

PENNS CREEK BASIN

01555000 PENNS CREEK AT PENNS CREEK, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 40°52'00", long 77°02'55", Union County, Hydrologic Unit 02050301, on left bank 200 ft downstream from bridge on State Highway 104, 2.9 mi upstream from Sweitzers Run, and 0.8 mi northeast of Penns Creek, Pa.

DRAINAGE AREA.--301 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year. Prior to October 1965, published as Penn Creek at Penns Creek.

REVISED RECORDS.--WSP 891: 1934(M). WSP 1502: 1933(M), 1934, 1936(M). WDR PA-72-1: 1933-34(M), 1936(M), 1940(M), 1951(M). WDR PA-79-2: 1978.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 506.72 ft, datum of 1912; 507.38 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 1, 1930, nonrecording gage at same site and datum.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 3,100 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Mar. 21	0445	4,380	7.01	Sept. 23	0615	*6,270	*8.44
Sept. 20	0000	4,220	6.88				

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	102	379	371	929	e280	388	891	398	1060	379	343	499
2	93	378	338	2650	e290	380	919	391	796	355	461	674
3	87	351	315	1870	e300	e380	900	366	757	338	1420	644
4	84	324	e270	1470	459	375	856	345	1170	318	1300	648
5	90	304	e280	1200	e400	339	1170	342	1030	300	1160	580
6	87	357	e280	1030	e340	407	1150	354	931	286	1100	515
7	81	369	e270	910	e280	e380	1070	354	1230	322	815	465
8	75	328	e260	848	e240	345	1070	405	1360	378	697	425
9	73	311	e250	974	e250	422	1050	418	1170	302	801	397
10	74	304	e230	959	e260	568	1050	413	1020	288	763	373
11	227	312	e300	784	e250	389	1800	411	904	1040	819	346
12	827	409	e490	680	e240	388	2400	415	864	655	704	327
13	526	496	e700	e600	e230	751	1930	397	804	435	570	349
14	298	433	1090	e550	e240	1240	1570	381	701	367	501	437
15	225	404	1360	e500	e240	1090	1330	363	696	332	447	432
16	637	428	1180	e450	e230	1290	1150	470	611	323	473	891
17	777	817	989	e410	e220	1710	990	684	545	304	969	587
18	499	1110	838	e380	e218	2240	876	562	731	289	694	500
19	367	929	757	e390	e300	2440	831	533	734	310	526	2300
20	304	805	895	e400	e360	2700	738	502	718	285	463	3380
21	259	713	992	e340	e340	4030	677	486	1100	279	423	2120
22	227	732	877	e300	329	3310	661	466	925	467	391	1580
23	206	672	816	e260	e700	2620	607	437	804	469	364	4950
24	190	576	735	e240	e900	2110	544	644	697	363	334	3090
25	184	513	716	e260	e650	1740	505	579	620	319	312	2160
26	377	466	657	e280	e500	1490	525	490	562	286	306	1700
27	317	451	581	e250	e420	1310	524	466	514	269	322	1370
28	257	417	534	e240	415	1100	458	449	469	355	300	1930
29	239	394	511	e250	---	1040	438	449	430	346	279	1490
30	304	393	474	e260	---	1110	426	425	400	273	325	1210
31	366	---	465	e270	---	983	---	652	---	251	373	---
TOTAL	8459	14875	18821	20934	9881	39065	29106	14047	24353	11283	18755	36369
MEAN	273	496	607	675	353	1260	970	453	812	364	605	1212
MAX	827	1110	1360	2650	900	4030	2400	684	1360	1040	1420	4950
MIN	73	304	230	240	218	339	426	342	400	251	279	327
CFSM	0.91	1.65	2.02	2.24	1.17	4.19	3.22	1.51	2.70	1.21	2.01	4.03
IN.	1.05	1.84	2.33	2.59	1.22	4.83	3.60	1.74	3.01	1.39	2.32	4.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

MEAN	220	356	445	450	529	900	881	615	398	194	157	176
MAX	1355	1567	1359	1627	1697	3093	2855	1793	2845	759	684	1295
(WY)	1991	1978	1997	1996	1984	1936	1993	1978	1972	1989	1984	1979
MIN	35.9	34.1	46.3	76.0	108	195	278	179	107	57.2	37.0	36.4
(WY)	1931	1931	1999	1981	1940	1931	1995	1941	1962	1962	1966	1964

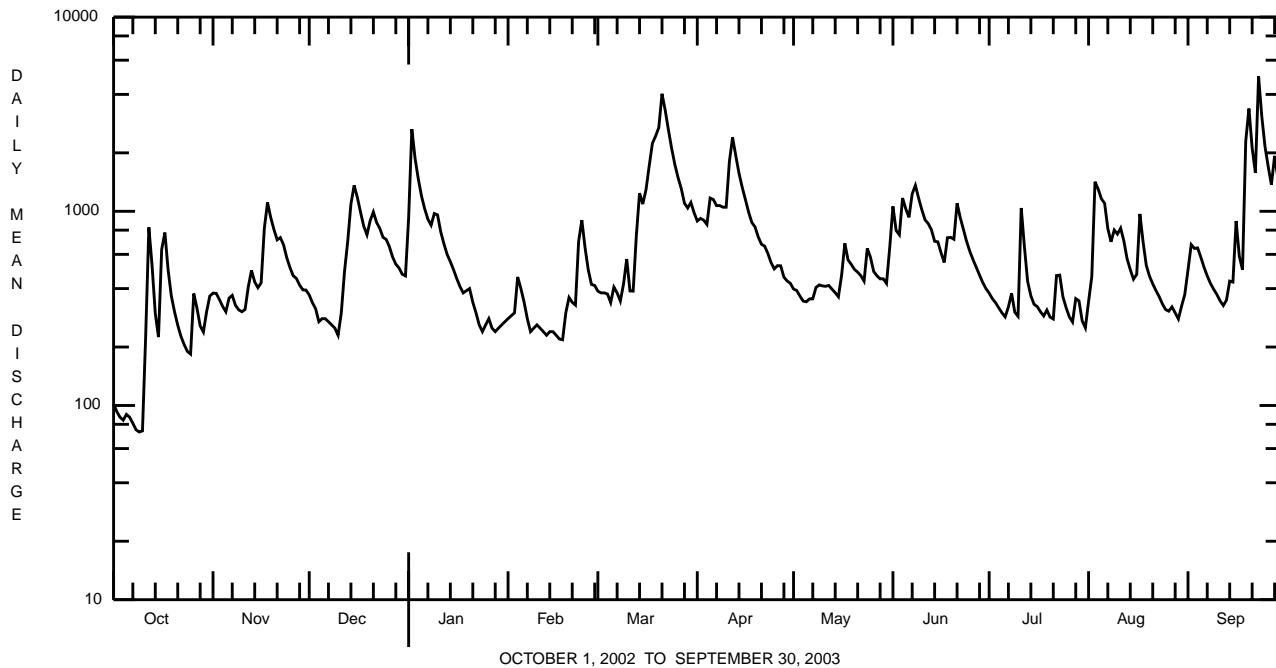
e Estimated.

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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1930 - 2003	
ANNUAL TOTAL	153397		245948			
ANNUAL MEAN	420		674		443	
HIGHEST ANNUAL MEAN					878	
LOWEST ANNUAL MEAN					205	
HIGHEST DAILY MEAN	3170	May 14	4950	Sep 23	24600	Jun 23 1972
LOWEST DAILY MEAN	53	Sep 12-14	73	Oct 9	21	Aug 30 1966
ANNUAL SEVEN-DAY MINIMUM	55	Sep 9	81	Oct 4	24	Aug 28 1966
MAXIMUM PEAK FLOW			6270	Sep 23	a 34600	Jun 23 1972
MAXIMUM PEAK STAGE			8.44	Sep 23	b 14.85	Jun 23 1972
INSTANTANEOUS LOW FLOW			71	Oct 9,10	7.0	Sep 27 1932
ANNUAL RUNOFF (CFSM)	1.40		2.24		1.47	
ANNUAL RUNOFF (INCHES)	18.96		30.40		19.98	
10 PERCENT EXCEEDS	831		1230		975	
50 PERCENT EXCEEDS	304		465		262	
90 PERCENT EXCEEDS	82		260		68	

a From rating curve extended above 6,800 ft³/s on basis of contracted-opening measurement of peak flow.
b From floodmark in gage.



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01555000 PENNS CREEK AT PENNS CREEK, 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 368-434.

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, μ S/cm 25 degC (00095)	Temperature, water, 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, water unfltrd fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 21...	1315	1028	9813	701	30	11.5	8.1	203	6.0	100	33.6	4.5	78
JAN 2003 14...	1320	1028	9813	E550	30	19.6	8.1	238	.2	110	35.6	4.7	86
MAR 25...	1430	1028	9813	1700	30	11.2	7.5	138	10.0	56	17.9	2.8	46
MAY 19...	1450	1028	9813	530	30	10.9	8.5	153	16.0	62	18.3	4.0	60
JUL 17...	1120	1028	9813	306	30	8.8	8.3	245	21.3	120	40.4	5.4	96
SEP 22...	1100	1028	9813	1570	30	9.8	7.4	177	14.3	87	29.2	3.4	70

Date	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)	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, μ g/L (01105)	Copper, water, unfltrd recover, μ g/L (01042)	Iron, water, unfltrd recover, μ g/L (01045)
NOV 2002 21...	13.7	64	10	<.020	2.13	<.040	.02	.016	2.5	2.0	<200	<10	180
JAN 2003 14...	13.1	158	2	<.020	2.41	<.040	<.01	.014	2.5	1.5	<200	<10	120
MAR 25...	9.6	78	16	<.020	1.11	<.040	.02	.035	1.3	2.7	500	<10	520
MAY 19...	9.7	122	12	<.020	.82	<.040	.02	.043	1.1	2.3	200	<10	320
JUL 17...	12.0	186	8	<.020	1.69	<.040	.03	.034	1.9	2.5	<200	<10	200
SEP 22...	9.7	130	10	<.020	1.44	<.040	.03	.046	1.6	2.8	400	<10	560

Date	Lead, water, unfltrd recover, μ g/L (01051)	Manganese, water, unfltrd recover, μ g/L (01055)	Nickel, water, unfltrd recover, μ g/L (01067)	Zinc, water, unfltrd recover, μ g/L (01092)
NOV 2002 21...	<1.0	10	<50	<10
JAN 2003 14...	<1.0	<10	<50	<10
MAR 25...	<1.0	30	<50	<10
MAY 19...	<1.0	30	<50	70
JUL 17...	<1.0	20	<50	<10
SEP 22...	<1.0	30	<50	<10

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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	8/20/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Nematoda (NEMATODES)	1
Nemertea (PROBOSAS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<u>Prostoma</u> sp	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Physidae	
<u>Physa</u> sp	2
Pleuroceridae	
<u>Leptoxis carinata</u>	10
Bivalvia (CLAMS)	
Veneroidea	
Sphaeriidae	
<u>Sphaerium</u> sp	1
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Acentrella</u> sp	3
<u>Baetis</u> sp	5
<u>Heterocloeon</u> sp	1
<u>Plauditus</u> sp	1
Caenidae	
<u>Caenis</u> sp	2
Ephemerellidae	12
<u>Serratella</u> sp	14
Heptageniidae	1
<u>Heptagenia</u> sp	1
<u>Leucrocuta</u> sp	1
<u>Stenonema</u> sp	8
Isonychiidae	
<u>Isonychia</u> sp	14
Tricorythidae	
<u>Tricorythodes</u> sp	1
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Gomphidae	
<u>Dromogomphus</u> sp	1
Plecoptera (STONEFLIES)	
Perlidae	1
<u>Acroneuria</u> sp	1
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<u>Corydalus</u> sp	4

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	8/20/02
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Brachycentridae	
<u>Brachycentrus</u> sp	1
Hydropsychidae	
<u>Cheumatopsyche</u> sp	36
<u>Hydropsyche</u> sp	15
Hydroptilidae	
<u>Hydroptila</u> sp	1
<u>Leucotrichia</u> sp	1
Lepidoptera (MOTHS AND BUTTERFLIES)	
Pyralidae	
<u>Petrophila</u> sp	2
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	11
<u>Stenelmis</u> sp	11
Psephenidae (WATER PENNIES)	
<u>Psephenus</u> sp	2
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	45
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	1
Total Organisms	214