

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

Station - 05394500 PRAIRIE RIVER NEAR MERRILL, 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 | = | 79 |
| Peaks not used in analysis | = | 0 |
| Systematic peaks in analysis | = | 79 |
| Historic peaks in analysis | = | 0 |
| Years of historic record | = | 0 |
| Generalized skew | = | -0.225 |
| 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. | 338.1 |
| WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE. | 5843.0 |

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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 | 3.1478 | 0.2108 | -0.025 |
| BULL.17B ESTIMATE | 0.0 | 1.0000 | 3.1478 | 0.2108 | -0.062 |

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 | 391.2 | 397.8 | 375.1 | 315.0 | 464.3 |
| 0.9900 | 444.3 | 450.2 | 429.9 | 364.0 | 520.7 |
| 0.9500 | 627.1 | 630.2 | 617.4 | 536.8 | 711.9 |
| 0.9000 | 752.0 | 753.4 | 744.7 | 657.4 | 841.5 |
| 0.8000 | 935.5 | 934.6 | 931.0 | 835.5 | 1032.0 |
| 0.5000 | 1413.0 | 1408.0 | 1413.0 | 1290.0 | 1547.0 |
| 0.2000 | 2118.0 | 2116.0 | 2128.0 | 1919.0 | 2372.0 |
| 0.1000 | 2610.0 | 2615.0 | 2634.0 | 2333.0 | 2983.0 |
| 0.0400 | 3254.0 | 3274.0 | 3307.0 | 2858.0 | 3816.0 |
| 0.0200 | 3748.0 | 3784.0 | 3834.0 | 3250.0 | 4473.0 |
| 0.0100 | 4252.0 | 4309.0 | 4381.0 | 3644.0 | 5160.0 |
| 0.0050 | 4771.0 | 4851.0 | 4953.0 | 4042.0 | 5878.0 |
| 0.0020 | 5479.0 | 5599.0 | 5754.0 | 4578.0 | 6881.0 |
| 0.6667 | 1145.1 | (1.50-year flood) | | | |
| 0.4292 | 1540.3 | (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 |
|------------|-----------|-------|------------|-----------|-------|
| 1914 | 1160.0 | | 1962 | 1340.0 | |
| 1915 | 781.0 | | 1963 | 772.0 | |
| 1916 | 2380.0 | | 1964 | 711.0 | |
| 1917 | 916.0 | | 1965 | 2530.0 | |
| 1918 | 1420.0 | | 1966 | 1100.0 | |
| 1919 | 1280.0 | | 1967 | 2670.0 | |
| 1920 | 2020.0 | | 1968 | 1050.0 | |
| 1921 | 1860.0 | | 1969 | 1620.0 | |
| 1922 | 2110.0 | | 1970 | 676.0 | |
| 1923 | 2380.0 | | 1971 | 1820.0 | |
| 1924 | 1700.0 | | 1972 | 2070.0 | |
| 1925 | 870.0 | | 1973 | 2390.0 | |
| 1926 | 3780.0 | | 1974 | 946.0 | |
| 1927 | 1860.0 | | 1975 | 1910.0 | |
| 1928 | 1420.0 | | 1976 | 1860.0 | |
| 1929 | 2680.0 | | 1977 | 627.0 | |
| 1930 | 1110.0 | | 1978 | 1540.0 | |
| 1931 | 394.0 | | 1979 | 2420.0 | |
| 1940 | 1810.0 | | 1980 | 1450.0 | |
| 1941 | 5800.0 | | 1981 | 1100.0 | |
| 1942 | 2530.0 | | 1982 | 1370.0 | |
| 1943 | 1400.0 | | 1983 | 1470.0 | |
| 1944 | 1050.0 | | 1984 | 1070.0 | |
| 1945 | 1160.0 | | 1985 | 900.0 | |
| 1946 | 1280.0 | | 1986 | 1850.0 | |
| 1947 | 1220.0 | | 1987 | 1800.0 | |
| 1948 | 515.0 | | 1988 | 690.0 | |
| 1949 | 628.0 | | 1989 | 1030.0 | |
| 1950 | 1660.0 | | 1990 | 1950.0 | |
| 1951 | 1590.0 | | 1991 | 1790.0 | |
| 1952 | 995.0 | | 1992 | 1100.0 | |
| 1953 | 1590.0 | | 1993 | 2000.0 | |
| 1954 | 1050.0 | | 1994 | 1630.0 | |
| 1955 | 1020.0 | | 1995 | 872.0 | |
| 1956 | 1050.0 | | 1996 | 2540.0 | |
| 1957 | 567.0 | | 1997 | 2400.0 | |
| 1958 | 1160.0 | | 1998 | 1540.0 | |
| 1959 | 3000.0 | | 1999 | 986.0 | |
| 1960 | 2620.0 | | 2000 | 930.0 | |
| 1961 | 2390.0 | | | | |

Explanation of peak discharge qualification codes

| PEAKFQ | WATSTORE | |
|--------|----------|---|
| CODE | CODE | DEFINITION |
| D | 3 | Dam failure, non-recurrent flow anomaly |

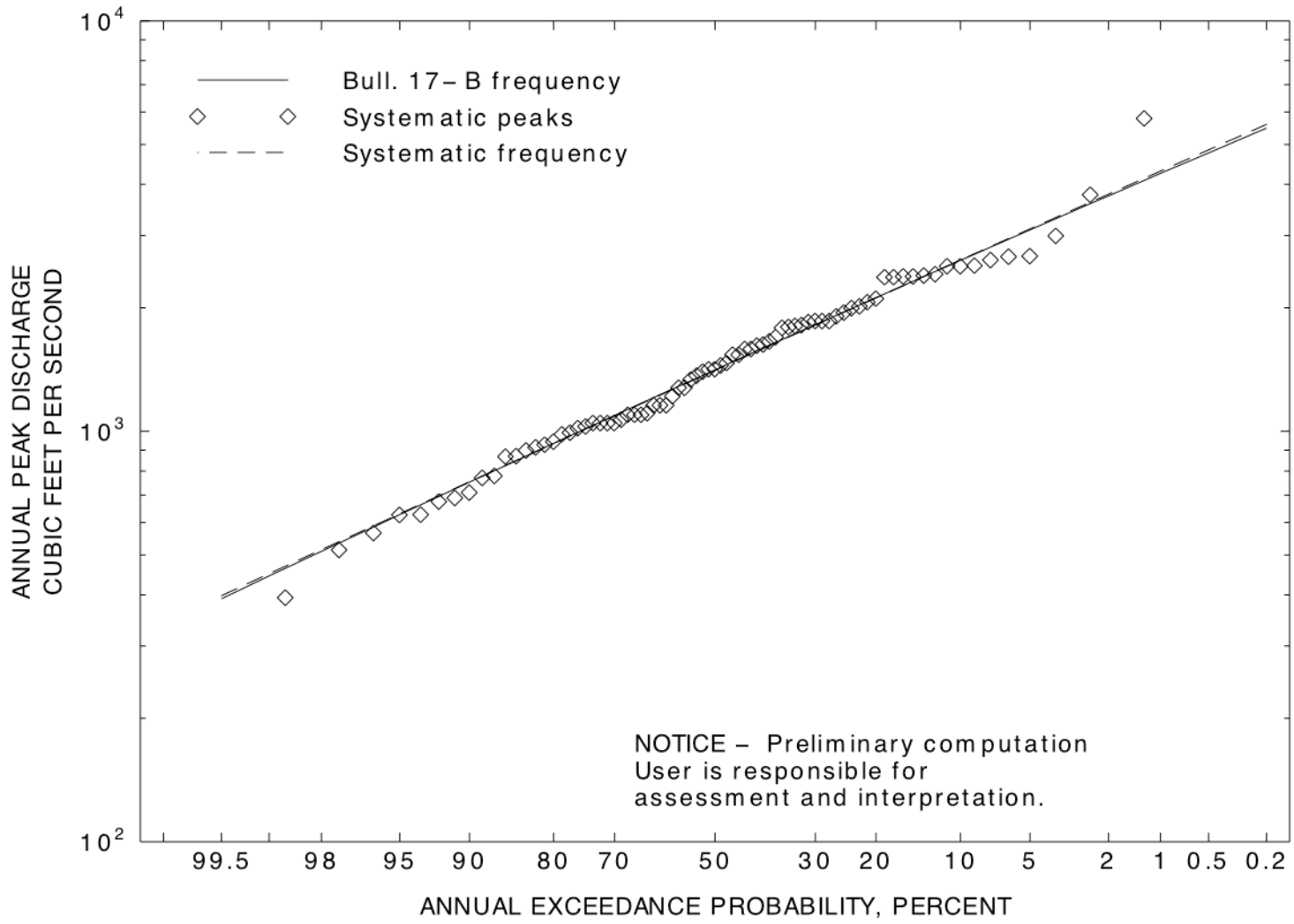
| | | |
|---|--------|--|
| G | 8 | Discharge greater than stated value |
| X | 3+8 | Both of the above |
| L | 4 | Discharge less than stated value |
| K | 6 OR C | Known effect of regulation or urbanization |
| H | 7 | Historic peak |

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EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

| WATER YEAR | RANKED DISCHARGE | SYSTEMATIC RECORD | BULL.17B ESTIMATE |
|---------------|---------------------|----------------------|----------------------|
| 1941 | 5800.0 | 0.0125 | 0.0125 |
| 1926 | 3780.0 | 0.0250 | 0.0250 |
| 1959 | 3000.0 | 0.0375 | 0.0375 |
| 1929 | 2680.0 | 0.0500 | 0.0500 |
| 1967 | 2670.0 | 0.0625 | 0.0625 |
| 1960 | 2620.0 | 0.0750 | 0.0750 |
| 1996 | 2540.0 | 0.0875 | 0.0875 |
| 1942 | 2530.0 | 0.1000 | 0.1000 |
| 1965 | 2530.0 | 0.1125 | 0.1125 |
| 1979 | 2420.0 | 0.1250 | 0.1250 |
| 1997 | 2400.0 | 0.1375 | 0.1375 |
| 1961 | 2390.0 | 0.1500 | 0.1500 |
| 1973 | 2390.0 | 0.1625 | 0.1625 |
| 1916 | 2380.0 | 0.1750 | 0.1750 |
| 1923 | 2380.0 | 0.1875 | 0.1875 |
| 1922 | 2110.0 | 0.2000 | 0.2000 |
| 1972 | 2070.0 | 0.2125 | 0.2125 |
| 1920 | 2020.0 | 0.2250 | 0.2250 |
| 1993 | 2000.0 | 0.2375 | 0.2375 |
| 1990 | 1950.0 | 0.2500 | 0.2500 |
| 1975 | 1910.0 | 0.2625 | 0.2625 |
| 1921 | 1860.0 | 0.2750 | 0.2750 |
| 1927 | 1860.0 | 0.2875 | 0.2875 |
| 1976 | 1860.0 | 0.3000 | 0.3000 |
| 1986 | 1850.0 | 0.3125 | 0.3125 |
| 1971 | 1820.0 | 0.3250 | 0.3250 |
| 1940 | 1810.0 | 0.3375 | 0.3375 |
| 1987 | 1800.0 | 0.3500 | 0.3500 |
| 1991 | 1790.0 | 0.3625 | 0.3625 |
| 1924 | 1700.0 | 0.3750 | 0.3750 |
| 1950 | 1660.0 | 0.3875 | 0.3875 |
| 1994 | 1630.0 | 0.4000 | 0.4000 |
| 1969 | 1620.0 | 0.4125 | 0.4125 |
| 1951 | 1590.0 | 0.4250 | 0.4250 |
| 1953 | 1590.0 | 0.4375 | 0.4375 |
| 1978 | 1540.0 | 0.4500 | 0.4500 |
| 1998 | 1540.0 | 0.4625 | 0.4625 |
| 1983 | 1470.0 | 0.4750 | 0.4750 |
| 1980 | 1450.0 | 0.4875 | 0.4875 |
| 1918 | 1420.0 | 0.5000 | 0.5000 |
| 1928 | 1420.0 | 0.5125 | 0.5125 |
| 1943 | 1400.0 | 0.5250 | 0.5250 |
| 1982 | 1370.0 | 0.5375 | 0.5375 |
| 1962 | 1340.0 | 0.5500 | 0.5500 |
| 1919 | 1280.0 | 0.5625 | 0.5625 |
| 1946 | 1280.0 | 0.5750 | 0.5750 |
| 1947 | 1220.0 | 0.5875 | 0.5875 |
| 1914 | 1160.0 | 0.6000 | 0.6000 |

| | | | |
|------|--------|--------|--------|
| 1945 | 1160.0 | 0.6125 | 0.6125 |
| 1958 | 1160.0 | 0.6250 | 0.6250 |
| 1930 | 1110.0 | 0.6375 | 0.6375 |
| 1966 | 1100.0 | 0.6500 | 0.6500 |
| 1981 | 1100.0 | 0.6625 | 0.6625 |
| 1992 | 1100.0 | 0.6750 | 0.6750 |
| 1984 | 1070.0 | 0.6875 | 0.6875 |
| 1944 | 1050.0 | 0.7000 | 0.7000 |
| 1954 | 1050.0 | 0.7125 | 0.7125 |
| 1956 | 1050.0 | 0.7250 | 0.7250 |
| 1968 | 1050.0 | 0.7375 | 0.7375 |
| 1989 | 1030.0 | 0.7500 | 0.7500 |
| 1955 | 1020.0 | 0.7625 | 0.7625 |
| 1952 | 995.0 | 0.7750 | 0.7750 |
| 1999 | 986.0 | 0.7875 | 0.7875 |
| 1974 | 946.0 | 0.8000 | 0.8000 |
| 2000 | 930.0 | 0.8125 | 0.8125 |
| 1917 | 916.0 | 0.8250 | 0.8250 |
| 1985 | 900.0 | 0.8375 | 0.8375 |
| 1995 | 872.0 | 0.8500 | 0.8500 |
| 1925 | 870.0 | 0.8625 | 0.8625 |
| 1915 | 781.0 | 0.8750 | 0.8750 |
| 1963 | 772.0 | 0.8875 | 0.8875 |
| 1964 | 711.0 | 0.9000 | 0.9000 |
| 1988 | 690.0 | 0.9125 | 0.9125 |
| 1970 | 676.0 | 0.9250 | 0.9250 |
| 1949 | 628.0 | 0.9375 | 0.9375 |
| 1977 | 627.0 | 0.9500 | 0.9500 |
| 1957 | 567.0 | 0.9625 | 0.9625 |
| 1948 | 515.0 | 0.9750 | 0.9750 |
| 1931 | 394.0 | 0.9875 | 0.9875 |



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 assessment and interpretation.

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