

CHRISTINA RIVER BASIN

01481000 BRANDYWINE CREEK AT CHADDS FORD, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 39°52'11", long 75°35'37", Delaware County, Hydrologic Unit 02040205, on left bank 27 ft upstream from Penn Central Railroad bridge at Chadds Ford, 150 ft upstream from Harvey Run, and 1,200 ft downstream from highway bridge on U.S. Highway 1.

DRAINAGE AREA.--287 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1911 to September 1953, October 1962 to current year. Prior to October 1911, monthly discharge only, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1202: 1917-18(M), 1919-20, 1922-31(M), 1932-33, 1934(M), 1936, 1938(P), 1939(M), 1942, 1944-46(M), WDR PA-98-1: 1996-97 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 150.45 ft above National Geodetic Vertical Datum of 1929. Prior to May 21, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since November 1973 by Marsh Creek Reservoir (station 01480684) about 17 mi upstream. Satellite and landline telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 19, 1955, reached a stage of 14.64 ft, gage datum, discharge, about 16,400 ft³/s.

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	62	277	195	1040	313	521	569	410	978	576	278	237
2	56	203	178	1830	338	1190	535	409	621	551	338	631
3	53	178	172	1020	323	2090	551	350	425	683	452	456
4	88	163	200	1330	391	942	531	325	2760	577	1030	932
5	68	157	235	823	428	1130	529	331	2140	532	736	776
6	58	257	271	746	309	3200	516	363	1090	534	646	380
7	50	221	e210	680	333	1680	507	347	1280	542	387	283
8	48	169	e210	650	312	1170	549	449	1560	580	437	253
9	45	156	236	758	289	2030	634	394	968	485	596	233
10	62	148	210	643	312	1720	674	394	842	466	3660	219
11	1210	159	782	554	289	927	1230	366	723	492	1040	208
12	939	297	2080	495	e260	820	1130	344	592	454	812	202
13	260	684	1020	478	e240	1110	749	330	702	478	547	416
14	169	331	2060	464	e220	1150	614	315	1210	407	505	758
15	137	270	1130	453	e230	906	568	302	981	397	444	8540
16	408	339	700	411	e210	892	550	304	689	378	381	3850
17	712	1650	558	e390	e220	1060	518	348	575	357	422	1430
18	229	1290	475	e365	e240	822	522	323	847	344	356	1220
19	166	536	445	e380	e250	688	514	311	641	352	331	2760
20	148	456	1100	e390	e350	1070	436	295	2910	334	306	1120
21	139	390	1060	e340	459	2880	423	317	10300	324	293	759
22	130	359	589	e300	2520	1230	464	333	2670	327	276	704
23	119	365	510	e270	5770	962	428	313	1720	418	261	3310
24	114	336	462	e275	2890	834	400	372	1450	394	235	1820
25	118	306	1060	e280	1420	740	388	377	1250	334	221	1050
26	312	288	1140	e290	964	673	515	2020	1060	308	240	902
27	217	345	714	e270	665	733	517	1030	796	299	271	855
28	153	322	598	e250	570	617	474	619	711	294	220	1300
29	142	217	551	e270	---	618	445	514	659	285	209	867
30	379	203	522	289	---	767	431	403	621	270	526	644
31	627	---	520	285	---	764	---	366	---	275	464	---
TOTAL	7418	11072	20193	17019	21115	35936	16911	13674	43771	13047	16920	37115
MEAN	239	369	651	549	754	1159	564	441	1459	421	546	1237
MAX	1210	1650	2080	1830	5770	3200	1230	2020	10300	683	3660	8540
MIN	45	148	172	250	210	521	388	295	425	270	209	202

e Estimated.

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01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	265	317	460	530	539	673	613	509	412	326	239	301
MAX (WY)	924	751	1634	1664	1308	1713	1509	1097	1459	1153	562	1237
MIN (WY)	1997	1997	1997	1979	1979	1994	1983	1989	2003	1975	1996	2003
MIN (WY)	99.5	105	112	106	144	195	183	249	153	88.8	64.0	80.2
MIN (WY)	2002	2002	1999	1981	2002	1981	2002	1999	1999	2002	2002	2002

SUMMARY STATISTICS FOR 2002 CALENDAR YEAR FOR 2003 WATER YEAR WATER YEARS 1974 - 2003

ANNUAL TOTAL		84207		254191								
ANNUAL MEAN		231		696					432			
HIGHEST ANNUAL MEAN									714			1984
LOWEST ANNUAL MEAN									152			2002
HIGHEST DAILY MEAN				2080	Dec 12		10300	Jun 21	10600	Jan 26		1978
LOWEST DAILY MEAN				33	Aug 22		45	Oct 9	33	Aug 22		2002
ANNUAL SEVEN-DAY MINIMUM				36	Aug 17		59	Oct 3	36	Aug 17		2002
MAXIMUM PEAK FLOW							a16700	Sep 15	a26900	Sep 17		1999
MAXIMUM PEAK STAGE							13.74	Sep 15	17.15	Sep 17		1999
INSTANTANEOUS LOW FLOW							42	Oct 9	8.4	Sep 13		1980
10 PERCENT EXCEEDS				484			1230		815			
50 PERCENT EXCEEDS				156			454		293			
90 PERCENT EXCEEDS				53			209		123			

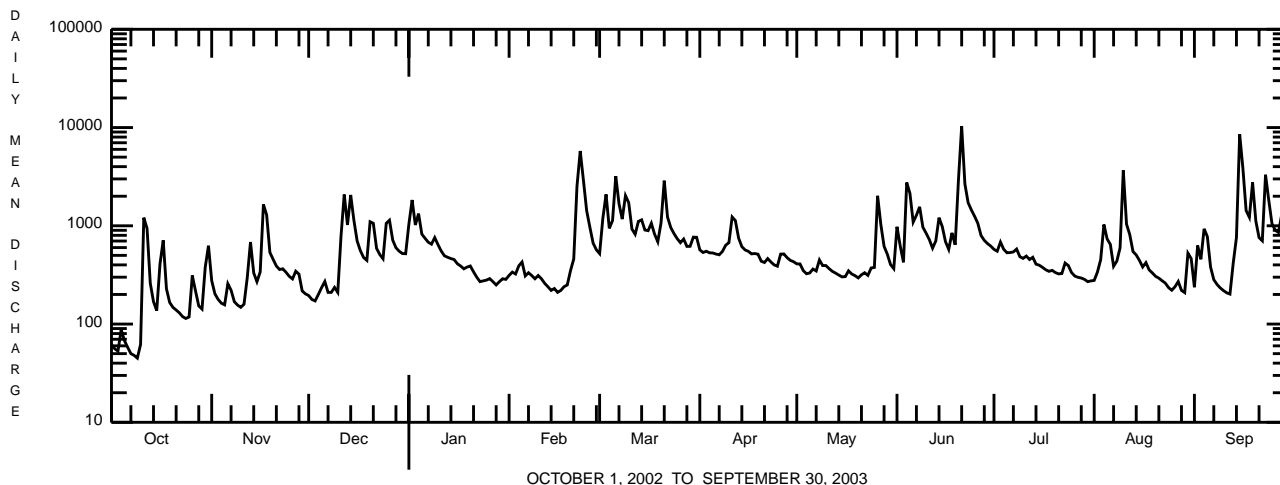
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911-1953, 1963-1973, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	219	301	348	444	570	605	530	435	364	309	278	230
MAX (WY)	666	625	827	1020	1130	1366	1043	946	1144	802	1089	1050
MIN (WY)	1972	1972	1973	1936	1971	1920	1973	1952	1972	1919	1933	1971
MIN (WY)	67.7	98.3	114	145	214	247	226	175	149	91.1	82.1	59.4
MIN (WY)	1964	1942	1966	1966	1934	1931	1963	1926	1963	1963	1930	1932

SUMMARY STATISTICS WATER YEARS 1911-1953 1963-1973

ANNUAL MEAN		385										
HIGHEST ANNUAL MEAN		625				1928						
LOWEST ANNUAL MEAN		218				1932						
HIGHEST DAILY MEAN		9590			Aug 24	1933						
LOWEST DAILY MEAN		42			Sep 12	1966						
ANNUAL SEVEN-DAY MINIMUM		45			Sep 7	1966						
MAXIMUM PEAK FLOW		b23800			Jun 22	1972						
MAXIMUM PEAK STAGE		16.56			Jun 22	1972						
INSTANTANEOUS LOW FLOW		4.9			Oct 2	1942						
ANNUAL RUNOFF (CFSM)		1.34										
ANNUAL RUNOFF (INCHES)		18.23										
10 PERCENT EXCEEDS		700										
50 PERCENT EXCEEDS		274										
90 PERCENT EXCEEDS		118										

- a From rating curve extended above 13,200 ft³/s on basis of area-velocity study at gage height 16.56 ft.
- b From rating curve extended above 9,000 ft³/s on basis of area-velocity study.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

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01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1965 to current year.
pH: October 1965 to September 1966, December 1971 to current year.
WATER TEMPERATURES: October 1964 to current year.
DISSOLVED OXYGEN: October 1971 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1963 to September 1978.

INSTRUMENTATION.--Water-quality monitor since August 1971.

REMARKS.--Specific conductance record rated good except for period May 1-21, which is fair. pH record rated good. Water temperature record rated fair. Dissolved oxygen record rated fair, except for periods Nov. 12 to Dec. 3, and May 1-7, which are poor. Data collection discontinued during winter months since 1981 water year. Other interruptions in the record were due to malfunctions of the equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 689 microsiemens, Mar. 6, 2001; minimum, 42 microsiemens, Nov. 26, 1979.
pH: Maximum, 9.8, Apr. 9, 1975; minimum, 6.1, Feb. 22, 1976.
WATER TEMPERATURE: Maximum, 31.0°C, July 4, 2002; minimum, 0.0°C, many days during winters.
DISSOLVED OXYGEN: Maximum, 17.1 mg/L, Dec. 5, 1976; minimum, 3.0 mg/L, June 21, 1984.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)	Specif. conduc- tance, wat un- f std µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Fecal coli- form, M-FC 0.7µ MF col/ 100 mL (31625)
MAR 2003									
10...	1545	1028	1028	1210	13.0	7.5	201	3.8	450
20...	1530	1028	1028	776	11.6	7.8	263	7.5	105
APR									
07...	1600	1028	1028	567	12.7	8.2	272	7.9	115
21...	1355	1028	1028	420	12.8	8.6	277	13.8	37
MAY									
01...	1430	1028	1028	406	11.5	8.2	275	16.8	49
12...	1500	1028	1028	311	9.4	7.6	295	17.2	145
21...	1245	1028	1028	314	8.7	7.3	309	16.1	380
JUN									
05...	1140	1028	1028	2050	9.4	7.4	196	14.3	3800
12...	1450	1028	1028	578	8.2	7.6	263	19.7	350
JUL									
08...	1340	1028	1028	547	9.5	7.6	270	23.1	350
16...	1250	1028	1028	380	8.8	7.5	284	22.0	277
AUG									
06...	1510	1028	1028	492	8.0	7.3	228	23.1	2800
27...	1620	1028	1028	249	11.8	8.5	289	22.9	820
SEP									
09...	1520	1028	1028	229	10.0	7.7	304	20.7	210
22...	1610	1028	1028	687	8.9	7.3	261	19.2	260

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01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued
(Pennsylvania Water-Quality Network Station)

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

REMARKS.--Other data for the Water-Quality Network can be found on pages 430-470.

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 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd μ S/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, unfltrd recover-able, mg/L (00916)	Magnesium, water, unfltrd recover-able, mg/L (00927)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 13...	1410	1028	9813	681	40	10.1	7.5	243	11.4	91	22.4	8.5	56
JAN 2003 13...	0830	1028	9813	481	40	13.9	7.5	295	.5	94	22.8	8.9	54
MAR 17...	1230	1028	9813	1110	40	11.6	7.4	252	9.6	77	18.9	7.1	43
MAY 20...	1130	1028	9813	292	40	10.7	7.6	294	16.1	110	25.6	10.0	59
JUL 10...	1240	1028	9813	467	40	8.7	7.5	270	20.9	100	23.6	10.0	55
SEP 08...	1340	1028	9813	250	40	10.4	7.9	289	19.7	110	25.4	10.7	68

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, 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)	Ortho-phosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover-able, μ g/L (01105)	Copper, water, unfltrd recover-able, μ g/L (01042)	Iron, water, unfltrd recover-able, μ g/L (01045)
NOV 2002 13...	22.5	190	12	.090	2.24	.020	--	.194	3.3	6.1	600	<4	1410
JAN 2003 13...	21.9	190	<2	<.020	3.27	<.010	--	.096	3.7	2.8	80	<4	210
MAR 17...	17.1	184	<2	<.020	2.24	<.040	.05	.070	2.6	3.5	300	10	430
MAY 20...	21.0	158	<2	.030	2.93	<.040	.03	.056	3.7	2.9	<200	<10	310
JUL 10...	18.6	184	8	.020	2.92	<.040	.04	.082	3.2	3.0	300	<10	500
SEP 08...	20.3	218	6	.030	3.12	<.040	.08	.081	3.3	3.3	<200	<10	340

Date	Lead, water, unfltrd recover-able, μ g/L (01051)	Manganese, water, unfltrd recover-able, μ g/L (01055)	Nickel, water, unfltrd recover-able, μ g/L (01067)	Zinc, water, unfltrd recover-able, μ g/L (01092)
NOV 2002 13...	2.8	90	<4.0	20
JAN 2003 13...	<1.0	40	<4.0	10
MAR 17...	1.0	40	<50	10
MAY 20...	<1.0	60	<50	20
JUL 10...	1.1	40	<50	20
SEP 08...	<1.0	40	<50	130

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	8/28/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	2
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Physidae	
<u>Physa</u> sp	2
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
<u>Corbicula fluminea</u>	1
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
<u>Gammarus</u> sp	3
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Acentrella</u> sp	8
<u>Baetis</u> sp	6
Ephemerellidae	
<u>Serratella</u> sp	11
Heptageniidae	
<u>Stenonema</u> sp	11
Isonychiidae	
<u>Isonychia</u> sp	1
Tricorythidae	
<u>Tricorythodes</u> sp	4
Odonata	
Coenagrionidae (DAMSELFLIES)	
<u>Argia</u> sp	4
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<u>Cheumatopsyche</u> sp	27
<u>Hydropsyche</u> sp	2
Philopotamidae	
<u>Chimarra</u> sp	10
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	48
<u>Oulimnius</u> sp	1
<u>Stenelmis</u> sp	22
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	3
Total Organisms	184

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01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	353	312	332	282	257	271	337	311	324	---	---	---
2	375	352	365	308	282	297	345	331	335	---	---	---
3	384	333	362	328	308	318	---	---	---	---	---	---
4	392	351	372	338	326	331	---	---	---	---	---	---
5	410	371	384	343	336	339	---	---	---	---	---	---
6	405	383	389	339	320	327	---	---	---	---	---	---
7	400	374	382	320	293	305	---	---	---	---	---	---
8	383	368	377	314	295	303	---	---	---	---	---	---
9	391	378	384	322	304	315	---	---	---	---	---	---
10	391	357	379	326	316	322	---	---	---	---	---	---
11	404	189	320	333	325	328	---	---	---	---	---	---
12	250	189	222	338	309	329	---	---	---	---	---	---
13	298	250	276	325	249	272	---	---	---	---	---	---
14	338	298	312	288	256	279	---	---	---	---	---	---
15	339	323	330	304	288	298	---	---	---	---	---	---
16	343	248	326	309	285	303	---	---	---	---	---	---
17	276	212	237	285	199	217	---	---	---	---	---	---
18	294	260	274	217	208	211	---	---	---	---	---	---
19	317	294	308	272	217	250	---	---	---	---	---	---
20	337	316	325	281	272	277	---	---	---	---	---	---
21	350	337	344	294	281	287	---	---	---	---	---	---
22	354	346	349	304	292	295	---	---	---	---	---	---
23	370	354	356	307	295	302	---	---	---	---	---	---
24	360	356	357	312	295	302	---	---	---	---	---	---
25	362	358	360	306	297	302	---	---	---	---	---	---
26	362	290	336	310	302	306	---	---	---	---	---	---
27	311	287	295	310	299	303	---	---	---	---	---	---
28	326	292	309	335	310	326	---	---	---	---	---	---
29	345	326	334	333	319	323	---	---	---	---	---	---
30	349	286	321	324	310	318	---	---	---	---	---	---
31	291	246	262	---	---	---	---	---	---	---	---	---
MONTH	410	189	332	343	199	299	345	311	330	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	429	312	380	272	255	266	275	270	273
2	---	---	---	370	312	338	273	269	272	276	267	271
3	---	---	---	312	233	245	276	266	269	278	266	271
4	---	---	---	269	242	257	274	267	271	281	274	278
5	---	---	---	285	268	275	274	271	273	276	273	275
6	---	---	---	280	194	215	273	267	271	278	268	273
7	---	---	---	258	241	249	273	269	271	277	263	269
8	---	---	---	267	252	261	309	270	292	282	265	272
9	---	---	---	257	183	232	297	282	287	272	267	270
10	---	---	---	224	180	197	284	267	274	272	263	270
11	---	---	---	250	224	240	272	217	253	271	264	269
12	---	---	---	258	250	255	248	217	236	286	269	274
13	---	---	---	258	239	247	259	247	253	282	275	279
14	---	---	---	245	233	239	264	252	259	279	272	276
15	---	---	---	---	---	---	263	241	254	276	269	272
16	---	---	---	260	245	252	283	244	276	276	272	274
17	---	---	---	254	244	251	287	273	282	283	272	279
18	---	---	---	258	250	252	289	283	285	288	277	283
19	---	---	---	261	252	257	292	248	279	304	286	294
20	---	---	---	---	---	---	283	232	259	309	286	301
21	---	---	---	---	---	---	282	267	274	315	300	307
22	---	---	---	241	226	238	276	272	274	310	301	305
23	---	---	---	248	241	246	277	271	273	330	301	318
24	---	---	---	253	248	251	283	273	277	335	320	329
25	---	---	---	259	251	255	285	278	281	320	305	314
26	---	---	---	262	257	261	283	276	280	318	174	234
27	---	---	---	271	259	265	276	260	265	270	185	236
28	---	---	---	265	259	263	274	264	267	305	270	290
29	---	---	---	268	260	265	269	264	268	309	302	305
30	---	---	---	274	256	263	271	265	268	315	304	310
31	---	---	---	266	251	258	---	---	---	315	307	312
MONTH	---	---	---	429	180	257	309	217	270	335	174	283

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SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	307	228	276	266	263	264	300	295	297	284	247	268
2	281	236	259	268	263	265	307	282	295	288	237	268
3	294	281	289	267	251	261	292	235	285	265	237	251
4	294	152	222	266	255	262	235	186	201	271	223	258
5	213	172	194	268	264	266	242	195	224	255	215	234
6	238	213	229	266	262	265	252	217	229	272	255	264
7	242	208	235	270	260	265	277	252	268	291	272	282
8	228	193	209	270	256	262	281	274	277	297	291	294
9	242	228	237	273	261	267	279	236	267	304	293	299
10	248	242	244	276	271	273	242	128	166	305	302	303
11	254	246	250	282	272	277	232	168	208	310	302	306
12	264	252	259	281	273	276	246	232	239	311	306	309
13	267	252	258	280	265	273	268	243	257	313	274	302
14	277	192	212	276	264	272	273	268	271	274	210	228
15	238	213	225	280	276	278	279	273	276	241	84	134
16	253	238	246	284	276	279	286	279	282	221	119	180
17	257	252	254	286	281	283	288	284	286	242	221	235
18	262	240	253	288	284	286	287	283	285	253	241	245
19	264	239	252	290	285	287	290	280	286	---	---	---
20	270	101	218	290	285	289	291	283	288	---	---	---
21	172	100	126	290	286	288	295	291	293	264	248	258
22	215	172	197	289	287	288	300	295	298	267	257	262
23	---	---	---	292	276	287	298	291	295	257	138	202
24	---	---	---	283	263	272	296	293	295	226	162	191
25	242	236	240	289	275	283	298	293	295	241	226	234
26	250	242	245	293	289	291	302	291	298	249	241	246
27	261	249	258	294	292	293	296	286	290	252	245	250
28	263	260	262	296	293	294	304	294	298	251	225	235
29	265	262	264	297	293	295	307	298	302	249	224	240
30	266	263	264	295	292	293	311	219	293	257	249	254
31	---	---	---	297	287	292	247	220	233	---	---	---
MONTH	307	100	238	297	251	278	311	128	270	313	84	251

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.0	7.4	7.5	7.3	7.1	7.2	7.2	7.1	7.1	---	---	---
2	8.1	7.4	7.5	7.3	7.2	7.3	7.2	7.1	7.1	---	---	---
3	8.3	7.4	7.6	7.4	7.3	7.3	---	---	---	---	---	---
4	7.6	7.3	7.4	7.4	7.3	7.3	---	---	---	---	---	---
5	7.8	7.3	7.3	7.4	7.3	7.3	---	---	---	---	---	---
6	8.0	7.3	7.4	7.3	7.2	7.3	---	---	---	---	---	---
7	8.2	7.4	7.5	7.2	7.2	7.2	---	---	---	---	---	---
8	8.3	7.4	7.6	7.3	7.2	7.2	---	---	---	---	---	---
9	8.2	7.5	7.6	7.2	7.1	7.2	---	---	---	---	---	---
10	7.7	7.5	7.5	7.3	7.1	7.2	---	---	---	---	---	---
11	7.5	7.1	7.4	7.2	7.0	7.0	---	---	---	---	---	---
12	7.2	7.1	7.2	7.1	6.9	7.0	---	---	---	---	---	---
13	7.2	7.2	7.2	7.0	7.0	7.0	---	---	---	---	---	---
14	7.3	7.2	7.3	7.0	7.0	7.0	---	---	---	---	---	---
15	7.5	7.3	7.4	7.0	7.0	7.0	---	---	---	---	---	---
16	7.5	7.4	7.4	7.0	7.0	7.0	---	---	---	---	---	---
17	7.4	7.2	7.3	7.0	6.9	7.0	---	---	---	---	---	---
18	7.4	7.3	7.3	7.2	7.0	7.0	---	---	---	---	---	---
19	7.4	7.3	7.4	7.1	7.1	7.1	---	---	---	---	---	---
20	7.5	7.3	7.4	7.1	7.1	7.1	---	---	---	---	---	---
21	7.4	7.3	7.4	7.1	7.1	7.1	---	---	---	---	---	---
22	7.5	7.3	7.4	7.1	7.1	7.1	---	---	---	---	---	---
23	7.6	7.3	7.4	7.1	7.0	7.0	---	---	---	---	---	---
24	7.6	7.4	7.4	7.0	7.0	7.0	---	---	---	---	---	---
25	7.6	7.4	7.4	7.0	7.0	7.0	---	---	---	---	---	---
26	7.4	7.3	7.4	7.0	7.0	7.0	---	---	---	---	---	---
27	7.4	7.2	7.3	7.1	7.0	7.0	---	---	---	---	---	---
28	7.4	7.2	7.3	7.1	7.1	7.1	---	---	---	---	---	---
29	7.5	7.2	7.3	7.1	7.0	7.0	---	---	---	---	---	---
30	7.4	7.3	7.4	7.1	7.0	7.1	---	---	---	---	---	---
31	7.3	7.2	7.3	---	---	---	---	---	---	---	---	---
MAX	8.3	7.5	7.6	7.4	7.3	7.3	7.2	7.1	7.1	---	---	---
MIN	7.2	7.1	7.2	7.0	6.9	7.0	7.2	7.1	7.1	---	---	---

CHRISTINA RIVER BASIN

01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	7.7	7.7	7.7	8.5	7.8	8.2	8.7	7.6	8.2
2	---	---	---	7.7	7.6	7.7	8.9	7.7	8.2	8.7	7.5	8.2
3	---	---	---	7.6	7.5	7.5	9.0	7.7	8.6	8.6	7.5	8.0
4	---	---	---	7.6	7.5	7.6	8.9	7.7	8.0	8.4	7.5	7.9
5	---	---	---	7.6	7.6	7.6	8.2	7.5	7.8	8.0	7.6	7.8
6	---	---	---	7.6	7.4	7.5	8.9	7.6	8.0	7.9	7.5	7.7
7	---	---	---	7.5	7.4	7.5	8.9	7.6	8.2	8.4	7.4	7.7
8	---	---	---	7.6	7.5	7.5	8.2	7.6	7.9	7.8	7.3	7.4
9	---	---	---	7.5	7.5	7.5	8.4	7.6	8.0	7.4	7.3	7.4
10	---	---	---	7.6	7.4	7.4	8.8	7.6	8.0	7.7	7.3	7.4
11	---	---	---	7.6	7.6	7.6	8.7	7.5	7.6	7.5	7.3	7.4
12	---	---	---	7.6	7.5	7.6	7.7	7.4	7.5	7.5	7.3	7.4
13	---	---	---	7.6	7.5	7.5	8.2	7.4	7.6	7.5	7.3	7.4
14	---	---	---	7.5	7.4	7.5	8.5	7.5	8.0	7.5	7.3	7.4
15	---	---	---	---	---	---	8.8	7.5	8.2	7.5	7.3	7.4
16	---	---	---	7.7	7.5	7.6	9.0	7.6	8.4	7.4	7.3	7.3
17	---	---	---	7.7	7.4	7.6	8.9	7.7	8.4	7.4	7.3	7.3
18	---	---	---	7.7	7.4	7.5	8.5	7.6	7.9	7.3	7.2	7.3
19	---	---	---	7.8	7.4	7.6	8.8	7.6	7.9	7.3	7.2	7.3
20	---	---	---	---	---	---	8.8	7.7	8.6	7.4	7.2	7.2
21	---	---	---	---	---	---	9.0	7.7	8.7	7.4	7.2	7.3
22	---	---	---	7.7	7.4	7.5	8.9	7.7	8.3	7.4	7.4	7.4
23	---	---	---	7.8	7.5	7.6	8.9	7.6	8.1	7.4	7.3	7.3
24	---	---	---	8.0	7.5	7.7	9.0	7.8	8.7	7.3	7.3	7.3
25	---	---	---	8.5	7.6	7.8	9.0	7.8	8.6	7.3	7.2	7.3
26	---	---	---	8.3	7.6	7.9	8.7	7.6	7.8	7.3	7.1	7.2
27	---	---	---	8.7	7.6	7.9	8.8	7.5	7.8	7.1	7.1	7.1
28	---	---	---	8.7	7.6	8.2	8.8	7.6	8.2	7.2	7.1	7.2
29	---	---	---	8.7	7.6	8.2	8.7	7.6	8.1	7.2	7.2	7.2
30	---	---	---	8.3	7.6	7.9	8.8	7.6	8.1	7.2	7.2	7.2
31	---	---	---	8.7	7.6	8.0	---	---	---	7.2	7.2	7.2
MAX	---	---	---	8.7	7.7	8.2	9.0	7.8	8.7	8.7	7.6	8.2
MIN	---	---	---	7.5	7.4	7.4	7.7	7.4	7.5	7.1	7.1	7.1
DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.3	7.2	7.2	8.3	7.4	7.7	7.6	7.4	7.5	7.5	7.3	7.4
2	7.2	7.2	7.2	8.5	7.4	7.9	7.6	7.4	7.5	7.4	7.3	7.4
3	7.2	7.2	7.2	8.0	7.4	7.6	7.6	7.3	7.4	7.4	7.3	7.3
4	7.3	7.1	7.2	8.3	7.4	7.7	7.3	7.1	7.2	7.4	7.3	7.4
5	7.4	7.1	7.3	8.3	7.4	7.7	7.3	7.2	7.2	7.4	7.3	7.3
6	7.5	7.4	7.4	8.1	7.3	7.6	7.4	7.2	7.3	7.4	7.3	7.4
7	7.5	7.4	7.4	7.9	7.3	7.5	7.5	7.4	7.4	7.6	7.4	7.5
8	7.4	7.4	7.4	7.7	7.3	7.5	7.5	7.4	7.4	7.7	7.4	7.5
9	7.5	7.4	7.4	7.7	7.3	7.5	7.4	7.3	7.4	8.0	7.4	7.6
10	7.5	7.4	7.4	7.5	7.3	7.4	7.4	7.0	7.1	8.2	7.6	7.8
11	7.6	7.4	7.4	7.6	7.4	7.5	7.2	7.1	7.2	8.4	7.6	8.0
12	7.6	7.4	7.5	7.6	7.4	7.5	7.3	7.2	7.3	8.2	7.7	8.0
13	7.5	7.3	7.4	7.6	7.4	7.5	7.4	7.3	7.3	7.9	7.6	7.7
14	7.5	7.3	7.3	7.6	7.4	7.5	7.5	7.4	7.4	7.6	7.3	7.4
15	7.4	7.3	7.4	7.6	7.4	7.5	7.6	7.4	7.5	7.4	6.9	7.0
16	7.6	7.4	7.5	7.7	7.4	7.5	7.5	7.4	7.5	7.0	7.0	7.0
17	7.6	7.5	7.5	7.6	7.4	7.5	7.7	7.5	7.6	7.1	7.0	7.1
18	7.6	7.4	7.5	7.5	7.4	7.5	7.8	7.5	7.6	7.1	7.0	7.1
19	7.5	7.4	7.4	7.6	7.4	7.5	7.9	7.5	7.7	---	---	---
20	7.5	6.9	7.4	7.6	7.4	7.5	8.0	7.6	7.8	---	---	---
21	7.1	6.9	7.0	7.6	7.4	7.5	8.3	7.6	7.9	7.2	7.2	7.2
22	7.2	7.1	7.2	7.7	7.4	7.5	8.4	7.7	8.1	7.5	7.2	7.2
23	---	---	---	7.6	7.4	7.5	8.5	7.7	8.2	7.5	7.1	7.3
24	---	---	---	7.6	7.4	7.5	8.6	7.8	8.3	7.4	7.2	7.2
25	7.5	7.3	7.4	7.6	7.4	7.5	8.8	7.8	8.4	7.4	7.4	7.4
26	7.5	7.3	7.4	7.6	7.4	7.5	8.8	7.9	8.4	7.5	7.4	7.4
27	7.5	7.3	7.4	7.6	7.4	7.5	8.7	7.5	8.0	7.5	7.4	7.4
28	7.6	7.4	7.5	7.6	7.4	7.5	8.8	7.7	8.4	7.4	7.3	7.4
29	7.8	7.4	7.5	7.7	7.4	7.5	8.7	7.8	8.2	7.5	7.4	7.4
30	8.0	7.4	7.6	7.7	7.4	7.5	8.6	7.3	7.8	7.5	7.4	7.5
31	---	---	---	7.6	7.5	7.5	7.6	7.3	7.4	---	---	---
MAX	8.0	7.5	7.6	8.5	7.5	7.9	8.8	7.9	8.4	8.4	7.7	8.0
MIN	7.1	6.9	7.0	7.5	7.3	7.4	7.2	7.0	7.1	7.0	6.9	7.0

CHRISTINA RIVER BASIN

01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	20.5	18.0	19.0	7.5	7.0	7.0	4.0	2.5	3.0	---	---	---
2	22.0	18.5	20.0	7.5	6.5	7.0	2.5	2.0	2.5	---	---	---
3	23.0	20.0	21.0	6.5	5.5	6.0	---	---	---	---	---	---
4	22.0	21.0	21.5	7.0	5.5	6.5	---	---	---	---	---	---
5	23.5	21.0	22.0	7.5	6.0	7.0	---	---	---	---	---	---
6	22.0	19.5	20.5	9.0	7.0	8.0	---	---	---	---	---	---
7	22.0	19.0	20.5	9.0	7.5	8.5	---	---	---	---	---	---
8	19.5	16.5	18.0	8.5	7.0	7.5	---	---	---	---	---	---
9	17.5	16.0	16.5	9.0	7.0	8.0	---	---	---	---	---	---
10	17.0	16.0	16.5	11.5	8.5	10.0	---	---	---	---	---	---
11	17.0	16.0	16.5	14.0	11.5	13.0	---	---	---	---	---	---
12	17.0	16.0	16.5	14.0	12.5	13.5	---	---	---	---	---	---
13	17.0	16.5	17.0	12.5	10.5	11.5	---	---	---	---	---	---
14	17.0	15.0	16.0	10.5	9.5	10.0	---	---	---	---	---	---
15	15.0	13.0	13.5	10.0	9.0	9.5	---	---	---	---	---	---
16	13.5	13.0	13.5	10.0	9.5	9.5	---	---	---	---	---	---
17	13.5	12.5	13.0	9.5	8.0	8.5	---	---	---	---	---	---
18	13.0	12.0	12.5	8.5	7.0	8.0	---	---	---	---	---	---
19	12.5	11.5	12.0	7.0	6.5	7.0	---	---	---	---	---	---
20	13.0	12.0	12.0	7.5	6.5	7.0	---	---	---	---	---	---
21	13.0	11.5	12.0	7.5	6.5	7.0	---	---	---	---	---	---
22	12.0	10.5	11.5	9.0	7.5	8.5	---	---	---	---	---	---
23	12.0	10.0	11.0	8.5	6.5	7.5	---	---	---	---	---	---
24	11.5	10.0	10.5	7.0	6.0	6.5	---	---	---	---	---	---
25	10.0	10.0	10.0	7.0	6.0	6.5	---	---	---	---	---	---
26	12.0	10.0	11.0	7.5	6.5	7.0	---	---	---	---	---	---
27	12.0	11.0	11.5	7.0	5.5	7.0	---	---	---	---	---	---
28	11.5	10.5	11.0	5.5	4.0	5.0	---	---	---	---	---	---
29	10.5	9.0	9.5	4.0	3.0	3.5	---	---	---	---	---	---
30	9.0	7.5	8.0	4.0	3.0	3.5	---	---	---	---	---	---
31	8.0	7.0	7.5	---	---	---	---	---	---	---	---	---
MONTH	23.5	7.0	14.6	14.0	3.0	7.8	4.0	2.0	2.8	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	4.0	3.5	4.0	8.0	6.5	7.0	18.0	15.5	16.5
2	---	---	---	4.5	4.0	4.5	11.5	7.0	9.0	19.0	17.0	18.0
3	---	---	---	4.0	1.5	2.5	13.0	10.5	12.0	18.5	16.5	17.5
4	---	---	---	3.0	0.5	2.0	12.5	10.0	11.0	17.0	15.0	15.5
5	---	---	---	5.0	3.0	4.0	10.0	9.0	9.0	15.0	12.5	13.5
6	---	---	---	5.0	1.5	3.0	10.5	7.5	9.0	13.0	12.0	12.0
7	---	---	---	3.5	1.0	2.0	10.5	6.5	8.5	17.0	12.5	14.5
8	---	---	---	5.5	3.0	4.0	6.5	5.5	6.0	17.5	16.5	17.0
9	---	---	---	6.5	4.5	5.5	6.5	5.5	6.0	17.0	15.0	16.0
10	---	---	---	5.0	2.5	3.0	7.5	6.0	7.0	16.0	14.5	15.0
11	---	---	---	3.5	2.0	3.0	7.5	7.0	7.0	17.5	15.5	16.5
12	---	---	---	5.5	3.0	4.5	11.5	7.0	9.0	17.5	16.0	17.0
13	---	---	---	7.0	5.0	6.0	12.5	10.0	11.5	16.0	14.5	15.0
14	---	---	---	7.0	5.0	6.0	13.0	10.0	11.5	15.0	13.5	14.5
15	---	---	---	---	---	---	15.0	11.0	13.0	15.0	13.5	14.5
16	---	---	---	9.0	6.0	7.5	17.0	14.0	15.5	14.5	13.5	14.0
17	---	---	---	10.0	8.5	9.5	17.0	11.5	14.0	13.5	12.5	13.0
18	---	---	---	11.0	9.5	10.0	11.5	9.0	10.0	13.0	12.0	12.5
19	---	---	---	10.5	9.0	9.5	12.5	9.0	10.5	15.0	11.5	13.5
20	---	---	---	---	---	---	14.0	11.0	12.5	17.0	14.0	15.5
21	---	---	---	---	---	---	14.0	12.5	13.5	16.5	15.0	16.0
22	---	---	---	11.0	8.0	9.5	14.5	13.0	14.0	15.0	14.5	14.5
23	---	---	---	11.0	9.5	10.0	13.5	11.5	12.5	14.5	14.0	14.0
24	---	---	---	11.5	9.0	10.5	13.5	10.5	12.0	14.5	13.5	14.0
25	---	---	---	12.0	9.5	11.0	14.0	11.5	13.0	14.5	14.0	14.5
26	---	---	---	12.0	10.5	11.5	14.0	13.5	13.5	14.5	13.5	14.0
27	---	---	---	12.0	10.0	11.0	16.0	12.5	14.5	14.5	13.5	14.0
28	---	---	---	11.5	10.0	11.0	17.0	14.0	15.5	15.0	14.0	14.5
29	---	---	---	12.5	11.0	12.0	16.5	15.0	15.5	16.5	14.0	15.5
30	---	---	---	12.5	9.0	11.0	16.5	14.0	15.5	18.5	15.5	17.0
31	---	---	---	9.0	7.5	8.0	---	---	---	18.5	17.0	17.5
MONTH	---	---	---	12.5	0.5	7.0	17.0	5.5	11.3	19.0	11.5	15.1

CHRISTINA RIVER BASIN

01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.0	15.5	16.0	22.0	20.0	21.0	23.0	22.0	22.5	22.0	21.5	21.5
2	16.5	14.0	15.5	21.5	20.0	20.5	24.0	22.0	23.0	21.5	20.5	21.0
3	16.0	15.0	15.5	21.0	19.5	20.0	24.0	23.0	23.5	20.5	19.5	20.0
4	15.0	13.5	14.0	22.0	19.0	20.5	23.5	23.0	23.0	20.0	20.0	20.0
5	16.0	13.5	14.5	23.0	21.0	22.0	23.5	22.5	23.0	21.0	19.5	20.0
6	16.5	14.5	15.5	23.5	21.5	22.5	23.5	22.0	22.5	20.0	18.5	19.5
7	16.0	14.5	15.0	23.5	22.0	23.0	23.0	22.0	22.5	20.0	18.0	19.0
8	15.5	15.0	15.0	23.5	22.0	23.0	23.5	21.5	22.5	20.5	18.5	19.5
9	17.0	14.5	15.5	23.5	22.0	23.0	23.0	21.5	22.0	20.5	19.5	20.0
10	18.5	15.5	17.0	23.0	20.0	21.5	23.5	21.5	22.5	20.0	18.5	19.0
11	18.5	16.5	17.5	21.5	19.5	20.5	23.0	22.5	23.0	20.0	18.0	19.0
12	20.5	17.5	19.0	22.0	20.0	21.0	23.5	22.0	23.0	19.5	18.5	19.0
13	20.5	19.0	20.0	22.5	20.5	21.5	24.0	22.5	23.0	19.5	18.5	19.0
14	21.5	19.5	20.5	22.0	20.5	21.5	24.5	22.5	23.5	21.5	19.5	20.5
15	21.0	20.5	21.0	22.5	20.5	21.5	24.5	22.5	23.5	21.5	21.0	21.0
16	20.5	18.0	19.0	23.5	21.5	22.5	24.0	22.0	23.0	21.0	19.5	20.0
17	18.5	16.5	17.5	23.5	21.5	22.5	23.5	21.5	22.5	19.5	17.5	18.0
18	18.0	17.0	17.5	23.0	21.0	21.5	23.5	22.0	22.5	17.5	16.0	16.5
19	18.5	17.5	18.0	22.0	20.5	21.0	23.5	21.5	22.5	---	---	---
20	18.5	17.5	18.0	22.5	20.5	21.5	23.5	22.0	22.5	---	---	---
21	18.0	16.5	17.0	23.5	21.0	22.0	24.5	22.5	23.5	20.0	19.0	19.5
22	17.0	16.0	16.5	24.5	23.0	23.5	25.0	23.5	24.0	19.5	18.5	19.0
23	---	---	---	24.0	22.5	23.0	24.5	23.5	24.0	20.0	19.0	19.5
24	---	---	---	23.5	22.0	22.5	23.5	21.5	22.5	19.5	17.5	18.5
25	20.0	17.5	19.0	23.5	21.5	22.5	22.5	20.5	21.5	18.5	17.0	17.5
26	20.5	18.5	19.5	23.5	22.0	23.0	22.5	21.0	22.0	19.5	18.0	19.0
27	21.5	19.5	20.5	24.5	23.0	23.5	23.0	21.5	22.0	19.5	18.5	19.0
28	21.0	19.5	20.5	24.5	23.5	24.0	24.0	22.0	23.0	19.5	18.5	19.0
29	21.5	19.5	20.5	24.0	22.5	23.0	23.5	22.5	23.0	18.5	16.5	17.5
30	21.5	19.5	21.0	23.0	22.0	22.5	24.0	22.5	23.0	16.5	15.0	15.5
31	---	---	---	23.0	21.5	22.5	23.0	21.5	22.0	---	---	---
MONTH	21.5	13.5	17.7	24.5	19.0	22.1	25.0	20.5	22.8	22.0	15.0	19.2

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.7	7.9	8.8	11.5	11.0	11.2	13.3	12.6	12.9	---	---	---
2	11.1	7.5	8.9	11.8	11.1	11.4	13.5	13.0	13.2	---	---	---
3	11.4	7.1	8.8	12.2	11.3	11.7	---	---	---	---	---	---
4	8.6	6.7	7.5	12.1	11.3	11.6	---	---	---	---	---	---
5	9.8	6.5	7.6	12.0	11.0	11.4	---	---	---	---	---	---
6	10.4	6.8	8.1	11.0	10.2	10.6	---	---	---	---	---	---
7	10.9	7.0	8.5	11.0	10.1	10.5	---	---	---	---	---	---
8	11.8	7.3	9.1	11.4	10.5	10.9	---	---	---	---	---	---
9	11.4	7.9	9.2	11.5	10.3	10.8	---	---	---	---	---	---
10	9.7	7.8	8.6	11.2	9.3	10.2	---	---	---	---	---	---
11	8.8	7.7	8.5	9.3	8.0	8.6	---	---	---	---	---	---
12	9.0	8.7	8.9	8.9	7.7	8.2	---	---	---	---	---	---
13	8.8	8.5	8.6	9.7	8.9	9.3	---	---	---	---	---	---
14	9.2	8.5	8.8	10.6	9.7	10.2	---	---	---	---	---	---
15	10.0	8.8	9.4	11.1	10.4	10.7	---	---	---	---	---	---
16	9.7	9.3	9.5	11.1	10.7	10.9	---	---	---	---	---	---
17	10.1	9.5	9.7	11.5	10.7	11.3	---	---	---	---	---	---
18	10.2	9.7	9.9	12.1	11.3	11.7	---	---	---	---	---	---
19	10.4	9.9	10.1	12.2	11.9	12.0	---	---	---	---	---	---
20	10.5	9.8	10.1	12.3	11.9	12.1	---	---	---	---	---	---
21	10.7	9.8	10.1	12.3	11.7	12.0	---	---	---	---	---	---
22	11.1	9.9	10.4	11.7	11.2	11.4	---	---	---	---	---	---
23	11.5	10.1	10.6	12.0	11.2	11.7	---	---	---	---	---	---
24	11.5	10.2	10.6	12.5	12.0	12.2	---	---	---	---	---	---
25	11.6	10.3	10.7	12.6	12.2	12.4	---	---	---	---	---	---
26	10.6	10.0	10.4	12.5	12.0	12.2	---	---	---	---	---	---
27	10.8	9.8	10.2	12.5	11.9	12.2	---	---	---	---	---	---
28	11.1	9.9	10.4	13.0	12.4	12.7	---	---	---	---	---	---
29	11.6	10.2	10.8	13.2	12.8	13.0	---	---	---	---	---	---
30	11.2	10.7	11.0	13.1	12.6	12.9	---	---	---	---	---	---
31	11.5	11.1	11.3	---	---	---	---	---	---	---	---	---
MONTH	11.8	6.5	9.5	13.2	7.7	11.3	13.5	12.6	13.1	---	---	---

CHRISTINA RIVER BASIN

01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	12.8	12.6	12.7	13.7	11.3	12.5	12.2	8.4	10.0
2	---	---	---	12.6	12.2	12.4	13.6	11.3	12.4	12.3	8.2	10.2
3	---	---	---	13.4	12.2	13.0	13.1	9.7	11.4	12.4	8.4	10.4
4	---	---	---	13.7	12.8	13.4	11.6	9.5	10.6	12.7	9.1	10.9
5	---	---	---	12.8	11.9	12.3	12.6	10.3	11.4	11.9	9.8	10.8
6	---	---	---	13.1	11.8	12.4	13.7	10.9	12.3	11.3	9.5	10.4
7	---	---	---	13.6	12.7	13.2	12.9	10.6	11.8	11.5	8.7	9.9
8	---	---	---	12.7	12.0	12.5	13.7	11.8	12.7	8.9	7.4	8.1
9	---	---	---	12.0	11.3	11.7	14.0	12.0	13.0	8.8	7.7	8.3
10	---	---	---	12.9	11.5	12.6	14.5	11.8	13.1	10.4	8.4	9.2
11	---	---	---	13.3	12.7	13.0	13.0	11.3	11.6	9.5	8.4	8.9
12	---	---	---	12.8	12.0	12.5	11.5	10.7	11.3	---	---	---
13	---	---	---	12.1	11.3	11.8	12.5	10.1	11.2	---	---	---
14	---	---	---	12.4	11.3	12.0	13.0	10.1	11.5	---	---	---
15	---	---	---	---	---	---	13.0	9.9	11.3	---	---	---
16	---	---	---	11.8	10.9	11.5	12.8	8.9	10.8	---	---	---
17	---	---	---	11.2	10.6	10.8	12.5	8.6	10.6	---	---	---
18	---	---	---	11.1	10.1	10.6	12.7	10.6	11.6	---	---	---
19	---	---	---	11.6	10.1	10.9	14.0	11.0	12.3	---	---	---
20	---	---	---	---	---	---	13.7	10.2	11.9	---	---	---
21	---	---	---	---	---	---	13.1	9.4	11.3	---	---	---
22	---	---	---	11.1	10.4	10.8	11.8	9.2	10.5	---	---	---
23	---	---	---	11.3	10.3	10.8	13.5	9.3	11.3	---	---	---
24	---	---	---	11.6	10.3	10.9	13.7	10.1	11.9	---	---	---
25	---	---	---	11.8	10.2	11.0	14.0	9.6	11.7	---	---	---
26	---	---	---	11.9	9.9	10.8	11.0	9.0	10	---	---	---
27	---	---	---	12.4	10.0	11.1	12.9	9.2	10.9	---	---	---
28	---	---	---	12.6	10.1	11.3	12.6	8.8	10.5	---	---	---
29	---	---	---	12.1	9.9	10.9	11.7	8.4	10.1	10.1	9.3	9.8
30	---	---	---	11.7	9.3	10.5	12.4	8.8	10.5	9.7	8.8	9.3
31	---	---	---	13.5	10.9	12.1	---	---	---	9.3	8.6	8.9
MONTH	---	---	---	13.7	9.3	11.8	14.5	8.4	11.5	12.7	7.4	9.7
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.6	8.8	9.3	10.6	8.5	9.4	9.1	7.9	8.3	9.0	7.5	8.2
2	10.1	9.4	9.7	11.0	8.3	9.6	9.1	7.8	8.3	8.3	8.0	8.2
3	9.7	9.3	9.5	9.7	8.3	8.9	8.6	7.6	8.0	8.9	8.2	8.5
4	9.9	9.2	9.6	11.0	8.6	9.6	7.9	7.4	7.6	8.6	8.3	8.4
5	9.5	9.0	9.3	10.8	8.1	9.2	8.0	7.5	7.7	8.6	8.2	8.4
6	9.3	8.9	9.1	10.3	7.9	9.0	8.3	7.7	7.9	9.2	8.2	8.6
7	9.2	8.7	9.0	10.0	7.7	8.7	8.4	7.8	8.0	9.7	8.4	8.9
8	---	---	---	9.7	7.6	8.5	8.6	8.0	8.2	9.8	8.2	9.0
9	---	---	---	9.6	7.7	8.5	8.3	7.8	8.0	10.1	8.3	9.1
10	---	---	---	8.7	7.8	8.3	8.1	6.8	7.3	10.3	8.1	9.1
11	---	---	---	9.4	8.4	8.8	7.6	7.3	7.5	10.7	8.1	9.3
12	8.4	7.8	8.1	9.4	8.2	8.7	7.8	7.4	7.6	10.0	8.0	8.9
13	7.9	7.6	7.8	9.4	8.2	8.7	7.8	7.3	7.5	9.2	7.8	8.4
14	7.8	7.4	7.6	9.5	8.1	8.7	7.9	7.3	7.6	7.9	7.3	7.6
15	7.8	7.4	7.6	9.7	8.3	8.9	8.4	7.4	7.9	---	---	---
16	8.7	7.8	8.4	9.6	8.0	8.7	8.2	7.6	7.9	---	---	---
17	9.2	8.5	8.9	9.4	8.0	8.6	8.8	7.9	8.3	---	---	---
18	8.9	8.8	8.8	9.0	8.0	8.5	9.0	7.9	8.4	---	---	---
19	9.0	8.7	8.8	9.3	8.2	8.6	9.4	8.0	8.6	---	---	---
20	8.7	7.0	8.3	9.3	8.0	8.6	9.8	7.9	8.8	---	---	---
21	8.2	6.9	7.3	9.0	7.8	8.3	10.3	8.0	9.0	---	---	---
22	9.0	8.2	8.8	8.5	7.4	7.9	10.4	7.8	9.0	---	---	---
23	---	---	---	8.2	7.2	7.7	10.6	7.6	9.0	8.6	7.0	7.9
24	---	---	---	8.5	7.5	7.9	11.5	8.0	9.6	8.7	7.5	8.4
25	9.2	8.7	9.0	8.8	7.6	8.1	12.2	8.4	10.1	9.0	8.6	8.8
26	9.1	8.5	8.9	8.9	7.6	8.2	12.3	8.2	9.9	8.9	8.6	8.7
27	8.9	8.5	8.6	8.7	7.5	8.0	11.8	7.7	9.5	8.8	8.4	8.7
28	9.3	8.4	8.8	8.5	7.3	7.8	12.4	7.7	9.8	8.6	8.2	8.4
29	9.6	8.6	9.1	8.9	7.5	8.1	11.8	7.6	9.3	9.1	8.6	8.9
30	10.0	8.5	9.2	9.3	7.7	8.4	11.6	7.4	8.9	9.8	9.0	9.5
31	---	---	---	9.1	8.0	8.5	9.1	7.4	8.1	---	---	---
MONTH	10.1	6.9	8.7	11.0	7.2	8.6	12.4	6.8	8.4	10.7	7.0	8.6

CHRISTINA RIVER BASIN

01481000 BRANDYWINE CREEK AT CHADDS FORD, PA--Continued

CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Instan- taneous dis- charge, cfs (00061)	Loca- tion in X-sect. looking dwnstrm ft from l bank (00009)	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)
MAR 2003										
	21...	1426	1028	2290	18	3.2	11.5	7.3	206	7.9
	21...	1427	1028	--	18	1.0	11.5	7.4	206	7.9
	21...	1431	1028	--	38	1.2	11.4	7.4	207	7.9
	21...	1436	1028	--	59	2.5	11.4	7.5	207	7.9
	21...	1440	1028	--	80	2.0	11.4	7.4	208	7.9
	21...	1444	1028	--	100	2.0	11.3	7.4	208	7.9
	21...	1449	1028	--	115	5.0	11.3	7.4	209	7.9
	21...	1450	1028	--	115	2.0	11.3	7.4	209	7.9
	21...	1456	1028	--	130	6.0	11.3	7.4	210	8.0
	21...	1457	1028	--	130	2.0	11.3	7.4	210	8.0
	21...	1500	1028	--	145	6.0	11.3	7.4	210	8.0
	21...	1511	1028	--	180	5.0	11.3	7.3	211	8.0
	21...	1513	1028	--	180	2.0	11.3	7.4	211	8.0