

## 05515000 KANKAKEE RIVER NEAR NORTH LIBERTY, IN

LOCATION.--Lat 41°33'50", long 86°29'50", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.23, T.36 N., R.1 W., St. Joseph County, Hydrologic Unit 07120001, (NORTH LIBERTY, IN quadrangle), on left bank at upstream side of bridge on county highway named "New Road", 2.7 mi upstream from Little Kankakee River, 4 mi northwest of North Liberty, and at mile 126.9.

DRAINAGE AREA.--174 mi<sup>2</sup>, of which 58.2 mi<sup>2</sup> does not contribute directly to surface runoff.

PERIOD OF RECORD.--January 1951 to October 2003 (discontinued).

REVISED RECORDS.--WSP 1915: 1952, 1956-59. WSP 2115: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 680.04 ft above National Geodetic Vertical Datum of 1929 (levels by State of Indiana, Department of Natural Resources). Prior to June 26, 1956, nonrecording gage on downstream side of bridge; June 26, 1956 to Sept. 3, 1996, water-stage recorder on left bank at downstream side of bridge, all at same datum

REMARKS.--Records good except for estimated daily discharges and those above 300 ft<sup>3</sup>/s (backwater), which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	75	87	120	86	87	103	107	146	91	94	94
2	74	76	88	113	86	88	99	114	141	87	91	111
3	74	75	84	108	91	86	98	110	141	82	87	108
4	78	75	84	103	122	87	107	106	143	83	97	104
5	84	77	86	102	119	88	171	170	138	101	93	98
6	81	78	85	99	112	86	158	179	135	108	86	94
7	81	76	86	98	107	86	146	151	133	129	82	92
8	79	77	84	99	105	90	139	167	132	152	83	88
9	78	77	83	99	101	111	136	342	131	150	78	85
10	77	93	84	98	99	102	131	461	127	141	78	83
11	75	90	84	96	96	99	125	386	127	136	81	78
12	76	86	86	94	95	100	119	333	127	128	72	72
13	76	84	86	94	94	121	115	278	126	122	71	73
14	75	83	86	93	91	129	113	237	125	118	66	78
15	77	85	85	91	89	125	112	233	121	117	70	82
16	76	85	84	91	86	128	110	215	118	113	71	79
17	76	84	83	90	87	131	107	196	118	108	71	77
18	76	84	95	89	87	129	106	182	115	105	67	73
19	76	85	121	95	87	127	102	175	118	99	59	74
20	75	84	128	89	87	130	104	178	113	90	55	72
21	75	85	122	85	92	144	103	167	109	127	58	73
22	75	88	114	85	93	136	100	161	108	140	56	80
23	74	89	108	e84	91	127	98	155	105	124	56	88
24	73	89	103	e83	89	120	95	157	102	113	58	e82
25	75	90	104	e84	88	120	94	148	94	104	52	e88
26	76	90	98	85	87	117	93	146	92	102	51	e82
27	75	86	96	88	87	112	92	142	99	107	70	e84
28	72	85	95	84	87	110	91	140	99	113	68	e90
29	74	88	93	83	---	107	91	140	100	107	71	e110
30	77	89	97	83	---	104	98	139	98	104	74	e100
31	75	---	122	86	---	103	---	155	---	99	73	---
TOTAL	2,362	2,508	2,941	2,891	2,641	3,430	3,356	5,970	3,581	3,500	2,239	2,592
MEAN	76.2	83.6	94.9	93.3	94.3	111	112	193	119	113	72.2	86.4
MAX	84	93	128	120	122	144	171	461	146	152	97	111
MIN	72	75	83	83	86	86	91	106	92	82	51	72
CFSM	0.44	0.48	0.55	0.54	0.54	0.64	0.64	1.11	0.69	0.65	0.42	0.50
IN.	0.50	0.54	0.63	0.62	0.56	0.73	0.72	1.28	0.77	0.75	0.48	0.55

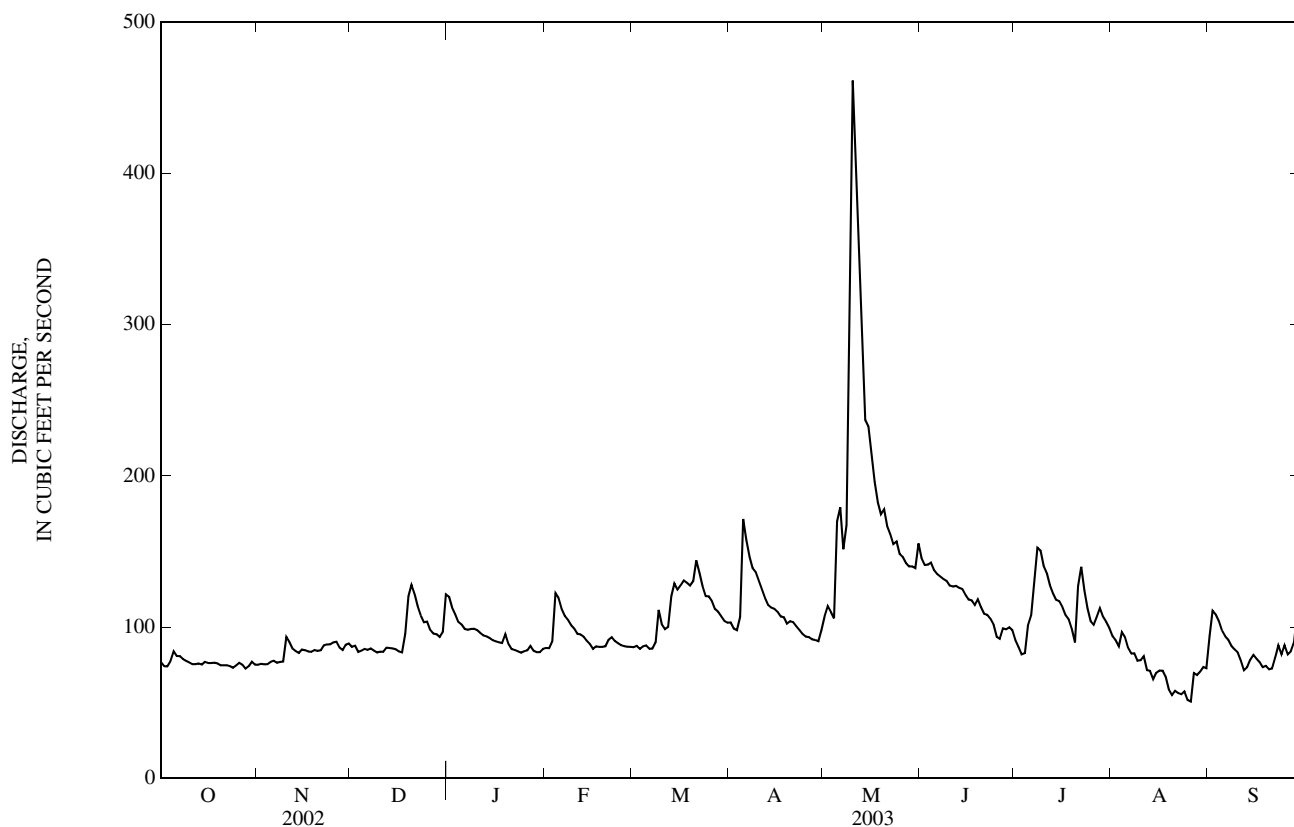
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

MEAN	135	153	165	165	178	219	210	180	159	127	106	104
MAX	333	303	341	367	298	471	310	335	410	390	273	222
(WY)	(1994)	(1991)	(1991)	(1991)	(1991)	(1982)	(1985)	(1996)	(1996)	(1996)	(1995)	(1993)
MIN	70.1	67.3	77.5	78.0	76.3	111	112	98.4	84.0	64.2	63.1	64.4
(WY)	(1954)	(1965)	(1961)	(1961)	(1963)	(2003)	(1987)	(1958)	(1971)	(1971)	(1964)	(1953)

## 05515000 KANKAKEE RIVER NEAR NORTH LIBERTY, IN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951 - 2003	
ANNUAL TOTAL	50,104		38,011		158	
ANNUAL MEAN	137		104		95.4	
HIGHEST ANNUAL MEAN					245	1991
LOWEST ANNUAL MEAN					95.4	1964
HIGHEST DAILY MEAN	580	May 13	461	May 10	903	Mar 17, 1982
LOWEST DAILY MEAN	60	Sep 9	51	Aug 26	44	Aug 4, 1988
ANNUAL SEVEN-DAY MINIMUM	62	Sep 7	55	Aug 20	51	Sep 7, 1964
MAXIMUM PEAK FLOW			483	May 9	908	Mar 17, 1982
MAXIMUM PEAK STAGE			5.27	May 9	9.04	Jun 27, 1968
ANNUAL RUNOFF (CFSM)	0.79		0.60		0.91	
ANNUAL RUNOFF (INCHES)	10.71		8.13		12.35	
10 PERCENT EXCEEDS	213		140		258	
50 PERCENT EXCEEDS	119		93		137	
90 PERCENT EXCEEDS	75		75		82	

e Estimated



## 05515500 KANKAKEE RIVER AT DAVIS, IN

LOCATION.--Lat 41°24'00", long 86°42'04", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.13, T.34 N., R.3 W., Starke County, Hydrologic Unit 07120001, (KINGSFORD HEIGHTS, IN quadrangle), on left bank at downstream side of bridge on U.S. Highway 30 at Davis, 0.5 mi downstream from Mill Creek, 4 mi east of Hanna, and at mile 110.9.

DRAINAGE AREA.--537 mi<sup>2</sup>, of which 137 mi<sup>2</sup> does not contribute directly to surface runoff.

PERIOD OF RECORD.--July 1905 to July 1906 and October 1924 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1338: 1953. WSP 2115: Drainage area.

GAGE.--Water-stage recorder and Acoustic Doppler Velocity meter. Datum of gage is 664.68 ft above National Geodetic Vertical Datum of 1929. July 13, 1905, to July 21, 1906, nonrecording gage at site 50 ft downstream at different datum. July 28, 1925, to May 18, 1929, nonrecording gage on bridge 0.5 mi downstream at different datum. Apr. 19, 1931, to Nov. 3, 1953, nonrecording gage at present site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248	e250	283	375	e283	e271	355	424	473	278	290	287
2	246	e242	285	366	e286	e272	350	511	456	264	284	352
3	245	e249	280	344	e303	e252	339	484	462	252	279	349
4	250	e259	276	331	362	e258	354	434	468	245	317	329
5	273	e277	270	323	387	e275	528	590	451	277	318	300
6	e283	287	276	319	374	e277	605	814	435	336	295	282
7	257	281	272	309	347	274	546	703	427	467	272	271
8	250	278	272	311	e327	280	525	679	420	589	259	260
9	247	e283	268	314	e293	329	512	1,080	414	610	248	250
10	250	305	267	314	317	325	485	1,550	403	557	238	243
11	255	318	270	302	301	322	462	1,400	398	497	233	241
12	255	303	274	e309	e363	327	438	1,240	402	448	228	236
13	e259	293	275	303	e454	362	415	1,080	404	415	225	230
14	e259	289	279	298	e499	423	403	953	403	388	231	233
15	e260	287	285	e297	298	417	395	890	384	383	220	239
16	266	284	284	e296	278	416	385	843	374	379	221	234
17	264	277	276	e295	281	433	371	768	358	355	217	228
18	268	274	297	e295	282	446	361	700	352	342	212	222
19	274	279	366	e293	282	448	356	651	363	331	197	219
20	e272	283	392	e292	e294	439	354	638	354	313	197	215
21	e270	285	387	e292	e300	455	367	639	340	329	197	213
22	e266	296	359	e292	302	451	364	597	327	373	187	227
23	e255	301	341	e289	296	427	343	563	320	356	184	242
24	253	298	335	e289	289	407	337	541	306	329	176	243
25	252	294	327	e288	278	408	335	521	295	308	175	241
26	262	302	323	e286	e269	401	332	504	288	292	186	242
27	266	299	310	e282	e267	394	324	486	287	301	237	257
28	e260	288	305	e280	e269	384	319	476	292	361	236	254
29	e260	286	306	e277	---	376	313	468	297	348	241	259
30	e253	293	309	e276	---	361	327	460	287	324	260	269
31	e249	---	346	e279	---	354	---	474	---	309	253	---
TOTAL	8,027	8,540	9,395	9,416	8,881	11,264	11,900	22,161	11,240	11,356	7,313	7,667
MEAN	259	285	303	304	317	363	397	715	375	366	236	256
MAX	283	318	392	375	499	455	605	1,550	473	610	318	352
MIN	245	242	267	276	267	252	313	424	287	245	175	213
CFSM	0.48	0.53	0.56	0.57	0.59	0.68	0.74	1.33	0.70	0.68	0.44	0.48
IN.	0.56	0.59	0.65	0.65	0.62	0.78	0.82	1.54	0.78	0.79	0.51	0.53

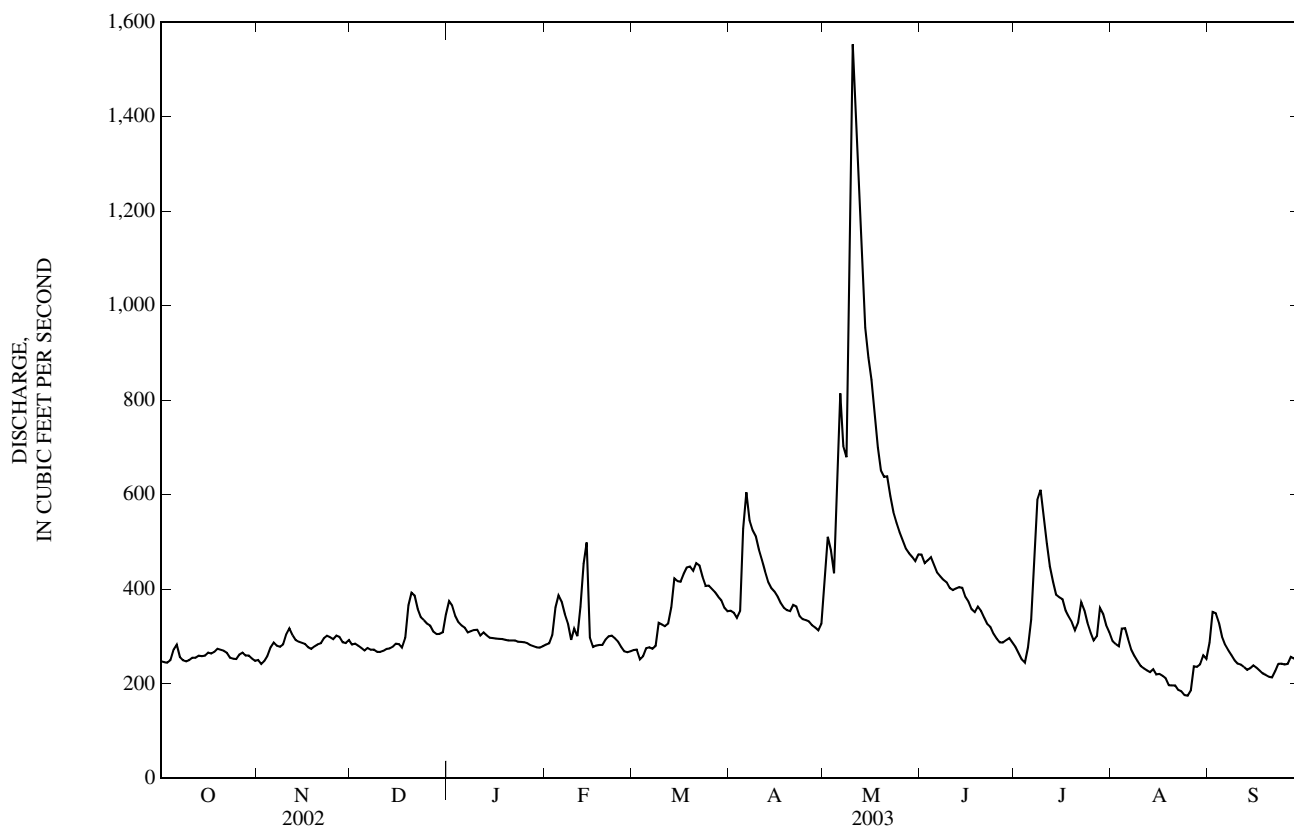
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 2003, BY WATER YEAR (WY)

MEAN	410	475	517	543	585	715	736	632	532	426	359	344
MAX	1,162	988	1,191	1,275	990	1,376	1,218	1,067	1,076	983	804	718
(WY)	(1955)	(1991)	(1928)	(1993)	(1991)	(1985)	(1982)	(1983)	(1996)	(1996)	(1996)	(1972)
MIN	198	230	236	235	236	325	397	296	248	205	174	179
(WY)	(1964)	(1965)	(1964)	(1963)	(1964)	(1934)	(2003)	(1934)	(1934)	(1934)	(1941)	(1941)

05515500 KANKAKEE RIVER AT DAVIS, IN—Continued

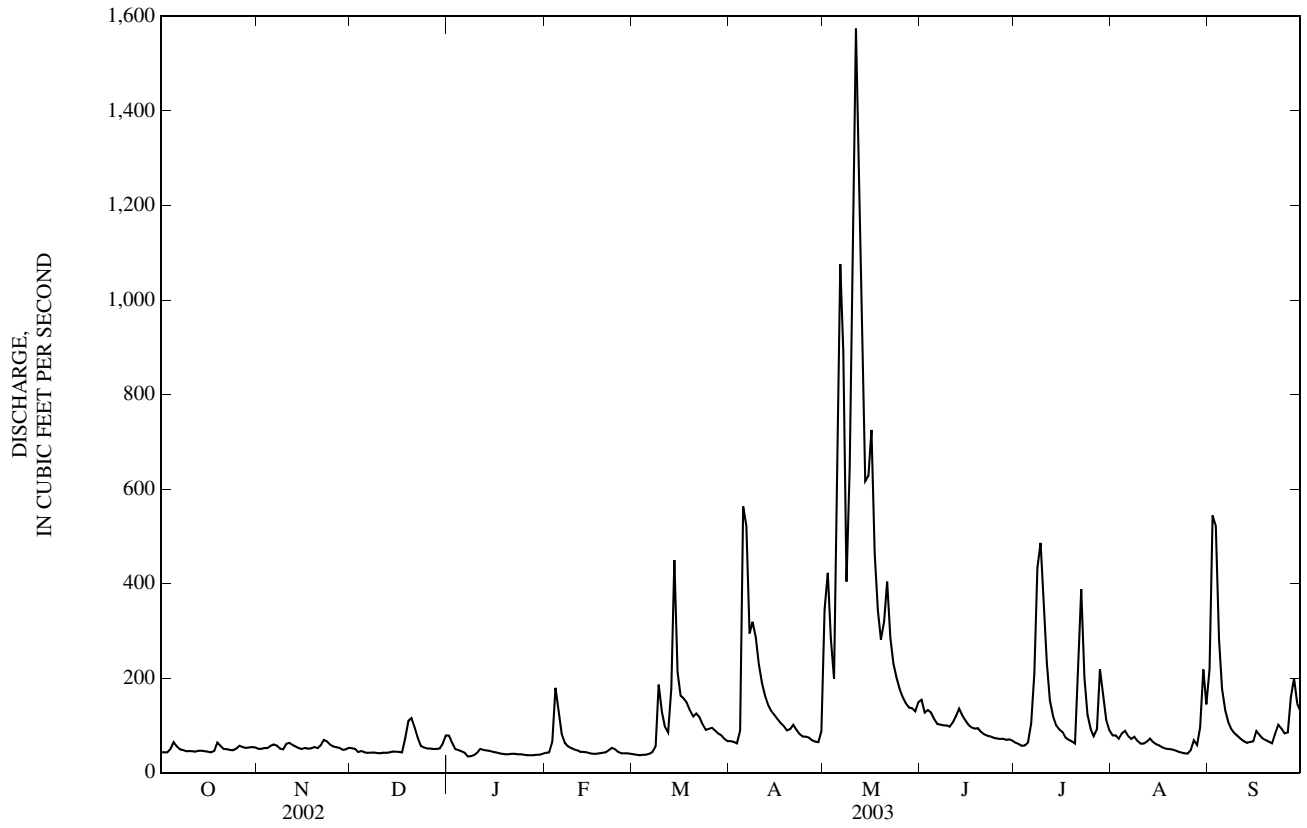
SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1926 - 2003	
ANNUAL TOTAL	182,746		127,160			
ANNUAL MEAN	501		348		522	
HIGHEST ANNUAL MEAN					823	1991
LOWEST ANNUAL MEAN					293	1964
HIGHEST DAILY MEAN	1,740	May 13	1,550	May 10	1,920	Mar 20, 1982
LOWEST DAILY MEAN	195	Sep 13	175	Aug 25	154	Aug 30, 1941
ANNUAL SEVEN-DAY MINIMUM	199	Sep 8	186	Aug 20	156	Aug 28, 1941
MAXIMUM PEAK FLOW			1,590	May 10	1,920	Mar 20, 1982
MAXIMUM PEAK STAGE			11.69	May 10	13.79	Jul 19, 1996
ANNUAL RUNOFF (CFSM)	0.93		0.65		0.97	
ANNUAL RUNOFF (INCHES)	12.66		8.81		13.21	
10 PERCENT EXCEEDS	884		479		888	
50 PERCENT EXCEEDS	413		300		450	
90 PERCENT EXCEEDS	241		243		276	

e Estimated





05516500 YELLOW RIVER AT PLYMOUTH, IN—Continued



## 05517000 YELLOW RIVER AT KNOX, IN

LOCATION.--Lat 41°18'10", long 86°37'14", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.14, T.33 N., R.2 W., Starke County, Hydrologic Unit 07120001, (KNOX EAST, IN quadrangle), on right bank 40 ft upstream from bridge on U.S. Highway 35 in Knox, 0.3 mi north of Knox, 1.4 mi downstream from Eagle Creek, and at mile 11.6.

DRAINAGE AREA.--435 mi<sup>2</sup>, of which 51 mi<sup>2</sup> does not contribute directly to surface runoff.

PERIOD OF RECORD.--August 1905 to July 1906, August 1943 to current year.

REVISED RECORDS.--WSP 1278: 1952. WSP 2115: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 679.93 ft above National Geodetic Vertical Datum of 1929 (levels by State of Indiana, Department of Natural Resources). August 1905 to July 1906, nonrecording gage at same site at different datum. August 1943 to July 17, 1952, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	93	112	190	e95	e108	158	444	282	93	234	302
2	75	90	113	208	e100	e109	155	664	275	92	217	413
3	75	88	e110	193	e120	e106	150	629	260	81	210	650
4	80	93	e78	171	223	e100	168	480	266	82	192	619
5	89	99	e105	167	351	113	316	507	251	131	196	409
6	96	104	e82	160	e260	117	723	860	231	162	199	294
7	91	110	e92	156	e170	117	648	1,050	219	332	176	235
8	84	112	e96	150	e140	118	508	1,070	211	580	160	201
9	81	114	e92	153	e133	161	509	820	204	748	165	178
10	81	125	e94	158	e130	305	459	1,050	198	757	156	165
11	80	130	e97	e150	e125	236	393	1,240	196	614	139	153
12	79	133	98	e106	e122	196	342	1,480	203	483	139	142
13	81	128	99	e130	e121	308	303	1,490	218	378	143	133
14	79	121	99	e124	e121	520	269	1,260	236	319	152	133
15	79	119	99	e84	e120	578	251	925	211	286	145	133
16	79	112	99	e120	e119	390	236	879	191	266	135	129
17	79	111	99	e114	e118	338	222	900	177	246	128	150
18	80	111	116	e107	125	321	211	699	170	220	122	138
19	99	111	172	e103	125	300	201	575	167	207	115	129
20	121	117	221	e102	126	276	197	536	158	199	105	124
21	107	116	243	e100	128	261	218	602	148	210	109	120
22	98	128	218	e98	130	258	215	600	137	443	106	135
23	93	135	187	e96	140	239	199	488	130	545	101	162
24	90	133	163	e95	130	215	185	426	123	375	101	171
25	92	125	161	e94	e123	206	177	380	117	284	90	162
26	98	122	146	e93	e117	205	175	344	114	237	90	152
27	101	118	145	e92	e113	203	167	312	108	224	100	174
28	97	115	144	e91	e110	195	157	293	105	301	125	258
29	96	111	142	e90	---	184	153	288	105	406	130	290
30	96	112	141	e90	---	173	167	276	100	332	181	238
31	97	---	157	e91	---	162	---	272	---	267	309	---
TOTAL	2,749	3,436	4,020	3,876	3,935	7,118	8,232	21,839	5,511	9,900	4,670	6,692
MEAN	88.7	115	130	125	141	230	274	704	184	319	151	223
MAX	121	135	243	208	351	578	723	1,490	282	757	309	650
MIN	75	88	78	84	95	100	150	272	100	81	90	120
CFSM	0.20	0.26	0.30	0.29	0.32	0.53	0.63	1.62	0.42	0.73	0.35	0.51
IN.	0.24	0.29	0.34	0.33	0.34	0.61	0.70	1.87	0.47	0.85	0.40	0.57

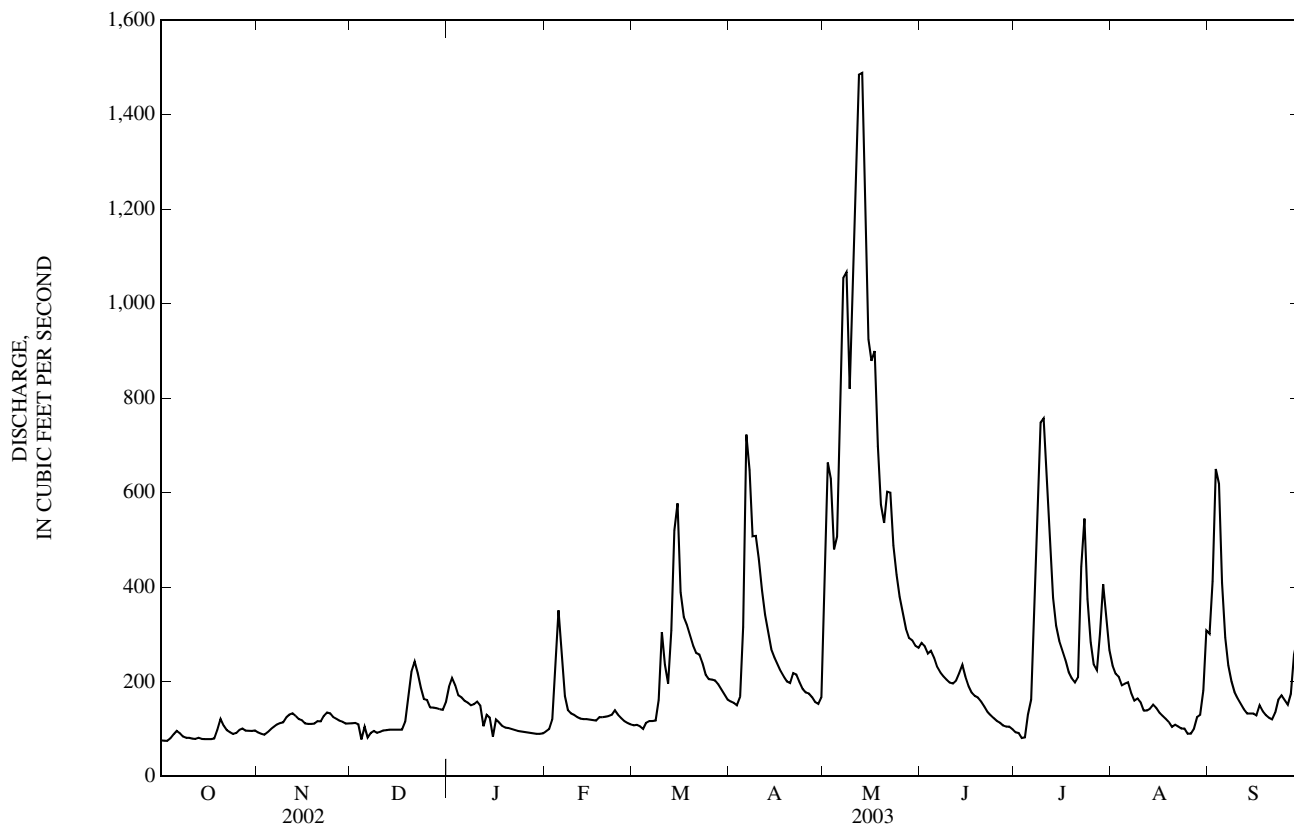
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2003, BY WATER YEAR (WY)

MEAN	257	296	385	440	527	709	713	512	418	288	205	178
MAX	1,939	883	1,070	1,580	1,289	2,127	1,714	1,154	1,113	955	652	692
(WY)	(1955)	(1973)	(1967)	(1993)	(2001)	(1982)	(1950)	(1996)	(1975)	(1996)	(1958)	(1972)
MIN	77.5	83.3	91.6	71.3	107	194	243	169	146	115	93.6	75.9
(WY)	(1965)	(1965)	(1964)	(1963)	(1963)	(1957)	(1958)	(1958)	(1988)	(1971)	(1964)	(1964)

05517000 YELLOW RIVER AT KNOX, IN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1944 - 2003	
ANNUAL TOTAL	149,877		81,978		410	
ANNUAL MEAN	411		225		180	
HIGHEST ANNUAL MEAN					661 1950	
LOWEST ANNUAL MEAN					180 1964	
HIGHEST DAILY MEAN	2,880	May 16	1,490	May 13	5,600	Oct 15, 1954
LOWEST DAILY MEAN	75	Oct 2	75	Oct 2	47	Jan 2, 1999
ANNUAL SEVEN-DAY MINIMUM	79	Sep 28	79	Oct 11	50	Jan 21, 1963
MAXIMUM PEAK FLOW			1,550	May 12	5,660	Oct 15, 1954
MAXIMUM PEAK STAGE			7.87	May 12	13.75	Oct 15, 1954
ANNUAL RUNOFF (CFSM)	0.94		0.52		0.94	
ANNUAL RUNOFF (INCHES)	12.82		7.01		12.81	
10 PERCENT EXCEEDS	934		467		882	
50 PERCENT EXCEEDS	236		150		266	
90 PERCENT EXCEEDS	90		93		112	

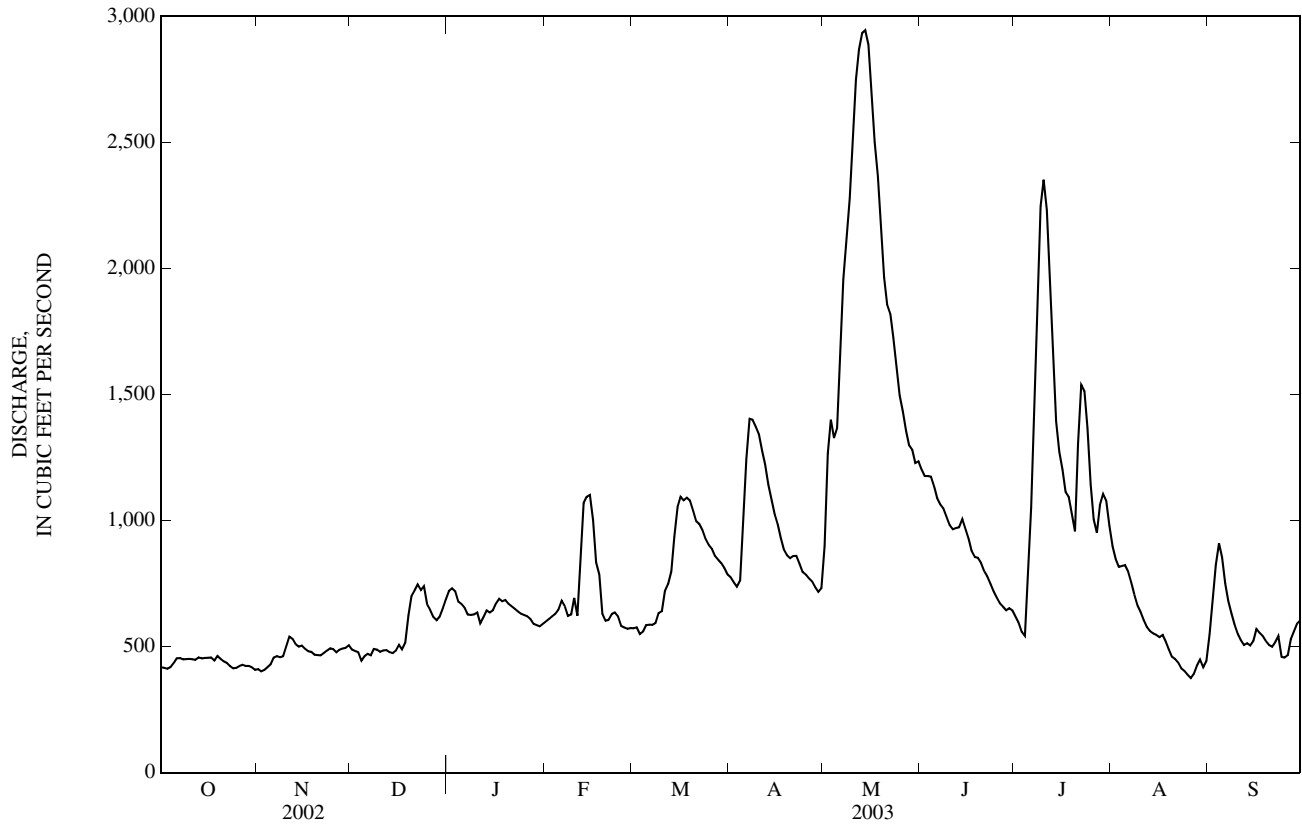
e Estimated







05517500 KANKAKEE RIVER AT DUNNS BRIDGE, IN—Continued



05517530 KANKAKEE RIVER NEAR KOUTS, IN

LOCATION.--Lat 41°15'14", long 87°02'02", in SW¼NE¼ sec.6, T.32 N., R.5 W., Jasper County, Hydrologic Unit 07120001, (KOUTS, IN quadrangle), on left bank, 20 ft downstream from bridge on State Highway 49, 0.7 mi upstream from Cook Ditch, 4.5 mi south of Kouts, and at mile 86.7.

DRAINAGE AREA.--1,376 mi<sup>2</sup>, of which 194 mi<sup>2</sup> does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR IN-77-1: 1975(M).

GAGE.--Water-stage recorder. Datum of gage is 645.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	394	407	461	738	e610	575	745	810	1,160	603	962	575
2	412	393	466	760	e620	551	725	1,160	1,140	592	890	683
3	393	407	490	732	e630	526	702	1,280	1,150	547	855	816
4	449	393	473	704	e640	531	717	1,240	1,130	548	838	916
5	418	422	446	699	e650	555	901	1,300	1,100	807	857	866
6	429	484	447	675	e690	590	1,160	1,610	1,060	1,100	820	745
7	460	455	435	667	e670	592	1,330	1,860	1,040	1,540	787	659
8	431	437	470	673	e650	605	1,350	2,040	1,030	1,930	720	615
9	431	449	469	693	e630	646	1,300	2,290	1,010	2,340	677	555
10	447	469	446	687	e690	642	1,270	2,570	992	2,460	679	521
11	462	555	471	650	e650	718	1,200	2,720	973	2,330	636	508
12	445	514	483	610	e620	739	1,170	2,830	968	2,040	606	474
13	446	489	475	643	967	797	1,100	2,870	988	1,720	594	489
14	443	472	445	659	996	900	1,050	2,880	1,010	1,470	562	495
15	449	455	465	645	1,020	977	995	2,850	985	1,340	556	509
16	485	431	483	e680	959	1,040	978	2,650	944	1,250	545	567
17	470	442	506	e700	839	998	902	2,450	887	1,160	556	563
18	466	422	535	e690	843	1,030	863	2,350	878	1,140	535	537
19	443	440	631	e700	757	1,010	858	2,110	861	1,060	495	505
20	453	442	728	e680	627	998	839	1,930	852	976	470	488
21	423	451	728	e670	610	937	852	1,810	799	1,530	459	471
22	426	428	762	e660	604	961	846	1,750	773	1,870	427	506
23	417	439	726	e640	613	936	820	1,660	743	1,670	383	540
24	412	449	773	e630	627	920	790	1,570	697	1,500	373	491
25	443	463	726	e640	589	889	773	1,450	661	1,250	361	468
26	422	452	706	e650	583	872	750	1,420	646	1,100	348	481
27	418	454	679	e640	573	846	721	1,330	624	1,020	383	528
28	417	491	659	e620	564	836	692	1,290	605	1,140	401	548
29	447	498	628	e600	---	796	684	1,270	628	1,160	434	575
30	427	473	680	e580	---	780	685	1,200	623	1,120	391	579
31	396	---	710	e600	---	756	---	1,200	---	1,040	455	---
TOTAL	13,474	13,576	17,602	20,615	19,521	24,549	27,768	57,750	26,957	41,353	18,055	17,273
MEAN	435	453	568	665	697	792	926	1,863	899	1,334	582	576
MAX	485	555	773	760	1,020	1,040	1,350	2,880	1,160	2,460	962	916
MIN	393	393	435	580	564	526	684	810	605	547	348	468
CFSM	0.32	0.33	0.41	0.48	0.51	0.58	0.67	1.35	0.65	0.97	0.42	0.42
IN.	0.36	0.37	0.48	0.56	0.53	0.66	0.75	1.56	0.73	1.12	0.49	0.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
MEAN	989	1,228	1,511	1,495	1,646	2,264	2,350	1,890	1,685	1,208	921	796																		
MAX	2,770	2,392	2,889	3,787	2,784	4,613	4,229	3,255	3,403	2,642	2,432	2,014																		
(WY)	(1991)	(1991)	(1991)	(1991)	(2001)	(1985)	(1985)	(1983)	(1996)	(1996)	(1990)	(1993)																		
MIN	435	437	568	634	697	792	926	1,113	619	411	398	350																		
(WY)	(2003)	(2000)	(2003)	(1977)	(2003)	(2003)	(2003)	(1992)	(1988)	(1988)	(1988)	(1999)																		

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

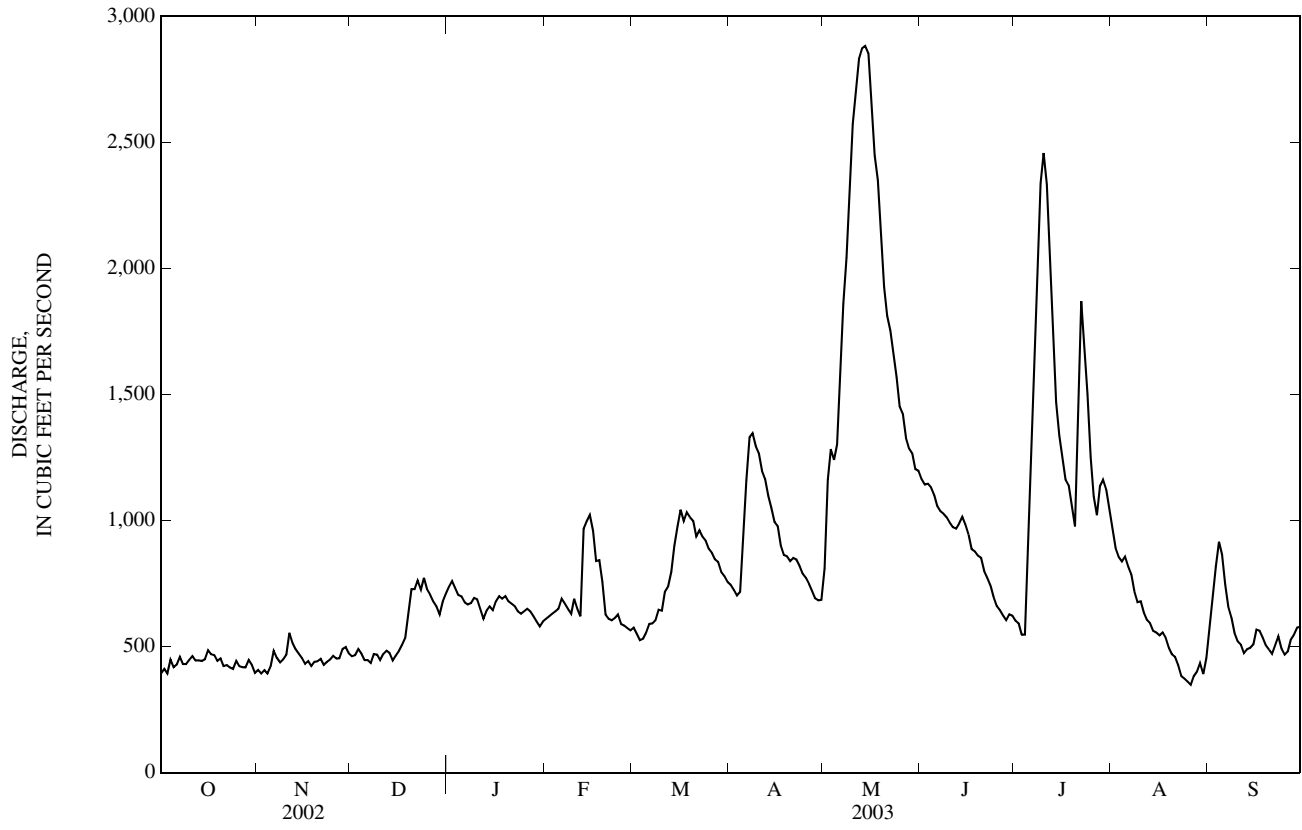
FOR 2003 WATER YEAR

WATER YEARS 1975 - 2003

ANNUAL TOTAL	468,218						298,493																							
ANNUAL MEAN	1,283						818																							
HIGHEST ANNUAL MEAN																														
LOWEST ANNUAL MEAN																														
HIGHEST DAILY MEAN	4,150						2,880																							
LOWEST DAILY MEAN	299						348																							
ANNUAL SEVEN-DAY MINIMUM	331						382																							
MAXIMUM PEAK FLOW							2,900																							
MAXIMUM PEAK STAGE							9.99																							
ANNUAL RUNOFF (CFSM)							0.59																							
ANNUAL RUNOFF (INCHES)							12.66																							
10 PERCENT EXCEEDS							2,720																							
50 PERCENT EXCEEDS							969																							
90 PERCENT EXCEEDS							423																							

e Estimated

05517530 KANKAKEE RIVER NEAR KOUTS, IN—Continued



## 05517890 COBB DITCH NEAR KOUTS, IN

LOCATION.--Lat 41°20'19", long 87°04'30", in NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 2, T.33 N., R.6 W., Porter County, Hydrologic Unit 07120001, (KOUTS, IN quadrangle), on left bank 15 ft upstream from bridge on County Road 50 West, 1.6 mi upstream from mouth, 3 mi northwest of Kouts, and 6.5 mi northeast of Hebron.

DRAINAGE AREA.--30.3 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1968 to October 2003, (discontinued). Prior to October 1971, published as State Ditch near Kouts.

GAGE.--Water-stage recorder. Datum of gage is 652.00 ft above National Geodetic Vertical Datum of 1929 (Indiana Department of Highways bench mark). Prior to Oct. 19, 1978, water-stage recorder at site 1.4 mi downstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	12	11	15	12	10	13	17	20	13	27	17
2	10	12	12	14	12	10	12	18	18	12	25	14
3	10	12	11	14	13	11	12	16	22	12	23	13
4	10	12	11	13	15	10	16	19	22	13	21	12
5	10	12	11	14	14	10	63	77	19	62	20	11
6	10	10	11	13	12	10	34	49	18	34	19	11
7	10	9.5	11	13	13	10	31	34	18	27	19	11
8	10	9.5	11	13	e13	22	31	39	17	23	18	11
9	10	9.6	11	13	e13	30	24	335	17	35	18	11
10	10	11	11	13	12	24	20	184	17	27	17	11
11	10	11	11	e12	e13	14	19	91	17	23	16	11
12	10	11	11	e12	e13	16	17	60	17	20	16	11
13	10	11	11	e12	e12	48	16	46	17	18	15	11
14	10	11	11	e12	11	25	19	37	16	17	14	11
15	10	11	11	e11	11	19	17	36	16	27	15	11
16	10	11	11	e11	15	18	14	31	15	21	15	11
17	10	11	11	e11	11	18	14	27	15	20	16	10
18	e11	11	14	e11	11	18	13	25	16	158	15	10
19	e11	11	18	e11	10	17	13	27	17	48	14	10
20	e11	11	16	e11	11	16	16	24	15	34	14	10
21	e11	12	15	e11	12	17	14	21	15	541	14	10
22	e11	12	14	e11	12	16	13	20	15	183	13	12
23	e11	12	13	e11	11	15	12	19	15	81	12	11
24	e11	11	13	e11	11	14	13	19	14	60	13	11
25	12	11	14	e11	e10	14	12	18	14	46	13	11
26	12	11	13	e11	e10	14	12	18	14	38	13	11
27	12	11	13	e11	e10	14	12	17	14	36	12	12
28	12	11	13	e11	10	14	13	17	14	48	13	11
29	12	12	13	e11	---	13	12	18	14	33	13	11
30	12	12	14	e11	---	13	14	17	13	32	13	10
31	12	---	16	e11	---	13	---	27	---	30	13	---
TOTAL	331	334.6	387	370	333	513	541	1,403	491	1,772	499	338
MEAN	10.7	11.2	12.5	11.9	11.9	16.5	18.0	45.3	16.4	57.2	16.1	11.3
MAX	12	12	18	15	15	48	63	335	22	541	27	17
MIN	10	9.5	11	11	10	10	12	16	13	12	12	10
CFSM	0.35	0.37	0.41	0.39	0.39	0.55	0.60	1.49	0.54	1.89	0.53	0.37
IN.	0.41	0.41	0.48	0.45	0.41	0.63	0.66	1.72	0.60	2.18	0.61	0.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
MEAN	21.2	29.5	31.1	32.1	38.8	50.4	48.4	41.4	38.3	27.5	20.7	17.9
MAX	67.8	112	88.9	86.8	82.8	142	103	89.4	121	77.7	99.0	60.6
(WY)	(1991)	(1986)	(1991)	(1993)	(1997)	(1982)	(1975)	(1974)	(1997)	(1996)	(1990)	(1993)
MIN	9.35	9.62	9.70	10.5	10.6	16.5	18.0	14.9	14.6	12.0	9.45	9.68
(WY)	(2000)	(2000)	(2001)	(2000)	(1978)	(2003)	(2003)	(1980)	(1988)	(1988)	(2001)	(2002)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

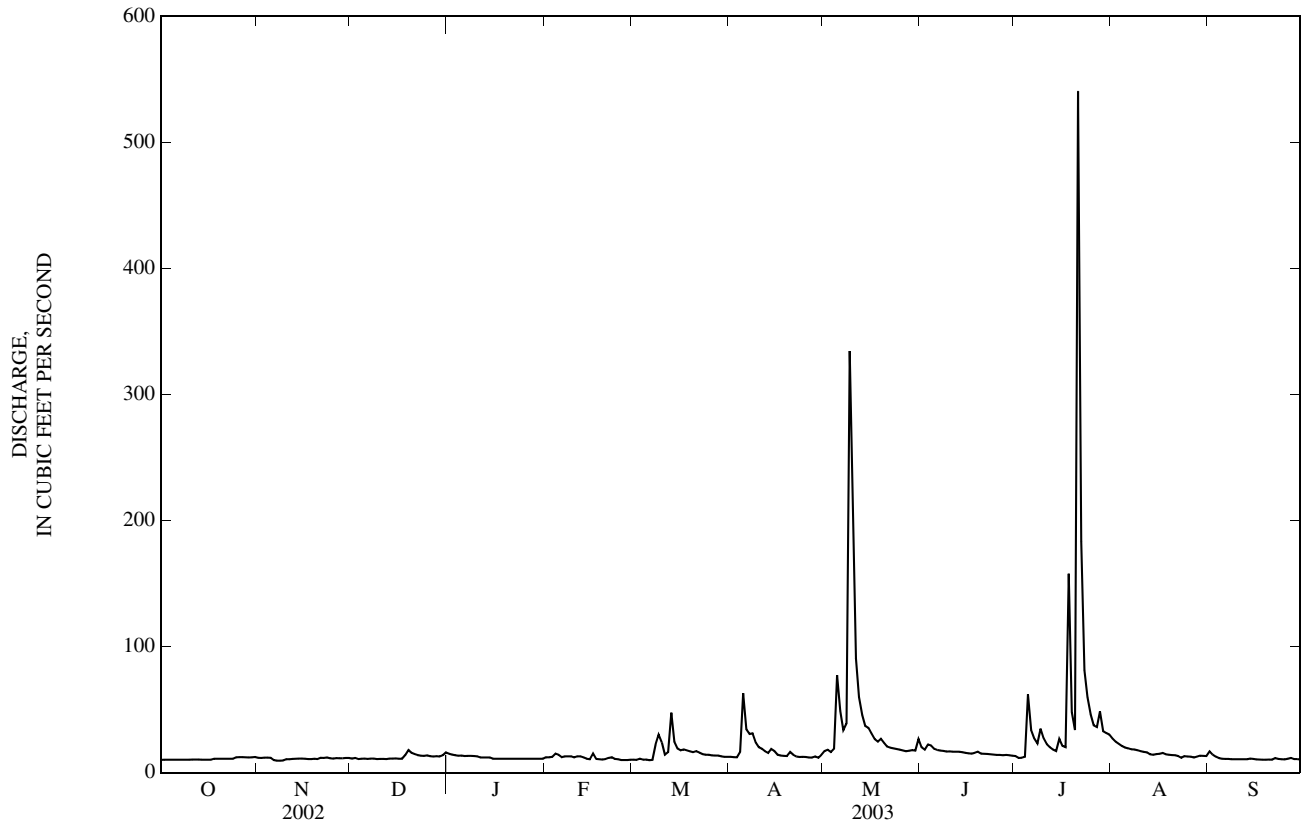
## FOR 2003 WATER YEAR

## WATER YEARS 1969 - 2003

ANNUAL TOTAL	10,116.5	7,312.6	
ANNUAL MEAN	27.7	20.0	
HIGHEST ANNUAL MEAN			33.1
LOWEST ANNUAL MEAN			53.1
HIGHEST DAILY MEAN	496	May 12	541
LOWEST DAILY MEAN	7.7	Sep 7	9.5
ANNUAL SEVEN-DAY MINIMUM	8.7	Sep 6	10
MAXIMUM PEAK FLOW			808
MAXIMUM PEAK STAGE			15.45
ANNUAL RUNOFF (CFSM)	0.91		0.66
ANNUAL RUNOFF (INCHES)	12.42		8.98
10 PERCENT EXCEEDS	49		27
50 PERCENT EXCEEDS	16		13
90 PERCENT EXCEEDS	10		10

e Estimated

05517890 COBB DITCH NEAR KOUTS, IN—Continued



## 05518000 KANKAKEE RIVER AT SHELBY, IN

LOCATION.--Lat 41°10'58", long 87°20'25", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.33, T.32 N., R.8 W., Lake County, Hydrologic Unit 07120001, (SHELBY, IN quadrangle), on right bank at upstream side of Highway 55 bridge, 1.0 mi south of Shelby, 7.8 mi upstream from Beaver Lake Ditch, and at mile 68.0.

DRAINAGE AREA.--1,779 mi<sup>2</sup>, of which 201 mi<sup>2</sup> does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1922 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1005: 1928(M). WSP 2115: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 628.13 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 19, 1934, nonrecording gage, Dec. 19, 1934, to Oct. 4, 1965, water-stage recorder on left bank 50 ft downstream, Oct. 5, 1965, to Sept. 21, 1966, nonrecording gage on right bank 200 ft downstream, and Sept. 21, 1966 to July 21, 1998, water-stage recorder on right bank 25 ft upstream from Monon railroad bridge and approximately 400 ft downstream, all at same datum.

REMARKS.--Records fair except those for Sept. 8 - 30, and estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

## DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	573	547	643	929	e820	775	985	1,020	1,600	720	1,700	759
2	524	535	653	970	e840	745	977	1,300	1,550	696	1,570	926
3	542	541	638	952	e860	710	933	1,560	1,560	629	1,440	1,030
4	552	549	676	e940	e870	710	932	1,610	1,590	618	1,390	1,110
5	587	539	671	e920	e880	724	1,160	1,830	1,520	1,060	1,350	1,120
6	552	597	646	e900	e900	747	1,430	2,180	1,470	2,040	1,310	1,020
7	582	609	666	e885	e880	765	1,650	2,320	1,420	2,460	1,240	892
8	574	596	650	875	e860	775	1,760	2,530	1,390	3,120	1,150	832
9	561	587	662	874	e830	845	1,740	3,070	1,360	3,700	1,050	770
10	564	635	633	888	e900	815	1,690	3,780	1,330	3,990	983	717
11	587	688	608	850	e860	843	1,640	3,750	1,300	3,880	927	690
12	595	705	644	820	e830	932	1,550	3,720	1,270	3,590	821	666
13	574	670	638	828	e974	1,010	1,500	3,730	1,290	3,140	749	680
14	589	663	631	e860	e1,020	1,190	1,420	3,690	1,300	2,700	724	692
15	556	643	615	e840	e1,080	1,200	1,340	3,720	1,300	2,460	691	698
16	607	643	640	e890	e1,100	1,280	1,300	3,640	1,240	2,400	673	742
17	605	621	645	e920	e1,080	1,280	1,220	3,420	1,180	2,160	668	771
18	598	620	718	e900	e1,020	1,290	1,150	3,220	1,110	2,320	659	743
19	602	618	789	e910	e970	1,290	1,140	3,030	1,130	2,250	617	690
20	581	613	909	e900	e900	1,280	1,120	2,800	1,090	1,910	574	664
21	584	660	962	e880	e820	1,250	1,140	2,610	1,050	2,880	568	651
22	566	624	971	e870	e820	1,220	1,130	2,420	1,000	4,390	537	662
23	559	612	970	e860	e810	1,220	1,080	2,300	969	3,970	481	704
24	540	640	972	e860	e810	1,180	1,050	2,160	908	3,490	449	696
25	572	632	992	e850	e800	1,170	1,050	2,010	855	3,000	437	657
26	578	629	910	e850	e800	1,140	999	1,920	826	2,530	418	648
27	553	608	895	e840	e780	1,110	962	1,820	800	2,190	404	703
28	574	614	872	e820	e770	1,090	935	1,720	768	2,210	441	727
29	568	664	817	e800	---	1,040	908	1,720	789	2,160	485	745
30	582	646	839	e780	---	1,020	925	1,650	762	2,000	493	744
31	550	---	910	e810	---	989	---	1,620	---	1,850	511	---
TOTAL	17,731	18,548	23,485	27,071	24,884	31,635	36,816	77,870	35,727	76,513	25,510	23,149
MEAN	572	618	758	873	889	1,020	1,227	2,512	1,191	2,468	823	772
MAX	607	705	992	970	1,100	1,290	1,760	3,780	1,600	4,390	1,700	1,120
MIN	524	535	608	780	770	710	908	1,020	762	618	404	648
CFSM	0.32	0.35	0.43	0.49	0.50	0.57	0.69	1.41	0.67	1.39	0.46	0.43
IN.	0.37	0.39	0.49	0.57	0.52	0.66	0.77	1.63	0.75	1.60	0.53	0.48

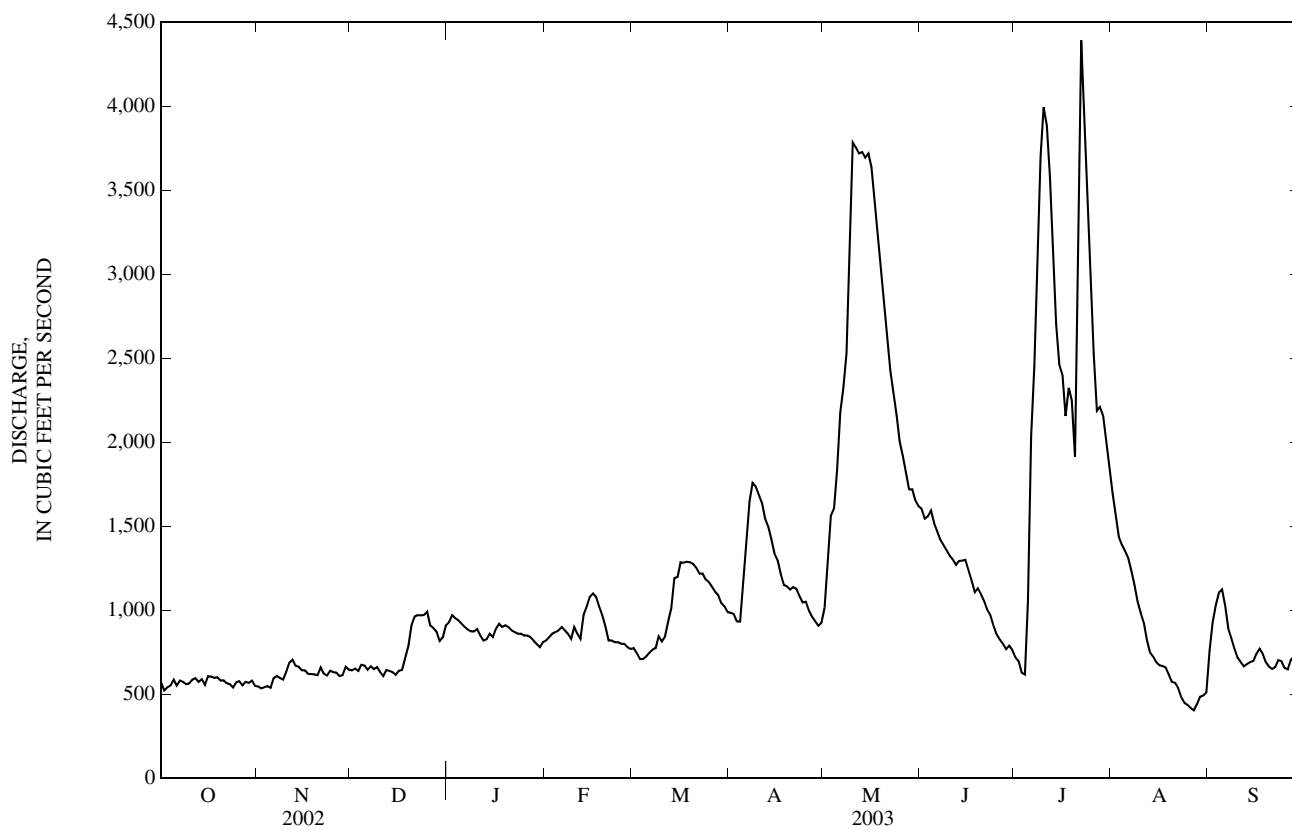
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2003, BY WATER YEAR (WY)

MEAN	1,076	1,332	1,611	1,803	1,976	2,536	2,750	2,315	1,825	1,297	970	866
MAX	3,529	3,413	4,502	4,867	3,658	5,570	5,365	4,409	4,347	3,228	3,058	2,843
(WY)	(1991)	(1973)	(1928)	(1991)	(1950)	(1985)	(1982)	(1943)	(1981)	(1996)	(1990)	(1993)
MIN	455	500	540	460	462	848	1,226	789	569	441	402	356
(WY)	(1954)	(2000)	(1964)	(1940)	(1963)	(1934)	(1925)	(1934)	(1934)	(1988)	(1988)	(1941)

## 05518000 KANKAKEE RIVER AT SHELBY, IN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1924 - 2003	
ANNUAL TOTAL	609,832		418,939			
ANNUAL MEAN	1,671		1,148		1,694	
HIGHEST ANNUAL MEAN					2,767	
LOWEST ANNUAL MEAN					775	
HIGHEST DAILY MEAN	5,090	May 19	4,390	Jul 22	7,650	Mar 26, 1982
LOWEST DAILY MEAN	358	Sep 9	404	Aug 27	260	Jan 13, 1954
ANNUAL SEVEN-DAY MINIMUM	383	Sep 5	445	Aug 23	298	Aug 2, 1988
MAXIMUM PEAK FLOW			4,510		7,650	Mar 26, 1982
MAXIMUM PEAK STAGE			10.90		12.98	Mar 24, 1982
ANNUAL RUNOFF (CFSM)	0.94		0.65		0.95	
ANNUAL RUNOFF (INCHES)	12.75		8.76		12.94	
10 PERCENT EXCEEDS	3,620		2,200		3,350	
50 PERCENT EXCEEDS	1,110		880		1,350	
90 PERCENT EXCEEDS	548		580		628	

e Estimated





## 05521000 IROQUOIS RIVER AT ROSEBUD, IN

LOCATION.--Lat 41°02'00", long 87°10'49", in NW¼SW¼ sec.24, T.30 N., R.7 W., Jasper County, Hydrologic Unit 07120002, (PARR, IN quadrangle), on right bank 100 ft downstream from bridge on county road 700W, 0.5 mi north of Rosebud, 0.5 mi downstream from the confluence of Swain and Dexter Ditches, 1.5 mi upstream from Davison Ditch, 2 mi east of Parr, and at mile 93.5.

DRAINAGE AREA.--35.6 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1948 to October 2003 (discontinued).

REVISED RECORDS.--WSP 1338: 1950-53. WSP 1728: 1959-60(M). WSP 1915: 1949-60. WSP 2115: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 661.47 ft above National Geodetic Vertical Datum of 1929 (levels by State of Indiana, Department of Natural Resources). Prior to Oct. 1, 1953, nonrecording gage on downstream side of county road bridge at same datum.

REMARKS.--Records good, except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	4.9	e5.0	15	e6.2	e4.5	13	17	17	9.3	50	24
2	3.3	5.1	4.8	12	e8.0	e4.7	12	17	17	7.7	57	32
3	3.6	5.8	e4.5	11	e12	e4.8	12	15	19	7.0	77	24
4	5.1	5.5	e4.2	e8.0	34	e5.0	19	16	18	8.5	63	20
5	5.0	6.6	4.0	e7.0	e16	e5.2	50	37	17	242	54	16
6	4.1	7.2	e3.9	e6.6	e11	e5.4	32	29	17	279	46	14
7	4.7	6.3	3.8	e6.2	e8.4	e6.0	36	27	16	217	42	13
8	4.2	5.8	3.7	e6.4	e7.5	e8.0	38	35	16	307	39	12
9	3.8	6.4	e3.6	e7.0	e6.8	e13	30	75	16	387	36	12
10	3.7	12	e3.5	e7.6	e6.2	e10	26	64	15	345	34	11
11	3.6	9.7	3.4	e7.2	e5.8	e9.0	24	56	15	246	32	11
12	3.7	8.1	3.5	e7.4	e5.6	e8.0	22	39	16	173	30	11
13	4.1	7.4	3.9	e7.3	e5.2	e7.6	20	33	19	122	28	10
14	3.8	7.2	4.0	e6.8	e4.8	e7.4	19	31	25	91	27	11
15	3.8	7.3	3.7	e6.4	e4.8	8.7	18	39	22	122	26	9.9
16	3.4	6.4	3.4	e6.0	e4.5	11	17	32	18	135	25	8.9
17	3.6	6.1	3.3	e5.8	e4.3	12	17	29	16	94	23	8.7
18	4.1	5.8	7.7	e5.6	e4.1	13	15	26	15	202	21	8.6
19	7.4	6.9	15	e5.5	e4.2	15	15	25	15	138	19	8.3
20	5.0	7.0	13	e5.4	e4.4	16	18	24	13	91	19	8.2
21	4.2	7.3	10	e5.2	e4.6	24	19	22	12	382	17	7.8
22	3.8	7.3	8.6	e5.0	e4.8	20	17	21	11	368	16	9.8
23	3.6	6.1	e6.0	e4.8	e4.9	16	15	20	11	230	15	8.9
24	3.7	5.8	e5.0	e4.5	e4.8	15	15	19	10	146	13	9.4
25	4.7	5.5	e4.7	e4.3	e4.7	20	15	19	8.4	106	13	8.9
26	4.6	5.4	e4.5	e4.2	e4.6	21	14	17	8.6	84	12	11
27	4.2	5.3	e4.3	e4.2	e4.5	18	13	17	8.0	79	12	28
28	4.0	5.3	e4.1	e4.0	e4.4	17	13	18	9.6	103	11	19
29	5.4	5.6	e4.1	e4.2	---	15	12	18	11	80	12	15
30	5.9	5.6	e10	e4.5	---	14	14	17	9.5	66	11	12
31	5.0	---	20	e5.2	---	13	---	19	---	56	12	---
TOTAL	132.6	196.7	183.2	200.3	201.1	367.3	600	873	441.1	4,923.5	892	403.4
MEAN	4.28	6.56	5.91	6.46	7.18	11.8	20.0	28.2	14.7	159	28.8	13.4
MAX	7.4	12	20	15	34	24	50	75	25	387	77	32
MIN	3.3	4.9	3.3	4.0	4.1	4.5	12	15	8.0	7.0	11	7.8
CFSM	0.12	0.18	0.17	0.18	0.20	0.33	0.56	0.79	0.41	4.46	0.81	0.38
IN.	0.14	0.21	0.19	0.21	0.21	0.38	0.63	0.91	0.46	5.14	0.93	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2003, BY WATER YEAR (WY)

	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	15.6	18.8	27.1	29.5	37.3	49.1	50.6	40.1	33.5	20.9	10.8	11.8	106	68.5	96.8	113	91.1	149	141	111	111	159	52.1	88.9	(1994)	(1993)	(1991)	(1950)	(1959)	(1982)	(1950)	(1974)	(1981)	(2003)	(1972)	(1993)									
MIN	1.19	1.80	2.43	3.52	3.13	7.69	17.2	10.2	5.47	3.08	1.97	1.53	(1965)	(1965)	(1964)	(1963)	(1964)	(1957)	(1986)	(1958)	(1988)	(1988)	(1964)	(1964)																					

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

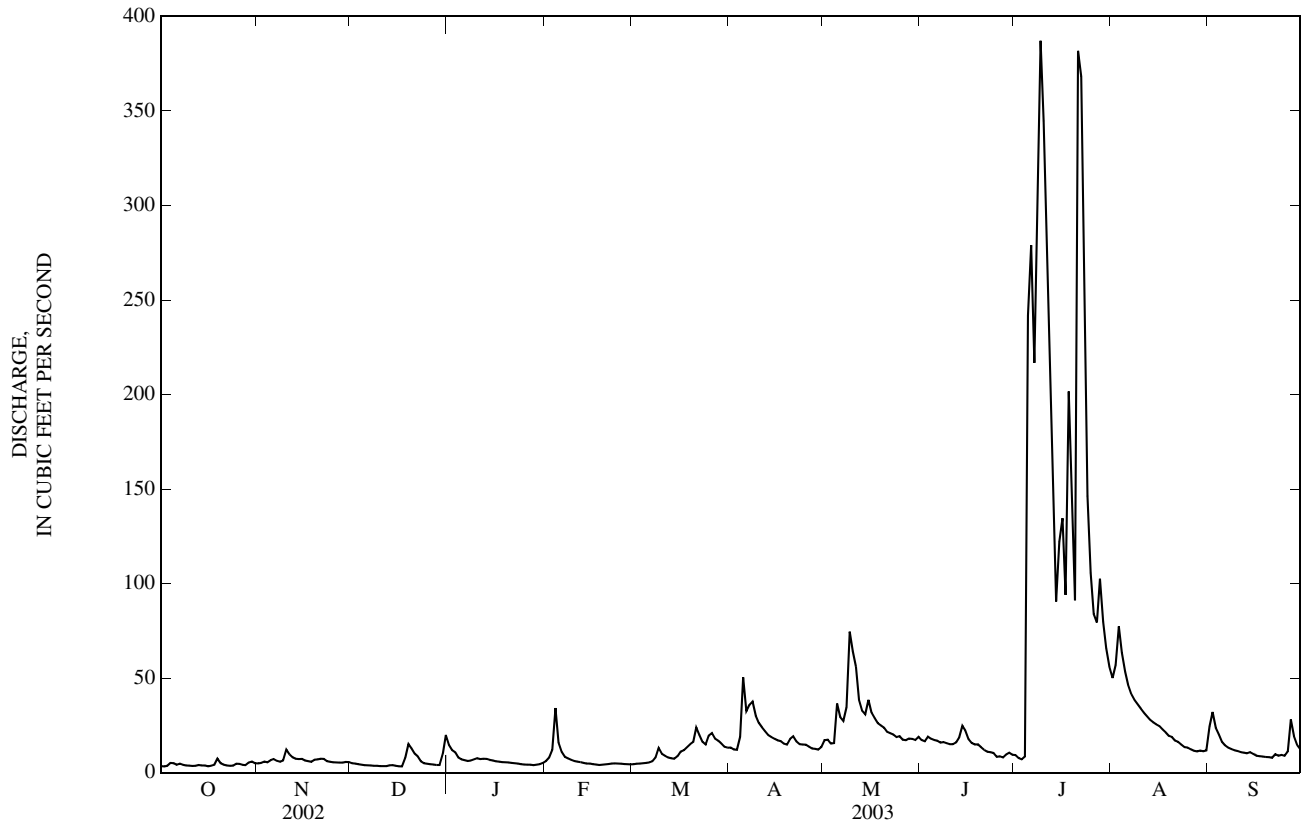
FOR 2003 WATER YEAR

WATER YEARS 1949 - 2003

ANNUAL TOTAL	10,657.9	9,414.2	
ANNUAL MEAN	29.2	25.8	28.7
HIGHEST ANNUAL MEAN			61.7
LOWEST ANNUAL MEAN			6.38
HIGHEST DAILY MEAN	315	May 12	621
LOWEST DAILY MEAN	3.3	Sep 30	0.50
ANNUAL SEVEN-DAY MINIMUM	3.5	Sep 27	0.77
MAXIMUM PEAK FLOW			656
MAXIMUM PEAK STAGE			8.86
ANNUAL RUNOFF (CFSM)	0.82		0.81
ANNUAL RUNOFF (INCHES)	11.14		10.95
10 PERCENT EXCEEDS	68		63
50 PERCENT EXCEEDS	17		17
90 PERCENT EXCEEDS	4.1		4.3

e Estimated

05521000 IROQUOIS RIVER AT ROSEBUD, IN—Continued



## ILLINOIS RIVER BASIN

## 05522500 IROQUOIS RIVER AT RENSSELAER, IN

LOCATION.--Lat 40°56'00", long 87°07'44", in NW¼SE¼ sec.29, T.29 N., R.6 W., Jasper County, Hydrologic Unit 07120002, (RENSSELAER, IN quadrangle), on right bank 20 ft downstream from bridge on State Highway 114, 0.8 mi east of Rensselaer, 1.5 mi downstream from Ryan Ditch, 5.5 mi upstream from Slough Creek, and at mile 84.9.

DRAINAGE AREA.--203 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1948 to current year.

REVISED RECORDS.--WSP 2115: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 642.29 ft above National Geodetic Vertical Datum of 1929 (levels by State of Indiana, Department of Natural Resources). Prior to July 8, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Streamflow affected by irrigation.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	26	24	75	e34	e30	58	109	108	53	403	130
2	16	24	30	61	e38	e31	57	174	98	53	394	229
3	16	22	25	e48	e48	e31	54	148	112	50	469	165
4	18	23	27	e44	144	e33	74	123	128	54	492	112
5	22	26	25	e42	120	e35	331	264	114	1,040	421	84
6	20	28	24	e41	79	e37	320	345	105	1,910	345	69
7	18	27	24	e40	e56	e44	264	251	105	2,110	280	61
8	18	25	24	e42	e47	e58	324	410	99	2,260	229	55
9	16	26	23	e45	e42	e88	261	643	93	2,470	197	52
10	17	33	23	e50	e39	e70	200	762	86	2,610	175	49
11	16	45	24	e47	e36	e58	168	714	88	2,570	157	47
12	15	36	24	e48	e35	e54	145	571	90	2,390	143	45
13	17	31	25	e47	e33	e52	123	408	138	2,150	132	45
14	17	28	27	e46	e31	e50	111	314	247	1,880	121	48
15	17	29	26	e42	e31	51	104	382	171	1,680	111	48
16	17	28	26	e39	e30	51	97	355	128	1,570	101	44
17	16	27	22	e39	e28	60	92	300	109	1,350	92	41
18	17	27	31	e38	e27	67	88	250	98	1,230	83	40
19	24	27	55	e37	e28	72	81	219	93	1,070	76	39
20	25	28	68	e37	e29	76	100	203	85	914	70	38
21	20	27	57	e36	e31	88	139	189	78	1,370	65	36
22	18	29	49	e34	e32	88	117	170	72	1,890	60	42
23	17	29	e37	e32	e33	75	98	155	67	1,980	55	44
24	17	29	e33	e28	e32	69	90	143	64	1,910	51	48
25	20	29	e30	e28	e31	78	90	131	56	1,700	50	47
26	26	27	e29	e27	e31	102	84	126	53	1,430	48	51
27	24	26	e28	e27	e30	91	76	114	50	1,190	46	135
28	21	24	e27	e26	e30	81	70	110	53	1,040	42	116
29	23	26	e27	e27	---	73	71	121	61	850	43	78
30	26	28	e40	e29	---	63	72	121	54	660	44	62
31	25	---	77	e31	---	58	---	118	---	516	45	---
TOTAL	594	840	1,011	1,233	1,205	1,914	3,959	8,443	2,903	43,950	5,040	2,100
MEAN	19.2	28.0	32.6	39.8	43.0	61.7	132	272	96.8	1,418	163	70.0
MAX	26	45	77	75	144	102	331	762	247	2,610	492	229
MIN	15	22	22	26	27	30	54	109	50	50	42	36
CFSM	0.09	0.14	0.16	0.20	0.21	0.30	0.65	1.34	0.48	6.98	0.80	0.34
IN.	0.11	0.15	0.19	0.23	0.22	0.35	0.73	1.55	0.53	8.05	0.92	0.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2003, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)
MEAN	92.4	119	175	201	253	328	337	250	210	129	55.3	64.3	92.4	119	175	201
MAX	921	561	559	774	660	935	886	766	863	1,418	238	641	921	561	559	774
(WY)	(1994)	(1993)	(1991)	(1950)	(1997)	(1982)	(1950)	(1974)	(1958)	(2003)	(1990)	(1993)	(1994)	(1993)	(1991)	(1950)
MIN	5.77	7.75	7.04	14.5	13.9	40.8	87.8	47.6	22.9	12.5	4.61	5.26	5.77	7.75	7.04	14.5
(WY)	(1965)	(1965)	(1964)	(1963)	(1964)	(1957)	(1986)	(1958)	(1988)	(1964)	(1964)	(1964)	(1965)	(1965)	(1964)	(1963)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

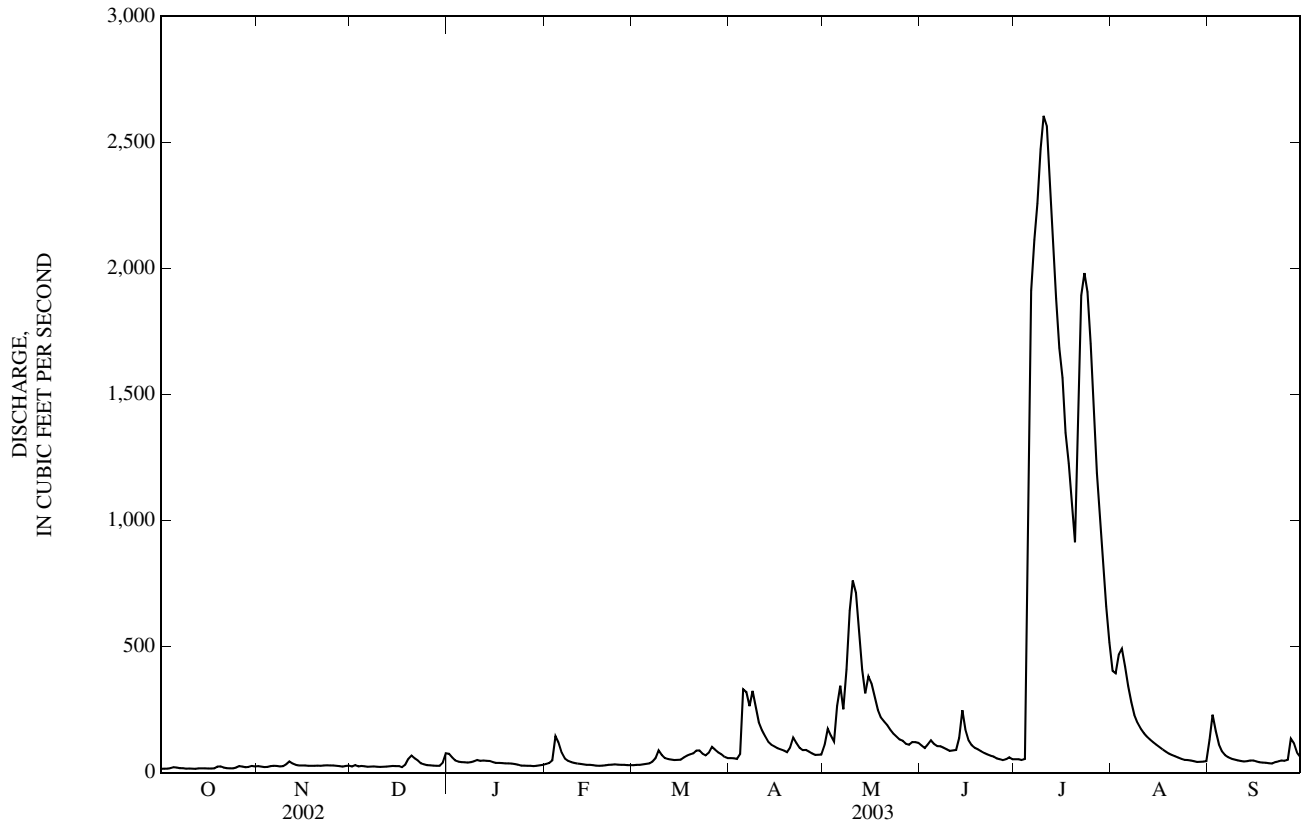
FOR 2003 WATER YEAR

WATER YEARS 1949 - 2003

ANNUAL TOTAL	67,707	73,192	
ANNUAL MEAN	185	201	184
HIGHEST ANNUAL MEAN			415
LOWEST ANNUAL MEAN			29.7
HIGHEST DAILY MEAN	1,780	May 14	2,610
LOWEST DAILY MEAN	15	Oct 1	15
ANNUAL SEVEN-DAY MINIMUM	16	Sep 27	16
MAXIMUM PEAK FLOW			2,620
MAXIMUM PEAK STAGE			16.59
ANNUAL RUNOFF (CFSM)	0.91		0.99
ANNUAL RUNOFF (INCHES)	12.41		13.41
10 PERCENT EXCEEDS	524		405
50 PERCENT EXCEEDS	78		53
90 PERCENT EXCEEDS	18		24

e Estimated

05522500 IROQUOIS RIVER AT RENNELAER, IN—Continued



05524500 IROQUOIS RIVER NEAR FORESMAN, IN

LOCATION.--Lat 40°52'14", long 87°18'24", in NE¼SE¼ sec.15, T.28 N., R.8 W., Newton County, Hydrologic Unit 07120002, (GOODLAND, IN quadrangle), on right bank at downstream side of bridge on State Highway 55, 0.2 mi north of intersection of State Highways 16 and 55, 0.5 mi downstream from Mosquito Creek, 0.6 mi west of Foresman, 3 mi east of Brook, and at mile 72.7.

DRAINAGE AREA.--449 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1948 to current year.

REVISED RECORDS.--WSP 1338: 1953. WSP 1438: 1955. WSP 1508: 1956. WSP 2115: Drainage area.

GAGE.--Water-stage recorder and Acoustic Doppler Velocity meter. Datum of gage is 624.00 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 7, 1955 nonrecording gage 2.5 mi upstream at datum 3.54 ft higher.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e36	e37	e42	e109	e58	e48	147	188	231	154	970	320
2	e38	e31	e46	e91	e66	e50	145	271	204	140	e899	567
3	e37	e30	e43	e71	e80	e51	142	262	220	123	e878	465
4	e38	e35	e46	e68	e262	e54	152	221	225	109	e1,000	316
5	e41	e36	e43	e62	e219	e58	595	420	205	e120	e800	231
6	e41	e44	e42	e61	e150	e62	636	629	135	e2,400	e640	190
7	e40	e43	e43	e65	e118	e72	547	487	123	e4,000	e560	166
8	e39	e41	e49	e69	e69	e92	660	492	166	e4,300	e440	147
9	e38	e42	e43	e74	e63	e171	564	941	132	e4,800	e380	135
10	e37	e48	e42	e82	e61	e140	452	1,620	103	e5,100	e330	126
11	e38	e73	e42	e75	e58	e112	376	1,910	105	e5,350	e300	119
12	e36	e69	e44	e72	e56	e97	317	1,680	148	e5,100	e280	111
13	e38	e58	e48	e67	e55	e87	267	1,370	242	e4,800	e240	108
14	e35	e53	e49	e63	e53	e85	240	1,050	948	e4,500	e220	110
15	e32	e53	e42	e62	e53	e86	227	882	856	e4,200	e200	113
16	e33	e46	e40	e61	e51	e88	216	762	574	e3,800	e190	105
17	e40	e49	e39	e59	e48	e102	200	595	401	e3,500	e170	96
18	e33	e49	e47	e58	e46	e160	186	486	312	e3,200	e160	91
19	e39	e50	e91	e58	e46	176	173	419	263	e3,000	e140	89
20	e45	e51	e111	e57	e48	199	204	375	225	e2,800	e130	85
21	e38	e51	e80	e56	e50	228	316	348	197	e2,700	e120	80
22	e34	e50	e78	e53	e51	237	279	313	179	3,260	e115	93
23	e32	e50	e51	e53	e49	204	226	286	166	3,270	e110	104
24	e31	e51	e47	e48	e49	182	203	282	151	3,060	e105	112
25	e33	e46	e44	e48	e48	196	197	260	136	2,780	e100	125
26	e41	e48	e42	e47	e48	240	191	243	124	2,440	e96	133
27	e42	e47	e41	e47	e49	224	175	222	118	2,110	e93	396
28	e39	e44	e41	e45	e49	201	164	213	121	1,880	97	392
29	e36	e40	e41	e47	---	185	159	232	168	1,680	98	272
30	e41	e47	e54	e50	---	161	158	238	155	1,400	108	205
31	e43	---	e101	e54	---	148	---	253	---	1,160	102	---
TOTAL	1,164	1,412	1,612	1,932	2,053	4,196	8,514	17,950	7,333	87,236	10,071	5,602
MEAN	37.5	47.1	52.0	62.3	73.3	135	284	579	244	2,814	325	187
MAX	45	73	111	109	262	240	660	1,910	948	5,350	1,000	567
MIN	31	30	39	45	46	48	142	188	103	109	93	80
CFSM	0.08	0.10	0.12	0.14	0.16	0.30	0.63	1.29	0.54	6.27	0.72	0.42
IN.	0.10	0.12	0.13	0.16	0.17	0.35	0.71	1.49	0.61	7.23	0.83	0.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

	189	249	386	424	562	730	752	571	484	308	109	135
MEAN	189	249	386	424	562	730	752	571	484	308	109	135
MAX	1,792	1,218	1,274	1,736	1,490	2,266	1,672	1,440	2,314	2,814	435	1,387
(WY)	(1994)	(1993)	(1968)	(1993)	(1968)	(1982)	(1950)	(2002)	(1958)	(2003)	(1990)	(1993)
MIN	9.70	16.1	15.3	27.0	31.4	81.7	199	108	39.8	17.7	12.2	11.1
(WY)	(1957)	(1965)	(1964)	(1963)	(1964)	(1957)	(1986)	(1958)	(1988)	(1988)	(1988)	(1964)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

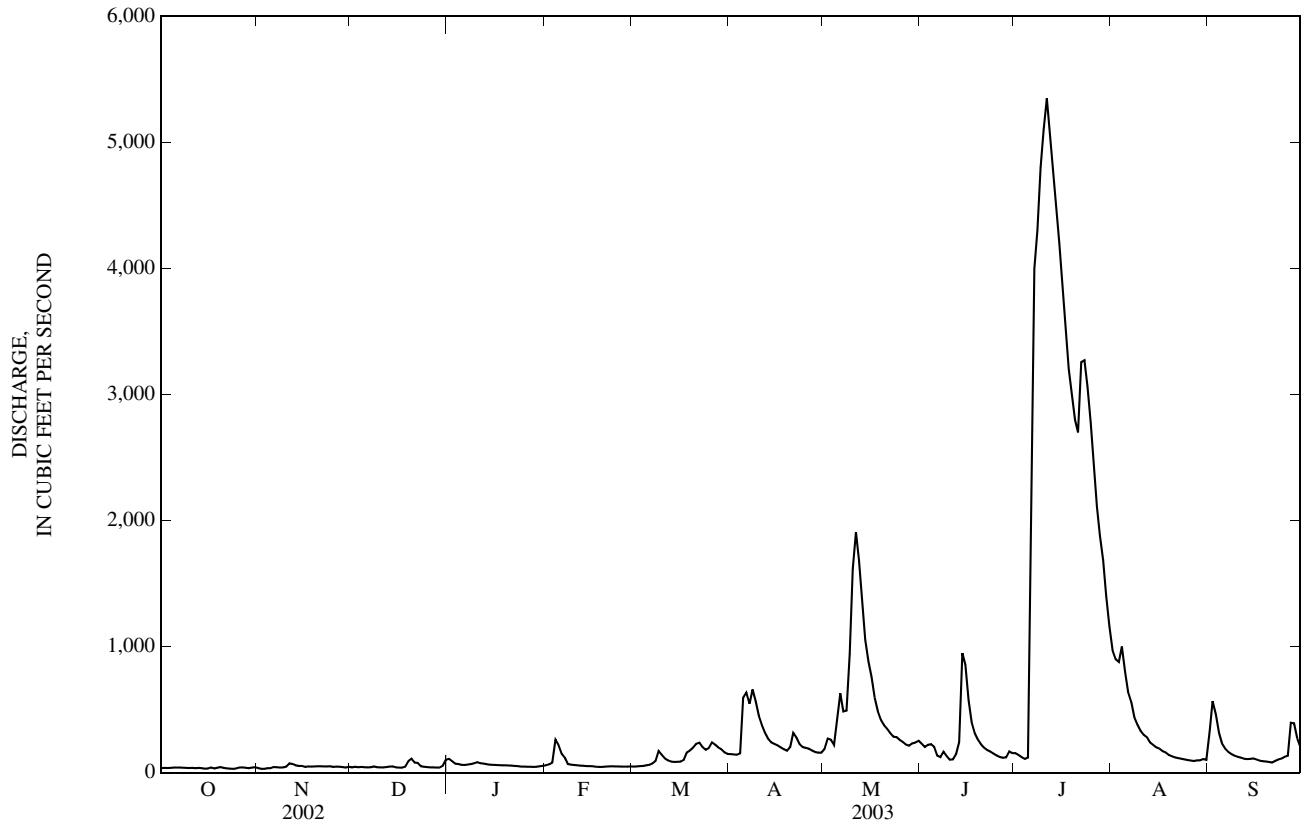
FOR 2003 WATER YEAR

WATER YEARS 1950 - 2003

ANNUAL TOTAL	159,465	149,075	
ANNUAL MEAN	437	408	407
HIGHEST ANNUAL MEAN			891
LOWEST ANNUAL MEAN			77.6
HIGHEST DAILY MEAN	3,990	May 14	e 5,350
LOWEST DAILY MEAN	30	Nov 3	30
ANNUAL SEVEN-DAY MINIMUM	35	Oct 12	35
MAXIMUM PEAK FLOW			e 5,350
MAXIMUM PEAK STAGE			24.87
ANNUAL RUNOFF (CFSM)	0.97		0.91
ANNUAL RUNOFF (INCHES)	13.21		12.35
10 PERCENT EXCEEDS	1,240		889
50 PERCENT EXCEEDS	161		111
90 PERCENT EXCEEDS	39		41

e Estimated

05524500 IROQUOIS RIVER NEAR FORESMAN, IN—Continued



LOCATION.--Lat 41°30'28", long 87°30'36", in NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.12, T.35 N., R.10 W., Lake County, Hydrologic Unit 07120003, (CALUMET CITY, IL-IN quadrangle), on right bank, 50 ft upstream from 213th Street in Dyer, 0.8 mi upstream from Dyer Ditch, 0.8 mi east of Illinois state line, 3.5 mi east of intersection of U.S. Highway 30 and Interstate 394.

DRAINAGE AREA.--37.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Datum of gage is 607.38 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Low-flow affected by sewage effluent.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	e2.7	3.6	6.1	e3.3	e4.0	4.7	63	24	5.9	34	12
2	3.7	e2.8	3.7	5.4	e3.1	e4.2	4.4	59	17	5.5	60	11
3	6.6	e2.9	3.6	4.7	e4.1	e4.2	4.6	35	22	5.6	84	8.1
4	12	e3.3	3.6	4.0	e4.0	e5.6	19	28	26	5.4	313	6.3
5	e5.0	e4.2	3.5	4.4	e3.9	e5.2	111	188	20	59	108	5.4
6	e3.9	e3.6	3.5	4.2	e3.7	e5.3	55	117	16	64	59	5.0
7	e3.7	e3.2	3.4	4.1	e3.7	e7.6	39	60	15	54	42	4.8
8	e3.7	e3.2	3.4	4.3	e3.6	9.5	38	44	14	75	33	4.6
9	e3.7	e3.6	3.3	4.3	e3.6	7.9	32	421	13	156	28	4.6
10	e3.7	e4.0	3.4	3.9	e3.6	13	25	330	12	148	23	4.3
11	3.5	e5.6	3.3	3.8	e3.4	8.3	20	184	11	88	20	4.4
12	3.7	e4.6	3.3	3.6	e3.3	9.3	17	120	11	52	17	4.3
13	3.8	e4.0	3.3	3.5	e3.9	22	15	77	10	39	15	4.1
14	3.7	e4.3	3.5	3.6	e4.0	13	14	54	9.5	31	13	5.6
15	3.2	e5.0	3.4	3.6	e4.0	11	13	43	9.0	100	12	5.2
16	4.5	e4.5	3.4	3.5	e3.9	9.9	12	35	8.3	104	11	5.0
17	3.5	e4.2	3.6	3.5	e3.8	10	12	29	7.7	67	9.7	4.6
18	e3.4	e4.0	11	3.4	e3.8	9.2	11	24	12	171	8.6	4.3
19	e3.3	e3.9	18	3.3	e3.8	7.9	11	21	10	97	7.7	4.1
20	e3.2	e3.9	12	3.4	e4.0	11	12	26	10	54	7.1	4.0
21	e3.2	5.6	7.0	3.3	e5.0	15	12	25	8.3	653	6.7	3.9
22	e3.0	5.1	5.3	3.3	e4.6	12	12	20	7.5	262	6.0	5.0
23	e2.9	4.8	4.3	3.0	e4.3	8.7	11	17	6.8	137	5.6	3.9
24	e2.9	4.7	4.5	2.8	e4.3	7.1	9.9	15	6.5	91	5.2	4.2
25	e3.4	4.6	4.0	3.0	e3.9	6.5	9.4	14	6.2	66	5.0	4.0
26	e3.2	4.3	4.2	3.1	e5.0	6.3	9.2	13	6.1	52	5.0	5.1
27	e2.9	3.9	3.8	3.0	e4.5	5.6	8.6	11	6.2	53	4.6	5.6
28	e2.9	3.8	3.7	e3.1	e4.1	5.8	8.3	11	6.3	68	4.3	5.2
29	e2.9	3.7	3.7	e3.0	---	5.8	8.3	12	6.5	54	5.3	4.9
30	e2.9	3.7	4.8	e3.0	---	6.1	16	12	6.1	39	4.9	4.1
31	e3.1	---	5.6	e3.7	---	5.2	---	22	---	32	5.5	---
TOTAL	118.2	121.7	150.7	114.9	110.2	262.2	574.4	2,130	344.0	2,888.4	963.2	157.6
MEAN	3.81	4.06	4.86	3.71	3.94	8.46	19.1	68.7	11.5	93.2	31.1	5.25
MAX	12	5.6	18	6.1	5.0	22	111	421	26	653	313	12
MIN	2.9	2.7	3.3	2.8	3.1	4.0	4.4	11	6.1	5.4	4.3	3.9
CFSM	0.10	0.11	0.13	0.10	0.10	0.22	0.51	1.83	0.30	2.48	0.83	0.14
IN.	0.12	0.12	0.15	0.11	0.11	0.26	0.57	2.11	0.34	2.86	0.95	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	22.0	41.8	33.9	45.6	56.9	63.1	55.9	58.0	52.0	25.2	20.4	14.1		
MAX	113	195	106	136	183	169	138	140	182	93.2	74.1	106		
(WY)	(1994)	(1991)	(1991)	(1993)	(1997)	(1991)	(1999)	(1996)	(1993)	(2003)	(1998)	(1993)		
MIN	2.77	3.55	4.86	3.71	3.94	7.00	16.6	7.48	4.21	4.46	3.87	2.41		
(WY)	(1996)	(2000)	(2003)	(2003)	(2003)	(2000)	(2001)	(1992)	(1992)	(1991)	(2002)	(1994)		

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

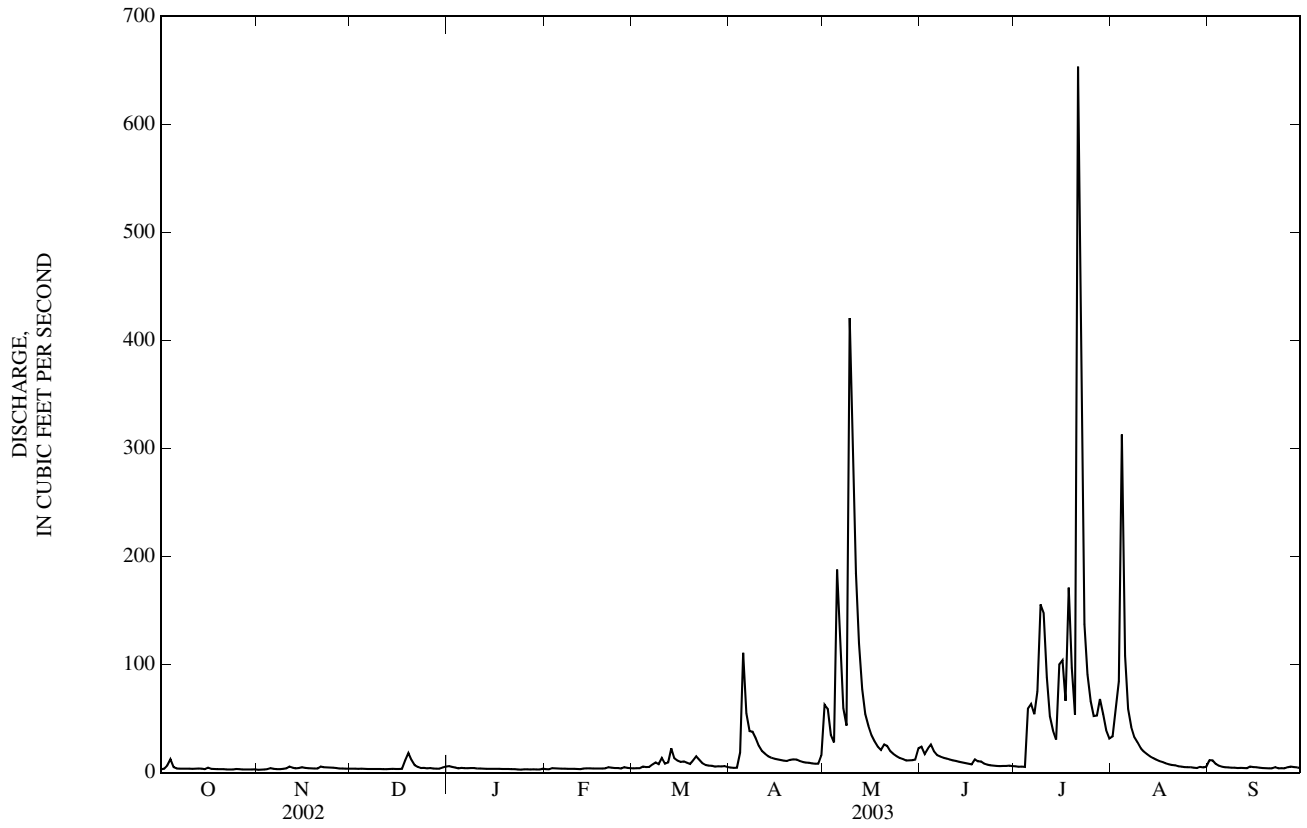
FOR 2003 WATER YEAR

WATER YEARS 1990 - 2003

ANNUAL TOTAL	11,176.0	7,935.5	
ANNUAL MEAN	30.6	21.7	40.6
HIGHEST ANNUAL MEAN			76.6
LOWEST ANNUAL MEAN			19.1
HIGHEST DAILY MEAN	950	May 12	653
LOWEST DAILY MEAN	2.7	Nov 1	2.7
ANNUAL SEVEN-DAY MINIMUM	2.9	Oct 27	2.9
MAXIMUM PEAK FLOW			887
MAXIMUM PEAK STAGE			8.17
ANNUAL RUNOFF (CFSM)	0.81		0.58
ANNUAL RUNOFF (INCHES)	11.06		7.85
10 PERCENT EXCEEDS	60		54
50 PERCENT EXCEEDS	6.5		5.5
90 PERCENT EXCEEDS	3.4		3.3

e Estimated

05536179 HART DITCH AT DYER, IN—Continued





05536190 HART DITCH AT MUNSTER, IN

LOCATION.--Lat 41°33'40", long 87°28'50", in SE¼NW¼ sec.20, T.36 N., R.9 W., Lake County, Hydrologic Unit 07120003, (HIGHLAND, IN quadrangle), on left bank, 0.2 mi downstream from Ridge Road, 0.4 mi upstream from mouth, and 0.9 mi south of intersection of Interstate 80/90 and U.S. Highway 41.

DRAINAGE AREA.--70.7 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WDR IN-72-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 591.27 ft above National Geodetic Vertical Datum of 1929 (levels by State of Indiana, Department of Natural Resources).

REMARKS.--Records fair except for daily discharges above 170 ft<sup>3</sup>/s due to possible backwater from Little Calumet River and estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	9.4	13	23	16	12	24	208	52	14	e152	111
2	13	9.7	13	20	15	13	21	127	40	14	e142	61
3	9.9	10	13	18	21	13	20	75	91	14	e370	41
4	86	12	12	16	21	14	331	81	65	15	e780	32
5	24	17	11	17	16	16	313	672	50	421	e290	28
6	15	13	11	17	16	16	130	297	41	232	e142	25
7	13	11	11	16	14	16	102	180	37	174	115	24
8	13	11	11	17	13	42	88	114	35	240	84	22
9	13	15	11	16	12	26	69	1,380	32	341	71	21
10	13	41	11	15	12	27	55	1,040	31	262	60	19
11	12	e30	11	13	11	32	46	703	31	154	59	19
12	13	e24	9.5	12	9.1	43	40	364	34	92	51	23
13	17	17	11	13	12	98	35	193	32	69	45	18
14	12	21	12	12	12	51	33	130	24	55	41	49
15	12	30	13	12	12	44	29	107	23	346	41	25
16	23	20	12	12	11	38	27	91	21	216	46	25
17	14	17	11	13	11	40	27	69	19	452	47	20
18	15	15	142	15	11	37	27	70	96	949	42	18
19	12	14	107	15	11	33	27	50	58	426	36	17
20	11	13	40	13	12	51	51	134	32	187	26	16
21	11	21	26	13	15	52	33	75	23	2,120	25	15
22	10	19	21	14	13	41	33	60	21	1,280	24	30
23	9.8	16	16	18	13	34	29	42	20	664	23	19
24	9.7	e16	14	15	13	28	26	38	17	381	23	18
25	14	e15	17	14	11	32	24	34	17	218	23	16
26	12	e15	17	16	15	28	22	33	18	124	31	37
27	10	e14	16	17	14	25	21	31	17	500	20	33
28	10	e14	14	16	12	32	21	46	18	373	20	21
29	10	e14	14	13	---	29	20	38	20	191	137	20
30	10	e13	32	13	---	26	95	59	16	107	35	17
31	11	---	27	21	---	25	---	108	---	81	40	---
TOTAL	468.4	507.1	699.5	475	374.1	1,014	1,819	6,649	1,031	10,712	3,041	840
MEAN	15.1	16.9	22.6	15.3	13.4	32.7	60.6	214	34.4	346	98.1	28.0
MAX	86	41	142	23	21	98	331	1,380	96	2,120	780	111
MIN	9.7	9.4	9.5	12	9.1	12	20	31	16	14	20	15
CFSM	0.21	0.24	0.32	0.22	0.19	0.46	0.86	3.03	0.49	4.89	1.39	0.40
IN.	0.25	0.27	0.37	0.25	0.20	0.53	0.96	3.50	0.54	5.64	1.60	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

MEAN	33.1	50.9	63.8	67.6	88.7	135	132	106	74.2	42.0	31.3	28.1
MAX	282	287	279	335	479	429	430	373	423	346	156	219
(WY)	(1955)	(1986)	(1983)	(1999)	(1997)	(1979)	(1999)	(1996)	(1993)	(2003)	(1998)	(1993)
MIN	3.95	3.54	3.07	3.77	6.32	19.1	19.2	11.9	8.78	6.11	4.73	3.91
(WY)	(1965)	(1972)	(1964)	(1977)	(1963)	(1957)	(1946)	(1958)	(1965)	(1965)	(1964)	(1956)

SUMMARY STATISTICS

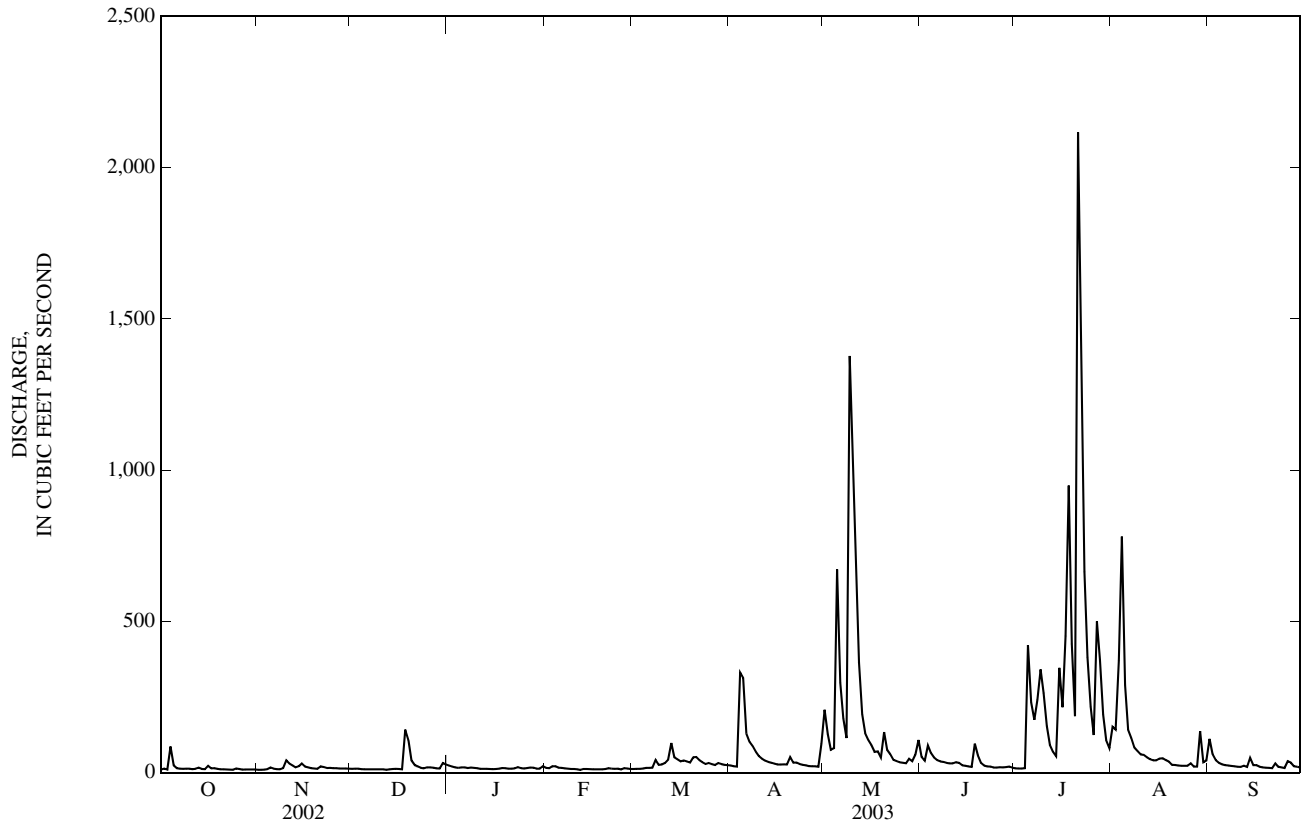
FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1943 - 2003

ANNUAL TOTAL	29,529.5	27,630.1	
ANNUAL MEAN	80.9	75.7	
HIGHEST ANNUAL MEAN			70.9
LOWEST ANNUAL MEAN			160
HIGHEST DAILY MEAN	2,500	May 12	19.2
LOWEST DAILY MEAN	9.4	Nov 1	19.2
ANNUAL SEVEN-DAY MINIMUM	10	Oct 27	19.2
MAXIMUM PEAK FLOW			1.7
MAXIMUM PEAK STAGE			1.7
ANNUAL RUNOFF (CFSM)	1.14		1.7
ANNUAL RUNOFF (INCHES)	15.54		1.7
10 PERCENT EXCEEDS	147		1.7
50 PERCENT EXCEEDS	26		1.7
90 PERCENT EXCEEDS	11		1.7

05536190 HART DITCH AT MUNSTER, IN—Continued



05536195 LITTLE CALUMET RIVER AT MUNSTER, IN

LOCATION.--Lat 41°34'38", long 87°31'17", in SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec.13, T.36 N., R.10 W., Lake County, Hydrologic Unit 07120003, (CALUMET CITY, IL-IN quadrangle), on left bank 200 ft upstream from Hohman Avenue bridge at north city limits of Munster, 0.4 mi upstream from Indiana-Illinois State line, and 4.6 mi upstream from Thorn Creek.

DRAINAGE AREA.--90.0 mi<sup>2</sup>. During times of floods on Deep River, flow may enter basin from eastern portion of Little Calumet River Basin; or, during times of floods on Hart Ditch, flow may leave the basin and enter eastern portion of the Little Calumet River Basin.

PERIOD OF RECORD.--June 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 580.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Flow from eastern portion of Little Calumet River Basin is diverted to Lake Michigan by Burns Ditch. Periods of high flow frequently are in backwater from downstream storage.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	e9.0	11	e20	e14	e10	12	109	25	8.4	101	72
2	12	e9.2	12	e17	e13	e10	11	78	18	9.1	157	41
3	10	e9.5	e12	e15	e18	e11	9.7	44	43	9.2	171	27
4	60	e10	e13	e13	e18	e10	120	37	28	11	326	21
5	34	e14	e10	e14	e14	e12	174	219	23	193	215	17
6	15	e11	e11	e14	e14	e12	85	148	17	128	138	15
7	12	e10	11	e13	e12	e12	63	86	17	138	100	14
8	12	e10	11	e12	e11	e26	54	71	14	108	74	14
9	12	e17	12	e13	e10	e22	43	316	15	169	55	13
10	11	47	11	e11	e10	e24	34	338	13	141	42	13
11	11	18	11	e13	e9.0	e28	28	254	12	109	38	13
12	10	15	7.8	e10	e8.0	e35	24	173	16	69	33	15
13	16	18	9.0	e11	e10	78	21	121	15	48	26	15
14	12	21	10	e10	e10	52	20	94	11	36	23	36
15	11	34	11	e10	e10	43	18	77	9.3	158	20	21
16	19	23	11	e10	e9.6	36	17	57	8.1	139	24	18
17	16	19	9.5	e11	e9.6	35	16	44	6.9	164	25	18
18	12	17	101	e13	e9.6	26	17	38	36	397	22	15
19	16	14	116	e13	e9.6	21	17	28	47	223	20	15
20	11	13	46	e11	e10	29	31	70	17	133	13	15
21	11	12	27	e11	e13	32	22	38	10	529	12	14
22	10	12	21	e12	e11	25	20	30	8.8	462	11	25
23	9.2	21	17	e14	e11	20	18	19	7.8	298	9.9	19
24	9.1	16	13	e13	e11	17	16	16	7.5	208	9.7	17
25	13	12	e15	e12	e9.6	19	15	14	6.7	155	9.7	15
26	14	17	e15	e14	e11	16	13	12	7.1	116	15	23
27	11	13	e14	e15	e13	14	13	11	7.4	247	11	36
28	10	12	e12	e14	e10	15	13	15	7.0	290	9.8	20
29	10	11	e11	e11	---	19	12	16	11	169	78	18
30	e10	11	e22	e11	---	14	54	20	9.0	108	26	16
31	e11	---	e27	e17	---	13	---	63	---	78	20	---
TOTAL	441.3	475.7	640.3	398	319.0	736	1,010.7	2,656	473.6	5,050.7	1,835.1	631
MEAN	14.2	15.9	20.7	12.8	11.4	23.7	33.7	85.7	15.8	163	59.2	21.0
MAX	60	47	116	20	18	78	174	338	47	529	326	72
MIN	9.1	9.0	7.8	10	8.0	10	9.7	11	6.7	8.4	9.7	13
CFSM	0.16	0.18	0.23	0.14	0.13	0.26	0.37	0.95	0.18	1.81	0.66	0.23
IN.	0.18	0.20	0.26	0.16	0.13	0.30	0.42	1.10	0.20	2.09	0.76	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

MEAN	35.0	57.6	72.0	62.5	82.7	124	125	94.1	70.6	42.5	37.4	39.0
MAX	151	212	301	199	252	386	268	266	222	185	141	217
(WY)	(1994)	(1973)	(1983)	(1993)	(1959)	(1979)	(1973)	(1959)	(1993)	(1996)	(1990)	(1965)
MIN	6.47	5.29	7.12	7.32	8.49	18.2	21.3	18.1	11.2	9.56	7.28	5.54
(WY)	(1969)	(1972)	(1961)	(1961)	(1963)	(2000)	(1963)	(1992)	(1965)	(1991)	(1964)	(1966)

SUMMARY STATISTICS

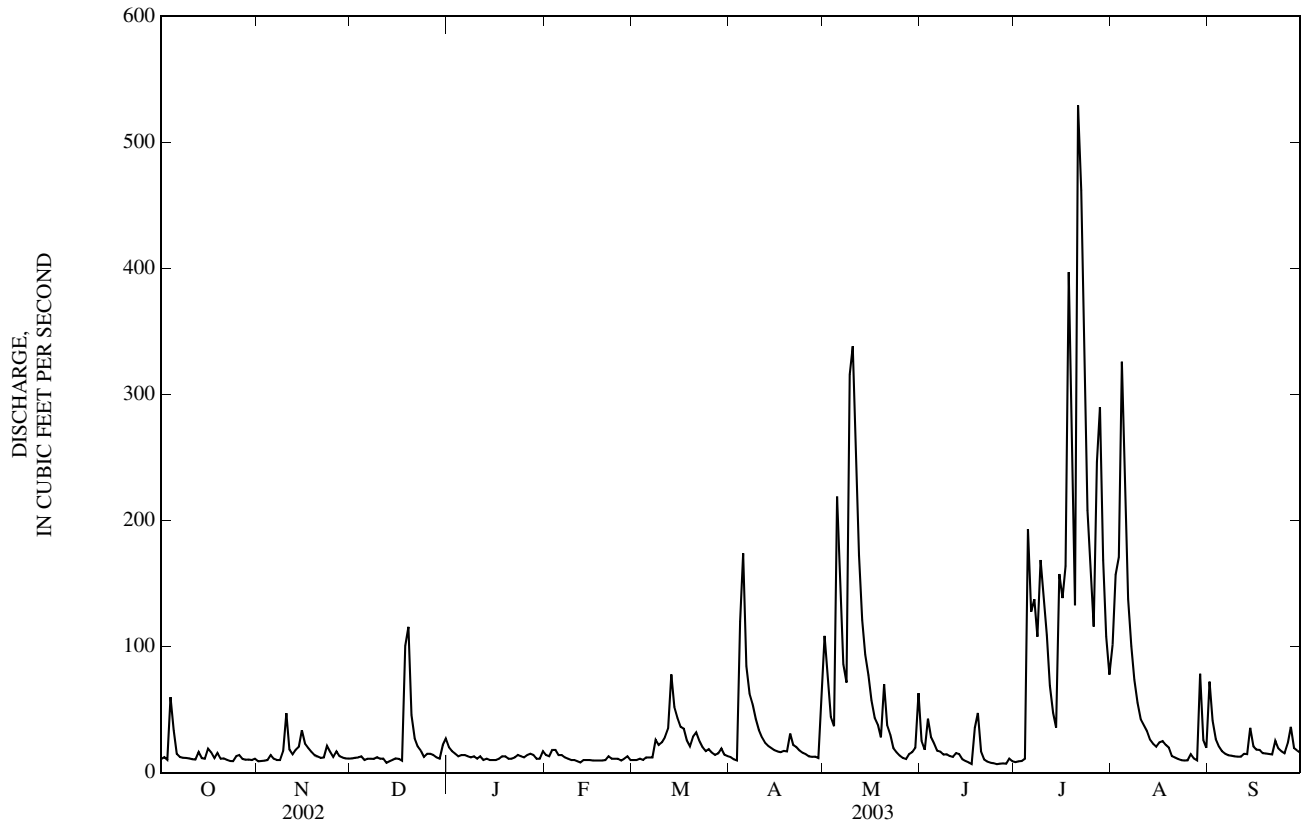
FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1959 - 2003

ANNUAL TOTAL	15,702.3	14,667.4	
ANNUAL MEAN	43.0	40.2	70.1
HIGHEST ANNUAL MEAN			121
LOWEST ANNUAL MEAN			23.5
HIGHEST DAILY MEAN	701	529	1,160
LOWEST DAILY MEAN	7.8	6.7	1.9
ANNUAL SEVEN-DAY MINIMUM	9.8	7.5	2.2
MAXIMUM PEAK FLOW		606	1,510
MAXIMUM PEAK STAGE		12.73	17.03
ANNUAL RUNOFF (CFSM)	0.48	0.45	0.78
ANNUAL RUNOFF (INCHES)	6.49	6.06	10.58
10 PERCENT EXCEEDS	90	109	175
50 PERCENT EXCEEDS	22	15	31
90 PERCENT EXCEEDS	11	10	8.9

05536195 LITTLE CALUMET RIVER AT MUNSTER, IN—Continued



05536357 GRAND CALUMET RIVER AT HOHMAN AVE AT HAMMOND, IN

LOCATION.--Lat 41°37'28", long 87°31'04", in NE¼NW¼sec. 36, T37 N., R10 W., Lake County, Hydrologic Unit 07120003, (CALUMET CITY, IL-IN quadrangle), on left bank, 20 feet upstream of Hohman Avenue, 1,000 feet east of Indiana-Illinois State line, 0.57 mi downstream of U.S. Highway 41, and 0.7 mi north of St. Margaret's Hospital (Hohman Avenue).

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 575.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.37	2.9	0.51	e2.3	e2.1	3.5	1.7	18	9.7	1.1	26	47
2	1.4	2.3	e0.97	e1.4	e3.0	6.4	1.6	3.7	7.3	1.1	32	28
3	1.1	1.4	e1.7	e2.9	e5.4	8.5	2.7	2.2	19	0.97	41	12
4	7.7	0.20	e0.92	e1.3	e3.0	8.5	39	5.2	12	0.68	42	7.4
5	3.7	2.2	e0.84	e2.0	e1.9	8.6	35	27	8.6	25	29	5.5
6	2.2	2.1	e0.70	e1.3	e1.7	7.5	6.1	9.7	7.5	23	24	4.5
7	3.7	0.78	e0.39	e1.8	e2.1	5.3	9.0	5.7	6.8	25	21	3.0
8	1.9	1.1	e0.54	e2.0	e1.3	13	8.4	5.5	7.1	13	21	4.1
9	1.7	1.1	e0.81	e2.8	e1.8	30	5.2	34	4.4	15	20	5.0
10	1.8	8.0	0.28	e2.0	e1.3	25	2.3	9.6	6.0	12	20	3.8
11	2.3	1.5	1.1	e3.0	e4.2	22	2.2	21	5.7	9.2	24	4.3
12	2.0	2.4	0.40	e0.93	5.5	26	3.3	8.4	4.4	7.4	25	3.8
13	4.8	0.47	1.4	e0.84	5.7	30	2.4	8.1	2.8	4.8	20	2.4
14	1.5	0.83	0.41	e1.1	9.6	24	1.9	8.6	2.8	4.1	18	29
15	1.8	2.6	0.52	e1.2	16	13	1.9	11	1.8	e35	16	14
16	3.2	1.5	0.97	e0.68	32	4.8	2.1	6.5	1.9	e23	15	4.2
17	1.6	2.2	0.33	e2.0	31	3.3	2.2	6.3	2.4	e31	21	3.2
18	1.6	1.1	21	e1.9	37	2.2	1.9	5.7	8.7	e65	16	2.9
19	2.8	4.4	4.5	e1.9	21	2.9	1.7	4.8	10	e28	11	3.3
20	1.8	0.83	3.4	e1.3	11	4.2	6.8	16	5.5	e13	10	2.2
21	1.7	4.2	2.3	e1.2	10	1.8	2.7	8.0	2.2	e85	8.9	2.6
22	1.7	3.9	3.4	e1.4	5.1	0.57	1.3	6.1	1.4	e53	7.3	13
23	1.4	1.4	0.93	e1.9	6.3	0.84	0.97	5.9	1.5	e26	6.2	9.9
24	1.0	2.4	1.8	e3.1	7.0	0.83	0.63	6.2	1.1	27	5.5	11
25	1.7	1.7	e3.2	e2.3	4.5	2.7	0.61	4.7	1.3	23	3.6	12
26	2.1	2.7	e0.49	e1.1	4.3	0.87	0.92	5.0	0.76	19	7.4	15
27	1.4	0.88	e0.97	e3.4	6.4	1.4	0.64	4.9	1.2	83	11	27
28	1.4	2.4	e1.4	e1.7	5.1	3.2	0.75	7.5	0.59	72	6.1	8.0
29	4.8	0.50	e0.93	e3.1	---	3.1	0.89	7.1	1.8	43	55	5.9
30	3.9	2.8	e3.9	e2.2	---	1.2	16	11	1.3	31	22	4.4
31	3.4	---	e1.9	e3.0	---	1.3	---	27	---	25	9.8	---
TOTAL	73.47	62.79	62.91	59.05	245.3	266.51	162.81	310.4	147.55	824.35	594.8	298.4
MEAN	2.37	2.09	2.03	1.90	8.76	8.60	5.43	10.0	4.92	26.6	19.2	9.95
MAX	7.7	8.0	21	3.4	37	30	39	34	19	85	55	47
MIN	0.37	0.20	0.28	0.68	1.3	0.57	0.61	2.2	0.59	0.68	3.6	2.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	30.8	29.1	25.6	25.1	29.6	31.6	36.9	39.4	40.8	44.2	36.4	31.9
MEAN												
MAX	80.4	63.7	65.2	66.8	95.9	81.5	90.8	85.9	98.8	102	93.9	88.9
(WY)	(1998)	(1998)	(1998)	(1998)	(1997)	(1998)	(1998)	(1997)	(1993)	(1993)	(1997)	(1997)
MIN	2.37	2.09	2.03	1.90	6.24	8.44	5.43	9.98	4.92	6.06	4.54	1.22
(WY)	(2003)	(2003)	(2003)	(2003)	(2000)	(2000)	(2003)	(2001)	(2003)	(2002)	(2002)	(2002)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

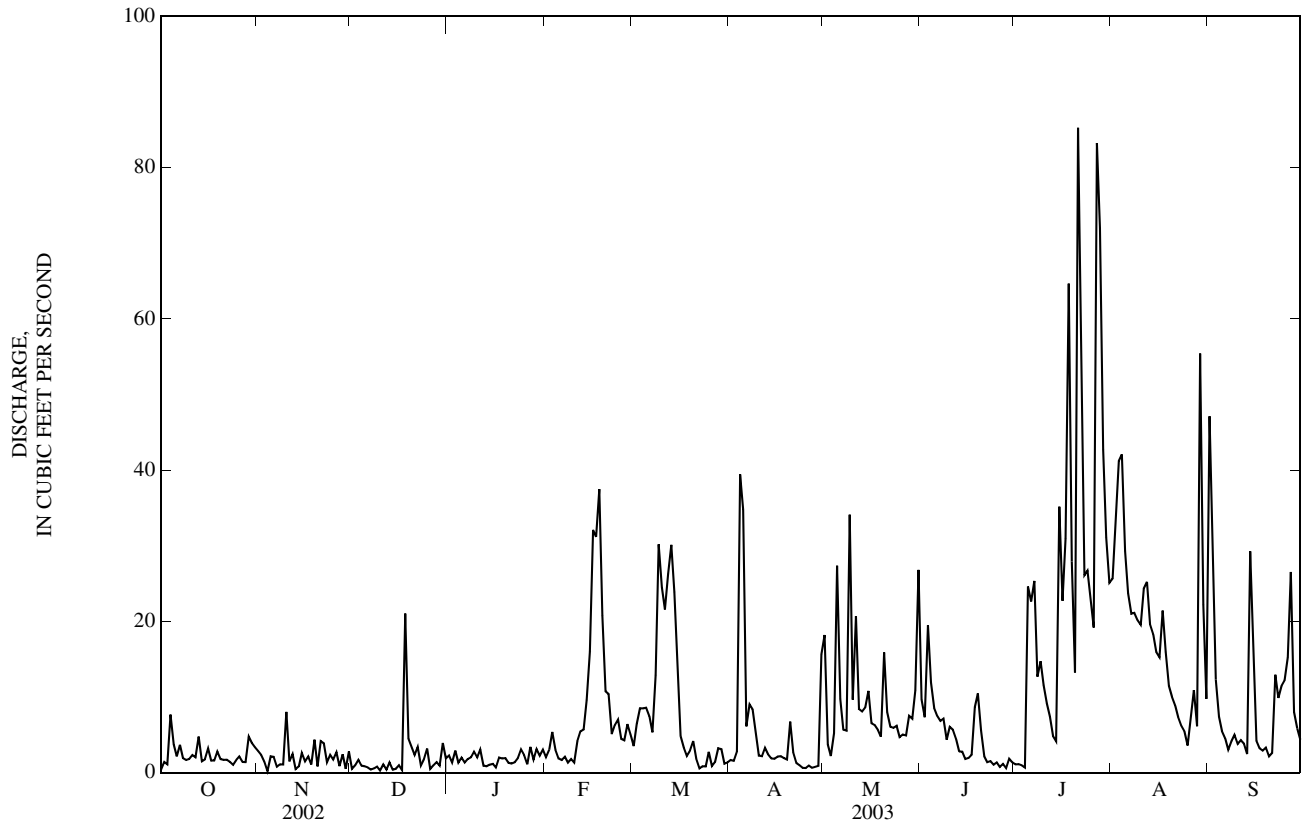
FOR 2003 WATER YEAR

WATER YEARS 1991 - 2003

ANNUAL TOTAL	2,257.09		3,108.34		33.5	
ANNUAL MEAN	6.18		8.52		76.2	
HIGHEST ANNUAL MEAN					1997	
LOWEST ANNUAL MEAN					8.21	
HIGHEST DAILY MEAN	166	May 12	85	Jul 21	464	Feb 21, 1997
LOWEST DAILY MEAN	0.20	Nov 4	0.20	Nov 4	0.20	Nov 4, 2002
ANNUAL SEVEN-DAY MINIMUM	0.60	Dec 6	0.60	Dec 6	0.60	Dec 6, 2002
MAXIMUM PEAK FLOW			unknown		701	Feb 21, 1997
MAXIMUM PEAK STAGE			unknown		8.76	Jul 18, 1996
10 PERCENT EXCEEDS	12		25		74	
50 PERCENT EXCEEDS	4.0		3.5		24	
90 PERCENT EXCEEDS	0.83		0.93		5.0	

e Estimated

05536357 GRAND CALUMET RIVER AT HOHMAN AVE AT HAMMOND, IN—Continued



## DISCHARGE AT MISCELLANEOUS SITES

## Special study and miscellaneous sites

## STREAMS TRIBUTARY TO LAKE MICHIGAN BASIN

## Lake Michigan Basin

Streamflow was measured at points other than continuous gaging stations from 4 sites in the Lake Michigan Basin on October 16, 2002. This data was collected as a part of an investigation of water quality and ground-water/surface-water interactions near Long Lake, Indiana Dunes National Lakeshore. This study was funded under the US Geological Survey-National Park Service Water Quality Assessment and Monitoring Partnership.

Stream	Tributary to	Location	Measurement date	Discharge (ft <sup>3</sup> /s)
Little Calumet River/Burns Ditch	Lake Michigan	Lat 41°34'28"N, long 87°17'22"W, NAD83, at Central Avenue bridge at Lake Station, Lake County, IN.	10-16-02	22.7
Little Calumet River/Burns Ditch	Lake Michigan	Lat 41°35'29"N, long 87°13'33"W, NAD83 approximately 200 feet downstream(east) of US Highway/Interstate 90 bridge at Lake Station, Lake County, IN.	10-16-02	36.4
Willow Creek	Little Calumet River/Burns Ditch	Lat 41°35'35"N, long 87°12'45"W, NAD83, approximately 700 feet downstream(west) of US Highway 20 bridge at Portage, Porter County, IN.	10-16-02	1.60
East Arm Little Calumet River	Burns Ditch	Lat 41°36'45"N, long 87°10'25"W, NAD83, at US Highway 249 bridge at Portage, Porter County, IN.	10-16-02	240

Streamflow was measured at points other than continuous gaging stations at one site in the Lake Michigan basin during the period April 7-August 27, 1998 as part of a miscellaneous surface water study.

Stream	Tributary to	Location	Measurement date	Discharge (ft <sup>3</sup> /s)
Turkey Creek	Elkhart River	Lat 41°24'31"N Long 85°51'27W NAD27 at West Emeline Street, in Milford, Kosciusko County, IN	04-07-1998	148
			06-01-1998	29.7
			06-04-1998	23.3
			06-18-1998	46.0
			07-20-1998	20.5
			08-27-1998	21.8

## Wabash River Basin

Streamflow was measured at points other than continuous gaging stations at one site in the Wabash River basin on November 19, 2003. This data was collected as a test of an acoustic streamflow measurement device.

Stream	Tributary to	Location	Measurement date	Discharge (ft <sup>3</sup> /s)
Eagle Creek	White River	Lat 39°53'16"N, Long 86°18'00W NAD27 at Lafayette Road, Marion County, IN	11-19-03	530