Annual Peak-Flow Frequency Analysis
For more information on the contents of this documentation, see Kessler and others (2013).

Streamgage number and name:

05273510 Mississippi River at Clearwater, Minn.

Peak-flow information:

Number of systematic peak flows in record	23
Systematic period begins	1972
Systematic period ends	1994
Length of systematic record	23
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Streamgage
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
4.2869	0.1693	-0.231

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	10,800

Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
4.2869	0.1693	-0.231

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	6,520	1,850	9,110
0.9900	7,320	2,470	9,820
0.9500	9,950	4,840	12,400
0.9000	11,600	7,030	14,200
0.8000	14,000	10,700	16,900
0.6667	16,600	13,500	19,900
0.5000	19,700	16,300	23,600
0.4292	21,100	17,600	25,300
0.2000	27,000	22,600	33,200
0.1000	31,600	26,300	43,200
0.0400	37,100	30,600	64,100
0.0200	41,000	33,000	79,500
0.0100	44,800	34,800	96,900
0.0050	48,600	36,100	119,000
0.0020	53,300	37,200	155,000

Peak-flow data used in the analysis:

Explanation of symbols and codes

−−	none
∗	Less than low-outlier threshold

Water year	Peak flow	Peak-flow code
1972	33,500	−−
1973	17,600	−−
1974	23,800	−−
1975	35,600	−−
1976	17,000	−−
1977	6,500	∗
1978	19,900	−−
1979	33,900	−−
1980	15,800	−−
1981	10,800	−−
1982	27,000	−−
1983	17,200	−−
1984	26,700	−−
1985	28,000	−−
1986	28,800	−−
1987	12,700	−−
1988	10,800	−−
1989	18,000	−−
1990	15,000	−−
1991	18,300	−−
1992	13,500	−−
1993	21,500	−−
1994	23,300	−−