

CRUM CREEK BASIN

01475850 CRUM CREEK NEAR NEWTOWN SQUARE, PA

LOCATION.--Lat 39°58'35", long 75°26'13", Delaware County, Hydrologic Unit 02040202, at Castle Rock bridge on State Highway 3, 0.6 mi upstream from Preston Run, 0.8 mi upstream from Springton Reservoir, and 2.0 mi west of Newtown Square.

DRAINAGE AREA.--15.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1981 to current year. Occasional low-flow measurements, water years 1932, 1949, 1970-1977, and annual maximum 1977-1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 207.75 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair 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 base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Nov. 17	0545	903	6.58	Aug. 9	1915	665	5.84
Feb. 22	----	Unknown	Ice jam	Aug. 10	1000	1,160	7.25
June 20	1945	*1,840	*8.72	Sept. 15	1915	953	6.72

**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	3.2	13	13	106	14	21	26	18	43	22	15	14
2	3.0	9.8	13	55	18	107	25	18	22	21	14	36
3	2.9	8.1	13	46	15	83	23	17	18	29	13	20
4	2.9	7.4	12	41	24	33	22	16	153	22	46	50
5	3.1	7.6	14	27	16	87	23	16	77	20	31	22
6	3.2	25	16	26	13	177	21	22	30	20	19	15
7	2.6	11	13	24	15	54	24	19	64	22	14	14
8	2.4	8.0	13	24	12	49	30	40	44	23	25	13
9	2.4	7.3	13	26	13	124	47	22	29	19	150	12
10	7.7	7.2	13	22	13	50	32	21	24	19	212	11
11	92	10	144	19	12	32	77	19	22	21	51	11
12	29	51	97	17	11	44	53	17	26	19	31	11
13	9.8	38	58	17	11	58	31	16	40	24	20	32
14	7.3	15	126	16	11	44	26	16	51	17	17	26
15	6.0	11	34	16	11	38	25	15	27	16	16	214
16	44	33	24	15	8.5	42	23	17	21	16	16	50
17	22	266	19	16	e11	46	22	20	19	15	17	20
18	9.7	82	17	14	e10	34	23	16	56	14	16	20
19	7.9	26	17	14	e10	28	23	15	28	15	15	94
20	6.6	21	73	15	e9.0	130	21	14	473	14	14	23
21	5.2	18	31	14	e9.0	109	21	17	134	13	14	18
22	4.7	25	21	13	e250	40	22	16	49	13	14	17
23	4.7	21	19	12	e240	32	20	16	39	13	13	87
24	4.5	16	17	12	89	29	19	18	33	17	12	26
25	5.5	16	113	13	43	27	19	17	29	13	12	19
26	43	15	45	13	29	28	31	130	27	12	12	18
27	11	24	27	12	24	31	22	31	26	12	13	17
28	7.2	19	22	11	23	26	20	22	25	12	12	39
29	11	15	21	13	---	27	19	19	23	11	11	e20
30	51	15	20	13	---	41	18	17	23	11	33	e19
31	38	---	21	13	---	33	---	16	---	13	19	---
TOTAL	453.5	841.4	1099	695	964.5	1704	808	693	1675	528	917	988
MEAN	14.6	28.0	35.5	22.4	34.4	55.0	26.9	22.4	55.8	17.0	29.6	32.9
MAX	92	266	144	106	250	177	77	130	473	29	212	214
MIN	2.4	7.2	12	11	8.5	21	18	14	18	11	11	11
CFSM	0.93	1.78	2.24	1.42	2.18	3.48	1.70	1.41	3.53	1.08	1.87	2.08
IN.	1.07	1.98	2.59	1.64	2.27	4.01	1.90	1.63	3.94	1.24	2.16	2.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
MEAN	14.3	19.9	25.6	26.4	27.5	37.5	32.0	25.3	20.1	15.4	12.3	15.8											
MAX	53.4	37.3	92.6	63.0	42.7	95.0	76.8	58.9	55.8	36.2	29.6	74.6											
(WY)	1997	1987	1997	1996	1984	1994	1983	1984	2003	1989	2003	1999											
MIN	3.87	5.02	4.63	7.45	7.13	11.7	9.45	13.2	5.85	4.02	2.82	4.53											
(WY)	2002	2002	1999	1985	2002	1985	1985	1999	1985	1999	2002	1998											

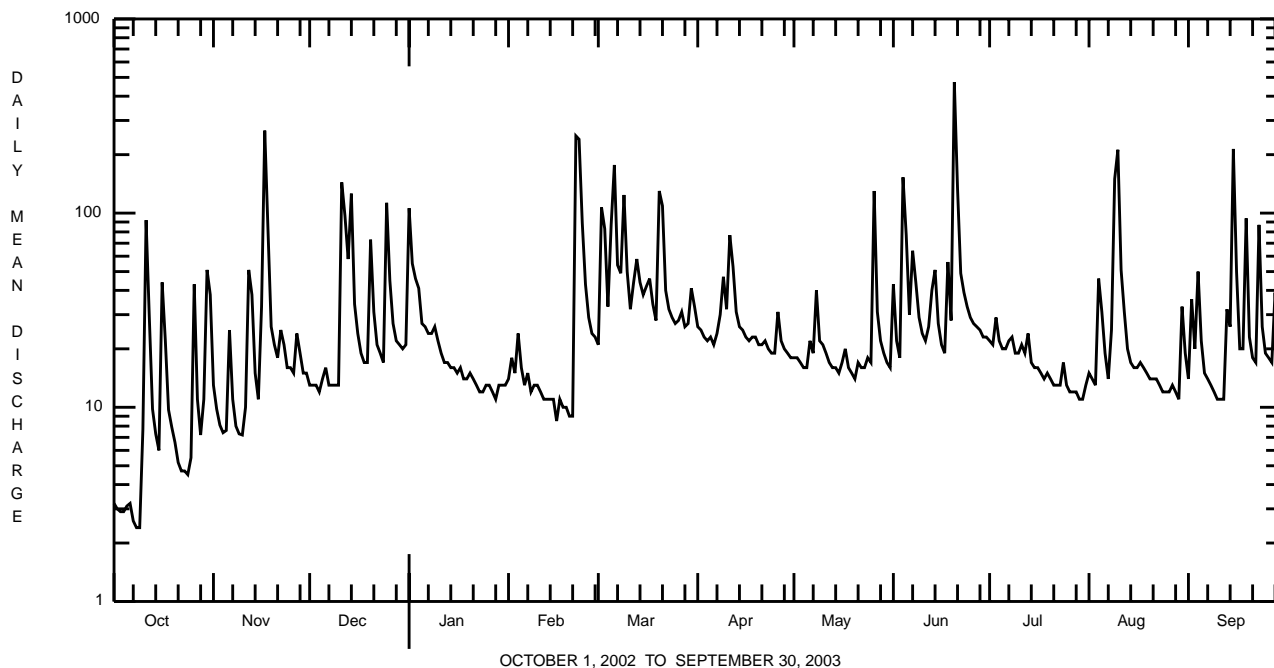
e Estimated.

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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL TOTAL	5243.6		11366.4			
ANNUAL MEAN	14.4		31.1		22.7	
HIGHEST ANNUAL MEAN					34.7	1984
LOWEST ANNUAL MEAN					9.24	2002
HIGHEST DAILY MEAN	266	Nov 17	473	Jun 20	1610	Sep 16 1999
LOWEST DAILY MEAN	1.1	Aug 18	2.4	Oct 8	0.64	Aug 8 1991
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 16	2.8	Oct 3	1.2	Aug 16 2002
MAXIMUM PEAK FLOW			a1840	Jun 20	a4250	Sep 16 1999
MAXIMUM PEAK STAGE			8.72	Jun 20	b11.99	Sep 16 1999
ANNUAL RUNOFF (CFSM)	0.91		1.97		1.43	
ANNUAL RUNOFF (INCHES)	12.35		26.76		19.48	
10 PERCENT EXCEEDS	27		53		39	
50 PERCENT EXCEEDS	8.8		19		15	
90 PERCENT EXCEEDS	2.6		11		5.7	

- a From rating curve extended above 1,300 ft³/s on basis of slope-area measurement at peak flow.
- b From outside floodmark.



CRUM CREEK BASIN

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975, 1999 to current year.

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)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat un- f 25 degC (00095)	Temper- ature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat un- f incrm. titr., field, mg/L as CaCO3 (00419)
OCT 2002 24...	0900	1028	80020	4.5	11.6	7.3	240	8.8	19.7	9.65	2.38	10.0	50
			Chlor- ide, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Boron, water, fltrd, µg/L (01020)	Iron, water, fltrd, µg/L (01046)		
			OCT 2002 24...	25.9	18.4	16.7	<.04	1.49	<.008	E.01	20	89	

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATESREMARKS.--Samples were collected using a Hess sampler with a mesh size of 500 μm . Each sample covered a total area of 2.4 m².

Date	10/24/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	63
Nemertea (PROBOSAS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<u>Prostoma</u> sp	78
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancyliidae	
<u>Ferrissia</u> sp	36
Lymnaeidae	
<u>Fossaria</u> sp	1
Planorbidae	
<u>Gyraulus</u> sp	5
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	19
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	218
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Acentrella</u> sp	6
<u>Baetis</u> sp	2
Caenidae	
<u>Caenis</u> sp	10
Ephemerellidae	
<u>Eurylophella</u> sp	40
<u>Serratella</u> sp	81
Heptageniidae	
<u>Stenonema</u> sp	175
Isonychiidae	
<u>Isonychia</u> sp	203
Tricorythidae	
<u>Tricorythodes</u> sp	2
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae (DAMSELFLIES)	
<u>Argia</u> sp	2
Gomphidae	3

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/24/02
Benthic Macroinvertebrate	Count
Plecoptera (STONEFLIES)	
Perlidae	
<u>Acroneuria</u> sp	8
Taeniopterygidae	
<u>Taeniopteryx</u> sp	3
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<u>Corydalus</u> sp	1
Trichoptera (CADDISFLIES)	
Brachycentridae	
<u>Micrasema</u> sp	1
Glossosomatidae	
<u>Glossosoma</u> sp	2
Hydropsychidae	
<u>Cheumatopsyche</u> sp	622
<u>Hydropsyche</u> sp	768
Hydroptilidae	
<u>Hydroptila</u> sp	1
<u>Leucotrichia</u> sp	17
Philopotamidae	
<u>Chimarra</u> sp	69
Psychomyiidae	
<u>Psychomyia</u> sp	9
Lepidoptera (MOTHS AND BUTTERFLIES)	
Pyrilidae	
<u>Petrophila</u> sp	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Dubiraphia</u> sp	1
<u>Optioservus</u> sp	90
<u>Oulimnius</u> sp	54
<u>Stenelmis</u> sp	55
Psephenidae (WATER PENNIES)	
<u>Psephenus</u> sp	3
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	
	111
Empididae (DANCE FLIES)	
<u>Hemerodromia</u> sp	4
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	9
Tipulidae (CRANE FLIES)	
<u>Antocha</u> sp	31
Total organisms	
	2804
Total number of taxa	
	38