

## CHRISTINA RIVER BASIN

**01479676 RUNOFF TO UNNAMED TRIBUTARY TO WEST BRANCH RED CLAY CREEK AT KENNETT SQUARE, PA  
(New Garden Township, Chester County, Spray Irrigation Project)**

**LOCATION.**--Lat 39°50'52", long 75°43'42", Chester County, Hydrologic unit 02040205, 125 ft upstream from station 01479678, and 725 ft upstream from confluence with West Branch Red Clay Creek, at Kennett Square Borough.

**DRAINAGE AREA.**--0.03 mi<sup>2</sup>.

**WATER-DISCHARGE RECORDS**

**PERIOD OF RECORD.**--July 1999 to December 2001. (discontinued)

**GAGE.**--Water-stage recorder. Elevation of gage is 335 ft above National Geodetic Vertical Datum of 1929, from topographic map.

**REMARKS.**--Records poor. Other data for this project presented in tables on pages 426-435 and 472-496.

**DISCHARGE, CUBIC FEET PER SECOND, OCTOBER 2001 TO DECEMBER 2001  
DAILY MEAN VALUES**

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.023	0.024	0.011	---	---	---	---	---	---	---	---	---
2	0.020	0.024	0.011	---	---	---	---	---	---	---	---	---
3	0.020	0.021	0.014	---	---	---	---	---	---	---	---	---
4	0.020	0.020	0.013	---	---	---	---	---	---	---	---	---
5	0.372	0.018	0.012	---	---	---	---	---	---	---	---	---
6	0.281	0.018	0.012	---	---	---	---	---	---	---	---	---
7	0.296	0.014	0.012	---	---	---	---	---	---	---	---	---
8	0.031	0.014	0.012	---	---	---	---	---	---	---	---	---
9	0.030	0.015	0.010	---	---	---	---	---	---	---	---	---
10	0.029	0.013	0.009	---	---	---	---	---	---	---	---	---
11	0.029	0.014	0.013	---	---	---	---	---	---	---	---	---
12	0.029	0.014	0.015	---	---	---	---	---	---	---	---	---
13	0.160	0.014	0.017	---	---	---	---	---	---	---	---	---
14	0.034	0.020	0.019	---	---	---	---	---	---	---	---	---
15	0.036	0.014	0.017	---	---	---	---	---	---	---	---	---
16	0.026	0.014	0.017	---	---	---	---	---	---	---	---	---
17	0.023	0.014	0.014	---	---	---	---	---	---	---	---	---
18	0.021	0.012	0.016	---	---	---	---	---	---	---	---	---
19	0.020	0.011	0.020	---	---	---	---	---	---	---	---	---
20	0.017	0.013	0.008	---	---	---	---	---	---	---	---	---
21	0.021	0.014	0.008	---	---	---	---	---	---	---	---	---
22	0.020	0.014	0.008	---	---	---	---	---	---	---	---	---
23	0.021	0.014	0.008	---	---	---	---	---	---	---	---	---
24	0.019	0.012	0.012	---	---	---	---	---	---	---	---	---
25	0.016	0.023	0.011	---	---	---	---	---	---	---	---	---
26	0.014	0.014	0.011	---	---	---	---	---	---	---	---	---
27	0.016	0.014	e0.010	---	---	---	---	---	---	---	---	---
28	0.017	0.012	0.013	---	---	---	---	---	---	---	---	---
29	0.021	0.011	0.011	---	---	---	---	---	---	---	---	---
30	0.018	0.013	e0.008	---	---	---	---	---	---	---	---	---
31	0.021	---	e0.008	---	---	---	---	---	---	---	---	---
TOTAL	1.721	0.462	0.380	---	---	---	---	---	---	---	---	---
MEAN	0.056	0.015	0.012	---	---	---	---	---	---	---	---	---
MAX	0.372	0.024	0.020	---	---	---	---	---	---	---	---	---
MIN	0.014	0.011	0.008	---	---	---	---	---	---	---	---	---

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

	2002	2000	2000	2001	2000	2000	2000	2000	2000	2000	2000	1999
MEAN	0.038	0.022	0.027	0.038	0.046	0.042	0.030	0.035	0.038	0.042	0.027	0.056
MAX	0.056	0.029	0.035	0.049	0.060	0.064	0.050	0.056	0.053	0.065	0.050	0.092
(WY)	2002	2000	2000	2001	2000	2000	2000	2000	2000	2000	2000	1999
MIN	0.027	0.013	0.012	0.028	0.032	0.020	0.010	0.014	0.024	0.019	0.005	0.027
(WY)	2001	2002	2002	2000	2001	2001	2001	2001	2001	2001	1999	2001

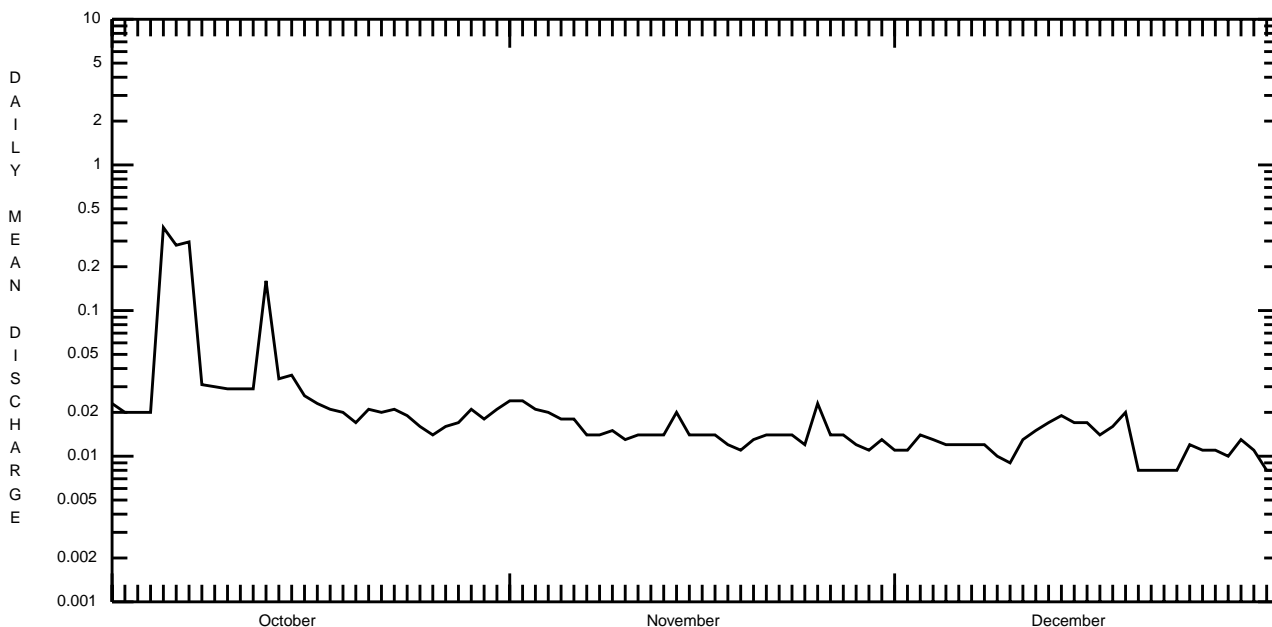
e Estimated.

CHRISTINA RIVER BASIN

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(New Garden Township, Chester County, Spray Irrigation Project)

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR PERIOD OF DAILY RECORD	
ANNUAL TOTAL	9.309			
ANNUAL MEAN	0.026		0.036	
HIGHEST ANNUAL MEAN			0.047	2000
LOWEST ANNUAL MEAN			0.025	2001
HIGHEST DAILY MEAN	0.580	Jan 19	2.3	Sep 16 1999
LOWEST DAILY MEAN	e0.005	Jan 2,9,15	0.000	Jul 7 1999
ANNUAL SEVEN-DAY MINIMUM	a0.01	Jan 9	0.00	Jul 7 1999
MAXIMUM PEAK FLOW			13	Sep 16 1999
MAXIMUM PEAK STAGE			2.54	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.00	Jul 6 1999
10 PERCENT EXCEEDS	0.03		0.06	
50 PERCENT EXCEEDS	0.01		0.02	
90 PERCENT EXCEEDS	0.01		0.01	

a Computed using estimated daily discharges.  
e Estimated.



OCTOBER 1, 2001 TO DECEMBER 31, 2001

## CHRISTINA RIVER BASIN

01479676 RUNOFF TO UNNAMED TRIBUTARY TO WEST BRANCH RED CLAY CREEK AT KENNETT SQUARE, PA--Continued  
(New Garden Township, Chester County, Spray Irrigation Project)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1999 to December 2001. (discontinued)

INSTRUMENTATION.--Automatic pumping sampler for stormflow events since September 1999. Sample intakes are located in flume.

REMARKS.-- Two types of samples are collected at this station. Grab samples are collected at the outlet of the flume. These are samples with one date in the table below. Samples with two dates are composited stormflow samples. Constituent values for stormflow water quality are for discharge-weighted composited samples; sample time is the composite start time, discharge is the mean for the composited period. Some values for dissolved phosphorus exceed values for total phosphorus and one value for dissolved ortho-phosphorus exceeds values for dissolved and total phosphorus. These results are within the limits of analytical precision and methods. Other data for this project are presented in tables on pages 426-435 and 472-496.

## WATER-QUALITY DATA, OCTOBER 2001 TO DECEMBER 2001

Date	Time	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	OXID- ATION RED- UCTION POTEN- TIAL (MV) (00090)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)
OCT 2001									
05-05	0917	9813	1028	.50	--	--	--	--	--
11...	1000	9813	1028	--	.03	--	--	6.4	462
OCT									
13-13	1045	9813	1028	.35	--	--	--	--	--
25...	0910	9813	1028	--	.02	--	5.1	7.0	430
NOV									
14...	0830	9813	1028	--	.01	--	7.8	6.7	414
14...	0840	9813	1028	--	--	--	--	--	--
NOV									
25-25	1711	9813	1028	.08	--	--	--	--	--
29...	1210	9813	1028	--	.01	230	--	6.6	408
DEC									
06...	0820	9813	1028	--	.01	220	7.4	6.8	401
06...	0821	9813	1028	--	.01	220	7.4	6.8	401
12...	1150	9813	1028	--	.01	242	9.5	7.0	396
27...	0810	9813	1028	--	.01	260	9.7	6.9	395

Date	TEMPER- ATURE WATER (DEG C) (00010)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT 2001									
05-05	--	--	--	--	--	--	87.8	--	--
11...	--	--	--	--	--	--	50.9	--	--
OCT									
13-13	--	--	--	--	--	--	85.9	--	--
25...	13.6	--	--	--	--	--	48.5	--	--
NOV									
14...	5.6	--	--	--	--	--	49.2	--	--
14...	--	--	--	--	--	--	--	--	--
NOV									
25-25	--	--	--	--	--	--	52.9	--	--
29...	12.3	--	--	--	--	--	48.4	--	--
DEC									
06...	9.9	--	--	--	--	--	47.7	--	--
06...	9.9	--	--	--	--	--	47.8	--	--
12...	8.4	51.9	13.4	4.48	7.63	<.2	49.3	<.20	9.76
27...	2.1	--	--	--	--	--	47.7	--	--

## CHRISTINA RIVER BASIN

## 01479676 RUNOFF TO UNNAMED TRIBUTARY TO WEST BRANCH RED CLAY CREEK AT KENNETT SQUARE, PA--Continued

## WATER-QUALITY DATA, OCTOBER 2001 TO DECEMBER 2001

Date	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL AMMONIA (MG/L AS N) (00610)	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)
OCT 2001									
05-05	--	--	.440	.460	4.5	1.33	.240	5.0	.700
11...	--	--	<.020	<.020	.61	.11	<.040	.61	.063
OCT									
13-13	--	--	.440	.450	3.2	1.53	<.040	4.6	.540
25...	--	--	<.020	<.020	.46	.12	<.040	.50	.058
NOV									
14...	--	--	<.020	<.020	.64	.43	<.040	.66	.030
14...	--	--	--	--	--	--	--	--	--
NOV									
25-25	--	--	.110	.110	2.1	1.07	<.040	2.4	.198
29...	--	--	<.020	<.020	.76	.42	<.040	.81	.031
DEC									
06...	--	--	<.020	<.020	.88	.50	<.040	.93	.025
06...	--	--	<.020	<.020	.86	.49	<.040	.90	.030
12...	27.2	248	<.020	<.020	.80	.58	<.040	.95	.029
27...	--	--	<.020	<.020	.96	.73	<.040	1.0	.026

Date	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM- INUM, DIS- SOLVED (MG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (MG/L AS SB) (01095)	ARSENIC DIS- SOLVED (MG/L AS AS) (01000)	BARIUM, DIS- SOLVED (MG/L AS BA) (01005)
OCT 2001								
05-05	.582	.960	--	10.9	--	--	--	--
11...	.043	.060	--	3.2	--	--	--	--
OCT								
13-13	.465	.800	--	--	--	--	--	--
25...	.024	.030	--	--	--	--	--	--
NOV								
14...	.029	.040	--	2.4	--	--	--	--
14...	--	--	--	--	--	--	--	--
NOV								
25-25	.194	.330	--	11.2	--	--	--	--
29...	.037	.035	--	2.5	--	--	--	--
DEC								
06...	.026	.040	--	2.2	--	--	--	--
06...	.026	.060	--	2.1	--	--	--	--
12...	.024	.038	2.2	2.2	39	<2	<4.0	91.8
27...	.020	.030	--	1.6	--	--	--	--

## CHRISTINA RIVER BASIN

01479676 RUNOFF TO UNNAMED TRIBUTARY TO WEST BRANCH RED CLAY CREEK AT KENNETT SQUARE, PA--Continued

## WATER-QUALITY DATA, OCTOBER 2001 TO DECEMBER 2001

Date	BORON, DIS- SOLVED (µG/L AS B) (01020)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	LITHIUM DIS- SOLVED (µG/L AS LI) (01130)
	OCT 2001							
05-05	--	--	--	--	<20	620	--	--
11...	--	--	--	--	20	30	--	--
OCT								
13-13	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
NOV								
14...	--	--	--	--	<20	80	--	--
14...	--	--	--	--	--	--	--	--
NOV								
25-25	--	--	--	--	40	620	--	--
29...	--	--	--	--	30	40	--	--
DEC								
06...	--	--	--	--	<20	<20	--	--
06...	--	--	--	--	<20	<20	--	--
12...	200	<.20	<4	<4	<20	--	<1.0	<20
27...	--	--	--	--	<20	<20	--	--

Date	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MERCURY DIS- SOLVED (µG/L AS HG) (71890)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (µG/L AS SR) (01080)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)	N15/N14 NO3 FRAC DIS- WATER FLTRD 0.45 µ PER MIL (82690)
	OCT 2001							
05-05	<10	140	--	--	--	--	410	--
11...	10	20	--	--	--	--	<10	--
OCT								
13-13	--	--	--	--	--	--	20	--
25...	--	--	--	--	--	--	<10	--
NOV								
14...	<10	80	--	--	--	--	<10	--
14...	--	--	--	--	--	--	--	11.80
NOV								
25-25	<10	230	--	--	--	--	<10	--
29...	<10	<10	--	--	--	--	10	--
DEC								
06...	<10	<10	--	--	--	--	<10	--
06...	<10	<10	--	--	--	--	<10	--
12...	<10	--	<.20	<4.0	<7	140	<10	--
27...	<10	<10	--	--	--	--	<10	--