	1
17	302	240	196	45	4	T	32	--	1
18	222	216	129	44	4	T	29	--	1
19	169	67	30	45	16	2	27	--	1
20	149	40	16	41	7	1	24	--	1
21	125	31	10	37	22	2	23	--	1
22	109	24	7	36	28	3	22	--	1
23	114	76	23	33	28	2	20	--	1
24	422	--	170	34	28	3	20	--	1
25	1160	730 S	2950	303	--	1400	18	--	1
26	810	628	1370	995	--	6300	17	--	1
27	454	360	441	503	--	2000	15	--	1
28	326	152	134	233	140 A	90	16	--	1
29	233	84	53	140	28	11	18	--	1
30	190	41	21	104	28	8	20	--	1
31	--	--	--	879	27	6	--	--	--
Total	13904	--	25767	3996	--	9862	2757	--	4286

	JULY			AUGUST			SEPTEMBER		
1	29	40 B	3	8.5	48	1	10	53	1
2	37	59	6	8.5	57	1	8.8	52	1
3	41	58	6	7.8	65	1	6.8	51	1
4	41	40	4	9.6	108	3	6.8	49	1
5	29	24	2	10	126	3	7.2	35	1
6	37	29	3	8.5	79	2	6.5	44	1
7	81	662 S	160	7.5	46	1	5.5	44	1
8	65	830	146	10	52	1	5.5	53	1
9	47	435	55	11	78	2	4.9	48	1
10	51	236	32	9.6	91	2	4.6	28	T
11	35	105	10	8.5	100	2	4.9	35	T
12	24	53	3	7.5	102	2	8.8	50	1
13	20	27	1	6.8	74	1	7.5	60	1
14	17	8	T	6.2	53	1	8.4	82 S	13
15	15	13	1	5.8	109	2	136	701 S	289
16	15	15	1	5.5	117	2	116	826 S	318
17	115	665 S	287	5.2	130	2	159	1540 S	711
18	72	288	56	6.2	128	2	69	458	85
19	34	143	13	7.8	94	2	37	208	21
20	22	140	8	7.8	93	2	25	114	8
21	17	72	3	7.2	107	2	20	106	6
22	15	38	2	7.2	108	2	20	64	3
23	14	26	1	6.2	102	2	20	95	5
24	13	24	1	5.5	98	1	20	104	6
25	11	22	1	4.9	99	1	16	112	5
26	10	22	1	9.2	107	3	14	100	4
27	9.2	22	1	9.2	117	3	13	81	3
28	8.8	31	1	7.5	126	3	12	62	2
29	8.5	42	1	6.5	102	2	11	63	2
30	7.5	52	1	6.2	49	1	12	67	2
31	7.8	55	1	7.8	52	1	--	--	--
Total	948.8	--	811	235.7	--	56	796.2	--	1495

Total discharge for year (cfs-days)..... 36955.6
Total load for year (tons)..... 54156

S Computed by subdividing day.
T Less than 0.50 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

WABASH RIVER BASIN--Continued

3-3418.5. WABASH RIVER NEAR SULLIVAN, IND.

LOCATION.--At intake line to Ohio River Valley Water Sanitation Commission (ORSANCO) monitor at Breed Generating Plant of the Indiana-Michigan Electric Company near Sullivan, Sullivan County.
DRAINAGE AREA.--12,600 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: July 1963 to October 1964 (discontinued).
Water temperatures: July 1963 to October 1964 (discontinued).
EXTREMES, July 1963 to October 1964:--Specific conductance: Maximum daily, 817 micromhos Jan. 3, 1964; minimum daily, 263 micromhos Apr. 25, 1964.
Water temperatures: Maximum, 85°F July 25, 28, 29, Aug. 3, 4, 1964; minimum, not determined.
REMARKS.--Daily samples collected for month of October and samples were selected for analysis on the following basis: (1) Maximum daily specific conductance for the month, (2) minimum daily specific conductance for the month, and (3) maximum daily specific conductance for the week. No samples available Oct. 17-27. No discharge records available. This station was moved to Hutsonville, Illinois as of November 1964.

Chemical analyses, in parts per million, October 1964

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																			Calcium, magnesium	Noncarbonate				
Oct. 2, 1964.						64	25				221	0	84	22	0.3	3.4		355	263	82		579	8.0	
Oct. 12.....						--	--				--	--	90	--	--	--	0.66	--	--	--		624	7.4	0.1
Oct. 31.....						80	28				266	0	84	36	.3	3.4		414	315	96		680	7.5	

Temperature (°F) of water, October 1964

Month	Day																													Average
	1	2	3	4	5	6	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	
October	64	64	66	62	64	63	60	60	59	59	59	56	56	60	60	60	--	--	--	--	--	--	--	--	--	--	--	59	--	--	59	--

WABASH RIVER BASIN--Continued

3-3419.1. WABASH RIVER AT HUTSONVILLE, ILL.

LOCATION.--At intake line to Ohio River Valley Water Sanitation Commission (ORSANCO) monitor station at Central Illinois Public Service Company at Hutsonville, Crawford County.
DRAINAGE AREA.--12,600 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1964 to September 1965.
Water temperatures: November 1964 to September 1965.
EXTREMES, November 1964 to September 1965.
Specific conductance: Maximum daily, 784 micromhos Jan. 24; minimum daily, 287 micromhos Feb. 10.
Water temperatures: Maximum, 88°F Aug. 19; minimum, 34°F Jan. 29, 30, Feb. 2.
REMARKS.--Daily samples were collected at this station and samples were selected for analysis on the following basis: (1) Maximum daily specific conductance for each month, (2) minimum daily specific conductance for each month, and (3) maximum daily specific conductance for each 10-day period. This station was moved from Sullivan, Indiana. No discharge records available.

Chemical analyses, in parts per million, November 1964 to September 1965

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphorus as PO_4	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Alkyl benzene sulfonate (ABS)
																			Calcium, magnesium	Noncarbonate					
Nov. 15, 1964.						--	--				--	--	89	--	--	--	0.74	--	--	--		669	7.6		0.1
Nov. 18.....						71	26				254	0	88	22	0.3	0.6	--	406	284	76		624	7.5		--
Nov. 29.....						71	26				257	0	81	42	.3	2.0	--	418	284	74		679	7.4		--
Dec. 1.....						77	29				262	0	95	23	.3	2.1	--	401	311	96		643	8.1		--
Dec. 10.....						--	--				--	--	98	--	--	--	1.3	--	--	--		690	8.0		.1
Dec. 13.....						--	--				--	--	97	--	--	--	1.2	--	--	--		730	8.0		.1
Dec. 26.....						89	31				288	0	109	40	.4	4.5	--	489	350	114		770	7.6		--
Jan. 1, 1965..						--	--				--	--	106	--	--	--	.57	--	--	--		709	7.5		.1
Jan. 20.....						--	--				--	--	124	--	--	--	.45	--	--	--		697	7.6		.1
Jan. 24.....						94	32				260	0	130	34	.3	18	--	508	366	153		784	7.5		--
Jan. 26.....						66	24				173	0	86	17	.3	3.8	--	331	263	121		534	7.8		--
Feb. 8.....						85	26				206	0	112	33	.2	29	--	463	319	150		667	7.6		--
Feb. 10.....						39	8.8				110	0	36	10	.2	5.9	--	201	134	44		287	7.0		--
Feb. 20.....						--	--				--	--	79	--	--	--	.54	--	--	--		518	7.9		.1
Feb. 28.....						--	--				--	--	103	--	--	--	.50	--	--	--		658	8.3		.1
Mar. 1.....						--	--				--	--	100	--	--	--	.21	--	--	--		592	7.9		.0
Mar. 10.....						55	17				134	0	67	15	.2	24	--	292	207	97		431	8.2		--
Mar. 16.....						--	--				--	--	92	--	--	--	.34	--	--	--		568	7.7		.1
Mar. 29.....						79	27				222	0	99	20	.2	13	--	395	308	126		617	7.5		--

WABASH RIVER BASIN--Continued

3-3419.1. WABASH RIVER AT HUTSONVILLE, ILL.--Continued

Chemical analyses, in parts per million, November 1964 to September 1965--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphorus as PO_4	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Alkyl benzene sulfonate (ABS)
																			Calcium, magnesium	Noncarbonate					
Apr. 1, 1965..						--	--				--	--	94	--	--	--	0.43	--	--	--		567	8.1		0.1
Apr. 8.....						47	17				140	0	52	9.0	0.3	18	--	241	187	72		377	6.8		--
Apr. 20.....						--	--				--	--	76	--	--	--	.38	--	--	--		493	7.6		.1
Apr. 24.....						79	29				225	0	88	19	.2	15	--	388	316	132		584	7.2		--
May 6.....						--	--				--	--	88	--	--	--	.38	--	--	--		566	7.5		.1
May 20.....						--	--				--	--	97	--	--	--	.42	--	--	--		604	7.5		.1
May 21.....						75	30				250	0	93	18	.3	12	--	390	311	106		611	7.6		--
May 28.....						44	18				148	0	50	10	.3	8.3	--	236	184	63		386	8.1		--
June 4.....						58	16				166	0	50	14	.3	16	--	276	211	74		431	8.1		--
June 8.....						--	--				--	--	68	--	--	--	.51	--	--	--		567	8.3		.1
June 14.....						--	--				--	--	72	--	--	--	.51	--	--	--		569	7.7		.1
June 26.....						67	29				228	0	85	22	.3	7.0	--	372	286	99		576	8.0		--
July 8.....						--	--				--	--	79	--	--	--	.53	--	--	--		548	7.2		.0
July 15.....						71	26				234	0	79	20	.3	9.6	--	351	284	92		573	7.4		--
July 21.....						46	16				156	0	51	11	.2	7.7	--	239	181	53		395	7.2		--
July 29.....						--	--				--	--	74	--	--	--	.53	--	--	--		555	8.0		.0
Aug. 1.....						50	26				186	0	83	20	.3	1.4	--	314	232	80		501	8.2		--
Aug. 7.....						--	--				--	--	91	--	--	--	.42	--	--	--		582	8.2		.0
Aug. 12.....						60	29				234	0	91	24	.4	.7	--	354	269	76		595	8.2		--
Aug. 21.....						--	--				--	--	93	--	--	--	.44	--	--	--		589	8.4		.0
Sept. 5.....						62	27				224	0	89	22	.3	4.9	--	348	266	82		590	8.0		--
Sept. 16.....						--	--				--	--	86	--	--	--	.38	--	--	--		584	8.4		.1
Sept. 19.....						43	16				154	0	44	8.0	.3	6.7	--	214	173	47		373	7.3		--
Sept. 30.....						--	--				--	--	76	--	--	--	.61	--	--	--		585	7.5		.0

WABASH RIVER BASIN--Continued

3-3419.1. WABASH RIVER AT HUTSONVILLE, ILL.--Continued

Specific conductance (micromhos at 25°C), November 1964 to September 1965

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	--	--	643	709	564	592	567	496	505	542	501	568
2	--	--	659	685	577	506	558	489	532	524	518	566
3	--	--	646	690	593	510	500	515	561	424	556	583
4	--	--	644	538	599	526	517	532	431	500	566	574
5	--	--	660	573	616	524	532	551	448	503	576	590
6	--	--	679	615	632	540	547	566	498	532	562	567
7	--	--	675	605	650	487	386	540	533	538	582	577
8	--	--	675	--	667	470	377	506	561	548	565	572
9	--	659	683	605	665	455	416	493	532	531	559	573
10	--	663	690	631	287	431	430	540	555	431	558	568
11	--	656	704	642	449	451	429	567	532	497	575	580
12	--	665	708	636	450	451	415	574	565	514	595	564
13	--	668	730	653	483	478	402	583	568	516	589	571
14	--	663	717	656	424	566	408	581	569	539	579	582
15	--	669	706	665	405	521	397	577	546	573	572	577
16	--	650	704	673	424	562	423	577	532	524	559	584
17	--	649	714	680	438	544	428	563	535	506	565	542
18	--	624	704	684	460	564	444	585	539	509	578	394
19	--	646	699	691	503	560	457	590	554	422	575	373
20	--	644	688	697	518	547	493	604	551	399	590	438
21	--	643	699	712	533	554	527	611	549	395	589	450
22	--	640	711	739	546	527	550	610	554	477	589	476
23	--	649	725	763	568	525	570	596	560	521	574	518
24	--	650	725	784	596	559	584	593	550	507	569	530
25	--	658	752	671	602	573	581	593	558	534	581	500
26	--	670	770	534	607	582	488	599	576	531	570	482
27	--	664	745	576	628	592	425	601	576	537	579	476
28	--	659	708	537	658	606	460	386	560	544	574	508
29	--	679	720	535	--	617	470	419	547	555	578	571
30	--	636	730	575	--	617	474	458	557	520	572	585
31	--	--	717	584	--	603	--	488	--	499	568	--
AVERAGE	--	654	700	644	540	536	475	547	541	506	569	534

WABASH RIVER BASIN--Continued

3-3419.1. WABASH RIVER AT HUTSONVILLE, ILL.--Continued

Temperature (°F) of water, November 1964 to September 1965

Month	Day																													Aver-age
	1	2	3	4	5	6	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	
October																																
November	--	--	--	--	--	--	--	--	57	57	57	60	57	57	58	61	60	60	56	50	45	41	40	39	42	41	42	49	46	42	--	--
December	42	42	42	45	46	42	43	43	44	46	47	50	52	48	46	43	47	39	40	39	40	40	43	49	47	45	43	40	41	45	46	44
January.....	48	51	47	46	46	43	45	--	51	48	47	46	46	44	43	39	37	40	39	40	41	43	44	44	37	37	36	35	34	34	36	42
February.....	37	34	38	39	40	40	42	44	42	50	40	41	40	--	40	41	42	41	42	42	44	41	41	40	38	36	40	44	--	--	--	41
March.....	42	44	42	40	38	39	38	38	39	39	39	39	40	39	39	40	43	45	44	41	38	39	42	42	42	40	40	42	44	44	47	41
April.....	47	46	46	45	47	49	52	56	57	54	54	57	54	55	55	53	54	56	55	55	57	60	62	64	64	62	57	56	58	56	--	55
May.....	60	62	65	68	69	70	68	69	70	71	71	72	70	71	74	74	72	74	74	74	73	74	75	76	77	76	75	72	68	68	68	71
June	68	69	71	70	70	72	73	74	75	76	77	80	80	79	76	75	74	73	75	75	75	74	78	77	78	76	80	80	80	80	--	75
July.....	78	80	76	78	80	80	80	78	77	77	81	80	82	82	82	81	82	81	77	79	80	81	83	84	86	85	86	84	85	82	82	81
August.....	79	78	76	78	80	84	85	83	82	79	80	80	81	83	85	86	86	87	88	85	84	82	82	81	81	81	82	81	78	78	77	82
September.....	77	78	76	78	77	77	78	80	82	82	78	76	74	75	75	75	73	72	73	74	76	76	75	74	69	68	67	67	67	69	--	75

3-3420. WABASH RIVER AT RIVERTON, IND.

LOCATION.--Temperature recorder at gaging station on left bank at Illinois Central Railroad bridge at Riverton, Sullivan County, 0.6 mile downstream from Turtle Creek, and at mile 162.0.
DRAINAGE AREA.--13,100 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: July 1954 to September 1961, October 1962 to September 1965.
EXTREMES, 1964-65.--Water temperatures: Maximum, 85°F July 26-28; minimum, freezing point Feb. 5, 6.
EXTREMES, 1954-61, 1962-65.--Water temperatures: Maximum, 91°F July 20, Aug. 29, 1954; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1964 to September 1965
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																														Average
	1	2	3	4	5	6	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	
October																																
Maximum	69	69	69	68	67	64	63	62	61	61	59	60	62	63	63	64	64	64	63	61	58	58	58	58	59	59	59	61	62	62	60	62
Minimum	68	69	67	67	64	62	62	61	60	59	58	59	60	62	63	63	63	63	61	58	58	58	58	57	58	59	59	59	61	60	59	61
November																																
Maximum	60	61	62	62	61	61	60	60	60	60	60	61	61	58	58	59	59	58	56	53	51	49	46	45	45	45	45	47	47	45	--	55
Minimum	60	60	61	61	61	60	60	60	60	59	59	60	58	57	57	58	58	56	53	51	49	46	45	45	45	45	44	45	45	44	--	54
December																																
Maximum	44	42	42	42	42	41	39	39	39	39	41	43	43	43	42	41	41	41	40	39	39	38	39	42	42	41	41	40	40	41	41	41
Minimum	42	42	42	42	41	39	39	39	39	39	39	41	43	42	41	41	41	40	39	38	38	38	38	39	41	41	40	40	40	40	41	40
January																																
Maximum	41	42	43	43	43	42	42	43	43	43	43	42	42	41	41	41	40	38	38	36	36	36	38	38	38	37	36	35	35	35	34	40
Minimum	41	41	42	43	42	42	42	42	43	43	42	42	41	41	41	40	38	38	36	36	36	36	36	38	37	36	35	35	35	34	34	39
February																																
Maximum	34	33	33	33	33	32	33	34	34	36	36	36	36	36	36	36	36	36	36	36	37	37	37	37	37	36	35	35	--	--	--	35
Minimum	33	33	33	33	32	32	33	33	34	34	36	36	36	36	36	36	36	36	36	36	36	37	37	37	36	35	34	34	--	--	--	35
March																																
Maximum	35	36	36	36	36	36	36	35	35	35	35	37	37	37	37	38	39	40	40	40	40	39	38	38	38	38	38	38	38	39	40	37
Minimum	35	35	36	36	36	36	35	35	35	35	35	35	37	37	37	37	38	39	40	40	39	38	38	38	38	38	38	38	38	38	39	37
April																																
Maximum	41	43	43	43	43	44	46	48	50	50	50	51	51	52	52	52	52	52	52	52	52	52	53	54	56	56	56	56	54	55	--	50
Minimum	40	41	43	43	43	43	44	46	48	50	50	50	51	51	52	52	52	52	52	52	52	52	52	53	54	56	56	54	53	53	--	50
May																																
Maximum	55	56	58	58	58	59	61	61	61	61	62	63	64	65	65	65	66	68	68	68	68	70	71	72	74	75	77	77	76	75	74	66
Minimum	54	55	56	58	58	58	59	61	61	61	61	62	64	63	65	65	65	67	68	68	68	69	70	71	73	74	76	76	75	74	73	65
June																																
Maximum	73	72	73	74	74	74	74	74	74	75	76	76	76	76	76	76	76	76	76	76	76	76	77	78	78	78	79	80	81	82	--	76
Minimum	72	72	72	73	74	74	74	74	74	74	74	76	76	76	76	76	76	76	76	76	76	76	76	77	78	78	78	79	80	81	--	76
July																																
Maximum	82	82	81	81	80	80	80	80	80	81	81	80	80	80	80	81	81	82	82	82	81	81	81	82	83	85	85	85	84	84	83	82
Minimum	82	81	81	80	80	78	80	80	80	80	80	80	80	80	80	80	81	81	82	81	81	81	81	81	82	83	85	84	84	83	83	81
August																																
Maximum	83	82	81	80	79	81	81	81	81	81	80	80	79	80	81	82	82	82	82	82	82	82	82	81	81	80	80	80	80	79	78	81
Minimum	82	81	80	79	79	79	81	81	81	80	80	79	79	79	80	81	82	82	82	82	82	82	81	81	80	80	80	80	79	78	78	80
September																																
Maximum	78	77	77	77	77	77	77	77	77	77	77	75	74	74	74	74	74	74	73	73	73	73	74	74	74	72	70	69	68	68	--	74
Minimum	77	77	77	77	77	77	77	77	76	77	75	74	74	74	74	74	74	73	73	73	73	73	73	74	72	70	69	68	68	68	--	74

WABASH RIVER BASIN

3-3485. WHITE RIVER NEAR NOBLESVILLE, IND.

LOCATION.--Temperature recorder at gaging station on downstream side of center pier of highway bridge, 1 mile west of Strawtown, 7 miles northeast of Noblesville, Hamilton County, and 9.5 miles upstream from Cicero Creek.
DRAINAGE AREA.--814 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1953 to July 1957, October 1962 to September 1965.
EXTREMES, 1964-65.--Water temperatures: Maximum, 83°F July 24, 25, Aug. 16; minimum, freezing point on many days during December to February.
EXTREMES, 1953-57 1962-65.--Water temperatures: Maximum, 88°F July 14, 1954; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1964 to September 1965
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																														Average
	1	2	3	4	5	6	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	
October																															
Maximum	62	63	62	61	59	58	55	54	54	52	51	50	52	54	54	54	56	56	54	52	50	50	49	49	50	51	52	53	54	54	52	54
Minimum	58	61	59	59	57	54	53	53	52	50	50	49	50	52	53	52	54	54	52	50	49	49	48	47	48	50	51	51	53	51	50	52
November																															
Maximum	52	52	52	52	53	53	50	50	50	50	51	52	52	50	49	52	52	51	48	44	40	36	34	34	36	38	40	43	43	38	--	47
Minimum	50	51	52	52	52	50	48	49	48	49	50	51	50	48	48	49	51	48	44	40	36	34	34	34	34	36	38	40	38	35	--	45
December																															
Maximum	35	33	34	34	34	34	34	33	33	33	37	40	40	39	36	33	34	33	32	32	32	32	34	40	40	40	39	37	37	41	41	36
Minimum	32	33	33	34	34	34	32	32	33	33	33	37	39	36	33	32	33	32	32	32	32	32	32	34	40	39	37	36	37	37	39	34
January																															
Maximum	39	41	41	39	37	38	40	45	45	43	39	37	37	35	33	33	33	33	33	33	33	32	32	34	34	37	37	36	33	32	32	36
Minimum	39	39	39	37	37	37	38	41	43	39	37	36	35	32	33	33	33	33	33	33	32	32	32	32	34	34	36	33	32	32	32	35
February																															
Maximum	32	34	33	32	32	32	32	33	35	43	43	43	40	39	38	39	40	40	40	40	40	39	35	34	33	33	33	35	--	--	--	36
Minimum	32	32	32	32	32	32	32	32	33	35	43	40	39	37	37	38	39	39	40	38	39	35	34	33	33	33	32	32	--	--	--	35
March																															
Maximum	37	36	36	36	36	35	36	37	37	37	38	39	40	40	40	43	43	43	40	37	36	39	39	39	39	37	39	41	43	44	44	39
Minimum	35	36	36	36	35	35	35	36	37	36	37	38	39	39	39	40	42	40	37	35	35	35	39	39	37	36	36	39	41	41	41	37
April																															
Maximum	44	44	44	44	44	50	52	52	51	50	52	52	51	50	49	48	50	50	52	56	60	63	63	63	57	55	52	52	56	60	--	52
Minimum	43	43	42	43	44	44	50	51	49	50	50	51	49	49	48	48	48	49	50	52	56	60	62	57	55	52	52	52	52	55	--	50
May																															
Maximum	64	67	68	70	70	70	70	72	72	70	69	70	70	70	70	70	71	71	71	71	72	74	74	75	74	73	73	70	66	66	69	70
Minimum	60	63	64	66	67	68	66	69	70	68	66	66	66	66	67	68	68	68	68	68	67	70	72	73	71	70	69	66	63	62	64	67
June																															
Maximum	70	70	68	70	73	73	72	74	75	76	76	77	77	75	74	72	72	72	74	74	76	76	76	76	76	76	78	78	78	78	--	74
Minimum	67	68	66	65	68	72	71	71	74	74	74	75	73	72	70	69	69	68	69	71	72	74	74	73	72	71	74	76	76	76	--	71
July																															
Maximum	78	78	77	77	78	78	78	78	79	77	77	78	79	79	78	78	77	76	77	78	76	78	80	83	83	81	81	80	79	76	76	78
Minimum	75	74	73	74	76	76	76	74	76	75	75	75	75	77	75	74	74	75	74	74	73	75	78	79	80	78	79	78	75	72	73	75
August																															
Maximum	73	71	72	72	78	79	78	77	75	72	74	75	76	79	81	83	82	81	78	78	76	76	75	75	76	76	76	76	72	70	69	76
Minimum	71	68	68	70	72	76	77	75	72	69	70	72	73	76	78	80	80	78	76	74	73	73	73	72	74	74	74	72	68	69	68	73
September																															
Maximum	70	70	70	70	72	72	73	74	76	76	76	69	69	71	71	68	67	70	72	73	73	72	71	70	64	62	61	62	63	63	--	70
Minimum	68	68	67	69	70	70	71	72	74	74	69	67	67	69	67	66	64	67	70	72	72	71	69	64	61	60	60	60	61	63	--	67

WABASH RIVER BASIN--Continued

3-3490. WHITE RIVER AT NOBLESVILLE, IND.

LOCATION.--Temperature recorder at gaging station on right bank at downstream side of Logan Street Bridge in Noblesville, Hamilton County, 1.5 miles upstream from Cicero Creek, 3.5 miles below dam at Clara, and at mile 269.0.
DRAINAGE AREA.--837 square miles.
RECORDS AVAILABLE.--Water temperatures: Novemver 1952 to September 1965.
EXTREMES, 1964-65.--Water temperatures: Maximum, 87°F July 24, Aug. 15, 17; minimum, freezing point Dec. 6-8, Jan. 21-25.
EXTREMES, 1952-65.--Water temperatures: Maximum, 94°F Aug. 1, 1953; minimun, freezing point on many days during winter months.
REMARKS.--Flow regulated by powerplant above station.

Temperature (°F) of water, water year October 1964 to September 1965
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																														Average
	1	2	3	4	5	6	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	
October																																
Maximum	65	65	64	63	62	59	58	57	56	55	54	54	56	57	57	59	59	58	55	54	53	53	55	55	52	53	53	55	55	55	53	57
Minimum	61	63	60	60	58	56	54	55	54	52	50	50	53	53	54	56	55	55	53	51	50	51	52	51	50	50	52	53	54	50	50	54
November																																
Maximum	53	54	55	55	55	54	53	53	52	54	54	54	53	52	51	53	53	53	51	48	43	37	35	36	36	37	41	43	42	39	--	48
Minimum	51	52	54	53	54	51	52	51	49	51	52	53	52	49	49	50	50	51	48	43	37	34	34	35	36	35	37	41	39	36	--	46
December																																
Maximum	38	37	36	35	36	34	32	35	35	38	39	41	40	40	38	35	35	34	33	33	33	33	37	40	40	41	40	39	40	43	41	37
Minimum	36	35	34	33	34	32	32	32	33	34	38	39	40	38	35	34	34	33	33	33	33	33	33	37	36	40	38	37	39	40	38	35
January																																
Maximum	39	41	41	41	41	42	42	45	45	43	40	38	37	36	34	33	33	33	33	33	33	32	32	32	34	36	36	35	35	35	33	37
Minimum	39	39	40	38	38	37	40	41	43	40	38	36	36	33	33	33	33	33	33	33	32	32	32	32	32	34	35	33	33	33	33	35
February																																
Maximum	33	33	33	34	37	37	36	35	35	44	44	43	41	39	38	39	41	42	41	40	39	38	38	36	36	37	37	35	--	--	--	38
Minimum	33	33	33	33	33	35	34	33	33	35	43	41	39	37	37	38	39	39	40	39	38	35	35	33	33	33	33	33	--	--	--	36
March																																
Maximum	39	39	38	38	38	37	38	39	39	39	39	41	43	42	44	45	46	45	43	39	39	44	44	41	39	38	39	42	45	45	46	41
Minimum	33	38	38	38	37	37	37	38	39	38	38	39	40	41	41	41	44	43	39	36	37	37	41	39	38	37	36	39	42	43	43	39
April																																
Maximum	45	46	44	44	46	51	54	54	52	51	54	54	52	51	50	50	52	52	54	56	59	62	64	62	57	54	51	52	54	59	--	53
Minimum	44	43	43	44	44	45	51	52	50	50	50	52	51	50	50	49	49	51	51	53	56	59	61	57	54	51	50	51	51	54	--	51
May																																
Maximum	63	65	68	70	71	70	71	75	72	70	70	72	73	72	73	72	73	74	75	75	77	76	77	80	80	75	73	70	68	65	69	72
Minimum	59	62	64	65	68	68	66	69	70	68	66	66	67	67	68	68	68	68	70	69	69	72	71	72	75	71	70	66	63	62	63	67
June																																
Maximum	72	72	68	68	74	74	74	78	78	80	81	80	78	77	77	75	75	76	76	76	78	80	80	79	79	78	80	80	80	81	--	77
Minimum	66	68	66	65	67	72	70	70	73	73	75	74	71	70	70	68	69	69	69	69	71	75	76	74	72	72	72	75	78	77	--	71
July																																
Maximum	81	81	79	78	81	80	82	83	83	81	80	81	83	83	83	83	80	79	80	80	79	80	85	87	86	83	83	83	82	79	79	82
Minimum	75	74	74	73	74	74	80	76	78	78	73	73	77	80	80	75	75	74	74	75	74	74	80	83	78	77	79	79	78	75	73	76
August																																
Maximum	74	73	73	74	80	83	82	80	77	77	78	80	82	86	87	85	87	86	84	84	80	77	77	77	80	79	79	80	74	73	72	79
Minimum	71	68	68	68	71	79	80	76	73	73	74	74	76	80	83	80	83	82	83	76	74	73	72	73	76	73	78	74	68	69	69	75
September																																
Maximum	74	74	74	74	75	75	76	77	79	82	80	72	72	74	74	70	70	75	74	79	79	77	73	72	66	63	63	64	65	66	--	73
Minimum	72	59	58	73	70	70	71	74	75	79	72	69	70	72	70	66	65	69	71	71	76	73	70	66	62	60	59	59	61	63	--	68

WABASH RIVER BASIN--Continued

3-3510. WHITE RIVER NEAR NORA, IND.

LOCATION.--Temperature recorder at gaging statior on downstream side of center pier of bridge on State Highway 100, 2 miles east of Nora, Marion County, and 14 miles upstream froı Fall Creek.
DRAINAGE AREA.--1,200 square miles.
RECORDS AVAILABLE.--Water temperatures: June 1954 to May 1960, October 1962 to September 1965.
EXTREMES, 1964-65.--Water temperatures: Maximum, 82°F July 24-27; minimum, freezing point on several days during December to February.
EXTREMES, 1954-60, 1962-65.--Water temperatures: Maximum, 89°F July 14, 1954; minimum, freezing point on many days during winter months.
REMARKS.--Flow regulated by powerplant above station.

Temperature (°F) of water, water year October 1964 to September 1965
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																															Average
	1	2	3	4	5	6	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	
October																																
Maximum	63	63	63	63	63	63	61	59	58	58	56	55	54	54	54	54	55	54	54	54	54	53	52	51	51	51	51	52	52	53	53	56
Minimum	63	63	63	63	63	61	59	58	58	56	55	54	54	54	54	54	54	54	54	54	53	52	51	51	51	51	51	51	52	52	52	55
November																																
Maximum	52	53	54	54	54	54	54	53	53	53	53	53	53	53	52	52	53	53	52	51	48	45	42	40	40	39	39	40	41	41	--	49
Minimum	52	52	53	54	54	54	53	53	53	52	52	52	53	52	52	52	52	51	51	48	45	42	40	40	39	39	39	39	40	38	--	48
December																																
Maximum	38	36	36	35	35	35	35	34	34	34	34	35	37	37	37	35	34	34	33	33	32	32	32	34	35	35	35	35	35	36	36	35
Minimum	36	36	35	35	35	34	34	34	34	33	33	33	34	37	35	33	33	33	33	32	32	32	32	32	34	34	35	35	35	35	36	34
January																																
Maximum	36	36	36	36	35	35	35	38	38	38	37	35	34	34	33	33	33	33	33	34	34	34	33	32	32	33	33	33	33	33	33	34
Minimum	36	36	36	35	35	34	34	34	38	37	35	34	34	32	32	32	33	33	33	33	34	33	32	32	32	32	33	33	33	33	33	34
February																																
Maximum	33	34	34	34	34	34	34	34	36	39	39	40	39	37	36	36	37	38	38	38	38	38	36	36	35	34	34	34	--	--	--	36
Minimum	32	32	34	33	33	34	34	33	32	36	39	39	37	36	36	36	36	37	38	38	38	36	36	34	34	34	32	32	--	--	--	35
March																																
Maximum	34	35	35	35	35	35	36	36	36	36	37	39	40	40	40	41	42	42	42	40	39	40	42	42	42	41	40	42	43	44	44	39
Minimum	34	34	35	35	35	35	35	36	36	36	36	37	39	40	40	40	41	42	40	39	39	39	40	42	41	40	39	39	42	43	44	38
April																																
Maximum	45	46	46	46	46	50	51	51	51	51	53	53	53	53	52	52	53	54	54	54	56	58	60	60	58	57	54	53	54	56	--	53
Minimum	44	45	46	46	46	46	50	51	51	51	51	53	52	52	51	51	52	53	53	53	54	56	58	58	57	54	53	53	53	54	--	52
May																																
Maximum	60	62	63	64	65	66	68	68	68	68	69	69	69	69	69	70	71	71	71	71	71	73	74	75	75	75	75	75	72	70	70	70
Minimum	56	60	62	63	64	65	66	68	68	68	68	69	69	69	69	69	70	70	70	71	71	71	73	74	75	75	75	72	70	69	69	69
June																																
Maximum	71	70	70	70	70	70	70	72	73	73	74	76	76	74	73	72	72	72	74	74	74	76	76	76	76	76	76	76	76	76	--	73
Minimum	68	69	70	68	69	69	70	70	72	73	73	73	74	73	72	72	72	72	72	73	74	74	76	74	74	75	74	76	76	76	--	72
July																																
Maximum	78	78	78	78	79	79	79	79	79	79	79	79	80	79	79	78	78	78	76	76	76	78	80	82	82	82	82	81	80	78	76	79
Minimum	76	78	77	77	78	79	79	78	79	79	79	79	79	79	78	78	78	76	76	76	76	76	78	80	82	82	81	80	78	76	76	78
August																																
Maximum	76	74	72	73	75	76	76	76	76	74	74	74	75	77	78	79	79	79	79	78	76	75	75	75	74	74	74	74	74	70	70	75
Minimum	74	72	72	72	73	75	76	76	74	73	73	74	74	75	77	78	79	79	78	76	75	75	75	73	73	74	74	74	70	70	70	74
September																																
Maximum	70	70	69	70	71	71	72	73	74	74	74	72	70	71	71	71	69	72	72	73	73	73	72	72	69	66	65	64	65	65	--	70
Minimum	70	69	69	69	70	71	71	72	73	74	72	70	70	70	71	69	68	68	72	72	73	72	72	69	66	65	64	64	64	65	--	69

3-3655. EAST FORK WHITE RIVER AT SEYMOUR, IND.

LOCATION.--Temperature recorder at gaging station on left bank, 1,700 feet downstream from highway bridge, 1 mile north of Seymour, Jackson County, 9.6 miles downstream from Sand Creek, and at mile 219.2.
DRAINAGE AREA.--2,333 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1965.
EXTREMES, 1964-65.--Water temperatures: Maximum, 86°F July 24, 25; minimum, freezing point Jan. 17-22.
EXTREMES, 1954-65.--Water temperatures: Maximum, 86°F July 24, 25, 1965; minimum, freezing point on many days during winter months. Maximum temperature known, 90°F July 19, 1954.
REMARKS.--Regulation at low flow by pumping plant 1,200 feet upstream from recorder.

Temperature (°F) of water, water year October 1964 to September 1965
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	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	
October																																
Maximum	64	66	66	65	66	62	60	58	58	56	55	54	56	57	58	59	60	59	58	56	55	54	54	52	52	52	53	54	55	55	54	58
Minimum	62	64	64	64	61	59	58	58	56	54	53	53	54	56	56	57	58	58	56	54	53	53	52	51	51	51	52	53	54	54	53	56
November																																
Maximum	54	54	55	55	55	55	53	52	52	52	53	54	54	54	53	53	54	54	52	49	46	42	39	38	39	40	41	43	43	42	--	49
Minimum	53	53	54	54	55	53	52	51	51	52	52	53	54	53	52	52	53	52	49	46	42	39	38	38	38	39	40	41	42	39	--	48
December																																
Maximum	39	37	37	38	38	38	36	36	36	36	38	40	41	41	39	37	36	36	34	33	33	33	36	41	42	42	40	39	38	41	41	38
Minimum	37	37	37	37	38	36	36	36	36	36	36	38	40	39	37	36	36	34	33	33	33	33	33	36	41	40	39	38	38	38	41	37
January																																
Maximum	41	41	41	40	38	37	38	42	42	42	40	38	37	37	35	34	33	32	32	32	32	33	33	35	34	36	36	36	35	34	34	36
Minimum	41	41	40	38	37	37	37	38	42	40	38	37	37	35	34	33	32	32	32	32	32	32	33	33	34	34	36	35	33	33	34	36
February																																
Maximum	34	34	34	34	34	34	34	34	36	46	47	47	44	42	40	40	42	43	43	43	43	41	40	39	38	36	38	40	--	--	--	39
Minimum	34	34	34	34	34	34	34	33	33	36	46	44	42	40	39	39	40	42	43	42	41	39	39	38	35	34	36	38	--	--	--	38
March																																
Maximum	42	43	43	43	42	41	41	42	42	42	42	43	44	44	45	46	47	47	47	44	43	44	45	44	43	42	41	43	44	45	47	44
Minimum	40	42	43	42	41	40	40	41	42	42	42	42	43	44	44	45	46	47	44	43	41	41	44	43	42	41	40	41	43	43	45	42
April																																
Maximum	47	47	47	47	48	52	55	57	57	55	55	55	56	56	55	54	55	56	57	58	60	63	65	65	64	61	57	55	56	58	--	56
Minimum	46	47	46	46	47	48	52	55	55	53	53	55	55	55	54	53	53	55	56	57	58	60	63	64	61	57	55	54	54	56	--	54
May																																
Maximum	62	65	66	67	68	68	70	72	72	71	71	71	72	72	71	70	72	72	72	71	71	73	75	76	77	76	76	75	71	70	71	71
Minimum	58	62	64	66	67	67	68	69	70	70	68	68	68	69	70	69	69	70	69	70	67	70	72	74	75	74	74	71	68	68	68	69
June																																
Maximum	71	73	73	74	76	76	75	77	77	77	78	79	78	76	75	74	74	74	76	76	76	78	78	77	77	77	79	80	79	79	--	76
Minimum	70	70	72	70	73	75	73	74	75	75	75	76	75	73	72	70	71	70	70	72	73	74	75	75	72	72	75	77	77	77	--	73
July																																
Maximum	79	79	78	79	82	82	81	81	80	80	79	79	79	81	81	80	79	79	80	79	79	79	83	86	86	84	84	82	81	78	77	81
Minimum	75	74	74	76	78	79	78	77	78	77	77	76	76	78	79	77	77	77	77	77	76	77	79	81	83	81	82	79	76	74	74	77
August																																
Maximum	74	73	74	74	78	80	79	76	75	75	77	78	79	80	82	85	85	84	83	80	79	80	79	78	79	79	78	77	73	74	73	78
Minimum	72	70	69	71	73	76	76	75	73	72	72	72	74	76	79	80	81	81	80	76	75	76	76	74	75	76	76	73	69	70	71	74
September																																
Maximum	72	73	72	71	74	75	76	76	78	78	77	71	71	72	72	71	70	73	74	76	76	76	75	73	66	65	64	65	67	66	--	72
Minimum	70	68	69	71	71	72	72	73	74	75	71	69	69	70	71	69	68	70	72	74	75	75	73	66	64	63	63	61	62	65	--	70

WABASH RIVER BASIN--Continued

3-3655. EAST FORK WHITE RIVER AT SEYMOUR, IND.--Continued

Periodic determinations of suspended sediment discharge, water year October 1964 to September 1965
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 2, 1964.....	1145			212	5	2.9											
Oct. 2.....	1710			199	2	1.1											
Nov. 20.....	0815			287	4	3.1											
Jan. 23, 1965.....	0910			640	6	10											
Feb. 8.....	1630			3940	431	4580											
Feb. 18.....	1810			3580	60	580											
Mar. 16.....	1430			2700	64	466											
Mar. 19.....	1445			2940	31	246											
Apr. 13.....	1200			7190	151	2930											
Apr. 15.....	1430			5300	112	1600											
May 10.....	1605			1860	48	241											
May 20.....	1600			1200	49	159											
June 17.....	1500			460	51	63											
July 15.....	1500			800	44	95											
Aug. 12.....	1715			468	19	24											
Sept. 24.....	1000			788	66	140											

WABASH RIVER BASIN--Continued

3-3740. WHITE RIVER AT PETERSBURG, IND.

LOCATION.--Temperature recorder at gaging station on left bank, 300 feet downstream from bridge on State Highway 61, three-eighths of a mile upstream from Prides Creek, 1 mile north of Petersburg, Pike County and at mile 47.7.
DRAINAGE AREA.--11,139 square miles.
RECORDS AVAILABLE.--Water temperatures: June 1964 to September 1965.
EXTREMES, June 1964 to September 1965.--Water temperatures: Maximum, 87°F Aug. 4, 1964; minimum, freezing point Dec. 22, 1964, Feb. 7, 1965.

Temperature (°F) of water June 1964 to September 1965
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																														Average
	1	2	3	4	5	6	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	
June																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	80	79	75	76	76	77	78	78	79	80	81	82	82	82	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	78	75	74	74	75	75	77	78	78	78	79	80	81	80	--	--
July																																
Maximum	81	82	82	82	80	80	78	78	76	76	77	77	77	76	78	77	76	76	76	79	79	81	84	85	84	84	84	83	84	82	82	80
Minimum	79	80	80	80	79	77	76	76	75	75	76	77	75	75	75	76	75	76	75	76	77	79	80	82	82	81	82	82	82	80	80	78
August																																
Maximum	83	84	86	87	85	84	83	82	81	82	82	78	74	74	75	76	77	78	79	79	78	76	77	77	76	76	78	79	81	82	81	80
Minimum	80	81	83	84	82	81	81	80	77	77	78	73	71	70	71	71	72	74	75	75	76	75	73	73	75	74	74	76	76	78	79	76
September																																
Maximum	80	80	80	80	79	79	80	80	80	80	78	--	--	--	--	--	--	--	--	--	--	--	--	--	69	67	66	63	--	--	--	--
Minimum	77	76	76	76	76	74	76	76	76	76	72	--	--	--	--	--	--	--	--	--	--	--	--	--	65	65	63	61	--	--	--	--
October																																
Maximum	--	68	67	67	65	--	--	60	58	--	--	--	59	60	62	62	62	61	58	56	55	--	--	--	--	--	--	--	--	58	56	--
Minimum	--	62	62	63	59	--	--	57	54	--	--	--	54	56	58	57	57	58	55	52	51	--	--	--	--	--	--	--	--	54	52	--
November																																
Maximum	58	59	60	58	60	58	56	57	57	58	58	59	58	56	58	60	58	56	--	--	--	--	--	42	43	44	46	47	46	--	--	55
Minimum	54	56	56	55	56	54	54	54	53	53	54	56	54	52	54	57	56	53	--	--	--	--	--	39	41	42	42	46	41	--	--	51
December																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33	38	43	43	42	39	39	40	43	43	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32	33	38	42	39	38	38	38	40	42	--
January																																
Maximum	42	43	42	41	41	41	43	45	45	44	42	40	40	39	38	36	--	--	--	--	33	35	37	37	38	38	38	37	--	--	--	--
Minimum	42	42	41	40	40	41	41	43	44	42	40	40	39	38	36	34	--	--	--	--	33	33	35	37	37	38	37	36	--	--	--	--
February																																
Maximum	--	--	--	--	--	--	33	33	38	44	45	45	45	44	42	42	41	41	41	41	41	41	40	39	38	36	36	37	--	--	--	40
Minimum	--	--	--	--	--	--	32	33	33	38	43	45	44	42	42	41	41	40	41	41	41	40	39	38	36	35	35	36	--	--	--	39
March																																
Maximum	37	39	40	40	40	40	40	39	39	39	39	39	39	40	40	41	43	43	43	43	42	42	42	42	42	42	40	40	40	41	42	41
Minimum	37	37	39	40	40	40	39	39	39	39	39	39	39	39	40	40	41	43	43	42	42	42	42	42	42	40	40	40	40	40	41	40
April																																
Maximum	43	44	44	44	46	48	50	52	52	52	52	53	53	53	53	53	53	52	52	53	53	56	57	59	60	60	59	57	55	54	--	52
Minimum	42	43	44	44	44	46	48	50	52	52	52	52	53	53	53	53	52	52	52	52	53	53	56	56	59	59	57	55	54	54	--	52
May																																
Maximum	54	58	60	62	64	65	66	68	68	68	68	68	69	70	70	70	70	70	70	70	70	72	73	74	74	74	73	73	70	69	70	68
Minimum	54	54	58	60	62	64	65	66	68	68	68	68	68	68	69	68	68	70	68	69	68	69	71	71	72	72	72	70	68	67	68	67
June																																
Maximum	70	71	72	72	74	74	72	73	73	74	74	76	76	76	74	72	72	73	74	74	75	75	74	75	75	76	78	78	78	78	--	74
Minimum	70	69	70	70	72	72	71	71	72	72	72	74	74	73	72	70	71	70	71	72	72	73	72	72	72	72	74	75	76	73	--	72
July																																
Maximum	75	75	74	74	75	76	76	76	76	76	75	76	77	79	80	78	78	78	78	79	78	79	81	83	83	82	81	80	79	78	76	78
Minimum	73	74	74	74	73	75	75	74	76	74	74	74	75	77	78	77	77	77	77	77	77	77	78	80	81	80	79	78	77	74	74	76
August																																
Maximum	74	74	74	74	78	78	78	74	75	75	76	76	78	80	82	84	82	82	82	79	78	79	78	78	78	77	74	74	71	70	71	77
Minimum	72	70	70	72	72	75	74	73	74	73	73	72	74	76	78	79	80	79	79	76	76	76	76	75	76	72	72	71	68	66	68	74
September																																
Maximum	70	70	68	67	70	71	72	73	75	74	74	66	66	68	68	66	66	67	68	70	70	70	68	67	64	62	62	62	63	63	--	68
Minimum	67	66	66	66	67	68	68	70	71	71	66	66	65	66	66	66	65	66	67	68	70	68	67	64	62	61	61	60	61	63	--	66

PART 4. ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE ERIE

4-1820. ST. MARYS RIVER NEAR FORT WAYNE, IND.

LOCATION.--At gaging station at highway bridge, 4 miles south of Fort Wayne, Allen County, and 12 miles upstream from confluence with St. Joseph River.
DRAINAGE AREA.--762 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1964 to September 1965.
Sediment records: May 1953 to September 1965.
EXTREMES, 1964-65.--Water temperatures: Maximum, 79°F on several days during July and August.
Sediment concentrations: Maximum daily, 374 ppm Mar. 30; minimum daily, 8 ppm Nov. 5, 6.
Sediment loads: Maximum daily, 3,400 (estimated) tons Apr. 7; minimum daily, less than 0.50 ton on several days during November.
EXTREMES, 1953-65.--Sediment concentrations: Maximum daily, 2,060 ppm Feb. 25, 1956; minimum daily, 1 ppm on many days during 1955-56, 1960-61.
Sediment loads: Maximum daily, 30,800 tons Feb. 11, 1959; minimum daily, less than 0.50 ton on many days during 1953-57, 1959-64.
REMARKS.--Flow affected by ice Dec. 12-15, 17-31, Jan. 14 to Feb. 9, 21-28. Flow sometimes regulated by Grand Lake. Some diversion from or into Wabash River basin and into Miami and Erie Canal. Sediment discharges computed from field and laboratory data supplied by Indiana Flood Control and Water Resources Commission, from October through March.

Temperature (°F) of water, water year October 1964 to September 1965
(Once-daily measurement at approximately 0900)

Month	Day																														Average
	1	2	3	4	5	6	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	
October	69	68	69	67	66	65	63	59	57	54	52	53	54	55	56	56	57	56	57	58	57	56	55	54	55	56	54	53	55	56	55	58
November	57	58	59	58	59	60	61	62	61	63	62	63	64	63	64	63	63	62	61	57	48	42	40	38	36	34	33	32	33	34	—	53
December	33	33	32	32	32	32	32	32	32	32	32	32	33	33	33	32	32	32	32	32	33	34	33	32	33	34	35	34	33	34	34	33
January	35	36	37	37	36	37	36	37	38	37	36	37	36	35	35	34	34	34	32	32	32	33	34	35	36	36	34	32	32	32	32	35
February	32	32	32	32	32	32	33	34	35	39	40	41	40	39	40	41	40	39	39	38	38	39	38	37	36	35	34	32	—	--	—	36
March	32	32	32	32	33	34	35	35	36	37	37	36	37	38	39	39	40	39	37	36	33	33	33	33	34	34	33	35	37	37	36	35
April	35	34	34	35	36	38	39	41	45	44	45	46	46	46	45	45	46	47	49	49	50	51	52	52	51	50	49	51	50	51	—	45
May	51	52	53	54	54	54	53	53	54	54	53	54	54	56	56	57	59	58	59	60	60	61	61	62	62	63	63	63	63	64	—	57
June	64	65	65	66	66	67	68	69	69	68	69	70	71	70	70	69	70	71	71	72	73	—	—	--	—	--	--	--	--	--	--	—
July	--	73	72	73	73	72	74	74	79	74	79	78	79	79	79	72	72	73	73	72	74	72	73	73	73	74	73	74	74	73	74	74
August	74	75	--	--	--	--	--	--	--	--	--	—	78	77	79	78	78	79	79	79	78	—	—	75	—	72	70	70	69	69	70	—
September	--	70	70	71	72	72	72	--	74	70	70	69	70	71	71	69	70	70	—	72	72	72	73	74	73	73	71	70	70	69	—	71

4-1820. ST. MARYS RIVER NEAR FORT WAYNE, IND.--Continued

Suspended sediment, water year October 1964 to September 1965
(Where no daily concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	14	25	1	8.0	28	1	20	41	2
2..	14	18	1	8.4	23	1	20	42	2
3..	14	19	1	8.8	18	T	20	39	2
4..	15	52	2	10	12	T	22	44	3
5..	14	49	2	11	8	T	22	40 B	2
6..	14	30	1	8.8	8	T	22	30 B	2
7..	13	28	1	11	10	T	20	20 B	1
8..	12	34	1	14	11	T	18	16 B	1
9..	14	22	1	14	11	T	21	17 B	1
10..	14	20	1	14	13	T	22	18 B	1
11..	14	19	1	18	16	1	26	20 B	1
12..	14	19 B	1	18	21	1	32	20 B	2
13..	14	20 B	1	18	24	1	38	20 B	2
14..	14	20 B	1	18	21	1	40	180 A	19
15..	14	20 B	1	19	23	1	30	230 A	19
16..	14	20 B	1	21	25	1	28	40 B	3
17..	14	19 B	1	22	26	2	26	20 B	1
18..	14	20 B	1	22	23	1	25	45 A	3
19..	12	20 B	1	22	27	2	24	19 B	1
20..	17	95 A	4	23	102	6	22	19 B	1
21..	16	95	4	22	98	6	21	19 B	1
22..	13	77	3	20	83	4	20	19	1
23..	12	87	3	18	91	4	20	18	1
24..	12	89	3	18	78	4	17	22	1
25..	11	62	2	18	62	3	27	39	3
26..	9.6	60	2	18	52	3	50	52	7
27..	8.0	54	1	18	48	2	80	19	4
28..	8.0	48	1	20	47	3	75	14	3
29..	8.0	42	1	23	52	3	48	13	2
30..	8.0	39	1	22	46	3	41	20	2
31..	8.0	34	1	---	---	---	40	22	2
Total	392.6	--	47	506.0	--	57	939	--	96
	JANUARY			FEBRUARY			MARCH		
1..	41	17	2	100	--	12	182	16	8
2..	141	54	21	70	--	7	486	23	30
3..	250	39	26	60	--	5	1750	20	94
4..	164	34	15	55	--	5	2970	92 S	427
5..	105	40	11	52	118	17	4230	109	1240
6..	77	44	9	52	104	15	4170	93	1050
7..	68	47	9	85	141	32	4050	82	897
8..	60	45	7	290	258	202	4110	86	954
9..	72	62	12	700	172	325	3990	105	1130
10..	88	122	29	3510	60	1520	3570	121	1170
11..	77	100	21	3690	137	1360	2750	130	965
12..	59	58	9	2910	97	762	2150	137	795
13..	53	56	8	1950	62	326	1850	119	594
14..	40	62	7	1650	30	134	1700	105	482
15..	37	68	7	1480	25	100	1520	98	402
16..	36	75	7	1120	24	73	1360	85	312
17..	33	80	7	805	24	52	1320	--	750
18..	31	88	7	575	13	20	1700	--	1200
19..	30	95	8	425	11	13	1080	--	600
20..	30	105	9	300	18	15	635	--	240
21..	31	--	2	220	17	10	455	--	140
22..	43	--	3	170	18	8	350	--	90
23..	230	--	45	140	20	8	312	--	75
24..	750	--	310	116	18	6	270	--	60
25..	920	--	430	105	15	4	270	199	145
26..	700	--	280	95	14	4	260	184	129
27..	480	--	150	90	15	4	300	190	154
28..	250	--	50	90	15	4	375	218	221
29..	190	--	35	--	--	--	1660	324 S	1620
30..	240	--	50	--	--	--	2700	374	2730
31..	190	--	35	--	--	--	1750	--	1200
Total	5516	--	1621	20905	--	5043	54275	--	19904

S Computed by subdividing day.
T Less than 0.50 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

STREAMS TRIBUTARY TO LAKE ERIE--Continued

4-1820. ST. MARYS RIVER NEAR FORT WAYNE, IND.--Continued

Suspended sediment, water year October 1964 to September 1965--Continued
(Where no daily concentrations are reported, loads are estimated)

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	1280	--	700	945		450	132	--	19
2	1800	--	1300	735		300	112	--	14
3	1320	--	750	545		180	97	--	12
4	945	--	450	400		110	82	--	9
5	770	--	320	312		75	67	--	6
6	2420	--	2000	260		55	60	--	5
7	3270	--	3400	210		40	78	--	8
8	2550	--	2200	182		30	230	--	45
9	2850	--	2700	156		25	156	--	25
10	2970	--	2900	148		25	99	--	12
11	2650	--	2400	132		19	82	--	9
12	2450	--	2100	118		16	77	--	8
13	2250	--	1800	99		12	69	--	7
14	1560	--	1000	93		11	61	--	6
15	1240	--	700	82		9	53	--	4
16	1200	--	650	77		8	43	--	3
17	1160	--	600	72		7	37	--	2
18	1020	--	500	67		6	33	--	2
19	805	--	350	62		6	29	--	2
20	635	--	240	55		5	26	--	1
21	515	--	170	49		4	25	--	1
22	400	--	110	45		4	23	--	1
23	400	--	110	148		25	25	--	1
24	891	110	S 339	260		55	58	--	5
25	2200	322	1910	224		45	54	--	4
26	2100	289	1640	375		95	35	--	2
27	1520	286	1170	966		470	27	--	1
28	1240	185	619	1200		650	22	65	A 4
29	1160	118	370	455		140	22	65	A 4
30	1120	--	600	240		50	24	65	A 4
31	--	--	--	164		25	--	--	--
Total	46691	--	34098	8876		2952	1941	--	226

Day	JULY			AUGUST			SEPTEMBER		
1	26	65	A 5	18	--	1	18	85	4
2	26	65	A 5	20	80	A 4	28	95	7
3	30	65	A 5	20	80	A 4	24	76	5
4	25	65	A 4	22	80	A 5	23	78	5
5	22	65	A 4	24	80	A 5	24	70	5
6	22	65	A 4	24	80	A 5	29	63	5
7	154	--	25	22	80	A 5	28	67	5
8	134	--	19	21	80	A 5	26	58	4
9	61	--	6	23	80	A 5	23	48	3
10	47	--	4	25	80	A 5	20	36	2
11	38	--	3	26	80	A 6	18	25	1
12	30	--	2	23	80	A 5	17	18	1
13	24	--	1	20	80	A 4	16	22	1
14	24	--	1	18	80	A 4	18	22	1
15	23	--	1	17	80	A 4	26	61	4
16	22	--	1	16	80	A 3	77	82	17
17	34	--	2	18	80	A 4	82	70	15
18	38	--	3	18	80	A 4	52	47	7
19	25	--	1	19	80	A 4	40	44	5
20	20	--	1	20	80	A 4	33	34	3
21	18	--	1	17	75	A 3	30	19	2
22	18	--	1	15	75	A 3	35	27	3
23	21	--	1	14	75	A 3	37	36	4
24	22	--	1	14	75	A 3	39	40	4
25	20	--	1	16	80	A 3	38	34	3
26	19	--	1	19	85	A 4	30	45	4
27	19	--	1	20	85	A 5	24	55	4
28	20	--	1	18	85	A 4	22	60	4
29	20	--	1	17	85	A 4	21	62	4
30	18	--	1	16	85	A 4	22	61	4
31	18	--	1	16	85	4	--	--	--
Total	1038	--	108	596	--	126	920	--	136

Total discharge for year (cfs-days)..... 142595.6
Total load for year (tons)..... 64414

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.

MISCELLANEOUS ANALYSES OF STREAMS IN THE OHIO RIVER BASIN

Chemical analyses, in parts per million, September 1964 to September 1965

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color	Dissolved oxygen	
														Calcium, magnesium	Noncarbonate				Parts per million	Percent saturation
WABASH RIVER BASIN																				
3-3536.4. WHITE RIVER NEAR INDIANAPOLIS, IND.																				
Oct. 29, 1964....	244							406	123	115	1.3	0.4	662	370	37	1200	7.5		1.0	11
3-3536.6. WHITE RIVER AT WAVERLY, IND.																				
Oct. 29, 1964....	269							381	114	105	1.2	1.1	624	362	50	1120	7.5		3.0	31
3-3538. WHITE LICK CREEK AT MOORESVILLE, IND.																				
Oct. 30, 1964....	5.65							340	50	18	0.5	1.3	369	324	45	654	7.9		6.0	54
3-3539. EAST FORK WHITE LICK CREEK AT FRIENDSWOOD, IND.																				
Oct. 30, 1964....	1.1							350	80	16	0.6	0.4	416	332	44	712	7.7		4.0	34
3-3540. WHITE RIVER NEAR CENTERTON, IND.																				
Oct. 30, 1964....	295							376	104	95	1.0	1.9	620	358	50	1050	7.6		4.0	40
3-3543. WHITE RIVER NEAR PARAGON, IND.																				
Oct. 29, 1964....	307							344	106	85	1.0	8.1	586	352	70	1010	7.5		5.0	53
3-3568. WHITE RIVER AT ROMONA, IND.																				
Oct. 29, 1964....	359							326	102	80	0.9	9.1	565	344	76	955	7.5		5.0	52
3-3570. WHITE RIVER AT SPENCER, IND.																				
Oct. 29, 1964....	360							313	99	75	0.9	11	549	338	81	928	7.5		6.0	61
3-3572.7. BIG WALNUT CREEK NEAR JAMESTOWN, IND.																				
Sept. 16, 1964...	0.79		0.50	0.10				294	74	7.0	0.4	2.3		315	74	591	7.9		7.0	71

MISCELLANEOUS ANALYSES OF STREAMS IN THE OHIO RIVER BASIN--Continued

Chemical analyses, in parts per million, September 1964 to September 1965--Continued

29058

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color	Dissolved oxygen	
														Calcium, magnesium	Noncarbonate				Parts per million	Percent saturation
WABASH RIVER BASIN--Continued																				
3-3573. BIG WALNUT CREEK NEAR BARNARD, IND.																				
Sept. 16, 1964...	1.66		0.21	0.07				A254	63	11	0.4	0.7		277	58	531	8.3		7.0	72
3-3573.3. BIG WALNUT CREEK NEAR ROACHDALE, IND.																				
Sept. 16, 1964...	1.22		0.22	0.12				269	61	10	0.4	0.6		273	52	535	8.1		7.0	72
3-3573.6. BIG WALNUT CREEK NEAR BAINBRIDGE, IND.																				
Sept. 16, 1964...	0.19		0.33	0.12				248	62	10	0.4	1.0		262	58	514	7.9		7.0	74
3-3574. BIG WALNUT CREEK NEAR GREENCASTLE, IND.																				
Sept. 16, 1964...	1.3		0.34	0.12				300	47	8.0	0.3	3.2		294	48	550	7.9		9.0	95
3-3574.4. LITTLE WALNUT CREEK NEAR REELSVILLE, IND.																				
Sept. 17, 1964...	0.74		0.30	0.12				266	29	6.0	0.3	1.4		250	32	467	8.0		5.0	51
3-3574.5. BIG WALNUT CREEK NEAR REELSVILLE, IND. (4.9 MILES NORTH)																				
Sept. 17, 1964...	2.88		0.49	0.14				320	52	38	0.4	5.0		315	52	691	7.9		5.0	51
3-3575. BIG WALNUT CREEK NEAR REELSVILLE, IND. (1000 FEET UPSTREAM FROM GAGE)																				
Sept. 17, 1964...	--		0.40	0.37				317	42	18	0.3	1.2		302	42	592	8.2		6.0	63
3-3602.3. RICHLAND CREEK NEAR SOLSBERRY, IND. (3.2 MILES NORTHEAST)																				
Oct. 7, 1964.....	0.09		0.24	0.24				187	34	6.0	0.3	0.5		183	30	373	7.8		7.0	61
3-3602.5. RICHLAND CREEK NEAR SOLSBERRY, IND. (4.8 MILES WEST)																				
Oct. 7, 1964.....	0.46		1.6	0.24				207	17	4.0	0.3	0.4		178	8	353	7.7		6.0	52

A Also contains 6 ppm carbonate (CO_3).

MISCELLANEOUS ANALYSES OF STREAMS IN THE OHIO RIVER BASIN--Continued

Chemical analyses, in parts per million, September 1964 to September 1965--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color	Dissolved oxygen: Parts per million	Dissolved oxygen: Percent saturation
WABASH RIVER BASIN--Continued																				
3-3602.6. TRIBUTARY TO RICHLAND CREEK NEAR SOLSBERRY, IND.																				
Oct. 7, 1964.....	0.41		0.85	0.22				228	15	8.0	0.3	0.7		193	6	373	8.0		9.0	76
3-3602.7. BEECH CREEK NEAR SOLSBERRY, IND.																				
Oct. 7, 1964.....	0.03		0.71	0.22				144	49	4.0	0.2	0.5		162	44	333	7.8		7.0	62
3-3602.8. RICHLAND CREEK NEAR SOLSBERRY, IND. (5.8 MILES SOUTHWEST)																				
Oct. 7, 1964.....	0.67		0.61	0.24				222	15	3.5	0.3	0.5		186	4	367	8.0		6.0	54
3-3603. RICHLAND CREEK NEAR BLOOMFIELD, IND.																				
Oct. 7, 1964.....	0.88		0.84	0.27				220	16	4.0	0.3	1.5		180	0	373	7.6		8.0	75
3-3609.2. BIG BLUE RIVER NEAR MOORELAND, IND.																				
June 24, 1965....	4.32							306	94	7.0	0.3	4.4	403	360	109	632	7.9		7.0	--
3-3609.4. BIG BLUE RIVER AT NEWCASTLE, IND.																				
June 24, 1965....	11.0							350	77	9.0	0.4	4.3	426	376	88	663	7.7		4.0	43
3-3609.6. BIG BLUE RIVER NEAR NEWCASTLE, IND. (4 MILES SOUTHWEST)																				
June 24, 1965....	24.4							176	290	50	1.0	10	719	452	308	965	6.8		2.0	21
3-3609.8. BIG BLUE RIVER AT KNIGHTSTOWN, IND.																				
June 24, 1965....	43.9							290	120	24	0.7	9.8	469	370	132	731	7.6		6.0	67
3-3610. BIG BLUE RIVER AT CARTHAGE, IND.																				
June 24, 1965....	57.2							332	74	27	0.7	9.0	451	358	86	704	8.0		7.0	80
3-3611. BIG BLUE RIVER NEAR MORRISTOWN, IND.																				
June 24, 1965....	57.3							A316	71	22	0.6	8.5	423	352	76	678	8.4		6.0	70
3-3612. BIG BLUE RIVER NEAR SHELBYVILLE, IND. (6 MILES NORTHEAST)																				
June 24, 1965....	71.4							336	55	16	0.5	7.6	390	340	64	643	8.2		8.0	94

A Also contains 10 ppm carbonate (CO_3).

MISCELLANEOUS ANALYSES OF STREAMS IN THE OHIO RIVER BASIN--Continued

Chemical analyses, in parts per million, September 1964 to September 1965

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color	Dissolved oxygen	
														Calcium, magnesium	Noncarbonate				Parts per million	Percent saturation
WABASH RIVER BASIN--Continued																				
3-3612.5. BIG BLUE RIVER NEAR SHELBYVILLE, IND. (2 MILES NORTH)																				
June 24, 1965....	73.2							331	56	18	0.5	7.5	404	336	64	638	8.1		7.0	83
3-3614.5. LITTLE BLUE RIVER AT SHELBYVILLE, IND.																				
June 24, 1965....	4.44							280	45	11	0.4	3.4	312	288	58	532	7.9		6.0	73
3-3615. BIG BLUE RIVER AT SHELBYVILLE, IND.																				
June 24, 1965....	81.6							318	55	18	0.5	7.4	382	322	61	628	7.9		7.0	84
3-3631.5. FLATROCK RIVER NEAR NEWCASTLE, IND.																				
Nov. 10, 1964....	0.84							322	48	8.0	0.5	4.5	348	320	56	584	7.9		7.0	61
3-3632. FLATROCK RIVER AT LEWISVILLE, IND.																				
Nov. 10, 1964....	2.96							318	45	20	0.4	8.1	359	326	65	623	7.8		6.0	52
3-3634.7. FLATROCK RIVER NEAR ADAMS, IND.																				
Nov. 10, 1964....	9.8							330	66	78	0.6	0.4	481	348	77	832	8.2		9.0	85
3-3635. FLATROCK RIVER AT ST. PAUL, IND.																				
Nov. 10, 1964....	12.3							A308	61	68	0.4	0.6	464	334	68	783	8.4		13	124
3-3774. PATOKA RIVER NEAR EAST MT. CARMEL, IND.																				
Sept. 26, 1963...	15							180	304	86			752	474	326	1120	7.1			
3-3744.5. PATOKA RIVER NEAR VALEENE, IND. (3 MILES NORTHEAST)																				
Sept. 24, 1963...	0.06							208	19	5.0			214	185	14	357	7.9			
3-3744.6. PATOKA RIVER NEAR VALEENE, IND. (3 MILES WEST)																				
Sept. 24, 1963...	0.03							170	12	3.0			176	148	8	303	7.1			

A Also contains 8 ppm carbonate (CO_3).

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1964 to September 1965
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
MIAMI RIVER BASIN																	
3-2760. EAST FORK WHITEWATER RIVER AT BROOKVILLE, IND.																	
Oct. 24, 1964	0725			26	35	2.4											
Nov. 20	0720			54	10	1.4											
Jan. 24, 1965	0845			1030	273	759											
Feb. 19	1240			368	38	38											
Mar. 12	1855			565	22	34											
Mar. 24	1535			990	122	326											
Apr. 16	0915			1230	122	405											
May 21	0800			188	28	14											
July 16	1435			75	49	9.9											
Aug. 17	1025			28	35	2.6											
Sept. 25	0945			65	38	6.7											
ANDERSON RIVER BASIN																	
3-3033. MIDDLE FORK ANDERSON RIVER AT BRISTOW, IND.																	
Feb. 18, 1965	1400			31	12	1.0											
Mar. 19	1030			62	12	2.0											
July 15	1045			3	7	.1											
WABASH RIVER BASIN																	
3-3243. SALAMONIE RIVER NEAR WARREN, IND																	
Feb. 12, 1965	1355			3270	310	2740											
Sept. 13	1230			10	54	1.4											
3-3355. WABASH RIVER AT LAFAYETTE, IND.																	
Feb. 11, 1965	1130			30800	980	81500											
Feb. 16	0935			9720	173	4540											
Mar. 18	1000			14400	126	4900											

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN--Continued

Periodic determinations of suspended-sediment discharge, water year October 1964 to September 1965--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters											Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
WABASH RIVER BASIN--Continued																		
3-3515. FALL CREEK NEAR FORTVILLE, IND.																		
Mar. 12, 1965	1425			241	14	9.1												
Mar. 24	1540			371	37	37												
3-3540. WHITE RIVER NEAR CENTERTON, IND.																		
Mar. 24, 1965	1355			3180	84	721												
Apr. 1	1325			2260	28	171												
May 3	1035			2570	78	541												
3-3680. BRUSH CREEK NEAR NEBRASKA, IND.																		
Jan. 23, 1965	1300			63	136	23												
Feb. 9	1355			660	2690	4790												
Feb. 19	1000			4.7	17	.2												
Mar. 19	1650			4.4	4	T												
Apr. 15	1700			65	74	13												
May 20	1800			.8	4	.1												
Aug. 12	0745			.1	38	.1												
Sept. 24	1300			1.6	26	.1												
3-3765. PATOKA RIVER NEAR PRINCETON, IND.																		
Oct. 1, 1964	1430			14	2	0.1												
Oct. 22	1155			3.6	2	T												
Nov. 19	1210			45	9	1.1												
Jan. 22, 1965	1445			278	62	46												
Feb. 18	1120			3740	79	798												
Mar. 19	0710			1850	56	280												
Apr. 15	0800			950	237	608												
May 20	1025			75	17	3.4												
June 17	0800			96	13	3.4												
July 15	0605			174	23	11												
Aug. 11	1515			14	16	.6												
Sept. 23	1400			298	138	111												

MISCELLANEOUS ANALYSES OF LAKES AND STREAMS IN HUDSON BAY AND UPPER MISSISSIPPI RIVER BASIN

Periodic determinations of suspended-sediment discharge, water year October 1964 to September 1965
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters											Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
ILLINOIS RIVER BASIN																		
5-5180. KANKAKEE RIVER AT SHELBY, IND.																		
Apr. 9, 1965.....	1930			3410	73	672												

Part 1. Surface Water Records

Part 2. Water Quality Records

GPO 826-927