

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05063850 State Ditch 45 tributary near Ulen, Minn.

Peak-flow information:

Number of systematic peak flows in record	10
Systematic period begins	2002
Systematic period ends	2011
Length of systematic record	10
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	-0.37
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
2.2220	0.4133	-1.410

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	130

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
2.2340	0.3731	-0.684	

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	10.9	0.17	34.6	--	--	--
0.9900	15.3	0.37	43.4	--	--	--
0.9500	36.0	2.66	79.0	--	--	--
0.9000	54.6	6.42	108.0	--	--	--
0.8000	86.8	19.10	156.0	--	--	--
0.6667	129.0	46.60	220.0	--	--	--
0.5000	189.0	89.70	319.0	141	94.9	209
0.4292	219.0	112.00	374.0	--	--	--
0.2000	358.0	211.00	708.0	336	229.0	495
0.1000	475.0	288.00	1,130.0	504	333.0	763
0.0400	619.0	372.00	1,920.0	758	474.0	1,210
0.0200	721.0	422.00	2,750.0	981	587.0	1,640
0.0100	817.0	462.00	3,840.0	1,240	706.0	2,160
0.0050	907.0	493.00	5,290.0	--	--	--
0.0020	1,020.0	524.00	7,620.0	1,950	1,000.0	3,800

Peak-flow data used in the analysis:

Explanation of symbols and codes

< Less than

-- none

Water	Peak	Peak-flow
year	flow	code
2002	386	--
2003	184	--
2004	152	--
2005	395	--
2006	130	--
2007	303	--
2008	260	--
2009	175	--
2010	155	--
2011	<31	--