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

Streamgage number and name:

05218000 Mississippi River above Sandy River near Libby, Minn.

Peak-flow information:

Number of systematic peak flows in record	19	
Systematic period begins	1897	
Systematic period ends	1927	
Length of systematic record	31	
Years without information	12	
Number of historical peak flows in record	1	1927

Frequency analysis options:

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

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
3.6653	0.1708	0.154

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	Not determined

Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
3.6653	0.1708	0.154

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	1,780	650	2,460
0.9900	1,940	811	2,570
0.9500	2,470	1,370	3,010
0.9000	2,810	1,900	3,360
0.8000	3,310	2,600	3,900
0.6667	3,870	3,190	4,520
0.5000	4,580	3,830	5,350
0.4292	4,910	4,120	5,760
0.2000	6,420	5,440	7,910
0.1000	7,710	6,460	10,700
0.0400	9,400	7,670	17,500
0.0200	10,700	8,500	22,800
0.0100	12,100	9,270	29,600
0.0050	13,500	9,970	38,300
0.0020	15,500	10,800	53,800

Peak-flow data used in the analysis:

Explanation of symbols and codes

H Historic, outside of systematic record

K Peak affected by regulation

Water year	Peak flow	Peak-flow code
1897	7,790	K
1898	4,630	K
1899	8,160	K
1900	9,570	K
1901	8,820	K
1902	6,290	K
1903	7,080	K
1904	5,040	K
1905	8,300	K
1906	7,580	K
1907	5,350	K
1908	4,200	K
1909	5,000	K
1910	3,790	K
1911	2,900	K
1912	2,540	K
1913	3,450	K
1914	2,960	K
1915	4,980	K
Gap in systematic record		
1927	5,180	K H