

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

Station - 05427570 ROCK RIVER AT INDIANFORD, WI
2002 MAR 13 09:03:20

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

| | | |
|--------------------------------------|---|----------|
| Number of peaks in record | = | 26 |
| Peaks not used in analysis | = | 0 |
| Systematic peaks in analysis | = | 26 |
| 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 |
| WCF195I-NO LOW OUTLIERS WERE DETECTED BELOW CRITERION. | 2294.4 |
| WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE. | 13749.9 |

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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 | 3.7495 | 0.1554 | 0.078 |
| BULL.17B ESTIMATE | 0.0 | 1.0000 | 3.7495 | 0.1554 | -0.110 |

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 | 2153.0 | 2294.0 | 1939.0 | 1565.0 | 2654.0 |
| 0.9900 | 2374.0 | 2494.0 | 2189.0 | 1772.0 | 2880.0 |
| 0.9500 | 3084.0 | 3143.0 | 2973.0 | 2466.0 | 3601.0 |
| 0.9000 | 3537.0 | 3562.0 | 3457.0 | 2922.0 | 4060.0 |
| 0.8000 | 4165.0 | 4151.0 | 4118.0 | 3561.0 | 4708.0 |
| 0.5000 | 5654.0 | 5591.0 | 5654.0 | 5023.0 | 6369.0 |
| 0.2000 | 7604.0 | 7580.0 | 7684.0 | 6725.0 | 8901.0 |
| 0.1000 | 8845.0 | 8910.0 | 9028.0 | 7713.0 | 10690.0 |
| 0.0400 | 10360.0 | 10610.0 | 10750.0 | 8861.0 | 13000.0 |
| 0.0200 | 11460.0 | 11890.0 | 12070.0 | 9662.0 | 14760.0 |
| 0.0100 | 12540.0 | 13180.0 | 13420.0 | 10430.0 | 16540.0 |
| 0.0050 | 13600.0 | 14490.0 | 14820.0 | 11170.0 | 18330.0 |
| 0.0020 | 15000.0 | 16280.0 | 16780.0 | 12120.0 | 20760.0 |
| 0.6667 | 4841.0 | (1.50-year flood) | | | |
| 0.4292 | 6026.7 | (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 |
|------------|-----------|-------|------------|-----------|-------|
| 1975 | 5470.0 | | 1988 | 3970.0 | |
| 1976 | 5340.0 | | 1989 | 3620.0 | |
| 1977 | 2430.0 | | 1990 | 5260.0 | |
| 1978 | 4650.0 | | 1991 | 4400.0 | |
| 1979 | 11900.0 | | 1992 | 3880.0 | |
| 1980 | 5160.0 | | 1993 | 10200.0 | |
| 1981 | 5340.0 | | 1994 | 4830.0 | |
| 1982 | 6870.0 | | 1995 | 3660.0 | |
| 1983 | 5670.0 | | 1996 | 7450.0 | |
| 1984 | 4920.0 | | 1997 | 5040.0 | |
| 1985 | 6870.0 | | 1998 | 5990.0 | |
| 1986 | 8820.0 | | 1999 | 6050.0 | |
| 1987 | 9360.0 | | 2000 | 8230.0 | |

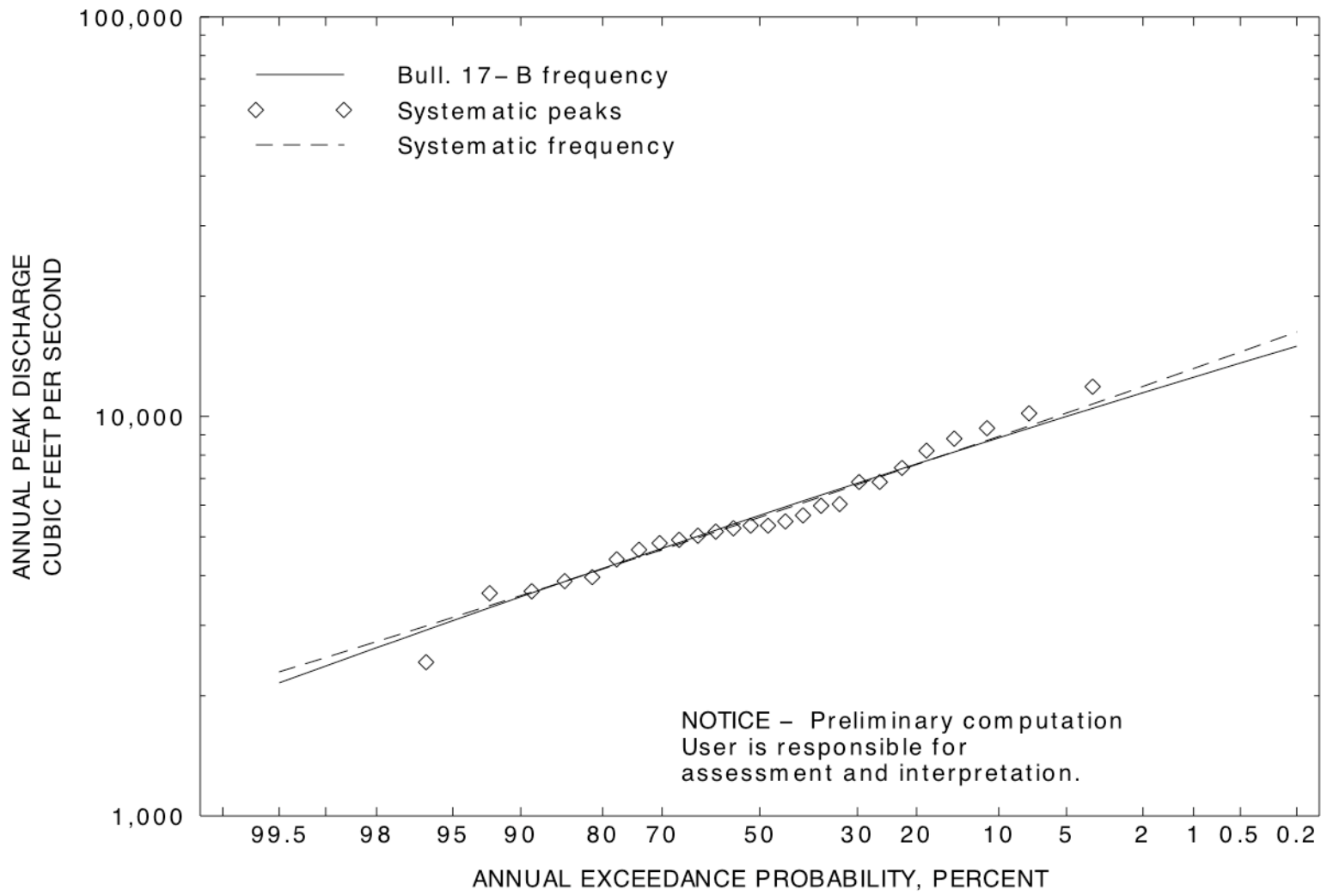
Explanation of peak discharge qualification codes

| 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 |
|---------------|---------------------|----------------------|----------------------|
| 1979 | 11900.0 | 0.0370 | 0.0370 |
| 1993 | 10200.0 | 0.0741 | 0.0741 |
| 1987 | 9360.0 | 0.1111 | 0.1111 |
| 1986 | 8820.0 | 0.1481 | 0.1481 |
| 2000 | 8230.0 | 0.1852 | 0.1852 |
| 1996 | 7450.0 | 0.2222 | 0.2222 |
| 1982 | 6870.0 | 0.2593 | 0.2593 |
| 1985 | 6870.0 | 0.2963 | 0.2963 |
| 1999 | 6050.0 | 0.3333 | 0.3333 |
| 1998 | 5990.0 | 0.3704 | 0.3704 |
| 1983 | 5670.0 | 0.4074 | 0.4074 |
| 1975 | 5470.0 | 0.4444 | 0.4444 |
| 1976 | 5340.0 | 0.4815 | 0.4815 |
| 1981 | 5340.0 | 0.5185 | 0.5185 |
| 1990 | 5260.0 | 0.5556 | 0.5556 |
| 1980 | 5160.0 | 0.5926 | 0.5926 |
| 1997 | 5040.0 | 0.6296 | 0.6296 |
| 1984 | 4920.0 | 0.6667 | 0.6667 |
| 1994 | 4830.0 | 0.7037 | 0.7037 |
| 1978 | 4650.0 | 0.7407 | 0.7407 |
| 1991 | 4400.0 | 0.7778 | 0.7778 |
| 1988 | 3970.0 | 0.8148 | 0.8148 |
| 1992 | 3880.0 | 0.8519 | 0.8519 |
| 1995 | 3660.0 | 0.8889 | 0.8889 |
| 1989 | 3620.0 | 0.9259 | 0.9259 |
| 1977 | 2430.0 | 0.9630 | 0.9630 |



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