

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

Station - 05366000 EAU CLAIRE RIVER NEAR AUGUSTA, WI  
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I N P U T   D A T A   S U M M A R Y

|                                      |   |          |
|--------------------------------------|---|----------|
| Number of peaks in record            | = | 12       |
| Peaks not used in analysis           | = | 0        |
| Systematic peaks in analysis         | = | 12       |
| Historic peaks in analysis           | = | 0        |
| Years of historic record             | = | 0        |
| Generalized skew                     | = | -0.328   |
| 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.      |         | 3274.3  |
| WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE. |         | 9920.5  |
| **WCF233W-EXPECTED PROB OUT OF RANGE AT TAB PROB.           | 0.00008 | 0.00200 |
| 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                 | 3.7558      | 0.1128             | -0.008 |
| BULL.17B ESTIMATE | 0.0        | 1.0000                 | 3.7558      | 0.1128             | -0.189 |

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                        | 2788.0            | 2914.0              | 2276.0                          | 1841.0   | 3455.0  |
| 0.9900                        | 3005.0            | 3110.0              | 2580.0                          | 2060.0   | 3664.0  |
| 0.9500                        | 3668.0            | 3716.0              | 3437.0                          | 2767.0   | 4297.0  |
| 0.9000                        | 4066.0            | 4085.0              | 3910.0                          | 3211.0   | 4683.0  |
| 0.8000                        | 4593.0            | 4581.0              | 4505.0                          | 3807.0   | 5216.0  |
| 0.5000                        | 5746.0            | 5701.0              | 5746.0                          | 5042.0   | 6563.0  |
| 0.2000                        | 7106.0            | 7093.0              | 7227.0                          | 6255.0   | 8589.0  |
| 0.1000                        | 7905.0            | 7949.0              | 8167.0                          | 6874.0   | 9965.0  |
| 0.0400                        | 8826.0            | 8974.0              | 9363.0                          | 7539.0   | 11680.0 |
| 0.0200                        | 9460.0            | 9706.0              | 10280.0                         | 7976.0   | 12940.0 |
| 0.0100                        | 10060.0           | 10410.0             | 11230.0                         | 8376.0   | 14160.0 |
| 0.0050                        | 10630.0           | 11110.0             | 12230.0                         | 8748.0   | 15370.0 |
| 0.0020                        | 11340.0           | 12010.0             | --                              | 9208.0   | 16950.0 |
| 0.6667                        | 5131.0            | ( 1.50-year flood ) |                                 |  |         |
| 0.4292                        | 6019.0            | ( 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 |
|------------|-----------|-------|------------|-----------|-------|
| 1915       | 4630.0    |       | 1921       | 5620.0    |       |
| 1916       | 7290.0    |       | 1922       | 7510.0    |       |
| 1917       | 3800.0    |       | 1923       | 3900.0    |       |
| 1918       | 5720.0    |       | 1924       | 6740.0    |       |
| 1919       | 5920.0    |       | 1925       | 4940.0    |       |
| 1920       | 8940.0    |       | 1926       | 5520.0    |       |

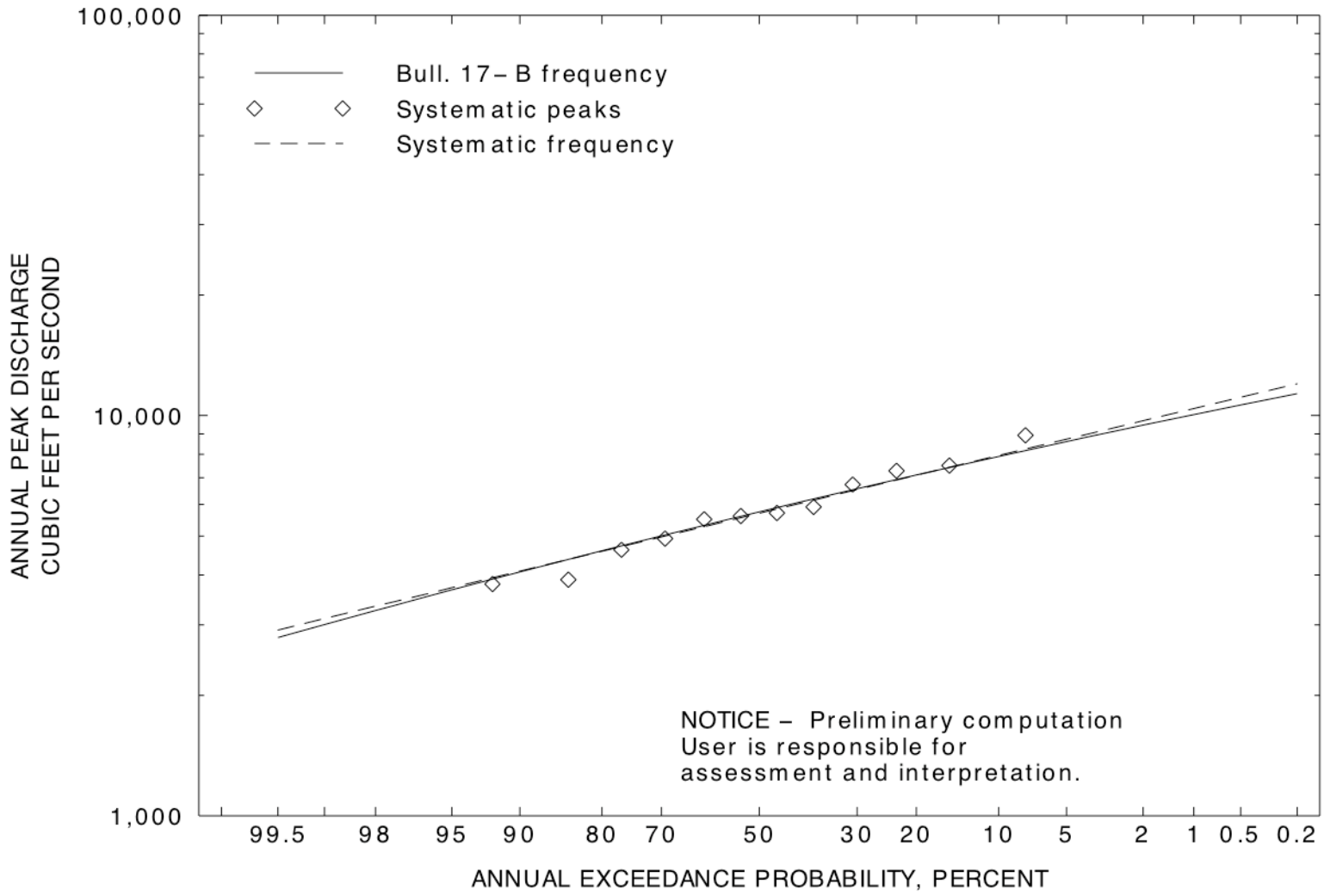
Explanation of peak discharge qualification codes

| 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<br>YEAR | RANKED<br>DISCHARGE | SYSTEMATIC<br>RECORD | BULL.17B<br>ESTIMATE |
|---------------|---------------------|----------------------|----------------------|
| 1920          | 8940.0              | 0.0769               | 0.0769               |
| 1922          | 7510.0              | 0.1538               | 0.1538               |
| 1916          | 7290.0              | 0.2308               | 0.2308               |
| 1924          | 6740.0              | 0.3077               | 0.3077               |
| 1919          | 5920.0              | 0.3846               | 0.3846               |
| 1918          | 5720.0              | 0.4615               | 0.4615               |
| 1921          | 5620.0              | 0.5385               | 0.5385               |
| 1926          | 5520.0              | 0.6154               | 0.6154               |
| 1925          | 4940.0              | 0.6923               | 0.6923               |
| 1915          | 4630.0              | 0.7692               | 0.7692               |
| 1923          | 3900.0              | 0.8462               | 0.8462               |
| 1917          | 3800.0              | 0.9231               | 0.9231               |



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