

CHRISTINA RIVER BASIN

01479820 RED CLAY CREEK NEAR KENNETT SQUARE, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 39°49'00", long 75°41'31", Chester County, Hydrologic Unit 02040205, on left bank along SR 82 (Creek Road), and 3.0 mi south of the intersection of SR 82 and U.S. Highway 1 at Kennett Square.

DRAINAGE AREA.--28.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 196.02 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Some regulation upstream of gage. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Nov. 28	0745	*2,740	*7.38	Mar. 28	1900	2,180	6.94
Dec. 23	1745	1,000	5.62	Apr. 2	1900	1,440	6.20
Jan. 14	1115	1,540	6.33				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	51	202	55	53	60	67	87	37	30	18	19
2	63	51	80	53	52	56	541	62	36	31	17	18
3	60	50	68	53	52	53	417	59	57	27	16	16
4	57	163	63	54	53	52	104	57	52	27	15	16
5	54	93	60	82	57	53	87	55	40	36	15	16
6	52	57	58	97	60	55	81	54	44	41	14	17
7	51	53	89	69	63	68	78	54	64	29	15	17
8	51	51	80	84	67	74	150	52	40	234	16	17
9	51	50	81	66	73	56	83	50	37	41	18	17
10	51	49	172	60	79	53	75	50	36	28	20	17
11	49	49	96	59	59	53	72	49	35	24	17	17
12	50	113	70	67	55	55	69	49	34	22	16	18
13	51	125	64	59	53	51	68	47	33	22	15	18
14	77	61	60	558	108	49	66	48	33	22	14	51
15	79	56	57	93	131	48	63	47	31	22	15	55
16	74	53	56	73	68	48	62	46	32	26	18	24
17	55	52	56	66	62	48	62	45	33	40	29	39
18	52	51	55	57	55	47	62	45	30	27	16	23
19	115	51	57	57	52	47	60	45	30	22	21	20
20	64	52	53	58	51	53	60	72	30	20	18	19
21	61	52	51	56	65	50	58	51	30	19	16	19
22	56	50	53	51	74	47	59	45	29	19	14	19
23	53	51	227	64	62	209	120	44	28	18	14	19
24	53	55	93	63	57	93	100	44	27	17	13	19
25	52	74	63	61	57	61	66	44	27	21	13	19
26	51	53	57	57	57	56	61	44	26	19	13	20
27	50	50	55	53	56	53	62	42	28	30	17	22
28	49	933	52	52	57	663	58	41	30	28	26	18
29	49	92	54	52	---	139	57	42	28	18	22	19
30	59	72	56	53	---	76	77	40	27	18	20	19
31	52	---	56	53	---	69	---	38	---	18	21	---
TOTAL	1810	2813	2394	2435	1788	2595	3045	1548	1044	996	532	647
MEAN	58.4	93.8	77.2	78.5	63.9	83.7	102	49.9	34.8	32.1	17.2	21.6
MAX	115	933	227	558	131	663	541	87	64	234	29	55
MIN	49	49	51	51	51	47	57	38	26	17	13	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2005, BY WATER YEAR (WY)

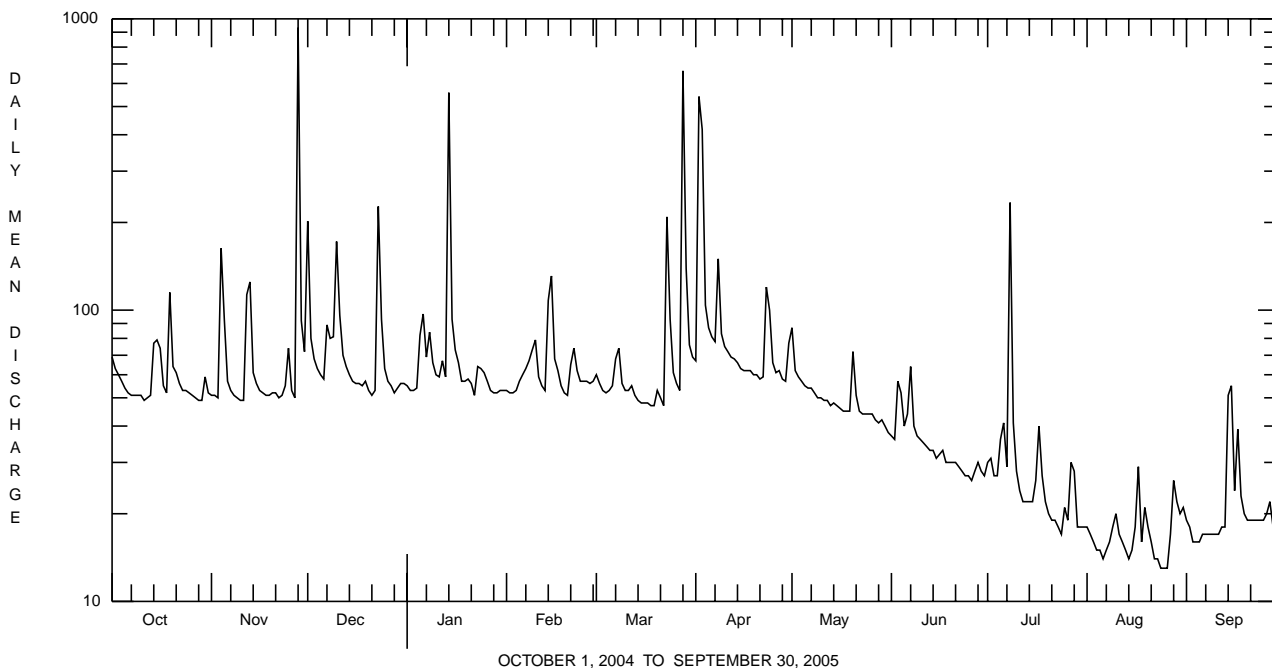
MEAN	31.7	37.9	47.4	49.1	49.5	63.5	49.9	41.4	38.3	29.9	25.8	44.1
MAX	79.0	93.8	128	96.1	106	116	102	79.2	112	94.5	88.7	212
(WY)	2004	2005	1997	1996	2004	1994	2005	1989	2003	1989	2004	2003
MIN	10.8	10.9	12.9	22.0	16.6	30.5	21.7	21.7	16.0	12.0	5.84	8.83
(WY)	1995	1999	1999	1992	2002	2002	2002	1999	1995	1995	1995	1995

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1988 - 2005	
ANNUAL TOTAL	27387		21647			
ANNUAL MEAN	74.8		59.3		42.6	
HIGHEST ANNUAL MEAN					78.2	2004
LOWEST ANNUAL MEAN					18.9	2002
HIGHEST DAILY MEAN	1390	Sep 28	933	Nov 28	4150	Sep 15 2003
LOWEST DAILY MEAN	25	Jul 2	13	Aug 24-26	0.86	Sep 3 1995
ANNUAL SEVEN-DAY MINIMUM	27	Jun 30	14	Aug 21	1.1	Sep 2 1995
MAXIMUM PEAK FLOW			a2740	Nov 28	a19700	Sep 15 2003
MAXIMUM PEAK STAGE			7.38	Nov 28	b15.30	Sep 15 2003
10 PERCENT EXCEEDS	94		80		64	
50 PERCENT EXCEEDS	49		52		29	
90 PERCENT EXCEEDS	35		18		13	

a From rating curve extended above 2,580 ft³/s from slope-conveyance determination of discharge at gage height 15.30 ft.
 b From outside highwater mark.



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01479820 RED CLAY CREEK NEAR KENNETT SQUARE, 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 386-432.

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 2004 TO SEPTEMBER 2005

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)	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unfltrd lab, µS/cm 25 degC (90095)	Specif. conduc-tance, wat unfltrd lab, µS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, unfltrd recover -able, mg/L (00916)	Magnes-ium, water, unfltrd recover -able, mg/L (00927)
NOV 2004 02...	0930	1028	9813	50	11.3	7.6	7.7	378	374	11.5	140	33	13
JAN 2005 25...	1240	1028	9813	62	16.4	7.7	7.8	366	373	.1	130	33	13
MAR 16...	1130	1028	9813	48	16.4	8.4	8.1	383	378	5.3	140	34	14
MAY 10...	1230	1028	9813	51	11.6	8.1	8.0	371	363	15.0	140	34	14
JUL 06...	1210	1028	9813	38	8.5	7.8	7.9	344	354	21.6	150	37	13
SEP 06...	1340	1028	9813	18	10.9	8.0	8.2	452	460	19.7	180	43	17

Date	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat fltrd, mg/L (00515)	Residue total at 105 deg. C, sus-pended, 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)	Total nitrogen, unfltrd, mg/L (00600)	Ortho-phosphate, water, unfltrd, mg/L as P (70507)	Phos-phorus, water, unfltrd, mg/L as P (00665)	Organic carbon, water, unfltrd, mg/L (00680)	Fecal coli-form, M-FC col/100 mL (31616)	Alum-inum, water, unfltrd recover -able, µg/L (01105)
NOV 2004 02...	77	35	290	<2	<.020	5.1	<.040	5.4	.12	.13	2.6	60	<200
JAN 2005 25...	66	36	230	<2	.020	5.6	<.040	6.2	.06	.08	1.6	240	<200
MAR 16...	72	38	280	<2	.020	5.4	.040	5.7	.07	.08	2.1	<20	<200
MAY 10...	74	37	260	<2	.030	4.9	.040	4.5	.09	.10	--	20	<200
JUL 06...	69	34	250	24	.070	3.2	<.040	3.9	.17	.26	--	22000	570
SEP 06...	93	38	330	18	.030	6.2	<.040	6.3	.54	.55	--	440	<200

Date	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan-ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2004 02...	<10	70	<1.0	10	<50	<10
JAN 2005 25...	<10	330	<1.0	60	<50	<10
MAR 16...	<10	150	<1.0	50	<50	<10
MAY 10...	<10	200	<1.0	40	<50	<10
JUL 06...	<10	930	1.3	90	<50	22
SEP 06...	<10	70	<1.0	20	<50	12

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	08/06/04
Benthic macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	6
Nemertea (PROBOSCIS WORMS)	
Enopla	
Hoploneuridae	
Tetrastemmatidae	
Prostoma	2
Mollusca	
Bivalvia (CLAMS)	
Sphaeriidae	
Sphaerium	10
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificidae	
Naididae	2
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	2
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	2
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea	4
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis	34
Heptageniidae	
Stenonema	4
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Hydropsyche	44
Hydroptilidae	
Leucotrichia	1
Philopotamidae	
Chimarra	8
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	11
Oulimnius	5
Stenelmis	24

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	08/06/04
Benthic macroinvertebrate	Count
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	22
Simuliidae (BLACK FLIES)	
<i>Simulium</i>	2
Tipulidae (CRANE FLIES)	
<i>Antocha</i>	6
Total Organisms	189
Total Taxa	18