

Annual Peak-Flow Frequency Analysis

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

**Streamgauge number and name:**

05313500 Yellow Medicine River near Granite Falls, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	80
Systematic period begins	1931
Systematic period ends	2011
Length of systematic record	81
Years without information	1
Number of historical peak flows in record	0

**Frequency analysis options:**

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.2
Standard error of generalized skew	0.426
Low-outlier method	Bulletin 17B Grubbs-Beck test

**Bulletin 17B systematic record analysis results:**

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

	Standard	
Mean	deviation	Skewness
3.1364	0.5100	-0.658

**Outlier criteria and number of peak flows exceeding:**

Low	43.4	1
High	37425.5	0

**Bulletin 17B Final analysis results:**

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

	Standard	
Mean	deviation	Skewness
3.1474	0.4866	-0.397

**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	NA	NA	NA	--	--	--
0.9900	NA	NA	NA	--	--	--
0.9500	198	137	267	--	--	--
0.9000	321	235	417	--	--	--
0.8000	562	435	704	--	--	--
0.6667	923	739	1,140	--	--	--
0.5000	1,510	1,230	1,860	1,530	1,190	1,960
0.4292	1,840	1,500	2,280	--	--	--
0.2000	3,660	2,920	4,750	3,690	2,900	4,710
0.1000	5,580	4,330	7,540	5,650	4,340	7,370
0.0400	8,500	6,380	12,000	8,680	6,300	11,900
0.0200	11,000	8,070	16,000	11,300	7,780	16,400
0.0100	13,700	9,860	20,600	14,300	9,280	21,900
0.0050	16,600	11,700	25,600	--	--	--
0.0020	20,700	14,400	32,900	22,200	12,600	39,200

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

Explanation of symbols and codes

-- none

\* Less than low-outlier threshold

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1931	67	--	1968	634	--
1932	476	--	1969	17,200	--
1933	56	--	1970	922	--
1934	41	*	1971	1,010	--
1935	85	--	1972	1,880	--
1936	147	--	1973	1,980	--
1937	2,330	--	1974	293	--
1938	1,150	--	1975	820	--
Gap in systematic record			1976	658	--
1940	1,740	--	1977	2,720	--
1941	891	--	1978	2,060	--
1942	778	--	1979	4,350	--
1943	1,310	--	1980	772	--
1944	3,250	--	1981	188	--
1945	750	--	1982	993	--
1946	1,690	--	1983	2,140	--
1947	1,580	--	1984	5,290	--
1948	3,510	--	1985	3,170	--
1949	1,740	--	1986	3,650	--
1950	1,060	--	1987	1,030	--
1951	7,470	--	1988	520	--
1952	9,610	--	1989	2,520	--
1953	1,560	--	1990	1,090	--
1954	2,140	--	1991	2,730	--
1955	742	--	1992	1,170	--
1956	778	--	1993	8,380	--
1957	11,800	--	1994	1,900	--
1958	790	--	1995	3,110	--
1959	520	--	1996	1,320	--
1960	3,500	--	1997	9,020	--
1961	374	--	1998	1,680	--
1962	3,150	--	1999	949	--
1963	1,590	--	2000	536	--
1964	486	--	2001	3,860	--
1965	6,820	--	2002	1,460	--
1966	1,600	--	2003	512	--
1967	1,570	--	2004	1,140	--

Water year	Peak flow	Peak-flow code
2005	933	--
2006	1,970	--
2007	4,600	--
2008	1,760	--
2009	1,060	--
2010	6,070	--
2011	6,620	--