

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

Station - 04087240 ROOT RIVER AT RACINE, WI  
 2002 MAR 13 09:02:45

I N P U T   D A T A   S U M M A R Y

Number of peaks in record	=	37
Peaks not used in analysis	=	0
Systematic peaks in analysis	=	37
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
WCF198I-LOW OUTLIERS BELOW FLOOD BASE WERE DROPPED.	1	509.9
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.		5447.6

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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	3.2628	0.2096	-1.007
BULL.17B ESTIMATE	509.9	0.9730	3.2767	0.1745	-0.090

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	--	339.1	--	--	--
0.9900	--	425.0	--	--	--
0.9500	966.5	740.0	939.6	790.5	1121.0
0.9000	1126.0	959.2	1106.0	947.2	1285.0
0.8000	1351.0	1271.0	1339.0	1171.0	1518.0
0.5000	1902.0	1984.0	1902.0	1703.0	2126.0
0.2000	2656.0	2762.0	2678.0	2363.0	3066.0
0.1000	3152.0	3154.0	3203.0	2764.0	3740.0
0.0400	3773.0	3536.0	3883.0	3245.0	4631.0
0.0200	4232.0	3756.0	4405.0	3588.0	5316.0
0.0100	4688.0	3933.0	4943.0	3922.0	6016.0
0.0050	5145.0	4077.0	5501.0	4250.0	6734.0
0.0020	5753.0	4229.0	6279.0	4679.0	7715.0
0.6667	1598.4	( 1.50-year flood )			
0.4292	2043.7	( 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
1964	997.0		1983	3480.0	
1965	1610.0		1984	1580.0	
1966	2500.0		1985	1810.0	
1967	2250.0		1986	2140.0	
1968	1470.0		1987	1450.0	
1969	2150.0		1988	2090.0	
1970	1280.0		1989	847.0	
1971	1560.0		1990	2530.0	
1972	2740.0		1991	2000.0	
1973	3790.0		1992	1220.0	
1974	4500.0		1993	3010.0	
1975	1930.0		1994	1940.0	
1976	2930.0		1995	1240.0	
1977	340.0		1996	1900.0	
1978	1490.0		1997	1800.0	
1979	3460.0		1998	1370.0	
1980	1000.0		1999	2690.0	
1981	1320.0		2000	2550.0	
1982	1940.0				

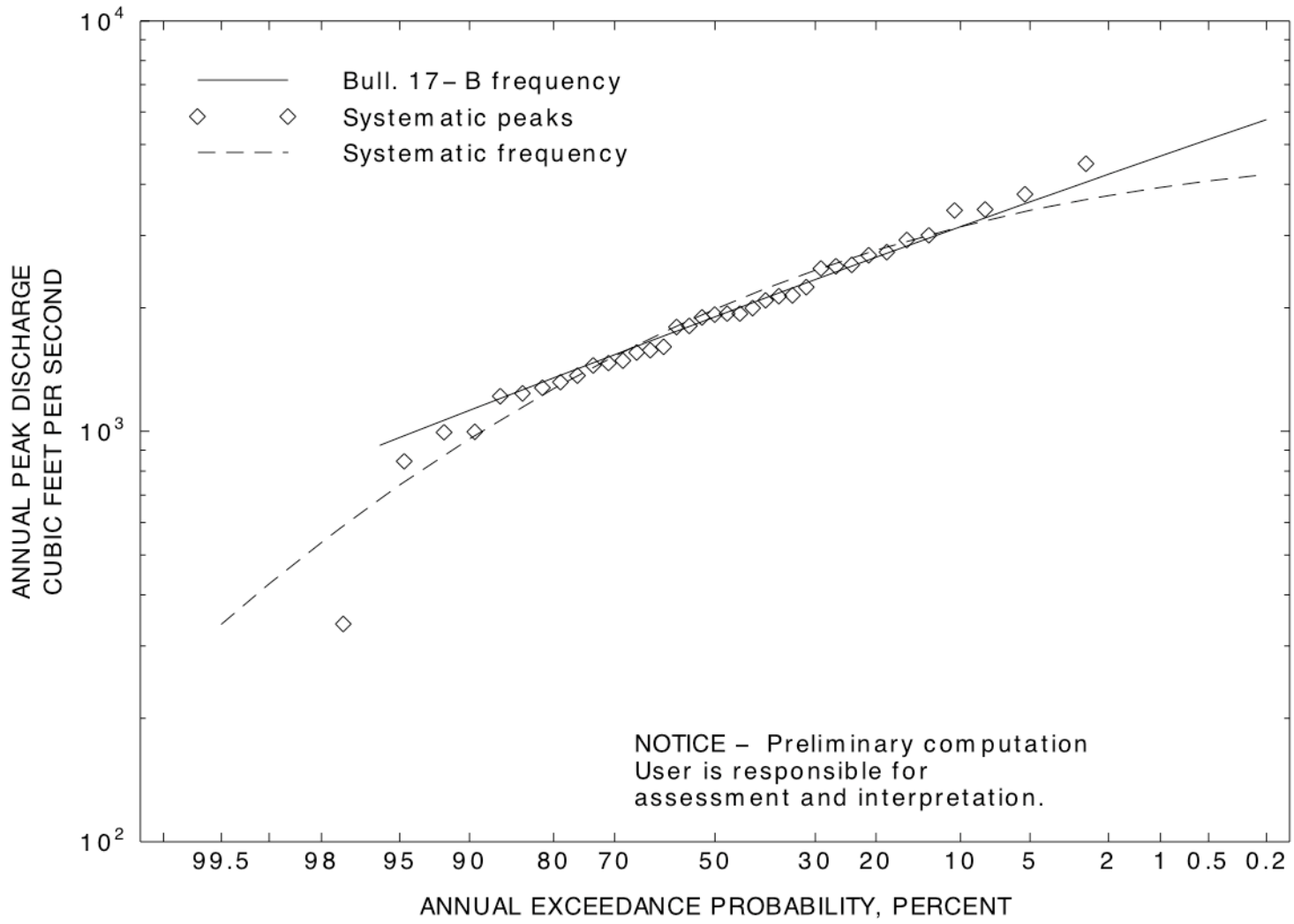
Explanation of peak discharge qualification codes

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
1974	4500.0	0.0263	0.0263
1973	3790.0	0.0526	0.0526
1983	3480.0	0.0789	0.0789
1979	3460.0	0.1053	0.1053
1993	3010.0	0.1316	0.1316
1976	2930.0	0.1579	0.1579
1972	2740.0	0.1842	0.1842
1999	2690.0	0.2105	0.2105
2000	2550.0	0.2368	0.2368
1990	2530.0	0.2632	0.2632
1966	2500.0	0.2895	0.2895
1967	2250.0	0.3158	0.3158
1969	2150.0	0.3421	0.3421
1986	2140.0	0.3684	0.3684
1988	2090.0	0.3947	0.3947
1991	2000.0	0.4211	0.4211
1982	1940.0	0.4474	0.4474
1994	1940.0	0.4737	0.4737
1975	1930.0	0.5000	0.5000
1996	1900.0	0.5263	0.5263
1985	1810.0	0.5526	0.5526
1997	1800.0	0.5789	0.5789
1965	1610.0	0.6053	0.6053
1984	1580.0	0.6316	0.6316
1971	1560.0	0.6579	0.6579
1978	1490.0	0.6842	0.6842
1968	1470.0	0.7105	0.7105
1987	1450.0	0.7368	0.7368
1998	1370.0	0.7632	0.7632
1981	1320.0	0.7895	0.7895
1970	1280.0	0.8158	0.8158
1995	1240.0	0.8421	0.8421
1992	1220.0	0.8684	0.8684
1980	1000.0	0.8947	0.8947
1964	997.0	0.9211	0.9211
1989	847.0	0.9474	0.9474
1977	340.0	0.9737	0.9737



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ANNUAL EXCEEDANCE PROBABILITY, PERCENT  
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