

Annual Peak-Flow Frequency Analysis

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

**Streamgauge number and name:**

05386000 Root River below South Fork near Houston, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	24
Systematic period begins	1938
Systematic period ends	1961
Length of systematic record	24
Years without information	0
Number of historical peak flows in record	0

**Frequency analysis options:**

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.173
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
4.1241	0.2633	-0.007

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

Low	2982.8	0
High	59369.9	0

**Bulletin 17B Final analysis results:**

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

	Standard	
Mean	deviation	Skewness
4.1241	0.2633	-0.095

**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	2,640	1,500	3,810	--	--	--
0.9900	3,110	1,850	4,370	--	--	--
0.9500	4,830	3,240	6,340	--	--	--
0.9000	6,080	4,330	7,750	--	--	--
0.8000	8,010	6,060	9,940	--	--	--
0.6667	10,300	8,160	12,700	--	--	--
0.5000	13,400	10,900	16,600	13,100	10,300	16,600
0.4292	15,000	12,200	18,600	--	--	--
0.2000	22,200	17,900	29,400	21,500	16,800	27,500
0.1000	28,800	22,600	40,300	27,700	21,300	36,100
0.0400	37,700	28,600	56,600	36,300	26,900	48,800
0.0200	44,800	33,200	70,400	42,900	30,900	59,700
0.0100	52,200	37,800	85,800	50,300	34,600	73,000
0.0050	60,100	42,400	103,000	--	--	--
0.0020	71,000	48,800	128,000	68,500	42,600	110,000

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

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1938	17,300	--
1939	11,500	--
1940	12,300	--
1941	8,010	--
1942	23,600	--
1943	12,800	--
1944	9,150	--
1945	21,600	--
1946	15,600	--
1947	15,600	--
1948	13,600	--
1949	10,800	--
1950	31,100	--
1951	32,400	--
1952	38,700	--
1953	10,800	--
1954	6,310	--
1955	5,880	--
1956	11,200	--
1957	3,240	--
1958	9,690	--
1959	11,500	--
1960	9,420	--
1961	38,200	--