

SWATARA CREEK BASIN

01573000 SWATARA CREEK AT HARPER TAVERN, PA

LOCATION.--Lat 40°24'09", long 76°34'39", Lebanon County, Hydrologic Unit 02050305, on left bank 100 ft downstream from bridge on State Highway 934 at Harper Tavern, 6.0 mi northwest of Annville, and 8.5 mi downstream from Little Swatara Creek.

DRAINAGE AREA.--337 mi².

PERIOD OF RECORD.--January 1919 to current year. Prior to October 1927, published as "at Harpers".

REVISED RECORDS.--WSP 1202: 1948. WSP 1302: 1920(M), 1921, 1924-25(M), 1927-28(M), 1930(M). WSP 1903: Drainage area. WDR PA-72-1: 1889 (M). WDR PA-85-2: 1984(P)(m).

GAGE.--Water-stage recorder. Datum of gage is 356.68 ft above National Geodetic Vertical Datum of 1929. Prior to July 16, 1931, nonrecording gage at same site and datum.

REMARKS.--Records fair except 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 10.8 ft³/s. Several measurements of water temperature were made during the year. Satellite and landline telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1889, reached a stage of 25.6 ft, from floodmark, discharge, about 88,000 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,800 ft³/s and maximum (*):

| Date | Time | Discharge ft ³ /s | Gage Height (ft) | Date | Time | Discharge ft ³ /s | Gage Height (ft) |
|---------|------|---------------------------------|---------------------|----------|------|---------------------------------|---------------------|
| Jan. 2 | 0630 | 4,800 | 7.00 | June 21 | 1800 | 8,960 | 10.28 |
| Mar. 21 | 1000 | *9,120 | *10.39 | Aug. 6 | 0530 | 5,300 | 7.43 |
| June 8 | 0000 | 5,690 | 7.75 | Aug. 11 | 1815 | 7,710 | 9.40 |
| June 13 | 1045 | 5,770 | 7.82 | Sept. 23 | 1830 | 6,940 | 8.81 |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 147 | 860 | 417 | 1450 | e310 | 439 | 1110 | 445 | 2230 | 468 | 236 | 202 |
| 2 | 129 | 660 | 355 | 4050 | e320 | 869 | 1040 | 532 | 1980 | 407 | 258 | 276 |
| 3 | 115 | 521 | e260 | 2560 | e300 | 2100 | 904 | 489 | 1430 | 372 | 236 | 449 |
| 4 | 118 | 436 | e210 | 2090 | e480 | 761 | 789 | 417 | 2930 | 336 | 1040 | 718 |
| 5 | 140 | 378 | e215 | 1540 | e650 | 645 | 823 | 380 | 2490 | 299 | 2160 | 443 |
| 6 | 128 | 688 | e230 | 1250 | e310 | 1940 | 748 | 369 | 1830 | 280 | 4340 | 303 |
| 7 | 93 | 580 | e215 | 1070 | e300 | 1160 | 646 | 364 | 2840 | 297 | 1840 | 246 |
| 8 | 76 | 421 | e200 | 964 | e270 | 736 | 670 | 448 | 4060 | 327 | 1070 | 216 |
| 9 | 69 | 348 | e185 | 1120 | e230 | 1360 | 835 | 453 | 2480 | 261 | 993 | 199 |
| 10 | 82 | 328 | e170 | 1210 | e250 | 1400 | 1010 | 397 | 1850 | 253 | 1450 | 180 |
| 11 | 874 | 332 | e500 | 969 | e210 | 705 | 1900 | 371 | 1460 | 269 | 3610 | 170 |
| 12 | 2150 | 451 | 3670 | 770 | e200 | 586 | 3340 | 365 | 1850 | 255 | 3660 | 155 |
| 13 | 1030 | 965 | 2110 | 672 | e190 | 1240 | 2180 | 335 | 4550 | 206 | 1760 | 249 |
| 14 | 637 | 641 | 3840 | 603 | e170 | 2480 | 1670 | 305 | 2280 | 181 | 1210 | 309 |
| 15 | 430 | 544 | 3280 | e500 | e180 | 1590 | 1370 | 283 | 1510 | 172 | 865 | 273 |
| 16 | 831 | 560 | 2140 | e450 | e160 | 1750 | 1180 | 290 | 1090 | 160 | 787 | 814 |
| 17 | 1780 | 1840 | 1480 | e400 | e180 | 2150 | 1000 | 341 | 849 | 152 | 782 | 480 |
| 18 | 924 | 2510 | 1090 | e350 | e200 | 2520 | 882 | 309 | 1030 | 157 | 566 | 325 |
| 19 | 612 | 1650 | 911 | e340 | e230 | 2300 | 838 | 287 | 920 | 249 | 447 | 680 |
| 20 | 489 | 1200 | 1750 | e280 | e260 | 2920 | 726 | 259 | 1190 | 161 | 384 | 796 |
| 21 | 390 | 985 | 1930 | e310 | e230 | 7780 | 660 | 261 | 7480 | 143 | 343 | 518 |
| 22 | 321 | 1180 | 1320 | e280 | e500 | 3850 | 682 | 264 | 4710 | 416 | 311 | 412 |
| 23 | 280 | 1270 | 1080 | e230 | e2000 | 2480 | 614 | 247 | 2900 | 1040 | 286 | 4220 |
| 24 | 248 | 906 | 884 | e200 | e250 | 1830 | 527 | 616 | 1870 | 3440 | 257 | 3180 |
| 25 | 223 | 764 | 879 | e220 | 1150 | 1430 | 480 | 1050 | 1370 | 958 | 229 | 1790 |
| 26 | 809 | 661 | 927 | e240 | e700 | 1210 | 693 | 2000 | 1060 | 545 | 218 | 1360 |
| 27 | 724 | 634 | 743 | e220 | e500 | 1320 | 817 | 1920 | 863 | 405 | 231 | 1070 |
| 28 | 487 | 577 | 645 | e240 | e480 | 976 | 570 | 1390 | 709 | 346 | 231 | 1080 |
| 29 | 427 | 490 | 601 | e260 | --- | 935 | 490 | 1230 | 598 | 298 | 193 | 922 |
| 30 | 1030 | 456 | 574 | e270 | --- | 1380 | 479 | 960 | 530 | 246 | 205 | 659 |
| 31 | 1390 | --- | 562 | e300 | --- | 1420 | --- | 857 | --- | 219 | 242 | --- |
| TOTAL | 17183 | 23836 | 33373 | 25408 | 13550 | 54262 | 29673 | 18234 | 62939 | 13318 | 30440 | 22694 |
| MEAN | 554 | 795 | 1077 | 820 | 484 | 1750 | 989 | 588 | 2098 | 430 | 982 | 756 |
| MAX | 2150 | 2510 | 3840 | 4050 | 2590 | 7780 | 3340 | 2000 | 7480 | 3440 | 4340 | 4220 |
| MIN | 69 | 328 | 170 | 200 | 160 | 439 | 479 | 247 | 530 | 143 | 193 | 155 |
| CFSM | 1.64 | 2.36 | 3.19 | 2.43 | 1.44 | 5.19 | 2.94 | 1.75 | 6.23 | 1.27 | 2.91 | 2.24 |
| IN. | 1.90 | 2.63 | 3.68 | 2.80 | 1.50 | 5.99 | 3.28 | 2.01 | 6.95 | 1.47 | 3.36 | 2.51 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2003, BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 329 | 522 | 699 | 679 | 752 | 1076 | 880 | 676 | 460 | 303 | 247 | 265 |
| MAX | 2104 | 1752 | 2168 | 2538 | 2097 | 3096 | 2466 | 2189 | 3952 | 1472 | 1772 | 2000 |
| (WY) | 1977 | 1927 | 1997 | 1996 | 1925 | 1994 | 1983 | 1989 | 1972 | 1945 | 1933 | 1975 |
| MIN | 28.1 | 35.9 | 60.0 | 42.1 | 162 | 358 | 297 | 154 | 80.2 | 30.8 | 22.0 | 15.9 |
| (WY) | 1942 | 1932 | 1931 | 1981 | 1980 | 1985 | 1988 | 1926 | 1965 | 1966 | 1966 | 1932 |

e Estimated.

SWATARA CREEK BASIN

01573000 SWATARA CREEK AT HARPER TAVERN, PA--Continued

| SUMMARY STATISTICS | FOR 2002 CALENDAR YEAR | | FOR 2003 WATER YEAR | | WATER YEARS 1919 - 2003 | |
|--------------------------|------------------------|--------|---------------------|----------|-------------------------|-------------|
| ANNUAL TOTAL | 163066 | | 344910 | | | |
| ANNUAL MEAN | 447 | | 945 | | 572 | |
| HIGHEST ANNUAL MEAN | | | | | 948 | 1972 |
| LOWEST ANNUAL MEAN | | | | | 201 | 1931 |
| HIGHEST DAILY MEAN | 3840 | Dec 14 | 7780 | Mar 21 | 42500 | Jun 23 1972 |
| LOWEST DAILY MEAN | 13 | Sep 15 | 69 | Oct 9 | 6.6 | Aug 21 1965 |
| ANNUAL SEVEN-DAY MINIMUM | 16 | Sep 9 | 101 | Oct 4 | 10 | Sep 19 1932 |
| MAXIMUM PEAK FLOW | | | 9120 | Mar 21 | a 66700 | Jun 23 1972 |
| MAXIMUM PEAK STAGE | | | 10.39 | Mar 21 | b 23.72 | Jun 23 1972 |
| INSTANTANEOUS LOW FLOW | | | 67 | Oct 9,10 | 6.0 | Aug 21 1965 |
| ANNUAL RUNOFF (CFSM) | 1.33 | | 2.80 | | 1.70 | |
| ANNUAL RUNOFF (INCHES) | 18.00 | | 38.07 | | 23.08 | |
| 10 PERCENT EXCEEDS | 1060 | | 2140 | | 1290 | |
| 50 PERCENT EXCEEDS | 234 | | 603 | | 315 | |
| 90 PERCENT EXCEEDS | 33 | | 208 | | 65 | |

a From rating curve extended above 25,000 ft³/s on basis of slope-area measurement of peak flow.
b From floodmark in gage.

