

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

Station - 05382000 BLACK RIVER NEAR GALESVILLE, WI  
 2002 MAR 13 09:02:57

I N P U T   D A T A   S U M M A R Y

Number of peaks in record	=	69
Peaks not used in analysis	=	1
Systematic peaks in analysis	=	68
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	-0.395
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. \*\*\*\*\*

**WCF109W-PEAKS WITH MINUS-FLAGGED DISCHARGES WERE BYPASSED.		1
**WCF113W-NUMBER OF SYSTEMATIC PEAKS HAS BEEN REDUCED TO NSYS =	=	68
WCF134I-NO SYSTEMATIC PEAKS WERE BELOW GAGE BASE.		0.0
WCF198I-LOW OUTLIERS BELOW FLOOD BASE WERE DROPPED.	1	4047.2
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.		91881.3
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	4.3055	0.2422	-0.446
BULL.17B ESTIMATE	4047.2	0.9853	4.3124	0.2263	-0.169

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	--	3809.0	--	--	--
0.9900	--	4614.0	--	--	--
0.9500	8504.0	7564.0	8330.0	7077.0	9853.0
0.9000	10440.0	9678.0	10310.0	8915.0	11880.0
0.8000	13310.0	12840.0	13220.0	11670.0	14910.0
0.5000	20840.0	21060.0	20840.0	18760.0	23150.0
0.2000	31960.0	32570.0	32130.0	28510.0	36470.0
0.1000	39640.0	39990.0	40070.0	34860.0	46300.0
0.0400	49570.0	48990.0	50520.0	42780.0	59560.0
0.0200	57080.0	55370.0	58590.0	48610.0	69920.0
0.0100	64660.0	61460.0	66900.0	54380.0	80610.0
0.0050	72350.0	67310.0	75480.0	60150.0	91680.0
0.0020	82720.0	74730.0	87360.0	67790.0	106900.0
0.6667	16606.4	( 1.50-year flood )			
0.4292	22868.9	( 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
1932	22400.0		1967	65500.0	
1933	10700.0		1968	22900.0	
1934	25500.0		1969	21200.0	
1935	30000.0		1970	17000.0	
1936	36500.0		1971	19200.0	
1937	9290.0		1972	17600.0	
1938	58000.0		1973	36300.0	
1939	30500.0		1974	12400.0	
1940	16000.0		1975	26900.0	
1941	15700.0		1976	22300.0	
1942	36400.0		1977	3440.0	
1943	34600.0		1978	22500.0	
1944	19400.0		1979	-31800.0	K
1945	25000.0		1980	44400.0	
1946	22500.0		1981	16600.0	
1947	15800.0		1982	24700.0	
1948	12400.0		1983	37900.0	
1949	5300.0		1984	13500.0	
1950	14800.0		1985	11300.0	
1951	29100.0		1986	43600.0	
1952	51000.0		1987	14000.0	
1953	26900.0		1988	11000.0	
1954	24600.0		1989	23000.0	
1955	20500.0		1990	19300.0	
1956	29300.0		1991	18300.0	
1957	6300.0		1992	25100.0	
1958	11400.0		1993	64000.0	
1959	14500.0		1994	13800.0	
1960	26200.0		1995	15700.0	
1961	30800.0		1996	13000.0	
1962	17500.0		1997	21000.0	
1963	21400.0		1998	30600.0	
1964	7760.0		1999	10000.0	
1965	33000.0		2000	15600.0	
1966	21400.0				

Explanation of peak discharge qualification codes

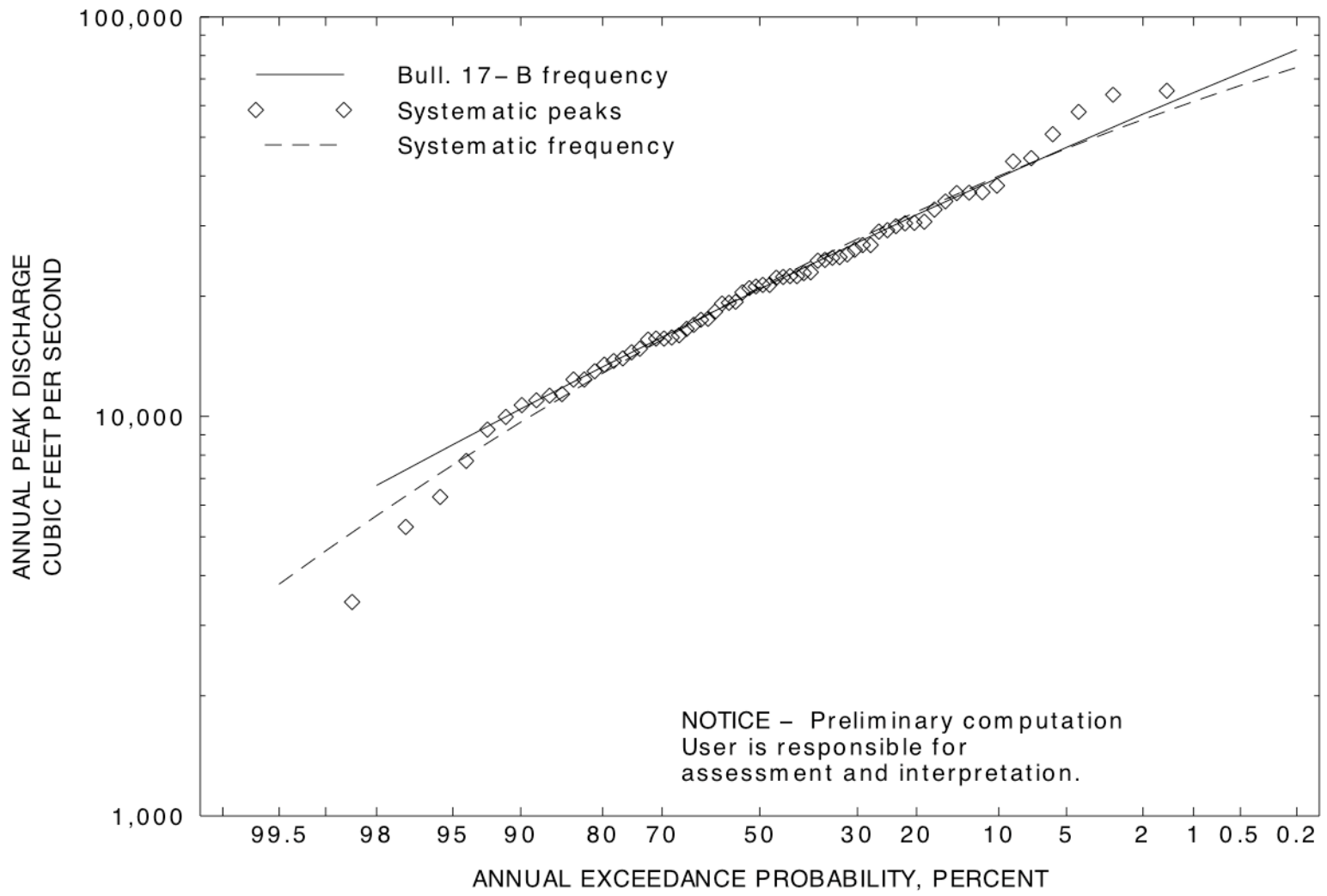
PEAKFQ	WATSTORE	DEFINITION
CODE	CODE	
D	3	Dam failure, non-recurrent flow anomaly
G	8	Discharge greater than stated value
X	3+8	Both of the above
L	4	Discharge less than stated value
K	6 OR C	Known effect of regulation or urbanization
H	7	Historic peak

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EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

WATER YEAR	RANKED DISCHARGE	SYSTEMATIC RECORD	BULL.17B ESTIMATE
1967	65500.0	0.0145	0.0145
1993	64000.0	0.0290	0.0290
1938	58000.0	0.0435	0.0435
1952	51000.0	0.0580	0.0580
1980	44400.0	0.0725	0.0725
1986	43600.0	0.0870	0.0870
1983	37900.0	0.1014	0.1014
1936	36500.0	0.1159	0.1159
1942	36400.0	0.1304	0.1304
1973	36300.0	0.1449	0.1449
1943	34600.0	0.1594	0.1594
1965	33000.0	0.1739	0.1739
1961	30800.0	0.1884	0.1884
1998	30600.0	0.2029	0.2029
1939	30500.0	0.2174	0.2174
1935	30000.0	0.2319	0.2319
1956	29300.0	0.2464	0.2464
1951	29100.0	0.2609	0.2609
1953	26900.0	0.2754	0.2754
1975	26900.0	0.2899	0.2899
1960	26200.0	0.3043	0.3043
1934	25500.0	0.3188	0.3188
1992	25100.0	0.3333	0.3333
1945	25000.0	0.3478	0.3478
1982	24700.0	0.3623	0.3623
1954	24600.0	0.3768	0.3768
1989	23000.0	0.3913	0.3913
1968	22900.0	0.4058	0.4058
1946	22500.0	0.4203	0.4203
1978	22500.0	0.4348	0.4348
1932	22400.0	0.4493	0.4493
1976	22300.0	0.4638	0.4638
1963	21400.0	0.4783	0.4783
1966	21400.0	0.4928	0.4928
1969	21200.0	0.5072	0.5072
1997	21000.0	0.5217	0.5217
1955	20500.0	0.5362	0.5362
1944	19400.0	0.5507	0.5507
1990	19300.0	0.5652	0.5652
1971	19200.0	0.5797	0.5797
1991	18300.0	0.5942	0.5942
1972	17600.0	0.6087	0.6087
1962	17500.0	0.6232	0.6232
1970	17000.0	0.6377	0.6377
1981	16600.0	0.6522	0.6522
1940	16000.0	0.6667	0.6667
1947	15800.0	0.6812	0.6812
1941	15700.0	0.6957	0.6957

1995	15700.0	0.7101	0.7101
2000	15600.0	0.7246	0.7246
1950	14800.0	0.7391	0.7391
1959	14500.0	0.7536	0.7536
1987	14000.0	0.7681	0.7681
1994	13800.0	0.7826	0.7826
1984	13500.0	0.7971	0.7971
1996	13000.0	0.8116	0.8116
1948	12400.0	0.8261	0.8261
1974	12400.0	0.8406	0.8406
1958	11400.0	0.8551	0.8551
1985	11300.0	0.8696	0.8696
1988	11000.0	0.8841	0.8841
1933	10700.0	0.8986	0.8986
1999	10000.0	0.9130	0.9130
1937	9290.0	0.9275	0.9275
1964	7760.0	0.9420	0.9420
1957	6300.0	0.9565	0.9565
1949	5300.0	0.9710	0.9710
1977	3440.0	0.9855	0.9855
1979	-31800.0	--	--



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