

BUSH KILL BASIN

01439500 BUSH KILL AT SHOEMAKERS, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 41°05'17", long 75°02'17", Monroe County, Hydrologic Unit 02040104, on right bank 30 ft downstream from bridge on township route 523, 0.1 mi downstream from Saw Creek, 0.7 mi northwest of Shoemakers, and 2.0 mi southwest of Bushkill.

DRAINAGE AREA.--117 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1908 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1928, published as Bushkill Creek near Shoemakers; October 1928 to September 1952, published as Bushkill Creek at Shoemakers.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1202: 1921, 1932(M), 1933, 1935-36, 1938(M), 1939-40, 1942, 1945, 1946(M), 1948(M). WSP 1302: 1909-15, 1920(M), 1922-29. WDR PA-89-1: 1988.

GAGE.--Water-stage recorder. Datum of gage is 421.13 ft above National Geodetic Vertical Datum of 1929. Sept. 19, 1908, to Aug. 12, 1938, nonrecording gage, and Aug. 13, 1938, to June 20, 1956, water-stage recorder at site 50 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
May 29	0015	*1,210	*3.51	June 7	0645	1,180	3.48

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	31	128	e140	146	101	352	494	546	113	30	26
2	81	32	120	e140	170	98	318	516	433	106	e40	23
3	72	32	114	e130	151	224	296	513	360	95	e50	21
4	65	32	108	e130	144	236	288	439	314	83	e40	19
5	55	29	100	130	127	191	259	398	284	74	e32	21
6	49	28	94	121	e130	168	236	359	371	64	28	21
7	47	27	92	133	118	156	215	333	1070	60	24	20
8	42	26	87	127	116	148	200	305	752	55	21	16
9	38	26	109	122	115	141	192	298	579	51	19	11
10	34	25	108	117	116	177	201	316	477	52	18	10
11	35	26	99	126	156	173	193	296	394	45	17	9.0
12	33	24	99	124	146	163	177	326	334	40	15	8.6
13	31	24	102	107	133	154	172	622	298	38	14	8.2
14	30	24	118	96	e110	146	188	938	381	36	13	8.0
15	51	24	143	86	119	142	405	802	486	35	13	12
16	63	25	132	85	118	144	371	656	424	35	12	88
17	50	25	131	81	115	140	327	557	348	29	12	97
18	43	24	184	79	115	146	287	837	288	27	11	59
19	38	23	198	e80	112	146	277	846	246	28	10	43
20	34	25	181	e100	115	193	314	687	215	70	13	34
21	32	25	160	e96	122	259	295	592	183	65	12	29
22	31	25	145	e90	119	280	288	520	157	47	12	27
23	30	23	134	81	116	248	277	458	141	46	13	26
24	29	24	146	84	112	227	252	401	126	130	15	24
25	28	33	138	113	110	213	253	352	117	93	17	21
26	28	85	125	112	109	220	299	318	125	63	18	20
27	28	71	117	111	111	472	266	291	218	54	15	45
28	29	56	136	113	108	445	427	415	183	47	13	124
29	30	51	135	118	---	400	608	1010	148	45	24	105
30	30	58	e130	126	---	368	518	678	123	41	43	80
31	30	---	e120	134	---	341	---	546	---	35	35	---
TOTAL	1312	983	3933	3432	3479	6660	8751	16119	10121	1802	649	1055.8
MEAN	42.32	32.77	126.9	110.7	124.2	214.8	291.7	520.0	337.4	58.13	20.94	35.19
MAX	96	85	198	140	170	472	608	1010	1070	130	50	124
MIN	28	23	87	79	108	98	172	291	117	27	10	8.0
CFSM	0.36	0.28	1.08	0.95	1.06	1.84	2.49	4.44	2.88	0.50	0.18	0.30
IN.	0.42	0.31	1.25	1.09	1.11	2.12	2.78	5.13	3.22	0.57	0.21	0.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2002, BY WATER YEAR (WY)

MEAN	121.6	207.9	262.1	257.5	272.1	431.3	429.8	304.7	194.5	127.6	96.47	91.98
MAX	773	643	841	807	706	1119	1002	773	919	747	864	569
(WY)	1956	1933	1997	1979	1909	1936	1993	1989	1972	1945	1955	1933
MIN	7.74	13.6	21.7	44.2	39.7	156	141	90.7	32.8	13.4	8.33	4.39
(WY)	1965	1965	1999	1981	1934	1981	1985	1941	1962	1999	1964	1964

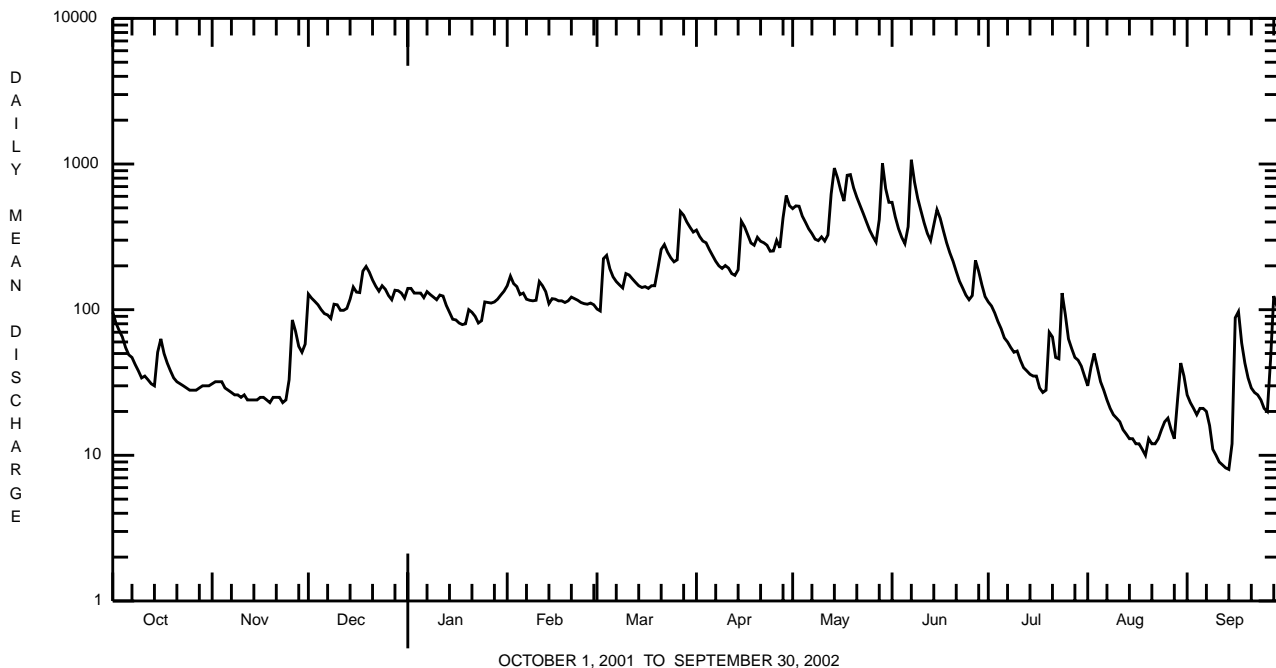
e Estimated.

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01439500 BUSH KILL AT SHOEMAKERS, PA--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1909 - 2002	
ANNUAL TOTAL	56468		58296.8		233	
ANNUAL MEAN	155		160		419	
HIGHEST ANNUAL MEAN					95.4	1928
LOWEST ANNUAL MEAN					1965	
HIGHEST DAILY MEAN	999	Mar 31	1070	Jun 7	11800	Aug 19 1955
LOWEST DAILY MEAN	10	Sep 10	8.0	Sep 14	2.6	Sep 25 1964
ANNUAL SEVEN-DAY MINIMUM	13	Sep 6	9.5	Sep 9	2.7	Sep 21 1964
MAXIMUM PEAK FLOW			1210	May 29	a 23400	Aug 19 1955
MAXIMUM PEAK STAGE			3.51	May 29	b 13.95	Aug 19 1955
INSTANTANEOUS LOW FLOW					2.6	Sep 25 1964
ANNUAL RUNOFF (CFSM)	1.32		1.37		1.99	
ANNUAL RUNOFF (INCHES)	17.95		18.54		27.04	
10 PERCENT EXCEEDS	359		396		518	
50 PERCENT EXCEEDS	120		112		160	
90 PERCENT EXCEEDS	23		22		26	

a From rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow.
b From floodmark.



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01439500 BUSH KILL AT SHOEMAKERS, 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 410-425. Some values for "dissolved" parameters exceed values for the corresponding "total" parameter. These results are within the limits of analytical precision and methods.

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 2001 TO SEPTEMBER 2002

Date	Time	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SAM- PLING METHOD, CODES (82398)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)
APR 2002 02...	1150	9813	317	30	12.3	6.9	37	8.2	13	3.31	3.2	1.08	1.1
JUN 03...	1330	9813	355	30	9.7	6.8	36	17.7	13	3.34	3.5	1.01	1.1
AUG 06...	1120	9813	28	30	9.0	7.5	57	22.5	17	4.38	4.4	1.33	1.3

Date	ANC WATER UNFLTRD FET LAB (MG/L AS CACO3) (00417)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	RESIDUE AT 105 DEG. C, DIS- SOLVED (MG/L) (00515)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (µG/L AS CU) (01042)
APR 2002 02...	5	7.2	20	<2	<.020	<.04	<.040	.24	.01	.018	2.7	<4	<4
JUN 03...	7	6.3	52	6	<.020	<.04	<.040	.12	.02	.020	1.4	<4	<4
AUG 06...	11	6.3	44	4	<.020	.28	<.040	.46	.03	.058	.5	<4	<4

Date	IRON, DIS- SOLVED (µG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (µG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (µG/L AS NI) (01067)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (µG/L AS ZN) (01092)
APR 2002 02...	40	150	<1.0	<1.0	10	<4.0	<4.0	<5.0	<5.0
JUN 03...	90	200	<1.0	<1.0	40	<4.0	<4.0	5.0	7.0
AUG 06...	60	70	<1.0	<1.0	10	<4.0	<4.0	<5.0	<5.0