

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

Station - 05436500 SUGAR RIVER NEAR BRODHEAD, WI
 2002 MAR 13 09:03:25

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

Number of peaks in record	=	87
Peaks not used in analysis	=	0
Systematic peaks in analysis	=	87
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	-0.400
Standard error of generalized skew	=	0.550
Skew option	=	WEIGHTED
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. *****

WCF134I-NO SYSTEMATIC PEAKS WERE BELOW GAGE BASE.	0.0
WCF195I-NO LOW OUTLIERS WERE DETECTED BELOW CRITERION.	393.4
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.	27164.4

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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	3.5144	0.3096	-0.127
BULL.17B ESTIMATE	0.0	1.0000	3.5144	0.3096	-0.177

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	463.0	478.5	435.3	339.3	593.4
0.9900	567.7	582.5	541.1	427.1	713.5
0.9500	977.4	986.7	956.0	785.4	1170.0
0.9000	1295.0	1299.0	1277.0	1073.0	1517.0
0.8000	1807.0	1803.0	1795.0	1544.0	2074.0
0.5000	3339.0	3319.0	3339.0	2942.0	3791.0
0.2000	5989.0	5981.0	6024.0	5213.0	7014.0
0.1000	8033.0	8068.0	8127.0	6870.0	9668.0
0.0400	10890.0	11030.0	11120.0	9101.0	13550.0
0.0200	13200.0	13460.0	13570.0	10850.0	16790.0
0.0100	15640.0	16050.0	16210.0	12660.0	20310.0
0.0050	18220.0	18830.0	19050.0	14540.0	24110.0
0.0020	21840.0	22790.0	23140.0	17130.0	29590.0
0.6667	2447.4	(1.50-year flood)			
0.4292	3792.1	(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
1914	7670.0		1958	2830.0	
1915	14800.0		1959	7150.0	
1916	8500.0		1960	10200.0	
1917	3310.0		1961	3340.0	
1918	5900.0		1962	2810.0	
1919	9100.0		1963	4800.0	
1920	2890.0		1964	966.0	
1921	1110.0		1965	5500.0	
1922	10000.0		1966	5260.0	
1923	7580.0		1967	3200.0	
1924	2380.0		1968	1430.0	
1925	2150.0		1969	2980.0	
1926	2140.0		1970	880.0	
1927	4650.0		1971	2100.0	
1928	4440.0		1972	1720.0	
1929	11400.0		1973	3840.0	
1930	4080.0		1974	5450.0	
1931	823.0		1975	8530.0	
1932	4350.0		1976	2480.0	
1933	7940.0		1977	1400.0	
1934	943.0		1978	4410.0	
1935	2180.0		1979	2720.0	
1936	2630.0		1980	1540.0	
1937	8780.0		1981	1630.0	
1938	7290.0		1982	3940.0	
1939	2540.0		1983	1880.0	
1940	4480.0		1984	2160.0	
1941	2990.0		1985	4290.0	
1942	1530.0		1986	2010.0	
1943	7000.0		1987	1490.0	
1944	5040.0		1988	1920.0	
1945	1060.0		1989	2740.0	
1946	7640.0		1990	2090.0	
1947	1830.0		1991	2450.0	
1948	10000.0		1992	1210.0	
1949	4380.0		1993	4310.0	
1950	5700.0		1994	3500.0	
1951	2400.0		1995	1060.0	
1952	4380.0		1996	6020.0	
1953	8500.0		1997	4840.0	
1954	1760.0		1998	2380.0	
1955	4400.0		1999	4510.0	
1956	775.0		2000	6240.0	
1957	826.0				

Explanation of peak discharge qualification codes

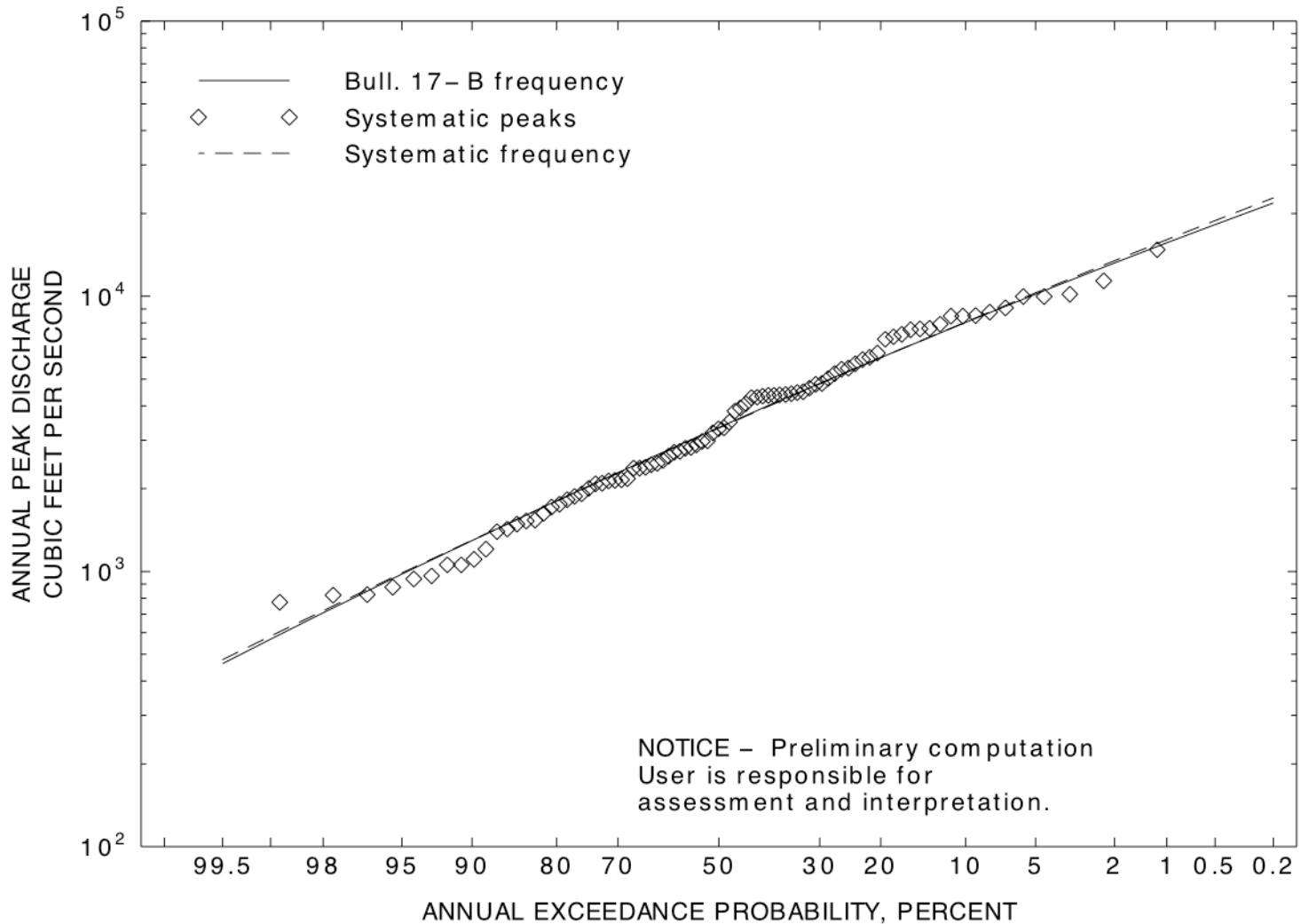
PEAKFQ	WATSTORE	
CODE	CODE	DEFINITION
D	3	Dam failure, non-recurrent flow anomaly
G	8	Discharge greater than stated value
X	3+8	Both of the above
L	4	Discharge less than stated value
K	6 OR C	Known effect of regulation or urbanization
H	7	Historic peak

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EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

WATER YEAR	RANKED DISCHARGE	SYSTEMATIC RECORD	BULL.17B ESTIMATE
1915	14800.0	0.0114	0.0114
1929	11400.0	0.0227	0.0227
1960	10200.0	0.0341	0.0341
1922	10000.0	0.0455	0.0455
1948	10000.0	0.0568	0.0568
1919	9100.0	0.0682	0.0682
1937	8780.0	0.0795	0.0795
1975	8530.0	0.0909	0.0909
1916	8500.0	0.1023	0.1023
1953	8500.0	0.1136	0.1136
1933	7940.0	0.1250	0.1250
1914	7670.0	0.1364	0.1364
1946	7640.0	0.1477	0.1477
1923	7580.0	0.1591	0.1591
1938	7290.0	0.1705	0.1705
1959	7150.0	0.1818	0.1818
1943	7000.0	0.1932	0.1932
2000	6240.0	0.2045	0.2045
1996	6020.0	0.2159	0.2159
1918	5900.0	0.2273	0.2273
1950	5700.0	0.2386	0.2386
1965	5500.0	0.2500	0.2500
1974	5450.0	0.2614	0.2614
1966	5260.0	0.2727	0.2727
1944	5040.0	0.2841	0.2841
1997	4840.0	0.2955	0.2955
1963	4800.0	0.3068	0.3068
1927	4650.0	0.3182	0.3182
1999	4510.0	0.3295	0.3295
1940	4480.0	0.3409	0.3409
1928	4440.0	0.3523	0.3523
1978	4410.0	0.3636	0.3636
1955	4400.0	0.3750	0.3750
1949	4380.0	0.3864	0.3864
1952	4380.0	0.3977	0.3977
1932	4350.0	0.4091	0.4091
1993	4310.0	0.4205	0.4205
1985	4290.0	0.4318	0.4318
1930	4080.0	0.4432	0.4432
1982	3940.0	0.4545	0.4545
1973	3840.0	0.4659	0.4659
1994	3500.0	0.4773	0.4773
1961	3340.0	0.4886	0.4886
1917	3310.0	0.5000	0.5000
1967	3200.0	0.5114	0.5114
1941	2990.0	0.5227	0.5227
1969	2980.0	0.5341	0.5341
1920	2890.0	0.5455	0.5455

1958	2830.0	0.5568	0.5568
1962	2810.0	0.5682	0.5682
1989	2740.0	0.5795	0.5795
1979	2720.0	0.5909	0.5909
1936	2630.0	0.6023	0.6023
1939	2540.0	0.6136	0.6136
1976	2480.0	0.6250	0.6250
1991	2450.0	0.6364	0.6364
1951	2400.0	0.6477	0.6477
1924	2380.0	0.6591	0.6591
1998	2380.0	0.6705	0.6705
1935	2180.0	0.6818	0.6818
1984	2160.0	0.6932	0.6932
1925	2150.0	0.7045	0.7045
1926	2140.0	0.7159	0.7159
1971	2100.0	0.7273	0.7273
1990	2090.0	0.7386	0.7386
1986	2010.0	0.7500	0.7500
1988	1920.0	0.7614	0.7614
1983	1880.0	0.7727	0.7727
1947	1830.0	0.7841	0.7841
1954	1760.0	0.7955	0.7955
1972	1720.0	0.8068	0.8068
1981	1630.0	0.8182	0.8182
1980	1540.0	0.8295	0.8295
1942	1530.0	0.8409	0.8409
1987	1490.0	0.8523	0.8523
1968	1430.0	0.8636	0.8636
1977	1400.0	0.8750	0.8750
1992	1210.0	0.8864	0.8864
1921	1110.0	0.8977	0.8977
1945	1060.0	0.9091	0.9091
1995	1060.0	0.9205	0.9205
1964	966.0	0.9318	0.9318
1934	943.0	0.9432	0.9432
1970	880.0	0.9545	0.9545
1957	826.0	0.9659	0.9659
1931	823.0	0.9773	0.9773
1956	775.0	0.9886	0.9886



NOTICE - Preliminary computation
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ANNUAL EXCEEDANCE PROBABILITY, PERCENT
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