

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 sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. 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)
Mar. 22	0115	659	5.82	Sept. 16	1700	*4,250	*11.99

**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES**

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	6.2	4.5	e3.7	11	36	18	14	8.8	5.6	2.7	3.0
2	3.4	6.1	4.3	e3.5	46	17	17	13	8.4	6.7	1.8	2.9
3	3.2	6.0	4.4	172	25	16	16	14	10	9.0	1.5	2.7
4	7.3	5.6	4.4	24	16	38	17	14	8.3	5.2	1.5	3.2
5	5.8	5.7	4.4	11	14	18	19	14	7.8	4.7	1.5	21
6	4.3	6.2	4.6	e8.0	13	19	16	13	7.7	4.3	1.5	58
7	5.2	6.7	4.5	e7.2	13	29	15	13	7.7	3.7	1.4	9.5
8	23	6.6	5.9	e7.0	23	16	15	14	7.6	3.4	1.9	6.8
9	22	6.8	9.3	e9.8	18	15	22	13	7.3	3.4	2.1	15
10	28	7.1	5.4	e18	15	15	62	12	7.0	3.5	1.7	72
11	9.1	14	4.8	10	13	14	38	12	7.1	3.5	1.4	11
12	6.4	9.0	4.3	9.6	16	13	45	11	6.8	3.2	1.3	7.2
13	5.9	5.9	4.6	16	31	13	23	16	7.9	3.3	1.4	6.0
14	7.7	5.7	4.4	16	16	14	19	12	11	3.3	26	5.3
15	6.1	5.7	4.2	131	13	22	17	11	13	3.2	10	9.2
16	5.2	5.4	4.3	33	13	25	23	11	7.4	3.1	3.9	1610
17	5.6	5.6	4.5	26	13	39	24	11	7.3	2.9	2.9	102
18	5.0	5.4	4.3	198	73	30	18	11	7.9	2.6	2.4	28
19	5.0	5.4	4.2	45	27	18	17	22	7.1	5.7	2.1	20
20	4.9	5.7	4.3	20	18	16	18	14	7.1	12	5.4	16
21	5.0	6.0	4.3	17	16	60	17	11	9.2	4.7	6.1	49
22	5.1	5.5	4.8	19	13	213	20	10	7.9	3.9	3.5	40
23	5.4	5.4	4.6	20	12	34	20	12	6.9	3.8	2.8	20
24	5.4	5.5	4.7	88	13	27	23	30	6.2	3.4	2.6	16
25	5.4	5.4	4.3	31	13	23	16	20	5.9	3.0	2.5	14
26	5.5	17	4.2	19	13	20	16	12	5.8	2.7	29	13
27	5.4	7.5	4.2	16	12	19	15	11	5.5	2.3	54	12
28	5.7	5.2	e4.1	14	24	21	15	10	5.4	2.2	7.9	12
29	6.9	4.8	e4.5	13	---	18	14	9.7	5.3	2.2	5.0	12
30	6.4	4.5	e4.2	12	---	17	14	9.2	4.9	2.1	3.5	41
31	6.1	---	e3.9	12	---	16	---	9.2	---	1.9	3.1	---
TOTAL	229.9	197.6	143.4	1029.8	543	891	629	409.1	226.2	124.5	194.4	2237.8
MEAN	7.42	6.59	4.63	33.2	19.4	28.7	21.0	13.2	7.54	4.02	6.27	74.6
MAX	28	17	9.3	198	73	213	62	30	13	12	54	1610
MIN	3.2	4.5	3.9	3.5	11	13	14	9.2	4.9	1.9	1.3	2.7
CFSM	.47	.42	.29	2.10	1.23	1.82	1.33	.84	.48	.25	.40	4.72
IN.	.54	.47	.34	2.42	1.28	2.10	1.48	.96	.53	.29	.46	5.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1999, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	14.8	20.5	25.8	28.2	27.9	36.1	33.3	25.9	18.6	15.9	12.3	15.7						
MAX (WY)	53.4	37.3	92.6	63.0	42.7	95.0	76.8	58.9	43.8	36.2	24.3	74.6						
MIN (WY)	1997	1987	1997	1996	1984	1994	1983	1984	1982	1989	1996	1999						
MIN (WY)	6.26	6.59	4.63	7.45	17.1	11.7	9.45	13.2	5.85	4.02	3.93	4.53						
MIN (WY)	1998	1999	1999	1985	1992	1985	1985	1999	1985	1999	1995	1998						

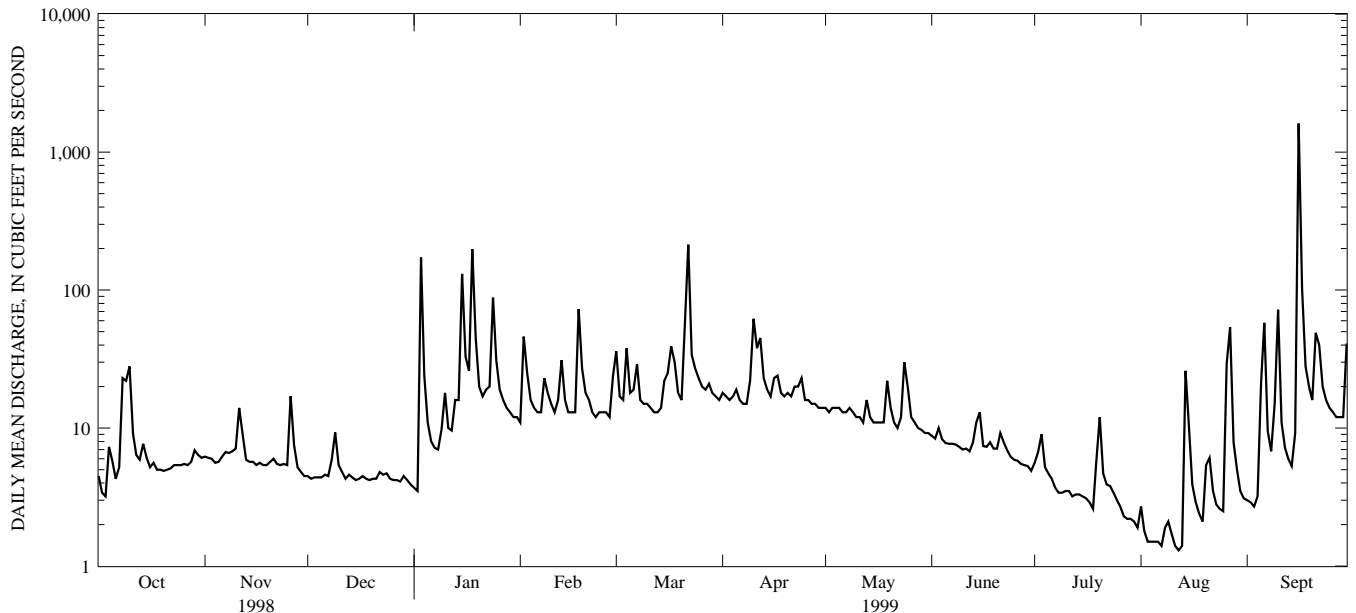
e Estimated.

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SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1982 - 1999	
ANNUAL TOTAL	6707.8		6855.7			
ANNUAL MEAN	18.4		18.8		22.9	
HIGHEST ANNUAL MEAN					34.7	
LOWEST ANNUAL MEAN					12.3	
HIGHEST DAILY MEAN	185	Jan 23	1610	Sep 16	1610	Sep 16 1999
LOWEST DAILY MEAN	2.7	Sep 29	1.3	Aug 12	.64	Aug 8 1991
ANNUAL SEVEN-DAY MINIMUM	3.3	Sep 23	1.6	Aug 2	1.6	Aug 2 1999
INSTANTANEOUS PEAK FLOW			a 4250	Sep 16	a 4250	Sep 16 1999
INSTANTANEOUS PEAK STAGE			b 11.99	Sep 16	b 11.99	Sep 16 1999
ANNUAL RUNOFF (CFSM)	1.16		1.19		1.45	
ANNUAL RUNOFF (INCHES)	15.79		16.14		19.67	
10 PERCENT EXCEEDS	34		26		39	
50 PERCENT EXCEEDS	13		9.2		15	
90 PERCENT EXCEEDS	4.2		3.2		5.8	

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



1-YEAR HYDROGRAPH
 OCTOBER 1, 1998 TO SEPTEMBER 30, 1999

CRUM CREEK BASIN

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975, 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)
NOV 1998 02...	0930	80020	1028	5.6	12.0	7.6	212

DATE	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV 1998 02...	8.5	55	<.020	.826	<.010	<.010

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

Date	11/02/98
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (Flatworms)	
Tricladida	
Planariidae	17
Nematoda (Nematodes)	17
Nemertea (Proboscis Worms)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<i>Prostoma</i>	29
Mollusca	
Gastropoda (Snails)	
Basommatophora	
Ancylidae	
<i>Ferrissia</i>	7
Lymnaeidae	3
Planorbidae	
<i>Gyraulus</i>	5
Bivalvia (Clams)	
Veneroidea	
Sphaeriidae	2
Annelida (Segmented Worms)	
Oligochaeta	
Tubificida	
Naididae	2
Arthropoda	
Acariformes	
Hydrachnidia (Water Mites)	151
Crustacea	
Amphipoda (Scuds)	
Crangonyctidae	
<i>Stygonectes</i>	3
Insecta	
Ephemeroptera (Mayflies)	
Baetidae	
<i>Baetis</i>	19
<i>Pseudocloeon</i>	7
Ephemerellidae	
<i>Eurylophella</i>	23
<i>Serratella</i>	129
Isonychiidae	
<i>Isonychia</i>	10
Leptohiphidae	
<i>Tricorythodes</i>	1
Odonata (Dragonflies and Damselflies)	
Coenagrionidae	
<i>Argia</i>	1
Gomphidae	4
Plecoptera (Stoneflies)	
Leuctridae	5
Taeniopterygidae	
<i>Taeniopteryx</i>	26

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	11/02/98
Benthic Macroinvertebrate	Count
Trichoptera (Caddisflies)	
Brachycentridae	
<i>Micrasema</i>	4
Glossosomatidae	
<i>Glossosoma</i>	70
Hydropsychidae	
<i>Cheumatopsyche</i>	701
<i>Hydropsyche</i>	883
Hydroptilidae	
<i>Hydroptila</i>	3
<i>Leucotrichia</i>	5
Leptoceridae	
<i>Mystacides</i>	3
Polycentropodidae	
<i>Polycentropus</i>	1
Psychomyiidae	
<i>Psychomyia</i>	8
Lepidoptera	
Pyrilididae (Moths)	
<i>Petrophila</i>	3
Coleoptera (Beetles)	
Elmidae (Riffle Beetles)	
<i>Optioservus</i>	206
<i>Oulimnius</i>	123
<i>Stenelmis</i>	76
Psephenidae (Water Pennies)	
<i>Psephenus</i>	21
Diptera (True Flies)	
Chironomidae (Midges)	485
Empididae (Dance Flies)	
<i>Hemerodromia</i>	15
Simuliidae (Black Flies)	
<i>Simulium</i>	2
Tipulidae (Crane Flies)	
<i>Antocha</i>	6
<i>Diranota</i>	46
<i>Tipula</i>	1
Total count	3,123
Total number of taxa	40