

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES  
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK**

Water-quality and benthic macroinvertebrate samples were collected from selected streams in Chester County in October and November 1998 as part of the Stream Conditions of Chester County Biological Monitoring Network. The biological monitoring program was initiated in 1969 with the goals of evaluating stream quality and long-term changes in stream quality of selected streams in Chester County. Benthic macroinvertebrates are macroscopic animals that inhabit the bottoms of aquatic habitats. Freshwater forms include aquatic insects, clams, crustaceans, snails and worms. Samples are collected annually from similar habitats of selected stream. By sampling in similar habitats with similar physical conditions it can be assumed that water quality is the determining factor controlling community structure. Benthic macroinvertebrate sampling was conducted following a single habitat approach. A cobble riffle habitat was used because macroinvertebrate diversity and abundance is usually highest there. Samples were collected using a Hess sampler with a mesh size of 500  $\mu\text{m}$ . Four samples were collected from areas of various velocities from within the riffle. Samples were composited and the entire sample was sorted and identified. Identifications were made to the lowest practical level (family or genus) by a U.S. Geological Survey biologist.

**TABLE 2.**--Stream conditions of Chester County biological monitoring network station list.

STATION NUMBER	STATION NAME	LATITUDE	LONGITUDE	DRAINAGE AREA (mi <sup>2</sup> )
01472080	PIGEON CREEK NEAR SLONAKER, PA	40°12'03"	75°37'10"	12.0
01472190	PICKERING CREEK NEAR PHOENIXVILLE, PA	40°06'33"	75°31'42"	31.4
01476435	RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, PA	39°58'50"	75°31'00"	9.71
01476835	EAST BRANCH CHESTER CREEK AT WESTTOWN, PA	39°56'26"	75°32'30"	10.4
01478120	EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA	39°49'42"	75°46'52"	11.3
01478220	WEST BRANCH WHITE CLAY CREEK NEAR CHESTERVILLE, PA	39°45'56"	75°47'47"	9.92
01478230	MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA	39°45'02"	75°46'19"	25.5
01479679	WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE, PA	39°50'59"	75°43'28"	8.63
01479700	WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, PA	39°48'39"	75°42'18"	16.9
01479800	EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA	39°49'10"	75°41'29"	10.2
01480629	BUCK RUN AT DOE RUN, PA	39°55'46"	75°49'24"	22.6
01480653	EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA	40°05'48"	75°46'44"	16.5
01480662	CULBERTSON RUN NEAR LYNDELL, PA	40°03'29"	75°45'07"	3.92
01480697	SHAMONA CREEK AT DOWLIN, PA	40°02'28"	75°41'57"	3.85
01480883	VALLEY CREEK AT CLOVER MILL ROAD NEAR EXTON, PA	40°00'43"	75°39'20"	11.8
01494800	EAST BRANCH BIG ELK CREEK AT FAGGS MANOR, PA	39° 50'45"	75°54'22"	3.55
01494900	EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA	39°48'48"	75°54'04"	11.1
01494950	WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA	39° 46'47"	75°55'27"	10.0
01494953	BIG ELK CREEK AT MAPLE GROVE, PA	39°45'44"	75°55'16"	26.6

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 MISCELLANEOUS STATION ANALYSES

DATE	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	DIS- CHARGE, INST. (CUBIC FEET PER SECOND) (00061)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE ( $\mu$ S/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
	01472080	PIGEON CREEK NEAR SLONAKER, PA (LAT 40 12 03N LONG 075 37 10W)								
NOV 1998 05...	80020	1028	2.9	12.8	7.6	163	5.5	58	15	4.9
	01472190	PICKERING CREEK NEAR PHOENIXVILLE, PA (LAT 40 06 33N LONG 075 31 42W)								
OCT 1998 30...	80020	1028	12	11.6	7.8	256	8.0	--	--	--
	01476435	RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, PA(LAT 39 58 50N LONG 075 31 00W)								
NOV 1998 04...	80020	1028	2.7	12.0	7.7	306	8.5	97	21	11
	01476835	EAST BRANCH CHESTER CREEK AT WESTTOWN, PA (LAT 39 56 26N LONG 075 32 30W)								
NOV 1998 04...	80020	1028	3.4	11.0	7.3	386	7.5	140	31	14
	01478120	EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA (LAT 39 49 42N LONG 075 46 52W)								
OCT 1998 23...	80020	1028	6.3	13.0	7.8	356	8.0	160	37	16
	01478220	WEST BRANCH WHITE CLAY CREEK NEAR CHESTERVILLE, PA(LAT 39 45 56N LONG 075 47 47W)								
OCT 1998 28...	80020	1028	3.2	11.8	7.9	190	12.5	61	14	6.1
	01478230	MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA (LAT 39 45 02N LONG 075 46 19W)								
OCT 1998 27...	80020	1028	12	11.5	7.3	217	11.5	73	17	7.3
	01479679	WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE,PA(LAT 39 50 59N LONG 075 43 28W)								
OCT 1998 20...	80020	1028	3.7	11.0	7.7	293	12.0	120	27	12
	01479700	WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, PA(LAT 39 48 39N LONG 75 42 18W)								
OCT 1998 21...	80020	1028	9.0	9.5	7.4	459	12.0	160	38	16
	01479800	EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA (LAT 39 49 10N LONG 075 41 29W)								
OCT 1998 21...	80020	1028	3.1	10.4	7.8	366	11.0	140	34	13
	01480629	BUCK RUN AT DOE RUN, PA (LAT 39 55 46N LONG 075 49 24W)								
OCT 1998 15...	80020	1028	22	9.5	7.6	231	13.0	83	21	7.7
	01480653	EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA (LAT 40 05 48N LONG 075 46 44W)								
OCT 1998 07...	80020	1028	4.6	11.0	7.7	207	13.5	75	20	6.3
	01480662	CULBERTSON RUN AT LYNDELL, PA (LAT 40 03 29N LONG 075 45 07W)								
OCT 1998 13...	80020	1028	2.6	9.8	7.8	232	15.5	78	20	6.9

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 MISCELLANEOUS STATION ANALYSES

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC WATER UNFLTRD FET FIELD (MG/L AS CACO3) (00410)	ANC WATER UNFLTRD IT FIELD (MG/L AS CACO3) (00419)	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)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
01472080                   PIGEON CREEK NEAR SLONAKER, PA (LAT 40 12 03N LONG 075 37 10W)										
NOV 1998 05...	1.5	.4	7.6	22	--	40	10	<.10	17	16
01472190                   PICKERING CREEK NEAR PHOENIXVILLE, PA (LAT 40 06 33N LONG 075 31 42W)										
OCT 1998 30...	--	--	--	--	--	59	--	--	--	--
01476435                   RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, PA(LAT 39 58 50N LONG 075 31 00W)										
NOV 1998 04...	3.0	.8	18	28	--	61	34	<.10	15	18
01476835                   EAST BRANCH CHESTER CREEK AT WESTTOWN, PA (LAT 39 56 26N LONG 075 32 30W)										
NOV 1998 04...	3.4	.6	17	21	74	--	49	<.10	16	23
01478120                   EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA (LAT 39 49 42N LONG 075 46 52W)										
OCT 1998 23...	2.6	.3	8.2	10	--	103	19	<.10	16	25
01478220                   WEST BRANCH WHITE CLAY CREEK NEAR CHESTERVILLE, PA(LAT 39 45 56N LONG 075 47 47W)										
OCT 1998 28...	3.3	.5	9.1	23	41	--	17	<.10	14	15
01478230                   MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA (LAT 39 45 02N LONG 075 46 19W)										
OCT 1998 27...	3.4	.5	9.0	20	--	61	17	<.10	12	15
01479679                   WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE,PA(LAT 39 50 59N LONG 075 43 28W)										
OCT 1998 20...	2.7	.3	7.7	12	82	--	16	<.10	17	20
01479700                   WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, PA(LAT 39 48 39N LONG 75 42 18W)										
OCT 1998 21...	10	.7	20	20	--	115	38	<.10	16	40
01479800                   EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA (LAT 39 49 10N LONG 075 41 29W)										
OCT 1998 21...	3.4	.5	13	16	--	97	29	<.10	18	36
01480629                   BUCK RUN AT DOE RUN, PA (LAT 39 55 46N LONG 075 49 24W)										
OCT 1998 15...	3.0	.4	7.9	16	--	47	17	<.10	9.9	16
01480653                   EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA (LAT 40 05 48N LONG 075 46 44W)										
OCT 1998 07...	2.1	.4	8.2	19	--	48	14	<.10	20	13
01480662                   CULBERTSON RUN AT LYNDELL, PA (LAT 40 03 29N LONG 075 45 07W)										
OCT 1998 13...	3.1	.5	9.5	20	41	--	19	<.10	15	20

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 MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BORON, DIS- SOLVED (µG/L AS B) (01020)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)
01472080	PIGEON CREEK NEAR SLONAKER, PA (LAT 40 12 03N LONG 075 37 10W)								
NOV 1998 05...	<.020	1.66	<.010	.019	103	--	--	22	--
01472190	PICKERING CREEK NEAR PHOENIXVILLE, PA (LAT 40 06 33N LONG 075 31 42W)								
OCT 1998 30...	<.020	1.16	<.010	<.010	--	--	--	--	--
01476435	RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, PA(LAT 39 58 50N LONG 075 31 00W)								
NOV 1998 04...	<.020	3.58	<.010	.376	173	--	--	71	--
01476835	EAST BRANCH CHESTER CREEK AT WESTTOWN, PA (LAT 39 56 26N LONG 075 32 30W)								
NOV 1998 04...	.022	3.00	<.010	.258	213	--	--	47	--
01478120	EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA (LAT 39 49 42N LONG 075 46 52W)								
OCT 1998 23...	.022	5.20	.016	.027	210	--	--	<16	--
01478220	WEST BRANCH WHITE CLAY CREEK NEAR CHESTERVILLE, PA(LAT 39 45 56N LONG 075 47 47W)								
OCT 1998 28...	<.020	4.15	<.010	.012	121	--	--	<16	--
01478230	MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA (LAT 39 45 02N LONG 075 46 19W)								
OCT 1998 27...	.022	4.53	.016	.068	126	<10	<1	<16	<1.0
01479679	WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE,PA(LAT 39 50 59N LONG 075 43 28W)								
OCT 1998 20...	<.020	4.60	<.010	.013	173	<10	<1	E8.8	<1.0
01479700	WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, PA(LAT 39 48 39N LONG 75 42 18W)								
OCT 1998 21...	.063	5.24	.124	.846	267	<10	<1	38	<1.0
01479800	EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA (LAT 39 49 10N LONG 075 41 29W)								
OCT 1998 21...	<.020	3.19	.015	.050	210	<10	<1	25	<1.0
01480629	BUCK RUN AT DOE RUN, PA (LAT 39 55 46N LONG 075 49 24W)								
OCT 1998 15...	.028	4.57	<.010	.020	131	--	--	26	--
01480653	EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA (LAT 40 05 48N LONG 075 46 44W)								
OCT 1998 07...	.020	3.64	<.010	.016	129	--	--	E14	--
01480662	CULBERTSON RUN AT LYNDELL, PA (LAT 40 03 29N LONG 075 45 07W)								
OCT 1998 13...	.029	3.41	<.010	.036	134	--	--	24	--

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**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 MISCELLANEOUS STATION ANALYSES

DATE	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)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MERCURY DIS- SOLVED (µG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
01472080	PIGEON CREEK NEAR SLONAKER, PA (LAT 40 12 03N LONG 075 37 10W)								
NOV 1998 05...	--	--	27	--	--	--	--	--	--
01472190	PICKERING CREEK NEAR PHOENIXVILLE, PA (LAT 40 06 33N LONG 075 31 42W)								
OCT 1998 30...	--	--	--	--	--	--	--	--	--
01476435	RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, PA(LAT 39 58 50N LONG 075 31 00W)								
NOV 1998 04...	--	--	38	--	--	--	--	--	--
01476835	EAST BRANCH CHESTER CREEK AT WESTTOWN, PA (LAT 39 56 26N LONG 075 32 30W)								
NOV 1998 04...	--	--	44	--	--	--	--	--	--
01478120	EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA (LAT 39 49 42N LONG 075 46 52W)								
OCT 1998 23...	--	--	13	--	--	--	--	--	--
01478220	WEST BRANCH WHITE CLAY CREEK NEAR CHESTERVILLE, PA(LAT 39 45 56N LONG 075 47 47W)								
OCT 1998 28...	--	--	20	--	--	--	--	--	--
01478230	MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA (LAT 39 45 02N LONG 075 46 19W)								
OCT 1998 27...	<1.0	<1.0	17	<1.0	5.7	<1.1	<1.0	<1.0	<20
01479679	WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE,PA(LAT 39 50 59N LONG 075 43 28W)								
OCT 1998 20...	<1.0	<1.0	18	<1.0	14	<1.1	<1.0	<1.0	E7.5
01479700	WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, PA(LAT 39 48 39N LONG 75 42 18W)								
OCT 1998 21...	<1.0	2.6	37	<1.0	15	<1.1	<1.0	<1.0	E13
01479800	EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA (LAT 39 49 10N LONG 075 41 29W)								
OCT 1998 21...	<1.0	1.6	23	<1.0	11	<1.1	<1.0	<1.0	<20
01480629	BUCK RUN AT DOE RUN, PA (LAT 39 55 46N LONG 075 49 24W)								
OCT 1998 15...	--	--	21	--	--	--	--	--	--
01480653	EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA (LAT 40 05 48N LONG 075 46 44W)								
OCT 1998 07...	--	--	34	--	--	--	--	--	--
01480662	CULBERTSON RUN AT LYNDELL, PA (LAT 40 03 29N LONG 075 45 07W)								
OCT 1998 13...	--	--	E8.4	--	--	--	--	--	--

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DATE	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	DIS- CHARGE, INST. (CUBIC FEET PER SECOND) (00061)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
			01480697 SHAMONA CREEK AT DOWLIN, PA (LAT 40 02 28N LONG 75 41 57W)							
OCT 1998 14...	80020	1028	2.8	9.3	7.7	309	14.0	110	26	10
			01480883 VALLEY CREEK AT CLOVER MILL ROAD NEAR EXTON, PA (LAT 40 00 43N LONG 075 39 20W)							
OCT 1998 14...	80020	1028	3.2	9.4	8.1	466	16.0	180	46	17
			01494800 EAST BRANCH BIG ELK CREEK AT FAGGS MANOR, PA (LAT 39 50 45N LONG 075 54 22W)							
NOV 1998 09...	80020	1028	1.4	11.3	6.9	133	9.5	43	8.5	5.2
			01494900 EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA (LAT 39 48 48N LONG 075 54 04W)							
OCT 1998 26...	80020	1028	4.2	11.6	7.1	170	10.5	55	12	6.1
			01494950 WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA (LAT 39 46 47N LONG 075 55 27W)							
OCT 1998 28...	80020	1028	5.1	11.0	7.4	215	11.5	66	14	7.4
			01494953 BIG ELK CREEK AT MAPLE GROVE, PA (LAT 39 45 44N LONG 075 55 16W)							
NOV 1998 09...	80020	1028	9.6	12.4	7.5	202	6.5	62	14	6.8

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DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC WATER UNFLTRD FET FIELD (MG/L AS CACO3) (00410)	ANC WATER UNFLTRD IT FIELD (MG/L AS CACO3) (00419)	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)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
	01480697 SHAMONA CREEK AT DOWLIN, PA (LAT 40 02 28N LONG 75 41 57W)									
OCT 1998 14...	2.9	.6	14	21	--	55	33	<.10	16	22
	01480883 VALLEY CREEK AT CLOVER MILL ROAD NEAR EXTON, PA (LAT 40 00 43N LONG 075 39 20W)									
OCT 1998 14...	2.5	.6	20	19	--	148	42	<.10	8.3	22
	01494800 EAST BRANCH BIG ELK CREEK AT FAGGS MANOR, PA (LAT 39 50 45N LONG 075 54 22W)									
NOV 1998 09...	2.0	.4	5.4	21	--	16	13	<.10	9.8	3.9
	01494900 EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA (LAT 39 48 48N LONG 075 54 04W)									
OCT 1998 26...	2.6	.4	7.0	21	32	--	15	<.10	11	7.0
	01494950 WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA (LAT 39 46 47N LONG 075 55 27W)									
OCT 1998 28...	3.4	.6	11	25	--	62	23	<.10	9.6	11
	01494953 BIG ELK CREEK AT MAPLE GROVE, PA (LAT 39 45 44N LONG 075 55 16W)									
NOV 1998 09...	4.9	.5	9.2	23	--	28	20	<.10	9.0	12

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DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BORON, DIS- SOLVED (µG/L AS B) (01020)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)
01480697	SHAMONA CREEK AT DOWLIN, PA (LAT 40 02 28N LONG 75 41 57W)								
OCT 1998 14...	.025	2.34	<.010	.022	172	<10	<1	28	<1.0
01480883	VALLEY CREEK AT CLOVER MILL ROAD NEAR EXTON, PA (LAT 40 00 43N LONG 075 39 20W)								
OCT 1998 14...	.022	1.38	<.010	.085	250	<10	<1	30	<1.0
01494800	EAST BRANCH BIG ELK CREEK AT FAGGS MANOR, PA (LAT 39 50 45N LONG 075 54 22W)								
NOV 1998 09...	<.020	5.64	<.010	<.010	82	<10	<1	21	<1.0
01494900	EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA (LAT 39 48 48N LONG 075 54 04W)								
OCT 1998 26...	<.020	5.89	.016	.031	106	--	--	<16	--
01494950	WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA (LAT 39 46 47N LONG 075 55 27W)								
OCT 1998 28...	<.020	6.49	.011	.090	124	--	--	20	--
01494953	BIG ELK CREEK AT MAPLE GROVE, PA (LAT 39 45 44N LONG 075 55 16W)								
NOV 1998 09...	<.020	5.76	<.010	.032	117	<10	<1	20	<1.0



**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 MISCELLANEOUS STATION ANALYSES

DATE	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)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MERCURY DIS- SOLVED (µG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
01480697	SHAMONA CREEK AT DOWLIN, PA (LAT 40 02 28N LONG 75 41 57W)								
OCT 1998 14...	<1.0	<1.0	E9.0	<1.0	E2.3	<.1	<1.0	<1.0	<20
01480883	VALLEY CREEK AT CLOVER MILL ROAD NEAR EXTON, PA (LAT 40 00 43N LONG 075 39 20W)								
OCT 1998 14...	<1.0	<1.0	14	<1.0	13	<.1	<1.0	<1.0	<20
01494800	EAST BRANCH BIG ELK CREEK AT FAGGS MANOR, PA (LAT 39 50 45N LONG 075 54 22W)								
NOV 1998 09...	<1.0	<1.0	18	<1.0	16	<.1	<1.0	<1.0	<20
01494900	EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA (LAT 39 48 48N LONG 075 54 04W)								
OCT 1998 26...	--	--	21	--	--	--	--	--	--
01494950	WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA (LAT 39 46 47N LONG 075 55 27W)								
OCT 1998 28...	--	--	17	--	--	--	--	--	--
01494953	BIG ELK CREEK AT MAPLE GROVE, PA (LAT 39 45 44N LONG 075 55 16W)								
NOV 1998 09...	<1.0	<1.0	31	<1.0	5.4	<.1	<1.0	<1.0	<20



**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES

**REMARKS.**--A dash (—) indicates there were no observations of the organism in the sample.

Station Number	01472080	01472190	01476435	01476835	01478120
Date	11/05/98	10/30/98	11/03/98	11/04/98	10/23/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
Platyhelminthes					
Turbellaria (Flatworms)					
Tricladida					
Planariidae	—	1	25	11	142
Nematoda (Nematodes)	—	—	17	7	15
Nemertea (Proboscis Worms)					
Enopla					
Hoplonemertea					
Tetrastemmatidae					
<i>Prostoma</i>	—	—	56	9	1
Mollusca					
Gastropoda (Snails)					
Basommatophora					
Ancyliidae					
<i>Ferrissia</i>	—	9	2	3	1
Physidae					
<i>Physa</i>	—	1	—	—	—
Planorbidae					
<i>Gyraulus</i>	1	1	3	—	—
Bivalvia (Clams)					
Veneroidea					
Sphaeriidae	—	—	1	1	—
Annelida (Segmented Worms)					
Oligochaeta					
Lumbriculida					
Lumbriculidae	—	—	—	—	—
Tubificida					
Naididae	—	—	6	13	2
Hirudinea (Leeches)					
Rhynchobdellida					
Glossiphoniidae	—	—	—	—	—
Arthropoda					
Acariformes					
Hydrachnidia (Water Mites)	34	41	99	18	61
Crustacea					
Amphipoda (Scuds)					
Crangonyctidae					
<i>Crangonyx</i>	—	—	—	18	1
<i>Stygonectes</i>	—	—	—	1	—
Gammaridae					
<i>Gammarus</i>	2	4	8	—	—
Isopoda (Sow Bugs)					
Asellidae					
<i>Caecidotea</i>	—	—	—	—	—

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01478220	01478230	01479679	01479700	01479800	Station Number
10/28/98	10/27/98	10/20/98	10/21/98	10/21/98	Date
Count	Count	Count	Count	Count	Benthic Macroinvertebrate
					Platyhelminthes
					Turbellaria (Flatworms)
					Tricladida
—	7	3	4	6	Planariidae
—	—	5	18	1	Nematoda (Nematodes)
					Nemertea (Proboscis Worms)
					Enopla
					Hoploneurata
					Tetrastemmatidae
—	—	—	11	2	<i>Prostoma</i>
					Mollusca
					Gastropoda (Snails)
					Basommatophora
					Ancylidae
—	10	—	59	2	<i>Ferrissia</i>
					Physidae
—	—	—	2	—	<i>Physa</i>
					Planorbidae
—	—	—	49	—	<i>Gyraulus</i>
					Bivalvia (Clams)
					Veneroida
—	—	—	—	—	Sphaeriidae
					Annelida (Segmented Worms)
5	—	15	2	4	Oligochaeta
					Lumbriculida
—	3	—	—	—	Lumbriculidae
					Tubificida
—	—	—	4	2	Naididae
					Hirudinea (Leeches)
					Rhynchobdellida
—	—	—	1	—	Glossiphoniidae
					Arthropoda
					Acariformes
32	131	4	181	73	Hydrachnidia (Water Mites)
					Crustacea
					Amphipoda (Scuds)
					Crangonyctidae
—	—	—	—	34	<i>Crangonyx</i>
—	—	2	1	6	<i>Stygonectes</i>
					Gammaridae
—	—	—	—	—	<i>Gammarus</i>
					Isopoda (Sow Bugs)
					Asellidae
—	—	10	—	5	<i>Caecidotea</i>

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

Station Number	01472080	01472190	01476435	01476835	01478120
Date	11/05/98	10/30/98	11/03/98	11/04/98	10/23/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
<b>Crustacea</b>					
<b>Decapoda</b>					
Cambaridae (Crayfish)	1	—	—	—	—
<b>Insecta</b>					
<b>Ephemeroptera (Mayflies)</b>					
<b>Baetidae</b>					
<i>Baetis</i>	—	3	1	—	1
<i>Pseudocloeon</i>	1	—	—	8	—
<b>Caenidae</b>					
<i>Caenis</i>	—	—	1	—	—
<b>Ephemeridae</b>					
<i>Ephemera</i>	—	—	—	—	4
<b>Ephemerellidae</b>					
<i>Eurylophella</i>	—	—	8	—	—
<i>Serratella</i>	59	29	156	3	42
<b>Heptageniidae</b>					
<i>Epeorus</i>	—	—	—	—	—
<i>Stenonema</i>	154	30	297	—	56
<b>Isonychiidae</b>					
<i>Isonychia</i>	160	28	13	—	5
<b>Leptohyphidae</b>					
<i>Tricorythodes</i>	—	—	1	1	—
<b>Leptophlebiidae</b>					
<i>Paraleptophlebia</i>	—	—	—	—	—
<b>Odonata (Dragonflies and Damselflies)</b>					
<b>Coenagrionidae</b>					
<i>Argia</i>	—	—	3	—	—
<b>Gomphidae</b>					
<i>Lanthus</i>	1	—	—	—	—
<b>Plecoptera (Stoneflies)</b>					
<b>Capniidae</b>					
	7	—	—	—	—
<b>Leuctridae</b>					
	—	—	—	8	—
<b>Perlidae</b>					
<i>Acroneuria</i>	16	12	1	—	—
<i>Paragnetina</i>	—	1	—	—	—
<b>Taeniopterygidae</b>					
<i>Taeniopteryx</i>	30	5	10	41	6
<b>Megaloptera</b>					
<b>Corydalidae (Fishflies and Dobsonflies)</b>					
<i>Corydalus</i>	—	1	4	—	—
<i>Nigronia</i>	2	—	—	—	—
<b>Sialidae (Alderflies)</b>					
<i>Sialis</i>	4	—	—	—	—

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01478220	01478230	01479679	01479700	01479800	Station Number
10/28/98	10/27/98	10/20/98	10/21/98	10/21/98	Date
Count	Count	Count	Count	Count	Benthic Macroinvertebrate
					Crustacea
					Decapoda
—	—	—	—	1	Cambaridae (Crayfish)
					Insecta
					Ephemeroptera (Mayflies)
					Baetidae
1	—	11	—	—	<i>Baetis</i>
11	17	7	—	—	<i>Pseudocloeon</i>
					Caenidae
2	—	—	—	—	<i>Caenis</i>
					Ephemeridae
—	—	—	—	—	<i>Ephemera</i>
					Ephemerellidae
—	—	—	—	—	<i>Eurylophella</i>
2	16	28	8	7	<i>Serratella</i>
					Heptageniidae
—	—	6	—	—	<i>Epeorus</i>
55	9	61	—	20	<i>Stenonema</i>
					Isonychiidae
205	11	6	—	—	<i>Isonychia</i>
					Leptohyphidae
—	—	—	—	—	<i>Tricorythodes</i>
					Leptophlebiidae
—	—	8	—	—	<i>Paraleptophlebia</i>
					Odonata (Dragonflies and Damselflies)
					Coenagrionidae
—	—	—	—	—	<i>Argia</i>
—	—	—	1	—	Gomphidae
—	—	—	—	—	<i>Lanthus</i>
					Plecoptera (Stoneflies)
—	—	—	—	—	Capniidae
—	—	—	—	—	Leuctridae
					Perlidae
—	—	2	—	—	<i>Acroneuria</i>
—	—	—	—	—	<i>Paragnetina</i>
					Taeniopterygidae
3	7	4	—	—	<i>Taeniopteryx</i>
					Megaloptera
					Corydalidae (Fishflies and Dobsonflies)
3	2	—	—	—	<i>Corydalus</i>
—	—	—	—	1	<i>Nigronia</i>
					Sialidae (Alderflies)
—	—	4	—	—	<i>Sialis</i>

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

Station Number	01472080	01472190	01476435	01476835	01478120
Date	11/05/98	10/30/98	11/03/98	11/04/98	10/23/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
<b>Trichoptera (Caddisflies)</b>					
<b>Apataniidae</b>					
<i>Apatania</i>	12	2	—	—	—
<b>Brachycentridae</b>					
<i>Micrasema</i>	6	23	7	—	—
<b>Glossosomatidae</b>					
<i>Glossosoma</i>	5	10	3	4	1
<b>Helicopsychidae</b>					
<i>Helicopsyche</i>	—	1	—	—	—
<b>Hydropsychidae</b>					
<i>Cheumatopsyche</i>	502	276	662	67	160
<i>Hydropsyche</i>	145	514	464	126	711
<i>Macrostemum</i>	—	1	—	—	—
<b>Hydroptilidae</b>					
<i>Hydroptila</i>	—	—	11	55	3
<i>Leucotrichia</i>	—	143	33	—	7
<b>Limnephilidae</b>					
<i>Hydatophylax</i>	—	—	—	—	—
<b>Leptoceridae</b>					
<i>Oecetis</i>	—	—	1	—	—
<b>Philopotamidae</b>					
<i>Chimarra</i>	169	36	95	182	14
<i>Dolophilodes</i>	—	—	—	—	—
<i>Wormaldia</i>	1	—	—	—	—
<b>Polycentropodidae</b>					
<i>Neureclipsis</i>	—	—	3	—	—
<i>Polycentropus</i>	—	—	—	1	—
<b>Psychomyiidae</b>					
<i>Psychomyia</i>	—	—	—	2	—
<b>Rhyacophilidae</b>					
<i>Rhyacophila</i>	11	—	—	—	—

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01478220	01478230	01479679	01479700	01479800	Station Number
10/28/98	10/27/98	10/20/98	10/21/98	10/21/98	Date
Count	Count	Count	Count	Count	Benthic Macroinvertebrate
					<b>Trichoptera (Caddisflies)</b>
					<b>Apataniidae</b>
—	1	—	—	—	<i>Apatania</i>
					<b>Brachycentridae</b>
—	—	—	—	—	<i>Micrasema</i>
					<b>Glossosomatidae</b>
—	21	18	—	—	<i>Glossosoma</i>
					<b>Helicopsychidae</b>
—	—	—	—	—	<i>Helicopsyche</i>
					<b>Hydropsychidae</b>
189	215	636	1	317	<i>Cheumatopsyche</i>
665	937	1504	27	447	<i>Hydropsyche</i>
—	—	—	—	—	<i>Macrostemum</i>
					<b>Hydroptilidae</b>
1	1	2	—	—	<i>Hydroptila</i>
18	57	56	—	—	<i>Leucotrichia</i>
					<b>Limnephilidae</b>
—	—	1	—	—	<i>Hydatophylax</i>
					<b>Leptoceridae</b>
—	—	—	—	—	<i>Oecetis</i>
					<b>Philopotamidae</b>
33	15	120	—	—	<i>Chimarra</i>
—	—	—	—	3	<i>Dolophilodes</i>
—	—	—	—	—	<i>Wormaldia</i>
					<b>Polycentropodidae</b>
—	—	—	—	—	<i>Neureclipsis</i>
—	—	5	—	—	<i>Polycentropus</i>
					<b>Psychomyiidae</b>
—	4	157	—	—	<i>Psychomyia</i>
					<b>Rhyacophilidae</b>
—	—	—	—	—	<i>Rhyacophila</i>



**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

Station Number	01472080	01472190	01476435	01476835	01478120
Date	11/05/98	10/30/98	11/03/98	11/04/98	10/23/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
<b>Coleoptera (Beetles)</b>					
<b>Elmidae (Riffle Beetles)</b>					
<i>Ancyronyx</i>	1	—	—	1	—
<i>Dubiraphia</i>	2	1	—	7	—
<i>Microcyloepus</i>	—	—	—	10	—
<i>Optioservus</i>	191	93	133	245	575
<i>Oulimnius</i>	138	20	59	78	18
<i>Promoesia</i>	4	—	—	—	—
<i>Stenelmis</i>	233	16	108	780	381
<b>Hydrophilidae</b>					
<i>Berosus</i>	—	—	—	1	—
<b>Psephenidae (Water Pennies)</b>					
<i>Ectopria</i>	1	—	—	—	—
<i>Psephenus</i>	42	25	24	40	47
<b>Ptilodactylidae</b>					
<i>Anchytarsus</i>	1	—	—	—	—
<b>Diptera (True Flies)</b>					
<b>Athericidae</b>					
<i>Atherix</i>	1	—	—	—	—
<b>Ceratopogonidae</b>					
	—	—	—	1	—
<b>Chironomidae (Midges)</b>					
	165	73	220	405	245
<b>Empididae (Dance Flies)</b>					
<i>Hemerodromia</i>	4	3	4	11	14
<b>Psychodidae</b>					
<i>Telmatoscopus</i>	—	—	—	1	—
<b>Simuliidae (Black Flies)</b>					
<i>Simulium</i>	1	5	15	165	—
<b>Tabanidae</b>					
	—	—	—	1	—
<b>Tipulidae (Crane Flies)</b>					
<i>Antocha</i>	26	15	42	30	94
<i>Diranota</i>	—	—	9	64	—
<i>Hexatoma</i>	1	—	—	22	—
<i>Molophilus</i>	—	—	—	1	—
<i>Tipula</i>	—	—	—	5	—
Total Organisms	2134	1427	2611	2450	2607
Total Taxa	37	34	40	41	26

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01478220	01478230	01479679	01479700	01479800	Station Number
10/28/98	10/27/98	10/20/98	10/21/98	10/21/98	Date
Count	Count	Count	Count	Count	Benthic Macroinvertebrate
—	1	—	—	—	<b>Coleoptera (Beetles)</b>
—	1	1	—	2	<b>Elmidae (Riffle Beetles)</b>
—	—	—	—	—	<i>Ancyronyx</i>
—	—	—	—	—	<i>Dubiraphia</i>
—	—	—	—	—	<i>Microcylloepus</i>
59	86	567	1	269	<i>Optioservus</i>
14	15	112	—	13	<i>Oulimnius</i>
—	—	—	—	—	<i>Promoresia</i>
6	13	97	2	96	<i>Stenelmis</i>
—	—	—	—	—	<b>Hydrophilidae</b>
—	—	—	—	—	<i>Berosus</i>
—	—	—	—	—	<b>Psephenidae (Water Pennies)</b>
—	—	—	—	—	<i>Ectopria</i>
3	—	70	—	28	<i>Psephenus</i>
—	—	—	—	—	<b>Ptilodactylidae</b>
—	—	—	—	—	<i>Anchytarsus</i>
—	—	—	—	—	<b>Diptera (True Flies)</b>
—	—	—	—	1	<b>Athericidae</b>
—	—	—	—	—	<i>Atherix</i>
—	—	—	—	—	<b>Ceratopogonidae</b>
141	285	142	296	157	<b>Chironomidae (Midges)</b>
—	—	—	2	—	<b>Empididae (Dance Flies)</b>
13	26	2	141	28	<i>Hemerodromia</i>
—	—	—	—	—	<b>Psychodidae</b>
—	—	—	—	—	<i>Telmatoctopus</i>
—	—	—	—	—	<b>Simuliidae (Black Flies)</b>
10	3	—	1	6	<i>Simulium</i>
—	—	—	—	—	<b>Tabanidae</b>
—	—	—	—	—	<b>Tipulidae (Crane Flies)</b>
100	286	55	2	34	<i>Antocha</i>
—	—	—	—	—	<i>Diranota</i>
—	—	2	—	—	<i>Hexatoma</i>
—	—	—	—	—	<i>Molophilus</i>
—	—	—	21	5	<i>Tipula</i>
1571	2180	3723	835	1570	Total Organisms
23	27	34	23	28	Total Taxa

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

Station Number	01480629	01480653	01480662	01480697	01480883
Date	10/15/98	10/07/98	10/13/98	10/14/98	10/14/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
Platyhelminthes					
Turbellaria (Flatworms)					
Tricladida					
Planariidae	29	1	1	1	82
Nematoda (Nematodes)	9	—	—	1	6
Nemertea (Proboscis Worms)					
Enopla					
Hoplonemertea					
Tetrastemmatidae					
<i>Prostoma</i>	—	—	—	3	10
Mollusca					
Gastropoda (Snails)					
Basommatophora					
Ancyliidae					
<i>Ferrissia</i>	25	—	—	—	3
Lymnaeidae					
<i>Lymnaea</i>	—	1	—	—	—
Physidae					
<i>Physa</i>	—	—	—	—	1
Planorbidae					
<i>Gyraulus</i>	—	—	—	—	—
Bivalvia (Clams)					
Veneroida					
Sphaeriidae	3	—	—	—	20
Annelida (Segmented Worms)					
Oligochaeta					
Lumbriculida	1	2	4	—	1
Lumbriculidae					
Lumbriculidae	—	2	8	—	—
Tubificida					
Naididae	—	—	1	—	1
Tubificidae	2	—	—	—	—
Arthropoda					
Acariformes					
Hydrachnidia (Water Mites)	16	64	48	6	33
Crustacea					
Amphipoda (Scuds)					
Crangonyctidae					
<i>Crangonyx</i>	—	—	—	—	2
<i>Stygonectes</i>	—	—	—	—	—
Decapoda					
Cambaridae (Crayfish)	—	—	—	—	—
Podocopa (Seed Shrimp)	—	—	—	—	—

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01494800	01494900	01494950	01494953	Station Number
11/09/98	10/26/98	10/28/98	11/09/98	Date
Count	Count	Count	Count	Benthic Macroinvertebrate
				Platyhelminthes
				Turbellaria (Flatworms)
				Tricladida
9	4	1	—	Planariidae
—	8	3	7	Nematoda (Nematodes)
				Nemertea (Proboscis Worms)
				Enopla
				Hoploneurata
				Tetrastemmatidae
13	178	—	25	<i>Prostoma</i>
				Mollusca
				Gastropoda (Snails)
				Basommatophora
				Ancyliidae
—	10	8	—	<i>Ferrissia</i>
				Lymnaeidae
—	—	—	—	<i>Lymnaea</i>
6	—	—	—	Physidae
—	1	—	—	<i>Physa</i>
				Planorbidae
1	1	—	3	<i>Gyraulus</i>
				Bivalvia (Clams)
				Veneroida
4	2	—	1	Sphaeriidae
				Annelida (Segmented Worms)
3	3	—	—	Oligochaeta
				Lumbriculida
—	—	—	—	Lumbriculidae
				Tubificida
25	32	—	—	Naididae
—	—	—	—	Tubificidae
				Arthropoda
				Acariformes
86	256	49	104	Hydrachnidia (Water Mites)
				Crustacea
				Amphipoda (Scuds)
				Crangonyctidae
—	—	—	—	<i>Crangonyx</i>
39	—	—	—	<i>Stygonectes</i>
				Decapoda
2	—	—	1	Cambaridae (Crayfish)
—	2	—	—	Podocopa (Seed Shrimp)

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

Station Number	01480629	01480653	01480662	01480697	01480883
Date	10/15/98	10/07/98	10/13/98	10/14/98	10/14/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
<b>Insecta</b>					
<b>Ephemeroptera (Mayflies)</b>					
<b>Baetidae</b>					
<i>Baetis</i>	—	3	5	—	—
<i>Pseudocloeon</i>	—	5	—	5	—
<b>Caenidae</b>					
<i>Caenis</i>	—	1	—	—	—
<b>Ephemerellidae</b>					
<i>Dannella</i>	—	—	—	—	—
<i>Serratella</i>	62	7	5	10	11
<b>Heptageniidae</b>					
<i>Epeorus</i>	3	—	—	—	—
<i>Stenacron</i>	—	—	—	—	1
<i>Stenonema</i>	60	56	36	2	2
<b>Isonychiidae</b>					
<i>Isonychia</i>	63	11	9	6	—
<b>Leptohiphidae</b>					
<i>Tricorythodes</i>	4	—	—	—	63
<b>Leptophlebiidae</b>					
<i>Paraleptophlebia</i>	—	1	—	—	—
<b>Odonata (Dragonflies and Damselflies)</b>					
<b>Coenagrionidae</b>					
<i>Argia</i>	8	1	—	—	2
<b>Gomphidae</b>					
<i>Lanthus</i>	—	—	5	—	—
<b>Plecoptera (Stoneflies)</b>					
<b>Capniidae</b>					
<i>Capnia</i>	—	—	—	8	—
<b>Chloroperlidae</b>					
<i>Chloroperla</i>	—	—	—	—	2
<b>Leuctridae</b>					
<i>Leuctra</i>	—	—	—	—	—
<b>Perlidae</b>					
<i>Acroneuria</i>	—	3	4	5	—
<i>Agneta</i>	—	—	—	1	—
<i>Beloneuria</i>	—	1	1	—	—
<i>Neoperla</i>	—	—	—	—	1
<b>Taeniopterygidae</b>					
<i>Taeniopteryx</i>	—	1	—	1	—
<b>Megaloptera</b>					
<b>Corydalidae (Fishflies and Dobsonflies)</b>					
<i>Chauliodes</i>	—	—	—	—	—
<i>Corydalus</i>	—	—	1	—	—
<i>Nigronia</i>	—	2	4	—	—
<b>Sialidae (Alderflies)</b>					
<i>Sialis</i>	3	5	6	—	1

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01494800	01494900	01494950	01494953	Station Number
11/09/98	10/26/98	10/28/98	11/09/98	Date
Count	Count	Count	Count	Benthic Macroinvertebrate
				<b>Insecta</b>
				<b>Ephemeroptera (Mayflies)</b>
				<b>Baetidae</b>
4	—	—	—	<i>Baetis</i>
1	—	—	3	<i>Pseudocloeon</i>
				<b>Caenidae</b>
—	—	4	—	<i>Caenis</i>
				<b>Ephemerellidae</b>
—	—	2	—	<i>Dannella</i>
62	1	12	8	<i>Serratella</i>
				<b>Heptageniidae</b>
—	—	—	—	<i>Epeorus</i>
—	—	—	—	<i>Stenacron</i>
101	—	28	13	<i>Stenonema</i>
				<b>Isonychiidae</b>
7	—	9	9	<i>Isonychia</i>
				<b>Leptohyphidae</b>
—	—	—	—	<i>Tricorythodes</i>
				<b>Leptophlebiidae</b>
110	—	—	—	<i>Paraleptophlebia</i>
				<b>Odonata (Dragonflies and Damselflies)</b>
				<b>Coenagrionidae</b>
—	—	—	—	<i>Argia</i>
—	1	—	—	<b>Gomphidae</b>
—	—	1	—	<i>Lanthus</i>
				<b>Plecoptera (Stoneflies)</b>
—	—	—	—	<b>Capniidae</b>
2	—	—	—	<b>Chloroperlidae</b>
17	—	—	—	<b>Leuctridae</b>
				<b>Perlidae</b>
—	—	—	—	<i>Acroneuria</i>
—	—	—	—	<i>Agneta</i>
—	—	—	—	<i>Beloneuria</i>
—	—	—	—	<i>Neoperla</i>
				<b>Taeniopterygidae</b>
—	—	—	—	<i>Taeniopteryx</i>
				<b>Megaloptera</b>
				<b>Corydalidae (Fishflies and Dobsonflies)</b>
1	—	—	—	<i>Chauliodes</i>
—	—	2	1	<i>Corydalus</i>
—	—	—	1	<i>Nigronia</i>
				<b>Sialidae (Alderflies)</b>
—	—	1	—	<i>Sialis</i>

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

Station Number	01480629	01480653	01480662	01480697	01480883
Date	10/15/98	10/07/98	10/13/98	10/14/98	10/14/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
<b>Trichoptera (Caddisflies)</b>					
<b>Apataniidae</b>					
<i>Apatania</i>	—	1	7	—	—
<b>Brachycentridae</b>					
<i>Micrasema</i>	—	7	12	—	—
<b>Glossosomatidae</b>					
<i>Glossosoma</i>	—	—	4	1	—
<b>Helicopsychidae</b>					
<i>Helicopsyche</i>	—	—	13	—	—
<b>Hydropsychidae</b>					
<i>Cheumatopsyche</i>	29	190	72	11	36
<i>Hydropsyche</i>	81	234	132	104	34
<b>Hydroptilidae</b>					
<i>Hydroptila</i>	25	1	4	1	1
<i>Leucotrichia</i>	35	—	12	—	—
<b>Leptoceridae</b>					
<i>Mystacides</i>	1	—	—	—	2
<i>Oecetis</i>	—	2	—	—	1
<b>Philopotamidae</b>					
<i>Chimarra</i>	150	21	8	4	8
<i>Dolophilodes</i>	—	—	—	2	—
<i>Wormaldia</i>	—	—	—	—	—
<b>Polycentropodidae</b>					
<i>Neureclipsis</i>	6	—	—	—	—
<i>Polycentropus</i>	3	1	15	—	9
<b>Psychomyiidae</b>					
<i>Psychomyia</i>	1	—	14	1	—
<b>Rhyacophilidae</b>					
<i>Rhyacophila</i>	—	1	1	2	—
<b>Uenoidae</b>					
<i>Neophylax</i>	—	—	—	2	—
<b>Coleoptera (Beetles)</b>					
<b>Elmidae (Riffle Beetles)</b>					
<i>Ancyronyx</i>	—	—	2	—	—
<i>Dubiraphia</i>	—	—	1	—	3
<i>Macronychus</i>	—	1	—	—	—
<i>Optioservus</i>	24	9	108	39	659
<i>Oulimnius</i>	7	11	46	24	14
<i>Promoresia</i>	—	4	—	—	—
<i>Stenelmis</i>	16	13	11	—	202
<b>Hydrophilidae</b>					
<i>Berosus</i>	1	—	—	—	2
<b>Psephenidae (Water Pennies)</b>					
<i>Ectopria</i>	—	—	—	—	1
<i>Psephenus</i>	5	1	55	22	52

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01494800	01494900	01494950	01494953	Station Number
11/09/98	10/26/98	10/28/98	11/09/98	Date
Count	Count	Count	Count	Benthic Macroinvertebrate
				<b>Trichoptera (Caddisflies)</b>
				<b>Apataniidae</b>
4	—	—	—	<i>Apatania</i>
				<b>Brachycentridae</b>
104	—	—	—	<i>Micrasema</i>
				<b>Glossosomatidae</b>
6	—	—	—	<i>Glossosoma</i>
				<b>Helicopsychidae</b>
—	—	—	—	<i>Helicopsyche</i>
				<b>Hydropsychidae</b>
—	16	136	19	<i>Cheumatopsyche</i>
—	100	158	10	<i>Hydropsyche</i>
				<b>Hydroptilidae</b>
240	39	5	14	<i>Hydroptila</i>
—	—	8	14	<i>Leucotrichia</i>
				<b>Leptoceridae</b>
—	—	—	—	<i>Mystacides</i>
—	—	—	1	<i>Oecetis</i>
				<b>Philopotamidae</b>
9	1	3	1	<i>Chimarra</i>
22	—	—	—	<i>Dolophilodes</i>
6	—	—	—	<i>Wormaldia</i>
				<b>Polycentropodidae</b>
—	—	6	1	<i>Neureclipsis</i>
1	—	1	2	<i>Polycentropus</i>
				<b>Psychomyiidae</b>
—	—	—	—	<i>Psychomyia</i>
				<b>Rhyacophilidae</b>
—	—	—	—	<i>Rhyacophila</i>
				<b>Uenoidae</b>
2	—	—	—	<i>Neophylax</i>
				<b>Coleoptera (Beetles)</b>
				<b>Elmidae (Riffle Beetles)</b>
—	—	—	—	<i>Ancyronyx</i>
3	2	2	—	<i>Dubiraphia</i>
—	—	—	—	<i>Macronychus</i>
317	29	36	18	<i>Optioservus</i>
373	5	17	8	<i>Oulimnius</i>
6	—	—	—	<i>Promoresia</i>
34	2	33	12	<i>Stenelmis</i>
				<b>Hydrophilidae</b>
—	—	—	—	<i>Berosus</i>
				<b>Psephenidae (Water Pennies)</b>
—	—	—	—	<i>Ectopria</i>
—	—	—	—	<i>Psephenus</i>



**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

Station Number	01480629	01480653	01480662	01480697	01480883
Date	10/15/98	10/07/98	10/13/98	10/14/98	10/14/98
Benthic Macroinvertebrate	Count	Count	Count	Count	Count
Diptera (True Flies)					
Athericidae					
<i>Atherix</i>	—	2	—	—	—
Ceratopogonidae					
Chironomidae (Midges)	28	23	33	30	40
Empididae (Dance Flies)					
<i>Hemerodromia</i>	1	—	10	2	—
Simuliidae (Black Flies)					
<i>Simulium</i>	15	34	—	1	—
Tabanidae					
Tipulidae (Crane Flies)					
<i>Antocha</i>	21	17	29	3	30
<i>Diranota</i>	1	—	—	—	—
<i>Hexatoma</i>	—	—	—	—	—
<i>Limnophila</i>	—	—	—	—	—
<i>Tipula</i>	2	—	—	1	—
Total Organisms	740	741	727	300	1338
Total Taxa	34	38	36	30	35

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES**  
**STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued**

BIOLOGICAL DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
 BENTHIC MACROINVERTEBRATES--Continued

01494800	01494900	01494950	01494953	Station Number
11/09/98	10/26/98	10/28/98	11/09/98	Date
Count	Count	Count	Count	Benthic Macroinvertebrate
				Diptera (True Flies)
				Athericidae
				<i>Atherix</i>
—	—	—	—	
4	—	—	—	Ceratopogonidae
210	149	26	227	Chironomidae (Midges)
—	—	—	—	Empididae (Dance Flies)
17	102	18	10	<i>Hemerodromia</i>
				Simuliidae (Black Flies)
6	—	1	8	<i>Simulium</i>
1	—	—	—	Tabanidae
—	—	—	—	Tipulidae (Crane Flies)
82	112	16	48	<i>Antocha</i>
—	—	—	—	<i>Diranota</i>
1	—	—	—	<i>Hexatoma</i>
1	—	—	—	<i>Limnophila</i>
2	—	—	—	<i>Tipula</i>
1944	1056	586	569	Total Organisms
42	24	27	27	Total Taxa