

Annual Peak-Flow Frequency Analysis

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

**Streamgauge number and name:**

05272300 Johnson Creek near St. Augusta, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	48
Systematic period begins	1964
Systematic period ends	2011
Length of systematic record	48
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	-0.18
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
2.4720	0.3373	-0.077

**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
2.4719	0.3375	-0.119

**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	36.7	12.6	59.3	--	--	--
0.9900	45.4	18.5	69.5	--	--	--
0.9500	80.5	47.0	110.0	--	--	--
0.9000	108.0	72.2	143.0	--	--	--
0.8000	155.0	114.0	198.0	--	--	--
0.6667	215.0	165.0	272.0	--	--	--
0.5000	301.0	237.0	381.0	283	228	352
0.4292	346.0	273.0	438.0	--	--	--
0.2000	572.0	451.0	757.0	534	422	674
0.1000	794.0	614.0	1,130.0	729	559	951
0.0400	1,120.0	833.0	1,820.0	994	720	1,370
0.0200	1,390.0	997.0	2,540.0	1,200	824	1,730
0.0100	1,690.0	1,160.0	3,480.0	1,410	922	2,160
0.0050	2,010.0	1,310.0	4,680.0	--	--	--
0.0020	2,480.0	1,510.0	6,800.0	1,920	1,120	3,320

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

Explanation of symbols and codes

< Less than

-- none

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1964	227	--	1988	90	--
1965	682	--	1989	170	--
1966	430	--	1990	395	--
1967	358	--	1991	255	--
1968	105	--	1992	430	--
1969	532	--	1993	346	--
1970	90	--	1994	212	--
1971	185	--	1995	540	--
1972	230	--	1996	180	--
1973	154	--	1997	550	--
1974	85	--	1998	118	--
1975	660	--	1999	202	--
1976	262	--	2000	<114	--
1977	360	--	2001	952	--
1978	342	--	2002	629	--
1979	780	--	2003	246	--
1980	470	--	2004	349	--
1981	270	--	2005	154	--
1982	285	--	2006	297	--
1983	1,100	--	2007	365	--
1984	220	--	2008	198	--
1985	2,350	--	2009	885	--
1986	305	--	2010	403	--
1987	40	--	2011	563	--