

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 39°45'33", long 79°58'15", Greene County, Hydrologic Unit 05020005, on left bank 1,300 ft upstream from highway bridge at mine buildings at Shannopin, 1.2 mi north of Dunkard, 3.5 mi upstream from mouth, and 4 mi southwest of Greensboro.

DRAINAGE AREA.--229 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to current year. Prior to December 1940 monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1505: 1955.

GAGE.--Water-stage recorder. Datum of gage is 806.25 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation at low flow by mine pumpage above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Feb. 23	1600	7,760	10.42	June 4	0700	4,490	8.75
May 10	0100	*8,420	*10.71				

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	35	110	75	579	e58	675	142	99	381	71	112	373
2	25	78	75	2240	e58	666	137	98	e352	67	103	2080
3	19	61	70	1290	e91	829	127	83	e1070	67	154	1370
4	15	51	e57	1460	e372	793	121	85	3470	68	451	e867
5	13	47	e55	832	e1040	1140	152	183	2170	74	225	e480
6	12	50	e60	602	677	2620	274	630	1320	133	136	e286
7	11	79	e57	468	478	2330	311	e431	1650	135	106	e190
8	11	101	e55	387	346	2270	749	e1250	1940	495	101	e138
9	9.8	81	e52	413	259	e2830	640	3440	1360	665	144	115
10	10	68	e59	425	e212	e1840	482	5150	910	546	157	95
11	14	80	e68	e351	e187	e957	478	2980	617	1400	184	82
12	19	136	e136	e273	e157	685	667	2000	420	625	243	75
13	30	114	e321	e223	e121	700	541	1370	393	762	186	69
14	31	86	1460	e185	e112	1230	424	905	406	395	162	66
15	24	70	1380	e155	e92	788	348	592	702	220	94	64
16	30	63	845	e123	e82	650	295	e507	567	552	72	67
17	211	159	584	e118	e77	546	251	e412	417	e342	65	64
18	126	413	401	e113	e102	436	209	e333	1370	e235	58	58
19	73	234	324	e113	e107	350	184	e286	1170	e166	50	76
20	55	265	478	e102	e106	295	161	e254	1430	e122	44	140
21	46	216	663	e100	e135	269	157	e254	934	e103	38	103
22	40	157	437	e90	286	242	206	e302	578	92	35	76
23	34	130	324	e82	4730	204	168	e602	369	88	31	98
24	28	109	241	e77	3220	181	141	1770	249	107	28	129
25	25	93	392	e74	2000	161	125	1180	177	99	25	91
26	25	84	686	e68	1430	153	120	718	139	75	23	84
27	22	79	448	e63	1070	155	114	476	117	63	202	78
28	24	76	340	e61	824	135	99	340	104	56	651	78
29	30	71	275	e58	---	128	91	279	91	52	270	92
30	88	69	220	e61	---	144	92	215	79	49	1150	82
31	179	---	190	e58	---	148	---	188	---	54	680	---
TOTAL	1314.8	3430	10828	11244	18429	24550	8006	27412	24952	7978	5980	7666
MEAN	42.4	114	349	363	658	792	267	884	832	257	193	256
MAX	211	413	1460	2240	4730	2830	749	5150	3470	1400	1150	2080
MIN	9.8	47	52	58	58	128	91	83	79	49	23	58
CFSM	0.19	0.50	1.53	1.58	2.87	3.46	1.17	3.86	3.63	1.12	0.84	1.12
IN.	0.21	0.56	1.76	1.83	2.99	3.99	1.30	4.45	4.05	1.30	0.97	1.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

MEAN	67.7	156	324	418	508	628	463	336	189	91.9	78.4	73.7
MAX	381	1149	1071	1050	1100	1475	1033	903	877	461	890	573
(WY)	1955	1986	1991	1994	1956	1994	1948	1968	1981	1996	1980	1975
MIN	1.73	2.44	7.46	26.5	63.5	112	80.9	57.4	10.2	4.62	2.45	2.38
(WY)	1952	1954	1954	1967	1954	1987	1971	1986	1966	1962	1962	1999

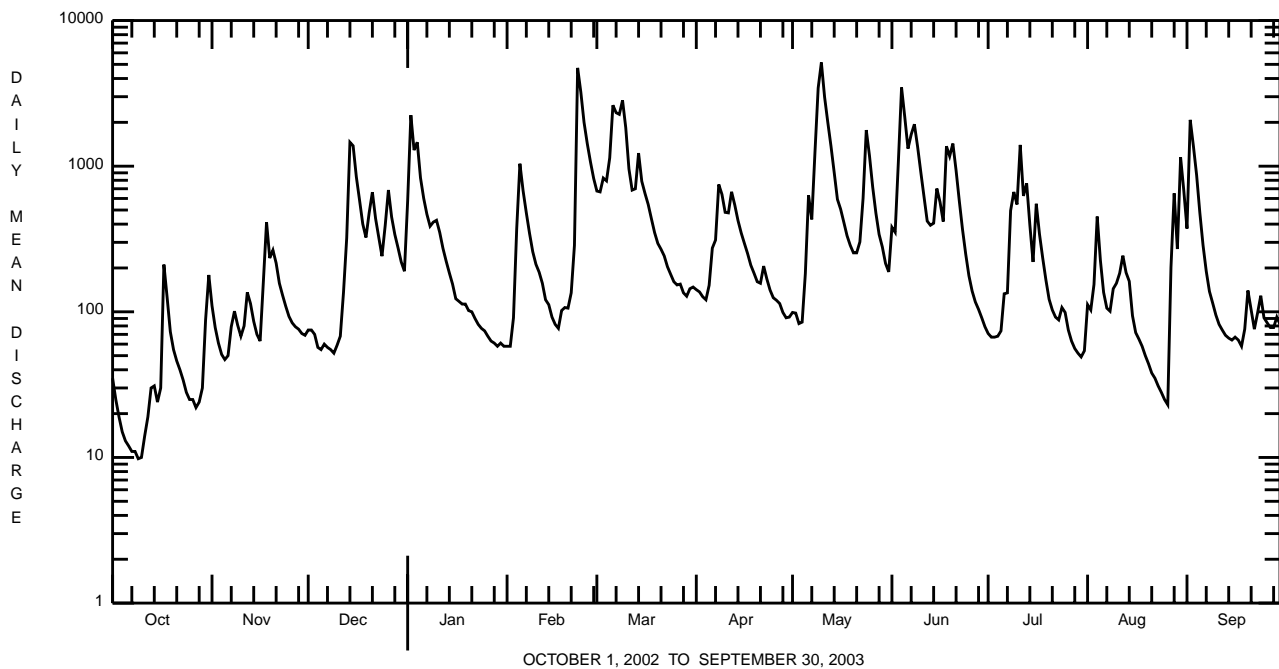
e Estimated.

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	95391.3		151789.8			
ANNUAL MEAN	261		416		277	
HIGHEST ANNUAL MEAN					462	
LOWEST ANNUAL MEAN					104	
HIGHEST DAILY MEAN	4170	Mar 27	5150	May 10	11200	Mar 5 1963
LOWEST DAILY MEAN	1.8	Sep 13,14	9.8	Oct 9	0.50	Aug 27 1944
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 10	12	Oct 5	0.73	Aug 25 1944
MAXIMUM PEAK FLOW			8420	May 10	a 17600	Aug 18 1980
MAXIMUM PEAK STAGE			10.71	May 10	14.27	Aug 18 1980
INSTANTANEOUS LOW FLOW			9.5	Oct 9,10	0.40	Aug 28 1944
ANNUAL RUNOFF (CFSM)	1.14		1.82		1.21	
ANNUAL RUNOFF (INCHES)	15.50		24.66		16.45	
10 PERCENT EXCEEDS	666		1140		685	
50 PERCENT EXCEEDS	105		157		97	
90 PERCENT EXCEEDS	11		51		8.0	

a From rating curve extended above 16,000 ft³/s.



MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, 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, μ S/cm 25 degC (00095)	Temperature, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover mg/L (00916)	Magnesium, water, unfltrd recover mg/L (00927)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002	06...	1028	9813	49	40	11.0	7.8	833	7.6	200	54.1	16.4	84
JAN 2003	07...	1028	9813	482	40	14.6	7.6	322	1.8	110	29.6	7.7	60
MAR	04...	1028	9813	794	40	13.2	7.8	285	1.5	110	30.9	6.9	54
MAY	06...	1028	9813	696	40	8.9	7.6	476	14.7	120	35.1	8.7	87
JUL	14...	1028	9813	364	40	9.1	7.0	337	--	120	33.7	9.3	64
SEP	10...	1028	9813	94	40	10.2	7.5	582	20.0	190	52.0	15.1	91

Date	Sulfate water, unfltrd, mg/L (00945)	Residue on evap. at 105degC, suspended, 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)	Ortho-phosphate, 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 mg/L (01105)	Copper, water, unfltrd recover mg/L (01042)	Iron, water, unfltrd recover mg/L (01045)
NOV 2002	06...	269	608	10	.450	<.040	.02	.015	.88	2.8	800	<10	800
JAN 2003	07...	78.0	286	14	.060	<.040	.01	.012	1.1	1.8	400	<10	590
MAR	04...	70.4	216	4	.070	<.040	.03	.015	1.1	1.7	600	<10	700
MAY	06...	106	348	66	.040	<.040	.08	.060	.97	3.5	3000	<10	3060
JUL	14...	82.7	258	30	<.020	.33	<.040	.07	.058	3.7	2400	<10	2720
SEP	10...	164	608	16	<.020	.16	<.040	<.01	.020	2.2	1100	<10	1240

Date	Lead, water, unfltrd recover mg/L (01051)	Manganese, water, unfltrd recover mg/L (01055)	Nickel, water, unfltrd recover mg/L (01067)	Zinc, water, unfltrd recover mg/L (01092)	
NOV 2002	06...	<1.0	170	<50	<10
JAN 2003	07...	<1.0	80	<50	30
MAR	04...	<1.0	80	<50	20
MAY	06...	2.7	210	<50	20
JUL	14...	1.4	180	<50	150
SEP	10...	<1.0	230	<50	20

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03072000 DUNKARD CREEK AT SHANNOPIN, 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 μ m. Samples represent counts per 100 (approximate) subsamples.

Date	9/5/02
Benthic Macroinvertebrate	Count
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
<u>Corbicula fluminea</u>	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Enchytraeidae	1
Arthropoda	
Insecta	
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
<u>Argia</u> sp	1
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<u>Corydalus</u> sp	2
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<u>Hydropsyche</u> sp	76
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Oulimnius</u> sp	1
<u>Promoresia</u> sp	1
<u>Stenelmis</u> sp	15
Diptera (TRUE FLIES)	
Athericidae	
<u>Atherix</u> sp	5
Chironomidae (MIDGES)	4
Total Organisms	107