



Water-Data Report 2006

**01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA**

Lower Delaware Basin  
Brandywine-Christina Subbasin

LOCATION.--Lat 39°57'42", long 75°48'06" referenced to North American Datum of 1927, Chester County, PA, Hydrologic Unit 02040205, on left bank at bridge on SR 15068 at Modena, and 300 ft upstream from Dennis Run.

DRAINAGE AREA.--55 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--January 1970 to current year.

REVISED RECORDS.--WDR PA-74-1: 1971-72(P), 1973. WDR PA-75-1: 1974(m).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 262.52 ft above North American Vertical Datum of 1988. Satellite and landline telemetry at station.

COOPERATION.--Station established and maintained by the U.S. Geological Survey in cooperation with the Chester County Water Resources Authority and the City of Wilmington, Delaware.

REMARKS.--Records fair. Slight regulation from Rock Run Reservoir 5.6 mi upstream, capacity, 982 acre-ft, and by Lukens Steel Company. Diversion from Rock Run Reservoir for municipal supply of city of Coatesville reenters creek upstream from gage.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 08	2000	*6,090	*10.38
Jun 26	2030	2,030	6.89
Jun 28	0500	2,920	7.85

Minimum discharge, 16 ft<sup>3</sup>/s, Oct 6, gage height, 2.65 ft.

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	22	54	110	78	92	77	54	53	37	85	31	29
2	20	52	82	99	86	80	51	52	119	69	29	139
3	20	53	70	486	248	81	56	52	170	61	29	90
4	21	50	74	139	175	71	69	50	65	58	27	41
5	21	51	72	104	268	69	59	50	53	144	26	42
6	20	51	65	91	131	69	55	49	48	118	24	39
7	35	57	63	82	106	67	56	47	46	74	25	30
8	3,040	52	59	76	100	67	94	47	43	56	25	29
9	972	51	e55	75	93	70	97	46	43	51	24	29
10	203	54	e55	72	90	71	65	45	40	47	26	27
11	105	49	e55	73	89	68	58	48	37	44	27	26
12	75	49	e50	102	e100	94	56	67	36	43	26	27
13	104	48	e50	83	97	90	57	53	37	48	24	27
14	89	46	e50	199	91	75	55	50	39	43	25	76
15	69	50	55	143	94	68	55	52	38	69	25	149
16	58	78	579	86	113	62	53	51	35	67	25	99
17	50	140	195	79	296	63	51	47	33	43	25	62
18	50	67	97	363	179	60	51	47	33	44	21	45
19	48	55	84	203	101	59	51	48	34	76	21	41
20	44	52	71	120	90	58	50	45	33	43	23	37
21	48	56	65	102	86	58	50	43	31	40	21	33
22	94	175	65	93	83	57	106	40	30	40	20	32
23	130	91	63	379	83	57	209	39	36	39	21	33
24	68	70	65	176	84	56	191	38	171	35	21	31
25	257	63	70	135	83	55	110	37	112	33	22	34
26	197	55	202	110	79	56	80	42	815	32	22	32
27	89	54	101	95	75	54	67	51	793	37	24	28
28	71	54	80	93	76	54	61	42	1,030	133	54	38
29	64	72	79	95	---	53	56	38	183	44	57	58
30	59	491	89	99	---	53	55	37	124	35	81	39
31	56	---	77	94	---	54	---	35	---	33	32	---
<b>Total</b>	6,199	2,340	2,947	4,224	3,288	2,026	2,178	1,441	4,344	1,784	883	1,442
<b>Mean</b>	200	78.0	95.1	136	117	65.4	72.6	46.5	145	57.5	28.5	48.1
<b>Max</b>	3,040	491	579	486	296	94	209	67	1,030	144	81	149
<b>Min</b>	20	46	50	72	75	53	50	35	30	32	20	26
<b>Cfsm</b>	3.64	1.42	1.73	2.48	2.14	1.19	1.32	0.85	2.63	1.05	0.52	0.87
<b>In.</b>	4.19	1.58	1.99	2.86	2.22	1.37	1.47	0.97	2.94	1.21	0.60	0.98

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2006, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	61.6	74.3	96.3	103	109	125	116	91.5	86.6	67.2	47.1	58.5
<b>Max</b>	200	157	306	330	235	308	241	213	302	236	123	186
<b>(WY)</b>	(2006)	(2004)	(1997)	(1979)	(1971)	(1994)	(1983)	(1989)	(1972)	(1984)	(1971)	(1979)
<b>Min</b>	20.0	17.8	21.5	20.1	30.2	43.0	34.7	41.5	28.4	15.4	11.8	20.6
<b>(WY)</b>	(2002)	(2002)	(1999)	(1981)	(2002)	(1985)	(2002)	(1999)	(1999)	(2002)	(2002)	(2002)

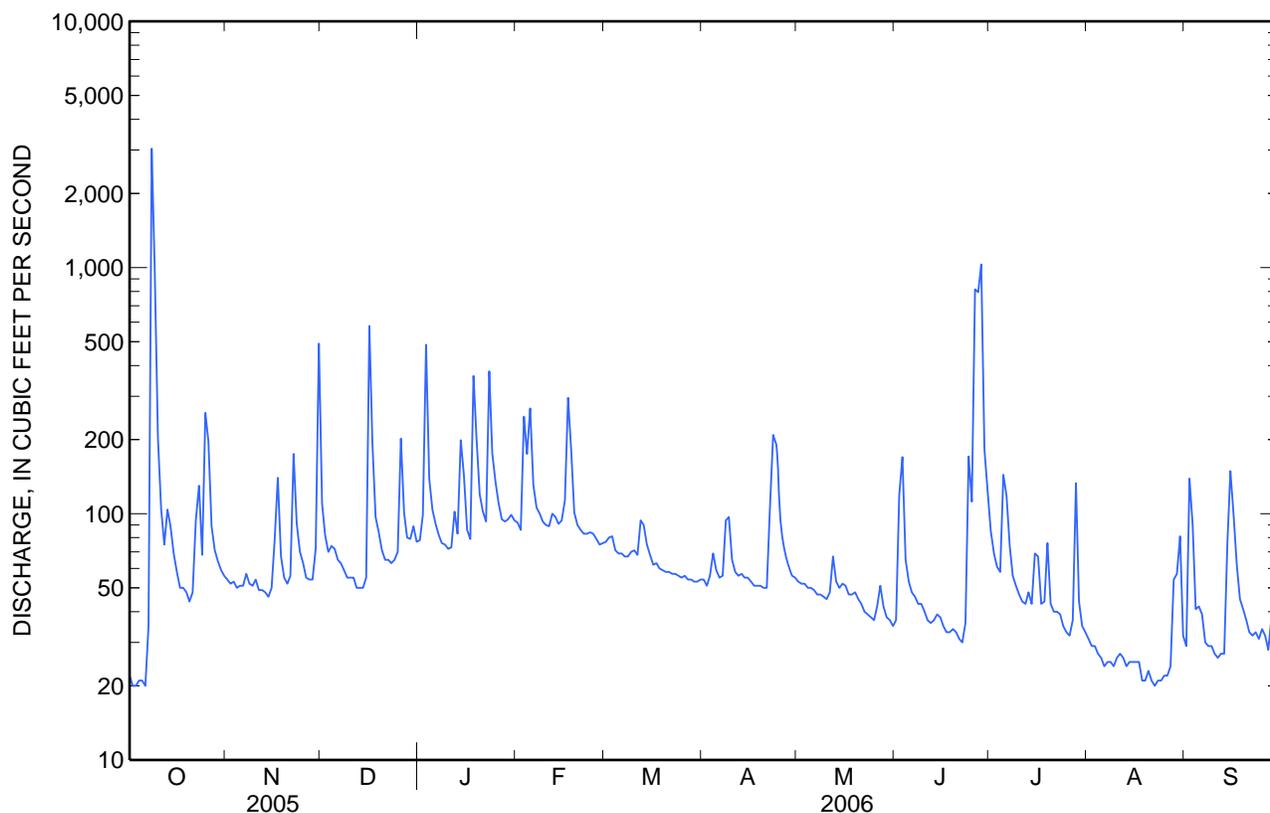
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SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1970 - 2006	
<b>Annual total</b>	35,646		33,096			
<b>Annual mean</b>	97.7		90.7		86.4	
<b>Highest annual mean</b>					130	1979
<b>Lowest annual mean</b>					29.7	2002
<b>Highest daily mean</b>	3,040	Oct 8	3,040	Oct 8	4,010	Jun 22, 1972
<b>Lowest daily mean</b>	20	Sep 12	20	Oct 2 <sup>a</sup>	7.4	Aug 23, 2002
<b>Annual seven-day minimum</b>	21	Sep 30	21	Aug 18	8.1	Aug 17, 2002
<b>Maximum peak flow</b>			6,090	Oct 8	<sup>b</sup> 9,600	Jun 29, 1973
<b>Maximum peak stage</b>			10.38	Oct 8	12.47	Jun 29, 1973
<b>Annual runoff (cfsm)</b>	1.78		1.65		1.57	
<b>Annual runoff (inches)</b>	24.11		22.38		21.34	
<b>10 percent exceeds</b>	150		134		149	
<b>50 percent exceeds</b>	66		56		57	
<b>90 percent exceeds</b>	26		29		25	

<sup>a</sup> Also Oct 3, 6, Aug 22.

<sup>b</sup> From rating curve extended above 7,800 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 11.48 ft.



**01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued**

**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--October 1969 to October 1978, August 1981 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1971 to October 1977, August 1981 to current year.

pH: May 1971 to October 1977, August 1981 to current year.

WATER TEMPERATURES: May 1971 to October 1977, August 1981 to current year.

DISSOLVED OXYGEN: May 1971 to October 1977, August 1981 to current year.

TURBIDITY: October 2005 to current year.

INSTRUMENTATION.--Water-quality monitor May 1971 to October 1977, August 1981 to current year.

REMARKS.--Specific conductance record rated fair except for period Feb. 28 to Apr. 19, which is poor. pH record rated good except for periods June 2-7 and Aug. 11 to Sept. 14, which are fair. Water temperature record rated fair except for periods Oct. 14-21, Mar. 29-31, and Apr. 1, 4, 5, which are poor. Dissolved oxygen record rated fair except for periods Oct. 1 to Mar. 28 and July 16-19, 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. Water-quality samples were collected as part of the Chester County Biological Monitoring project.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 858 microsiemens, Jan. 10, 1977; minimum, 72 microsiemens, Nov. 16, 1985.

pH: Maximum, 10.0, Dec. 21, 1971; minimum, 5.9, July 14, 1991.

WATER TEMPERATURE: Maximum, 33.5°C, July 19, 1977; minimum, 0.0°C, many days during winters.

DISSOLVED OXYGEN: Maximum, 19.5 mg/L, Sept. 2, 1990; minimum, 0.6 mg/L, Nov. 1, 3, 1974.

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

[Remark codes: E, estimated.]

Date	Time	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 unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Fecal coli- form, M-FC 0.7u MF col/ 100 mL (31625)
<b>Mar</b>								
20...	0815	1028	57	10.9	7.6	313	5.9	220
27...	0730	1028	53	12.5	7.6	322	7.1	400
<b>Apr</b>								
10...	1255	1028	67	14.3	8.0	291	11.0	880
25...	1030	1028	112	11.1	7.1	243	13.0	E13,000
<b>May</b>								
10...	0700	1028	43	8.1	7.5	329	14.3	820
18...	1000	1028	46	8.2	7.6	309	15.2	400
24...	0630	1028	38	8.5	7.6	357	13.9	530
<b>Jun</b>								
05...	0635	1028	51	8.1	7.7	305	17.8	2,400
14...	0930	1028	33	8.8	7.8	363	18.9	1,700
19...	0735	1028	32	6.0	7.5	403	21.5	2,300
<b>Jul</b>								
13...	1035	1028	57	8.2	7.6	324	22.7	3,300
19...	0845	1028	117	7.5	7.6	276	22.9	4,900
25...	1115	1028	46	8.3	7.7	327	22.3	1,100
<b>Aug</b>								
03...	0705	1028	39	6.7	7.4	387	25.3	1,000
16...	0800	1028	33	7.8	7.5	400	20.9	2,400
23...	0800	1028	21	7.6	7.4	448	21.0	2,100
<b>Sep</b>								
14...	0910	1028	40	7.9	7.5	320	18.3	7,800
19...	0845	1028	32	8.8	7.6	331	19.2	2,300

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Part 1 of 3

[Remark codes: &lt;, less than; E, estimated.]

Date	Time	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 unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf incrm. titr., field, mg/L as CaCO3 (00419)	Chlor- ide, water, fltrd, mg/L (00940)
<b>Nov</b>													
04...	1400	80020	63	13.5	8.4	347	12.2	29.8	10.5	5.39	20.2	54	34.9

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**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Part 2 of 3

[Remark codes: <, less than; E, estimated.]

Date	Fluor- ide, water, fltrd, mg/L (00950)	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- phos- phate, water, fltrd, mg/L as P (00671)	Alum- inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)
	Nov 04...	.41	12.5	30.6	<.04	5.25	E.007	.14	32.4	.36	58	.17	3.9

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Part 3 of 3

[Remark codes: <, less than; E, estimated.]

Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Molyb- denum, water, fltrd, ug/L (01060)	Zinc, water, fltrd, ug/L (01090)
	Nov 04...	23	.22	14.8	<.010	27.4

**CROSS-SECTION ANALYSES**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Date	Time	Instan- taneous dis- charge, cfs (00061)	Sam- pling depth, feet (00003)	Turb- idity, IR LED light, 90 deg, FNU (63680)	Dis- solved oxygen, mg/L (00300)	Specif. conduc- tance, uS/cm 25 degC (00095)	Temper- ature, deg C (00010)	Loca- tion in X-sect. looking dwnstrm ft from l bank (00009)
		Jul						
19...	1240	--	.50	13	9.4	265	24.1	.00
19...	1241	--	.50	17	9.2	267	24.1	5.00
19...	1242	--	.50	14	9.2	267	24.1	10.0
19...	1243	--	.50	16	9.2	268	24.1	15.0
19...	1244	--	.50	15	9.3	268	24.2	20.0
19...	1245	--	.50	18	9.3	268	24.1	25.0
19...	1246	--	.50	14	9.2	268	24.1	30.0
19...	1247	--	.50	17	9.3	268	24.2	35.0
19...	1248	--	.50	16	9.3	268	24.2	40.0
19...	1249	--	.50	15	9.3	268	24.2	45.0
19...	1250	--	.50	15	9.3	268	24.2	50.0
19...	1251	--	.50	15	9.2	268	24.1	55.0
19...	1252	--	.50	24	9.2	268	24.1	60.0
19...	1253	--	.50	38	9.2	268	24.1	65.0
19...	1254	84	--	--	--	--	--	66.0

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	511	455	488	355	323	339	---	---	---	---	---	---
2	510	481	495	362	335	351	---	---	---	---	---	---
3	509	470	487	365	336	353	---	---	---	---	---	---
4	506	468	485	363	333	352	---	---	---	---	---	---
5	490	449	474	366	340	355	---	---	---	---	---	---
6	482	416	462	364	329	348	---	---	---	---	---	---
7	475	267	430	358	310	336	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	365	319	347	---	---	---	---	---	---
11	---	---	---	368	338	356	---	---	---	---	---	---
12	344	321	332	369	352	359	---	---	---	---	---	---
13	344	255	301	368	334	352	---	---	---	---	---	---
14	341	304	321	371	326	358	---	---	---	---	---	---
15	346	323	334	379	348	362	---	---	---	---	---	---
16	365	339	350	361	239	320	---	---	---	---	---	---
17	370	349	360	282	232	255	---	---	---	---	---	---
18	384	351	370	318	282	295	---	---	---	---	---	---
19	402	372	384	337	313	324	---	---	---	---	---	---
20	400	369	382	347	321	335	---	---	---	---	---	---
21	385	347	367	350	289	336	---	---	---	---	---	---
22	363	252	302	302	223	251	---	---	---	---	---	---
23	304	250	275	297	248	268	---	---	---	---	---	---
24	332	299	313	328	297	308	---	---	---	---	---	---
25	321	212	235	333	297	312	---	---	---	---	---	---
26	293	227	247	333	313	325	---	---	---	---	---	---
27	312	286	297	337	320	330	---	---	---	---	---	---
28	323	307	316	339	317	328	---	---	---	---	---	---
29	337	315	326	325	167	315	---	---	---	---	---	---
30	350	324	338	---	---	---	---	---	---	---	---	---
31	349	325	338	---	---	---	---	---	---	---	---	---
Month	511	212	363	379	167	329	---	---	---	---	---	---

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	339	320	331	337	313	327
2	---	---	---	---	---	---	343	314	330	337	313	328
3	---	---	---	356	301	315	343	306	326	348	317	333
4	---	---	---	335	318	324	316	271	297	350	314	335
5	---	---	---	319	307	313	325	297	313	352	322	335
6	---	---	---	322	300	312	321	299	310	348	319	335
7	---	---	---	325	304	314	322	302	313	357	324	341
8	---	---	---	325	312	318	318	248	287	360	325	342
9	---	---	---	326	306	314	281	235	259	353	320	336
10	---	---	---	326	297	311	298	263	277	347	318	335
11	---	---	---	331	296	319	308	284	295	351	322	338
12	---	---	---	471	280	335	310	286	300	332	257	289
13	---	---	---	308	263	287	324	291	307	326	299	314
14	---	---	---	314	292	301	333	308	322	323	301	314
15	---	---	---	320	288	306	333	313	324	325	295	314
16	---	---	---	323	308	317	329	310	321	326	300	314
17	---	---	---	337	312	320	329	291	307	334	305	321
18	---	---	---	321	309	315	324	282	308	338	309	327
19	---	---	---	324	308	317	338	307	324	344	314	330
20	---	---	---	325	305	315	340	309	326	356	318	338
21	---	---	---	339	305	322	341	311	328	362	329	348
22	---	---	---	338	309	326	342	230	274	363	333	348
23	---	---	---	344	304	329	249	212	228	360	328	348
24	---	---	---	339	325	332	251	174	218	375	337	360
25	322	309	316	339	323	332	262	221	239	370	340	357
26	316	296	307	334	314	325	293	254	272	378	341	363
27	---	---	---	332	307	321	308	284	296	365	306	328
28	---	---	---	331	313	323	324	300	311	361	321	335
29	---	---	---	338	320	328	335	312	325	377	341	359
30	---	---	---	333	314	321	336	314	327	374	339	363
31	---	---	---	339	303	323	---	---	---	379	338	362
Month	322	296	312	471	263	318	343	174	300	379	257	336

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
<b>1</b>	384	348	367	---	---	---	379	342	363	386	321	345
<b>2</b>	381	136	278	---	---	---	387	360	373	---	---	---
<b>3</b>	273	184	228	---	---	---	403	364	386	---	---	---
<b>4</b>	314	273	296	---	---	---	402	379	388	---	---	---
<b>5</b>	349	301	322	---	---	---	397	370	385	---	---	---
<b>6</b>	350	328	342	---	---	---	402	382	395	349	321	335
<b>7</b>	359	337	350	---	---	---	403	378	390	379	349	365
<b>8</b>	365	344	355	343	315	328	410	377	390	395	365	382
<b>9</b>	370	345	356	340	326	335	411	387	399	399	372	387
<b>10</b>	373	353	365	346	328	337	413	384	398	425	388	404
<b>11</b>	377	355	369	348	331	340	403	372	390	416	381	401
<b>12</b>	385	359	375	353	330	340	408	381	396	416	384	400
<b>13</b>	393	354	375	352	311	336	412	387	404	409	373	393
<b>14</b>	390	257	364	352	333	343	412	379	399	412	204	324
<b>15</b>	399	257	356	353	196	317	418	385	398	280	227	253
<b>16</b>	410	389	402	333	270	299	409	376	394	292	242	276
<b>17</b>	419	395	411	343	325	335	418	394	405	335	268	302
<b>18</b>	416	371	395	---	---	---	418	391	406	352	308	328
<b>19</b>	409	377	394	---	---	---	420	394	409	363	330	348
<b>20</b>	406	383	394	323	310	316	417	397	407	393	352	371
<b>21</b>	411	352	381	344	310	325	429	367	400	389	361	377
<b>22</b>	436	378	410	349	327	336	442	421	433	400	370	386
<b>23</b>	427	356	384	342	319	332	450	415	432	398	368	386
<b>24</b>	368	109	246	373	324	343	427	389	408	395	365	383
<b>25</b>	288	223	262	377	351	363	401	344	381	396	357	378
<b>26</b>	---	---	---	371	346	360	429	391	412	392	353	373
<b>27</b>	---	---	---	371	272	361	413	371	395	403	369	386
<b>28</b>	---	---	---	309	122	259	394	229	280	396	227	363
<b>29</b>	---	---	---	347	309	329	359	152	310	323	244	295
<b>30</b>	---	---	---	374	342	356	305	234	264	370	323	349
<b>31</b>	---	---	---	372	346	360	337	292	315	---	---	---
<b>Month</b>	436	109	351	377	122	334	450	152	384	425	204	357

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	8.4	7.8	8.1	7.8	7.2	7.4	---	---	---	---	---	---
2	8.4	7.8	8.1	8.0	7.4	7.5	---	---	---	---	---	---
3	8.3	7.7	8.0	7.8	7.2	7.4	---	---	---	---	---	---
4	8.2	7.6	8.0	8.1	7.1	7.4	---	---	---	---	---	---
5	8.4	7.6	8.0	8.4	7.3	7.6	---	---	---	---	---	---
6	8.3	7.5	8.0	8.6	7.4	7.7	---	---	---	---	---	---
7	8.1	7.5	7.6	8.0	7.3	7.5	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	8.1	7.2	7.4	---	---	---	---	---	---
11	---	---	---	7.9	7.1	7.3	---	---	---	---	---	---
12	7.8	7.7	7.8	7.8	6.9	7.2	---	---	---	---	---	---
13	7.8	7.7	7.8	8.0	7.0	7.3	---	---	---	---	---	---
14	7.8	7.7	7.8	8.4	7.1	7.5	---	---	---	---	---	---
15	7.8	7.7	7.8	7.8	7.0	7.3	---	---	---	---	---	---
16	7.9	7.8	7.8	8.3	7.1	7.3	---	---	---	---	---	---
17	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---
18	8.0	7.7	7.8	---	---	---	---	---	---	---	---	---
19	8.0	7.7	7.8	---	---	---	---	---	---	---	---	---
20	8.3	7.7	7.9	---	---	---	---	---	---	---	---	---
21	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---
22	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
23	7.9	7.7	7.7	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	7.2	6.8	7.0	---	---	---	---	---	---	---	---	---
30	7.3	6.9	7.0	---	---	---	---	---	---	---	---	---
31	7.4	7.0	7.2	---	---	---	---	---	---	---	---	---
<b>Max</b>	8.4	7.8	8.1	8.6	7.4	7.7	---	---	---	---	---	---
<b>Min</b>	7.2	6.8	7.0	7.8	6.9	7.2	---	---	---	---	---	---

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	---	---	---	---	---	---	9.2	7.4	7.9	8.4	7.6	7.8
2	---	---	---	---	---	---	9.5	7.6	8.2	8.9	7.5	7.9
3	---	---	---	9.2	7.6	8.0	9.2	7.5	7.8	8.9	7.6	8.1
4	---	---	---	9.2	7.6	7.9	9.3	7.5	8.0	9.0	7.6	8.0
5	---	---	---	9.1	7.6	7.9	9.4	7.7	8.2	9.1	7.6	8.1
6	---	---	---	9.2	7.6	8.0	9.5	7.7	8.2	9.0	7.5	8.1
7	---	---	---	9.2	7.6	8.0	9.4	7.8	8.2	9.0	7.6	8.1
8	---	---	---	9.3	7.6	8.0	8.1	7.7	7.9	9.0	7.6	8.0
9	---	---	---	9.4	7.5	8.0	8.7	7.7	7.9	9.0	7.5	8.0
10	---	---	---	9.3	7.4	8.1	9.1	7.8	8.1	9.0	7.5	8.1
11	---	---	---	9.2	7.4	8.2	9.3	7.8	8.2	8.7	7.6	7.8
12	---	---	---	8.0	7.4	7.6	9.6	7.8	8.4	8.5	7.5	7.7
13	---	---	---	9.1	7.4	7.8	9.5	7.9	8.3	8.4	7.6	7.7
14	---	---	---	9.1	7.4	8.0	9.0	7.5	8.0	8.3	7.6	7.7
15	---	---	---	9.1	7.5	8.0	9.4	7.5	8.4	7.9	7.5	7.6
16	---	---	---	9.1	7.6	8.0	9.3	7.5	8.2	8.2	7.5	7.7
17	---	---	---	9.1	7.4	8.0	9.3	7.5	8.2	8.2	7.6	7.8
18	---	---	---	9.1	7.5	8.0	9.3	7.5	8.0	8.2	7.6	7.8
19	---	---	---	9.0	7.5	7.9	9.4	7.5	7.8	8.3	7.6	7.8
20	---	---	---	9.2	7.5	8.0	9.3	7.5	8.2	8.5	7.6	7.8
21	---	---	---	9.1	7.5	8.0	9.3	7.4	7.8	8.3	7.5	7.8
22	---	---	---	9.2	7.5	8.0	7.7	7.5	7.6	8.5	7.5	7.8
23	---	---	---	9.3	7.5	7.8	7.6	7.4	7.4	8.5	7.5	7.8
24	---	---	---	9.4	7.5	8.2	7.9	7.4	7.6	8.5	7.5	7.8
25	9.0	7.7	7.9	9.3	7.5	8.2	8.1	7.6	7.6	8.5	7.4	7.8
26	9.0	7.7	8.0	9.3	7.5	8.1	8.2	7.6	7.8	7.8	7.4	7.6
27	---	---	---	9.3	7.5	8.1	8.2	7.6	7.8	7.7	7.2	7.4
28	---	---	---	9.3	7.5	8.0	8.3	7.6	7.8	8.0	7.3	7.5
29	---	---	---	9.3	7.5	8.1	8.3	7.6	7.8	8.0	7.3	7.5
30	---	---	---	9.4	7.5	8.1	8.4	7.6	7.8	7.8	7.3	7.4
31	---	---	---	9.4	7.4	8.0	---	---	---	8.0	7.2	7.5
<b>Max</b>	9.0	7.7	8.0	9.4	7.6	8.2	9.6	7.9	8.4	9.1	7.6	8.1
<b>Min</b>	9.0	7.7	7.9	8.0	7.4	7.6	7.6	7.4	7.4	7.7	7.2	7.4

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	8.6	7.3	7.5	---	---	---	8.6	7.5	7.8	7.7	7.5	7.6
2	8.0	7.4	7.6	---	---	---	8.6	7.4	7.8	---	---	---
3	7.6	7.5	7.6	---	---	---	8.6	7.4	7.8	---	---	---
4	7.9	7.6	7.7	---	---	---	8.6	7.4	7.8	---	---	---
5	8.0	7.6	7.7	---	---	---	8.6	7.5	7.9	---	---	---
6	8.1	7.6	7.8	---	---	---	8.7	7.5	7.9	8.0	7.6	7.7
7	8.1	7.6	7.8	---	---	---	8.7	7.5	8.0	8.1	7.6	7.8
8	8.4	7.6	7.9	8.5	7.7	7.9	8.7	7.5	8.0	8.1	7.6	7.8
9	8.3	7.5	7.8	8.7	7.6	8.0	8.6	7.5	8.0	8.3	7.6	7.9
10	8.2	7.6	7.8	8.9	7.6	8.1	8.6	7.5	7.9	8.4	7.5	7.9
11	8.5	7.6	7.9	9.0	7.6	8.1	8.6	7.5	8.0	8.3	7.5	7.9
12	8.4	7.6	7.9	9.0	7.5	7.9	8.6	7.5	8.0	8.5	7.5	8.0
13	8.6	7.5	7.9	8.8	7.4	7.8	8.6	7.5	8.0	8.2	7.5	7.9
14	8.8	7.5	7.8	8.8	7.5	7.9	8.8	7.5	8.0	7.8	7.4	7.6
15	8.6	7.5	7.8	8.2	7.5	7.7	8.6	7.5	8.0	7.6	7.4	7.4
16	8.6	7.5	7.9	8.5	7.6	7.8	8.5	7.5	8.0	7.6	7.4	7.5
17	8.6	7.5	7.9	8.7	7.5	7.8	8.4	7.5	7.8	7.8	7.4	7.5
18	8.4	7.4	7.8	---	---	---	8.3	7.4	7.9	8.2	7.4	7.6
19	8.4	7.3	7.7	---	---	---	8.3	7.4	7.8	8.2	7.5	7.8
20	8.4	7.3	7.7	8.6	7.5	7.8	8.1	7.4	7.7	8.3	7.6	7.8
21	8.4	7.4	7.7	8.7	7.5	7.8	8.2	7.4	7.7	8.5	7.6	7.9
22	8.4	7.3	7.7	8.4	7.4	7.6	8.4	7.4	7.8	8.7	7.6	8.0
23	7.9	7.2	7.6	8.5	7.5	7.7	8.3	7.4	7.8	8.5	7.6	8.0
24	8.0	7.2	7.4	8.5	7.4	7.7	8.2	7.4	7.8	8.5	7.5	7.9
25	7.5	7.3	7.5	8.8	7.4	7.7	8.3	7.4	7.7	8.6	7.5	7.9
26	---	---	---	8.8	7.5	8.0	7.8	7.4	7.6	8.6	7.5	7.9
27	---	---	---	8.8	7.5	7.8	7.5	7.4	7.4	8.6	7.4	7.9
28	---	---	---	8.0	7.4	7.5	7.4	7.2	7.3	8.7	7.5	7.9
29	---	---	---	8.1	7.5	7.7	8.1	7.2	7.3	8.1	7.4	7.6
30	---	---	---	8.1	7.5	7.6	7.5	7.4	7.5	8.1	7.5	7.7
31	---	---	---	8.5	7.4	7.8	7.8	7.4	7.5	---	---	---
<b>Max</b>	8.8	7.6	7.9	9.0	7.7	8.1	8.8	7.5	8.0	8.7	7.6	8.0
<b>Min</b>	7.5	7.2	7.4	8.0	7.4	7.5	7.4	7.2	7.3	7.6	7.4	7.4

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	17.9	14.6	16.4	12.0	9.7	11.0	---	---	---	---	---	---
2	18.6	15.2	17.1	12.4	10.9	11.6	---	---	---	---	---	---
3	18.8	16.1	17.7	12.0	9.6	10.9	---	---	---	---	---	---
4	19.4	17.2	18.3	12.7	10.6	11.7	---	---	---	---	---	---
5	20.4	18.6	19.4	13.6	11.6	12.5	---	---	---	---	---	---
6	20.9	19.2	20.0	14.6	12.2	13.4	---	---	---	---	---	---
7	21.3	20.3	20.8	14.3	12.1	13.1	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	13.8	10.9	12.8	---	---	---	---	---	---
11	---	---	---	10.9	9.2	10.1	---	---	---	---	---	---
12	17.4	16.2	16.9	10.0	8.0	9.0	---	---	---	---	---	---
13	16.4	15.5	16.0	10.6	8.3	9.5	---	---	---	---	---	---
14	17.6	16.2	16.8	12.3	10.6	11.4	---	---	---	---	---	---
15	18.3	16.4	17.2	13.3	11.5	12.2	---	---	---	---	---	---
16	16.5	15.0	15.6	15.9	12.9	14.5	---	---	---	---	---	---
17	15.6	13.8	14.7	12.9	8.4	10.6	---	---	---	---	---	---
18	16.1	13.8	14.8	8.4	6.6	7.3	---	---	---	---	---	---
19	16.0	13.6	14.9	7.5	5.6	6.6	---	---	---	---	---	---
20	15.6	14.4	15.0	8.2	5.9	7.1	---	---	---	---	---	---
21	14.4	13.3	13.7	9.0	7.1	7.9	---	---	---	---	---	---
22	13.3	12.9	13.1	9.0	7.3	8.3	---	---	---	---	---	---
23	13.3	11.8	12.6	7.3	5.5	6.1	---	---	---	---	---	---
24	12.6	11.3	12.0	7.4	5.2	6.2	---	---	---	---	---	---
25	12.2	10.6	11.3	5.2	3.0	3.9	---	---	---	---	---	---
26	11.3	10.2	10.7	5.1	3.1	4.0	---	---	---	---	---	---
27	11.1	10.0	10.6	7.5	4.6	5.9	---	---	---	---	---	---
28	11.1	9.6	10.4	10.9	7.5	9.0	---	---	---	---	---	---
29	10.7	9.5	10.0	14.3	10.9	12.2	---	---	---	---	---	---
30	11.5	8.8	10.1	---	---	---	---	---	---	---	---	---
31	11.6	9.2	10.5	---	---	---	---	---	---	---	---	---
<b>Month</b>	21.3	8.8	14.7	15.9	3.0	9.6	---	---	---	---	---	---

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	15.7	13.4	14.4	17.1	12.8	15.1
2	---	---	---	---	---	---	16.0	12.1	13.9	17.6	13.2	15.5
3	---	---	---	5.2	2.5	3.8	13.9	11.5	12.2	18.4	14.3	16.4
4	---	---	---	5.4	1.9	3.7	13.5	10.1	11.8	19.4	14.8	17.1
5	---	---	---	6.5	3.0	4.8	11.9	9.6	10.8	19.5	16.2	17.8
6	---	---	---	6.7	3.7	5.4	12.8	9.1	10.7	20.0	16.4	18.0
7	---	---	---	7.2	4.1	5.7	12.5	9.5	10.8	18.5	14.9	16.7
8	---	---	---	7.2	3.7	5.7	12.3	9.1	11.2	17.0	14.8	15.9
9	---	---	---	9.5	6.5	7.9	12.4	7.6	9.9	18.1	14.2	16.0
10	---	---	---	12.6	8.7	10.6	13.6	8.4	11.1	19.9	15.0	17.4
11	---	---	---	12.8	9.6	11.4	15.1	9.9	12.5	18.0	16.4	16.9
12	---	---	---	12.1	10.6	11.1	14.9	11.6	13.5	19.6	15.4	17.4
13	---	---	---	14.1	10.0	12.0	17.8	13.2	15.3	18.6	15.8	17.2
14	---	---	---	14.0	10.5	12.7	16.3	14.1	14.8	17.5	15.8	16.6
15	---	---	---	10.5	7.7	8.9	18.0	13.6	15.7	16.3	14.8	15.6
16	---	---	---	9.5	6.0	7.8	17.8	14.3	16.0	17.1	14.3	15.6
17	---	---	---	10.9	7.8	9.1	16.6	13.4	15.1	17.0	14.4	15.8
18	---	---	---	9.1	6.5	7.9	17.8	13.0	15.3	18.1	14.6	16.3
19	---	---	---	8.4	5.5	7.0	18.4	14.1	16.2	16.6	15.0	15.9
20	---	---	---	8.7	5.9	7.3	18.9	14.2	16.6	17.5	14.0	15.6
21	---	---	---	7.7	5.2	6.7	17.2	15.0	16.2	17.2	13.8	15.5
22	---	---	---	8.2	5.4	6.9	15.3	12.4	13.1	17.5	13.5	15.3
23	---	---	---	10.0	6.3	8.0	14.6	12.2	13.2	17.7	13.2	15.4
24	---	---	---	9.9	7.1	8.6	15.2	13.0	14.1	18.5	13.7	16.0
25	6.3	3.1	4.8	9.4	8.0	8.7	17.6	12.8	15.1	18.3	15.3	16.7
26	5.3	3.0	4.1	9.2	7.8	8.4	16.6	13.2	15.1	19.4	16.4	17.6
27	---	---	---	11.4	7.1	9.2	17.1	12.3	14.9	21.1	17.5	19.1
28	---	---	---	10.6	8.0	9.5	17.3	13.5	15.5	22.8	17.9	20.2
29	---	---	---	12.7	8.8	10.9	16.9	12.7	14.9	23.8	18.9	21.3
30	---	---	---	13.6	9.2	11.6	17.0	12.6	14.9	25.1	20.4	22.6
31	---	---	---	14.9	10.4	12.8	---	---	---	25.3	21.4	23.3
<b>Month</b>	6.3	3.0	4.5	14.9	1.9	8.4	18.9	7.6	13.8	25.3	12.8	17.2

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	25.2	21.5	23.2	---	---	---	28.0	23.9	25.8	20.5	18.4	19.2
2	23.3	21.1	22.4	---	---	---	28.5	24.8	26.6	---	---	---
3	21.1	19.4	20.6	---	---	---	28.9	25.2	27.0	---	---	---
4	20.1	18.1	19.1	---	---	---	27.1	25.1	26.1	---	---	---
5	20.0	17.6	18.7	---	---	---	26.4	23.0	24.7	---	---	---
6	21.2	17.5	19.4	---	---	---	26.1	22.2	24.1	21.3	18.4	19.6
7	19.9	18.4	18.9	---	---	---	25.8	22.9	24.2	22.0	18.6	20.2
8	20.6	17.5	19.0	21.8	19.8	20.9	26.4	23.4	24.8	21.6	18.9	20.3
9	21.5	18.2	19.8	23.5	19.9	21.6	25.0	21.6	23.4	22.8	19.6	21.0
10	19.3	17.4	18.3	24.1	20.5	22.2	23.5	21.2	22.4	22.3	19.8	21.1
11	19.8	15.7	17.7	25.2	21.4	23.2	24.2	21.3	22.6	21.5	19.7	20.4
12	19.3	16.6	17.9	24.4	22.5	23.4	23.4	20.0	21.7	20.1	17.7	19.0
13	22.2	16.9	19.4	24.3	22.5	23.3	23.1	19.2	21.2	18.8	17.3	17.9
14	21.1	18.8	19.9	25.4	21.6	23.4	23.7	19.6	21.6	19.5	18.1	18.7
15	22.3	18.2	20.2	24.4	22.2	22.8	24.0	21.8	22.7	19.6	18.4	19.0
16	22.8	18.0	20.3	26.1	22.0	23.8	24.7	20.8	22.8	20.4	18.9	19.5
17	23.2	18.6	20.8	26.7	22.6	24.6	24.7	21.1	22.8	21.6	18.7	20.0
18	25.1	19.9	22.4	---	---	---	24.5	21.4	23.0	21.6	18.7	20.1
19	25.0	21.4	23.2	---	---	---	24.7	21.8	23.2	20.5	19.2	19.9
20	24.9	22.0	23.3	26.2	23.1	24.5	25.6	22.8	24.1	19.5	17.3	18.5
21	25.1	20.9	23.1	26.2	23.1	24.5	25.1	22.1	23.7	18.2	15.7	17.0
22	25.3	21.4	23.2	25.4	23.4	24.3	24.8	21.2	23.0	18.0	15.1	16.6
23	25.1	22.0	23.6	25.0	22.6	23.6	24.4	20.9	22.8	19.3	16.9	17.9
24	23.7	21.6	22.7	25.2	21.0	23.1	24.5	21.3	23.0	20.6	18.7	19.5
25	22.2	21.4	21.7	24.9	21.7	23.2	24.1	21.8	22.9	20.1	18.1	19.1
26	---	---	---	25.4	22.1	23.7	23.6	22.3	22.6	19.1	16.5	17.9
27	---	---	---	26.5	22.7	24.3	23.6	21.8	22.6	18.6	16.5	17.6
28	---	---	---	25.1	22.2	23.6	23.9	22.3	23.2	19.2	16.4	17.7
29	---	---	---	26.3	22.5	24.3	24.9	22.4	23.1	18.9	16.4	17.6
30	---	---	---	26.3	23.4	24.7	23.2	21.5	22.2	16.4	14.6	15.4
31	---	---	---	27.1	23.2	25.1	21.8	20.5	21.1	---	---	---
<b>Month</b>	25.3	15.7	20.8	27.1	19.8	23.6	28.9	19.2	23.4	22.8	14.6	18.9

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	11.1	8.8	9.7	---	---	---	---	---	---	---	---	---
2	11.2	8.6	9.6	---	---	---	---	---	---	---	---	---
3	11.2	8.2	9.3	---	---	---	---	---	---	---	---	---
4	10.6	7.8	8.9	---	---	---	---	---	---	---	---	---
5	10.7	7.7	8.8	---	---	---	---	---	---	---	---	---
6	10.5	7.3	8.6	---	---	---	---	---	---	---	---	---
7	8.5	6.7	7.5	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	12.2	9.4	10.6	---	---	---	---	---	---
11	---	---	---	12.7	10.3	11.2	---	---	---	---	---	---
12	9.0	8.5	8.8	12.6	10.5	11.3	---	---	---	---	---	---
13	9.3	9.0	9.2	12.7	10.0	11.2	---	---	---	---	---	---
14	9.4	9.1	9.2	12.5	9.9	10.9	---	---	---	---	---	---
15	9.3	8.9	9.1	11.8	9.7	10.5	---	---	---	---	---	---
16	9.5	9.1	9.3	11.7	9.1	10.1	---	---	---	---	---	---
17	9.7	9.2	9.4	11.4	10.0	10.9	---	---	---	---	---	---
18	9.8	9.2	9.5	12.4	11.4	11.8	---	---	---	---	---	---
19	10.2	9.2	9.6	12.7	11.4	11.9	---	---	---	---	---	---
20	10.6	9.3	9.8	12.6	11.2	11.8	---	---	---	---	---	---
21	---	---	---	12.4	11.0	11.6	---	---	---	---	---	---
22	---	---	---	11.6	11.1	11.4	---	---	---	---	---	---
23	---	---	---	12.3	11.6	11.9	---	---	---	---	---	---
24	---	---	---	12.2	11.2	11.7	---	---	---	---	---	---
25	11.0	10.6	10.8	12.9	11.7	12.3	---	---	---	---	---	---
26	10.8	10.2	10.6	12.9	11.7	12.3	---	---	---	---	---	---
27	11.0	10.1	10.5	12.6	11.1	11.8	---	---	---	---	---	---
28	---	---	---	12.0	10.2	11.1	---	---	---	---	---	---
29	---	---	---	11.5	9.2	10.3	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
Month	11.2	6.7	9.4	12.9	9.1	11.3	---	---	---	---	---	---

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	13.6	8.3	10.3	11.6	8.7	10.0
2	---	---	---	---	---	---	15.4	8.5	11.3	11.1	8.3	9.7
3	---	---	---	14.8	11.9	13.2	15.4	8.6	11.4	11.4	8.2	9.6
4	---	---	---	15.0	11.5	13.2	15.1	10.4	12.4	11.2	7.9	9.4
5	---	---	---	15.0	10.9	12.8	15.7	10.5	12.8	11.3	7.7	9.2
6	---	---	---	15.2	10.8	12.7	16.0	10.4	12.8	11.1	7.4	9.0
7	---	---	---	15.0	10.6	12.6	15.5	9.9	12.2	11.4	7.7	9.2
8	---	---	---	15.5	10.1	12.6	12.6	9.4	11.1	11.4	7.6	9.1
9	---	---	---	14.3	9.5	11.5	13.8	10.0	12.0	11.4	7.8	9.2
10	---	---	---	13.5	8.8	10.7	14.4	9.2	11.7	11.0	7.2	8.8
11	---	---	---	14.0	8.8	10.8	14.0	8.5	11.1	10.5	7.0	8.4
12	---	---	---	11.1	8.9	10	14.7	8.4	11.2	9.7	6.6	7.9
13	---	---	---	13.2	8.9	10.8	12.5	7.1	9.7	9.5	5.9	7.6
14	---	---	---	13.1	9.0	10.5	10.6	6.9	8.4	9.7	6.4	7.9
15	---	---	---	14.3	9.2	12.0	10.5	5.7	7.9	8.9	6.3	7.5
16	---	---	---	15.3	11.0	13.0	---	---	---	9.3	6.3	7.7
17	---	---	---	13.5	9.8	11.4	---	---	---	9.2	6.3	7.8
18	---	---	---	14.1	9.8	11.8	---	---	---	9.9	6.8	8.1
19	---	---	---	14.5	10.4	12.2	---	---	---	10.2	6.6	8.7
20	---	---	---	14.9	10.5	12.4	---	---	---	10.6	8.7	9.5
21	---	---	---	15.0	10.7	12.7	---	---	---	10.6	8.7	9.4
22	---	---	---	15.3	11.0	13.0	9.9	7.5	8.9	11.0	8.6	9.7
23	---	---	---	15.6	10.9	13.0	9.9	7.9	8.5	11.0	8.3	9.6
24	---	---	---	16.3	10.8	13.1	9.3	8.1	8.8	10.9	8.2	9.4
25	14.4	11.5	12.8	15.7	10.7	12.7	9.8	8.2	9.1	10.5	7.8	8.9
26	14.8	11.5	13.1	15.9	10.8	12.8	10.1	8.4	9.2	9.6	7.1	8.0
27	---	---	---	15.9	10.2	12.7	10.3	8.4	9.4	8.7	6.6	7.5
28	---	---	---	15.6	10.3	12.7	10.5	8.4	9.4	9.6	6.6	7.9
29	---	---	---	15.5	9.6	12.2	11.1	8.7	9.9	10.1	7.1	8.4
30	---	---	---	15.4	9.3	12.0	11.3	9.0	10.0	9.7	6.8	8.1
31	---	---	---	15.1	8.5	11.6	---	---	---	9.4	6.4	7.7
Month	14.8	11.5	12.9	16.3	8.5	12.2	16.0	5.7	10.4	11.6	5.9	8.7

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	9.2	6.1	7.6	---	---	---	9.0	6.8	7.8	9.0	8.1	8.5
2	8.4	6.4	7.4	---	---	---	9.0	6.5	7.5	---	---	---
3	8.0	7.4	7.8	---	---	---	8.8	6.4	7.4	---	---	---
4	8.7	7.9	8.3	---	---	---	9.1	6.3	7.5	---	---	---
5	9.0	7.7	8.3	---	---	---	9.3	6.8	7.9	---	---	---
6	8.6	7.1	7.8	---	---	---	9.6	7.0	8.0	9.4	8.7	9.0
7	8.9	7.1	7.9	---	---	---	9.4	6.9	8.0	9.4	8.6	9.0
8	---	---	---	9.7	8.2	8.9	9.3	6.1	7.9	9.5	8.5	9.0
9	---	---	---	9.8	7.9	8.8	9.7	7.0	8.2	9.4	8.2	8.8
10	---	---	---	10.1	7.8	8.8	9.8	7.4	8.3	9.4	8.2	8.6
11	---	---	---	10.1	7.5	8.7	9.7	7.4	8.3	9.8	8.1	8.8
12	---	---	---	10.0	7.1	8.3	9.9	7.4	8.5	10.2	8.7	9.4
13	---	---	---	9.4	6.9	8.0	10.0	7.6	8.6	10.2	8.8	9.5
14	---	---	---	9.5	7.2	8.2	10.2	7.5	8.7	9.1	8.2	8.6
15	9.9	7.1	8.6	8.9	7.1	7.7	9.8	7.4	8.4	8.9	7.9	8.4
16	10.3	7.9	8.9	8.7	6.9	8.0	9.9	7.6	8.5	8.5	7.7	8.2
17	10.4	7.7	8.8	9.0	6.8	7.7	9.6	7.5	8.4	8.7	7.7	8.3
18	9.8	7.0	8.3	---	---	---	9.7	7.3	8.3	9.4	7.9	8.8
19	9.5	6.6	7.8	---	---	---	9.5	7.2	8.1	9.6	8.4	8.9
20	9.6	6.8	7.9	9.2	7.1	7.9	8.8	6.7	7.6	10.3	8.7	9.5
21	9.5	7.0	8.1	9.2	7.0	7.9	9.0	6.6	7.6	11.1	9.4	10.2
22	---	---	---	9.0	6.9	7.6	9.4	6.9	8.1	11.5	9.7	10.4
23	---	---	---	9.2	6.8	7.8	9.6	7.4	8.3	10.8	8.9	9.8
24	---	---	---	9.3	7.1	8.0	9.5	7.0	8.1	10.3	8.4	9.1
25	---	---	---	9.6	7.1	8.3	9.5	6.4	8.1	10.6	8.3	9.2
26	---	---	---	8.7	6.8	7.7	8.5	6.9	7.6	10.7	8.5	9.5
27	---	---	---	9.7	6.9	8.1	7.7	6.6	7.1	10.9	8.4	9.5
28	---	---	---	8.2	6.9	7.8	7.6	6.1	6.8	10.8	7.3	9.4
29	---	---	---	8.7	6.7	7.6	7.0	5.0	6.3	9.9	7.4	9.0
30	---	---	---	8.8	6.6	7.8	8.7	5.9	7.7	11.1	9.1	10
31	---	---	---	9.0	6.4	7.7	9.0	7.5	8.3	---	---	---
Month	10.4	6.1	8.1	10.1	6.4	8.1	10.2	5.0	7.9	11.5	7.3	9.1

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	7.0	3.0	4.2	3.0	0.0	1.6	91	27	46	5.0	3.0	3.2
2	5.0	3.0	3.7	5.0	1.0	1.9	32	6.0	15	88	2.0	18
3	8.0	0.0	3.7	2.0	0.0	2.0	6.0	4.0	4.5	190	51	120
4	---	---	---	5.0	0.0	2.1	6.0	4.0	4.3	51	13	24
5	---	---	---	3.0	2.0	2.1	5.0	3.0	3.5	15	6.0	10
6	9.0	3.0	4.4	28	2.0	6.1	4.0	3.0	3.0	6.0	4.0	4.8
7	90	4.0	11	24	2.0	5.5	3.0	2.0	2.3	5.0	3.0	3.6
8	940	81	420	18	1.0	5.5	3.0	2.0	2.0	9.0	3.0	3.9
9	230	28	84	13	1.0	3.3	8.0	2.0	4.0	3.0	3.0	3.0
10	35	15	20	13	1.0	3.1	10	6.0	6.8	4.0	2.0	2.7
11	37	9.0	15	7.0	1.0	1.5	9.0	4.0	5.1	57	2.0	9.5
12	39	7.0	14	4.0	1.0	2.0	---	---	---	51	5.0	12
13	63	8.0	30	4.0	1.0	2.0	---	---	---	11	5.0	8.1
14	---	---	---	10	2.0	3.9	36	2.0	4.3	400	4.0	170
15	---	---	---	11	3.0	5.6	16	2.0	3.0	200	29	79
16	---	---	---	61	2.0	12	310	16	110	32	10	18
17	4.0	2.0	3.3	38	18	25	49	13	27	12	7.0	8.4
18	5.0	2.0	2.9	47	12	19	---	---	---	380	7.0	150
19	3.0	2.0	2.2	18	6.0	8.9	12	5.0	8.3	210	43	88
20	3.0	1.0	1.9	17	4.0	7.5	14	3.0	5.8	45	13	25
21	6.0	2.0	3.4	28	0.0	7.1	4.0	3.0	3.4	13	7.0	9.9
22	22	3.0	12	74	11	35	3.0	2.0	2.9	17	5.0	6.8
23	33	9.0	15	47	9.0	19	3.0	2.0	2.9	400	5.0	150
24	14	0.0	7.1	---	---	---	3.0	2.0	2.6	87	21	40
25	51	14	37	8.0	0.0	2.8	95	2.0	17	28	8.0	12
26	42	11	22	4.0	1.0	1.8	---	---	---	9.0	5.0	6.4
27	18	4.0	7.9	4.0	1.0	1.3	---	---	---	7.0	4.0	5.1
28	6.0	2.0	3.8	2.0	0.0	1.2	8.0	4.0	6.0	8.0	4.0	4.4
29	---	---	---	260	0.0	10	9.0	4.0	6.0	16	3.0	5.6
30	---	---	---	390	89	210	6.0	4.0	4.7	12	3.0	5.1
31	2.0	1.0	1.8	---	---	---	20	4.0	6.0	13	3.0	5.2
Month	---	---	---	---	---	---	---	---	---	400	2.0	33

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

**TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	18	3.0	5.6	16	2.0	3.7	---	---	---	8.0	4.0	5.5
2	11	3.0	4.6	25	2.0	6.2	---	---	---	8.0	3.0	4.9
3	310	3.0	73	4.0	3.0	3.1	---	---	---	5.0	4.0	4.4
4	---	---	---	6.0	2.0	3.0	---	---	---	14	0.0	4.3
5	---	---	---	4.0	2.0	3.0	---	---	---	33	4.0	6.0
6	---	---	---	6.0	2.0	3.1	---	---	---	62	5.0	12
7	---	---	---	29	2.0	8.4	---	---	---	35	5.0	9.1
8	---	---	---	47	3.0	6.3	71	2.0	21	41	8.0	14
9	---	---	---	4.0	2.0	3.1	50	7.0	23	67	8.0	23
10	---	---	---	---	---	---	40	4.0	10	29	7.0	12
11	---	---	---	---	---	---	17	3.0	7.1	48	9.0	13
12	---	---	---	42	3.0	14	9.0	4.0	6.0	73	11	23
13	---	---	---	---	---	---	---	---	---	100	10	25
14	---	---	---	8.0	3.0	4.4	18	5.0	7.5	38	9.0	13
15	---	---	---	8.0	3.0	4.2	12	4.0	6.9	120	8.0	22
16	---	---	---	---	---	---	9.0	5.0	5.9	22	9.0	13
17	---	---	---	---	---	---	10	5.0	6.6	64	7.0	13
18	---	---	---	---	---	---	8.0	4.0	5.5	32	7.0	11
19	---	---	---	---	---	---	8.0	3.0	4.6	71	5.0	14
20	---	---	---	---	---	---	5.0	3.0	3.8	8.0	0.0	5.2
21	---	---	---	---	---	---	22	3.0	6.3	7.0	0.0	5.3
22	---	---	---	---	---	---	400	5.0	72	65	4.0	10
23	---	---	---	6.0	2.0	2.5	230	21	75	20	3.0	5.4
24	---	---	---	26	2.0	4.4	320	13	90	10	3.0	5.1
25	4.0	2.0	2.9	6.0	0.0	2.3	58	14	32	7.0	4.0	5.2
26	7.0	2.0	3.6	4.0	2.0	2.5	40	6.0	16	18	6.0	8.2
27	9.0	2.0	3.1	---	---	---	40	4.0	15	71	7.0	14
28	8.0	2.0	2.8	---	---	---	48	4.0	14	56	6.0	12
29	---	---	---	---	---	---	9.0	3.0	4.9	17	5.0	7.8
30	---	---	---	---	---	---	37	4.0	8.2	11	4.0	6.7
31	---	---	---	---	---	---	---	---	---	8.0	4.0	6.2
Month	---	---	---	---	---	---	---	---	---	120	0.0	11

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS  
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	57	5.0	7.6	---	---	---	15	5.0	7.2	43	16	21
2	390	21	79	---	---	---	9.0	4.0	6.0	180	24	69
3	530	49	130	---	---	---	7.0	3.0	5.4	---	---	---
4	56	35	45	---	---	---	6.0	3.0	4.5	20	7.0	13
5	35	22	30	---	---	---	6.0	3.0	4.3	26	9.0	14
6	28	15	19	---	---	---	9.0	3.0	4.4	17	11	14
7	30	9.0	16	---	---	---	6.0	3.0	4.3	12	7.0	9.4
8	24	7.0	11	---	---	---	7.0	0.0	4.4	12	5.0	8.4
9	27	6.0	11	---	---	---	7.0	3.0	4.6	9.0	4.0	6.5
10	14	6.0	10	---	---	---	7.0	3.0	4.6	7.0	4.0	5.7
11	13	5.0	8.7	---	---	---	6.0	3.0	4.6	12	4.0	5.5
12	24	5.0	8.9	---	---	---	6.0	3.0	4.6	6.0	0.0	4.2
13	16	5.0	8.1	13	4.0	7.5	6.0	0.0	4.3	5.0	3.0	4.0
14	89	5.0	16	8.0	3.0	5.1	6.0	3.0	4.6	93	0.0	23
15	88	7.0	17	120	5.0	28	7.0	4.0	4.8	90	28	51
16	13	0.0	8.7	61	10	21	6.0	3.0	4.9	55	19	34
17	16	6.0	8.8	15	7.0	11	8.0	4.0	5.1	20	5.0	12
18	17	5.0	8.0	18	6.0	10	6.0	4.0	4.7	9.0	5.0	6.9
19	11	5.0	8.3	31	10	18	6.0	3.0	4.8	9.0	3.0	5.6
20	21	6.0	10	16	7.0	11	6.0	4.0	4.8	8.0	3.0	4.9
21	55	8.0	15	---	---	---	6.0	3.0	4.8	7.0	2.0	4.2
22	58	11	26	12	5.0	7.9	7.0	0.0	4.6	8.0	2.0	4.1
23	68	17	39	13	5.0	7.9	6.0	0.0	4.6	9.0	3.0	4.6
24	610	44	220	10	4.0	6.3	6.0	4.0	5.0	---	---	---
25	250	79	120	8.0	0.0	5.8	8.0	4.0	5.3	---	---	---
26	790	140	310	9.0	3.0	5.5	6.0	3.0	4.1	4.0	2.0	3.1
27	440	57	160	380	3.0	12	140	0.0	10	4.0	0.0	2.6
28	780	58	260	660	25	120	130	13	23	56	2.0	9.5
29	---	---	---	27	9.0	16	380	6.0	79	47	5.0	9.6
30	---	---	---	16	7.0	11	270	45	92	6.0	2.0	3.4
31	---	---	---	12	5.0	8.7	46	21	32	---	---	---
Month	---	---	---	---	---	---	380	0.0	12	---	---	---

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

## CLIMATOLOGICAL RECORDS

COOPERATION.--Station established and maintained by the U.S. Geological Survey in cooperation with the Chester County Water Resources Authority and the City of Wilmington, Delaware.

PERIOD OF RECORD.--October 2005 to current year.

INSTRUMENTATION.--Precipitation gage interfaced with data collection platform.

**PRECIPITATION, TOTAL, INCHES**  
**WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**  
**DAILY SUM VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.10	0.00	0.00	0.46
2	0.00	0.00	0.00	1.11	0.01	0.21	0.00	0.00	2.22	0.02	0.00	1.22
3	0.00	0.00	0.00	0.29	0.96	0.00	0.43	0.00	0.47	0.16	0.00	0.00
4	0.00	0.00	0.23	0.02	0.86	0.00	0.01	0.00	0.00	0.42	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.13	0.00	0.51
6	0.25	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00
7	0.97	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.03	0.00	0.00	0.00
8	4.72	0.00	0.00	0.00	0.00	0.00	0.75	0.05	0.00	0.00	0.00	0.00
9	0.07	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
10	0.00	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.16	0.00	0.03	0.34	---	0.00	0.00	0.44	0.00	0.00	0.00	0.00
12	0.12	0.00	0.01	0.00	---	0.47	0.00	0.02	0.00	0.02	0.00	0.00
13	0.66	0.00	0.00	0.00	---	0.00	0.04	0.10	0.00	0.15	0.00	0.00
14	0.00	0.00	0.00	0.56	---	0.01	0.04	0.00	0.42	0.00	0.00	1.72
15	0.00	0.01	0.66	0.00	---	0.00	0.01	0.25	0.00	0.99	0.00	0.26
16	0.00	0.90	0.69	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.01
17	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	1.13	0.00	0.00	0.00	0.02	0.00	0.22	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.01	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.26	0.64	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00
22	0.93	0.24	0.00	0.08	0.00	0.00	1.51	0.00	0.32	0.12	0.00	0.00
23	0.00	0.00	0.00	0.91	0.01	0.00	0.30	0.00	0.03	0.00	0.00	0.02
24	0.53	0.09	0.00	0.13	0.00	0.00	0.30	0.00	2.29	0.00	0.04	0.00
25	0.90	0.00	0.58	0.00	0.00	0.00	0.04	0.00	0.24	0.00	0.00	0.00
26	0.02	0.00	0.01	0.00	0.00	0.00	0.06	0.11	0.64	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.50	1.23	0.80	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	0.97	0.04	0.91
29	0.00	1.06	0.26	0.11	---	0.00	0.00	0.00	0.21	0.00	0.53	0.01
30	0.00	0.05	0.00	0.01	---	0.00	0.00	0.00	0.00	0.00	0.01	0.00
31	0.00	---	0.10	0.03	---	0.00	---	0.00	---	0.00	0.00	---
<b>Total</b>	9.59	3.30	2.60	4.72	---	0.69	3.89	1.28	9.18	4.79	1.42	5.12

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued

## ECOLOGICAL RECORDS

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

REMARKS.--Samples were collected using a Hess sampler with a mesh size of 500 mm. Each sample covered a total area of 2.4 m<sup>2</sup>.

BIOLOGICAL DATA-BENTHIC MACROINVERTEBRATES	
Date	11/04/05
Benthic Macroinvertebrate	Count
Platyhelminthes	•
Turbellaria (FLATWORMS)	•
Tricladida	•
Planariidae	•
	1
	2
Nematoda (NEMATODES)	•
	2
Nemertea (PROBOSCIS WORMS)	•
Enopla	•
Hoplonemertea	•
Tetrastemmatidae	•
<i>Prostoma</i>	•
	1
Mollusca	•
Gastropoda (SNAILS)	•
Hydrobiidae	•
<i>Amnicola</i>	•
	2
Planorbidae	•
<i>Planorbella</i>	•
	2
Annelida	•
Hirudinea (LEECHES)	•
Rhynchobdellida	•
Glossiphoniidae	•
	1
Oligochaeta (AQUATIC EARTHWORMS)	•
Lumbriculida	•
Lumbriculidae	•
	6
Tubificida	•
Naididae	•
	1
Arthropoda	•
Acariformes	•
Hydrachnidia (WATER MITES)	•
	4
Crustacea	•
Amphipoda (SCUDS)	•
Crangonyctidae	•
<i>Crangonyx</i>	•
	1

**01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA—Continued**

Date	11/04/05
Benthic Macroinvertebrate	Count
Insecta	•
Ephemeroptera (MAYFLIES)	•
Baetidae	•
<i>Acentrella</i>	• 3
Ephemerellidae	•
<i>Serratella</i>	• 3
<i>Maccaffertium</i>	• 5
Isonychiidae	•
<i>Isonychia</i>	• 6
Plecoptera (STONEFLIES)	•
Taeniopterygidae	•
<i>Strophopteryx</i>	• 1
Trichoptera (CADDISFLIES)	•
Hydropsychidae	•
<i>Cheumatopsyche</i>	• 5
<i>Hydropsyche</i>	• 9
<i>Hydropsyche</i>	• 1
<i>Hydropsyche</i>	• 9
Philopotamidae	•
<i>Chimarra</i>	• 6
Lepidoptera (MOTHS AND BUTTERFLIES)	•
Pyrilidae	•
<i>Petrophila</i>	• 2
Coleoptera (BEETLES)	•
Elmidae (RIFFLE BEETLES)	•
<i>Optioservus</i>	• 1
<i>Optioservus</i>	• 1
<i>Oulimnius</i>	• 4
<i>Stenelmis</i>	• 4
Psephenidae (WATER PENNIES)	•
<i>Psephenus</i>	• 2
Diptera (TRUE FLIES)	•
Chironomidae (MIDGES)	• 1
	• 4
	• 3
<b>Total Organisms</b>	<b>300</b>