

05267000 MISSISSIPPI RIVER NEAR ROYALTON, MN

LOCATION.--Lat 45°49'34", long 94°21'18", sec. 32, T. 39 N., R. 32 W., Morrison County, Hydrologic Unit 07010201, on left bank at upstream side of bridge on County Highway 26, 2.5 mi west of Royalton, and at mile 954 upstream from Ohio River.

DRAINAGE AREA.--11,600 mi² (approximately).

PERIOD OF RECORD.--March 1924 to Sept. 30, 1993, discharges obtained from Minnesota Power and adjusted to U.S. Geological Survey streamflow measurements; Oct. 1993 to Sept. 30, 2000, discharges flow-averaged between Mississippi River at Ft. Ripley (05261000) and Mississippi River at St. Cloud (05270700); Oct. 2000 to July, 2001, discharges obtained from Minnesota Power and adjusted to U.S. Geological Survey streamflow measurements; July 2001 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except those for estimated days, which are fair to poor. Flow partly regulated by power plants and Winnibigoshish, Leech, Pokegama, Sandy, and Gull Lakes and by Pine River Reservoir.

COOPERATION.--Minnesota Power Co. in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,780	2,020	2,630	1,580	e2,020	e2,460	7,550	4,750	5,500	2,390	2,010	1,420
2	1,720	1,960	2,750	1,490	e2,040	e2,520	7,890	4,960	6,080	2,460	1,870	1,450
3	1,710	2,020	2,750	e1,450	e2,070	e2,550	7,610	4,510	6,880	2,050	1,910	1,470
4	1,710	2,040	2,680	e1,400	e2,070	e2,540	7,420	4,240	7,200	2,110	1,920	1,470
5	1,720	2,100	2,710	e1,360	e2,050	e2,560	7,900	4,250	7,420	2,380	1,860	1,740
6	1,730	2,000	2,660	e1,650	e2,030	e2,520	7,890	4,190	7,500	2,710	1,840	3,040
7	1,740	1,690	2,490	e1,750	e1,970	e2,650	7,050	4,010	7,330	3,090	1,740	2,760
8	1,780	1,770	2,930	e1,930	e1,950	e2,610	7,030	3,300	7,300	3,050	1,630	2,480
9	1,780	1,470	e2,800	e2,050	e1,930	e2,570	7,490	3,390	7,020	3,310	1,560	3,460
10	1,710	1,790	e2,550	e2,170	e1,930	e2,500	7,140	3,380	6,460	3,420	1,610	3,580
11	1,650	2,200	e2,350	e2,230	e1,930	e2,500	6,980	2,870	6,550	3,090	1,620	3,890
12	1,800	2,240	e2,220	e2,280	e1,930	e2,480	7,190	3,010	6,230	3,660	1,670	3,560
13	1,800	2,490	e2,200	e2,300	e1,940	e2,530	6,650	2,820	5,440	3,640	1,820	3,780
14	1,670	2,250	e2,200	e2,300	e1,910	e2,540	6,650	2,810	5,550	3,760	1,790	4,060
15	1,170	2,100	2,140	e2,280	e1,910	e2,570	6,300	3,030	5,320	4,730	1,590	3,730
16	1,740	2,500	e2,250	e2,270	e1,950	e2,630	5,730	3,590	4,860	4,290	1,580	3,950
17	1,920	2,510	e2,270	e2,240	e2,020	e2,680	5,810	3,880	4,840	4,040	1,710	4,480
18	1,970	2,510	2,250	e2,220	e2,030	e2,710	5,440	3,940	4,460	3,790	1,720	4,720
19	1,960	2,690	e2,230	e2,210	e1,960	e2,750	5,280	4,010	4,140	3,440	1,640	5,350
20	1,680	2,460	2,200	e2,200	e1,940	e2,860	5,280	4,880	3,970	3,290	1,430	5,180
21	1,670	2,390	2,280	e2,200	e2,100	e2,970	6,270	4,550	3,740	3,080	1,340	5,210
22	1,740	2,410	2,190	e2,180	e2,130	e2,990	6,300	4,870	3,910	3,000	1,450	5,650
23	1,780	2,330	2,210	e2,170	e2,160	e3,190	6,630	5,010	3,500	2,720	1,420	6,250
24	1,850	e1,100	e2,050	e2,170	e2,210	e3,500	6,580	4,850	3,070	2,200	1,430	6,330
25	1,840	e1,200	e1,850	e2,180	e2,260	e3,850	6,510	4,440	3,090	2,050	1,520	6,700
26	1,840	e1,300	1,700	e2,200	e2,320	4,550	6,060	4,830	3,120	2,140	1,640	7,080
27	1,840	1,920	1,980	e2,190	e2,360	5,280	5,770	5,270	2,730	2,060	1,390	6,730
28	1,820	2,400	1,690	e2,150	e2,380	6,250	5,670	4,970	2,590	1,830	1,480	7,040
29	1,830	2,520	e1,650	e2,050	e2,430	6,880	5,540	5,040	2,590	1,790	1,440	6,880
30	2,140	2,780	e1,500	e1,970	---	7,280	5,140	5,400	2,430	1,860	1,550	6,790
31	2,210	---	e1,540	e2,000	---	7,350	---	5,600	---	1,740	1,580	---
TOTAL	55,300	63,160	69,900	62,820	59,930	105,820	196,750	130,650	150,820	89,170	50,760	130,230
MEAN	1,784	2,105	2,255	2,026	2,067	3,414	6,558	4,215	5,027	2,876	1,637	4,341
MAX	2,210	2,780	2,930	2,300	2,430	7,350	7,900	5,600	7,500	4,730	2,010	7,080
MIN	1,170	1,100	1,500	1,360	1,910	2,460	5,140	2,810	2,430	1,740	1,340	1,420
AC-FT	109,700	125,300	138,600	124,600	118,900	209,900	390,300	259,100	299,200	176,900	100,700	258,300
CFSM	0.15	0.18	0.19	0.17	0.18	0.29	0.57	0.36	0.43	0.25	0.14	0.37
IN.	0.18	0.20	0.22	0.20	0.19	0.34	0.63	0.42	0.48	0.29	0.16	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2004, BY WATER YEAR (WY)

MEAN	4,170	4,045	3,189	2,798	2,680	3,876	9,278	8,679	6,527	5,055	3,721	3,578
MAX	12,930	14,640	7,297	5,713	5,480	12,290	25,430	24,600	18,160	15,250	15,230	12,940
(WY)	(1966)	(1972)	(1997)	(1966)	(1997)	(1966)	(1997)	(1950)	(1965)	(1993)	(1953)	(1986)
MIN	632	618	627	534	758	968	1,924	1,663	1,071	648	449	535
(WY)	(1937)	(1937)	(1935)	(1935)	(1937)	(1940)	(1931)	(1977)	(1988)	(1988)	(1934)	(1934)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1924 - 2004	
ANNUAL TOTAL	1,381,180		1,165,310			
ANNUAL MEAN	3,784		3,184		4,825	
HIGHEST ANNUAL MEAN					9,555 1966	
LOWEST ANNUAL MEAN					1,213 1934	
HIGHEST DAILY MEAN	14,300	Jun 29	7,900	Apr 5	38,200	Apr 8, 1997
LOWEST DAILY MEAN	1,100	Nov 24	1,100	Nov 24	254	Nov 25, 1936
ANNUAL SEVEN-DAY MINIMUM	1,650	Oct 10	1,460	Aug 21	358	Sep 3, 1936
MAXIMUM PEAK FLOW			a8,740	Apr 5		
MAXIMUM PEAK STAGE			a11.10	Apr 5		
INSTANTANEOUS LOW FLOW			b1,110	Oct 15		
ANNUAL RUNOFF (AC-FT)	2,740,000		2,311,000		3,496,000	
ANNUAL RUNOFF (CFSM)	0.326		0.274		0.416	
ANNUAL RUNOFF (INCHES)	4.43		3.74		5.65	
10 PERCENT EXCEEDS	8,140		6,310		9,830	
50 PERCENT EXCEEDS	2,580		2,440		3,550	
90 PERCENT EXCEEDS	1,780		1,650		1,360	

- a Due in part to regulation.
- b Due to regulation.
- e Estimated.

