05378500 MISSISSIPPI RIVER AT WINONA, MN

LOCATION.--Lat 44°03'21", long 91°38'16", in sec. 23, T.107 N., R.7 W., Winona County, Hydrologic Unit 07040003, on right bank at Winona pumping station in Winona, 9.5 mi upstream from Trempealeau River, and at mile 725.7 upstream from the Ohio River.

DRAINAGE AREA.--59,200 mi^2 (approximately).

PERIOD OF RECORD.--June 1928 to current year. Gage-height records collected in this vicinity since 1878 are contained in reports of Mississippi River Commission.

GAGE.--Water-stage recorder. Datum of gage is 639.64 ft above sea level (NGVD of 1929). June 10,1928 to Apr. 15, 1931, nonrecording gage at site 800 ft upstream. Prior to Oct. 1, 1929, at datum 0.20 ft higher and Oct. 1, 1929 to Apr. 15, 1931, at datum 0.12 ft lower. Apr. 16, 1931 to Nov. 12, 1934, nonrecording gage at present site and datum. Since Mar. 31, 1937, auxiliary water-stage recorder 2.7 mi upstream at tailwater of navigation dam 5A.

REMARKS.-- Records good except those for estimated days, which are fair to poor. Some regulation by reservoirs, navigation dams, and power plants at low and medium stages. Daily discharges for some estimated days provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Minimum gage height, -3.38 ft, Aug. 31, 1934 (prior to dam construction in 1936); minimum gage height since 1938, after completion of dam, 1.95 ft, Jan. 27, 1944.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21200	21000	20700	e16200	e14600	50100	31300	23600	31900	35500	20400	12700
2	21300	20900	19000	e16200	e14400	49700	28900	22100	35800	31900	19000	12300
3	21400	20200	17900	e16200	e14200	49500	26800	19900	37700	30500	18900	13600
4	21400	19700	18100	e16200	e14200	49300	26200	e20200	42200	29300	18800	15000
5	21200	20800	18300	e16200	e14200	48700	24700	e19900	45500	28200	17800	16700
6	21600	21800	19300	e16000	e14100	46800	22800	e19700	45700	26200	16000	16100
7	21300	21600	19500	e16000	e14100	45100	22500	e19300	47400	22700	15700	13700
8	20800	21200	19400	e16000	e14100	43600	22400	e18700	49100	22400	15200	15300
9	21600	21600	19200	e15800	e14100	42000	22800	17900	48100	27300	15800	16400
10	21700	21400	19500	e15900	e14100	39200	23600	18700	46300	35700	16700	15500
11	21800	21300	19000	e16200	e14200	37700	23200	19300	43000	41700	16800	15800
12	22000	20700	18600	e16200	e14200	38200	23200	22400	41200	51400	16500	17400
13	21700	20000	18100	e16100	e14100	38800	22500	24200	37600	61200	16200	23000
14	21200	19500	17300	e16100	e14100	38900	21500	24900	36500	62500	16600	26100
15	19700	19000	e14000	e16100	e14100	37500	21000	25300	34100	62200	16100	23900
16	18600	18400	e12200	e16000	e13300	36100	21000	26500	32400	57600	16200	18800
17	19100	18500	e10300	e15900	e12900	35400	21000	29200	30700	52900	19300	17000
18	19500	18700	e9500	e14700	e12900	32200	21000	32200	28400	49400	26200	15600
19	19400	17500	e8800	e15000	e13000	31000	21200	33200	27700	45900	29100	12300
20	19500	17500	e8000	e14900	e13100	29900	22000	31500	32600	44800	28000	10000
21	19600	17600	e7600	e13400	e13100	26700	25000	33600	39200	42500	26500	10500
22	19100	17900	e7600	e13000	e13200	25400	27100	36200	42500	38600	22700	11000
23	19500	19900	e7600	e13100	e14000	25500	30400	35800	46200	34600	21000	11600
24	19900	20900	e7800	e13200	17000	25100	35000	35900	51000	30200	19400	12300
25	19500	20900	e8100	e13300	22800	24300	37500	36000	56800	26100	17600	12300
26	19200	20200	e8800	e13500	28100	24100	36700	35100	54700	24400	16900	12400
27	20200	20200	e9600	e13500	29200	25300	32700	33600	50500	24400	17700	12300
28	19700	21300	e10900	e13600	36300	27200	31000	32600	45700	24000	18000	11900
29	20200	22200	e12000	e13700	45900	29100	28900	29800	42100	23200	18200	11700
30	20100	22200	e13800	e15100	---	31200	25100	27200	39500	22700	17800	10900
31	21400	---	e15700	e15300	---	31900	---	26700	---	22000	15400	---
TOTAL	634400	604600	436200	468600	497600	1115500	779000	831200	1242100	1132000	586500	444100
MEAN	20460	20150	14070	15120	17160	35980	25970	26810	41400	36520	18920	14800
MAX	22000	22200	20700	16200	45900	50100	37500	36200	56800	62500	29100	26100
MIN	18600	17500	7600	13000	12900	24100	21000	17900	27700	22000	15200	10000
AC-FT	1258000	1199000	865200	929500	987000	2213000	1545000	1649000	2464000	2245000	1163000	880900
CFSM	.35	.34	.24	.26	.29	.61	.44	.45	.70	.62	.32	.25

05378500 MISSISSIPPI RIVER AT WINONA, MN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2000, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22570	22980	17750	15300	15620	30680	61280	48530	39340	31930	21610	22390
MAX	85950	50040	40440	30480	35900	86420	152600	111500	100200	118800	67560	69490
(WY)	1987	1972	1992	1983	1984	1983	1965	1986	1993	1993	1993	1986
MIN	6774	7367	6286	6742	7874	9023	12810	11930	8450	7063	5391	6790
(WY)	1934	1934	1934	1940	1977	1934	1931	1931	1934	1934	1934	1933

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1928 - 2000	
ANNUAL TOTAL	12562500		8771800			
ANNUAL MEAN	34420		23970		29200	
HIGHEST ANNUAL MEAN					56850	1986
LOWEST ANNUAL MEAN					9742	1934
HIGHEST DAILY MEAN	109000	May 24	62500	Jul 14	264000	Apr 20 1965
LOWEST DAILY MEAN	7600	Dec 21	7600	Dec 21	2250	Dec 29 1933
ANNUAL SEVEN-DAY MINIMUM	7930	Dec 19	7930	Dec 19	3210	Dec 27 1933
INSTANTANEOUS PEAK FLOW			62700	Jul 14	268000	Apr 19 1965
INSTANTANEOUS PEAK STAGE			8.31	Jul 14	20.77[a]	Apr 19 1965
INSTANTANEOUS LOW FLOW					1940[b]	Dec 12 1980
ANNUAL RUNOFF (AC-FT)	24920000		17400000		21150000	
ANNUAL RUNOFF (CFSM)	.58		.40		.49	
10 PERCENT EXCEEDS	67100		41800		60100	
50 PERCENT EXCEEDS	27100		20900		21100	
90 PERCENT EXCEEDS	16700		13200		10000	

[a] From highwater mark.
[b] Result of ice jam upstream.
e Estimated.