

UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05385000 ROOT RIVER NEAR HOUSTON, MN

LOCATION.--43°46'07", long 91°34'11", in SW¹/₄NW¹/₄ sec. 33, T.104 N., R.6 W., Houston County, Hydrologic Unit 07040008, on right bank 0.2 mi north of Houston and 1.6 mi upstream from South Fork and 18.2 mi upstream from mouth.

DRAINAGE AREA.--1,250 mi².

PERIOD OF RECORD.--May 1909 to September 1917, May to November 1929, March 1930 to 1983, 1991 to current year. Operated as high-flow partial-record station October 1983 to September 1990. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1508: 1911-12. WSP 1628: 1948(P).

GAGE.--Water-stage recorder. Datum of gage is 667.00 ft above sea level. May 28, 1909 to Sept. 30, 1917, nonrecording gage at site 1.3 mi downstream at different datum. May 4, 1929 to Sept. 27, 1933, nonrecording gage and Sept. 28, 1933 to June 26, 1980, recording gage at site 0.9 mi upstream at datum 671.86 ft.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Slight diurnal fluctuation at low flows caused by power plants above station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	2100	6,360	11.03	May 19	1000	4,580	9.23
Apr 24	0500	4,670	9.33	Jul 21	1300	*8,000	*12.41

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	689	1010	741	e540	e610	907	814	1820	1380	855	2910	1250
2	681	954	733	e530	e620	898	813	1720	1350	876	2780	1200
3	696	904	727	e520	e620	899	937	1640	1300	1140	2230	1150
4	713	856	719	e510	e560	863	1260	1560	1260	1390	1960	1090
5	763	830	720	e500	e580	847	1510	1550	1240	1200	1760	1070
6	800	802	710	e500	e590	842	1880	1490	1290	1060	1620	1070
7	798	779	690	e500	e610	799	2660	1440	1550	972	1500	1020
8	793	766	678	e500	624	771	2720	1390	1920	920	1410	1030
9	781	762	678	e505	652	759	2900	1340	1940	946	1360	980
10	774	857	672	e515	671	723	5380	1280	1680	942	1480	955
11	764	953	664	e525	821	726	5050	1260	1580	955	1430	938
12	751	1050	659	e540	e1000	728	4120	1310	1490	911	1300	1020
13	732	1130	665	e570	e1040	697	3520	1380	1420	875	1240	1050
14	717	1100	664	e590	1070	690	2990	1710	1340	e885	1180	970
15	718	1050	661	e600	1100	696	2640	2050	1270	e804	1120	933
16	735	1030	653	e620	1130	745	2380	1910	1200	e751	1080	910
17	761	1020	646	e660	e1100	993	2170	1850	1160	e751	1040	888
18	784	984	643	e680	e1080	1420	1990	2550	1130	e730	1020	877
19	814	955	635	e700	e1060	1360	1840	4170	1090	e715	2270	868
20	828	919	623	e720	e1030	1160	1730	2910	1060	e2140	2330	851
21	818	887	561	e740	e980	1070	1650	2460	1040	e7020	1690	834
22	798	879	454	e740	948	1020	1780	2930	1010	6440	1510	824
23	779	872	e470	e740	923	982	2930	2700	1030	3920	1610	822
24	763	836	e490	e720	907	918	4380	2220	1010	2810	2530	815
25	747	823	e520	e710	868	866	3500	2010	973	2290	2870	807
26	734	801	e540	e700	837	835	2940	1840	930	2250	2220	805
27	801	784	e570	e700	894	814	2610	1700	896	2980	1910	813
28	872	772	e600	e680	937	817	2400	1600	899	2650	1710	804
29	995	765	e620	e650	---	828	2160	1510	886	2310	1550	790
30	1140	768	e580	e610	---	830	1960	1450	851	2110	1420	781
31	1050	---	e560	e600	---	820	---	1400	---	2450	1330	---
TOTAL	24589	26898	19546	18915	23862	27323	75614	58150	37175	57048	53370	28215
MEAN	793	897	631	610	852	881	2520	1876	1239	1840	1722	940
MAX	1140	1130	741	740	1130	1420	5380	4170	1940	7020	2910	1250
MIN	681	762	454	500	560	690	813	1260	851	715	1020	781
AC-FT	48770	53350	38770	37520	47330	54200	150000	115300	73740	113200	105900	55960
CFSM	.63	.72	.50	.49	.68	.71	2.02	1.50	.99	1.47	1.38	.75
IN.	.73	.80	.58	.56	.71	.81	2.25	1.73	1.11	1.70	1.59	.84

e Estimated

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	518	518	433	413	496	1403	1210	837	901	809	662	574
MAX	1465	1494	1671	1152	1427	3512	4963	2440	2803	3252	2257	2105
(WY)	1974	1983	1992	1973	1966	1961	1965	1973	1974	1978	1993	1938
MIN	193	218	189	172	168	251	274	234	261	236	231	243
(WY)	1934	1934	1934	1959	1959	1931	1931	1934	1934	1964	1958	1933

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1910 - 1999
ANNUAL TOTAL	370273	450705	
ANNUAL MEAN	1014	1235	737
HIGHEST ANNUAL MEAN			1590
LOWEST ANNUAL MEAN			294
HIGHEST DAILY MEAN	6830	7020	31100
LOWEST DAILY MEAN	370	454	82
ANNUAL SEVEN-DAY MINIMUM	417	504	113
INSTANTANEOUS PEAK FLOW		8000	37000
INSTANTANEOUS PEAK STAGE		12.41 ^a	18.32 ^b
INSTANTANEOUS LOW FLOW		362 ^c	65 ^d
ANNUAL RUNOFF (AC-FT)	734400	894000	534100
ANNUAL RUNOFF (CFSM)	.81	.99	.59
ANNUAL RUNOFF (INCHES)	11.02	13.41	8.01
10 PERCENT EXCEEDS	1710	2280	1320
50 PERCENT EXCEEDS	838	933	468
90 PERCENT EXCEEDS	473	622	262

- a From highwater mark.
- b Backwater from ice.
- c Result of freezeup.
- d Also occurred, Feb. 25, 1935.

