

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

Station - 05393000 TOMAHAWK RIVER AT BRADLEY, WI
 2002 DEC 5 16:25:51

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

| | | |
|--------------------------------------|---|----------|
| Number of peaks in record | = | 44 |
| Peaks not used in analysis | = | 0 |
| Systematic peaks in analysis | = | 44 |
| Historic peaks in analysis | = | 0 |
| Years of historic record | = | 0 |
| Generalized skew | = | -0.190 |
| 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. | 391.2 |
| WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE. | 3937.4 |

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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 | 3.0938 | 0.1844 | 0.005 |
| BULL.17B ESTIMATE | 0.0 | 1.0000 | 3.0938 | 0.1844 | -0.049 |

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 | 407.7 | 416.6 | 381.4 | 312.3 | 495.0 |
| 0.9900 | 455.2 | 463.0 | 432.1 | 356.2 | 545.0 |
| 0.9500 | 613.7 | 617.7 | 598.9 | 507.2 | 709.3 |
| 0.9000 | 718.7 | 720.4 | 707.8 | 609.8 | 817.4 |
| 0.8000 | 869.1 | 868.1 | 862.5 | 757.9 | 973.8 |
| 0.5000 | 1245.0 | 1241.0 | 1245.0 | 1119.0 | 1386.0 |
| 0.2000 | 1776.0 | 1774.0 | 1789.0 | 1585.0 | 2037.0 |
| 0.1000 | 2134.0 | 2139.0 | 2165.0 | 1877.0 | 2513.0 |
| 0.0400 | 2591.0 | 2612.0 | 2660.0 | 2234.0 | 3153.0 |
| 0.0200 | 2935.0 | 2972.0 | 3045.0 | 2495.0 | 3653.0 |
| 0.0100 | 3282.0 | 3338.0 | 3444.0 | 2752.0 | 4170.0 |
| 0.0050 | 3634.0 | 3713.0 | 3863.0 | 3008.0 | 4707.0 |
| 0.0020 | 4108.0 | 4224.0 | 4451.0 | 3346.0 | 5451.0 |
| 0.6667 | 1036.7 | (1.50-year flood) | | | |
| 0.4292 | 1343.4 | (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 |
|------------|-----------|-------|------------|-----------|-------|
| 1930 | 1220.0 | | 1952 | 1640.0 | |
| 1931 | 890.0 | | 1953 | 1570.0 | |
| 1932 | 1170.0 | | 1954 | 1280.0 | |
| 1933 | 939.0 | | 1955 | 1240.0 | |
| 1934 | 612.0 | | 1956 | 778.0 | |
| 1935 | 1890.0 | | 1957 | 767.0 | |
| 1936 | 1170.0 | | 1958 | 688.0 | |
| 1937 | 912.0 | | 1959 | 2460.0 | |
| 1938 | 1760.0 | | 1960 | 2690.0 | |
| 1939 | 2100.0 | | 1961 | 1050.0 | |
| 1940 | 1410.0 | | 1962 | 926.0 | |
| 1941 | 1790.0 | | 1963 | 989.0 | |
| 1942 | 2100.0 | | 1964 | 488.0 | |
| 1943 | 2530.0 | | 1965 | 1560.0 | |
| 1944 | 1100.0 | | 1966 | 953.0 | |
| 1945 | 1860.0 | | 1967 | 1020.0 | |
| 1946 | 1840.0 | | 1968 | 2540.0 | |
| 1947 | 1310.0 | | 1969 | 1300.0 | |
| 1948 | 587.0 | | 1970 | 883.0 | |
| 1949 | 759.0 | | 1971 | 1100.0 | |
| 1950 | 976.0 | | 1972 | 1030.0 | |
| 1951 | 1460.0 | | 1973 | 2250.0 | |

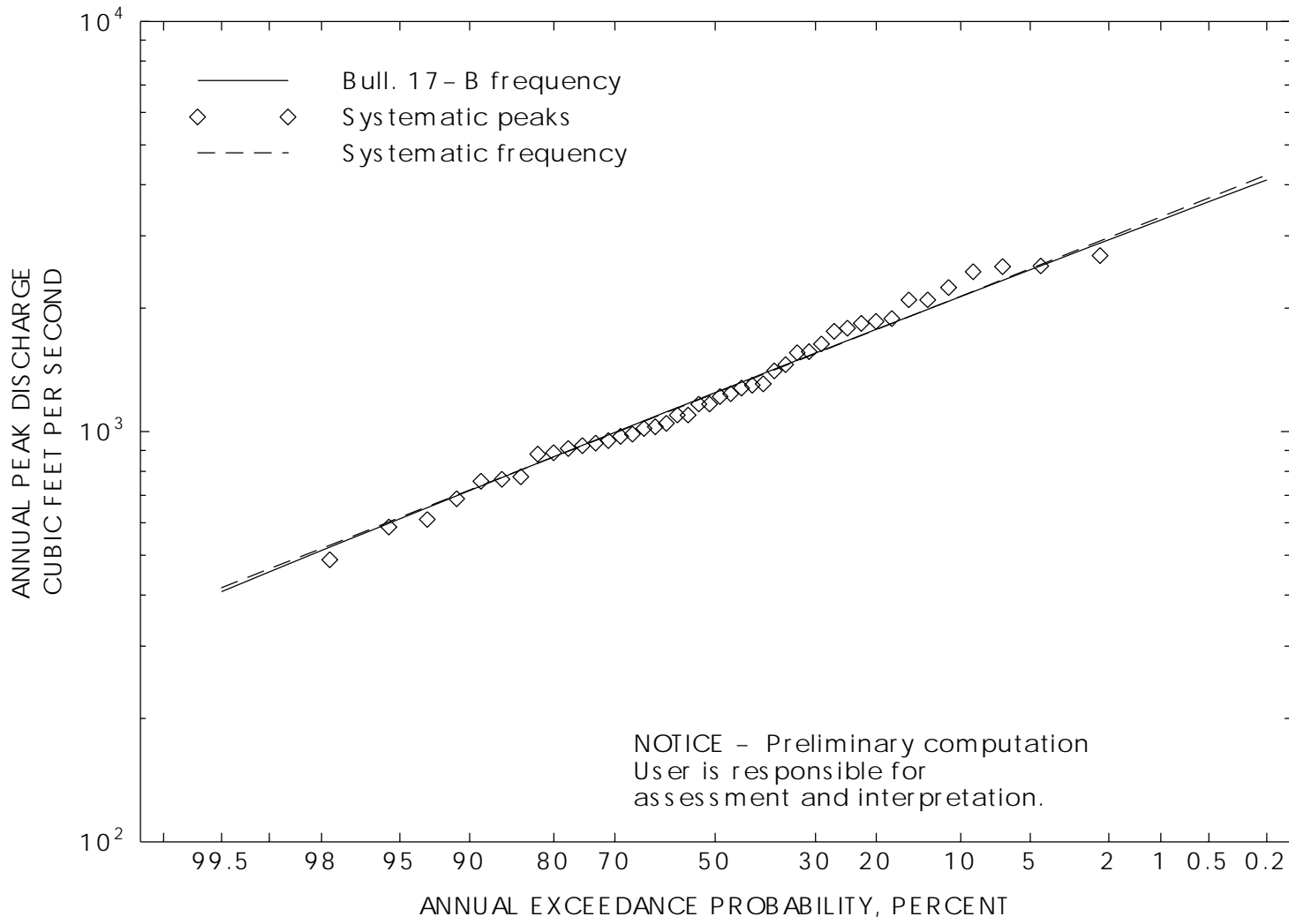
Explanation of peak discharge qualification codes

| 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 |
|---------------|---------------------|----------------------|----------------------|
| 1960 | 2690.0 | 0.0222 | 0.0222 |
| 1968 | 2540.0 | 0.0444 | 0.0444 |
| 1943 | 2530.0 | 0.0667 | 0.0667 |
| 1959 | 2460.0 | 0.0889 | 0.0889 |
| 1973 | 2250.0 | 0.1111 | 0.1111 |
| 1939 | 2100.0 | 0.1333 | 0.1333 |
| 1942 | 2100.0 | 0.1556 | 0.1556 |
| 1935 | 1890.0 | 0.1778 | 0.1778 |
| 1945 | 1860.0 | 0.2000 | 0.2000 |
| 1946 | 1840.0 | 0.2222 | 0.2222 |
| 1941 | 1790.0 | 0.2444 | 0.2444 |
| 1938 | 1760.0 | 0.2667 | 0.2667 |
| 1952 | 1640.0 | 0.2889 | 0.2889 |
| 1953 | 1570.0 | 0.3111 | 0.3111 |
| 1965 | 1560.0 | 0.3333 | 0.3333 |
| 1951 | 1460.0 | 0.3556 | 0.3556 |
| 1940 | 1410.0 | 0.3778 | 0.3778 |
| 1947 | 1310.0 | 0.4000 | 0.4000 |
| 1969 | 1300.0 | 0.4222 | 0.4222 |
| 1954 | 1280.0 | 0.4444 | 0.4444 |
| 1955 | 1240.0 | 0.4667 | 0.4667 |
| 1930 | 1220.0 | 0.4889 | 0.4889 |
| 1932 | 1170.0 | 0.5111 | 0.5111 |
| 1936 | 1170.0 | 0.5333 | 0.5333 |
| 1944 | 1100.0 | 0.5556 | 0.5556 |
| 1971 | 1100.0 | 0.5778 | 0.5778 |
| 1961 | 1050.0 | 0.6000 | 0.6000 |
| 1972 | 1030.0 | 0.6222 | 0.6222 |
| 1967 | 1020.0 | 0.6444 | 0.6444 |
| 1963 | 989.0 | 0.6667 | 0.6667 |
| 1950 | 976.0 | 0.6889 | 0.6889 |
| 1966 | 953.0 | 0.7111 | 0.7111 |
| 1933 | 939.0 | 0.7333 | 0.7333 |
| 1962 | 926.0 | 0.7556 | 0.7556 |
| 1937 | 912.0 | 0.7778 | 0.7778 |
| 1931 | 890.0 | 0.8000 | 0.8000 |
| 1970 | 883.0 | 0.8222 | 0.8222 |
| 1956 | 778.0 | 0.8444 | 0.8444 |
| 1957 | 767.0 | 0.8667 | 0.8667 |
| 1949 | 759.0 | 0.8889 | 0.8889 |
| 1958 | 688.0 | 0.9111 | 0.9111 |
| 1934 | 612.0 | 0.9333 | 0.9333 |
| 1948 | 587.0 | 0.9556 | 0.9556 |
| 1964 | 488.0 | 0.9778 | 0.9778 |



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

ANNUAL EXCEEDANCE PROBABILITY, PERCENT
 Station - 05393000 TOMAHAWK RIVER AT BRADLEY, WI
 2005 JUL 26 11:53:40