

## MONONGAHELA RIVER BASIN

03075070 MONONGAHELA RIVER AT ELIZABETH, PA  
(Pennsylvania Water-Quality Network Station)

**LOCATION.**--Lat 40°15'44", long 79°54'05", Allegheny County, Hydrologic Unit 05020005, on right bank 30 ft landward from upstream end of guide wall, 1,050 ft upstream from dam at lock 3 at Elizabeth, 0.4 mi downstream from Lobbs Creek, at mile 24.0.

**DRAINAGE AREA.**--5,340 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1933 to current year. Published as "*at Charleroi*" (station 03075000) October 1933 to September 1976. Monthly discharge prior to 1940, adjusted for reservoir contents, published in WSP 1305. Records for March 1886 to March 1905 (high-water periods, only), published in WSP 169, are unreliable and should not be used (peak discharge of July 11, 1888, as published in WSP 183, is still considered reliable).

**REVISED RECORDS.**--WSP 758: Drainage area. WSP 783: 1888 (M). WSP 1435: 1934, 1936. See also "*PERIOD OF RECORD.*"

**GAGE.**--Water-stage recorder and concrete dam control. Datum of gage is 717.90 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). From Oct. 1, 1967 to Sept. 30, 1976, at site 17.5 mi upstream at datum 15.70 ft higher. Prior to Oct. 1, 1967, water-stage recorder at site 17.9 mi upstream at datum 17.43 ft higher. Oct. 1, 1965 to Sept. 30, 1967, auxiliary staff gage, Apr. 14, 1966 to Sept. 30, 1967, auxiliary water-stage recorder and Oct. 1, 1967 to Nov. 4, 1990, water-stage recorder at present site at datum 7.60 ft higher.

**REMARKS.**--No estimated daily discharges. Records good, except those below 2,500 ft<sup>3</sup>/s, which are poor. Flow regulated by locks above station, since 1938 by Tygart Lake (station 03055500), since May 1926 by Lake Lynn, and since April 1989 by Stonewall Jackson Lake, combined capacity, 432,000 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers 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	3050	11500	7970	13100	5170	20500	5630	4260	18300	3180	8380	7600
2	1710	9130	8380	31400	6660	18000	8990	4130	28400	2410	5320	22800
3	877	8060	7510	27500	7840	23200	9750	5200	26000	2060	3690	25600
4	1490	7450	8270	32200	14200	25500	9680	5580	46100	3090	5430	30900
5	2330	6050	4920	26200	21900	23600	10500	9910	31800	2670	4370	36700
6	864	8030	6090	20500	17200	44500	9570	15300	26100	3150	3350	26000
7	843	11100	4530	19800	16800	48700	12000	15600	23600	3340	3330	14200
8	1490	12900	2420	14500	15200	35600	20900	16200	33300	21900	4330	9920
9	1380	9410	4180	11900	12500	37200	23500	25300	25400	33900	3780	8360
10	1280	9690	4420	12000	7580	39400	23000	53000	19800	31800	7970	6960
11	1840	8280	3390	9670	7470	29100	23200	63200	15400	38300	7640	5110
12	2250	8390	4170	9620	7120	24000	23100	43500	11300	24100	7310	3700
13	2560	11800	9640	8720	6100	21300	20100	30200	7900	16200	9040	2030
14	3310	10500	23600	8860	4920	27400	17400	29400	11800	11500	8560	2950
15	2760	9570	29500	7680	4370	31300	16300	26700	19600	7150	7200	3010
16	4850	8840	18800	5930	4540	25300	11200	23500	19900	6450	5590	3310
17	8190	11300	17200	2980	5200	25200	10000	17600	17000	5550	5050	3450
18	8250	18800	13800	4290	6320	23500	6330	13300	21100	4370	6220	5100
19	7830	15200	13200	1970	7490	18000	5340	10900	18900	6240	9410	14000
20	5410	17100	13800	2710	8230	16700	3740	12900	18900	4500	8410	30400
21	6150	16700	27800	2580	8040	15200	4660	12600	24400	4520	5000	19900
22	5810	13800	19800	3790	12800	14900	5560	11000	22000	3100	3060	17300
23	5670	9500	14400	4490	55500	13400	6240	11400	16200	3050	1740	17400
24	3760	9990	15800	5150	70300	8570	7030	17100	12100	4440	3130	16800
25	5140	8000	14000	3270	34700	8440	5800	16000	7530	3000	2060	12200
26	2940	7480	18300	2050	30100	10400	6640	13900	6110	2950	1860	11100
27	2650	8980	15000	3490	31700	7980	4550	8990	5570	2560	4860	8030
28	5320	6260	11700	2720	26100	5710	5930	8500	4370	1430	15100	7600
29	3630	7420	10600	3550	---	4910	3360	6080	3310	6440	6900	9930
30	8510	6630	10800	3510	---	2490	4360	6210	3160	6900	6240	9620
31	12600	---	10600	4110	---	6330	---	7120	---	4810	9100	---
TOTAL	124744	307860	374590	310240	456050	656330	324360	544580	545350	275060	183430	391980
MEAN	4024	10260	12080	10010	16290	21170	10810	17570	18180	8873	5917	13070
MAX	12600	18800	29500	32200	70300	48700	23500	63200	46100	38300	15100	36700
MIN	843	6050	2420	1970	4370	2490	3360	4130	3160	1430	1740	2030
(†)	-52	-419	-216	-40	+1390	-867	+1110	+188	-93	-17	-70	-470

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2003, BY WATER YEAR (WY)

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
MEAN	3566	6657	11480	13440	15450	18070	13470	10350	6506	4445	4143	3078
MAX	16770	33750	29760	37480	33170	41930	26500	33610	24840	13570	17890	13300
(WY)	1980	1986	1973	1937	1994	1963	1940	1996	1981	1958	1956	1945
MIN	475	400	1991	2249	3210	6636	4478	2128	1009	915	812	581
(WY)	1954	1954	1966	1977	1934	1987	1971	1982	1936	1966	1957	1936

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

## MONONGAHELA RIVER BASIN

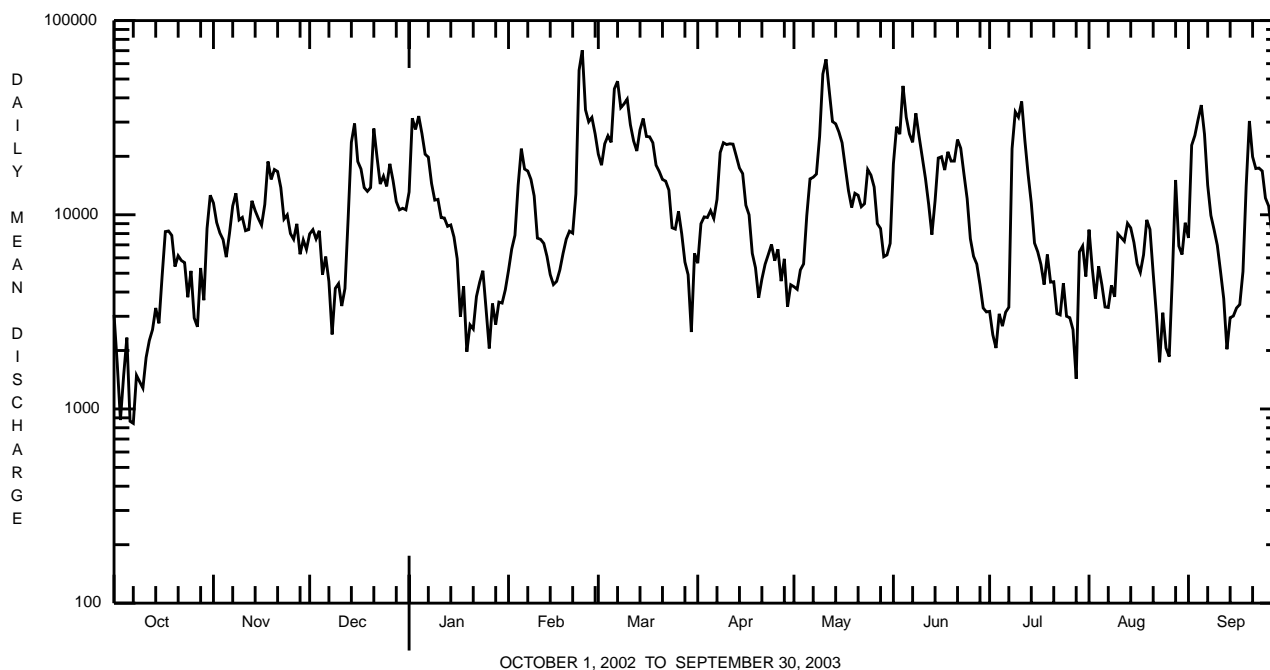
## 03075070 MONONGAHELA RIVER AT ELIZABETH, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1934 - 2003	
ANNUAL TOTAL	3174040		4494574			
ANNUAL MEAN	8696 † +15		12310 † +26		9195	
HIGHEST ANNUAL MEAN					14400 1996	
LOWEST ANNUAL MEAN					5282 1954	
HIGHEST DAILY MEAN	71400	Mar 21	70300	Feb 24	158000	Jan 20 1996
LOWEST DAILY MEAN	614	Aug 18	843	Oct 7	206	Jun 29 1936
ANNUAL SEVEN-DAY MINIMUM	889	Sep 10	1320	Oct 3	301	Oct 1 1936
MAXIMUM PEAK FLOW			85200	Feb 24	a178000	Nov 6 1985
MAXIMUM PEAK STAGE			20.56	Feb 24	b30.39	Jan 20 1996
10 PERCENT EXCEEDS	20000		26100		22300	
50 PERCENT EXCEEDS	5700		8510		5180	
90 PERCENT EXCEEDS	1250		3030		1150	

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 110,000 ft<sup>3</sup>/s.

b Gage height 23.60 ft, datum then in use.



## MONONGAHELA RIVER BASIN

03075070 MONONGAHELA RIVER AT ELIZABETH, 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 242-289.

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, unfltrd deg C (00010)	Hardness, water, unfltrd 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 07...	1245	1028	9813	11800	40	11.0	7.0	270	9.6	93	27.2	6.0	30
JAN 2003 09...	1300	1028	9813	10200	40	16.1	7.5	232	4.5	80	21.5	6.4	30
MAR 12...	1330	1028	9813	22600	40	14.9	7.1	220	6.0	79	22.4	5.7	25
MAY 22...	1100	1028	9813	11200	40	10.0	8.4	220	16.0	83	23.0	6.2	31
JUL 08...	1025	1028	9813	10200	40	8.4	7.2	331	--	120	33.0	8.6	45
SEP 30...	1045	1028	9813	8300	40	10.4	6.7	210	16.5	73	20.3	5.4	31
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 07...	<.2	77.3	180	10	.060	.56	<.040	.02	.017	.91	2.5	300	<10
JAN 2003 09...	<.2	56.9	170	8	.090	.79	<.040	.03	.018	.92	1.9	800	<10
MAR 12...	<.2	59.0	146	12	.030	.79	<.040	.02	.023	.98	1.4	900	<10
MAY 22...	<.2	60.0	168	22	<.020	.43	<.040	.03	.017	.60	1.9	700	<10
JUL 08...	<.2	94.6	244	38	<.020	.39	<.040	.03	.047	.70	1.9	1000	<10
SEP 30...	<.2	55.0	460	8	.040	.50	<.040	.02	.019	.48	2.6	500	<10
Date	Cyanide, amenable to chlorination, wat unfltrd recover -able, 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 pounds, mg/L (32730)						
NOV 2002 07...	<1.00	670	2.4	130	<50	10	<5						
JAN 2003 09...	<1.00	970	1.2	160	<50	20	<5						
MAR 12...	<1.00	1300	1.5	170	<50	30	<5						
MAY 22...	<1.00	920	<1.0	140	<50	160	<5						
JUL 08...	<1.00	2150	2.2	230	<50	40	<5						
SEP 30...	<1.00	800	<1.0	110	<50	80	<5						

## MONONGAHELA RIVER BASIN

## 03075070 MONONGAHELA RIVER AT ELIZABETH, 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  $\mu$ m. Samples represent counts per 100 (approximate) subsamples.

Date	10/1/02
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Hydrobiidae	
<u>Amnicola</u> sp	10
Planorbidae	
<u>Planorbella</u> sp	5
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	1
Arthropoda	
Crustacea	
Cladocera	5
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	
<u>Stenacron</u> sp	5
Tricorythidae	
<u>Tricorythodes</u> sp	1
Trichoptera (CADDISFLIES)	
Polycentropodidae	
<u>Neureclipsis</u> sp	2
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	12
Total Organisms	41