



2004 Water Year CHRISTINA RIVER BASIN

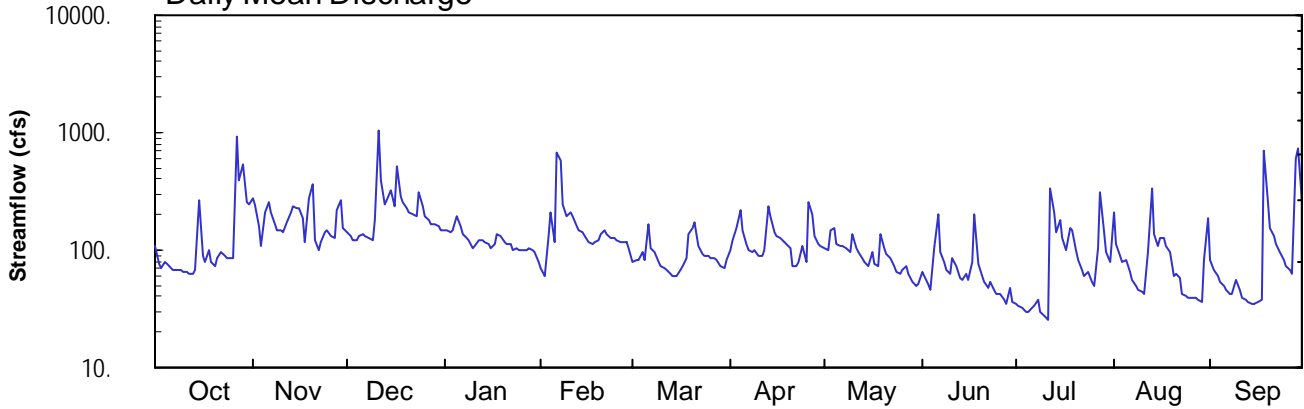
01480700 East Branch Brandywine Creek near Downingtown, PA

Latitude: 40° 02' 05"
Chester County

Longitude: 075° 42' 32"
Datum: 270 feet

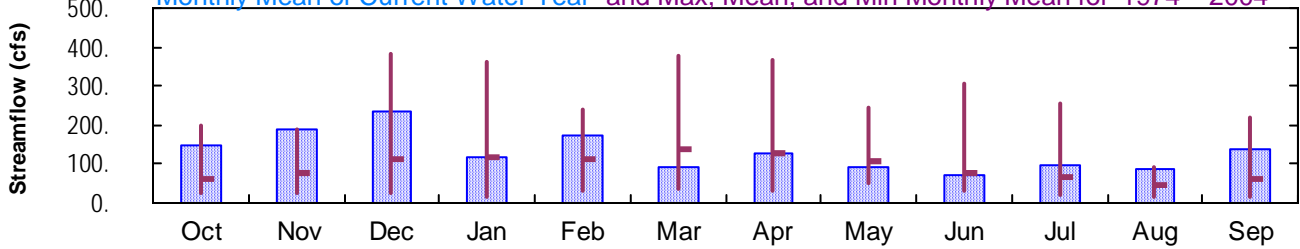
Hydrologic Unit Code: 02040205
Drainage Area: 60.6 mi²

Daily Mean Discharge

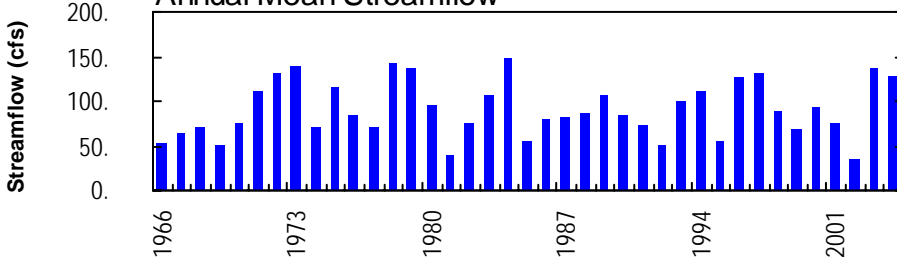


Monthly Statistics

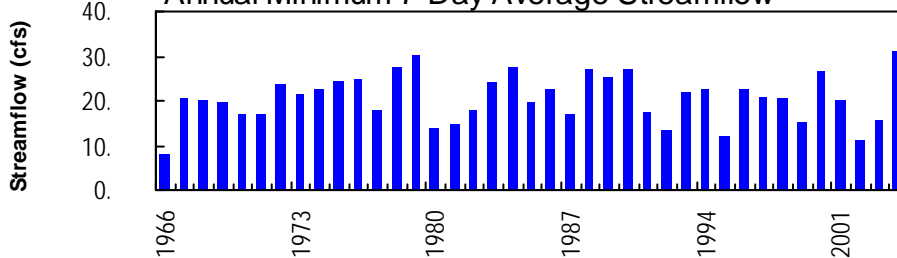
Monthly Mean of Current Water Year and Max, Mean, and Min Monthly Mean for 1974 – 2004



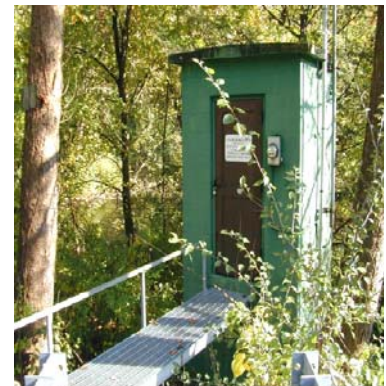
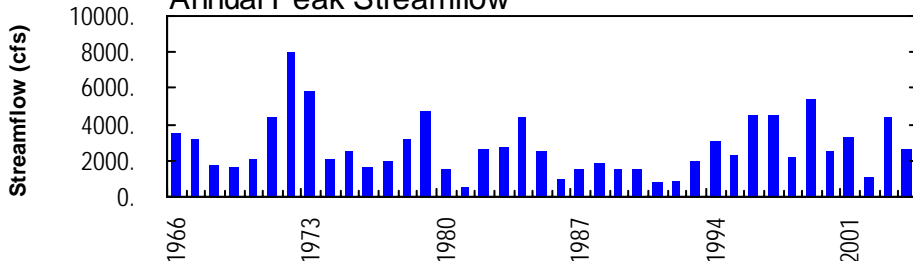
Annual Mean Streamflow



Annual Minimum 7-Day Average Streamflow



Annual Peak Streamflow



01480700-EB Brandywine Creek near Downingtown

CHRISTINA RIVER BASIN

01480700 EAST BRANCH BRANDYWINE CREEK NEAR DOWNINGTOWN, PA

LOCATION.--Lat 40°02'05", long 75°42'32", Chester County, Hydrologic Unit 02040205, on right bank 20 ft downstream from bridge on Dowlin Forge Road, 200 ft east of State Highway 282, 0.4 mi downstream from Shamona Creek, 1.5 mi downstream from Marsh Creek, 2.0 mi upstream from Beaver Creek, and 2.2 mi north of Downingtown.

DRAINAGE AREA.--60.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1948-57. October 1965 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 270 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 30, 1966, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since November 1973 by Marsh Creek Reservoir (station 01480684) 1.9 mi upstream. Several measurements of water temperature were made during the year. Satellite and landline telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	274	142	145	e70	80	98	104	66	34	209	82
2	75	241	132	145	e60	83	120	101	59	34	112	67
3	70	162	124	145	e130	82	156	150	52	32	88	60
4	79	108	121	146	207	95	219	153	47	30	79	53
5	77	214	129	192	118	83	146	112	103	29	83	49
6	70	251	137	161	674	165	111	107	200	32	64	45
7	68	207	129	136	587	103	102	106	98	33	56	42
8	68	167	124	125	249	97	97	105	79	38	50	43
9	67	150	122	123	193	79	100	95	68	30	46	56
10	66	145	177	e105	210	73	90	137	62	27	43	46
11	65	143	1040	110	193	71	87	102	85	26	42	40
12	63	171	398	120	158	67	99	96	73	341	97	38
13	61	206	245	121	148	63	238	86	59	208	337	36
14	67	237	265	115	144	61	197	79	56	143	138	35
15	267	230	323	111	131	61	144	74	63	183	110	35
16	88	226	234	103	117	69	133	97	56	124	125	37
17	78	190	514	111	113	74	124	76	78	102	126	37
18	101	116	287	135	116	84	118	73	202	156	109	718
19	80	277	257	131	123	135	113	135	75	147	96	250
20	73	369	228	116	135	154	102	103	60	99	60	153
21	85	121	207	110	148	174	73	92	53	83	63	129
22	96	102	198	110	139	109	73	84	48	67	57	112
23	90	119	191	101	127	92	78	72	53	61	43	96
24	86	140	316	104	125	88	107	66	45	65	40	84
25	84	150	232	99	122	88	80	62	43	54	39	75
26	84	133	193	e100	117	85	259	69	42	49	39	67
27	934	127	178	e100	116	85	200	74	37	103	39	62
28	388	214	168	e102	115	82	131	61	34	315	37	595
29	544	267	163	e100	106	74	115	54	48	144	36	726
30	256	153	159	e95	---	70	110	49	37	98	82	262
31	244	---	149	e80	---	83	---	52	---	80	185	---
TOTAL	4582	5610	7282	3697	4991	2809	3820	2826	2081	2967	2730	4130
MEAN	148	187	235	119	172	90.6	127	91.2	69.4	95.7	88.1	138
MAX	934	369	1040	192	674	174	259	153	202	341	337	726
MIN	61	102	121	80	60	61	73	49	34	26	36	35

e Estimated.

CHRISTINA RIVER BASIN

01480700 EAST BRANCH BRANDYWINE CREEK NEAR DOWNINGTOWN, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	61.1	76.9	114	118	112	140	129	105	79.0	65.1	45.8	62.8
MAX (WY)	199	187	385	361	242	380	365	246	308	257	93.7	217
MIN (WY)	1997	2004	1997	1979	1979	1994	1983	1989	2003	1984	2003	2003
MIN (WY)	23.2	24.9	23.5	17.5	29.5	35.7	28.9	49.2	29.6	19.7	17.8	17.1
MIN (WY)	1981	2002	1981	1981	2002	1985	1985	1976	1985	2002	2002	1980

SUMMARY STATISTICS FOR 2003 CALENDAR YEAR FOR 2004 WATER YEAR WATER YEARS 1974 - 2004

ANNUAL TOTAL		58740		47525								
ANNUAL MEAN		161		130						92.2		
HIGHEST ANNUAL MEAN										150		1984
LOWEST ANNUAL MEAN										35.0		2002
HIGHEST DAILY MEAN				1330	Sep 15		1040	Dec 11		2020	Jan 26	1978
LOWEST DAILY MEAN				e34	Jan 22		26	Jul 11		9.1	Sep 13	2002
ANNUAL SEVEN-DAY MINIMUM				a37	Jan 22		31	Jul 5		11	Sep 8	2002
MAXIMUM PEAK FLOW							2630	Sep 28		b5410	Sep 16	1999
MAXIMUM PEAK STAGE							6.72	Sep 28		9.59	Sep 16	1999
INSTANTANEOUS LOW FLOW							25	Jul 11, 12		7.4	Sep 13	2002
10 PERCENT EXCEEDS			293				233			178		
50 PERCENT EXCEEDS			121				102			59		
90 PERCENT EXCEEDS			52				46			25		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1973, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	44.3	76.4	92.0	81.4	139	129	123	98.8	99.8	63.1	56.5	45.2
MAX (WY)	120	168	245	168	286	195	238	144	306	128	147	148
MIN (WY)	1972	1973	1973	1973	1971	1972	1973	1973	1972	1972	1971	1971
MIN (WY)	24.8	27.6	32.0	33.3	51.6	70.0	64.3	43.2	30.3	18.3	15.3	20.1
MIN (WY)	1970	1966	1966	1969	1969	1969	1969	1969	1966	1966	1966	1970

SUMMARY STATISTICS WATER YEARS 1966 - 1973

ANNUAL TOTAL ANNUAL MEAN		87.0										
HIGHEST ANNUAL MEAN		139								1973		
LOWEST ANNUAL MEAN		51.6								1969		
HIGHEST DAILY MEAN		3220				Jun 22				1972		
LOWEST DAILY MEAN		7.2				Sep 12				1966		
ANNUAL SEVEN DAY MINIMUM		8.0				Sep 7				1966		
MAXIMUM PEAK FLOW		b8070				Jun 22				1972		
MAXIMUM PEAK STAGE		c12.06				Jun 22				1972		
INSTANTANEOUS LOW FLOW		7.2				Sep 2,3,11-13,				1966		
ANNUAL RUNOFF (CFSM)		1.44										
ANNUAL RUNOFF (INCHES)		19.51										
10 PERCENT EXCEEDS		163										
50 PERCENT EXCEEDS		56										
90 PERCENT EXCEEDS		23										

- a Computed using estimated daily discharges.
- b From rating curve extended above 5,000 ft³/s.
- c From floodmark.
- e Estimated.

CHRISTINA RIVER BASIN

01480700 EAST BRANCH BRANDYWINE CREEK NEAR DOWNINGTOWN, PA--Continued

PERIOD OF RECORD--October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

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)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, 25 degC (90095)	Specif. conductance, wat unfltrd lab, 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)
NOV 24...	1200	1028	80020	139	11.3	7.8	7.2	182	186	10.7	15.1	5.16	2.25

Date	Time	Sodium, water, field, fltrd, mg/L (00930)	ANC, wat unfltrd, titr., mg/L as CaCO3 (00419)	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, mg/L (01106)	Arsenic, water, fltrd, mg/L (01000)	Boron, water, fltrd, mg/L (01020)	Cadmium, water, fltrd, mg/L (01025)
NOV 24...	8.94	42	19.4	12.8	13.5	.06	1.79	E.007	<.02	21	<2	22	<.2	

Date	Time	Chromium, water, fltrd, µg/L (01030)	Copper, water, fltrd, µg/L (01040)	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 24...		<.8	E.9	131	<1	51.3	<.02	<1.8	E1.2	E3

CHRISTINA RIVER BASIN

01480700 EAST BRANCH BRANDYWINE CREEK NEAR DOWNINGTOWN, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--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	11/18/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	20
Nematoda (NEMATODES)	1
Nemertea (PROBOSAS WORMS)	
Enopla	
Hoploneurtea	
Tetrastemmatidae	
<i>Prostoma</i>	10
Mollusca	
Bivalvia (CLAMS)	
Veneroidea	
Sphaeriidae	
<i>Sphaerium</i>	3
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	2
Tubificida	
Tubificidae	10
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	55
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
<i>Gammarus</i>	2
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
<i>Caenis</i>	2
Ephemerellidae	
<i>Serratella</i>	6
Heptageniidae	
<i>Stenonema</i>	24
Isonychiidae	
<i>Isonychia</i>	1
Odonata	
Gomphidae (DRAGONFLIES)	
<i>Lanthus</i>	3
Plecoptera (STONEFLIES)	
Capniidae	
<i>Allocapnia</i>	13
Nemouridae	1
Perlidae	
<i>Acroneuria</i>	5
<i>Agnatina</i>	1
Taeniopterygidae	
<i>Strophopteryx</i>	11
<i>Taeniopteryx</i>	11

CHRISTINA RIVER BASIN

01480700 EAST BRANCH BRANDYWINE CREEK NEAR DOWNINGTOWN, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	11/18/03
Benthic Macroinvertebrate	Count
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<i>Corydalus</i>	6
<i>Nigronia</i>	1
Trichoptera (CADDISFLIES)	
Apataniidae	
<i>Apatania</i>	7
Brachycentridae	
<i>Micrasema</i>	11
Glossosomatidae	
<i>Glossosoma</i>	11
Hydropsychidae	
<i>Cheumatopsyche</i>	33
<i>Diplectrona</i>	1
<i>Hydropsyche</i>	451
Hydroptilidae	
<i>Leucotrichia</i>	4
Philopotamidae	
<i>Chimarra</i>	1
<i>Dolophilodes</i>	1
Polycentropodidae	
<i>Neureclipsis</i>	2
<i>Polycentropus</i>	1
Uenoidae	
<i>Neophylax</i>	8
Lepidoptera	
Pyralididae (MOTHS)	
<i>Petrophila</i>	1
Coleoptera (BEETLES)	
Dryopidae	
<i>Helichus</i>	1
Elmidae (RIFFLE BEETLES)	
<i>Dubiraphia</i>	5
<i>Optioservus</i>	130
<i>Oulimnius</i>	17
<i>Promoresia</i>	8
<i>Stenelmis</i>	12
Psephenidae (WATER PENNIES)	
<i>Psephenus</i>	27
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	
	410
Empididae (DANCE FLIES)	
<i>Hemerodromia</i>	22
Simuliidae (BLACK FLIES)	
<i>Prosimulium</i>	4
<i>Simulium</i>	8
Tipulidae (CRANE FLIES)	
<i>Antocha</i>	22
<i>Tipula</i>	1
Total Organisms	1387
Total Taxa	47