

LEHIGH RIVER BASIN

01454700 LEHIGH RIVER AT GLENDON, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 40°40'09", long 75°14'12", Northampton County, Hydrologic Unit 02040106, on right bank 140 ft upstream from highway bridge in Hugh Moore Parkway at Glendon, 2.3 mi upstream from mouth, and 2.0 mi southwest of Easton.

DRAINAGE AREA.--1,359 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR PA-72-1: 1971(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 164.30 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Francis E. Walter Reservoir (station 01447780), Penn Forest Reservoir (station 01449400), Wild Creek Reservoir (station 01449700), and since February 1971, by Beltzville Lake (station 01449790) about 60 mi upstream. Flows above 10,000 ft³/s may be affected by backwater from the Delaware River. Several measurements of water temperature were made during the year. Satellite telemetry at station.

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 | 889 | 2630 | 2820 | 3940 | 1660 | 2270 | 6500 | 2120 | 8790 | 3150 | 1570 | 1510 |
| 2 | 869 | 2370 | 2680 | 6780 | 1670 | 2650 | 5950 | 2100 | 8840 | 2840 | 1640 | 2430 |
| 3 | 832 | 2160 | 2580 | 7360 | 1650 | 3980 | 5750 | 1970 | 10300 | 2690 | 1670 | 2940 |
| 4 | 851 | 2070 | 2080 | 6030 | 1790 | 2820 | 5370 | 1850 | 11900 | 2530 | 2400 | 3380 |
| 5 | 877 | 1940 | 2070 | 5250 | 2360 | 2850 | 4980 | 1730 | 10300 | 2410 | 5050 | 2860 |
| 6 | 1180 | 2200 | 2070 | 4880 | 2080 | 3810 | 4660 | 1750 | 7530 | 2180 | 7720 | 2300 |
| 7 | 760 | 2200 | 1910 | 4720 | 2150 | 3120 | 4400 | 1730 | 6470 | 2050 | 7460 | 1990 |
| 8 | 661 | 1990 | 1850 | 4250 | 1820 | 2710 | 3880 | 1830 | 7530 | 2200 | 5520 | 1760 |
| 9 | 640 | 2000 | 1820 | 3720 | 1610 | 3060 | 3920 | 1780 | 5790 | 2070 | 4270 | 1550 |
| 10 | 643 | 2100 | 1580 | 3590 | 1780 | 3690 | 4130 | 1820 | 7020 | 1990 | 4500 | 1370 |
| 11 | 2900 | 2090 | 1990 | 3370 | 1500 | 2790 | 4460 | 1830 | 6300 | 1910 | 4530 | 1320 |
| 12 | 7400 | 2270 | 5280 | 3140 | 1350 | 2580 | 5220 | 2020 | 6550 | 1950 | 5910 | 1280 |
| 13 | 4340 | 2930 | 5700 | 3000 | 1250 | 2910 | 4890 | 1990 | 8460 | 1940 | 5950 | 1470 |
| 14 | 3410 | 2910 | 7280 | 2760 | 1310 | 3850 | 4530 | 1810 | 7510 | 1750 | 4910 | 1650 |
| 15 | 3300 | 2790 | 7770 | 2540 | 1440 | 3280 | 4180 | 1740 | 6370 | 1580 | 3450 | 4620 |
| 16 | 4530 | 2960 | 6630 | 2200 | 1290 | 3640 | 3750 | 1670 | 5850 | 1480 | 3110 | 9270 |
| 17 | 9190 | 5480 | 5850 | 2260 | e1100 | 4670 | 3470 | 1650 | 5580 | 1390 | 3740 | 8940 |
| 18 | 7140 | 6670 | 5040 | e1870 | e1500 | 7070 | 3370 | 1720 | 5300 | 1330 | 3890 | 5960 |
| 19 | 4810 | 6470 | 4220 | 1950 | e1700 | 8900 | 3220 | 1580 | 5080 | 1590 | 2980 | 5810 |
| 20 | 3970 | 7460 | 4720 | 2120 | e2000 | 8940 | 3030 | 1470 | 5630 | 1400 | 2420 | 5160 |
| 21 | 3620 | 4930 | 5680 | 1920 | 2070 | 14500 | 2900 | 1510 | 23000 | 1500 | 2230 | 4620 |
| 22 | 3210 | 4470 | 5030 | 1830 | 2630 | 13700 | 2810 | 1540 | 13200 | 7270 | 2090 | 4490 |
| 23 | 2550 | 4470 | 4750 | e1720 | 5260 | 11300 | 2700 | 1480 | 11400 | 5030 | 1940 | 16200 |
| 24 | 2100 | 3970 | 5450 | e1680 | 5040 | 9680 | 2540 | 1590 | 13300 | 4370 | 1790 | 16400 |
| 25 | 1910 | 3690 | 5190 | 1730 | 3750 | 9200 | 2300 | 1750 | 11700 | 3410 | 1720 | 12500 |
| 26 | 2910 | 3370 | 5060 | 1740 | 3090 | 8050 | 2440 | 3150 | 10500 | 2640 | 1620 | 10800 |
| 27 | 2900 | 3350 | 4030 | 1630 | 2540 | 7830 | 2680 | 3310 | 9780 | 2280 | 1560 | 7980 |
| 28 | 2400 | 3180 | 3480 | 1370 | 2330 | 6600 | 2380 | 3260 | 6300 | 2290 | 1490 | 8460 |
| 29 | 2580 | 3010 | 3340 | 1620 | --- | 5990 | 2300 | 3510 | 4620 | 1870 | 1390 | 7980 |
| 30 | 2790 | 2930 | 3220 | 1660 | --- | 7230 | 2270 | 2990 | 4160 | 1770 | 1540 | 6510 |
| 31 | 2930 | --- | 3150 | 1650 | --- | 6850 | --- | 2690 | --- | 1650 | 1580 | --- |
| TOTAL | 89092 | 101060 | 124320 | 94280 | 59720 | 180520 | 114980 | 62940 | 255060 | 74510 | 101640 | 163510 |
| MEAN | 2874 | 3369 | 4010 | 3041 | 2133 | 5823 | 3833 | 2030 | 8502 | 2404 | 3279 | 5450 |
| MAX | 9190 | 7460 | 7770 | 7360 | 5260 | 14500 | 6500 | 3510 | 23000 | 7270 | 7720 | 16400 |
| MIN | 640 | 1940 | 1580 | 1370 | 1100 | 2270 | 2270 | 1470 | 4160 | 1330 | 1390 | 1280 |
| CFM | 2.11 | 2.48 | 2.95 | 2.24 | 1.57 | 4.28 | 2.82 | 1.49 | 6.26 | 1.77 | 2.41 | 4.01 |
| IN. | 2.44 | 2.77 | 3.40 | 2.58 | 1.63 | 4.94 | 3.15 | 1.72 | 6.98 | 2.04 | 2.78 | 4.48 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2003, BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|------|------|------|------|------|------|------|-------|------|------|------|------|------|
| MEAN | 1946 | 2626 | 3371 | 3036 | 3172 | 4300 | 4391 | 3381 | 2693 | 1827 | 1507 | 1736 |
| MAX | 5272 | 5438 | 9593 | 8414 | 5385 | 8344 | 10810 | 8542 | 8502 | 4641 | 4179 | 7920 |
| (WY) | 1977 | 1971 | 1997 | 1996 | 1976 | 1977 | 1993 | 1989 | 2003 | 1984 | 1969 | 1987 |
| MIN | 771 | 704 | 633 | 405 | 1278 | 1805 | 1639 | 1502 | 906 | 630 | 607 | 660 |
| (WY) | 1981 | 2002 | 1981 | 1981 | 1980 | 1981 | 1985 | 1995 | 1999 | 1999 | 1999 | 1983 |

e Estimated.

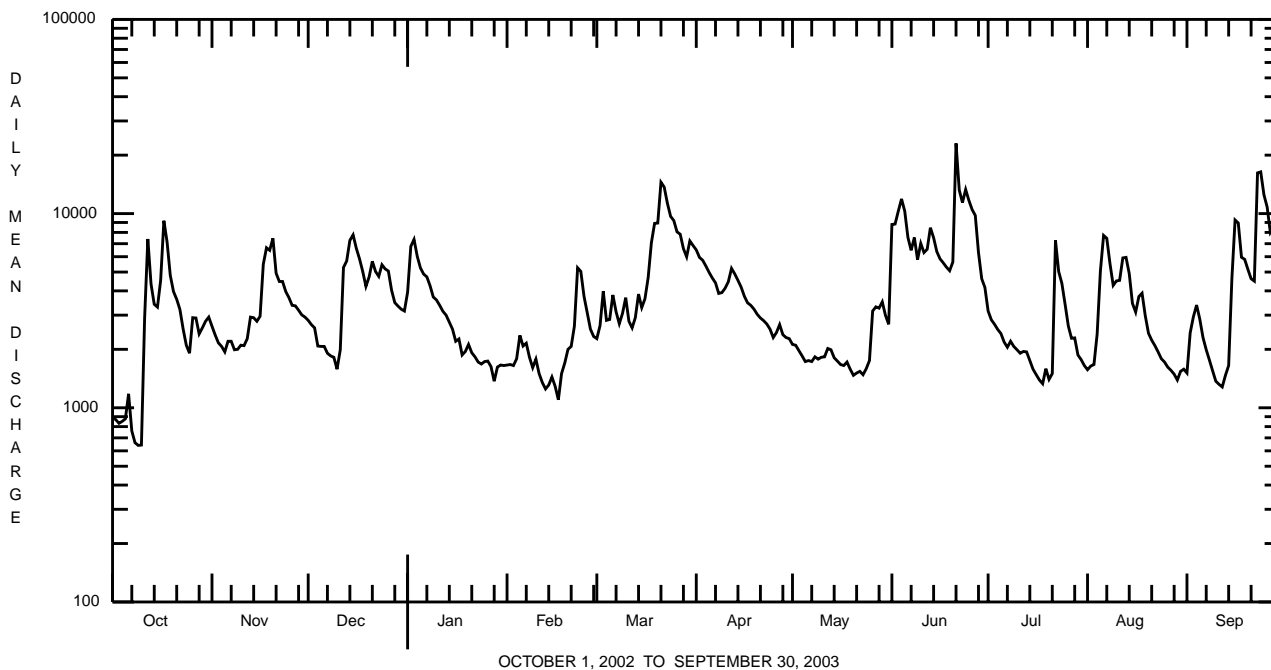
LEHIGH RIVER BASIN

01454700 LEHIGH RIVER AT GLENDON, PA--Continued

| SUMMARY STATISTICS | FOR 2002 CALENDAR YEAR | | FOR 2003 WATER YEAR | | WATER YEARS 1967 - 2003 | |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|--------------------------|
| ANNUAL TOTAL | 821272 | | 1421632 | | | |
| ANNUAL MEAN | 2250 | | 3895 | | 2829 | |
| HIGHEST ANNUAL MEAN | | | | | 3997 | 1984 |
| LOWEST ANNUAL MEAN | | | | | 1594 | 1985 |
| HIGHEST DAILY MEAN | 9190 | Oct 17 | 23000 | Jun 21 | 44300 | Jun 23 1972 |
| LOWEST DAILY MEAN | 472 | Aug 28 | 640 | Oct 9 | 330 | Jan 31 1981 ^a |
| ANNUAL SEVEN-DAY MINIMUM | 525 | Sep 5 | 802 | Oct 4 | 349 | Jan 26 1981 |
| MAXIMUM PEAK FLOW | | | 28000 | Sep 23 | ^b 60600 | Jun 23 1972 |
| MAXIMUM PEAK STAGE | | | 17.71 | Sep 23 | 24.86 | Jun 23 1972 |
| ANNUAL RUNOFF (CFSM) | 1.66 | | 2.87 | | 2.08 | |
| ANNUAL RUNOFF (INCHES) | 22.48 | | 38.91 | | 28.29 | |
| 10 PERCENT EXCEEDS | 4770 | | 7520 | | 5580 | |
| 50 PERCENT EXCEEDS | 1830 | | 2910 | | 2060 | |
| 90 PERCENT EXCEEDS | 676 | | 1550 | | 858 | |

^a Also Feb. 1, 1981.

^b From rating curve extended above 36,000 ft³/s.



LEHIGH RIVER BASIN

01454700 LEHIGH RIVER AT GLENDON, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 430-470.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| Date | Time | Agency collecting sample, code (00027) | Agency analyzing sample, code (00028) | Instantaneous discharge, cfs (00061) | Sampling method, code (82398) | Dissolved oxygen, mg/L (00300) | pH, water, unfltrd field, std units (00400) | Specific conductance, wat unfltrd 25 degC (00095) | Temperature, water, deg C (00010) | Hardness, water, mg/L as CaCO3 (00900) | Calcium water, unfltrd recover -able, mg/L (00916) | Magnesium, water, unfltrd recover -able, mg/L (00927) | ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (00417) |
|----------------|------|--|---------------------------------------|--------------------------------------|-------------------------------|--------------------------------|---|---|-----------------------------------|--|--|---|---|
| NOV 2002 19... | 1220 | 1028 | 9813 | 6750 | 40 | 12.8 | 7.6 | 152 | 7.1 | 50 | 12.7 | 4.5 | 28 |
| JAN 2003 27... | 1230 | 1028 | 9813 | 1550 | 40 | 15.4 | 7.7 | 281 | .7 | 91 | 22.4 | 8.6 | 56 |
| MAR 19... | 1040 | 1028 | 9813 | 9280 | 40 | 13.0 | 7.3 | 151 | 6.3 | 39 | 10.0 | 3.5 | 19 |
| MAY 28... | 1110 | 1028 | 9813 | 3250 | 40 | 10.5 | 7.6 | 227 | 14.2 | 75 | 19.7 | 6.1 | 46 |
| JUL 10... | 1200 | 1028 | 9813 | 1960 | 40 | 8.6 | 7.8 | 274 | 21.1 | 100 | 24.8 | 10.4 | 64 |
| SEP 24... | 1300 | 1028 | 9813 | 14600 | 40 | 10.3 | 7.3 | 132 | 15.9 | 54 | 14.8 | 4.2 | 29 |

| Date | Fluoride, water, unfltrd mg/L (00951) | Sulfate water, fltrd, mg/L (00945) | Residue on evap. at 105degC wat flt mg/L (00515) | Residue total at 105 deg. C, suspended, mg/L (00530) | Ammonia water, unfltrd mg/L as N (00610) | Nitrate water, unfltrd mg/L as N (00620) | Nitrite water, unfltrd mg/L as N (00615) | Orthophosphate, water, unfltrd mg/L as P (70507) | Phosphorus, water, unfltrd mg/L (00665) | Total nitrogen, water, unfltrd mg/L (00600) | Organic carbon, water, unfltrd mg/L (00680) | Aluminum, water, unfltrd recover -able, mg/L (01105) | Copper, water, unfltrd recover -able, mg/L (01042) |
|----------------|---------------------------------------|------------------------------------|--|--|--|--|--|--|---|---|---|--|--|
| NOV 2002 19... | <.2 | 17.4 | 136 | 10 | .030 | 2.02 | <.040 | .03 | .059 | 2.5 | 3.1 | 400 | <10 |
| JAN 2003 27... | <.2 | 28.6 | 320 | 2 | .090 | 2.22 | <.040 | .09 | .092 | 2.4 | 1.6 | <200 | <10 |
| MAR 19... | <.2 | 12.3 | 112 | 50 | .030 | 1.13 | <.040 | .03 | .096 | 1.8 | 2.6 | 1300 | <10 |
| MAY 28... | <.2 | 21.4 | 158 | <2 | .080 | 1.53 | <.040 | .06 | .102 | 2.2 | 3.1 | <200 | <10 |
| JUL 10... | <.2 | 28.1 | 180 | 4 | <.020 | 1.92 | <.040 | .10 | .121 | 2.2 | 2.9 | <200 | <10 |
| SEP 24... | <.2 | 15.3 | 96 | 36 | <.020 | 2.17 | <.040 | .07 | .081 | 2.4 | 4.5 | 1300 | <10 |

| Date | Cyanide amenable to chlorination wat unfltrd mg/L (00722) | Iron, water, unfltrd recover -able, mg/L (01045) | Lead, water, unfltrd recover -able, mg/L (01051) | Manganese, water, unfltrd recover -able, mg/L (01055) | Nickel, water, unfltrd recover -able, mg/L (01067) | Zinc, water, unfltrd recover -able, mg/L (01092) | Phenolic compounds, water, unfltrd mg/L (32730) |
|----------------|---|--|--|---|--|--|---|
| NOV 2002 19... | <1.00 | 620 | 1.9 | 100 | <50 | 80 | <5 |
| JAN 2003 27... | <1.00 | 190 | <1.0 | 60 | <50 | 80 | <5 |
| MAR 19... | <1.00 | 1710 | 6.2 | 250 | <50 | 130 | <5 |
| MAY 28... | <1.00 | 330 | 1.1 | 60 | <50 | 50 | 6 |
| JUL 10... | <1.00 | 180 | <1.0 | 30 | <50 | 50 | <5 |
| SEP 24... | <1.00 | 2050 | 5.5 | 160 | <50 | 100 | <5 |

LEHIGH RIVER BASIN

01454700 LEHIGH RIVER AT GLENDON, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

| Date | 8/19/02 |
|---------------------------|---------|
| Benthic Macroinvertebrate | Count |
| Platyhelminthes | |
| Turbellaria (FLATWORMS) | |
| Tricladida | |
| Planariidae | 2 |
| Nematoda (NEMATODES) | 2 |
| Mollusca | |
| Gastropoda (SNAILS) | |
| Basommatophora | |
| Ancylidae | |
| <u>Ferrissia</u> sp | 1 |
| Physidae | |
| <u>Physa</u> sp | 2 |
| Bivalvia (CLAMS) | |
| Veneroida | |
| Sphaeriidae | |
| <u>Sphaerium</u> sp | 1 |
| Arthropoda | |
| Crustacea | |
| Amphipoda (SCUDS) | |
| Gammaridae | |
| <u>Gammarus</u> sp | 5 |
| Insecta | |
| Ephemeroptera (MAYFLIES) | |
| Baetidae | |
| <u>Acentrella</u> sp | 2 |
| <u>Baetis</u> sp | 4 |
| Heptageniidae | 7 |
| <u>Stenacron</u> sp | 13 |
| Trichoptera (CADDISFLIES) | |
| Glossosomatidae | |
| <u>Glossosoma</u> sp | 1 |
| Hydropsychidae | |
| <u>Cheumatopsyche</u> sp | 17 |
| <u>Hydropsyche</u> sp | 27 |
| Hydroptilidae | |
| <u>Leucotrichia</u> sp | 2 |
| Lepidostomatidae | |
| <u>Lepidostoma</u> sp | 1 |
| Polycentropodidae | |
| <u>Polycentropus</u> sp | 1 |
| Coleoptera (BEETLES) | |
| Elmidae (RIFFLE BEETLES) | |
| <u>Stenelmis</u> sp | 5 |
| Diptera (TRUE FLIES) | |
| Chironomidae (MIDGES) | 21 |
| Empididae (DANCE FLIES) | |
| <u>Hemerodromia</u> sp | 1 |
| Simuliidae (BLACK FLIES) | |
| <u>Simulium</u> sp | 1 |
| Tipulidae (CRANE FLIES) | |
| <u>Antocha</u> sp | 1 |
| Total Organisms | 117 |