

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

Station - 05393500 SPIRIT RIVER AT SPIRIT FALLS, WI
2002 MAR 13 09:03:01

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

Number of peaks in record	=	59
Peaks not used in analysis	=	0
Systematic peaks in analysis	=	59
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	-0.211
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.	378.8
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.	6433.3

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 2002 MAR 13 09:03:01

ANNUAL FREQUENCY CURVE PARAMETERS -- LOG-PEARSON TYPE III

	FLOOD BASE		LOGARITHMIC		
	DISCHARGE	EXCEEDANCE PROBABILITY	MEAN	STANDARD DEVIATION	SKEW
SYSTEMATIC RECORD	0.0	1.0000	3.1934	0.2172	-0.704
BULL.17B ESTIMATE	0.0	1.0000	3.1934	0.2172	-0.549

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	333.5	310.9	306.5	246.7	418.8
0.9900	400.5	379.7	375.7	305.3	492.3
0.9500	639.1	628.3	621.9	524.2	746.6
0.9000	804.3	801.4	791.1	681.3	919.8
0.8000	1044.0	1052.0	1036.0	912.3	1172.0
0.5000	1634.0	1655.0	1634.0	1467.0	1823.0
0.2000	2397.0	2397.0	2409.0	2132.0	2750.0
0.1000	2857.0	2821.0	2885.0	2511.0	3348.0
0.0400	3387.0	3284.0	3441.0	2933.0	4059.0
0.0200	3745.0	3583.0	3823.0	3212.0	4554.0
0.0100	4076.0	3848.0	4180.0	3465.0	5018.0
0.0050	4382.0	4084.0	4516.0	3698.0	5456.0
0.0020	4756.0	4359.0	4935.0	3978.0	5997.0
0.6667	1309.3	(1.50-year flood)			
0.4292	1786.3	(2.33-year flood)			

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 2002 MAR 13 09:03:01

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

WATER YEAR	DISCHARGE	CODES	WATER YEAR	DISCHARGE	CODES
1942	4180.0		1972	1750.0	
1943	1850.0		1973	2290.0	
1944	1290.0		1974	1190.0	
1945	2200.0		1975	2110.0	
1946	3540.0		1976	1910.0	
1947	1510.0		1977	736.0	
1948	624.0		1978	2190.0	
1949	1630.0		1979	1730.0	
1950	2140.0		1980	1890.0	
1951	1570.0		1981	1490.0	
1952	1700.0		1982	1830.0	
1953	1820.0		1983	2110.0	
1954	1210.0		1984	1140.0	
1955	1510.0		1985	1860.0	
1956	1600.0		1986	2970.0	
1957	478.0		1987	1420.0	
1958	710.0		1988	664.0	
1959	1520.0		1989	1660.0	
1960	1290.0		1990	1650.0	
1961	1200.0		1991	1340.0	
1962	1080.0		1992	2470.0	
1963	672.0		1993	2730.0	
1964	394.0		1994	3990.0	
1965	1500.0		1995	1620.0	
1966	2000.0		1996	3130.0	
1967	2960.0		1997	2660.0	
1968	1840.0		1998	1500.0	
1969	1770.0		1999	1060.0	
1970	500.0		2000	1370.0	
1971	2150.0				

Explanation of peak discharge qualification codes

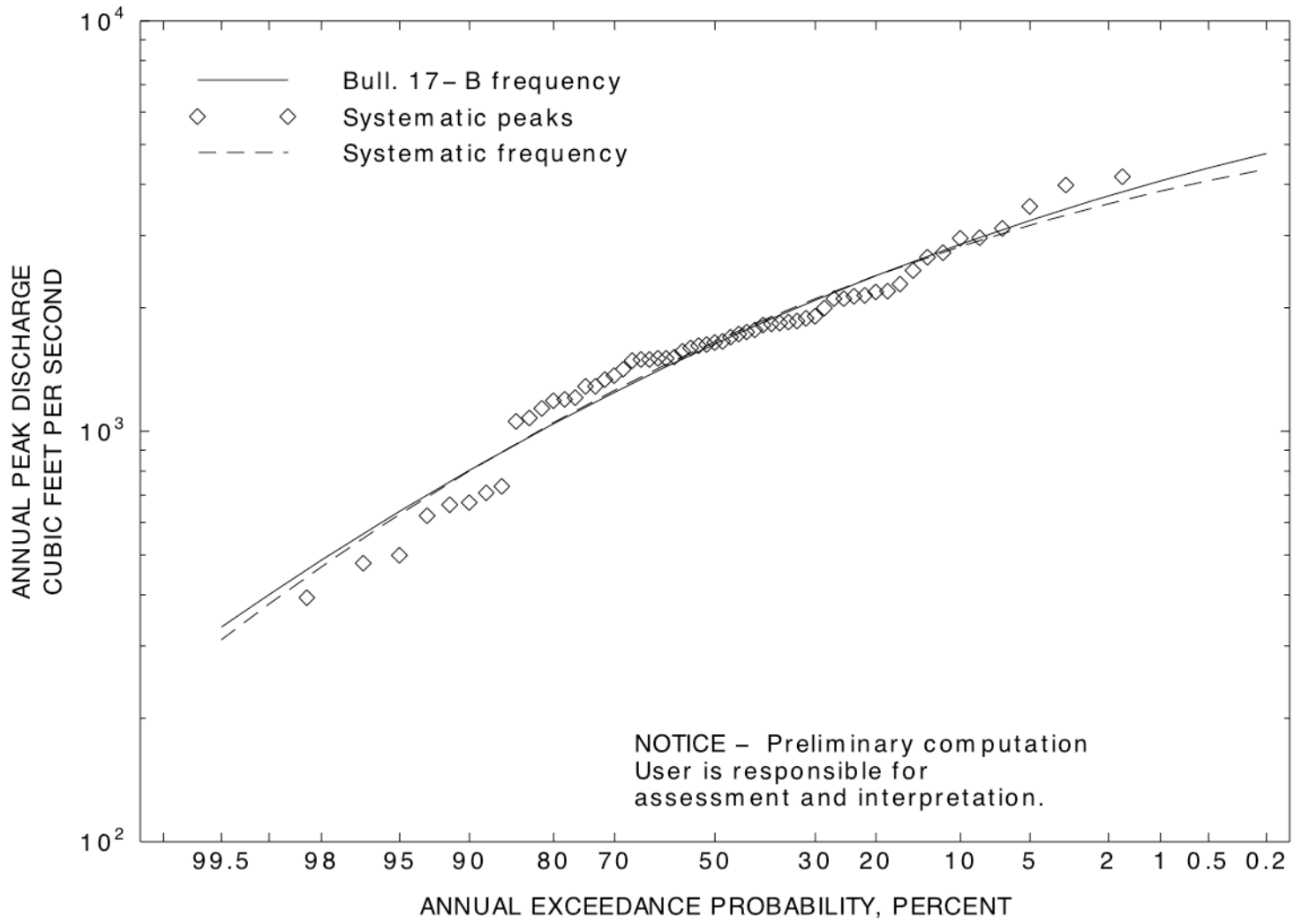
PEAKFQ	WATSTORE	DEFINITION
CODE	CODE	
D	3	Dam failure, non-recurrent flow anomaly
G	8	Discharge greater than stated value
X	3+8	Both of the above
L	4	Discharge less than stated value
K	6 OR C	Known effect of regulation or urbanization
H	7	Historic peak

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2002 MAR 13 09:03:01

EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

WATER YEAR	RANKED DISCHARGE	SYSTEMATIC RECORD	BULL.17B ESTIMATE
1942	4180.0	0.0167	0.0167
1994	3990.0	0.0333	0.0333
1946	3540.0	0.0500	0.0500
1996	3130.0	0.0667	0.0667
1986	2970.0	0.0833	0.0833
1967	2960.0	0.1000	0.1000
1993	2730.0	0.1167	0.1167
1997	2660.0	0.1333	0.1333
1992	2470.0	0.1500	0.1500
1973	2290.0	0.1667	0.1667
1945	2200.0	0.1833	0.1833
1978	2190.0	0.2000	0.2000
1971	2150.0	0.2167	0.2167
1950	2140.0	0.2333	0.2333
1975	2110.0	0.2500	0.2500
1983	2110.0	0.2667	0.2667
1966	2000.0	0.2833	0.2833
1976	1910.0	0.3000	0.3000
1980	1890.0	0.3167	0.3167
1985	1860.0	0.3333	0.3333
1943	1850.0	0.3500	0.3500
1968	1840.0	0.3667	0.3667
1982	1830.0	0.3833	0.3833
1953	1820.0	0.4000	0.4000
1969	1770.0	0.4167	0.4167
1972	1750.0	0.4333	0.4333
1979	1730.0	0.4500	0.4500
1952	1700.0	0.4667	0.4667
1989	1660.0	0.4833	0.4833
1990	1650.0	0.5000	0.5000
1949	1630.0	0.5167	0.5167
1995	1620.0	0.5333	0.5333
1956	1600.0	0.5500	0.5500
1951	1570.0	0.5667	0.5667
1959	1520.0	0.5833	0.5833
1947	1510.0	0.6000	0.6000
1955	1510.0	0.6167	0.6167
1965	1500.0	0.6333	0.6333
1998	1500.0	0.6500	0.6500
1981	1490.0	0.6667	0.6667
1987	1420.0	0.6833	0.6833
2000	1370.0	0.7000	0.7000
1991	1340.0	0.7167	0.7167
1944	1290.0	0.7333	0.7333
1960	1290.0	0.7500	0.7500
1954	1210.0	0.7667	0.7667
1961	1200.0	0.7833	0.7833
1974	1190.0	0.8000	0.8000

1984	1140.0	0.8167	0.8167
1962	1080.0	0.8333	0.8333
1999	1060.0	0.8500	0.8500
1977	736.0	0.8667	0.8667
1958	710.0	0.8833	0.8833
1963	672.0	0.9000	0.9000
1988	664.0	0.9167	0.9167
1948	624.0	0.9333	0.9333
1970	500.0	0.9500	0.9500
1957	478.0	0.9667	0.9667
1964	394.0	0.9833	0.9833



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