

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05128700 Pike River tributary near Wahlsten, Minn.

Peak-flow information:

Number of systematic peak flows in record	21
Systematic period begins	1961
Systematic period ends	1981
Length of systematic record	21
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	0.09
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
1.6678	0.2310	-0.168

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	23

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.6684	0.2297	-0.005

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	11.9	3.67	17.8	--	--	--
0.9900	13.6	5.01	19.6	--	--	--
0.9500	19.5	10.70	26.0	--	--	--
0.9000	23.6	15.00	30.8	--	--	--
0.8000	29.9	21.30	38.2	--	--	--
0.6667	37.1	28.10	47.2	--	--	--
0.5000	46.6	36.40	59.8	45.0	36.1	56.0
0.4292	51.2	40.20	66.2	--	--	--
0.2000	72.7	56.90	101.0	70.6	55.2	90.4
0.1000	91.8	70.50	143.0	89.0	67.1	118.0
0.0400	118.0	87.20	220.0	114.0	80.9	160.0
0.0200	138.0	99.10	302.0	133.0	90.5	197.0
0.0100	159.0	110.00	412.0	154.0	99.6	239.0
0.0050	182.0	121.00	556.0	--	--	--
0.0020	213.0	135.00	813.0	207.0	119.0	358.0

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
1961	60.0	--
1962	23.0	--
1963	8.2	*
1964	39.0	--
1965	26.0	--
1966	25.0	--
1967	31.0	--
1968	62.0	--
1969	80.0	--
1970	71.0	--
1971	70.0	--
1972	30.0	--
1973	34.0	--
1974	105.0	--
1975	92.0	--
1976	43.0	--
1977	68.0	--
1978	47.0	--
1979	95.0	--
1980	27.0	--
1981	65.0	--