

Annual Peak-Flow Frequency Analysis

For more information on the contents of this documentation, see Kessler and others (2013).

Streamgauge number and name:

05048000 Mustinka River below Twelvemile Creek near Charlesville, Minn.

Peak-flow information:

Number of systematic peak flows in record	12
Systematic period begins	1944
Systematic period ends	1955
Length of systematic record	12
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.24
Standard error of generalized skew	0.4266
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.4879	0.2929	-0.099

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	132

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.4870	0.2949	-0.211

Annual frequency curve at selected exceedance probabilities:

[WIE, Weighted independent estimate; --, not computed]

Exceedance probability	Peak estimate	Lower-95 level	Upper 95 level	WIE estimate	Lower-95 WIE level	Upper 95 WIE level
0.9950	46.7	4.86	92	--	--	--
0.9900	57.0	7.50	106	--	--	--
0.9500	96.6	21.50	159	--	--	--
0.9000	127.0	41.80	199	--	--	--
0.8000	175.0	82.30	265	--	--	--
0.6667	234.0	133.00	350	--	--	--
0.5000	314.0	199.00	477	358	250	514
0.4292	354.0	229.00	547	--	--	--
0.2000	547.0	366.00	969	704	484	1,020
0.1000	720.0	477.00	1,530	1,040	688	1,560
0.0400	958.0	612.00	2,680	1,590	999	2,530
0.0200	1,140.0	708.00	4,040	2,070	1,230	3,460
0.0100	1,340.0	796.00	6,050	2,680	1,520	4,700
0.0050	1,540.0	878.00	8,480	--	--	--
0.0020	1,820.0	977.00	12,400	4,290	2,160	8,520

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1944	318	--
1945	165	--
1946	512	--
1947	600	--
1948	132	--
1949	292	--
1950	374	--
1951	500	--
1952	997	--
1953	47	*
1954	207	--
1955	318	--