Appendix A

Water Quality Data for Interstate Streams Crossing the New York-Pennsylvania and Pennsylvania-Maryland Borders

Table A1. Water Quality Data for New York-Pennsylvania Border Streams

Parameter	Units	APAL 6.9	BNTY 0.9	BNTY 0.9	BNTY 0.9	BNTY 0.9	CASC 1.6	CASC 1.6	CASC 1.6
Date	yyyymmdd	20020806	20020807	20021113	20030304	20030528	20021112	20030303	20030527
Time	hhmm	1015	1045	1145	1005	1140	1140	1100	1245
Discharge	cfs	0.343	0.777	3.788	10.36	11.104	3.229	3.802	2.085
Temperature	degree C	21	19.5	8.5	0.2	13.2	9.1	0.1	15.4
Conductance	umhos/cm	127	292	193	154	146	56	51	54
Dissolved Oxygen	mg/l	4.75	7.78	7.45	9.07	9.23	7.09	8.79	7.69
pH		7.6	8.2	7.6	7.5	7.7	6.7	7	6.95
Alkalinity	mg/l	40	78	58	84	42	16	12	14
Acidity	mg/l	4	2	2	8	4	8	4	2
Solids, Total	mg/l	90	148	144	116	88	1450	62	34
Solids, Dissolved	mg/l	76	148	144	112	88	1449	56	34
Ammonia, Total	mg/l	0.04	<0.02	0.2	<0.02	<0.02	0.18	<0.02	<0.02
Ammonia, Dissolved	mg/l	0.04	<0.02	0.17	<0.02	<0.02	0.08	<0.02	<0.02
Nitrite, Total	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrite, Dissolved	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrate, Total	mg/l	<0.04	0.05	0.28	1.04	0.1	<0.04	0.21	<0.04
Nitrate, Dissolved	mg/l	<0.04	<0.04	0.27	1.05	0.1	<0.04	0.21	<0.04
Nitrogen, Total	mg/l	0.330	0.180	0.750	1.320	0.290	0.330	0.430	0.090
Nitrogen Dissolved	mg/l	0.310	0.150	0.730	1.240	0.330	0.400	0.410	0.200
Phosphorus, Total	mg/l	0.04	<0.01	<0.01	<0.01	0.016	<0.01	0.014	0.015
Phosphorus, Dissolved	mg/l	0.029	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	0.013
Orthophosphate, Total	mg/l	0.016	0.012	<0.01	0.012	0.014	<0.01	0.013	0.014
Orthophosphate, Dissolved	mg/l	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Organic Carbon, Total	mg/l	3	2	2.7	2.3	2.7	2	1.5	2.8
Calcium	mg/l	11.9	33.7	23.2	16.7	17.5	5.65	4.21	5.31
Magnesium	mg/l	3.4	6.23	4.64	3.48	3.22	1.66	1.43	1.58
Chloride	mg/l	8.5	22.3	11.6	14.4	8.4	2	5.6	2
Sulfate	mg/l	<20	<20	<20	<20	<20	<20	<20	<20
Turbidity	ntu	2.52	<1	<1	2.65	1.28	1.07	3.07	2.61
Iron, Total	µg/l	459	<20	24	136	26	239	319	415
Iron, Dissolved	µg/l	183	<20	<20	39	<20	118	111	240
Manganese, Total	µg/l	166	<10	<10	<10	<10	35	16	76
Manganese, Dissolved	µg/l	103	<10	<10	<10	<10	28	<10	58
Aluminum, Total	µg/l	<200	<200	<200	<200	<200	<200	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A1. Water Quality Data for New York-Pennsylvania Border Streams – Continued

Parameter	Units	CAYT 1.7	CAYT 1.7	CAYT 1.7	CAYT 1.7	CHEM 12.0	CHEM 12.0	CHEM 12.0	CHEM 12.0
Date	yyyymmdd	20020807	20021113	20030304	20030528	20020807	20021113	20030304	20030528
Time	hhmm	825	930	730	905	930	1035	845	1010
Discharge	cfs	12.032	14.92	35.12	63.7	304	414	NA	NA
Temperature	degree C	18	8.7	0.3	13.5	22	9.2	0.2	15.6
Conductance	umhos/cm	545	357	254	188	494	465	333	275
Dissolved Oxygen	mg/l	6.34	7.41	8.98	9.38	5.1	6.16	9.01	8.22
pH		8.05	7.85	8.3	7.5	8.1	7.8	8.1	7.7
Alkalinity	mg/l	106	108	130	48	100	122	80	68
Acidity	mg/l	4	6	0	4	4	6	4	4
Solids, Total	mg/l	332	230	176	118	268	324	248	166
Solids, Dissolved	mg/l	328	230	168	114	260	322	242	160
Ammonia, Total	mg/l	<0.02	0.11	<0.02	<0.02	0.02	0.16	0.02	0.04
Ammonia, Dissolved	mg/l	<0.02	0.02	<0.02	<0.02	0.03	0.17	<0.02	0.04
Nitrite, Total	mg/l	0.01	<0.01	<0.01	0.01	0.02	0.01	<0.01	0.02
Nitrite, Dissolved	mg/l	0.02	<0.01	<0.01	0.01	0.02	0.01	0.01	0.01
Nitrate, Total	mg/l	1.17	0.75	0.83	0.3	0.48	0.7	1.14	0.41
Nitrate, Dissolved	mg/l	1.13	0.76	0.86	0.31	0.49	0.71	1.16	0.41
Nitrogen, Total	mg/l	1.370	1.210	1.390	0.600	0.840	1.290	1.490	0.830
Nitrogen Dissolved	mg/l	1.390	1.230	1.120	0.650	0.770	1.340	1.420	0.780
Phosphorus, Total	mg/l	0.04	0.04	0.062	0.044	0.07	0.075	0.031	0.039
Phosphorus, Dissolved	mg/l	0.033	0.027	0.056	0.02	0.055	0.064	0.024	0.013
Orthophosphate, Total	mg/l	0.032	0.031	0.047	0.025	0.061	0.059	0.021	0.026
Orthophosphate, Dissolved	mg/l	0.029	0.03	0.041	0.018	0.045	0.059	0.015	<0.01
Organic Carbon, Total	mg/l	3.1	1.9	2.3	3.1	3.8	3	2.7	3.5
Calcium	mg/l	47.7	41.3	25.6	19	50.2	50.2	33.3	28.2
Magnesium	mg/l	10.3	7.93	5	3.78	10.9	11.6	6.92	5.71
Chloride	mg/l	84.2	37.2	30.5	18.8	88.8	56.1	46	30.9
Sulfate	mg/l	31.7	23.4	28.8	<20	29.4	32.8	26.3	23.3
Turbidity	ntu	1.19	1.1	2.13	4.19	4.44	1.2	3.17	3.7
Iron, Total	µg/l	164	76	156	200	141	61	302	170
Iron, Dissolved	µg/l	45	39	55	72	20	39	47	41
Manganese, Total	µg/l	32	<10	13	15	53	10	57	38
Manganese, Dissolved	µg/l	19	<10	10	11	<10	<10	45	<10
Aluminum, Total	µg/l	1270	<200	<200	<200	<200	<200	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A1. Water Quality Data for New York-Pennsylvania Border Streams – Continued

Parameter	Units	CHOC9.1	COWN1.0	COWN1.0	COWN1.0	COWN1.0	COWN2.2	COWN2.2	COWN2.2
Date	yyyymmdd	20020806	20020807	20021113	20030304	20030529	20020808	20021114	20030304
Time	hhmm	910	1515	1505	1410	810	730	1030	1525
Discharge	cfs	0.933	27	22	NA	NA	NA	NA	NA
Temperature	degree C	20	26.4	8.8	3.9	16	21	9.3	3.7
Conductance	umhos/cm	129	191	209	249	164	190	203	210
Dissolved Oxygen	mg/l	5.41	7.9	7.12	8.09	9.05	4.45	7.27	8.39
pH		7.5	8.45	7.3	8	8.4	8.1	7.35	7.7
Alkalinity	mg/l	32	50	66	50	38	68	66	42
Acidity	mg/l	2	0	6	4	0	2	4	6
Solids, Total	mg/l	76	120	146	176	100	144	136	176
Solids, Dissolved	mg/l	74	118	146	172	100	138	126	164
Ammonia, Total	mg/l	0.16	0.02	0.12	<0.02	<0.02	0.03	0.26	0.02
Ammonia, Dissolved	mg/l	0.13	<0.02	0.12	<0.02	<0.02	0.04	0.2	<0.02
Nitrite, Total	mg/l	0.01	0.02	0.02	<0.01	<0.01	0.02	0.01	<0.01
Nitrite, Dissolved	mg/l	<0.01	0.02	0.02	<0.01	<0.01	0.02	0.01	<0.01
Nitrate, Total	mg/l	0.18	0.22	0.51	1.11	0.45	0.07	0.26	1.1
Nitrate, Dissolved	mg/l	0.16	0.22	0.51	1.12	0.44	0.08	0.26	1.12
Nitrogen, Total	mg/l	0.390	0.730	1.360	1.520	0.760	0.680	0.740	1.480
Nitrogen Dissolved	mg/l	0.380	0.660	1.360	1.380	0.730	0.590	0.880	1.450
Phosphorus, Total	mg/l	0.02	0.04	0.054	0.014	0.022	0.02	0.021	0.014
Phosphorus, Dissolved	mg/l	0.015	0.029	0.037	<0.01	0.01	0.015	<0.01	<0.01
Orthophosphate, Total	mg/l	0.016	0.03	0.048	0.013	0.016	0.019	0.026	0.013
Orthophosphate, Dissolved	mg/l	<0.01	0.023	0.032	<0.01	<0.01	<0.01	<0.01	<0.01
Organic Carbon, Total	mg/l	2	5.8	4.2	3.3	3.8	5.1	4.6	3.5
Calcium	mg/l	10.5	21.4	23.1	26	16.8	21.1	22.9	26.4
Magnesium	mg/l	3.07	4.14	4.76	5.24	3.36	4.42	4.76	5.19
Chloride	mg/l	12.4	11.5	13.9	27.8	12.9	10.2	13.9	27.1
Sulfate	mg/l	<20	<20	<20	24.2	26.5	<20	<20	23.8
Turbidity	ntu	2.99	2.5	7.07	2.71	4.19	5.04	10.2	2.63
Iron, Total	µg/l	293	153	341	611	81	147	584	128
Iron, Dissolved	µg/l	133	36	45	32	<20	68	45	25
Manganese, Total	µg/l	65	73	123	82	36	319	490	79
Manganese, Dissolved	µg/l	47	36	67	56	13	226	268	59
Aluminum, Total	µg/l	<200	<200	205	<200	<200	<200	301	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A1. Water Quality Data for New York-Pennsylvania Border Streams – Continued

Parameter	Units	COWN2.2	HLDN3.5	LSNK 7.6	LSNK 7.6	LSNK 7.6	NFCR7.6	SEEL10.3	SEEL10.3
Date	yyyymmdd	20030529	20020808	20020806	20021112	20030527	20020808	20020807	20021113
Time	hhmm	930	900	745	1350	1455	1145	1300	1315
Discharge	cfs	NA	NA	0.332	3.166	3.207	0.271	2.355	5.476
Temperature	degree C	15.6	14.8	19	8.8	15.5	16.3	19.3	9.6
Conductance	umhos/cm	160	348	317	152	109	204	327	329
Dissolved Oxygen	mg/l	8.88	6.46	5.35	7.26	8.26	6.85	5.97	6.14
pH		8.4	7.9	7.7	7.1	7.1	7.8	7.8	7.8
Alkalinity	mg/l	40	122	44	26	18	58	110	116
Acidity	mg/l	0	4	2	6	2	4	6	6
Solids, Total	mg/l	114	236	200	104	84	144	176	222
Solids, Dissolved	mg/l	110	224	196	100	84	134	176	222
Ammonia, Total	mg/l	<0.02	<0.02	0.16	0.13	<0.02	<0.02	<0.02	0.16
Ammonia, Dissolved	mg/l	<0.02	<0.02	0.16	0.11	<0.02	<0.02	<0.02	0.15
Nitrite, Total	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
Nitrite, Dissolved	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
Nitrate, Total	mg/l	0.45	<0.04	0.04	<0.04	<0.04	0.4	0.07	0.13
Nitrate, Dissolved	mg/l	0.44	<0.04	0.04	<0.04	<0.04	0.4	0.07	0.13
Nitrogen, Total	mg/l	0.740	0.260	0.300	0.380	0.280	0.780	0.120	0.480
Nitrogen Dissolved	mg/l	0.700	0.260	0.310	0.330	0.340	0.780	0.150	0.500
Phosphorus, Total	mg/l	0.02	0.02	0.02	<0.01	0.018	0.07	<0.01	<0.01
Phosphorus, Dissolved	mg/l	0.011	0.017	0.018	<0.01	0.018	0.056	0.011	<0.01
Orthophosphate, Total	mg/l	0.015	0.015	0.013	<0.01	0.017	0.055	0.01	<0.01
Orthophosphate, Dissolved	mg/l	<0.01	0.012	<0.01	<0.01	0.012	0.048	0.01	<0.01
Organic Carbon, Total	mg/l	3.8	2.5	3.7	2.3	4	3.9	1.6	1.4
Calcium	mg/l	17.6	40.8	20.2	10.6	7.73	20.2	46.8	45.7
Magnesium	mg/l	3.47	12.9	5.02	2.68	2.13	6.75	7.15	7.4
Chloride	mg/l	13.1	15.8	63.1	22	15.1	13.9	14.7	21.6
Sulfate	mg/l	<20	<20	<20	<20	<20	<20	<20	20.3
Turbidity	ntu	3.42	1.97	2.27	1.05	3.03	2.86	<1	<1
Iron, Total	µg/l	86	64	590	209	423	142	<20	<20
Iron, Dissolved	µg/l	32	26	404	120	280	45	<20	<20
Manganese, Total	µg/l	31	<10	166	46	28	34	<10	<10
Manganese, Dissolved	µg/l	10	<10	139	41	26	15	<10	<10
Aluminum, Total	µg/l	<200	<200	<200	<200	<200	<200	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A1. Water Quality Data for New York-Pennsylvania Border Streams – Continued

Parameter	Units	SEEL10.3	SEEL10.3	SNAK2.3	SOUT6.9	SUSQ289.1	SUSQ289.1	SUSQ289.1
Date	yyyymmdd	20030304	20030528	20020805	20020807	20020806	20021113	20030303
Time	hhmm	1135	1315	1600	1140	1330	820	1340
Discharge	cfs	12.126	20.874	4.307	0.19	867	6860	NA
Temperature	degree C	0.1	13.4	27.6	18.7	24.6	8.7	0
Conductance	umhos/cm	228	212	119	212	362	221	227
Dissolved Oxygen	mg/l	8.63	8.29	6.41	6.95	6.01	6.72	9.17
pH		7.5	8	8	7.9	8.3	7.7	8
Alkalinity	mg/l	104	64	34	50	82	70	40
Acidity	mg/l	10	2	2	2	0	2	4
Solids, Total	mg/l	156	130	50	50	252	142	180
Solids, Dissolved	mg/l	168	130	50	50	248	138	172
Ammonia, Total	mg/l	<0.02	<0.02	0.1	<0.02	<0.02	0.14	0.02
Ammonia, Dissolved	mg/l	<0.02	<0.02	0.16	<0.02	<0.02	0.14	0.02
Nitrite, Total	mg/l	<0.01	<0.01	<0.01	<0.01	0.02	0.01	<0.01
Nitrite, Dissolved	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01
Nitrate, Total	mg/l	1.1	0.06	0.1	<0.04	0.36	0.58	0.95
Nitrate, Dissolved	mg/l	1.11	0.06	0.1	<0.04	0.35	0.57	0.96
Nitrogen, Total	mg/l	1.260	0.280	0.350	0.410	0.790	1.290	1.250
Nitrogen Dissolved	mg/l	1.340	0.330	0.360	0.430	0.680	1.130	1.340
Phosphorus, Total	mg/l	<0.01	0.015	0.02	0.02	0.04	0.027	0.023
Phosphorus, Dissolved	mg/l	<0.01	0.013	0.015	0.025	0.023	0.012	0.013
Orthophosphate, Total	mg/l	<0.01	0.011	0.011	0.021	0.025	0.014	0.018
Orthophosphate, Dissolved	mg/l	<0.01	<0.01	0.011	0.018	0.017	0.013	0.011
Organic Carbon, Total	mg/l	2.2	3.2	2.2	6.5	3.8	3	1.7
Calcium	mg/l	24.9	24	9.93	16.7	37.4	26.8	24.4
Magnesium	mg/l	4.17	4.06	2.83	4.05	6.57	3.94	3.78
Chloride	mg/l	28.4	17.7	10.7	24.6	96.6	17.8	30.4
Sulfate	mg/l	<20	<20	<20	<20	<20	<20	<20
Turbidity	ntu	<1	<1	1.08	1.25	2.43	3.01	3.38
Iron, Total	µg/l	45	47	70	201	155	188	221
Iron, Dissolved	µg/l	<20	22	36	160	30	78	57
Manganese, Total	µg/l	<10	<10	10	38	40	19	18
Manganese, Dissolved	µg/l	<10	<10	<10	30	<10	<10	11
Aluminum, Total	µg/l	<200	<200	<200	<200	<200	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200

Table A1. Water Quality Data for New York-Pennsylvania Border Streams – Continued

Parameter	Units	SUSQ340.0	SUSQ340.0	SUSQ340.0	SUSQ340.0	SUSQ365.0	SUSQ365.0	SUSQ365.0
Date	yyyymmdd	20030528	20020805	20021112	20030303	20030527	20020805	20021112
Time	hhmm	750	1430	1245	1210	1345	1135	1045
Discharge	cfs	NA	371	2458	NA	NA	154	2200
Temperature	degree C	16.9	28.2	9.1	0	16.4	26.2	9.1
Conductance	umhos/cm	206	239	192	183	193	259	197
Dissolved Oxygen	mg/l	8.83	6.93	7.14	8.86	8.54	5.81	6.74
pH		8.05	8.35	7.5	8	7.9	8.6	7.6
Alkalinity	mg/l	62	80	58	42	52	136	62
Acidity	mg/l	2	0	6	10	2	0	6
Solids, Total	mg/l	122	144	1278	160	118	152	312
Solids, Dissolved	mg/l	116	144	1274	134	118	146	304
Ammonia, Total	mg/l	<0.02	0.06	0.14	<0.02	<0.02	0.11	0.15
Ammonia, Dissolved	mg/l	<0.02	0.14	0.12	<0.02	<0.02	0.07	0.04
Nitrite, Total	mg/l	0.02	0.01	<0.01	<0.01	<0.01	0.01	<0.01
Nitrite, Dissolved	mg/l	0.02	0.01	<0.01	<0.01	<0.01	0.01	<0.01
Nitrate, Total	mg/l	0.57	0.22	0.36	0.73	0.33	0.44	0.44
Nitrate, Dissolved	mg/l	0.4	0.22	0.37	0.75	0.34	0.42	0.47
Nitrogen, Total	mg/l	0.820	0.480	0.980	0.980	0.560	0.680	1.070
Nitrogen Dissolved	mg/l	0.830	0.420	0.960	0.960	0.580	0.690	0.950
Phosphorus, Total	mg/l	0.025	0.02	0.012	0.011	0.016	0.03	0.011
Phosphorus, Dissolved	mg/l	0.013	0.016	<0.01	<0.01	0.013	0.024	<0.01
Orthophosphate, Total	mg/l	0.019	<0.01	<0.01	0.011	0.017	0.012	0.012
Orthophosphate, Dissolved	mg/l	0.012	<0.01	<0.01	<0.01	0.01	0.012	<0.01
Organic Carbon, Total	mg/l	3.2	2.6	2.6	1.6	3	2.5	2.7
Calcium	mg/l	23.6	29.6	26.3	22.4	23.4	33.5	27.8
Magnesium	mg/l	3.43	3.73	2.85	2.66	2.7	4.16	3.11
Chloride	mg/l	20.2	20.4	13.6	22.2	18.5	21.1	13.2
Sulfate	mg/l	<20	<20	<20	<20	<20	<20	<20
Turbidity	ntu	3.48	1.17	1.56	2.48	3.45	1.34	2.45
Iron, Total	µg/l	297	115	184	236	181	99	202
Iron, Dissolved	µg/l	44	47	94	79	78	36	85
Manganese, Total	µg/l	20	24	20	20	30	27	22
Manganese, Dissolved	µg/l	<10	12	17	15	19	13	14
Aluminum, Total	µg/l	212	<200	<200	<200	<200	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200

Table A1. Water Quality Data for New York-Pennsylvania Border Streams – Continued

Parameter	Units	SUSQ365.0	SUSQ365.0	TIOG10.0	TIOG10.0	TIOG10.0	TIOG10.0	TROW1.6	TRUP4.5
Date	yyyymmdd	20030303	20030527	20020807	20021113	20030304	20030528	20020805	20020808
Time	hhmm	950	1130	1430	1435	1250	1445	1330	1030
Discharge	cfs	NA	NA	76	6599	NA	NA	NA	1.705
Temperature	degree C	0	15	23.2	8	0.5	15.3	23.6	18.9
Conductance	umhos/cm	142	190	221	232	214	170	102	322
Dissolved Oxygen	mg/l	9.03	8.93	6.6	7.08	8.79	8.04	7.17	7.45
pH		7.3	7.7	7.7	7.15	7.6	7.6	7.8	8
Alkalinity	mg/l	40	58	48	26	48	28	36	94
Acidity	mg/l	4	2	4	6	8	2	4	2
Solids, Total	mg/l	164	140	146	170	110	116	58	204
Solids, Dissolved	mg/l	152	138	144	170	96	114	56	198
Ammonia, Total	mg/l	0.07	0.05	<0.02	0.15	0.05	<0.02	0.09	<0.02
Ammonia, Dissolved	mg/l	<0.02	0.04	<0.02	0.06	0.04	<0.02	0.12	<0.02
Nitrite, Total	mg/l	<0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01
Nitrite, Dissolved	mg/l	<0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01
Nitrate, Total	mg/l	0.78	0.39	0.31	0.31	0.94	0.28	0.13	<0.04
Nitrate, Dissolved	mg/l	0.78	0.42	0.32	0.32	0.95	0.28	0.13	<0.04
Nitrogen, Total	mg/l	1.280	0.680	0.590	0.840	1.230	0.580	0.250	0.270
Nitrogen Dissolved	mg/l	0.980	0.810	0.590	0.750	1.180	0.600	0.170	0.290
Phosphorus, Total	mg/l	0.017	0.023	0.02	0.011	0.018	0.016	0.012	<0.01
Phosphorus, Dissolved	mg/l	<0.01	0.016	0.018	<0.01	<0.01	0.012	0.016	0.013
Orthophosphate, Total	mg/l	0.011	0.021	0.019	<0.01	0.017	0.017	<0.01	0.015
Orthophosphate, Dissolved	mg/l	<0.01	0.012	0.013	<0.01	<0.01	<0.01	0.011	<0.01
Organic Carbon, Total	mg/l	2.3	3.9	3.8	2.3	2.7	2.6	1.7	3
Calcium	mg/l	23.4	24.4	24.2	24.5	21.7	17.2	6.9	34.9
Magnesium	mg/l	2.72	2.87	5.64	7.65	5.04	4.35	2.24	8.17
Chloride	mg/l	23.5	15.8	10.9	11.4	21	11.4	8.6	26.4
Sulfate	mg/l	21.4	<20	35.7	58.1	33	28.6	<20	<20
Turbidity	ntu	1.89	5.61	1.73	1.83	3.44	3.71	<1	1.77
Iron, Total	µg/l	163	340	76	99	176	132	37	66
Iron, Dissolved	µg/l	73	97	28	<20	39	30	<20	26
Manganese, Total	µg/l	18	28	72	231	377	288	<10	<10
Manganese, Dissolved	µg/l	14	16	31	186	328	200	<10	<10
Aluminum, Total	µg/l	<200	<200	<200	<200	<200	<200	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A1. Water Quality Data for New York-Pennsylvania Border Streams – Continued

Parameter	Units	TRUP4.5	TRUP4.5	TRUP4.5	WAPP2.6
Date	yyyymmdd	20021114	20030305	20030529	20020806
Time	hhmm	905	845	1110	1135
Discharge	cfs	4.533	10.321	12.713	NA
Temperature	degree C	7.5	0.6	16.5	22
Conductance	umhos/cm	358	225	180	174
Dissolved Oxygen	mg/l	7.59	9.03	9.37	5.68
pH		8	8.2	9	7.5
Alkalinity	mg/l	106	80	54	44
Acidity	mg/l	4	6	0	2
Solids, Total	mg/l	200	174	122	108
Solids, Dissolved	mg/l	200	172	118	108
Ammonia, Total	mg/l	0.33	<0.02	<0.02	0.17
Ammonia, Dissolved	mg/l	0.18	<0.02	<0.02	0.07
Nitrite, Total	mg/l	<0.01	<0.01	<0.01	<0.01
Nitrite, Dissolved	mg/l	<0.01	<0.01	<0.01	<0.01
Nitrate, Total	mg/l	<0.04	1.33	<0.04	1.21
Nitrate, Dissolved	mg/l	<0.04	1.37	<0.04	1.25
Nitrogen, Total	mg/l	0.180	1.570	0.250	1.250
Nitrogen Dissolved	mg/l	0.200	1.570	0.250	1.270
Phosphorus, Total	mg/l	<0.01	0.014	0.016	0.02
Phosphorus, Dissolved	mg/l	<0.01	<0.01	0.02	0.016
Orthophosphate, Total	mg/l	<0.01	0.036	0.025	<0.01
Orthophosphate, Dissolved	mg/l	<0.01	<0.01	<0.01	<0.01
Organic Carbon, Total	mg/l	2.5	2.9	4.1	1.5
Calcium	mg/l	42.6	22.7	19.9	16.6
Magnesium	mg/l	9.48	5.45	4.29	4.64
Chloride	mg/l	32.1	27.7	13.6	11.5
Sulfate	mg/l	46	<20	<20	<20
Turbidity	ntu	1.17	11.44	8.89	<1
Iron, Total	µg/l	61	428	351	34
Iron, Dissolved	µg/l	33	80	60	<20
Manganese, Total	µg/l	<10	14	11	<10
Manganese, Dissolved	µg/l	<10	12	<10	<10
Aluminum, Total	µg/l	<200	363	267	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200

Table A2. Water Quality Data for Pennsylvania-Maryland Border Streams

Parameter	Units	BBDC4.1	CNWG 4.4	CNWG 4.4	CNWG 4.4	CNWG 4.4	DEER 44.2	DEER 44.2	DEER 44.2
Date	yyyymmdd	20020731	20020801	20021218	20030226	20030603	20020730	20021218	20030227
Time	hhmm	900	1130	1040	1445	1140	1215	745	1040
Discharge	cfs	0.437	4.665	14.91	16.43	12.582	3.276	15.03	17.23
Temperature	degree C	18.8	26.2	1.3	0.8	14.7	25.2	1	1.2
Conductance	umhos/cm	132	221	242	208	240	227	222	237
Dissolved Oxygen	mg/l	6.94	6.99	8.48	9.04	8.53	6.62	9.04	9.13
pH		7.7	8	7.2	7	7.5	8.2	6.95	7.2
Alkalinity	mg/l	42	42	36	36	36	64	12	30
Acidity	mg/l	6	2	14	4	2	2	14	4
Solids, Total	mg/l	128	176	220	184	1766	178	196	156
Solids, Dissolved	mg/l	122	170	210	162	1760	176	192	182
Ammonia, Total	mg/l	<0.02	0.06	<0.02	0.95	0.04	0.03	0.05	0.06
Ammonia, Dissolved	mg/l	<0.02	0.06	<0.02	0.98	0.02	0.02	<0.02	0.06
Nitrite, Total	mg/l	<0.01	0.03	<0.01	0.03	0.04	0.02	<0.01	<0.01
Nitrite, Dissolved	mg/l	<0.01	0.03	0.02	0.03	0.04	0.02	<0.01	<0.01
Nitrate, Total	mg/l	4.66	6.14	10.01	6.29	8.28	2.45	6.28	5.04
Nitrate, Dissolved	mg/l	4.67	6.24	10.09	6.19	8.44	2.51	6.17	5.07
Nitrogen, Total	mg/l	5.100	6.230	11.000	8.660	9.150	2.980	6.870	5.600
Nitrogen Dissolved	mg/l	5.090	6.370	10.830	8.310	9.160	2.970	6.760	5.520
Phosphorus, Total	mg/l	0.02	0.05	0.046	0.599	0.072	0.02	0.076	0.023
Phosphorus, Dissolved	mg/l	0.018	0.05	0.034	0.52	0.042	0.013	0.069	0.016
Orthophosphate, Total	mg/l	0.012	0.038	0.039	0.513	0.047	0.012	0.084	0.02
Orthophosphate, Dissolved	mg/l	<0.01	0.032	0.034	0.476	0.034	<0.01	0.054	0.012
Organic Carbon, Total	mg/l	1.4	3.5	2.4	7.1	3.1	2.5	1.5	1.4
Calcium	mg/l	9.86	15.2	19.5	13.9	16.4	20	19	16.4
Magnesium	mg/l	5.45	9.72	10.9	8.33	11	6.46	6.61	5.62
Chloride	mg/l	10.6	19	21.8	18.7	20	26.6	30.3	40.1
Sulfate	mg/l	<20	<20	<20	<20	<20	<20	<20	<20
Turbidity	ntu	1.24	2.89	3.37	14.69	6.16	2.44	2.28	3.81
Iron, Total	µg/l	181	225	148	849	538	162	107	146
Iron, Dissolved	µg/l	37	131	63	178	133	53	36	55
Manganese, Total	µg/l	15	39	42	77	40	21	32	27
Manganese, Dissolved	µg/l	<10	33	34	65	26	21	22	26
Aluminum, Total	µg/l	276	<200	<200	590	303	<200	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A2. Water Quality Data for Pennsylvania-Maryland Border Streams – Continued

Parameter	Units	DEER 44.2	EBAU 1.5	EBAU 1.5	EBAU 1.5	EBAU 1.5	FBDC4.1	LNGA 2.5	LNGA 2.5
Date	yyyymmdd	20030602	20020730	20021218	20030227	20030602	20020731	20020730	20021118
Time	hhmm	1045	1330	900	1135	1210	1020	900	840
Discharge	cfs	10.237	5.953	7.59	24.3	9.306	0.173	0.213	NA
Temperature	degree C	11.9	24	0.9	1.7	11.9	21	22.6	7.5
Conductance	umhos/cm	213	277	185	195	199	111	212	190
Dissolved Oxygen	mg/l	9.01	5.14	9.17	8.59	9.66	5.82	5.72	7.16
pH		7.35	7.7	6.8	7.25	7.25	7.8	8.1	7.1
Alkalinity	mg/l	36	70	34	32	32	38	70	32
Acidity	mg/l	2	8	NA	4	2	6	4	6
Solids, Total	mg/l	152	206	166	182	162	110	190	198
Solids, Dissolved	mg/l	140	202	162	154	150	100	176	190
Ammonia, Total	mg/l	<0.02	0.2	0.04	<0.02	<0.02	<0.02	0.16	0.1
Ammonia, Dissolved	mg/l	<0.02	0.22	0.04	<0.02	<0.02	0.02	0.16	0.1
Nitrite, Total	mg/l	<0.01	0.58	0.01	0.01	0.02	<0.01	0.11	0.03
Nitrite, Dissolved	mg/l	<0.01	0.59	0.01	<0.01	0.02	<0.01	0.09	0.01
Nitrate, Total	mg/l	4.8	4.78	6.22	5.58	4.68	3.68	3.43	6
Nitrate, Dissolved	mg/l	4.91	4.84	6.22	5.49	4.71	3.66	3.58	6.21
Nitrogen, Total	mg/l	4.900	7.570	6.720	5.980	5.340	3.950	4.650	7.390
Nitrogen Dissolved	mg/l	4.960	7.790	6.760	6.040	5.350	3.830	4.560	7.140
Phosphorus, Total	mg/l	0.018	0.27	0.03	0.024	0.055	0.02	0.06	0.086
Phosphorus, Dissolved	mg/l	0.014	0.257	0.026	0.017	0.03	0.014	0.022	0.055
Orthophosphate, Total	mg/l	0.012	0.21	0.027	0.018	0.027	0.012	0.038	0.054
Orthophosphate, Dissolved	mg/l	<0.01	0.208	0.02	0.011	0.024	<0.01	0.018	0.038
Organic Carbon, Total	mg/l	1.5	3.2	1.5	1.3	2	1.9	3	3.9
Calcium	mg/l	16.4	17.7	15.8	15	14.4	7.79	21.5	17
Magnesium	mg/l	5.93	6.46	5.7	5.4	5.56	4.38	6.56	5.99
Chloride	mg/l	27.9	28	21.1	26.9	22.9	9	18.3	14.7
Sulfate	mg/l	<20	<20	<20	<20	<20	<20	<20	<20
Turbidity	ntu	2.79	1.36	1.46	2.96	2.93	1.48	27.5	10.1
Iron, Total	µg/l	119	174	85	182	268	320	677	667
Iron, Dissolved	µg/l	58	79	33	43	51	99	119	99
Manganese, Total	µg/l	31	22	25	27	29	53	284	62
Manganese, Dissolved	µg/l	23	13	21	23	20	17	230	40
Aluminum, Total	µg/l	<200	<200	<200	<200	<200	<200	351	459
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A2. Water Quality Data for Pennsylvania-Maryland Border Streams – Continued

Parameter	Units	LNGA 2.5	LNGA 2.5	OCTO 6.6	OCTO 6.6	OCTO 6.6	OCTO 6.6	SBCC20.4	SCTT 3.0
Date	yyyymmdd	20030227	20030602	20020801	20021218	20030226	20030603	20020730	20020731
Time	hhmm	830	900	935	1010	1315	1010	1000	1115
Discharge	cfs	1.873	1.435	37.568	NA	NA	NA	0.14	NA
Temperature	degree C	2.7	11.1	25.6	0.3	0.7	16.3	22.1	24
Conductance	umhos/cm	185	186	225	259	167	242	174	484
Dissolved Oxygen	mg/l	8.89	8.25	5.56	8.61	8.97	8.48	6.18	6.45
pH		7.3	7.05	8.3	7.15	7.35	7.8	7.9	8
Alkalinity	mg/l	22	28	72	60	52	48	92	156
Acidity	mg/l	6	4	0	14	8	4	6	6
Solids, Total	mg/l	192	172	182	222	148	144	114	436
Solids, Dissolved	mg/l	146	172	172	208	112	107	108	436
Ammonia, Total	mg/l	0.08	0.03	0.02	0.17	1.34	0.08	<0.02	0.05
Ammonia, Dissolved	mg/l	0.08	0.03	0.04	0.15	1.3	0.08	<0.02	0.04
Nitrite, Total	mg/l	<0.01	0.01	0.01	0.03	0.04	0.06	0.02	<0.01
Nitrite, Dissolved	mg/l	0.01	<0.01	<0.01	0.02	0.03	0.05	0.02	<0.01
Nitrate, Total	mg/l	6.59	5.53	1.43	6.01	2.86	5.54	0.56	1.77
Nitrate, Dissolved	mg/l	6.45	5.74	1.49	6.02	2.91	5.28	0.47	1.74
Nitrogen, Total	mg/l	7.040	6.410	1.840	7.170	6.180	6.550	0.730	1.910
Nitrogen Dissolved	mg/l	6.770	6.430	1.900	7.190	5.890	6.360	0.780	2.060
Phosphorus, Total	mg/l	0.046	0.02	0.07	0.168	0.745	0.153	0.02	0.06
Phosphorus, Dissolved	mg/l	0.033	0.014	0.052	0.128	0.555	0.037	0.011	0.054
Orthophosphate, Total	mg/l	0.029	0.017	0.038	0.12	0.569	0.079	0.014	0.039
Orthophosphate, Dissolved	mg/l	0.019	<0.01	0.032	0.102	0.464	0.029	0.011	0.037
Organic Carbon, Total	mg/l	1.5	1.9	4.3	4.6	10.6	3.8	2	2.1
Calcium	mg/l	15.9	15.9	17.1	22.9	11	19.3	24.3	49.5
Magnesium	mg/l	5.88	6.24	10.8	10.9	6.21	10.6	4.29	25.5
Chloride	mg/l	20.6	17.8	18.2	20.7	13.9	18.8	6.9	53
Sulfate	mg/l	<20	<20	43.2	<20	<20	<20	<20	36.4
Turbidity	ntu	8.08	7.58	5.12	6.36	45.54	28.26	3.99	<1
Iron, Total	µg/l	314	271	427	292	2320	1170	304	96
Iron, Dissolved	µg/l	45	61	153	92	288	56	89	36
Manganese, Total	µg/l	51	71	90	67	149	98	50	28
Manganese, Dissolved	µg/l	40	56	37	41	100	16	45	25
Aluminum, Total	µg/l	219	<200	254	<200	2070	840	<200	<200
Aluminum, Dissolved	µg/l	<200	<200	<200	<200	<200	<200	<200	<200

Table A2. Water Quality Data for Pennsylvania-Maryland Border Streams – Continued

Parameter	Units	SCTT3.0	SCTT3.0	SCTT3.0	SUSQ10.0	SUSQ10.0	SUSQ10.0	SUSQ44.5
Date	yyyymmdd	20021118	20030227	20030602	20020731	20021118	20030602	20020801
Time	hhmm	1210	1305	1330	1215	1305	1435	1315
Discharge	cfs	0.396	1.037	1.114	5550	53600	NA	6740
Temperature	degree C	8.8	1.8	13.2	30.4	11.2	18.9	32.4
Conductance	umhos/cm	319	398	281	292	270	222	356
Dissolved Oxygen	mg/l	7.38	8.78	8.78	4.56	6.9	7.64	6.74
pH		7.2	7.1	7.6	8	7.5	7.7	8.7
Alkalinity	mg/l	56	80	48	80	56	48	84
Acidity	mg/l	6	10	2	2	8	2	0
Solids, Total	mg/l	282	260	210	210	220	140	252
Solids, Dissolved	mg/l	274	260	208	208	208	130	280
Ammonia, Total	mg/l	0.04	<0.02	<0.02	0.1	0.04	0.04	0.03
Ammonia, Dissolved	mg/l	0.03	<0.02	<0.02	0.12	0.04	0.04	0.05
Nitrite, Total	mg/l	<0.01	0.01	<0.01	0.04	0.02	0.02	<0.01
Nitrite, Dissolved	mg/l	<0.01	0.01	<0.01	0.04	0.01	0.01	<0.01
Nitrate, Total	mg/l	2.71	3.15	2	0.62	1.81	1.16	0.46
Nitrate, Dissolved	mg/l	2.58	3.3	1.95	0.58	1.86	1.18	0.43
Nitrogen, Total	mg/l	3.610	3.400	1.910	1.020	2.470	1.330	0.820
Nitrogen Dissolved	mg/l	3.470	3.360	1.970	1.130	2.450	1.310	0.760
Phosphorus, Total	mg/l	0.084	0.025	0.031	0.05	0.036	0.043	0.03
Phosphorus, Dissolved	mg/l	0.077	0.02	0.028	0.015	0.025	0.013	0.023
Orthophosphate, Total	mg/l	0.061	0.019	0.029	0.019	0.032	0.022	0.021
Orthophosphate, Dissolved	mg/l	0.06	0.016	0.025	<0.01	0.021	0.01	0.014
Organic Carbon, Total	mg/l	5.7	1.7	2.6	3.2	2.7	2.8	3.2
Calcium	mg/l	24.8	20.5	17.6	28.3	27.1	21.6	33.6
Magnesium	mg/l	16.3	13	11.4	8.69	7.54	6.04	12.1
Chloride	mg/l	25.4	78.2	36.4	20.8	17.8	16.2	27.2
Sulfate	mg/l	45.9	28.9	22.2	43.1	37.1	24.1	60.5
Turbidity	ntu	2.67	1.5	1.74	2.25	5.8	8.38	1.56
Iron, Total	µg/l	201	87	161	152	451	365	87
Iron, Dissolved	µg/l	97	39	78	22	131	36	37
Manganese, Total	µg/l	26	36	32	148	67	127	45
Manganese, Dissolved	µg/l	23	36	28	69	28	44	26
Aluminum, Total	µg/l	<200	<200	<200	<200	214	231	<200
Aluminum, Dissolved	µg/l	209	<200	<200	<200	<200	<200	<200

Table A2. Water Quality Data for Pennsylvania-Maryland Border Streams – Continued

Parameter	Units	SUSQ44.5	SUSQ44.5	SUSQ44.5
Date	yyyymmdd	20021218	20030227	20030603
Time	hhmm	1145	1505	1315
Discharge	cfs	72050	NA	NA
Temperature	degree C	2.8	0.5	16.5
Conductance	umhos/cm	247	310	205
Dissolved Oxygen	mg/l	8.53	8.96	8.36
pH		7.1	8.2	7.5
Alkalinity	mg/l	44	64	46
Acidity	mg/l	26	2	2
Solids, Total	mg/l	206	214	140
Solids, Dissolved	mg/l	176	210	66
Ammonia, Total	mg/l	0.04	0.19	0.04
Ammonia, Dissolved	mg/l	0.03	0.17	0.03
Nitrite, Total	mg/l	0.01	0.03	0.01
Nitrite, Dissolved	mg/l	0.01	0.03	0.01
Nitrate, Total	mg/l	3.24	2.5	1.55
Nitrate, Dissolved	mg/l	3.42	2.48	1.52
Nitrogen, Total	mg/l	3.920	3.090	2.230
Nitrogen Dissolved	mg/l	3.780	2.930	1.880
Phosphorus, Total	mg/l	0.046	0.07	0.131
Phosphorus, Dissolved	mg/l	0.016	0.049	0.022
Orthophosphate, Total	mg/l	0.027	0.045	0.082
Orthophosphate, Dissolved	mg/l	0.012	0.029	0.018
Organic Carbon, Total	mg/l	3	2.3	4.1
Calcium	mg/l	25.6	27.7	22.5
Magnesium	mg/l	6.27	7.06	5.65
Chloride	mg/l	27.2	44.2	15.8
Sulfate	mg/l	20.9	25.9	<20
Turbidity	ntu	6.89	6.89	65.6
Iron, Total	µg/l	652	499	2940
Iron, Dissolved	µg/l	93	150	103
Manganese, Total	µg/l	118	113	278
Manganese, Dissolved	µg/l	57	84	22
Aluminum, Total	µg/l	269	<200	1490
Aluminum, Dissolved	µg/l	<200	<200	<200

Table A3. Water Quality Data for Group 3 Streams

Parameter	Units	Babcock Run	Beagle Hollow Run	Bill Hess Creek	Bird Creek	Biscuit Hollow Run	Briggs Hollow Run
Date	yyyymmdd	20030513	20030514	20030515	20030514	20030515	20030513
Time	hhmm	1415	1600	0730	1145	0930	1545
Temperature	degree C	11.4	10.5	8.3	10.1	10.4	10.7
pH		6.90	6.70	8.20	7.10	7.25	7.30
Dissolved Oxygen	mg/l	9.25	9.37	9.38	9.54	8.97	9.96
Conductivity	umhos/cm	111	85	339	181	174	181
Alkalinity	mg/l	30.0	28.0	120.0	42.0	66.0	54.0
Acidity	mg/l	4.0	2.0	1.0	4.0	6.0	4.0

Parameter	Units	Bukley Brook	Camp Brook	Cook Hollow Run	Deep Hollow Brook	Denton Creek	Dry Brook
Date	yyyymmdd	20030515	20030514	20030515	20030513	20030513	20030514
Time	hhmm	0900	1500	1000	0940	1145	1000
Temperature	degree C	8.9	11.3	8.9	10.2	14.3	11.2
pH		6.70	7.80	7.20	6.25	6.10	7.30
Dissolved Oxygen	mg/l	9.06	8.83	8.24	10.13	8.68	8.11
Conductivity	umhos/cm	105	288	223	40	44	225
Alkalinity	mg/l	34.0	92.0	84.0	8.0	8.0	56.0
Acidity	mg/l	6.0	4.0	6.0	6.0	2.0	4.0

Parameter	Units	Little Wappasenning Creek	Parks Creek	Prince Hollow Run	Russell Run	Sackett Creek	Smith Creek
Date	yyyymmdd	20030514	20030513	20030513	20030513	20030514	20030514
Time	hhmm	0800	1545	1340	1500	0845	1245
Temperature	degree C	9.6	10.0	10.6	10.4	9.6	10.6
pH		7.00	6.90	6.80	7.10	7.20	7.25
Dissolved Oxygen	mg/l	9.57	9.17	9.21	9.23	8.87	8.16
Conductivity	umhos/cm	129	119	94	140	163	180
Alkalinity	mg/l	42.0	42.0	18.0	34.0	54.0	50.0
Acidity	mg/l	4.0	4.0	4.0	2.0	4.0	2.0

Table A3. Water Quality Data for Group 3 Streams -- Continued

Parameter	Units	Strait Creek	White Branch Cowanesque River	White Hollow
Date	yyyymmdd	20030514	20030515	20030514
Time	hhmm	1345	1115	1100
Temperature	degree C	11.8	11.9	9.3
pH		7.70	7.50	7.05
Dissolved Oxygen	mg/l	7.82	7.87	9.82
Conductivity	umhos/cm	226	192	156
Alkalinity	mg/l	82.0	38.0	38.0
Acidity	mg/l	4.0	4.0	4.0

APPENDIX B

ORGANIC POLLUTION–TOLERANCE AND FUNCTIONAL FEEDING GROUP DESIGNATIONS OF BENTHIC MACROINVERTEBRATE TAXA

Class: Order	Family	Family/Genus	Organic Pollution Tolerance Value	Functional Feeding Group Designation
Amphipoda	Gammaridae	*Gammarus*	*6*	SH
	Talitridae	*Hyalella*	*8*	CG
Bivalvia	Corbiculidae	*Corbicula*	*4*	FC
	Sphaeriidae	*Pisidium*	*8*	FC
Branchiobdellida	Brachiobdellidae	*Cambarincola*	*6*	PA/CG
Coleoptera	Carabidae		*7*	P
	Dryopidae	*Helichus*	*5*	SC/CG
	Dytiscidae	*Agabus*	*5*	P
		Oreodytes	*5*	P
	Elmidae	*Dubiraphia*	*6*	CG/SC
		Gonielmis	*5*	SC
		Macronychus	*2*	CG
		Optioservus	*4*	SC
		Oulimnious	*5*	SC
		Promoresia	*2*	SC
		Stenelmis	*5*	SC
	Gyrinidae	*Dineutus*	*4*	P
	Hydrophilidae	*Berosus*	*5*	CG
		Hydrobius	*5*	P/CG
	Lampyridae			
	Psephenidae	*Ectopria*	*5*	SC
		Psephenus	*4*	SC
	Ptilodactylidae	*Anchytarsus*	*5*	SH
Decapoda	Cambaridae	*Cambarus*	*6*	SH
		Orconectes	*6*	SH
Diptera	Athericidae	*Atherix*	*2*	P
	Ceratopogonidae	*Ceratopogon*	*6*	P
		Probezzia	*6*	P
	Chironomidae	*Chironomidae*	*6*	CG
	Culcidae	*Mansonia*	*8*	CG/FC
	Dolichopodidae		*4*	P
	Empididae	*Chelifera*	*6*	P
		Hemerodromia	*6*	P
		Roederiodes	*6*	P
		Trichoclinocera	*6*	P
	Psychodidae	*Pericoma*	*4*	CG
	Sciomyzidae	*Antichaeta*	*6*	P
		Tetanocera	*6*	P
	Simuliidae	*Prosimulium*	*2*	FC
		Simulium	*6*	FC
	Tabanidae	*Chrysops*	*7*	P
		Tabanus	*5*	P
	Tipulidae	*Antocha*	*3*	CG
		Dicranota	*3*	P
		Erioptera	*7*	CG
		Hexatoma	*2*	P
		Limnophila	*3*	P
		Pilaria	*7*	P

Class: Order	Family	Family/Genus	Organic Pollution Tolerance Value	Functional Feeding Group Designation
		Tipula	4	SH
Ephemeroptera	Ameletidae	*Ameletus*	0	CG
	Baetidae	*Acentrella*	4	CG
		Acerpenna	6	CG
		Baetis	6	CG
		Centroptilum	2	CG
		Cloeon	4	CG
		Diphetor	6	CG
		Heterocloeon	2	SC
		Procloeon	5	CG
	Caenidae	*Caenis*	7	CG
	Ephemerellidae	*Drunella*	1	SC
		Ephemerella	1	SC
		Serratella	2	CG
	Ephemeridae	*Ephemera*	2	CG
	Heptageniidae	*Cinygmula*	1	SC
		Epeorus	0	CG
		Leucrocuta	1	SC
		Nixe	2	SC/CG
		Rhithrogena	0	CG
		Stenacron	4	CG
		Stenonema	3	SC
	Isonychiidae	*Isonychia*	3	FC
	Leptophlebiidae	*Choroterpes*	2	CG/SC
		Habrophlebiodes	6	SC
		Paraleptophlebia	1	CG
	Polymitarcyidae	*Ephoron*	2	CG
	Potamanthidae	*Anthopotamus*	4	FC
	Tricorythidae	*Tricorythodes*	4	CG
Gastropoda	Physidae	*Physella*	8	SC
	Pleuroceridae	*Leptoxis*	7	SC
	Valvatidae	*Valvata*	2	SC
Haplotaxida	Haplotaxidae	*Haplotaxis*	10	P
	Lumbricidae		8	CG
	Naididae		8	CG
Hemiptera	Veliidae	*Microvelia*	9	P
Hydrachnidia	Hygrobatidae	*Hygrobates*	8	P
	Lebertiidae	*Lebertia*	8	P
	Sperchoniidae	*Sperchon*	7	P
Isopoda	Assellidae	*Caecidotea*	6	SH
Lepidoptera	Pyralidae	*Crambus*	5	SH
		Petrophila	5	SH
	Sphingidae		5	SH
Megaloptera	Corydalidae	*Corydalus*	4	P
		Nigronia	2	P
	Sialidae	*Sialis*	6	P
Nematomorpha			9	PA
	Gordidae	*Gordius*	9	PA

Class: Order	Family	Family/Genus	Organic Pollution Tolerance Value	Functional Feeding Group Designation
Neuroptera	Sisyridae	*Climacia*	*1*	P
Odonata	Aeshnidae	*Boyeria*	*2*	P
	Calopterygidae	*Hetaerina*	*6*	P
	Coenagrionidae	*Argia*	*6*	P
	Cordulegastridae	*Cordulegaster*	*3*	P
	Gomphidae	*Lanthus*	*5*	P
		Ophiogomphus	*1*	P
		Stylogomphus	*4*	P
Ostracoda			*8*	CG
Pharyngobdellida	Erpobdellidae	*Erpobdella*	*8*	PA
		Mooreobdella	*8*	PA
Plecoptera	Capniidae	*Paracapnia*	*1*	SH
	Chloroperlidae	*Haploperla*	*0*	P
		Suwallia	*0*	P
		Sweltsa	*0*	P
	Leuctridae	*Leuctra*	*0*	SH
	Nemouridae	*Amphinemura*	*3*	SH
		Ostrocerca	*2*	SH
	Peltoperlidae	*Peltoperla*	*2*	SH
		Tallaperla	*0*	SH
	Perlidae	*Acroneuria*	*0*	P
		Agnetina	*2*	P
		Claassenia	*3*	P
		Neoperla	*3*	P
		Paragnetina	*1*	P
		Perlesta	*4*	P
	Perlodidae	*Clioperla*	*2*	P
		Isoperla	*2*	P
		Yugus	*2*	P
Trichoptera	Brachycentridae	*Brachycentrus*	*1*	FC
		Micrasema	*2*	SH
	Glossosomatidae	*Glossosoma*	*0*	SC
		Protoptila	*1*	SC
	Hydropsychidae	*Ceratopsyche*	*5*	FC
		Cheumatopsyche	*6*	FC
		Diplectrona	*0*	FC
		Hydropsyche	*5*	FC
		Macrostemum	*3*	FC
	Hydroptilidae	*Agraylea*	*8*	CG
		Hydroptila	*6*	SC
		Leucotrichia	*6*	SC
	Lepidostomatidae	*Lepidostoma*	*1*	SH
	Odontoceridae	*Psilotreta*	*0*	SC
	Philopotamidae	*Chimarra*	*4*	FC
		Dolophilodes	*0*	FC
		Wormaldia	*0*	FC
	Polycentropodidae	*Neureclipsis*	*7*	CF
		Polycentropus	*6*	P

Class: Order	Family	Family/Genus	Organic Pollution Tolerance Value	Functional Feeding Group Designation
	Psychomyiidae	*Psychomyia*	*2*	CG
	Rhyachophilidae	*Rhyacophila*	*1*	P
	Uenoidae	*Neophylax*	*3*	SC

Appendix C

Macroinvertebrate Data for Interstate Streams Crossing the New York-Pennsylvania and Pennsylvania-Maryland Borders

Table C1. Macroinvertebrate Data for New York-Pennsylvania Border Streams

Class: Order	Family	Family/*Genus*	APAL 6.9	BNTY 0.9	CAYT 1.7	CHOC 9.1	HLDN 3.5
Coleoptera	Elmidae	*Gonielmis*					3
		Optioservus	7		13	10	6
		Oulimnious		21			
		Promoresia	1				
		Stenelmis	30	23	45	11	5
	Gyrinidae	*Dineutus*			1		
	Psephenidae	*Psephenus*	23	31	35	31	60
Decapoda	Cambaridae	*Cambarus*					1
Diptera	Athericidae	*Atherix*		1			
	Ceratopogonidae	*Probezzia*	1				
	Chironomidae	Chironomidae	56	42	48	96	83
	Empididae	*Hemerodromia*		14	7	1	3
	Simuliidae	*Simulium*	2	2			
	Tipulidae	*Antocha*		1	1	1	3
		Dicranota	1			1	
		Hexatoma	7	6	1		4
Ephemeroptera	Baetidae	*Acentrella*		1			7
		Acerpenna	1				22
		Baetis			1		12
		Diphetor					2
		Heterocloeon					2
		Procloeon					1
	Caenidae	*Caenis*	2			1	6
	Ephemerellidae	*Ephemerella*					1
		Serratella		5	15	2	
	Heptageniidae	*Epeorus*		3	1	4	
		Leucrocuta				14	2
		Stenacron					2
		Stenonema	2	2		47	3
	Isonychiidae	*Isonychia*	5	11	18	84	
	Leptophlebiidae	*Paraleptophlebia*	3			18	1
	Tricorythidae	*Tricorythodes*					6
Haplotaxida	Lumbricidae				1		
	Naididae				2	1	1
Hemiptera	Veliidae	*Microvelia*					2

Table C1. Macroinvertebrate Data for New York-Pennsylvania Border Streams—Continued

Class: Order	Family	Family/*Genus*	APAL 6.9	BNTY 0.9	CAYT 1.7	CHOC 9.1	HLDN 3.5
Hydrachnidia	Hygrobatidae	*Hygrobates*					3
	Sperchoniidae	*Sperchon*				1	2
Megaloptera	Corydalidae	*Corydalus*				1	
		Nigronia	2		1	1	
Odonata	Aeshnidae	*Boyeria*	1			1	1
	Gomphidae	*Ophiogomphus*				1	2
		Stylogomphus					1
Plecoptera	Chloroperlidae	*Sweltsa*	1				
	Leuctridae	*Leuctra*				2	
	Perlidae	*Acroneuria*		3	10		2
		Agnetina	1	2	2	1	5
		Claassenia					
		Neoperla		1			9
Trichoptera	Hydropsychidae	*Ceratopsyche*	10	47	38	19	11
		Cheumatopsyche	12	8	15	13	5
		Diplectrona					
		Hydropsyche	19		11		1
	Hydroptilidae	*Hydroptila*		1			4
		Leucotrichia			3		
	Philopotamidae	*Chimarra*	194	15	12	83	1
		Dolophilodes					8
		Wormaldia					5
	Polycentropodidae	*Polycentropus*					1
	Rhyachophilidae	*Rhyacophila*				1	

Table C1. Macroinvertebrate Data for New York-Pennsylvania Border Streams—Continued

Class: Order	Family	Family/*Genus*	LSNK 7.6	NFCR 7.6	SEEL 10.3	SNAK 2.3
Coleoptera	Dytiscidae	*Oreodytes*			1	
	Elmidae	*Optioservus*	14	8	1	
		Oulimnious				8
		Stenelmis	17	1	3	8
	Psephenidae	*Psephenus*	26	41	4	14
Diptera	Athericidae	*Atherix*	4		1	11
	Chironomidae	Chironomidae	120	94	174	28
	Empididae	*Chelifera*	1			
		Hemerodromia	4		2	
	Tabanidae	*Chrysops*		1		
	Tipulidae	*Antocha*	3	1	6	1
		Dicranota	5	24		1
		Hexatoma	1	7	13	
Ephemeroptera	Baetidae	*Acentrella*	2			10
		Acerpenna	5	1		
		Baetis	2		4	
		Centroptilum				6
		Cloeon				9
		Diphetor		20		
	Caenidae	*Caenis*			1	
	Ephemerellidae	*Serratella*		1	1	4
	Ephemeridae	*Ephemera*	4			
	Heptageniidae	*Epeorus*		1		2
		Leucrocuta	1	8		
		Stenacron		4		
		Stenonema	9	18	2	14
	Isonychiidae	*Isonychia*	8		13	13
	Leptophlebiidae	*Paraleptophlebia*	5	7		
	Tricorythidae	*Tricorythodes*			3	
Gastropoda	Physidae	*Physella*			1	
Haplotaxida	Naididae		6			
Hemiptera	Veliidae	*Microvelia*		1		
Hydrachnidia	Lebertiidae	*Lebertia*	2			
	Sperchoniidae	*Sperchon*	2	2		
Megaloptera	Corydalidae	*Nigronia*	15	2	1	
	Sialidae	*Sialis*	1			
Nematomorpha				3		

Table C1. Macroinvertebrate Data for New York-Pennsylvania Border Streams—Continued

Class: Order	Family	Family/*Genus*	LSNK 7.6	NFCR 7.6	SEEL 10.3	SNAK 2.3
Odonata	Calopterygidae	*Hetaerina*	1			
	Gomphidae	*Lanthus*			1	
		Ophiogomphus			2	
		Stylogomphus	12			
Plecoptera	Capniidae	*Paracapnia*		1		
	Chloroperlidae	*Sweltsa*	2		1	
	Leuctridae	*Leuctra*	3	14		
	Perlidae	*Acroneuria*	7	2	1	
		Agnetina		17		
		Neoperla				1
		Paragnetina			1	6
Trichoptera	Glossosomatidae	*Glossosoma*				1
	Hydropsychidae	*Ceratopsyche*	4	10	42	44
		Cheumatopsyche	13	2	30	8
		Diplectrona		1		
		Hydropsyche	7			
	Hydroptilidae	*Leucotrichia*				1
	Philopotamidae	*Chimarra*	94	3	1	54
		Dolophilodes		2		
	Rhyachophilidae	*Rhyacophila*				1

Table C1. Macroinvertebrate Data for New York-Pennsylvania Border Streams—Continued

Class: Order	Family	Family/*Genus*	SOUT 7.8	TROW 1.6	TRUP 4.5	WAPP 2.6
Coleoptera	Elmidae	*Gonielmis*	2			
		Optioservus	6	7	8	7
		Oulimnious		1		
		Promoresia	1			1
		Stenelmis	65	63	27	4
	Lampyridae			1		
	Psephenidae	*Psephenus*	46	3	16	10
Diptera	Athericidae	*Atherix*	1		1	
	Chironomidae	Chironomidae	40	27	20	105
	Empididae	*Hemerodromia*	1	12	5	16
	Tabanidae	*Tabanus*			1	
	Tipulidae	*Antocha*	8	2		2
		Dicranota	1			
		Hexatoma		3	10	5
Ephemeroptera	Baetidae	*Acerpenna*	2			1
		Baetis	10	4	8	7
		Procloeon		2		
	Caenidae	*Caenis*	1		2	3
	Ephemerellidae	*Serratella*		2		4
	Heptageniidae	*Epeorus*				2
		Leucrocuta	1	2	2	11
		Stenacron		1		
		Stenonema	9	1	4	14
	Isonychiidae	*Isonychia*	16	5	41	12
	Leptophlebiidae	*Paraleptophlebia*		3		
	Tricorythidae	*Tricorythodes*			5	
Haplotaxida	Naididae					28
Hydrachnidia	Sperchoniidae	*Sperchon*				1
Megaloptera	Corydalidae	*Corydalus*			1	
		Nigronia				1
Odonata	Coenagrionidae	*Argia*			2	
	Gomphidae	*Lanthus*			1	
		Ophiogomphus			9	
		Stylogomphus			2	
Plecoptera	Chloroperlidae	*Suwallia*		1		
		Sweltsa	1	3		2
	Perlidae	*Acroneuria*	1			
		Agnetina		10		
		Neoperla	1	25	22	

Table C1. Macroinvertebrate Data for New York-Pennsylvania Border Streams—Continued

Class: Order	Family	Family/*Genus*	SOUT 7.8	TROW 1.6	TRUP 4.5	WAPP 2.6
Trichoptera	Hydropsychidae	*Ceratopsyche*	4	11	36	30
		Cheumatopsyche	17	1	18	13
		Hydropsyche	11		2	
	Hydroptilidae	*Leucotrichia*	1			
	Odontoceridae	*Psilotreta*	1			
	Philopotamidae	*Chimarra*	21	2	1	19
		Dolophilodes		16		
		Wormaldia		1		
	Polycentropodidae	*Polycentropus*				2

Table C2. Macroinvertebrate Data for Pennsylvania-Maryland Border Streams

Class: Order	Family	Family/*Genus*	BBDC 4.1	CNWG 4.4	DEER 44.5	EBAU 1.5	FBDC 4.1
Amphipoda	Gammaridae	*Gammarus*		1			
Coleoptera	Elmidae	*Dubiraphia*					1
		Gonielmis	1				1
		Macronychus					2
		Optioservus	36		15	114	30
		Oulimnious	6			4	7
		Promoresia	29				1
		Stenelmis		92	22	3	4
	Psephenidae	*Ectopria*	1				5
		Psephenus		2	12	8	1
	Ptilodactylidae	*Anchytarsus*	5				2
Decapoda	Cambaridae	*Cambarus*				1	1
Diptera	Athericidae	*Atherix*		3	3		
	Chironomidae	Chironomidae	57	40	41	6	48
	Empididae	*Hemerodromia*					2
	Tipulidae	*Antocha*	1	2	5		
		Dicranota	1				1
		Tipula		1		2	5
Ephemeroptera	Baetidae	*Acentrella*			3		
		Baetis	4	19	18	8	1
		Procloeon					1
	Ephemerellidae	*Ephemerella*				3	
		Serratella	3	3	4		
	Heptageniidae	*Epeorus*	5		2		
		Leucrocuta	2	7	1		
		Nixe	1				
		Stenonema	8	5	26	2	1
	Isonychiidae	*Isonychia*	2	22	23	3	
	Leptophlebiidae	*Paraleptophlebia*					1
Haplotaxida	Lumbricidae		1				
	Naididae					1	
Hydrachnidia	Sperchoniidae	*Sperchon*				2	
Megaloptera	Corydalidae	*Corydalus*		8	2		
		Nigronia	4	4	5		7
	Sialidae	*Sialis*		1			1
Nematomorpha	Gordidae	*Gordius*				3	
Neuroptera	Sisyridae	*Climacia*		2			
Odonata	Aeshnidae	*Boyeria*					15
	Cordulegastridae	*Cordulegaster*	1				
	Gomphidae	*Lanthus*	1				26
		Stylogomphus					7

Table C2. Macroinvertebrate Data for Pennsylvania-Maryland Border Streams—Continued

Class: Order	Family	Family/*Genus*	BBDC 4.1	CNWG 4.4	DEER 44.5	EBAU 1.5	FBDC 4.1
Plecoptera	Leuctridae	*Leuctra*	13		1	1	8
	Perlidae	*Acroneuria*	8		5	12	16
		Claassenia			2		
		Perlesta	1				
Trichoptera	Glossosomatidae	*Glossosoma*					1
	Hydropsychidae	*Ceratopsyche*	8	3	11	55	
		Cheumatopsyche	1	64	38	17	20
		Diplectrona	4				
		Hydropsyche		11	12	13	
	Hydroptilidae	*Hydroptila*			1		
		Leucotrichia		1			
	Philopotamidae	*Chimarra*		1	65		
		Dolophilodes	22				10
		Wormaldia	2				
	Rhyachophilidae	*Rhyacophila*	8				1
	Uenoidae	*Neophylax*			1		

Table C2. Macroinvertebrate Data for Pennsylvania-Maryland Border Streams—Continued

Class: Order	Family	Family/*Genus*	LNGA 2.5	OCTO 6.6	SBCC 20.4	SCTT 3.0
Amphipoda	Gammaridae	*Gammarus*		8		
	Talitridae	*Hyalella*	2			
Coleoptera	Carabidae					1
	Dryopidae	*Helichus*			1	
	Elmidae	*Optioservus*	31	1	98	
		Oulimnious	2		14	
		Promoresia				1
		Stenelmis	22	83	1	
	Hydrophilidae	*Hydrobius*			1	
	Psephenidae	*Psephenus*	1	13		
	Ptilodactylidae	*Anchytarsus*	5			
Diptera	Chironomidae	Chironomidae	63	29	51	30
	Culcidae	*Mansonia*				1
	Empididae	*Chelifera*			1	
		Hemerodromia	1			
	Sciomyzidae	*Tetanocera*				1
	Simuliidae	*Prosimulium*	1			
		Simulium		1		
	Tabanidae	*Chrysops*	5			
	Tipulidae	*Antocha*		13		
		Dicranota	17		5	
		Hexatoma	2			
		Tipula			1	
Ephemeroptera	Baetidae	*Baetis*	6	29	1	
		Diphetor			1	
		Heterocloeon		13		
	Ephemerellidae	*Serratella*		10	1	
	Heptageniidae	*Leucrocuta*		4		
		Stenonema		4	12	
	Isonychiidae	*Isonychia*		4		
	Leptophlebiidae	*Habrophlebiodes*	2			
		Paraleptophlebia			2	
Gastropoda	Valvatidae	*Valvata*				1
Haplotaxida	Naididae				1	1
Hemiptera	Veliidae	*Microvelia*			1	
Hydrachnidia	Sperchoniidae	*Sperchon*			1	
Megaloptera	Corydalidae	*Corydalus*		1		
		Nigronia				1
Nematomorpha	Gordidae	*Gordius*		2		

Table C2. Macroinvertebrate Data for Pennsylvania-Maryland Border Streams—Continued

Class: Order	Family	Family/*Genus*	LNGA 2.5	OCTO 6.6	SBCC 20.4	SCTT 3.0
Odonata	Aeshnidae	*Boyeria*			2	
	Coenagrionidae	*Argia*		1		
	Gomphidae	*Lanthus*			4	
		Stylogomphus			1	
Plecoptera	Leuctridae	*Leuctra*	1		21	
	Peltoperlidae	*Tallaperla*			3	
	Perlidae	*Acroneuria*	1		1	
Trichoptera	Brachycentridae	*Brachycentrus*		7		
	Hydropsychidae	*Ceratopsyche*	1	31	3	
		Cheumatopsyche	3	4	14	5
		Hydropsyche	5	13		3
		Macrostemum		13		
	Hydroptilidae	*Leucotrichia*		14		
	Philopotamidae	*Chimarra*	1			
	Polycentropodidae	*Polycentropus*			1	

Table C3. Macroinvertebrate Data for River Sites

Class: Order	Family	Family/*Genus*	CHEM 12.0	COWN 1.0	COWN 2.2	SUSQ 44.5
Amphipoda	Gammaridae	*Gammarus*		1	2	16
	Talitridae	*Hyalella*		2		
Bivalvia	Corbiculidae	*Corbicula*				6
	Sphaeriidae	*Pisidium*	6			
Coleoptera	Elmidae	*Optioservus*	1			
		Stenelmis		3	1	65
	Gyrinidae	*Dineutus*	1	2		
	Hydrophilidae	*Berosus*			1	
	Psephenidae	*Psephenus*		14		11
Diptera	Chironomidae	Chironomidae	80	102	118	3
	Empididae	*Hemerodromia*			2	
	Simuliidae	*Prosimulium*	9			
		Simulium	47	8	3	
Ephemeroptera	Baetidae	*Acentrella*		2		
		Baetis	25			7
		Heterocloeon	7			22
	Caenidae	*Caenis*	1		1	
	Ephemerellidae	*Serratella*	13	1		
	Heptageniidae	*Leucrocuta*				3
		Stenonema	6	30	8	8
	Isonychiidae	*Isonychia*	44			13
	Leptophlebiidae	*Choroterpes*				
Haplotaxida	Haplotaxidae	*Haplotaxis*				2
Isopoda	Assellidae	*Caecidotea*		2	13	
Megaloptera	Corydalidae	*Corydalus*	5	24		2
		Nigronia	1			
Nematomorpha	Gordidae	*Gordius*			1	
Odonata	Coenagrionidae	*Argia*	1	6	1	
Pharyngobdellida	Erpobdellidae	*Erpobdella*				7
Trichoptera	Hydropsychidae	*Ceratopsyche*	41	10	2	
		Cheumatopsyche	31	59	51	17
		Hydropsyche	10			10
		Macrostemum	6			32
	Hydroptilidae	*Agraylea*			1	
		Hydroptila	1			
	Philopotamidae	*Chimarra*	29	4		85
	Polycentropodidae	*Neureclipsis*			3	

Table C3. Macroinvertebrate Data for River Sites—Continued

Class: Order	Family	Family/*Genus*	SUSQ 289.1	SUSQ 340.0	SUSQ 365.0	TIOG 10.8
Amphipoda	Gammaridae	*Gammarus*	8		1	
Bivalvia	Sphaeriidae	*Pisidium*	1			
Coleoptera	Elmidae	*Optioservus*	3	32	28	1
		Oulimnious	8	2	1	
		Promoresia			1	
		Stenelmis	78	60	83	
	Gyrinidae	*Dineutus*		1		1
	Psephenidae	*Psephenus*	19	19	15	1
Decapoda	Cambaridae	*Orconectes*	1			
Diptera	Chironomidae	Chironomidae	31	26	32	61
	Empididae	*Hemerodromia*		1		
	Simuliidae	*Prosimulium*	1			3
		Simulium	38	2		24
Ephemeroptera	Baetidae	*Acentrella*		9	1	9
		Baetis	20	2	20	7
		Heterocloeon			3	2
	Caenidae	*Caenis*	1		4	
	Ephemerellidae	*Serratella*	3	1	4	
	Heptageniidae	*Leucrocuta*	1		9	
		Rhithrogena			3	
		Stenonema	6	1	10	15
	Isonychiidae	*Isonychia*	56	9	19	39
	Leptophlebiidae	*Choroterpes*			1	
	Polymitarcyidae	*Ephoron*			1	
	Potamanthidae	*Anthopotamus*		5		
	Tricorythidae	*Tricorythodes*		1		
Gastropoda	Pleuroceridae	*Leptoxis*			4	
Lepidoptera	Pyralidae	*Petrophila*	1			1
Megaloptera	Corydalidae	*Corydalus*			3	16
		Nigronia				1
Odonata	Gomphidae	*Ophiogomphus*				1
Plecoptera	Perlidae	*Acroneuria*			2	
		Agnetina	4	8	20	
Trichoptera	Brachycentridae	*Micrasema*		1		
	Glossosomatidae	*Glossosoma*			2	
		Protoptila		1		
	Hydropsychidae	*Ceratopsyche*	14	6	12	33
		Cheumatopsyche	14	3	2	12
		Hydropsyche	11		4	
		Macrostemum	9	71	6	51
	Philopotamidae	*Chimarra*	55	5	24	15
	Psychomyiidae	*Psychomyia*			1	1

Table C4. Macroinvertebrate Data for Group 3 Sites

Class: Order	Family	Family/*Genus*	BABC	BEAG	BILL	BIRD	BISC
Coleoptera	Psephenidae	*Psephenus*		2	40	1	
Diptera	Chironomidae	Chironomidae	44	12	16	18	45
	Empididae	*Hemerodromia*				3	
		Roederiodes		1			
	Sciomyzidae	*Antichaeta*				2	
	Simuliidae	*Prosimulium*		2			1
		Simulium	2	1	5		32
	Tipulidae	*Erioptera*					1
		Hexatoma	1	1		2	
		Limnophila		1			
		Pilaria	3				
		Tipula		7		1	
Ephemeroptera	Ameletidae	*Ameletus*	2	51		9	3
	Baetidae	*Acentrella*	20	1	51		6
		Acerpenna	23		4		
		Baetis			8		11
	Ephemerellidae	*Drunella*	2			79	
		Ephemerella		1	2	1	
	Heptageniidae	*Cinygmula*	1				
		Epeorus	4	29	27	37	1
		Stenacron			1		
	Leptophlebiidae	*Paraleptophlebia*			46		3
Haplotaxida	Lumbricidae					1	
Lepidoptera	Pyralidae	*Crambus*		1			
Odonata	Gomphidae	*Ophiogomphus*				2	
Plecoptera	Chloroperlidae	*Haploperla*	28				
		Sweltsa	6	4	5	8	
	Leuctridae	*Leuctra*	44	15	5	8	
	Nemouridae	*Amphinemura*	40	47	16	58	113
		Ostrocerca		1			
	Perlidae	*Acroneuria*	1	1			
		Agnetina			12		
	Perlodidae	*Clioperla*				1	
		Isoperla	26	6	3	3	4
		Yugus		26		2	
Trichoptera	Hydropsychidae	*Ceratopsyche*			1		
		Diplectrona		2			
	Philopotamidae	*Dolophilodes*				1	
		Wormaldia		3			
	Rhyachophilidae	*Rhyacophila*	1	1			
	Uenoidae	*Neophylax*				4	

Table C4. Macroinvertebrate Data for Group 3 Sites—Continued

Class: Order	Family	Family/*Genus*	BRIG	BULK	CAMP	COOK	DEEP
Amphipoda	Talitridae	*Hyalella*					1
Branchiobdellida	Brachiobdellidae	*Cambarincola*				1	
Coleoptera	Elmidae	*Optioservus*				23	1
		Oulimnious					1
		Stenelmis	3		1	3	1
	Psephenidae	*Ectopria*				1	3
		Psephenus			30	8	
	Ptilodactylidae	*Anchytarsus*					1
Diptera	Chironomidae	Chironomidae	74	17	10	37	24
	Empididae	*Hemerodromia*	1		2		
	Psychodidae	*Pericoma*				1	
	Simuliidae	*Prosimulium*		10	35		3
		Simulium	3		13		1
	Tabanidae	*Chrysops*		1		1	1
	Tipulidae	*Dicranota*					7
		Hexatoma	1		9	1	2
		Pilaria		1		3	1
Ephemeroptera	Ameletidae	*Ameletus*	4	19	1	2	
	Baetidae	*Acentrella*	8		6		1
		Acerpenna			1	1	
		Baetis	7	3			2
	Ephemerellidae	*Ephemerella*			3	7	4
	Ephemeridae	*Ephemera*				1	
	Heptageniidae	*Cinygmula*	19			3	
		Epeorus	80	40	26	6	4
		Stenacron			2	1	
		Stenonema				3	36
	Leptophlebiidae	*Habrophlebiodes*					7
		Paraleptophlebia	5	7	1	4	
Haplotaxida	Lumbricidae			1			
Lepidoptera	Pyralidae	*Crambus*		1			
Megaloptera	Corydalidae	*Nigronia*				1	5
Nematomorpha	Gordidae	*Gordius*			1		
Odonata	Gomphidae	*Stylogomphus*				1	

Table C4. Macroinvertebrate Data for Group 3 Sites—Continued

Class: Order	Family	Family/*Genus*	BRIG	BULK	CAMP	COOK	DEEP
Plecoptera	Chloroperlidae	*Haploperla*	4				
		Suwallia			3	1	
		Sweltsa	8	1	1	10	1
	Leuctridae	*Leuctra*		25	4	15	2
	Nemouridae	*Amphinemura*	9	81	57	71	43
		Ostrocerca	1				
	Perlidae	*Acroneuria*		1	2	3	2
		Agnetina			4	4	
		Neoperla			1		
	Perlodidae	*Isoperla*	2	24	16	7	
Trichoptera	Hydropsychidae	*Ceratopsyche*	8		18	3	
		Cheumatopsyche				3	2
		Diplectrona		8	1	12	
		Hydropsyche				3	15
	Philopotamidae	*Chimarra*					44
		Dolophilodes					1
		Wormaldia		1			
	Polycentropodidae	*Polycentropus*					1
	Rhyachophilidae	*Rhyacophila*		16		2	5
	Uenoidae	*Neophylax*		1	1	2	

Table C4. Macroinvertebrate Data for Group 3 Sites—Continued

Class: Order	Family	Family/*Genus*	DENT	DRYB	LWAP	PARK	PRIN
Amphipoda	Gammaridae	*Gammarus*		1			
	Talitridae	*Hyalella*	1				
Coleoptera	Dytiscidae	*Agabus*		1			1
	Elmidae	*Stenelmis*	20				
	Psephenidae	*Ectopria*	1				
Diptera	Chironomidae	Chironomidae	110	233	17	20	36
	Dolichopodidae				2		
	Empididae	*Chelifera*	1				
		Hemerodromia	3		1	4	
	Simuliidae	*Prosimulium*	2	4	1	1	3
		Simulium	17	4	7	2	1
	Tabanidae	*Chrysops*	1				
	Tipulidae	*Antocha*			1		
		Hexatoma			1	8	1
		Pilaria	1				
Ephemeroptera	Ameletidae	*Ameletus*		3	16	10	34
	Baetidae	*Acentrella*				2	31
		Acerpenna			6	5	
		Baetis		3			12
	Ephemerellidae	*Drunella*			4		
		Ephemerella			3	1	
	Heptageniidae	*Cinygmula*			16	5	16
		Epeorus		1	44	77	30
		Stenacron	2				
		Stenonema	18			1	1
	Leptophlebiidae	*Paraleptophlebia*			1		10
Haplotaxida	Naididae			3			
Lepidoptera	Pyralidae	*Crambus*				1	
Plecoptera	Chloroperlidae	*Haploperla*				7	
		Suwallia			1		
		Sweltsa			17	21	2
	Leuctridae	*Leuctra*			3	11	1
	Nemouridae	*Amphinemura*	12	2	75	41	13
		Ostrocerca			6	1	
	Perlidae	*Acroneuria*	1			3	
	Perlodidae	*Isoperla*			2	18	
Trichoptera	Hydropsychidae	*Ceratopsyche*				1	
		Cheumatopsyche	5			1	
		Diplectrona	3			1	
		Hydropsyche	1				
	Lepidostomatidae	*Lepidostoma*				1	
	Philopotamidae	*Chimarra*	4				
		Wormaldia					1
	Polycentropodidae	*Polycentropus*					1
	Uenoidae	*Neophylax*			1	3	

Table C4. Macroinvertebrate Data for Group 3 Sites—Continued

Class: Order	Family	Family/*Genus*	RUSS	SACK	SMIT	STRA	WBCO	WHIT
Coleoptera	Elmidae	*Optioservus*			17	1	1	
		Oulimnious						1
	Psephenidae	*Ectopria*			5			
		Psephenus	2	41		31		
Diptera	Chironomidae	Chironomidae	9	14	26	8	181	8
	Empididae	*Chelifera*			3			
		Hemerodromia		9			14	
		Trichoclinocera						3
	Simuliidae	*Prosimulium*	1			8		2
		Simulium	2			11		
	Tabanidae	*Chrysops*			10			
	Tipulidae	*Antocha*			2		1	
		Hexatoma	11	6		4		9
		Pilaria			7			
		Tipula	3	1	2			
Ephemeroptera	Ameletidae	*Ameletus*	4		4			10
	Baetidae	*Acentrella*		1				
		Acerpenna	1					3
		Baetis		1		4		
		Diphetor		1				
	Ephemerellidae	*Ephemerella*		5		5		2
	Ephemeridae	*Ephemera*			2			
	Heptageniidae	*Cinygmula*	2	11		4		
		Epeorus	74	73		24		68
		Leucrocuta		1				
		Stenacron			1			
		Stenonema			7			
	Isonychiidae	*Isonychia*				1		
	Leptophlebiidae	*Paraleptophlebia*	1	6		14		
Megaloptera	Corydalidae	*Nigronia*		1	1			
	Sialidae	*Sialis*			2			
Nematomorpha	Gordidae	*Gordius*	1					
Odonata	Aeshnidae	*Boyeria*			1			
	Gomphidae	*Lanthus*						1
Ostracoda							2	

Table C4. Macroinvertebrate Data for Group 3 Sites—Continued

Class: Order	Family	Family/*Genus*	RUSS	SACK	SMIT	STRA	WBCO	WHIT
Plecoptera	Chloroperlidae	*Haploperla*	61	9		1		
		Suwallia		3				3
		Sweltsa	25	10	5	4		15
	Leuctridae	*Leuctra*	10	4	28	1		32
	Nemouridae	*Amphinemura*	56	9	90	102		16
		Ostrocerca						25
	Peltoperlidae	*Peltoperla*			2			
	Perlidae	*Acroneuria*	1	2	8			
		Agnetina				4		
	Perlodidae	*Clioperla*	2					
		Isoperla	12	16	3	14		1
		Yugus						27
Trichoptera	Hydropsychidae	*Ceratopsyche*			3	5		
		Cheumatopsyche				2	23	
		Diplectrona			42			3
		Hydropsyche					5	
	Philopotamidae	*Wormaldia*			2	1		17
	Polycentropodidae	*Polycentropus*		1				
	Rhyachophilidae	*Rhyacophila*			13			
	Uenoidae	*Neophylax*		1				3

Appendix D

Water Classification and Best Usage Relationships

New York:

The New York State water quality classifications are summarized from Water Quality Regulations for Surface Waters and Groundwaters, 6NYCRR Parts 700-705, effective September 1, 1991, New York State Department of Environmental Conservation, Division of Water, Albany, New York. Only classifications that are used in this report will be described in this section. The classes are as follows:

Class A:

(a) The best usages of Class A waters are: a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish propagation and survival.

(b) This classification may be given to those waters that, if subjected to approved treatment equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to reduce naturally present impurities, meet or will meet New York State Department of Health drinking water standards and are or will be considered safe and satisfactory for drinking water purposes.

Class B: The best usages of Class B waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival.

Class C: The best usage of Class C waters is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

Class D: The best usage of these waters is fishing. Due to such natural conditions as intermittence of flow, water conditions not conducive to propagation of game fishery, or streambed conditions, the waters will not support fish propagation. These waters shall be suitable for fish survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

(T): Suffix added to classes where trout survival is an additional best use to the use classification.

Pennsylvania:

The Pennsylvania state water quality classifications are summarized from Water Quality Standards of the Department's Rules and Regulations, 25 Pa. Code, Chapter 93.3-5, effective November 2000, PADEP, Division of Water Quality Assessment and Standards, Harrisburg, Pennsylvania. All surface waters must meet protected water uses for aquatic life (warm water fishes), water supply (potable, industrial, livestock, and wildlife), and recreation (boating, fishing, water contact sports, and aesthetics). Only classifications that are used in this report will be described in this section. The use classifications are as follows:

CWF – Cold Water Fishes: Maintenance and/or propagation of fish species including the family Salmonidae and additional flora and fauna, which are indigenous to a cold water habitat.

WWF – Warm Water Fishes: Maintenance and propagation of fish species and additional flora and fauna that are indigenous to a warm water habitat.

TSF – Trout Stocked Fishery: Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna that are indigenous to a warm water habitat.

MF – Migratory Fishes: Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes that ascend to flowing waters to complete their life cycle. The MF designation is in addition to other designations when appropriate.

Maryland:

The Maryland State water quality classifications are summarized from Water Quality Regulations for Designated Uses, COMAR 26.08.02, Effective August 2000, Maryland Department of the Environment, Annapolis, Maryland. All surface waters must protect public health or welfare; enhance the quality of water; protect aquatic resources; and serve the purposes of the Federal Act. Only classifications that are used in this report will be described in this section. The designated use classifications are as follows:

I-P – Protection of fish and aquatic life and contact recreation (fishable/swimmable), and Use I-P, which includes drinking water supply.

III-P – Natural trout waters and Use III-P, which includes a drinking water supply.

IV-P – Recreational trout waters and Use IV-P, which includes drinking water.