

Annual Peak-Flow Frequency Analysis

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

**Streamgauge number and name:**

05318897 South Fork Watonwan River near Ormsby, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	33
Systematic period begins	1979
Systematic period ends	2011
Length of systematic record	33
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	-0.14
Standard error of generalized skew	0.4266
Low-outlier method	Multiple Grubbs-Beck test

**EMA systematic record analysis results:**

**Moments of the common logarithms of the peak flows:**

	Standard	
Mean	deviation	Skewness
2.6999	0.4763	-0.436

**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:**

	Standard	
Mean	deviation	Skewness
2.7007	0.4752	-0.277

**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	22.6	2.41	51.8	--	--	--
0.9900	31.6	4.87	66.2	--	--	--
0.9500	76.5	25.80	133.0	--	--	--
0.9000	120.0	53.70	194.0	--	--	--
0.8000	204.0	113.00	312.0	--	--	--
0.6667	327.0	204.00	487.0	--	--	--
0.5000	528.0	348.00	781.0	527	369	754
0.4292	640.0	428.00	951.0	--	--	--
0.2000	1,280.0	862.00	2,020.0	1,230	858	1,760
0.1000	1,970.0	1,310.00	3,490.0	1,850	1,250	2,740
0.0400	3,060.0	1,940.00	6,650.0	2,770	1,760	4,360
0.0200	4,020.0	2,430.00	10,300.0	3,560	2,130	5,940
0.0100	5,110.0	2,900.00	15,600.0	4,420	2,500	7,790
0.0050	6,330.0	3,340.00	22,900.0	--	--	--
0.0020	8,130.0	3,880.00	37,000.0	6,690	3,290	13,600

### Peak-flow data used in the analysis:

Explanation of symbols and codes

< Less than  
> Greater than  
-- none

Water year	Peak flow	Peak-flow code
1979	836	--
1980	1,920	--
1981	117	--
1982	360	--
1983	760	--
1984	550	--
1985	980	--
1986	670	--
1987	258	--
1988	60	--
1989	111	--
1990	84	--
1991	700	--
1992	880	--
1993	1,500	--
1994	405	--
1995	510	--
1996	1,130	--
1997	>400	--
1998	572	--
1999	240	--
2000	145	--
2001	1,340	--
2002	<136	--
2003	216	--
2004	399	--
2005	2,360	--
2006	1,220	--
2007	1,640	--
2008	562	--
2009	100	--
2010	3,180	--
2011	1,580	--