# 01572190 SWATARA CREEK NEAR INWOOD, PA

Lower Susquehanna Basin
Lower Susquehanna-Swatara Subbasin

LOCATION.--Lat 40°28′45″, long 76°31′52″ referenced to North American Datum of 1927, Lebanon County, PA, Hydrologic Unit 02050305, on right bank 20 ft downstream from single-span steel-truss bridge on Appalachian Trail, 0.4 mi upstream from steel-truss bridge at Inwood, 0.5 mi downstream from Trout Run, and 2.0 mi north of Lickdale.

DRAINAGE AREA.--167 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1988 to January 1991, October 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 426.13 ft above North American Vertical Datum of 1988. Satellite telemetry at station.

COOPERATION.--Station established and maintained by the U.S. Geological Survey in cooperation with the Pennsylvania Department of Environmental Protection. Records of water diversion provided by Pennsylvania American Water Company.

REMARKS.--Record good except those for period Oct 1-27 and those for estimated daily discharges, which are poor. The Pennsylvania American Water Company diverts water upstream from station for municipal supply of city of Lebanon. Diversion for the year was equivalent to a mean daily discharge of 8.4 $ft^3/s$. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 $ft^3/s$ and (or) maximum (*):

| Date | Time | Discharge ($ft^3/s$) | Gage height (ft) |
|---|---|---|---|
| Oct 28 | 1900 | *5,000 | *10.93 |
| Nov 17 | 0245 | 4,940 | 10.87 |
| Mar 2 | 1100 | 4,400 | 10.27 |
| Apr 16 | 1030 | 2,510 | 7.90 |

Minimum discharge, 22 $ft^3/s$, Sept. 24, 25, gage height, 1.79 ft.

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**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**
**DAILY MEAN VALUES**
[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 98 | 541 | 318 | 866 | e125 | 143 | 385 | 264 | 114 | 43 | 36 | 35 |
| 2 | 88 | 706 | 423 | 809 | e125 | 2,420 | 420 | 365 | 95 | 40 | 31 | 32 |
| 3 | 79 | 552 | 316 | 636 | e120 | 1,840 | 361 | 297 | 83 | 38 | 28 | 30 |
| 4 | 78 | 452 | 283 | 547 | e115 | 980 | 332 | 255 | 97 | 38 | 26 | 29 |
| 5 | 328 | 398 | 260 | 498 | e105 | 669 | 315 | 236 | 89 | 83 | 24 | 29 |
| 6 | 221 | 359 | 247 | 579 | e100 | 501 | 279 | 220 | 77 | 80 | 48 | 28 |
| 7 | 166 | 327 | 238 | 512 | e100 | 413 | 258 | 209 | 70 | 55 | 39 | 28 |
| 8 | 142 | 629 | 215 | 1,160 | e100 | 353 | 241 | 200 | 68 | 46 | 49 | 28 |
| 9 | 129 | 783 | 200 | 1,130 | e105 | 314 | 225 | 198 | 67 | 43 | 46 | 26 |
| 10 | 121 | 583 | 194 | 862 | e105 | 296 | 211 | 189 | 61 | 40 | 53 | 49 |
| 11 | 118 | 475 | 191 | 699 | e110 | 457 | 200 | 183 | 60 | 37 | 45 | 50 |
| 12 | 119 | 435 | 216 | 592 | 114 | 481 | 366 | 169 | 62 | 37 | 35 | 51 |
| 13 | 113 | 492 | 313 | 507 | 118 | 500 | 355 | 157 | 76 | 34 | 31 | 38 |
| 14 | 107 | 469 | 225 | 449 | e115 | 602 | 275 | 143 | 67 | 32 | 27 | 34 |
| 15 | 105 | 419 | 181 | 416 | e110 | 797 | 1,370 | 139 | 61 | 30 | 26 | 31 |
| 16 | 103 | 1,370 | 170 | 385 | e100 | 766 | 2,360 | 137 | 59 | 31 | 26 | 29 |
| 17 | 149 | 3,550 | 152 | 332 | e90 | 663 | 2,030 | 138 | 56 | 29 | 27 | 27 |
| 18 | 408 | 1,490 | 148 | 301 | e90 | 554 | 1,330 | 127 | 53 | 29 | 24 | 27 |
| 19 | 261 | 1,010 | 142 | 291 | e100 | 480 | 999 | 120 | 54 | 31 | 24 | 27 |
| 20 | 333 | 772 | 134 | 268 | e110 | 475 | 785 | 116 | 90 | 36 | 35 | 26 |
| 21 | 406 | 615 | 133 | 234 | e120 | 561 | 641 | 113 | 69 | 31 | 150 | 26 |
| 22 | 319 | 520 | 147 | 228 | e105 | 631 | 548 | 102 | 56 | 28 | 238 | 25 |
| 23 | 293 | 655 | 690 | 218 | e100 | 1,580 | 482 | 100 | 51 | 26 | 111 | 24 |
| 24 | 252 | 589 | 556 | 209 | e100 | 1,500 | 429 | 95 | 48 | 28 | 76 | 23 |
| 25 | 224 | 479 | 441 | 203 | e110 | 1,170 | 395 | 92 | 46 | 29 | 63 | 22 |
| 26 | 201 | 433 | 695 | 186 | e115 | 905 | 454 | 89 | 46 | 27 | 83 | 23 |
| 27 | 188 | 396 | 614 | e170 | e125 | 762 | 409 | 134 | 45 | 28 | 66 | 38 |
| 28 | 2,860 | 368 | 503 | 182 | e135 | 637 | 367 | 118 | 46 | 30 | 52 | 47 |
| 29 | 2,110 | 333 | 421 | 175 | --- | 531 | 320 | 95 | 55 | 31 | 46 | 35 |
| 30 | 975 | 314 | 376 | e140 | --- | 464 | 289 | 83 | 47 | 54 | 42 | 30 |
| 31 | 691 | --- | 337 | e130 | --- | 419 | --- | 78 | --- | 62 | 38 | --- |
| Total | 11,785 | 20,514 | 9,479 | 13,914 | 3,067 | 22,864 | 17,431 | 4,961 | 1,968 | 1,206 | 1,645 | 947 |
| Mean | 380 | 684 | 306 | 449 | 110 | 738 | 581 | 160 | 65.6 | 38.9 | 53.1 | 31.6 |
| Max | 2,860 | 3,550 | 695 | 1,160 | 135 | 2,420 | 2,360 | 365 | 114 | 83 | 238 | 51 |
| Min | 78 | 314 | 133 | 130 | 90 | 143 | 200 | 78 | 45 | 26 | 24 | 22 |
| Cfsm | 2.28 | 4.09 | 1.83 | 2.69 | 0.66 | 4.42 | 3.48 | 0.96 | 0.39 | 0.23 | 0.32 | 0.19 |
| In. | 2.63 | 4.57 | 2.11 | 3.10 | 0.68 | 5.09 | 3.88 | 1.11 | 0.44 | 0.27 | 0.37 | 0.21 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2007, BY WATER YEAR (WY)**

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 215 | 320 | 406 | 423 | 329 | 558 | 496 | 337 | 307 | 172 | 123 | 163 |
| Max | 538 | 684 | 1,098 | 987 | 832 | 1,263 | 1,325 | 1,184 | 1,007 | 576 | 512 | 996 |
| (WY) | (1997) | (2007) | (1997) | (1996) | (1998) | (1994) | (1993) | (1989) | (2003) | (1989) | (2003) | (2004) |
| Min | 35.1 | 40.8 | 35.8 | 94.6 | 96.4 | 139 | 165 | 123 | 58.3 | 26.2 | 31.5 | 31.0 |
| (WY) | (2002) | (2002) | (1999) | (2002) | (2002) | (2006) | (1995) | (1999) | (1999) | (1999) | (1999) | (2005) |

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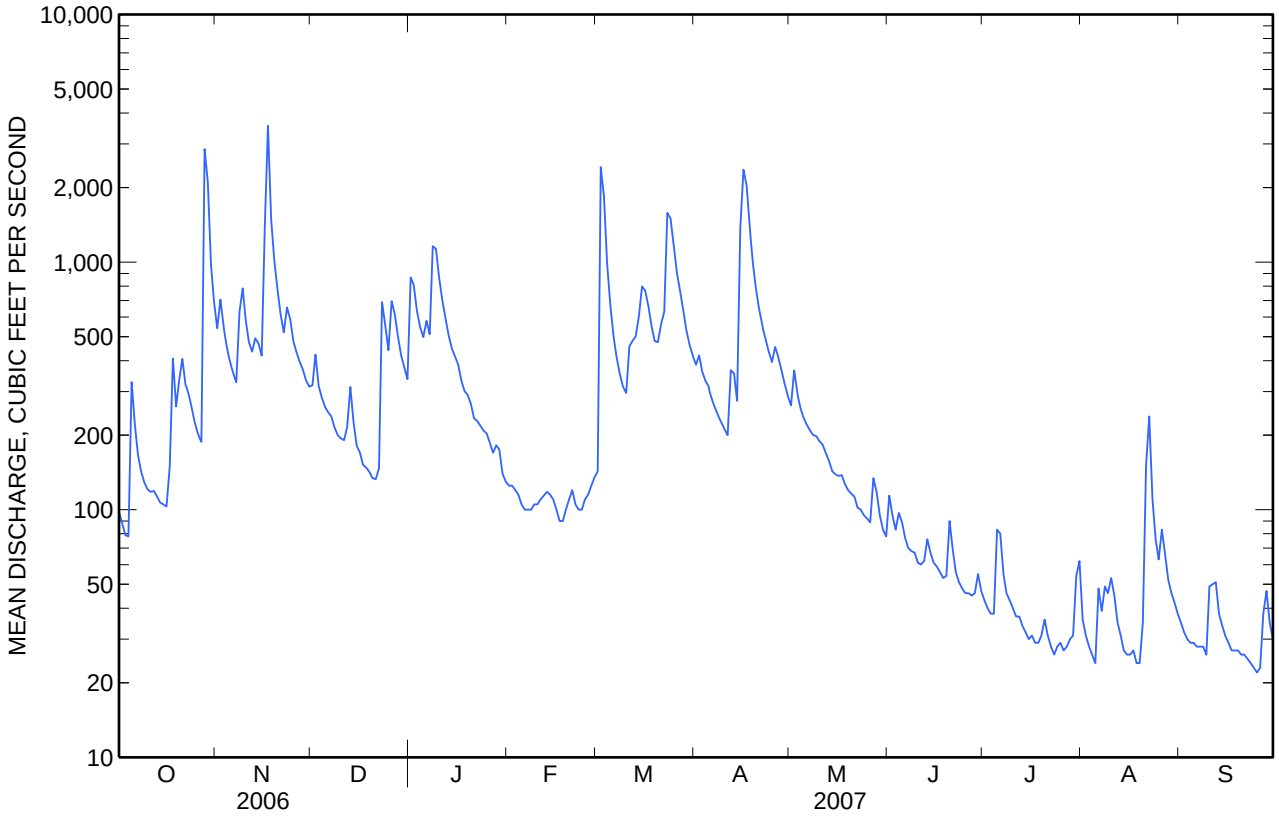
**SUMMARY STATISTICS**

| | Calendar Year 2006 | | Water Year 2007 | | Water Years 1989 - 2007 | |
|---|---|---|---|---|---|---|
| **Annual total** | 142,470 | | 109,781 | | | |
| **Annual mean** | 390 | | 301 | | 318 | |
| **Highest annual mean** | | | | | 459 | 2003 |
| **Lowest annual mean** | | | | | 140 | 2002 |
| **Highest daily mean** | 11,600 | Jun 28 | 3,550 | Nov 17 | 11,600 | Jun 28, 2006 |
| **Lowest daily mean** | 47 | Aug 23 | 22 | Sep 25 | 17 | Aug 2, 1999[a] |
| **Annual seven-day minimum** | 49 | Aug 20 | 24 | Sep 20 | 17 | Aug 2, 1999 |
| **Maximum peak flow** | | | 5,000 | Oct 28 | [b]17,300 | Sep 18, 2004 |
| **Maximum peak stage** | | | 10.93 | Oct 28 | 19.67 | Sep 18, 2004 |
| **Instantaneous low flow** | | | 22 | Sep 24[c] | 17 | Aug 2, 1999[d] |
| **Annual runoff (cfsm)** | 2.34 | | 1.80 | | 1.90 | |
| **Annual runoff (inches)** | 31.74 | | 24.45 | | 25.85 | |
| **10 percent exceeds** | 699 | | 665 | | 690 | |
| **50 percent exceeds** | 188 | | 142 | | 175 | |
| **90 percent exceeds** | 80 | | 30 | | 44 | |

[a] Also Aug 3-8, 12, 13, 1999.
[b] From rating curve extended above 14,500 ft³/s.
[c] Also Sep 25.
[d] Also Aug 3-8, 12,13, Sep 5, 1999.