

04024000 ST. LOUIS RIVER AT SCANLON, MN

LOCATION.--Lat 46°42'12", long 92°25'07", in NW¹/₄ sec. 30, T.49 N., R.16 W., Carlton County, Hydrologic Unit 04010201, on right bank 80 ft downstream from bridge on U.S. Highway 61 at Scanlon, 0.6 mi downstream from Minnesota Power Co. power plant, 3 mi upstream from Thomson Reservoir, and 3.2 mi upstream from Midway River.

DRAINAGE AREA.--3,430 mi² (approximately).

PERIOD OF RECORD.--January 1908 to current year. Monthly discharge only for some periods published in WSP 1307. Published as "near Thomson" 1908-50.

REVISED RECORDS.--WSP 1337: 1911-12.

GAGE.--Water-stage recorder. Datum of gage is 1,101.23 ft above sea level (NGVD of 1929). Oct. 5, 1909 to Sept. 5, 1914, nonrecording gage 3 mi downstream and 50 ft below power plant at datum about 420 ft lower. Sept. 6, 1914 to Aug. 4, 1953, power plant record at Thomson hydroelectric plant.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation caused by power plant upstream. Flow regulated by Whiteface Reservoir and Boulder, Island, Rice and Fish Lakes, combined capacity, 332,160 acre-ft; the water-discharge table shows the monthly change in contents (+).

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	1,740	1,150	1,580	e946	e717	e860	8,250	3,900	11,900	945	587	464
2	1,660	1,300	1,490	e942	e713	e854	8,790	3,640	11,400	896	612	482
3	1,540	1,240	1,430	e931	e710	e835	10,100	3,330	10,100	898	575	503
4	1,440	1,340	1,430	e863	e709	e859	10,300	3,150	8,920	800	409	518
5	1,290	1,250	1,370	e814	e710	896	11,000	2,870	7,840	751	449	580
6	1,330	1,070	1,330	e779	e725	951	9,760	2,810	7,200	780	497	1,100
7	1,320	906	e1,270	e763	e742	869	8,520	2,530	6,520	804	449	1,460
8	1,180	1,000	e1,190	e748	e757	805	8,160	2,450	5,900	765	423	1,770
9	1,140	887	e1,100	e742	e765	e815	7,790	2,240	5,330	656	474	1,640
10	1,070	1,010	e1,020	e744	e769	e827	7,270	2,300	4,660	677	612	1,440
11	1,130	1,050	e969	e764	e773	e835	6,630	2,100	4,130	990	560	1,370
12	1,080	1,190	e996	e773	e773	e845	6,080	2,090	3,900	1,080	560	1,210
13	1,260	953	e1,010	e769	e773	e850	5,490	2,480	3,730	1,140	654	1,110
14	1,320	1,320	e1,020	e769	e770	e833	5,050	2,670	3,470	1,050	654	1,060
15	1,380	1,240	e1,030	e769	e765	e815	4,670	2,660	3,100	966	607	1,170
16	1,260	1,170	e1,020	e769	e764	817	4,470	2,490	2,800	861	585	1,250
17	1,150	1,220	e1,020	e771	e764	1,010	4,240	2,910	2,600	738	575	2,040
18	1,180	1,290	e1,030	e763	e771	991	4,210	4,410	2,320	727	594	2,280
19	1,170	1,380	e1,040	e755	e775	842	4,940	5,090	2,010	736	587	2,050
20	1,110	1,600	e1,030	e749	e781	e818	6,020	4,980	1,740	667	573	1,890
21	1,090	1,540	e1,020	e748	e784	e743	6,150	4,560	1,680	640	522	1,850
22	1,040	1,440	e1,020	e749	e784	e823	6,140	4,420	1,420	682	507	1,900
23	1,050	1,140	1,020	e746	e788	e834	6,030	3,940	1,370	615	568	2,050
24	965	703	1,020	e746	e789	e802	5,640	3,590	1,300	567	475	2,160
25	996	836	993	e745	e792	961	5,400	3,430	1,180	538	469	2,230
26	915	1,140	956	e744	e798	1,120	5,250	3,470	1,200	510	568	2,210
27	874	1,530	e970	e741	e815	1,430	4,980	3,550	1,110	492	519	2,070
28	967	1,660	e975	e737	e843	2,910	4,690	3,330	1,080	514	492	1,810
29	996	1,620	e971	e733	e854	6,480	4,410	3,300	1,090	555	473	1,720
30	982	1,600	e960	e727	---	7,790	4,210	3,360	943	459	457	1,520
31	1,140	---	e952	e722	---	7,930	---	7,920	---	561	455	---
TOTAL	36,765	36,775	34,232	24,061	22,273	49,050	194,640	105,970	121,943	23,060	16,541	44,907
MEAN	1,186	1,226	1,104	776	768	1,582	6,488	3,418	4,065	744	534	1,497
MAX	1,740	1,660	1,580	946	854	7,930	11,000	7,920	11,900	1,140	654	2,280
MIN	874	703	952	722	709	743	4,210	2,090	943	459	409	464
AC-FT	72,920	72,940	67,900	47,720	44,180	97,290	386,100	210,200	241,900	45,740	32,810	89,070
CFSM	0.35	0.36	0.32	0.23	0.22	0.46	1.89	1.00	1.19	0.22	0.16	0.44
IN.	0.40	0.40	0.37	0.26	0.24	0.53	2.11	1.15	1.32	0.25	0.18	0.49
+	-73.0	-12.7	-266	-266	-304	-55.6	1750	367	-269	-214	-147	139
MEAN ‡	1113	1213	838	510	464	1527	8238	3785	3796	530	387	1636
CFSM ‡	.32	.35	.24	.15	.14	.45	2.40	1.10	1.11	.15	.11	.48
IN ‡	.37	.39	.28	.17	.15	.52	2.68	1.27	1.24	.17	.13	.54

CAL. YR. 03 TOTAL 510,537 MEAN 1,399 MAX 5,740 MIN 321 MEAN ‡ 1,378 CFSM ‡ 0.40 IN ‡ 5.46
WTR. YR. 04 TOTAL 710,217 MEAN 1,940 MAX 11,900 MIN 409 MEAN ‡ 1,990 CFSM ‡ 0.58 IN ‡ 7.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2004, BY WATER YEAR (WY)

MEAN	2,028	1,747	1,291	1,073	1,056	1,458	5,701	5,064	3,555	2,485	1,652	1,759
MAX	7,508	8,518	2,993	2,272	2,200	6,026	15,860	22,210	16,480	12,630	9,197	7,594
(WY)	(1974)	(1972)	(1972)	(1966)	(1966)	(1945)	(2001)	(1950)	(1908)	(1999)	(1953)	(1928)
MIN	407	473	282	265	249	301	667	593	458	199	377	402
(WY)	(1935)	(1935)	(1911)	(1911)	(1924)	(1924)	(1977)	(1977)	(1988)	(1988)	(1977)	(1934)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1908 - 2004	
ANNUAL TOTAL	510,537		710,217			
ANNUAL MEAN	1,399		1,940		2,394	
HIGHEST ANNUAL MEAN					4,276	1972
LOWEST ANNUAL MEAN					945	1924
HIGHEST DAILY MEAN	5,740	Jul 12	11,900	Jun 1	37,900	May 9, 1950
LOWEST DAILY MEAN	321	Sep 11	409	Aug 4	88	Aug 24, 1977
ANNUAL SEVEN-DAY MINIMUM	438	Sep 5	468	Aug 3	134	Jul 26, 1988
MAXIMUM PEAK FLOW			13,600	Apr 5	37,900	May 9, 1950
MAXIMUM PEAK STAGE			8.77	Apr 5	15.80	May 9, 1950
INSTANTANEOUS LOW FLOW			379	Aug 4		
ANNUAL RUNOFF (AC-FT)	1,013,000		1,409,000		1,734,000	
ANNUAL RUNOFF (CFSM)	0.408		0.566		0.698	
ANNUAL RUNOFF (INCHES)	5.54		7.70		9.48	
10 PERCENT EXCEEDS	2,550		4,980		5,260	
50 PERCENT EXCEEDS	1,170		1,030		1,390	
90 PERCENT EXCEEDS	650		586		655	

+ Change in contents, equivalent in cubic feet per second, in Whiteface Reservoir, and Boulder, Island, Rice and Fish Lakes; records furnished by Minnesota Power Co.

‡ Adjusted for change in reservoir contents.

e Estimated.

