

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

Station - 05400025 JOHNSON CREEK NEAR KNOWLTON, WI
2002 MAR 13 09:03:06

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

| | | |
|--------------------------------------|---|----------|
| Number of peaks in record | = | 27 |
| Peaks not used in analysis | = | 0 |
| Systematic peaks in analysis | = | 27 |
| Historic peaks in analysis | = | 0 |
| Years of historic record | = | 0 |
| Generalized skew | = | -0.285 |
| Standard error of generalized skew | = | 0.550 |
| Skew option | = | WEIGHTED |
| Gage base discharge | = | 550.0 |
| 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. *****

| | | |
|---|---|--------|
| WCF133I-SYSTEMATIC PEAKS BELOW GAGE BASE WERE NOTED. | 6 | 550.0 |
| WCF162I-SYSTEMATIC PEAKS EXCEEDED HIGH-OUTLIER CRITERION. | 1 | 3056.3 |
| WCF195I-NO LOW OUTLIERS WERE DETECTED BELOW CRITERION. | | 365.9 |

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ANNUAL FREQUENCY CURVE PARAMETERS -- LOG-PEARSON TYPE III

| | FLOOD BASE | | LOGARITHMIC | | |
|-------------------|------------|------------------------|-------------|--------------------|-------|
| | DISCHARGE | EXCEEDANCE PROBABILITY | MEAN | STANDARD DEVIATION | SKEW |
| SYSTEMATIC RECORD | 550.0 | 0.7778 | 2.9630 | 0.2073 | 1.094 |
| BULL.17B ESTIMATE | 550.0 | 0.7778 | 2.9630 | 0.2073 | 0.369 |

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 |
| 0.5000 | 891.9 | 843.3 | 891.9 | 762.3 | 1040.0 |
| 0.2000 | 1358.0 | 1311.0 | 1379.0 | 1157.0 | 1663.0 |
| 0.1000 | 1720.0 | 1742.0 | 1777.0 | 1434.0 | 2211.0 |
| 0.0400 | 2244.0 | 2461.0 | 2387.0 | 1808.0 | 3072.0 |
| 0.0200 | 2683.0 | 3151.0 | 2938.0 | 2106.0 | 3846.0 |
| 0.0100 | 3168.0 | 4002.0 | 3587.0 | 2423.0 | 4745.0 |
| 0.0050 | 3703.0 | 5050.0 | 4363.0 | 2762.0 | 5786.0 |
| 0.0020 | 4498.0 | 6818.0 | 5633.0 | 3249.0 | 7416.0 |
| 0.6667 | 731.6 | (1.50-year flood) | | | |
| 0.4292 | 969.6 | (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 |
|------------|-----------|-------|------------|-----------|-------|
| 1973 | 820.0 | | 1987 | 820.0 | |
| 1974 | 375.0 | | 1988 | 460.0 | |
| 1975 | 980.0 | | 1989 | 680.0 | |
| 1976 | 980.0 | | 1990 | 1000.0 | |
| 1977 | 550.0 | L | 1991 | 610.0 | |
| 1978 | 1800.0 | | 1992 | 380.0 | |
| 1979 | 2000.0 | | 1993 | 910.0 | |
| 1980 | 3700.0 | | 1994 | 1850.0 | |
| 1981 | 1080.0 | | 1995 | 640.0 | |
| 1982 | 1200.0 | | 1996 | 1250.0 | |
| 1983 | 940.0 | | 1997 | 540.0 | |
| 1984 | 960.0 | | 1998 | 715.0 | |
| 1985 | 700.0 | | 2000 | 370.0 | |
| 1986 | 1150.0 | | | | |

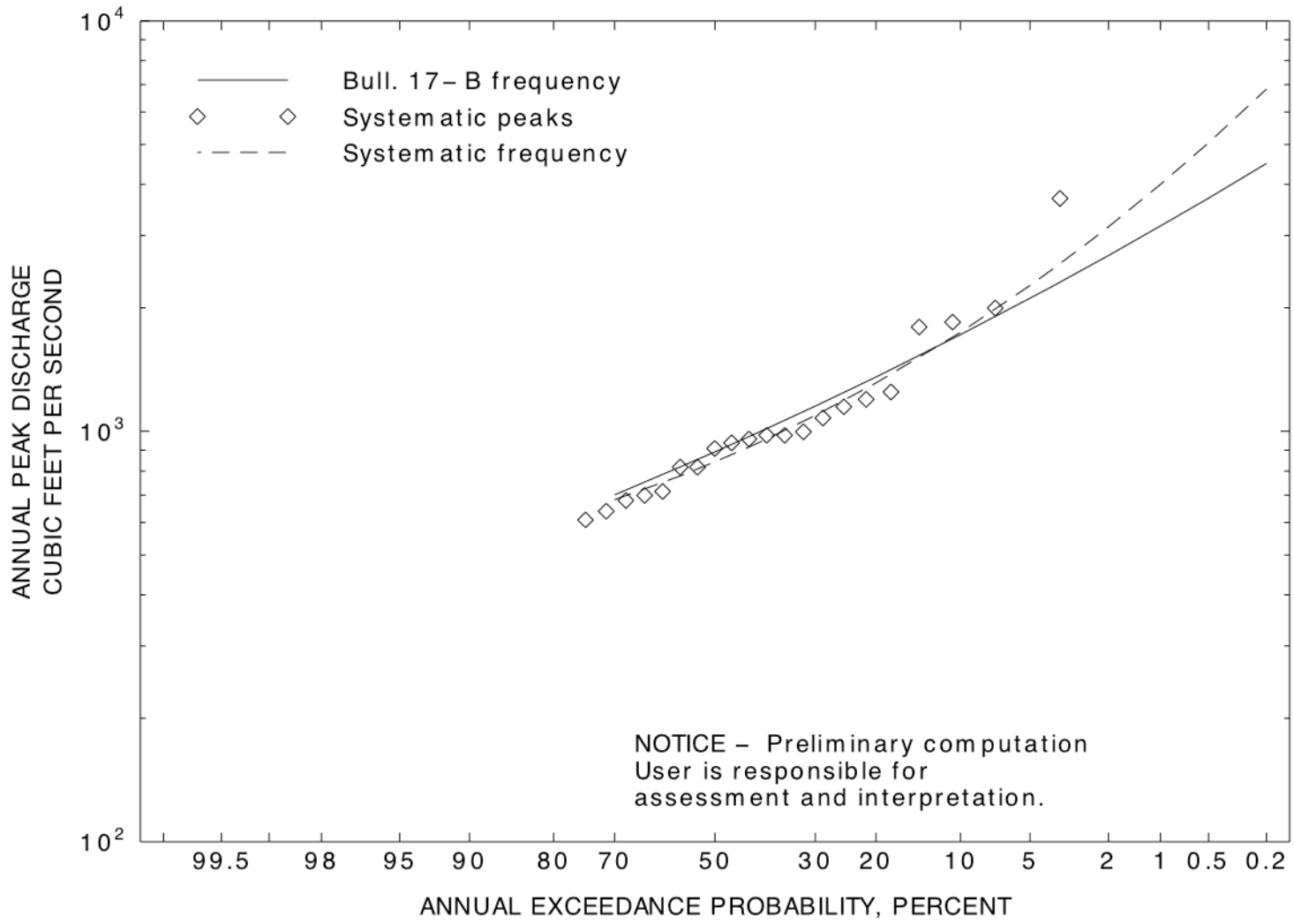
Explanation of peak discharge qualification codes

| 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 |
|---------------|---------------------|----------------------|----------------------|
| 1980 | 3700.0 | 0.0357 | 0.0357 |
| 1979 | 2000.0 | 0.0714 | 0.0714 |
| 1994 | 1850.0 | 0.1071 | 0.1071 |
| 1978 | 1800.0 | 0.1429 | 0.1429 |
| 1996 | 1250.0 | 0.1786 | 0.1786 |
| 1982 | 1200.0 | 0.2143 | 0.2143 |
| 1986 | 1150.0 | 0.2500 | 0.2500 |
| 1981 | 1080.0 | 0.2857 | 0.2857 |
| 1990 | 1000.0 | 0.3214 | 0.3214 |
| 1975 | 980.0 | 0.3571 | 0.3571 |
| 1976 | 980.0 | 0.3929 | 0.3929 |
| 1984 | 960.0 | 0.4286 | 0.4286 |
| 1983 | 940.0 | 0.4643 | 0.4643 |
| 1993 | 910.0 | 0.5000 | 0.5000 |
| 1973 | 820.0 | 0.5357 | 0.5357 |
| 1987 | 820.0 | 0.5714 | 0.5714 |
| 1998 | 715.0 | 0.6071 | 0.6071 |
| 1985 | 700.0 | 0.6429 | 0.6429 |
| 1989 | 680.0 | 0.6786 | 0.6786 |
| 1995 | 640.0 | 0.7143 | 0.7143 |
| 1991 | 610.0 | 0.7500 | 0.7500 |
| 1977 | 550.0 | -- | -- |
| 1997 | 540.0 | -- | -- |
| 1988 | 460.0 | -- | -- |
| 1992 | 380.0 | -- | -- |
| 1974 | 375.0 | -- | -- |
| 2000 | 370.0 | -- | -- |



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