

## CHRISTINA RIVER BASIN

## 01480638 BROAD RUN AT NORTHBROOK, PA

**LOCATION.**--Lat 39°55'49", long 75°41'06", Chester County, Hydrologic Unit 02040205, on right bank 50 ft upstream from Northbrook Road and 2.2 mi south of Marshalton.

**DRAINAGE AREA.**--6.39 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--December 2002 to current year.

**GAGE.**--Water-stage recorder, crest-stage gage. Elevation of gage is 190.78 ft above NAVD of 1988.

**REMARKS.**--Records fair except those for estimated daily discharges and those above 100 ft<sup>3</sup>/s, which are poor. Several measurements of water temperature were made during the year.

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	---	---	---	24	8.0	12	14	9.7	16	18	6.5	6.5
2	---	---	---	20	7.9	36	14	9.5	9.3	17	6.5	9.9
3	---	---	---	22	7.3	28	13	9.2	9.0	18	15	8.1
4	---	---	---	23	e8.3	15	13	9.1	48	16	17	17
5	---	---	---	19	6.9	33	13	9.1	33	16	11	8.5
6	---	---	---	19	6.2	50	12	9.6	21	15	8.6	7.2
7	---	---	---	17	e6.0	27	12	9.3	34	19	7.6	6.6
8	---	---	---	17	e6.2	29	13	14	24	16	7.6	6.3
9	---	---	---	16	e6.3	41	14	10	21	14	13	6.0
10	---	---	---	14	e6.1	24	12	9.9	18	13	44	5.9
11	---	---	---	13	e6.2	20	26	9.3	17	13	12	5.7
12	---	---	---	11	e6.2	20	17	8.7	17	12	9.9	5.8
13	---	---	---	11	e6.2	22	14	8.4	19	12	8.7	8.4
14	---	---	---	11	e6.2	19	14	8.2	18	11	7.9	7.6
15	---	---	---	10	e6.0	17	13	8.0	17	10	7.4	277
16	---	---	---	9.6	e5.9	17	13	8.1	14	9.8	7.6	57
17	---	---	---	e9.0	e6.0	19	13	8.2	13	9.2	7.7	38
18	---	---	---	e8.5	e6.1	17	13	7.7	22	9.0	7.0	33
19	---	---	---	e8.8	e6.2	15	12	7.4	14	8.8	6.8	49
20	---	---	---	e9.0	e6.2	30	12	7.0	63	8.4	6.4	31
21	---	---	---	e8.6	e6.4	36	12	7.5	81	8.3	6.2	28
22	---	---	---	e7.8	e22	24	13	7.2	62	7.9	6.1	26
23	---	---	---	e7.2	e81	21	12	7.4	48	8.1	6.0	50
24	---	---	8.5	e7.4	e40	19	11	8.0	37	8.5	5.8	31
25	---	---	25	e7.5	21	18	11	7.8	31	7.4	5.6	28
26	---	---	16	e7.6	16	19	13	33	27	7.1	6.3	26
27	---	---	13	e7.0	14	17	11	11	24	7.1	6.3	30
28	---	---	12	e6.7	14	16	10	9.8	22	6.9	5.7	36
29	---	---	11	e6.9	---	17	10	9.1	20	6.7	5.8	25
30	---	---	10	e7.1	---	18	9.8	8.6	19	6.5	17	22
31	---	---	11	7.4	---	16	---	8.6	---	6.4	7.4	---
TOTAL	---	---	106.5	373.1	344.8	712	389.8	298.4	818.3	346.1	296.4	896.5
MEAN	---	---	13.3	12.0	12.3	23.0	13.0	9.63	27.3	11.2	9.56	29.9
MAX	---	---	13.3	12.0	12.3	23.0	13.0	9.63	27.3	11.2	9.56	29.9
(WY)	---	---	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003
MIN	---	---	13.3	12.0	12.3	23.0	13.0	9.63	27.3	11.2	9.56	29.9
(WY)	---	---	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	---	---	13.3	12.0	12.3	23.0	13.0	9.63	27.3	11.2	9.56	29.9
MAX	---	---	13.3	12.0	12.3	23.0	13.0	9.63	27.3	11.2	9.56	29.9
(WY)	---	---	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003
MIN	---	---	13.3	12.0	12.3	23.0	13.0	9.63	27.3	11.2	9.56	29.9
(WY)	---	---	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003

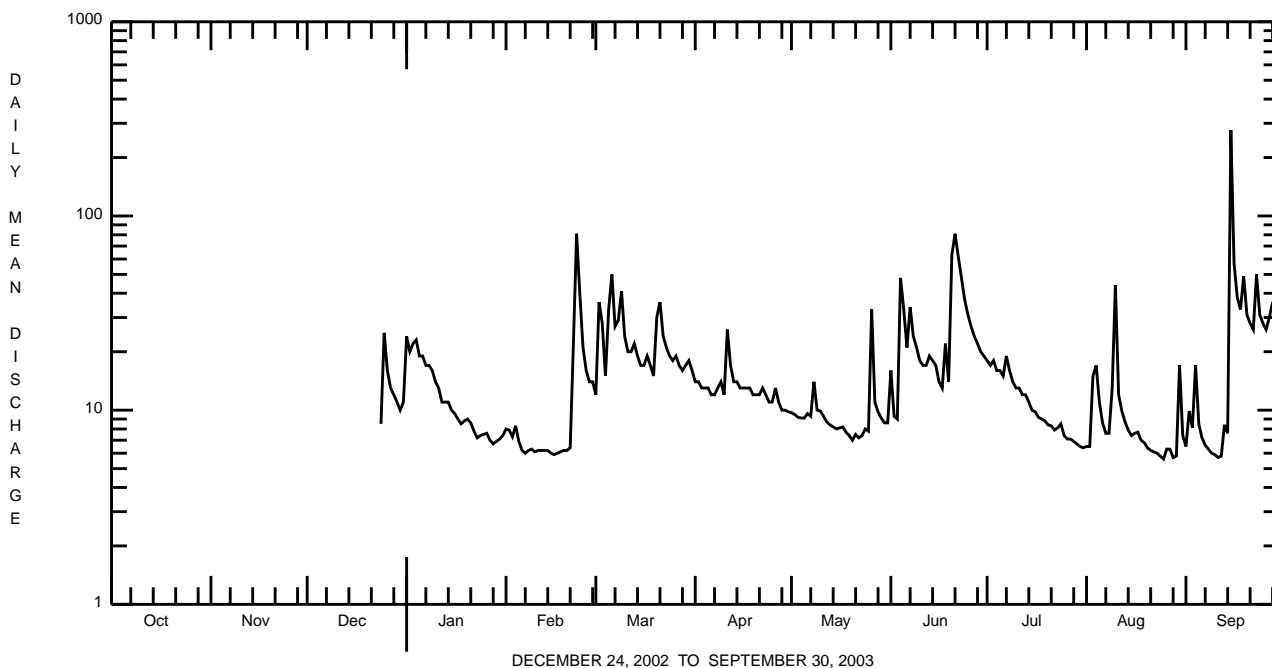
e Estimated.

CHRISTINA RIVER BASIN

01480638 BROAD RUN AT NORTHBROOK, PA--Continued

SUMMARY STATISTICS	FOR PERIOD OF RECORD	
ANNUAL TOTAL	4581.9	
PERIOD OF RECORD MEAN	16.3	
HIGHEST DAILY MEAN	277	Sep 15
LOWEST DAILY MEAN	5.6	Aug 25
ANNUAL SEVEN-DAY MINIMUM	5.9	Aug 23
MAXIMUM PEAK FLOW	<sup>a</sup> 4700	Sep 15
MAXIMUM PEAK STAGE	8.04	Sep 15
INSTANTANEOUS LOW FLOW	5.2	Aug 25
10 PERCENT EXCEEDS	30	
50 PERCENT EXCEEDS	12	
90 PERCENT EXCEEDS	6.3	

a From rating curve extended above 76 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 8.04 ft.



CHRISTINA RIVER BASIN

01480638 BROAD RUN AT NORTHBROOK, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to current year.

REMARKS.--

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)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd, µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd, titr., field, mg/L as CaCO3 (00419)
NOV 2002 26...	0930	1028	80020	5.0	10.1	7.2	224	6.7	17.4	8.06	1.39	10.6	36
Date	Chloride, 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-phosphate, water, fltrd, mg/L as P (00671)	Aluminum, water, fltrd, µg/L (01106)	Arsenic water, fltrd, µg/L (01000)	Boron, water, fltrd, µg/L (01020)	Cadmium water, fltrd, µg/L (01025)	Chromium, water, fltrd, µg/L (01030)	Copper, water, fltrd, µg/L (01040)
NOV 2002 26...	21.3	9.9	17.5	<.04	2.61	E.004	<.02	<20	<2	40	<.2	<.8	<1.2
Date	Iron, water, fltrd, µg/L (01046)	Lead, water, fltrd, µg/L (01049)	Manganese, water, fltrd, µg/L (01056)	Mercury water, fltrd, µg/L (71890)	Molybdenum, water, fltrd, µg/L (01060)	Nickel, water, fltrd, µg/L (01065)	Zinc, water, fltrd, µg/L (01090)						
NOV 2002 26...	32	<1	26.7	<.02	<1.8	<2.0	<24						

## CHRISTINA RIVER BASIN

## 01480638 BROAD RUN AT NORTHBROOK, PA--Continued

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 m<sup>2</sup>.

Date	11/26/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	20
Nematoda (NEMATODES)	52
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
<u>Pisidium</u> sp	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	15
Tubificida	
Naididae	78
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	82
Isopoda (SOW BUGS)	
Asellidae	
<u>Caecidotea</u> sp	1
Podocopa (SEED SHRIMP)	3
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Acentrella</u> sp	1
<u>Baetis</u> sp	6
Caenidae	
<u>Caenis</u> sp	2
Ephemerellidae	
<u>Eurylophella</u> sp	9
<u>Serratella</u> sp	154
Heptageniidae	
<u>Stenonema</u> sp	17
Isonychiidae	
<u>Isonychia</u> sp	6
Plecoptera (STONEFLIES)	
Leuctridae	
<u>Paraleuctra</u> sp	7
Perlidae	
<u>Acroneuria</u> sp	3
<u>Paragnetina</u> sp	23
Taeniopterygidae	
<u>Strophopteryx</u> sp	29
<u>Taeniopteryx</u> sp	3
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<u>Nigronia</u> sp	2

## CHRISTINA RIVER BASIN

## 01480638 BROAD RUN AT NORTHBROOK, PA--Continued

BIOLOGICAL DATA  
BENTHIC MACROINVERTEBRATES--Continued

Date	11/26/02
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Brachycentridae	
<u>Micrasema</u> sp	66
Glossosomatidae	
<u>Glossosoma</u> sp	10
Goeridae	
<u>Goera</u> sp	1
Hydropsychidae	
<u>Cheumatopsyche</u> sp	369
<u>Hydropsyche</u> sp	352
Hydroptilidae	
<u>Hydroptila</u> sp	48
Philopotamidae	
<u>Chimarra</u> sp	287
<u>Dolophilodes</u> sp	2
Polycentropodidae	
<u>Polycentropus</u> sp	3
Psychomyiidae	
<u>Psychomyia</u> sp	1
Rhyacophilidae	
<u>Rhyacophila</u> sp	3
Uenoidae	
<u>Neophylax</u> sp	4
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Macronychus</u> sp	3
<u>Optioservus</u> sp	587
<u>Oulimnius</u> sp	292
<u>Promoresia</u> sp	71
<u>Stenelmis</u> sp	95
Psephenidae (WATER PENNIES)	
<u>Psephenus</u> sp	54
Diptera (TRUE FLIES)	
Ceratopogonidae (BITING MIDGES)	
	1
Chironomidae (MIDGES)	
	509
Empididae (DANCE FLIES)	
<u>Hemerodromia</u> sp	14
Ephydriidae	
	2
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	30
Tipulidae (CRANE FLIES)	
<u>Antocha</u> sp	66
Total Organisms	3384
Total Taxa	45