

## BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSRVILLE, PA  
(Pennsylvania Water-Quality Network Station)

**LOCATION.**--Lat 41°51'09", long 79°19'03", Warren County, Hydrologic Unit 05010001, on right bank 150 ft downstream from bridge on Main Street at Youngsville, 500 ft upstream from Matthews Run, and 3.7 mi upstream from mouth. Records include flow of Matthews Run.

**DRAINAGE AREA.**--321 mi<sup>2</sup>, including that of Matthews Run.

## WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1909 to current year. Monthly discharge only for some periods, published in WSP 1305. Flow of Matthews Run included in records since October 1938.

**REVISED RECORDS.**--WSP 743: Drainage area. WSP 1083: 1913 (M). WSP 1275: 1920, 1932, 1936. WSP 1305: 1910-15, 1928-29.

**GAGE.**--Water-stage recorder. Datum of gage is 1,186.92 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1933, nonrecording gage at site 150 ft upstream at datum 2.00 ft higher. Oct. 1, 1933 to June 15, 1939, nonrecording gage at site 150 ft upstream, and June 16, 1939 to Sept. 30, 1961, water-stage recorder at present site, both at datum 1.00 ft higher.

**REMARKS.**--Records good except those for estimated daily discharges, which are poor. 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 4,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge ft <sup>3</sup> /s	Gage Height (ft)	Date	Time	Discharge ft <sup>3</sup> /s	Gage Height (ft)
Mar. 18	2300	4,890	7.62	July 22	0200	*8,920	*10.24
Apr. 5	0700	5,090	7.77	Aug. 10	2000	5,320	7.94
June 13	0500	5,210	7.86				

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	96	147	e303	2590	e161	e490	805	246	869	127	437	410
2	78	199	e301	2780	e160	e445	1130	396	639	118	437	1380
3	72	234	e293	1780	e192	e400	1120	647	434	113	340	1510
4	78	253	e283	1030	e571	e380	1160	444	371	115	304	836
5	94	287	e263	760	e893	e390	4170	358	374	171	402	435
6	95	615	e270	e550	e1200	e440	2930	547	434	175	623	309
7	87	679	e254	e470	e924	e528	1950	584	377	153	618	239
8	78	483	e254	e438	e684	e723	1290	635	333	133	422	200
9	71	339	e253	e426	e530	e880	1280	651	451	167	790	177
10	68	283	e233	e400	e444	e930	1300	629	435	300	2110	158
11	66	1030	e521	e388	e363	e750	1150	580	522	352	1460	143
12	67	1140	e865	e369	e314	e637	927	702	1850	240	713	132
13	68	692	1220	e356	e254	e571	743	1800	4170	176	482	125
14	70	440	2400	e350	e235	534	613	2460	2810	139	361	118
15	69	333	2270	e337	e218	658	535	2170	1750	118	289	133
16	91	314	1800	e331	e218	1640	471	1280	850	363	253	167
17	134	761	1100	e306	e214	3370	419	807	562	218	276	154
18	126	1260	770	e300	e209	4440	382	631	579	484	287	127
19	216	997	717	e290	e197	4370	347	509	534	407	211	181
20	481	820	3100	e280	e205	3660	320	450	456	229	175	411
21	356	697	3150	e270	e189	2960	644	599	398	2920	156	368
22	195	662	2390	e260	e266	2460	865	490	373	6310	201	251
23	141	850	1300	e250	e767	1960	685	404	309	3220	318	1070
24	113	715	808	e240	e1260	1370	550	499	251	2400	212	958
25	99	599	660	e230	e952	1080	466	607	211	1520	154	482
26	192	541	550	e220	e728	1520	410	451	184	837	156	314
27	257	472	e447	e210	e592	1790	357	364	166	1470	385	383
28	227	410	e354	e205	e583	1290	316	333	155	2710	441	1050
29	171	e352	e298	e196	---	983	286	305	144	1640	260	829
30	147	e324	e363	e179	---	1240	260	262	139	848	305	868
31	142	---	1150	e170	---	990	---	394	---	520	326	---
TOTAL	4245	16928	28940	16961	13523	43879	27881	21234	21130	28693	13904	13918
MEAN	137	564	934	547	483	1415	929	685	704	926	449	464
MAX	481	1260	3150	2780	1260	4440	4170	2460	4170	6310	2110	1510
MIN	66	147	233	170	160	380	260	246	139	113	154	118
CFSM	0.43	1.76	2.91	1.70	1.50	4.41	2.90	2.13	2.19	2.88	1.40	1.45
IN.	0.49	1.96	3.35	1.97	1.57	5.09	3.23	2.46	2.45	3.33	1.61	1.61

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2003, BY WATER YEAR (WY)

MEAN	312	619	752	786	772	1237	1020	604	380	233	180	225
MAX	1413	1817	1724	2459	2248	2851	2715	1528	1535	1039	994	1428
(WY)	1991	1986	1978	1913	1976	1936	1947	1943	1928	1986	1956	1977
MIN	31.7	57.3	85.9	124	161	297	251	135	62.0	37.8	32.3	31.6
(WY)	1932	1931	1961	1918	1987	1915	1946	1934	1934	1934	1934	1936

e Estimated.

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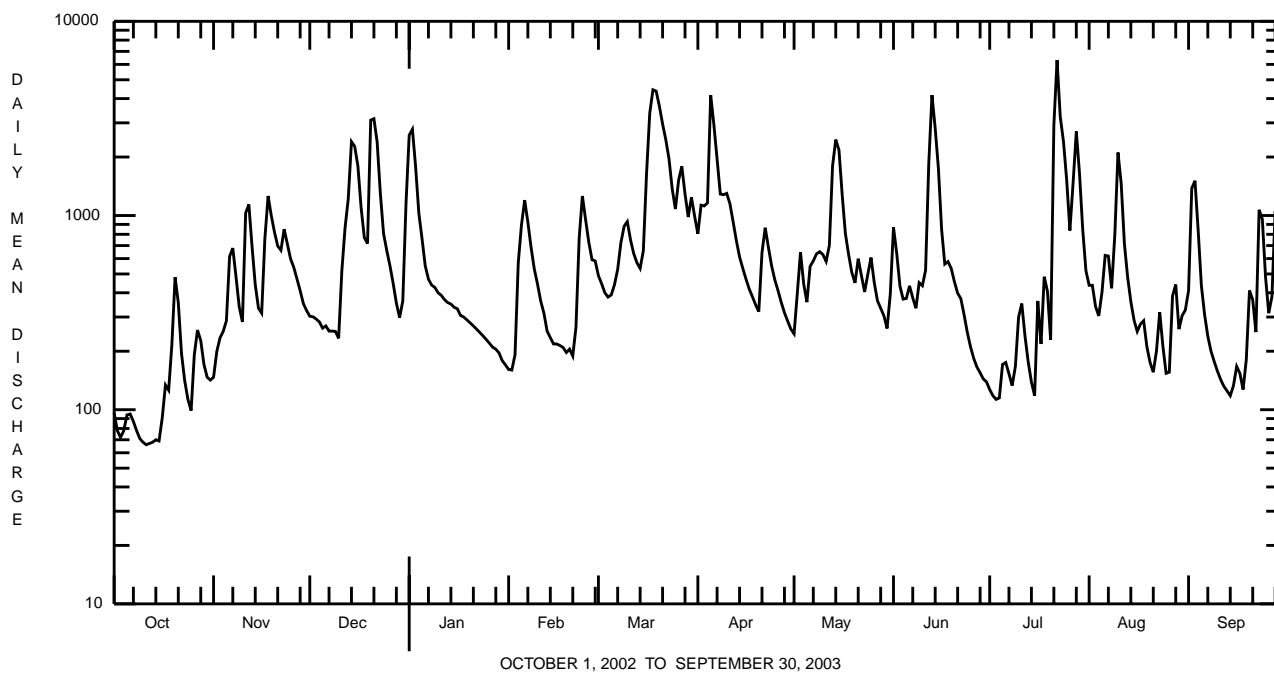
## 03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1910 - 2003	
ANNUAL TOTAL	225157		251236			
ANNUAL MEAN	617		688		592	
HIGHEST ANNUAL MEAN					864	1956
LOWEST ANNUAL MEAN					307	1931
HIGHEST DAILY MEAN	6380	May 14	6310	Jul 22	14000	Mar 25 1913
LOWEST DAILY MEAN	42	Sep 11	66	Oct 11	19	Oct 14 1934
ANNUAL SEVEN-DAY MINIMUM	44	Sep 7	68	Oct 9	24	Oct 11 1934
MAXIMUM PEAK FLOW			8920	Jul 22	ab18000	Mar 25 1913
MAXIMUM PEAK STAGE			10.24	Jul 22	14.20	Mar 25 1913
INSTANTANEOUS LOW FLOW			65	Oct 11,13	c19	Oct 14 1934
ANNUAL RUNOFF (CFSM)	1.92		2.14		1.85	
ANNUAL RUNOFF (INCHES)	26.09		29.12		25.07	
10 PERCENT EXCEEDS	1290		1520		1420	
50 PERCENT EXCEEDS	364		410		304	
90 PERCENT EXCEEDS	67		144		67	

**a** From rating curve extended above 9,400 ft<sup>3</sup>/s.

**b** About.

**c** Minimum observed.



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03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, 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 col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, µS/cm 25 degC (00095)	Temper- ature, deg C (00010)	Hard- ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 26...	0900	1028	9813	554	40	13.2	7.8	164	3.2	66	20.0	3.9	46
MAR 2003 26...	1000	1028	9813	1530	40	11.3	7.5	119	7.4	44	12.8	3.0	32
MAY 20...	1200	1028	9813	420	40	11.0	8.1	168	14.5	63	17.5	4.6	60
JUL 29...	1315	1028	9813	1630	40	8.8	7.3	119	17.9	47	14.0	3.0	40
SEP 23...	1310	1028	9813	1110	40	8.9	7.5	138	15.9	57	17.0	3.6	46

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC sus- pende, mg/L (00515)	Residue total at 105 deg. C, sus- pende, 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- phos- phate, water, unfltrd mg/L as P (70507)	Phos- phorus, water, unfltrd mg/L (00665)	Total nitro- gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Alum- inum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002 26...	13.6	122	<2	<.020	.57	<.040	.01	.022	.72	3.7	<200	<10	270
MAR 2003 26...	10.2	72	24	<.020	.65	<.040	.02	.021	.90	3.2	600	<10	960
MAY 20...	9.8	118	<2	<.020	.50	<.040	.02	.017	.75	3.7	<200	<10	420
JUL 29...	7.0	92	24	<.020	.38	<.040	.04	.065	.84	7.6	700	<10	1410
SEP 23...	7.0	130	46	<.020	.43	<.040	.08	.106	.95	7.4	1800	<10	2710

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002 26...	<1.0	20	<50	<10
MAR 2003 26...	<1.0	40	<50	40
MAY 20...	<1.0	30	<50	80
JUL 29...	1.2	60	<50	10
SEP 23...	1.7	160	<50	60

## BROKENSTRAW CREEK BASIN

## 03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, 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	8/21/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Dugesiidae	
<u>Dugesia</u> sp	1
Nematoda (NEMATODES)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<u>Ferrissia</u> sp	2
Annelida	
Hirudinea (LEECHES)	1
Oligochaeta (AQUATIC EARTHWORMS)	5
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Acentrella</u> sp	2
<u>Baetis</u> sp	8
<u>Plauditus</u> sp	2
<u>Procladius</u> sp	1
Caenidae	
<u>Caenis</u> sp	15
Ephemerellidae	
<u>Serratella</u> sp	2
Heptageniidae	
<u>Stenonema</u> sp	27
Isonychiidae	
<u>Isonychia</u> sp	3
Polymitarcyidae	
<u>Ephoron</u> sp	2
Plecoptera (STONEFLIES)	
Perlidae	1
<u>Acroneuria</u> sp	4
<u>Neoperla</u> sp	2
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<u>Corydalus</u> sp	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<u>Cheumatopsyche</u> sp	20
<u>Hydropsyche</u> sp	24
Hydroptilidae	
<u>Leucotrichia</u> sp	10
Philopotamidae	
<u>Chimarra</u> sp	2

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BIOLOGICAL DATA  
BENTHIC MACROINVERTEBRATES--Continued

Date	8/21/02
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	5
<u>Stenelmis</u> sp	7
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	48
Tipulidae (CRANE FLIES)	
<u>Antocha</u> sp	7
Total Organisms	203