

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

Station - 05397500 EAU CLAIRE RIVER AT KELLY, WI
2002 MAR 13 09:03:04

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

| | | |
|--------------------------------------|---|----------|
| Number of peaks in record | = | 74 |
| Peaks not used in analysis | = | 0 |
| Systematic peaks in analysis | = | 74 |
| Historic peaks in analysis | = | 0 |
| Years of historic record | = | 0 |
| Generalized skew | = | -0.262 |
| 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. | 751.1 |
| WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE. | 13004.3 |

Station - 05397500 EAU CLAIRE RIVER AT KELLY, WI
 2002 MAR 13 09:03:04

ANNUAL FREQUENCY CURVE PARAMETERS -- LOG-PEARSON TYPE III

| | FLOOD BASE | | LOGARITHMIC | | |
|-------------------|------------|------------------------|-------------|--------------------|--------|
| | DISCHARGE | EXCEEDANCE PROBABILITY | MEAN | STANDARD DEVIATION | SKEW |
| SYSTEMATIC RECORD | 0.0 | 1.0000 | 3.4949 | 0.2126 | -0.202 |
| BULL.17B ESTIMATE | 0.0 | 1.0000 | 3.4949 | 0.2126 | -0.215 |

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 | 802.5 | 807.2 | 762.2 | 633.3 | 965.8 |
| 0.9900 | 926.7 | 930.9 | 890.5 | 746.5 | 1099.0 |
| 0.9500 | 1357.0 | 1360.0 | 1333.0 | 1151.0 | 1551.0 |
| 0.9000 | 1652.0 | 1653.0 | 1633.0 | 1434.0 | 1858.0 |
| 0.8000 | 2082.0 | 2081.0 | 2071.0 | 1851.0 | 2307.0 |
| 0.5000 | 3180.0 | 3177.0 | 3180.0 | 2894.0 | 3497.0 |
| 0.2000 | 4739.0 | 4738.0 | 4761.0 | 4276.0 | 5336.0 |
| 0.1000 | 5782.0 | 5786.0 | 5834.0 | 5150.0 | 6643.0 |
| 0.0400 | 7096.0 | 7112.0 | 7210.0 | 6216.0 | 8355.0 |
| 0.0200 | 8068.0 | 8096.0 | 8245.0 | 6985.0 | 9658.0 |
| 0.0100 | 9032.0 | 9074.0 | 9289.0 | 7736.0 | 10980.0 |
| 0.0050 | 9994.0 | 10050.0 | 10350.0 | 8474.0 | 12320.0 |
| 0.0020 | 11270.0 | 11350.0 | 11780.0 | 9437.0 | 14120.0 |
| 0.6667 | 2568.4 | (1.50-year flood) | | | |
| 0.4292 | 3471.3 | (2.33-year flood) | | | |

Station - 05397500 EAU CLAIRE RIVER AT KELLY, WI
 2002 MAR 13 09:03:04

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 | 2910.0 | | 1964 | 3050.0 | |
| 1915 | 1180.0 | | 1965 | 6980.0 | |
| 1916 | 3520.0 | | 1966 | 1500.0 | |
| 1917 | 1460.0 | | 1967 | 6260.0 | |
| 1918 | 2450.0 | | 1968 | 1800.0 | |
| 1919 | 2560.0 | | 1969 | 3610.0 | |
| 1920 | 5080.0 | | 1970 | 2050.0 | |
| 1921 | 6600.0 | | 1971 | 4600.0 | |
| 1922 | 6460.0 | | 1972 | 6360.0 | |
| 1923 | 5620.0 | | 1973 | 5000.0 | |
| 1924 | 4130.0 | | 1974 | 1910.0 | |
| 1925 | 1220.0 | | 1975 | 2960.0 | |
| 1926 | 8300.0 | | 1976 | 3900.0 | |
| 1940 | 5020.0 | | 1977 | 1260.0 | |
| 1941 | 5980.0 | | 1978 | 2970.0 | |
| 1942 | 3090.0 | | 1979 | 2700.0 | |
| 1943 | 5740.0 | | 1980 | 2720.0 | |
| 1944 | 1760.0 | | 1981 | 2330.0 | |
| 1945 | 3750.0 | | 1982 | 1930.0 | |
| 1946 | 4330.0 | | 1983 | 3600.0 | |
| 1947 | 2020.0 | | 1984 | 2530.0 | |
| 1948 | 3860.0 | | 1985 | 1860.0 | |
| 1949 | 1300.0 | | 1986 | 3730.0 | |
| 1950 | 3200.0 | | 1987 | 3270.0 | |
| 1951 | 4090.0 | | 1988 | 1200.0 | |
| 1952 | 4580.0 | | 1989 | 3500.0 | |
| 1953 | 5280.0 | | 1990 | 5200.0 | |
| 1954 | 2430.0 | | 1991 | 4000.0 | |
| 1955 | 3230.0 | | 1992 | 2020.0 | |
| 1956 | 3650.0 | | 1993 | 3900.0 | |
| 1957 | 1450.0 | | 1994 | 2450.0 | |
| 1958 | 2420.0 | | 1995 | 3190.0 | |
| 1959 | 5410.0 | | 1996 | 3480.0 | |
| 1960 | 4950.0 | | 1997 | 4470.0 | |
| 1961 | 6600.0 | | 1998 | 2190.0 | |
| 1962 | 2660.0 | | 1999 | 1610.0 | |
| 1963 | 2690.0 | | 2000 | 1850.0 | |

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 |

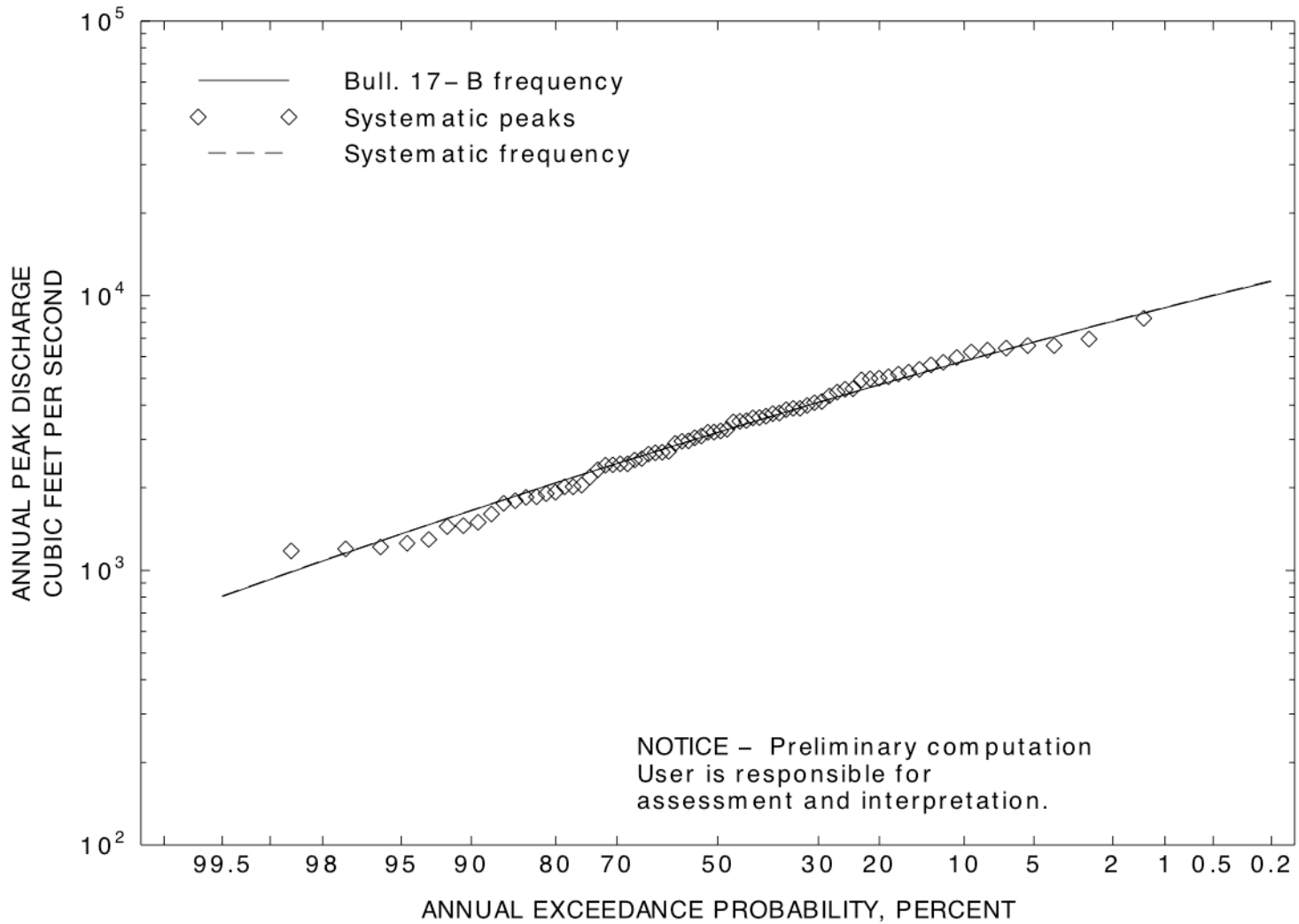
K 6 OR C Known effect of regulation or urbanization
H 7 Historic peak

Station - 05397500 EAU CLAIRE RIVER AT KELLY, WI
2002 MAR 13 09:03:04

EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

| WATER YEAR | RANKED DISCHARGE | SYSTEMATIC RECORD | BULL.17B ESTIMATE |
|---------------|---------------------|----------------------|----------------------|
| 1926 | 8300.0 | 0.0133 | 0.0133 |
| 1965 | 6980.0 | 0.0267 | 0.0267 |
| 1921 | 6600.0 | 0.0400 | 0.0400 |
| 1961 | 6600.0 | 0.0533 | 0.0533 |
| 1922 | 6460.0 | 0.0667 | 0.0667 |
| 1972 | 6360.0 | 0.0800 | 0.0800 |
| 1967 | 6260.0 | 0.0933 | 0.0933 |
| 1941 | 5980.0 | 0.1067 | 0.1067 |
| 1943 | 5740.0 | 0.1200 | 0.1200 |
| 1923 | 5620.0 | 0.1333 | 0.1333 |
| 1959 | 5410.0 | 0.1467 | 0.1467 |
| 1953 | 5280.0 | 0.1600 | 0.1600 |
| 1990 | 5200.0 | 0.1733 | 0.1733 |
| 1920 | 5080.0 | 0.1867 | 0.1867 |
| 1940 | 5020.0 | 0.2000 | 0.2000 |
| 1973 | 5000.0 | 0.2133 | 0.2133 |
| 1960 | 4950.0 | 0.2267 | 0.2267 |
| 1971 | 4600.0 | 0.2400 | 0.2400 |
| 1952 | 4580.0 | 0.2533 | 0.2533 |
| 1997 | 4470.0 | 0.2667 | 0.2667 |
| 1946 | 4330.0 | 0.2800 | 0.2800 |
| 1924 | 4130.0 | 0.2933 | 0.2933 |
| 1951 | 4090.0 | 0.3067 | 0.3067 |
| 1991 | 4000.0 | 0.3200 | 0.3200 |
| 1976 | 3900.0 | 0.3333 | 0.3333 |
| 1993 | 3900.0 | 0.3467 | 0.3467 |
| 1948 | 3860.0 | 0.3600 | 0.3600 |
| 1945 | 3750.0 | 0.3733 | 0.3733 |
| 1986 | 3730.0 | 0.3867 | 0.3867 |
| 1956 | 3650.0 | 0.4000 | 0.4000 |
| 1969 | 3610.0 | 0.4133 | 0.4133 |
| 1983 | 3600.0 | 0.4267 | 0.4267 |
| 1916 | 3520.0 | 0.4400 | 0.4400 |
| 1989 | 3500.0 | 0.4533 | 0.4533 |
| 1996 | 3480.0 | 0.4667 | 0.4667 |
| 1987 | 3270.0 | 0.4800 | 0.4800 |
| 1955 | 3230.0 | 0.4933 | 0.4933 |
| 1950 | 3200.0 | 0.5067 | 0.5067 |
| 1995 | 3190.0 | 0.5200 | 0.5200 |
| 1942 | 3090.0 | 0.5333 | 0.5333 |
| 1964 | 3050.0 | 0.5467 | 0.5467 |
| 1978 | 2970.0 | 0.5600 | 0.5600 |
| 1975 | 2960.0 | 0.5733 | 0.5733 |
| 1914 | 2910.0 | 0.5867 | 0.5867 |
| 1980 | 2720.0 | 0.6000 | 0.6000 |
| 1979 | 2700.0 | 0.6133 | 0.6133 |
| 1963 | 2690.0 | 0.6267 | 0.6267 |
| 1962 | 2660.0 | 0.6400 | 0.6400 |

| | | | |
|------|--------|--------|--------|
| 1919 | 2560.0 | 0.6533 | 0.6533 |
| 1984 | 2530.0 | 0.6667 | 0.6667 |
| 1918 | 2450.0 | 0.6800 | 0.6800 |
| 1994 | 2450.0 | 0.6933 | 0.6933 |
| 1954 | 2430.0 | 0.7067 | 0.7067 |
| 1958 | 2420.0 | 0.7200 | 0.7200 |
| 1981 | 2330.0 | 0.7333 | 0.7333 |
| 1998 | 2190.0 | 0.7467 | 0.7467 |
| 1970 | 2050.0 | 0.7600 | 0.7600 |
| 1947 | 2020.0 | 0.7733 | 0.7733 |
| 1992 | 2020.0 | 0.7867 | 0.7867 |
| 1982 | 1930.0 | 0.8000 | 0.8000 |
| 1974 | 1910.0 | 0.8133 | 0.8133 |
| 1985 | 1860.0 | 0.8267 | 0.8267 |
| 2000 | 1850.0 | 0.8400 | 0.8400 |
| 1968 | 1800.0 | 0.8533 | 0.8533 |
| 1944 | 1760.0 | 0.8667 | 0.8667 |
| 1999 | 1610.0 | 0.8800 | 0.8800 |
| 1966 | 1500.0 | 0.8933 | 0.8933 |
| 1917 | 1460.0 | 0.9067 | 0.9067 |
| 1957 | 1450.0 | 0.9200 | 0.9200 |
| 1949 | 1300.0 | 0.9333 | 0.9333 |
| 1977 | 1260.0 | 0.9467 | 0.9467 |
| 1925 | 1220.0 | 0.9600 | 0.9600 |
| 1988 | 1200.0 | 0.9733 | 0.9733 |
| 1915 | 1180.0 | 0.9867 | 0.9867 |



NOTICE - Preliminary computation
User is responsible for
assessment and interpretation.

Station - 05397500 EAU CLAIRE RIVER AT KELLY, WI
2002 MAR 13 09:03:04