

U. S. GEOLOGICAL SURVEY
 ANNUAL PEAK FLOW FREQUENCY ANALYSIS
 Following Bulletin 17-B Guidelines
 Program peakfq
 (Version 4.0, December, 2000)

Station - 05369000 RED CEDAR RIVER AT MENOMONIE, WI
 2002 JUL 10 11:20:59

I N P U T D A T A S U M M A R Y

Number of peaks in record	=	88
Peaks not used in analysis	=	2
Systematic peaks in analysis	=	86
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	0.000
Standard error of generalized skew	=	0.550
Skew option	=	STATION SKEW
Gage base discharge	=	0.0
User supplied high outlier threshold	=	--
User supplied low outlier criterion	=	--
Plotting position parameter	=	0.00

***** NOTICE -- Preliminary machine computations. *****
 ***** User responsible for assessment and interpretation. *****

**WCF109W-PEAKS WITH MINUS-FLAGGED DISCHARGES WERE BYPASSED.		2
**WCF113W-NUMBER OF SYSTEMATIC PEAKS HAS BEEN REDUCED TO NSYS =	=	86
WCF134I-NO SYSTEMATIC PEAKS WERE BELOW GAGE BASE.		0.0
WCF198I-LOW OUTLIERS BELOW FLOOD BASE WERE DROPPED.	1	1971.3
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.		39259.1
*WCF151I-17B WEIGHTED SKEW REPLACED BY USER OPTION.	-0.026	-0.031 -1
WCF002J-CALCS COMPLETED. RETURN CODE =	2	

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ANNUAL FREQUENCY CURVE PARAMETERS -- LOG-PEARSON TYPE III

	FLOOD BASE		LOGARITHMIC		
	DISCHARGE	EXCEEDANCE PROBABILITY	MEAN	STANDARD DEVIATION	SKEW
SYSTEMATIC RECORD	0.0	1.0000	3.9449	0.2192	-0.256
BULL.17B ESTIMATE	1971.3	0.9884	3.9494	0.2093	-0.031

ANNUAL FREQUENCY CURVE -- DISCHARGES AT SELECTED EXCEEDANCE PROBABILITIES

ANNUAL EXCEEDANCE PROBABILITY	BULL.17B ESTIMATE	SYSTEMATIC RECORD	'EXPECTED PROBABILITY' ESTIMATE	95-PCT CONFIDENCE LIMITS FOR BULL. 17B ESTIMATES	
				LOWER	UPPER
0.9950	--	2127.0	--	--	--
0.9900	--	2478.0	--	--	--
0.9500	4012.0	3708.0	3957.0	3465.0	4527.0
0.9000	4792.0	4557.0	4751.0	4220.0	5335.0
0.8000	5938.0	5803.0	5912.0	5335.0	6524.0
0.5000	8923.0	9000.0	8923.0	8187.0	9727.0
0.2000	13360.0	13540.0	13420.0	12160.0	14880.0
0.1000	16480.0	16560.0	16620.0	14810.0	18710.0
0.0400	20590.0	20350.0	20900.0	18180.0	23950.0
0.0200	23760.0	23140.0	24260.0	20720.0	28110.0
0.0100	27010.0	25900.0	27770.0	23280.0	32480.0
0.0050	30370.0	28630.0	31460.0	25890.0	37070.0
0.0020	34990.0	32220.0	36640.0	29420.0	43500.0
0.6667	7248.6	(1.50-year flood)			
0.4292	9723.4	(2.33-year flood)			

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I N P U T D A T A L I S T I N G

WATER YEAR	DISCHARGE	CODES	WATER YEAR	DISCHARGE	CODES
1908	5260.0		1957	4740.0	
1913	8660.0		1958	-11800.0	DK
1914	6850.0		1959	13500.0	K
1915	6140.0		1960	13000.0	
1916	12700.0		1961	11800.0	
1917	8300.0		1962	5140.0	
1918	7570.0		1963	11200.0	
1919	6000.0		1964	4560.0	
1920	14000.0		1965	28700.0	
1921	4520.0		1966	13000.0	
1922	6880.0		1967	33200.0	
1923	8120.0		1968	11400.0	
1925	3140.0		1969	9340.0	
1926	11000.0		1970	9910.0	
1927	10700.0		1971	6790.0	
1928	8950.0		1972	13200.0	
1929	12500.0		1973	11600.0	
1930	6050.0		1974	9740.0	
1931	1920.0		1975	12100.0	
1932	6890.0		1976	9480.0	
1933	8160.0		1977	8920.0	
1934	-40000.0	DK	1978	5680.0	
1935	7880.0		1979	10300.0	
1936	14900.0		1980	8400.0	
1937	3080.0		1981	5130.0	
1938	23000.0		1982	14000.0	
1939	7440.0		1983	13400.0	
1940	7220.0		1984	5300.0	
1941	6390.0		1985	5600.0	
1942	24400.0		1986	8760.0	
1943	13700.0		1987	4570.0	
1944	5620.0		1988	4160.0	
1945	16800.0		1989	16800.0	
1946	10600.0		1990	15500.0	
1947	5120.0		1991	12600.0	
1948	6850.0		1992	9850.0	
1949	9020.0		1993	7380.0	
1950	12300.0		1994	7220.0	
1951	11700.0		1995	12500.0	
1952	12000.0		1996	9040.0	
1953	12600.0		1997	12200.0	
1954	12700.0		1998	8940.0	
1955	2670.0		1999	4180.0	
1956	12900.0		2000	10000.0	

Explanation of peak discharge qualification codes

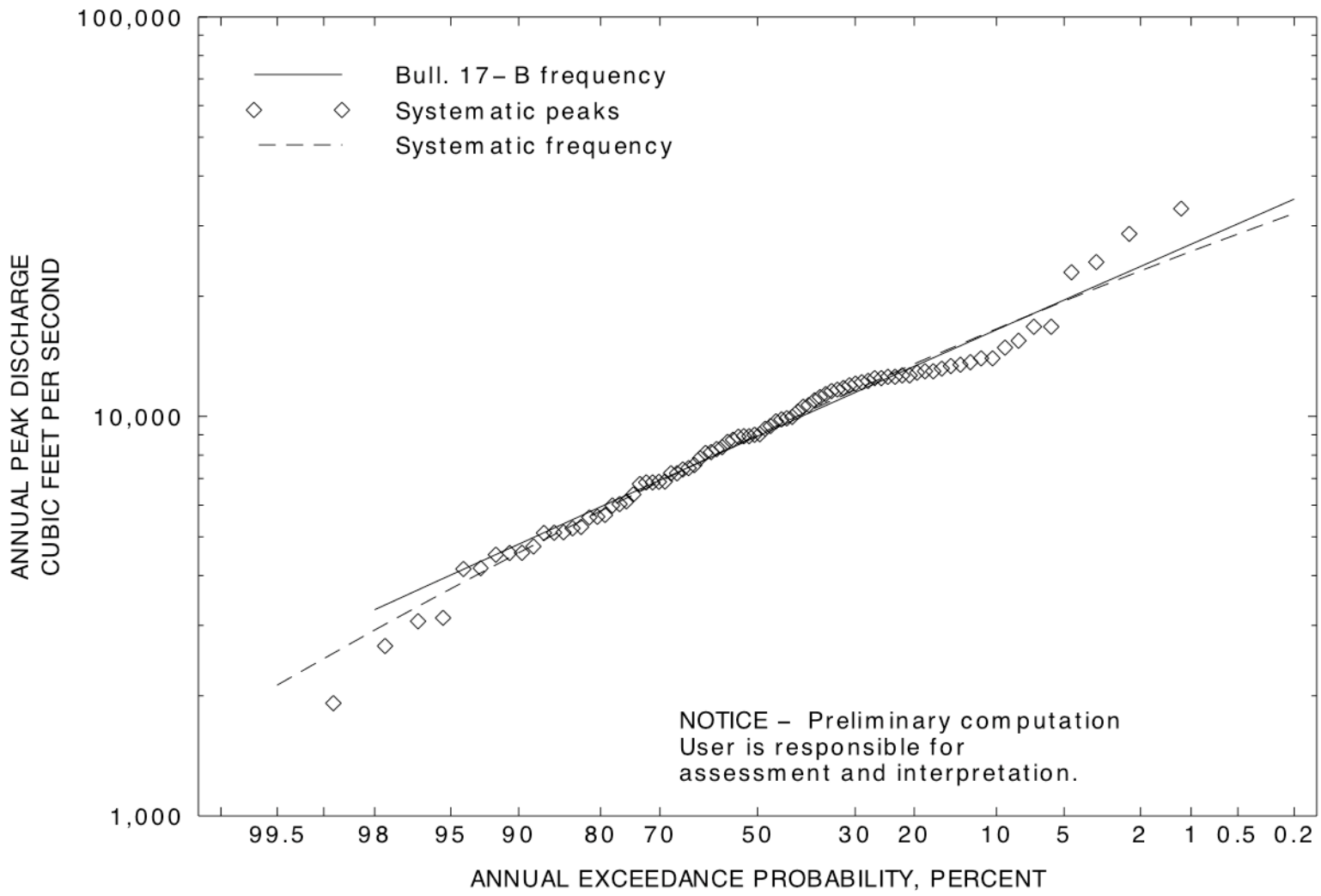
PEAKFQ	WATSTORE	
CODE	CODE	DEFINITION
D	3	Dam failure, non-recurrent flow anomaly
G	8	Discharge greater than stated value
X	3+8	Both of the above
L	4	Discharge less than stated value
K	6 OR C	Known effect of regulation or urbanization
H	7	Historic peak

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EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

WATER YEAR	RANKED DISCHARGE	SYSTEMATIC RECORD	BULL.17B ESTIMATE
1967	33200.0	0.0115	0.0115
1965	28700.0	0.0230	0.0230
1942	24400.0	0.0345	0.0345
1938	23000.0	0.0460	0.0460
1945	16800.0	0.0575	0.0575
1989	16800.0	0.0690	0.0690
1990	15500.0	0.0805	0.0805
1936	14900.0	0.0920	0.0920
1920	14000.0	0.1034	0.1034
1982	14000.0	0.1149	0.1149
1943	13700.0	0.1264	0.1264
1959	13500.0	0.1379	0.1379
1983	13400.0	0.1494	0.1494
1972	13200.0	0.1609	0.1609
1960	13000.0	0.1724	0.1724
1966	13000.0	0.1839	0.1839
1956	12900.0	0.1954	0.1954
1916	12700.0	0.2069	0.2069
1954	12700.0	0.2184	0.2184
1953	12600.0	0.2299	0.2299
1991	12600.0	0.2414	0.2414
1929	12500.0	0.2529	0.2529
1995	12500.0	0.2644	0.2644
1950	12300.0	0.2759	0.2759
1997	12200.0	0.2874	0.2874
1975	12100.0	0.2989	0.2989
1952	12000.0	0.3103	0.3103
1961	11800.0	0.3218	0.3218
1951	11700.0	0.3333	0.3333
1973	11600.0	0.3448	0.3448
1968	11400.0	0.3563	0.3563
1963	11200.0	0.3678	0.3678
1926	11000.0	0.3793	0.3793
1927	10700.0	0.3908	0.3908
1946	10600.0	0.4023	0.4023
1979	10300.0	0.4138	0.4138
2000	10000.0	0.4253	0.4253
1970	9910.0	0.4368	0.4368
1992	9850.0	0.4483	0.4483
1974	9740.0	0.4598	0.4598
1976	9480.0	0.4713	0.4713
1969	9340.0	0.4828	0.4828
1996	9040.0	0.4943	0.4943
1949	9020.0	0.5057	0.5057
1928	8950.0	0.5172	0.5172
1998	8940.0	0.5287	0.5287
1977	8920.0	0.5402	0.5402
1986	8760.0	0.5517	0.5517

1913	8660.0	0.5632	0.5632
1980	8400.0	0.5747	0.5747
1917	8300.0	0.5862	0.5862
1933	8160.0	0.5977	0.5977
1923	8120.0	0.6092	0.6092
1935	7880.0	0.6207	0.6207
1918	7570.0	0.6322	0.6322
1939	7440.0	0.6437	0.6437
1993	7380.0	0.6552	0.6552
1940	7220.0	0.6667	0.6667
1994	7220.0	0.6782	0.6782
1932	6890.0	0.6897	0.6897
1922	6880.0	0.7011	0.7011
1914	6850.0	0.7126	0.7126
1948	6850.0	0.7241	0.7241
1971	6790.0	0.7356	0.7356
1941	6390.0	0.7471	0.7471
1915	6140.0	0.7586	0.7586
1930	6050.0	0.7701	0.7701
1919	6000.0	0.7816	0.7816
1978	5680.0	0.7931	0.7931
1944	5620.0	0.8046	0.8046
1985	5600.0	0.8161	0.8161
1984	5300.0	0.8276	0.8276
1908	5260.0	0.8391	0.8391
1962	5140.0	0.8506	0.8506
1981	5130.0	0.8621	0.8621
1947	5120.0	0.8736	0.8736
1957	4740.0	0.8851	0.8851
1987	4570.0	0.8966	0.8966
1964	4560.0	0.9080	0.9080
1921	4520.0	0.9195	0.9195
1999	4180.0	0.9310	0.9310
1988	4160.0	0.9425	0.9425
1925	3140.0	0.9540	0.9540
1937	3080.0	0.9655	0.9655
1955	2670.0	0.9770	0.9770
1931	1920.0	0.9885	0.9885
1958	-11800.0	--	--
1934	-40000.0	--	--



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