

0208650112 FLAT RIVER TRIBUTARY NEAR WILLARDVILLE, NC

LOCATION.--Lat 36°07'55", long 78°49'59", Durham County, Hydrologic Unit 03020201, on left bank at culvert on Secondary Road 1680, 1.5 mi southeast of Willardville.

DRAINAGE AREA.--1.14 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1988 to September 1990, October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 270 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No flow at times during most years. Maximum discharge for period of record, from rating curve extended above 70 ft³/s, on basis of computation of flow through culvert with road overflow. Maximum gage height for period of record from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| 1 | 0.01 | 0.08 | 0.10 | 0.37 | 0.67 | 0.62 | 2.0 | 0.40 | 0.15 | 0.06 | 0.04 | 0.25 |
| 2 | 0.01 | 0.06 | 0.08 | 0.39 | 0.63 | 0.66 | 1.1 | 3.4 | 0.12 | 0.05 | 0.07 | 0.13 |
| 3 | 0.02 | 0.08 | 0.06 | 0.39 | 4.1 | 0.71 | 0.75 | 6.6 | 0.10 | 0.05 | 0.17 | 0.06 |
| 4 | 0.03 | 0.12 | 0.10 | 0.39 | 2.2 | 0.66 | 0.63 | 1.6 | 0.19 | 0.04 | 0.03 | 0.03 |
| 5 | 0.05 | 0.14 | 0.46 | 0.41 | 1.2 | 0.62 | 0.53 | 0.80 | 0.16 | 0.03 | 0.05 | 0.02 |
| 6 | 0.08 | 0.23 | 0.29 | 0.39 | 2.7 | 0.63 | 0.48 | 0.55 | 0.14 | 0.02 | 0.06 | 0.08 |
| 7 | 0.12 | 0.09 | 0.19 | 0.35 | 5.7 | 0.57 | 0.47 | 0.43 | 0.13 | 0.00 | 0.01 | 0.17 |
| 8 | 0.20 | 0.11 | 0.15 | 0.35 | 1.7 | 0.55 | 0.46 | 0.36 | 0.30 | 0.00 | 0.01 | 0.51 |
| 9 | 0.20 | 0.09 | 0.13 | 0.39 | 1.1 | 0.52 | 0.42 | 0.32 | 0.23 | 0.00 | 0.01 | 0.26 |
| 10 | 0.17 | 0.09 | 2.2 | 0.37 | 0.92 | 0.52 | 0.39 | 0.29 | 0.17 | 0.00 | 0.01 | 0.10 |
| 11 | 0.15 | 0.09 | 4.1 | 0.36 | 0.77 | 0.52 | 0.39 | 0.26 | 0.19 | 0.00 | 0.01 | 0.06 |
| 12 | 0.06 | 0.12 | 1.0 | 0.37 | 1.0 | 0.52 | 0.73 | 0.25 | 0.20 | 0.00 | 0.09 | 0.07 |
| 13 | 0.08 | 0.15 | 0.66 | 0.39 | 1.2 | 0.48 | 1.2 | 0.24 | 0.14 | 0.00 | 0.14 | 0.08 |
| 14 | 0.17 | 0.16 | 7.2 | 0.36 | 0.91 | 0.48 | 1.3 | 0.22 | 0.14 | 0.00 | 0.82 | 0.12 |
| 15 | 0.13 | 0.19 | 2.1 | 0.38 | 0.82 | 0.58 | 0.92 | 0.21 | 0.12 | 0.00 | 0.48 | 0.16 |
| 16 | 0.06 | 0.19 | 1.0 | 0.34 | 0.89 | 0.92 | 0.70 | 0.19 | 0.16 | 0.00 | 0.26 | 0.13 |
| 17 | 0.06 | 0.22 | 1.3 | 0.33 | 0.93 | 1.1 | 0.60 | 0.18 | 0.14 | 0.00 | 0.11 | 2.3 |
| 18 | 0.08 | 0.19 | 1.1 | 0.50 | 0.95 | 0.85 | 0.53 | 0.17 | 0.11 | 0.00 | 0.07 | 4.2 |
| 19 | 0.07 | 0.74 | 0.80 | 0.46 | 1.2 | 0.76 | 0.46 | 0.16 | 0.08 | 0.00 | 0.04 | 0.74 |
| 20 | 0.09 | 0.79 | 0.64 | 0.41 | 0.96 | 0.67 | 0.43 | 0.15 | 0.07 | 0.12 | 0.03 | 0.25 |
| 21 | 0.11 | 0.26 | 0.53 | 0.39 | 0.84 | 0.65 | 0.41 | 0.14 | 0.06 | 0.00 | 0.27 | 0.15 |
| 22 | 0.13 | 0.17 | 0.51 | 0.39 | 0.70 | 0.56 | 0.38 | 0.13 | 0.08 | 0.04 | 0.30 | 0.10 |
| 23 | 0.13 | 0.14 | 0.48 | 0.38 | 0.65 | 0.52 | 0.34 | 0.66 | 0.11 | 0.03 | 0.10 | 0.07 |
| 24 | 0.13 | 0.13 | 0.54 | 0.39 | 0.64 | 0.52 | 0.33 | 0.38 | 0.10 | 0.02 | 0.05 | 0.05 |
| 25 | 0.15 | 0.10 | 0.48 | 0.35 | 0.58 | 0.52 | 0.31 | 0.21 | 0.07 | 0.01 | 0.04 | 0.04 |
| 26 | 0.20 | 0.09 | 0.44 | 0.35 | 0.56 | 0.51 | 0.32 | 0.18 | 0.21 | 0.01 | 0.03 | 0.04 |
| 27 | 0.20 | 0.09 | 0.43 | 0.35 | 0.70 | 0.50 | 0.34 | 0.17 | 0.11 | 0.04 | 0.03 | 0.07 |
| 28 | 0.17 | 0.15 | 0.39 | 0.37 | 0.76 | 0.49 | 0.27 | 0.14 | 0.11 | 0.07 | 0.02 | 0.20 |
| 29 | 0.51 | 0.16 | 0.39 | 0.43 | 0.67 | 0.48 | 0.26 | 0.12 | 0.10 | 0.05 | 0.03 | 0.08 |
| 30 | 0.16 | 0.13 | 0.41 | 0.66 | --- | 0.49 | 0.26 | 0.31 | 0.07 | 0.03 | 6.4 | 0.06 |
| 31 | 0.09 | --- | 0.39 | 0.86 | --- | 0.57 | --- | 0.21 | --- | 0.01 | 1.2 | --- |
| TOTAL | 3.82 | 5.35 | 28.65 | 12.62 | 36.65 | 18.75 | 17.71 | 19.43 | 4.06 | 0.68 | 10.98 | 10.58 |
| MEAN | 0.12 | 0.18 | 0.92 | 0.41 | 1.26 | 0.60 | 0.59 | 0.63 | 0.14 | 0.02 | 0.35 | 0.35 |
| MAX | 0.51 | 0.79 | 7.2 | 0.86 | 5.7 | 1.1 | 2.0 | 6.6 | 0.30 | 0.12 | 6.4 | 4.2 |
| MIN | 0.01 | 0.06 | 0.06 | 0.33 | 0.56 | 0.48 | 0.26 | 0.12 | 0.06 | 0.00 | 0.01 | 0.02 |
| CFSM | 0.11 | 0.16 | 0.81 | 0.36 | 1.11 | 0.53 | 0.52 | 0.55 | 0.12 | 0.02 | 0.31 | 0.31 |
| IN. | 0.12 | 0.17 | 0.93 | 0.41 | 1.20 | 0.61 | 0.58 | 0.63 | 0.13 | 0.02 | 0.36 | 0.35 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2004,[@] BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| MEAN | 0.62 | 0.44 | 0.87 | 1.61 | 2.10 | 2.40 | 1.54 | 0.69 | 0.50 | 0.25 | 0.15 | 1.27 |
| MAX | 4.01 | 1.27 | 3.26 | 3.17 | 5.41 | 8.30 | 5.04 | 2.20 | 4.07 | 1.26 | 0.50 | 8.60 |
| (WY) | (2003) | (1996) | (1990) | (1998) | (1998) | (1998) | (2003) | (1989) | (1995) | (1989) | (1989) | (1996) |
| MIN | 0.01 | 0.06 | 0.01 | 0.16 | 0.27 | 0.36 | 0.06 | 0.01 | 0.05 | 0.00 | 0.00 | 0.00 |
| (WY) | (2002) | (2001) | (1989) | (2001) | (2002) | (2002) | (1995) | (2002) | (1988) | (1988) | (1988) | (1990) |

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| SUMMARY STATISTICS | FOR 2003 CALENDAR YEAR | | FOR 2004 WATER YEAR | | WATER YEARS 1987 - 2004 [@] | |
|--------------------------|------------------------|--------|---------------------|--------|--------------------------------------|--------------|
| ANNUAL TOTAL | 530.08 | | 169.28 | | 1.06 | |
| ANNUAL MEAN | 1.45 | | 0.46 | | 0.16 | |
| HIGHEST ANNUAL MEAN | | | | | 2.00 | 2003 |
| LOWEST ANNUAL MEAN | | | | | 0.16 | 2002 |
| HIGHEST DAILY MEAN | 50 | Apr 9 | 7.2 | Dec 14 | 225 | Sep 6, 1996 |
| LOWEST DAILY MEAN | 0.01 | Sep 1 | 0.00 | Jul 7 | 0.00 | Jun 22, 1988 |
| ANNUAL SEVEN-DAY MINIMUM | 0.01 | Sep 26 | 0.00 | Jul 7 | 0.00 | Jul 2, 1988 |
| MAXIMUM PEAK FLOW | | | 35 | Aug 30 | 1410* | Sep 6, 1996 |
| MAXIMUM PEAK STAGE | | | 3.40 | Aug 30 | 7.77* | Sep 6, 1996 |
| INSTANTANEOUS LOW FLOW | | | 0.00* | Oct 1 | 0.00* | Jun 15, 1988 |
| ANNUAL RUNOFF (CFSM) | 1.27 | | 0.406 | | 0.930 | |
| ANNUAL RUNOFF (INCHES) | 17.30 | | 5.52 | | 12.63 | |
| 10 PERCENT EXCEEDS | 2.9 | | 0.91 | | 1.9 | |
| 50 PERCENT EXCEEDS | 0.39 | | 0.22 | | 0.21 | |
| 90 PERCENT EXCEEDS | 0.06 | | 0.03 | | 0.00 | |

[@] See PERIOD OF RECORD.

* See REMARKS.

