AB-378
MHAPI,II,III
APTBA-1 - APTBG-12

CONSTRUCTION PHASE

ECOLOGICAL MONITORING PROGRAM

MARBLE HILL NUCLEAR GENERATING STATION

UNITS 1 AND 2

FINAL REPORT

FEBRUARY-NOVEMBER 1981

APPENDIX: VOLUME 2

FEBRUARY 1982

APPLIED BIOLOGY, INC.

ATLANTA, GEORGIA 30033

APPENDIX TABLES

APPENDIX TABLES
(continued)

APPENDIX TABLE A-1

WATER CHEMISTRY PARAMETERS AND PROCEDURES
MARBLE HILL PLANT SITE
1981

Parameter	1 liter preservative	Holding time	95% confidence level on detection limit	Method	Page[a]
pH	none	none[b]	0.1 pH	Electronic pH meter	402
Alkalinity	none	6 hours	1.0 mg/l as $CaCo_3$	Potentiometric titration	253
Dissolved oxygen	none	none[b]	0.1 mg/l	Electronic dissolved oxygen meter	388
Specific conductance	none	7 days[b]	1 mho/cm	Electronic conductance meter	70
Total dissolved solids	none	7 days	1.0 mg/l	Gravimetric	93
Total suspended solids	none	7 days	1.0 mg/l	Gravimetric	94
Calcium	HNO_3 to <pH2	6 months	0.01 mg/l	Flame photometric method	182
Magnesium	HNO_3 to <pH2	7 days	0.01 mg/l	Atomic absorption spectrometric method	152
Sodium	HNO_3 to <pH2	7 days	0.01 mg/l	Flame photometric method	231
Chloride	none	7 days	0.5 mg/l	Argentometric method	270
Sulfate	4°C	7 days	0.2 mg/l	Turbidimetric method with spectrophotometer	439

APPENDIX TABLE A-1
(Continued)
WATER CHEMISTRY PARAMETERS AND PROCEDURES
MARBLE HILL PLANT SITE
1981

Parameter	1 liter preservative	Holding time	95% confidence level on detection limit	Method	Page[a]
Chemical oxygen demand	H_2SO_4 to <pH2	24 hours	0.1 mg/l	Dichromate reflux method	490
Biochemical oxygen demand	4°C	6 hours	0.1 mg/l	Azide method	483
Total organic carbon	H_2SO_4 to <pH2	24 hours	1.0 mg/l	Combustion-infrared method	471
Orthophosphate[c]	4°C	24 hours	0.01 mg/l	Ascorbic acid method with spectrophotometer	411
Total phosphorus	4°C	24 hours	0.01 mg/l	Digestion and ascorbic acid method with spectrophotometer	420
Nitrate nitrogen	H_2SO_4 to <pH2, 4°C	24 hours	0.01 mg/l N	Cadmium reduction with diazotization	370
Ammonia nitrogen	H_2SO_4 to <pH2, 4°C	24 hours	0.01 mg/l N	Indophenol method with spectrophotometer	351
Organic nitrogen	H_2SO_4 to <pH2, 4°C	24 hours	0.01 mg/l N	Kjeldahl nitrogen minus ammonia nitrogen	383
Silica	4°C	7 days	0.2 mg/l	Heteropoly blue method with a spectrophotometer	432
Phenol	5 ml H_3PO_4, 1 g., $CuSO_4$, 4°C	24 hours	0.001 mg/l	Amino antipyrine method	508

APPENDIX TABLE A-1
(continued)
WATER CHEMISTRY PARAMETERS AND PROCEDURES
MARBLE HILL PLANT SITE
1981

Parameter	1 liter preservative	Holding time	95% confidence level on detection limit	Method	Page[a]
Hexane-soluble materials	HCl to <pH2, 4°C	24 hours	variable	Soxhlet extraction method	518
Free residual chlorine	none	none[b]	0.01 mg/l	Amperometric titration	286
Chloramines	none	none[b]	0.01 mg/l	Amperometric titration	288

[a]Procedures are described in APHA (1980) on given page numbers.

[b]Field determined.

[c]Filtered in the field.

MHAP1
APTBA-1A,B,C

APPENDIX TABLE A-2

RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
25 MARCH 1981

Station and replicate	Organic nitrogen (mg/l)	Nitrate nitrogen (NO_3-N mg/l)	Ammonia nitrogen (NH_3-N mg/l)	Total phosphorous (PO_4-P mg/l)	Ortho-phosphate (PO_4-P mg/l)	Chlorides (mg/l)	Silica (SiO_2 mg/l)
1A	0.31	1.03	0.19	0.71	0.06	21.0	5.24
1B	0.18	1.03	0.21	0.79	0.08	21.0	5.45
Avg.	0.25	1.03	0.20	0.75	0.07	21.0	5.35
3A	0.39	1.02	0.20	0.81	0.08	20.0	5.67
3B	0.24	1.00	0.22	1.16	0.06	20.5	6.15
Avg.	0.32	1.01	0.21	0.99	0.07	20.3	5.91
5A	0.42	1.22	0.21	0.67	0.07	20.5	5.96
5B	0.27	2.78	0.19	0.72	0.09	19.5	3.60
Avg.	0.35	2.00	0.20	0.70	0.08	20.0	4.78
6A	0.47	0.69	0.02	0.09	0.04	65.5	2.91
6B	0.29	0.69	<0.01	0.06	0.02	64.5	2.72
Avg.	0.38	0.69	0.01	0.08	0.03	65.0	2.82

MHAP I
APTBA-2,A,B

APPENDIX TABLE A-2
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
25 MARCH 1981

Station and replicate	Chemical oxygen demand (mg/l)	Biochemical oxygen demand (mg/l)	Total organic carbon (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Sodium (mg/l)	Sulfate (mg/l)
1A	<5.0	4.2	4.6	27.92	6.70	10.75	72.6
1B	<5.0	3.9	3.5	28.73	6.98	9.75	73.6
Avg.	<5.0	4.1	4.1	28.33	6.84	10.25	73.1
3A	<5.0	3.7	3.2	30.45	7.55	10.40	71.6
3B	<5.0	4.1	3.8	29.28	7.12	9.90	71.7
Avg.	<5.0	3.9	3.5	29.87	7.34	10.15	71.7
5A	<5.0	3.8	3.7	30.35	7.85	10.45	72.2
5B	<5.0	1.5	3.1	30.72	7.65	10.20	52.6
Avg.	<5.0	2.7	3.4	30.54	7.75	10.33	62.4
6A	<5.0	1.6	3.2	55.20	35.43	14.10	88.7
6B	<5.0	0.6	3.3	66.50	38.96	15.40	87.6
Avg.	<5.0	1.1	3.3	60.85	37.20	14.80	88.1

MHAP I
APTBA-2B

APPENDIX TABLE A-2
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
25 MARCH 1981

Station and replicate	Hexane-soluble materials (mg/l)	Phenols (mg/l)	Alkalinity (mg/l)	Free residual chlorine (mg/l)	Chloramines (mg/l)
1A	<5.0	<0.002	29	<0.01	<0.01
1B	<5.0	<0.002	28	<0.01	<0.01
Avg.	<5.0	<0.002	29	<0.01	<0.01
3A	<5.0	<0.002	29	<0.01	<0.01
3B	<5.0	<0.002	29	<0.01	<0.01
Avg.	<5.0	<0.002	29	<0.01	<0.01
5A	<5.0	<0.002	29	<0.01	<0.01
5B	<5.0	<0.002	18	<0.01	<0.01
Avg.	<5.0	<0.002	24	<0.01	<0.01
6A	<5.0	<0.002	87	<0.01	<0.01
6B	<5.0	<0.002	88	<0.01	<0.01
Avg.	<5.0	<0.002	88	<0.01	<0.01

MHAP I
APTBA-2A

APPENDIX TABLE A-2
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
25 MARCH 1981

Station	Total dissolved solids (mg/l)	Total suspended solids (mg/l)	Dissolved oxygen (mg/l)	Percent saturation	pH	Specific conductance (μmho/cm)
1A	209	16	10.2	86	7.1	210
1B	202	17				
Avg.	206	17				
3A	181	13	10.7	88	7.0	210
3B	176	16				
Avg.	179	15				
5A	172	16	9.7	80	7.1	205
5B	105	6				
Avg.	139	11				
6A	460	1	14.6	128	7.6	550
6B	472	1				
Avg.	466	1				
8A	540	6	-	-	-	-
8B	507	1				
Avg.	524	4				

MHAP I
APTBA-2C

APPENDIX TABLE A-3

RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
27 MAY 1981

Station and replicate	Organic nitrogen (mg/l)	Nitrate nitrogen (NO_3-N mg/l)	Ammonia nitrogen (NH_3-N mg/l)	Total phosphorous (PO_4-P mg/l)	Ortho-phosphate (PO_4-P mg/l)	Chlorides (mg/l)	Silica (SiO_2 mg/l)
1A	0.45	1.36	0.01	0.13	0.08	12.5	7.37
1B	0.49	1.36	0.02	0.14	0.07	12.5	6.83
Avg.	0.47	1.36	0.02	0.15	0.08	12.5	7.10
3A	0.46	1.36	0.01	0.17	0.04	12.5	6.38
3B	0.36	1.46	0.01	0.18	0.10	12.5	6.28
Avg.	0.41	1.41	0.01	0.18	0.07	12.5	6.33
5A	0.62	1.43	0.02	0.18	0.08	12.5	6.94
5B	0.43	1.46	0.01	0.15	0.08	12.5	6.41
Avg.	0.53	1.45	0.02	0.17	0.08	12.5	6.68
6A	0.63	2.15	<0.01	0.10	0.03	38.0	7.75
6B	0.67	2.15	<0.01	0.14	0.03	39.0	8.27
Avg.	0.65	2.15	<0.01	0.12	0.03	38.5	8.01

MHAP I
APTBA-3

APPENDIX TABLE A-3
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
27 MAY 1981

Station and replicate	Chemical oxygen demand (mg/l)	Biochemical oxygen demand (mg/l)	Total organic carbon (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Sodium (mg/l)	Sulfate (mg/l)
1A	11.0	2.4	2.1	31.0	5.9	20.9	54.0
1B	14.0	1.8	2.4	31.0	6.0	18.6	55.6
Avg.	13.0	2.1	2.3	31.0	6.0	19.8	54.8
3A	12.0	1.3	2.3	35.2	5.7	10.5	54.0
3B	14.0	2.1	2.5	34.3	5.8	8.1	55.2
Avg.	13.0	1.7	2.4	34.8	5.8	9.3	54.6
5A	19.0	0.5	2.9	25.7	5.1	15.5	55.6
5B	17.0	1.7	2.7	28.8	5.4	26.8	53.1
Avg.	18.0	1.1	2.8	27.3	5.3	21.2	54.4
6A	30.0	1.8	2.3	92.0	20.1	32.7	127.1
6B	19.0	2.3	2.4	81.0	21.8	20.2	124.1
Avg.	24.5	2.1	2.4	86.5	21.0	26.5	125.6

MHAP I
APTBA-3A

APPENDIX TABLE A-3
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
27 MAY 1981

Station and replicate	Hexane-soluble materials (mg/l)	Phenols (mg/l)	Alkalinity (mg/l)	Free residual chlorine (mg/l)	Chloramines (mg/l)
1A	<5.0	<0.002	66	<0.01	<0.01
1B	<5.0	<0.002	66	<0.01	<0.01
Avg.	<5.0	<0.002	66	<0.01	<0.01
3A	<5.0	<0.002	64	<0.01	<0.01
3B	<5.0	<0.002	62	<0.01	<0.01
Avg.	<5.0	<0.002	63	<0.01	<0.01
5A	<5.0	<0.002	64	<0.01	<0.01
5B	<5.0	<0.002	68	<0.01	<0.01
Avg.	<5.0	<0.002	66	<0.01	<0.01
6A	<5.0	<0.002	168	<0.01	<0.01
6B	<5.0	<0.002	168	<0.01	<0.01
Avg.	<5.0	<0.002	168	<0.01	<0.01

MHAP I
APTBA-3B

APPENDIX TABLE A-3
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
27 MAY 1981

Station	Total dissolved solids (mg/l)	Total suspended solids (mg/l)	Dissolved oxygen (mg/l)	Percent saturation	pH	Specific conductance (µmho/cm)
1A	165	35	8.6	91	7.3	232
1B	163	22				
Avg.	164	29				
3A	142	42	8.3	87	7.3	233
3B	142	29				
Avg.	142	36				
5A	148	22	8.3	87	7.4	234
5B	155	37				
Avg.	152	30				
6A	391	22	8.8	89	8.0	710
6B	399	18				
Avg.	395	20				
8A	412	380	-	-	-	-
8B	409	323				
Avg.	411	352				

MHAP I
APTBA-3C

APPENDIX TABLE A-4

RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 AUGUST 1981

Station and replicate	Organic nitrogen (mg/l)	Nitrate nitrogen (NO_3-N mg/l)	Ammonia nitrogen (NH_3-N mg/l)	Total phosphorous (PO_4-P mg/l)	Ortho-phosphate (PO_4-P mg/l)	Chlorides (mg/l)	Silica (SiO_2 mg/l)
1A	0.47	1.40	0.04	0.12	0.04	25.0	1.67
1B	0.37	1.24	0.09	0.10	0.05	25.0	1.68
Avg.	0.42	1.32	0.07	0.11	0.05	25.0	1.68
3A	0.38	1.11	0.10	0.33	0.05	25.0	1.82
3B	0.30	1.19	0.10	0.13	0.04	25.0	1.82
Avg.	0.34	1.15	0.10	0.23	0.05	25.0	1.82
5A	0.34	1.16	0.14	0.09	0.04	25.0	1.83
5B	0.36	1.11	0.12	0.09	0.05	25.0	1.88
Avg.	0.35	1.14	0.13	0.09	0.05	25.0	1.86
6A	0.40	0.18	0.02	0.04	<0.01	72.5	7.37
6B	0.30	0.18	0.02	0.03	<0.01	72.5	7.67
Avg.	0.35	0.18	0.02	0.04	<0.01	72.5	7.52

MHAP I
APTBA-4

APPENDIX TABLE A-4
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 AUGUST 1981

Station and replicate	Chemical oxygen demand (mg/l)	Biochemical oxygen demand (mg/l)	Total organic carbon (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Sodium (mg/l)	Sulfate (mg/l)
1A	5.1	7.5	4.9	39.52	11.70	22.99	98.6
1B	4.9	9.2	5.0	39.15	11.78	22.93	97.5
Avg.	5.0	8.4	5.0	39.34	11.74	22.96	98.1
3A	10.0	14.8	5.4	40.52	11.81	22.56	101.3
3B	10.0	11.2	4.6	39.89	12.19	22.67	99.3
Avg.	10.0	13.0	5.0	40.21	12.00	22.62	100.3
5A	4.9	8.5	4.2	38.52	12.41	24.24	103.4
5B	5.1	10.3	4.4	35.89	12.30	26.25	101.8
Avg.	5.0	9.9	4.3	37.21	12.36	25.25	102.6
6A	<5.0	6.3	2.7	72.65	32.19	28.95	164.6
6B	10.0	5.1	3.8	72.65	32.31	30.01	166.4
Avg.	<7.5	5.7	3.3	72.65	32.25	28.98	165.5

MHAP I
APTBA-4A

APPENDIX TABLE A-4
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 AUGUST 1981

Station and replicate	Hexane-soluble materials (mg/l)	Phenols (mg/l)	Alkalinity (mg/l)	Free residual chlorine (mg/l)	Chloramines (mg/l)
1A	<5.0	<0.002	90	<0.01	<0.01
1B	<5.0	<0.002	90	<0.01	<0.01
Avg.	<5.0	<0.002	90	<0.01	<0.01
3A	<5.0	<0.002	92	<0.01	<0.01
3B	<5.0	<0.002	92	<0.01	<0.01
Avg.	<5.0	<0.002	92	<0.01	<0.01
5A	<5.0	<0.002	88	<0.01	<0.01
5B	<5.0	<0.002	89	<0.01	<0.01
Avg.	<5.0	<0.002	89	<0.01	<0.01
6A	<5.0	<0.002	224	<0.01	<0.01
6B	<5.0	<0.002	226	<0.01	<0.01
Avg.	<5.0	<0.002	225	<0.01	<0.01

MHAP I
APTBA-4B

APPENDIX TABLE A-4
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 AUGUST 1981

Station	Total dissolved solids (mg/l)	Total suspended solids (mg/l)	Dissolved oxygen (mg/l)	Percent saturation	pH	Specific conductance (µmho/cm)
1A	308	7	7.1	90	6.9	479
1B	335	11				
Avg.	322	9				
3A	303	7	6.8	85	6.9	471
3B	326	7				
Avg.	315	7				
5A	313	7	6.6	83	6.9	468
5B	316	8				
Avg.	315	8				
6A	644	3	7.1	81	7.2	750
6B	579	3				
Avg.	612	3				
8A	-[a]	-	-	-	-	-
8B	-	-				
Avg.	-	-				

[a]No water in stream.

MHAPI
APTBA-4C

APPENDIX TABLE A-5

RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Station and replicate	Organic nitrogen (mg/l)	Nitrate nitrogen (NO_3-N mg/l)	Ammonia nitrogen (NH_3-N mg/l)	Total phosphorous (PO_4-P mg/l)	Ortho-phosphate (PO_4-P mg/l)	Chlorides (mg/l)	Silica (SiO_2 mg/l)
1A	1.00	0.95	0.13	0.14	0.05	25.0	2.11
1B	0.52	0.95	0.14	0.09	0.04	25.0	2.11
Avg.	0.76	0.95	0.14	0.12	0.05	25.0	2.11
3A	0.20	0.92	0.16	0.09	0.04	25.0	2.33
3B	0.64	0.96	0.15	0.09	0.03	25.0	2.36
Avg.	0.42	0.94	0.16	0.09	0.04	25.0	2.35
5A	0.80	0.97	0.16	0.10	0.04	25.0	2.30
5B	0.55	0.97	0.16	0.09	0.03	25.0	2.33
Avg.	0.68	0.97	0.16	0.10	0.04	25.0	2.32
6A	0.67	0.36	<0.01	0.04	0.01	85.0	8.05
6B	0.20	0.48	<0.01	0.04	0.01	85.0	5.55
Avg.	0.44	0.42	<0.01	0.04	0.01	85.0	6.80

MHAP I
APTBA-5

APPENDIX TABLE A-5
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Station and replicate	Chemical oxygen demand (mg/l)	Biochemical oxygen demand (mg/l)	Total organic carbon (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Sodium (mg/l)	Sulfate (mg/l)
1A	7.0	1.2	5.2	14.73	7.22	15.34	77.0
1B	7.0	1.4	3.7	14.73	7.10	15.59	76.0
Avg.	7.0	1.3	4.5	14.73	7.16	15.47	76.5
3A	<5.0	1.4	4.0	13.60	7.05	14.49	75.0
3B	<5.0	1.3	4.1	11.78	7.15	14.86	76.0
Avg.	<5.0	1.4	4.1	12.69	7.10	14.68	75.5
5A	<5.0	1.1	5.5	8.60	6.95	14.26	78.0
5B	<5.0	1.3	3.7	7.65	6.75	14.06	73.0
Avg.	<5.0	1.2	4.6	8.12	6.85	14.16	75.5
6A	<5.0	1.0	2.5	58.20	42.00	22.11	183.0
6B	<5.0	1.3	2.1	53.60	41.53	22.81	203.0
Avg.	<5.0	1.2	2.3	55.90	41.77	22.46	193.0

MHAP I
APTBA-5A

APPENDIX TABLE A-5
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Station and replicate	Hexane-soluble materials (mg/l)	Phenols (mg/l)	Alkalinity (mg/l)	Free residual chlorine (mg/l)	Chloramines (mg/l)
1A	<5.0	<0.002	49	<0.01	<0.01
1B	<5.0	<0.002	49	<0.01	<0.01
Avg.	<5.0	<0.002	49	<0.01	<0.01
3A	<5.0	<0.002	49	<0.01	<0.01
3B	<5.0	<0.002	49	<0.01	<0.01
Avg.	<5.0	<0.002	49	<0.01	<0.01
5A	<5.0	<0.002	49	<0.01	<0.01
5B	<5.0	<0.002	49	<0.01	<0.01
Avg.	<5.0	<0.002	49	<0.01	<0.01
6A	<5.0	<0.002	185	<0.01	<0.01
6B	<5.0	<0.002	185	<0.01	<0.01
Avg.	<5.0	<0.002	185	<0.01	<0.01

MHAP I
APTBA-5B

PPENDIX TABLE A-5
(continued)
RESULTS OF WATER CHEMISTRY ANALYSIS
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Station	Total dissolved solids (mg/l)	Total suspended solids (mg/l)	Dissolved oxygen (mg/l)	Percent saturation	pH	Specific conductance (µmho/cm)
1A	249	8	8.5	80	7.0	270
1B	254	9				
Avg.	252	9				
3A	234	7	8.9	84	7.0	280
3B	229	7				
Avg.	232	7				
5A	209	10	8.9	85	7.0	280
5B	200	9				
Avg.	205	10				
6A	602	4	9.9	91	7.2	560
6B	602	4				
Avg.	602	4				
8A	-[a]	-	-	-	-	-
8B	-	-				
Avg.	-	-				

[a]No water in stream.

MHAP I
APTBA-5C

APPENDIX TABLE A-6

RESULTS OF PHYSICAL PARAMETER MEASUREMENTS
MARBLE HILL PLANT SITE
25 MARCH 1981

Parameter	Station 1	3	5	6	8
Temperature (°C)	7.9	7.0	7.0	9.6	-[a]
Current velocity (cm/sec)	32	35	32	<10	-[a]
Secchi depth (cm)	50	50	50	bottom visible	-[a]
Water depth (m)	5.2	5.2	5.9	0.6	-[a]
Turbidity (NTU)	12.5	13.5	12.5	2.1	4.7

[a]Not required.

MHAP I
APTBA-6

APPENDIX TABLE A-7

RESULTS OF PHYSICAL PARAMETER MEASUREMENTS
MARBLE HILL PLANT SITE
27 MAY 1981

Parameter	Station 1	3	5	6	8
Temperature (°C)	18.2	18.2	18.4	16.1	-[a]
Current velocity (cm/sec)	55	50	35	<10	-[a]
Secchi depth (cm)	<10	<10	<10	bottom visible	-[a]
Water depth (m)	4.5	5.5	5.7	0.8	-[a]
Turbidity (NTU)	24.5	27.0	24.5	17.0	192.5

[a]Not required.

MHAP I
APTBA-7

APPENDIX TABLE A-8

RESULTS OF PHYSICAL PARAMETER MEASUREMENTS
MARBLE HILL PLANT SITE
13 AUGUST 1981

Parameter	Station 1	3	5	6	8
Temperature (°C)	28.1	27.8	27.8	22.2	-[a]
Current velocity (cm/sec)	15	15	15	<10	-[a]
Secchi depth (cm)	85	85	85	bottom visible	-[a]
Water depth (m)	3.1	3.9	4.5	0.8	-[a]
Turbidity (NTU)	4.9	5.2	5.1	2.1	-[b]

[a]Not required.

[b]No water in stream.

MHAP I
APTBA-8

APPENDIX TABLE A-9

RESULTS OF PHYSICAL PARAMETER MEASUREMENTS
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Parameter	Station 1	3	5	6	8
Temperature (°C)	13.2	13.2	13.5	11.8	-[a]
Current velocity (cm/sec)	18	18	18	<10	-[a]
Secchi depth (cm)	115	120	130	bottom visible	-[a]
Water depth (m)	4.9	4.7	4.9	0.75	-[a]
Turbidity (NTU)	5.3	4.6	5.1	2.4	-[b]

[a]Not required.

[b]No water in stream.

MHAP I
APTBA-9

APPENDIX TABLE B-1

RESULTS OF BACTERIAL ANALYSIS
MARBLE HILL PLANT SITE
25 MARCH 1981

Station and replicate	Total coliforms (counts/100 ml)	Fecal coliforms (counts/100 ml)	Fecal streptococcus (counts/100 ml)	FC/FS
1A	1100	470	30	15.67
1B	2091	260	<10	>26.00
Avg.	1596	365	<20	>18.25
3A	4000	440	20	22.00
3B	1700	530	10	53.00
Avg.	2850	485	15	31.33
6A	220	45	<10	>4.50
6B	400	99	<10	>9.90
Avg.	310	72	<10	>7.20
8A	178	130	<10	>13.00
8B	127	100	<10	>9.9
Avg.	152	115	<10	>11.4

MHAP I
APTBB-1

APPENDIX TABLE B-2

RESULTS OF BACTERIAL ANALYSIS
MARBLE HILL PLANT SITE
27 MAY 1981

Station and replicate	Total coliforms (counts/100 ml)	Fecal coliforms (counts/100 ml)	Fecal streptococcus (counts/100 ml)	FC/FS
1A	5400	682	1036	0.66
1B	5400	510	900	0.57
Avg.	5400	596	968	0.62
3A	4500	530	990	0.54
3B	4200	570	1082	0.53
Avg.	4350	550	1036	0.53
6A	2600	510	4600	0.11
6B	2100	540	4400	0.12
Avg.	2350	525	4500	0.12
8A	5300	1191	6000	0.20
8B	5400	1409	7400	0.19
Avg.	5350	1300	6700	0.20

MHAP I
APTBB-2

APPENDIX TABLE B-3

RESULTS OF BACTERIAL ANALYSIS
MARBLE HILL PLANT SITE
11 AUGUST 1981

Station and replicate	Total coliforms (counts/100 ml)	Fecal coliforms (counts/100 ml)	Fecal streptococcus (counts/100 ml)	FC/FS
1A	260	52	<10	<5.20
1B	240	39	<10	<3.90
Avg.	250	46	<10	<4.60
3A	460	71	<10	<7.10
3B	340	51	<10	<5.10
Avg.	400	61	<10	<6.10
6A	6300	83	280	0.30
6B	5100	101	350	0.29
Avg.	5700	92	315	0.29
8A	-[a]	-	-	-
8B	-	-	-	-
Avg.	-	-	-	-

[a]No water in stream.

MHAP I
APTBB-3

APPENDIX TABLE B-4

RESULTS OF BACTERIAL ANALYSIS
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Station and replicate	Total coliforms (counts/100 ml)	Fecal coliforms (counts/100 ml)	Fecal streptococcus (counts/100 ml)	FC/FS
1A	2480	200	14	14.28
1B	2320	182	12	15.17
Avg.	2400	191	13	14.69
3A	2500	200	9	22.22
3B	2480	200	10	20.00
Avg.	2440	200	10	20.00
6A	200	29	46	0.63
6B	210	40	43	0.93
Avg.	205	34	44	0.77
8A	-[a]	-	-	-
8B	-	-	-	-
Avg.	-	-	-	-

[a]No water in stream.

MHAP I
APTBB-4

APPENDIX TABLE C.1-1

PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA												
Centrales												
Cyclotella glomerata	206.8	159.5	183.1	149.7	31.0	90.3	93.8	139.4	116.6			
C. Meneghiniana	0.0	45.6	22.8	74.9	46.4	60.7	8.5	10.0	9.2			
C. ocellata	25.8	0.0	12.9									
C. pseudostelligera	0.0	22.8	11.4									
C. stelligera				0.0	15.5	7.7	34.1	19.9	27.0			
C. striata				0.0	61.9	31.0	17.1	39.8	28.4			
Cyclotella sp. 1	491.1	501.2	496.2	623.9	402.5	513.2	341.2	398.2	369.7			
Melosira distans	51.7	91.1	71.4	25.0	15.5	20.2	51.2	39.8	45.5			
M. granulata	51.7	0.0	25.8	49.9	0.0	25.0	0.0	10.0	5.0			
M. italica				49.9	15.5	32.7	25.6	19.9	22.8			
Stephanodiscus astraea	258.5	296.2	277.3	149.7	15.5	82.6	34.1	39.8	37.0			
S. astraea v. minutula	103.4	250.6	177.0	399.3	216.7	308.0	418.0	477.9	447.9			
unidentified centric sp. 1	180.9	136.7	158.8	199.6	77.4	138.5	85.3	99.6	92.4			
unidentified centric sp. 2	25.8	0.0	12.9									
Pennales												
Achnanthes deflexa	0.0	22.8	11.4									
A. fragilarioides	51.7	0.0	25.8									
A. hungarica	0.0	22.8	11.4									
A. lanceolata	25.8	0.0	12.9				8.5	0.0	4.3			
A. linearis f. curta				25.0	15.5	20.2	8.5	39.8	24.2	7.3	0.0	3.6
A. minutissima	51.7	0.0	25.8	74.9	77.4	76.1	34.1	39.8	37.0	87.1	8.0	47.6
Amphora perpusilla				25.0	0.0	12.5	8.5	10.0	9.2	1.8	0.0	0.9
A. submontana				25.0	0.0	12.5	8.5	0.0	4.3			
Asterionella formosa	51.7	91.1	71.4	74.9	46.4	60.7	42.7	39.8	41.2			
Cocconeis placentula v. lineata										0.0	5.3	2.7
Cymbella affinis				0.0	15.5	7.7				3.6	2.7	3.1
Diatoma vulgare				25.0	15.5	20.2	8.5	10.0	9.2	1.8	2.7	2.2
Eunotia curvata							8.5	0.0	4.3			
Fragilaria vaucheriae							8.5	0.0	4.3			
Gomphonema angustatum							17.1	0.0	8.5	25.4	29.3	27.3
G. olivaceum	0.0	45.6	22.8							116.2	143.6	129.9
Hannaea arcus	0.0	22.8	11.4									
Meridion circulare										1.8	2.7	2.2
Navicula bacillum				0.0	15.5	7.7						
N. cryptocephala	103.4	22.8	63.1	74.9	46.4	60.7	0.0	10.0	5.0			
N. cryptocephala v. veneta	0.0	22.8	11.4	25.0	0.0	12.5						
N. gracilioides							8.5	0.0	4.3			

APPENDIX TABLE C.1-1
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA (continued)												
Navicula seminulum	25.8	0.0	12.9									
N. tripunctata	0.0	22.8	11.4				8.5	0.0	4.3			
N. viridula	25.8	22.8	24.3	25.0	0.0	12.5						
Navicula sp. 2	0.0	45.6	22.8									
Nitzschia acicularis v. closterioides	568.6	205.1	386.8	324.4	185.8	255.1	307.1	378.3	342.7	1.8	0.0	0.9
N. amphibia				25.0	15.5	20.2						
N. capitellata				25.0	0.0	12.5						
N. communis v. abbreviata	51.7	0.0	25.8	25.0	15.5	20.2	17.1	10.0	13.5			
N. dissipata	0.0	22.8	11.4	0.0	61.9	31.0	0.0	79.6	39.8			
N. ganderselmiensis				0.0	15.5	7.7						
N. Kutzingiana	51.7	0.0	25.8									
N. palea	0.0	136.7	68.4	0.0	92.9	46.4	25.6	0.0	12.8			
N. sublinearis				0.0	15.5	7.7				7.3	0.0	3.6
Pinnularia subcapitata v. paucistriata	25.8	0.0	12.9	25.0	0.0	12.5						
Rhoicosphenia curvata							8.5	0.0	4.3	54.5	58.5	56.5
Surirella ovata	25.8	0.0	12.9	25.0	31.0	28.0	8.5	39.8	24.2	1.8	0.0	0.9
S. ovalis	25.8	0.0	12.9									
Synedra acus										18.2	2.7	10.4
S. delicatissima							0.0	10.0	5.0	14.5	5.3	9.9
S. fasciculata							0.0	10.0	5.0	1.8	2.7	2.2
S. filiformis v. exilis	103.4	91.1	97.3	25.0	0.0	12.5	34.1	39.8	37.0	10.9	0.0	5.4
S. radians										5.4	2.7	4.1
S. rumpens	0.0	22.8	11.4				17.1	19.9	18.5			
S. ulna							8.5	0.0	4.3	1.8	2.7	2.2
S. ulna v. oxyrhynchus f. mediocontracta				0.0	15.5	7.7						
TOTAL BACILLARIOPHYTA	2584.7	2323.9	2454.3	2570.4	1579.1	2074.7	1706.1	2030.9	1868.5	363.0	268.7	315.8
CHRYSOPHYTA												
Dinobryon sertularia	0.0	7.9	4.0	0.0	7.7	3.9	0.0	7.7	3.9			
D. sociale	282.9	243.6	263.3	231.1	177.2	204.2	119.4	107.8	113.6			
Mallomonas ? sp. 1				7.7	0.0	3.9	0.0	3.9	2.0			
TOTAL CHRYSOPHYTA	282.9	251.5	267.3	238.8	184.9	212.0	119.4	119.4	119.5	0.0	0.0	0.0
CRYPTOPHYTA												
cryptophyte sp. 1	31.4	23.6	27.5	30.8	23.1	27.0	15.4	15.4	15.4	6.5	1.4	4.0
cryptophyte sp. 2	7.9	15.7	11.8	15.4	15.4	15.4	0.0	7.7	3.9			
TOTAL CRYPTOPHYTA	39.3	39.3	39.3	46.2	38.5	42.4	15.4	23.1	19.3	6.5	1.4	4.0

APPENDIX TABLE C.1-1
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CHLOROPHYTA												
Ankistrodesmus Braunii				7.7	0.0	3.9						
A. convolutus	15.7	23.6	19.7	0.0	23.1	11.6	3.9	11.6	7.8			
A. falcatus	39.3	39.3	39.3	53.9	15.4	34.7	27.0	11.6	19.3			
A. falcatus v. acicularis				0.0	7.7	3.9	0.0	3.9	2.0			
A. falcatus v. mirabilis	15.7	15.7	15.7	7.7	0.0	3.9	11.6	23.1	17.4			
A. fractus							0.0	3.9	2.0			
Carteria sp. 1	0.0	7.9	4.0	0.0	7.7	3.9						
Chlamydomonas globosa	23.6	15.7	19.7	69.3	38.5	53.9	23.1	27.0	25.1	2.4	1.8	2.1
C. Snowii	23.6	0.0	11.8	15.4	0.0	7.7	7.7	3.9	5.8			
Chlamydomonas sp. 3										2.4	0.0	1.2
Chlamydomonas sp. 5	70.7	47.1	58.9	0.0	38.5	19.3	77.0	50.1	63.6			
Chlorella ? sp.	157.2	78.6	117.9	154.0	15.4	84.7	50.1	38.5	44.3			
Cosmarium sp. 3	0.0	7.9	4.0				3.9	3.9	3.9			
Desmatractum indutum							3.9	0.0	2.0			
Dictyosphaerium pulchellum	7.9	7.9	7.9	0.0	15.4	7.7				1.2	0.0	0.6
Golenkinia radiata	0.0	7.9	4.0				3.9	7.7	5.8			
Kirchneriella lunaris	0.0	7.9	4.0	15.4	0.0	7.7	3.9	3.9	3.9			
K. lunaris v. irregularis	7.9	0.0	4.0	7.7	0.0	3.9						
K. obesa v. major	0.0	15.7	7.9				0.0	3.9	2.0			
Micractinium pusillum				0.0	7.7	3.9	0.0	3.9	2.0			
Oocystis Borgei							3.9	3.9	3.9			
O. pusilla ?							3.9	7.7	5.8			
Polyedriopsis quadrispina	7.9	15.7	11.8	15.4	7.7	11.6	11.6	3.9	7.8			
Quadrigula chodatii							0.0	3.9	2.0			
Scenedesmus quadricauda				7.7	0.0	3.9	0.0	7.7	3.9			
Schroederia setigera							3.9	7.7	5.8			
Selenastrum gracile	23.6	23.6	23.6				3.9	19.3	11.6			
Tetraedron minimum	0.0	7.9	4.0									
Tetrastrum elegans	7.9	0.0	4.0									
T. glabrum				7.7	0.0	3.9						
Wisiouchiella planctonica	15.7	31.4	23.6	0.0	7.7	3.9	19.3	3.9	11.6			
TOTAL CHLOROPHYTA	416.7	353.8	385.8	361.9	184.8	274.0	262.5	254.9	259.3	6.0	1.8	3.9
CYANOPHYTA												
Anabaena sp. 1							6.6	1.6	4.1			
Aphanothece sp.	7.9	0.0	4.0	7.7	0.0	3.9	3.9	3.9	3.9			

APPENDIX TABLE C.1-1
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CYANOPHYTA (continued)												
Chroococcus dispersus v. minor	31.4	47.1	39.3	7.7	30.8	19.3	15.4	15.4	15.4			
C. limneticus	15.7	0.0	7.9				0.0	3.9	2.0			
Dactylococcopsis fascicularis ?	7.9	47.1	27.5	46.2	0.0	23.1	15.4	11.6	13.5			
D. raphioides	0.0	7.9	4.0	15.4	0.0	7.7						
Gomphosphaeria lacustris	0.0	7.9	4.0				0.0	7.7	3.9			
Lyngbya contorta							1.6	0.0	0.8			
Lyngbya sp.	4.0	0.0	2.0	2.3	2.3	2.3	5.8	3.9	4.9			
Microcystis incerta	7.9	0.0	4.0									
Oscillatoria amphibia ?	12.6	7.9	10.3				3.1	3.5	3.3			
Oscillatoria sp. (1,2)	2.4	0.0	1.2	3.1	0.0	1.6	2.3	2.0	2.2	1.7	2.4	2.1
Synehocystis ? sp.	23.6	31.4	27.5	0.0	7.7	3.9	15.4	0.0	7.7			
filamentous blue-green sp. 1										2.5	0.1	1.3
TOTAL CYANOPHYTA	113.4	149.3	131.7	82.4	40.8	61.8	69.5	53.5	61.7	4.2	2.5	3.4
EUGLENOPHYTA												
Phacus Lemmermanii	7.9	0.0	4.0	0.0	7.7	3.9	3.9	15.4	9.7			
Trachelomonas volocina	0.0	7.9	4.0	7.7	0.0	3.9	3.9	0.0	2.0			
Trachelmonas sp. 1	110.0	157.1	133.6	208.0	107.8	157.9	127.1	88.6	107.9			
TOTAL EUGLENOPHYTA	118.9	165.0	141.6	215.7	115.5	165.7	134.9	104.0	119.6	0.0	0.0	0.0
PYRRHOPHYTA												
Peridinium inconspicuum							0.0	3.9	2.0			
dinoflagellate sp. 1				7.7	0.0	3.9						
TOTAL PYRRHOPHYTA	0.0	0.0	0.0	7.7	0.0	3.9	0.0	3.9	2.0	0.0	0.0	0.0
OTHERS												
phytoflagellate sp. 3	7.9	0.0	4.0	0.0	7.7	3.9						
TOTAL OTHERS	7.9	0.0	4.0	0.0	7.7	3.9	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL PHYTOPLANKTON	3563.8	3282.8	3424.0	3523.1	2151.3	2838.4	2307.8	2589.7	2449.9	379.7	274.4	327.1
std. dev.			±188.5			±880.7			±303.4			±63.6

APPENDIX TABLE C.1-2

PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA												
Centrales												
Cyclotella glomerata	294.3	180.3	237.3	156.2	156.2		536.7	261.7	399.2			
C. Meneghiniana	87.0	40.3	63.6	23.3	23.3		50.5	76.3	63.4			
C. ocellata	138.8	0.0	69.4	181.4	181.4		154.1	250.8	202.4			
C. pseudostelligera							0.0	21.8	10.9			
C. stelligera							50.5	0.0	25.2			
Cyclotella sp. 1	33.2	166.3	99.7									
Melosira distans	138.8	40.3	89.6	78.1	78.1		85.0	163.5	124.3			
M. granulata	51.8	0.0	25.9	97.0	97.0		188.6	130.8	159.7			
M. varians	0.0	12.3	6.1	10.8	10.8		15.9	0.0	8.0			
Stephanodiscus astraea	120.2	54.3	87.2	71.8	71.8		103.6	130.8	117.2			
S. astraea v. minutula	0.0	12.3	6.1									
Centric sp. 1	312.9	234.6	273.7	350.1	350.1		119.6	294.4	207.0			
Centric sp. 2	16.6	0.0	8.3									
Pennales												
Achnanthes deflexa	33.2	26.3	29.7	35.9	35.9		34.5	10.9	22.7			
A. lanceolata				23.3	23.3							
A. linearis f. curta	16.6	40.3	28.4	23.3	23.3		34.5	76.3	55.4			
A. minutissima	16.6	12.3	14.4	59.3	59.3		103.6	98.1	100.9			
A. nolii	0.0	12.3	6.1									
Amphora perpusilla				10.8	10.8							
A. submontana	16.6	0.0	8.3									
Asterionella formosa				145.4	145.4		188.6	109.0	148.8			
A. formosa v. gracillima	155.4	124.3	139.9									
Cymbella affinis							50.5	10.9	30.7			
C. minuta v. silesiaca							0.0	10.9	5.5			
Diatoma tenue v. elongatum							0.0	10.9	5.5			
D. vulgare				23.3	23.3		0.0	10.9	5.5			
Fragilaria construens v. pumila	16.6	0.0	8.3									
F. crotonensis	190.7	0.0	95.3	10.8	10.8							
F. vaucheriae	0.0	26.3	13.1	10.8	10.8		15.9	0.0	8.0			
Gomphonema angustatum	0.0	12.3	6.1	35.9	35.9		15.9	0.0	8.0			
G. olivaceum	0.0	12.3	6.1				15.9	0.0	8.0			
G. parvulum	0.0	26.3	13.1				15.9	32.7	24.3			

SAMPLES NOT ADEQUATELY PRESERVED

MHAPI
APTBC.1-2

APPENDIX TABLE C.1-2
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA (continued)												
Navicula biconica	16.6	0.0	8.3									
N. cryptocephla	51.8	82.3	67.0	10.8	10.8							
N. cryptocephala v. veneta	16.6	0.0	8.3	35.9	35.9		69.1	0.0	34.5			
N. gracilloides	0.0	12.3	6.1				15.9	0.0	8.0			
N. minuscula	16.6	0.0	8.3	10.8	10.8		50.5	0.0	25.2			
N. mutica				23.3	23.3							
N. mutica v. cohnii							0.0	21.8	10.9			
N. rhyncocephala				23.3	23.3		34.5	0.0	17.3			
N. tripunctata	16.6	26.3	21.4				15.9	0.0	8.0			
N. viridula				10.8	10.8		15.9	21.8	18.9			
Navicula sp. 4							15.9	0.0	8.0			
Nitzschia acicularis	138.8	54.3	96.6				0.0	65.4	32.7			
v. closterioides												
N. amphibia							15.9	0.0	8.0			
N. communis v. abbreviata	0.0	68.3	34.1	23.3	23.3		15.9	43.6	29.8			
N. dissipata	16.6	68.3	42.4	59.3	59.3		50.5	65.4	57.9			
N. gandersheimiensis				23.3	23.3		34.5	0.0	17.3			
N. palea	33.2	54.3	43.7	71.8	71.8		138.1	152.6	145.4			
N. parvula	0.0	12.3	6.1									
N. stagnorum	0.0	12.3	6.1									
Pinnularia appendiculata							34.5	0.0	17.3			
Rhoicosphenia curvata				10.8	10.8		69.1	10.9	40.0			
Surirella angustata	16.6	0.0	8.3									
S. ovata	16.6	0.0	8.3	23.3	23.3		34.5	10.9	22.7			
Synedra delicatissima	33.2	54.3	43.7	35.9	35.9		50.5	10.9	30.7			
S. filliformis v. exilis	31.1	0.0	15.5	23.3	23.3		69.1	0.0	34.5			
S. rumpens	33.2	40.3	36.7				69.1	0.0	34.5			
S. ulna				35.9	35.9		15.9	21.8	18.9			
S. ulna v. contracta	0.0	12.3	6.1									
TOTAL BACILLARIOPHYTA	2076.8	1531.0	1802.7	1769.3	1769.3		2595.1	2125.8	2361.1			

MHAPI
APTBC.1-2A

APPENDIX TABLE C.1-2
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CRYPTOPHYTA												
Cryptomonas ovata	12.9	20.6	16.7		6.5	6.5	0.0	14.2	7.1			
cryptophyte sp. 1	32.2	10.3	21.2		19.3	19.3						
cryptophyte sp. 2	70.8	5.2	38.0		6.5	6.5	23.2	92.0	57.6			
TOTAL CRYPTOPHYTA	115.9	36.1	75.9		32.3	32.3	23.2	106.2	64.7			
CHLOROPHYTA												
Actinastrum Hantzschii v. fluviatile	6.4	0.0	3.2		6.5	6.5	7.7	7.1	7.4			
Ankistrodesmus convolutus	6.4	30.9	18.7		6.5	6.5	15.5	7.1	11.3			
A. falcatus	96.5	113.3	104.9		25.8	25.8	131.3	49.6	90.4			
A. falcatus v. acicularis	0.0	5.2	2.6				0.0	7.1	3.5			
A. falcatus v. mirabilius	25.7	15.4	20.6		12.9	12.9	7.7	21.2	14.5			
Carteria cordiformis							7.7	0.0	3.9			
Chlamydomonas globosa	77.2	20.6	48.9		6.5	6.5	54.1	21.2	37.7			
Chlamydomonas sp. 5	32.2	41.2	36.7		25.7	25.7	46.3	49.6	47.9			
Chlorella ? sp.	109.4	41.2	75.3		32.2	32.2	77.2	49.6	63.4			
Coelastrum sphaericum					12.9	12.9						
Cosmarium sp. 3	12.9	25.7	19.3		19.3	19.3	30.9	0.0	15.4			
Crucigenia quadrata	0.0	5.2	2.6									
Dictyosphaerium pulchellum	6.4	0.0	3.2									
Dictyosphaerium Ehrenberglanum							7.7	0.0	3.9			
Golenkinia radiata	6.4	0.0	3.2				7.7	28.3	18.0			
Kirchneriella lunaris v. Dianae	12.9	20.6	16.7		6.5	6.5	23.2	21.2	22.2			
K. lunaris v. irregularis	0.0	20.6	10.3		6.5	6.5	23.2	14.2	18.7			
Lagerheimia quadriseta	19.3	5.2	12.2		12.9	12.9	7.7	0.0	3.9			
Micractinium pusillum	6.4	5.2	5.8				0.0	7.1	3.5			
Neophracytium limneticum	12.9	0.0	6.4									
Oocystis Borgei	0.0	10.3	5.1		12.9	12.9	7.7	7.1	7.4			
Polyedriopsis quadrispina	6.4	5.2	5.8		12.9	12.9						
Quadrigula chadatii	19.3	0.0	9.7		6.5	6.5	0.0	7.1	3.5			
Scenedesmus abundans	0.0	5.2	2.6		6.5	6.5	7.7	7.1	7.4			
S. acutiformis ?							7.7	0.0	3.9			
S. Bernardii	6.4	5.2	5.8		12.9	12.9	0.0	14.2	7.1			
S. bijuga	0.0	5.2	2.6									
S. dimorphus	32.2	10.3	21.2		19.3	19.3	15.5	21.2	18.3			
S. quadricauda	45.1	10.3	27.7		6.5	6.5	23.2	35.4	29.3			

MHAPI
APTBC.1-2B

APPENDIX TABLE C.1-2
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CHLOROPHYTA (continued)												
Schroederia setigera	6.4	0.0	3.2		6.5	6.5						
Selenastrum minutum	6.4	0.0	3.2									
S. westii	6.4	0.0	3.2		12.9	12.9	15.5	14.2	14.8			
Tetraedron minimum	0.0	5.2	2.6									
Tetrastrum elegans	19.3	0.0	9.7		6.5	6.5	7.7	7.1	7.4			
T. glabrum	0.0	5.2	2.6									
T. staurogeniaeforme	12.9	5.2	9.0									
TOTAL CHLOROPHYTA	591.8	417.6	504.6		277.6	277.6	579.3	609.1	464.7			
CYANOPHYTA												
Chroococcus dispersus v. minor	51.5	51.5	51.5		45.1	45.1	100.4	35.4	67.9			
Dactylococcopsis fascicularis	32.2	30.9	31.5				23.2	7.1	15.1			
D. rhaphidioides					25.8	25.8						
D. smithii	6.4	0.0	3.2				15.4	14.2	7.7			
Microcystis incerta	0.0	5.2	2.6									
Oscillatoria amphibia?	12.9	29.3	21.1									
O. limnetica					16.8	16.8						
Oscillatoria sp. 3					1.3	1.3	1.5	0.0	0.8			
Rhabdoderma lineare	6.4	0.0	3.2									
TOTAL CYANOPHYTA	109.4	116.9	113.1		89.0	89.0	140.5	56.7	91.5			
EUGLENOPHYTA												
Trachelomonas hispida	0.0	5.2	2.6				7.7	0.0	3.9			
T. volvocina	0.0	5.2	2.6									
Trachelomonas sp. 1	64.4	51.5	57.9		38.6	38.6	85.0	63.7	74.3			
TOTAL EUGLENOPHYTA	64.4	61.9	63.1		38.6	38.6	92.7	63.7	78.2			
TOTAL PHYTOPLANKTON	2958.3	2163.5	2559.4		2206.8	2206.8	3430.8	2961.5	3060.2			
std. dev.			±681.0						±422.8			

MHAPI
APTBC.1-2, 1-2A, 1-2B, 1-2C

APPENDIX TABLE C.1-3

PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA												
Centrales												
Coscinodiscus lacustris	14.2	0.0	7.1				18.9	20.9	19.9			
Cyclotella glomerata	134.5	205.3	169.9	421.9	542.5	482.2	337.2	413.6	375.4	30.3	14.4	22.4
Cyclotella Meneghiniana	358.8	0.0	179.4	918.5	1,532.3	1,225.4	786.9	599.9	693.4			
Cyclotella ocellata	164.5	284.1	224.3	124.3	415.0	269.6	356.2	248.1	302.1			
Cyclotella stelligera	15.0	0.0	7.5	25.1	31.7	28.4	0.0	20.9	10.4			
Melosira distans	0.0	0.0	0.0	25.1	31.7	28.4	0.0	0.0	0.0			
Melosira granulata	179.5	410.4	294.9	496.6	446.7	471.6	487.1	310.0	398.5			
Melosira granulata v. angustissima	0.0	0.0	0.0	0.0	0.0	0.0	18.9	0.0	9.5			
Melosira varians	0.0	31.6	15.8	0.0	0.0	0.0	0.0	0.0	0.0			
Stephanodiscus astraea	15.0	0.0	7.5	49.6	64.1	56.9	93.9	20.9	57.4			
centric sp. 1	627.8	710.4	669.1	1,315.8	1,404.8	1,360.3	918.2	1,116.6	1,017.4	7.6	0.0	3.8
Pennales												
Achnanthes affinis										0.0	7.2	3.6
Achnanthes lanceolata v. dubia				0.0	31.7	15.9				7.6	0.0	3.8
Achnanthes linearis f. curta										22.7	7.2	15.0
Achnanthes minutissima				49.6	0.0	24.8	18.9	0.0	9.5	7.6	36.0	21.8
Achnanthes sp. 1				25.1	31.7	28.4				7.6	0.0	3.8
Amphora perpusilla										45.5	43.2	44.3
Asterionella formosa				0.0	31.7	15.9				0.0	0.0	0.0
Cocconeis placentula										15.2	14.4	14.8
Cymbella affinis	15.0	0.0	7.5				0.0	20.9	10.4	37.9	21.6	29.7
Cymbella minuta v. silesiaca							0.0	20.9	10.4			
Diatoma vulgare							0.0	20.9	10.4	0.0	7.2	3.6
Fragilaria												
Gomphonema angustatum							18.9	0.0	9.5	37.9	43.2	40.5
Gomphonema truncatum										7.6	0.0	3.8
Gyrosigma nodiferum							18.9	0.0	9.5	7.6	0.0	3.8
Navicula contenta										7.6	0.0	3.8
Navicula cryptocephala										0.0	14.4	7.2
Navicula gracilloides							18.9	0.0	9.5	7.6	36.0	21.8
Navicula tripunctata							18.9	0.0	9.5	30.3	0.0	15.2
Navicula viridula v. rostellata							18.9	20.9	19.9	7.6	0.0	3.8
Nitzschia acicularis v. closterioides							0.0	20.9	10.4			
Nitzschia communis v. abbreviata	15.0	15.8	15.4	0.0	64.1	32.0	18.9	0.0	9.5	7.6	14.4	11.0

MHAPI
APTBC.1-3

APPENDIX TABLE C.1-3
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA (continued)												
Nitzschia dissipata										0.0	28.8	14.4
Nitzschia palea										7.6	14.4	11.0
Nitzschia sigma										0.0	7.2	3.6
Nitzschia tryblionella v. victoriae							0.0	41.4	20.7			
Pinnularia subcapitata v. paucistriata										7.6	7.2	7.4
Rhoicosphenia curvata										7.6	21.6	14.6
Stauroneis Smithii				25.1	0.0	12.5						
Synedra delicatissima	717.6	836.7	777.1	1,613.5	1,947.3	1,780.4	618.4	1,199.3	908.9	0.0	7.2	3.6
Synedra rumpens v. familiaris	15.0	0.0	7.5				0.0	20.9	10.4			
Synedra ulna	15.0	15.8	15.4	25.1	31.7	28.4	18.9	62.2	40.6			
TOTAL BACILLARIOPHYTA	2286.9	2510.1	2398.4	5115.3	6607.0	5861.1	3786.9	4179.2	3983.1	318.6	345.6	332.1
CHRYSOPHYTA												
Mallomonas sp.							12.7	0.0	6.3			
Mallomonas sp. 1				38.0	12.7	25.3						
TOTAL CHRYSOPHYTA	0.0	0.0	0.0	38.0	12.7	25.3	12.7	0.0	6.3	0.0	0.0	0.0
CRYPTOPHYTA												
Cryptomonas ovata	145.6	221.5	183.5	88.6	38.0	63.3	12.7	25.3	19.0			
cryptophyte sp. 2	50.6	38.0	44.3	25.3	25.3	25.3	12.7	63.3	38.0	4.9	2.5	3.7
TOTAL CRYPTOPHYTA	196.2	259.5	227.8	113.9	63.3	88.6	25.4	88.6	57.0	4.9	2.5	3.7
CHLOROPHYTA												
Actinastrum Hantzschii v. fluviatile	6.3	6.3	6.3	25.3	25.3	25.3	25.3	25.3	25.3			
Ankistrodesmus convolutus	44.3	38.0	41.1	63.3	101.3	82.3	12.7	63.3	38.0			
Ankistrodesmus falcatus	19.0	25.3	22.2	0.0	101.3	50.6	25.3	25.3	25.3			
Ankistrodesmus falcatus v. acicularis	6.3	6.3	6.3									
Ankistrodesmus falcatus v. mirabilis	6.3	6.3	6.3									

MHAPI
APTBC.1-3A

APPENDIX TABLE C.1-3
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CHLOROPHYTA (continued)												
Chlamydomonas globosa	177.2	189.9	183.5	240.5	278.5	259.5	50.6	88.6	69.6	0.0	1.2	0.6
Chlamydomonas sp. 1										0.0	2.5	1.2
Chlorella ? sp.	82.3	44.3	63.3	113.9	113.9	113.9	63.3	38.0	50.6			
Coelastrum sphaericum	19.0	6.3	12.7	0.0	12.7	6.3	12.7	0.0	6.3			
Cosmarium sp. 2				12.7	25.3	19.0						
Cosmarium sp. 3	0.0	6.3	3.2									
Crucigenia quadrata	12.7	0.0	6.3									
Crucigenia tetrapedia	6.3	6.3	6.3	25.3	38.0	31.6	12.7	0.0	6.3			
Crucigenia truncata				0.0	12.7	6.3	0.0	25.3	12.7			
Dactylococcopsis fascicularis	0.0	6.3	3.2									
Dictyosphaerium Ehrenbergianum	12.7	6.3	9.5	25.3	63.3	44.3	76.0	38.0	57.0			
Euastrum sp.							25.3	0.0	12.7			
Francia droescheri	6.3	0.0	3.2									
Francia tuberculata				0.0	12.7	6.3	12.7	12.7	12.7			
Gloeocystis gigas	12.7	31.7	22.2	38.0	63.3	50.6	38.0	63.3	50.6			
Golenkinia radiata				38.0	38.0	38.0	38.0	76.0	57.0			
Kirchneriella contorta	6.3	25.3	15.8				25.3	25.3	25.3			
Kirchneriella lunaris	0.0	19.0	9.5	76.0	63.3	69.6	63.3	38.0	50.6			
Kirchneriella lunaris v. irregularis	38.0	25.3	31.6	113.9	202.5	158.2	113.9	151.9	132.9			
Kirchneriella obesa	6.3	19.0	12.7	0.0	113.9	57.0	12.7	12.7	12.7			
Kirchneriella obesa v. major				0.0	0.0	0.0	12.7	25.3	19.0			
Lagerheimia quadriseta	6.3	0.0	3.2	0.0	101.3	50.6	88.6	88.6	88.6			
Micractinium pusillum				12.7	0.0	6.3	25.3	0.0	12.7			
Oocystis Borgei	31.7	12.7	22.2	76.0	88.6	82.3	38.0	0.0	19.0			
Oocystis pusilla	12.7	6.3	9.5	12.7	38.0	25.3	25.3	25.3	25.3			
Pandorina morum	19.0	12.7	15.8	12.7	0.0	6.3	12.7	0.0	6.3			
Pediastrum duplex v. clathratum	6.3	0.0	3.2	0.0	12.7	6.3						
Scenedesmus abundans	0.0	12.7	6.3	38.0	38.0	38.0	50.6	38.0	44.3			
Scenedesmus denticulatus	12.7	19.0	15.8	25.3	12.7	19.0	0.0	38.0	19.0			
Scenedesmus dimorphus	12.7	6.3	9.5	38.0	50.6	44.3	0.0	38.0	19.0			
Scenedesmus quadricauda	12.7	38.0	25.3	88.6	76.0	82.3	25.3	25.3	25.3			
Scenedesmus sp. 2	0.0	6.3	3.2	0.0	25.3	12.7	25.3	12.7	19.0			

MHAPI
APTBC.1-38

APPENDIX TABLE C.1-3
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CHLOROPHYTA (continued)												
Selenastrum Westii	25.3	25.3	25.3	38.0	63.3	50.6	38.0	25.3	31.6			
Sphaerocystis schroeteri	0.0	12.7	6.3	38.0	38.0	38.0	25.3	25.3	25.3			
Tetraedron muticum				0.0	0.0	0.0						
Tetrastrum glabrum	12.7	0.0	6.3	50.6	50.6	50.6	12.7	0.0	6.3			
Tetratrum heteracanthum				0.0	25.3	12.7	12.7	12.7	12.7			
coccoid green 8	31.6	12.7	22.2	12.7	50.6	31.6	38.0	0.0	19.0			
unidentified green 2	31.6	38.0	34.8	38.0	88.6	63.3	0.0	25.3	12.7			
TOTAL CHLOROPHYTA	671.0	664.6	667.8	1253.5	2025.6	1639.0	1038.3	1063.5	1050.7	0.0	3.7	1.8
CYANOPHYTA												
Anabaena sp.	3.8	0.0	1.9									
Anthrospira gomontiana	1.9	0.0	1.0									
Aphanothece sp.				0.0	12.7	6.3						
Arthrospira gomontiana				5.1	2.5	3.8	5.1	5.1	5.1			
Chroococcus dispersus v. minor	76.0	69.6	72.8	177.2	367.1	272.2	76.0	253.2	164.6			
Chroococcus limneticus				25.3	12.7	19.0				0.0	1.2	0.6
Dactylococcopsis fascicularis				25.3	38.0	31.6	12.7	38.0	25.3			
Gomphosphaeria lacustris v. compacta	19.0	12.7	15.8	38.0	101.3	69.6	88.6	50.6	69.6			
Lyngbya limnetica										0.0	1.0	0.5
Marssoniella elegans				0.0	38.0	19.0	0.0	12.7	6.3			
Merismopedia tenuissima	12.7	12.7	12.7	12.7	38.0	25.3	12.7	12.7	12.7			
Microcystis incerta	25.3	25.3	25.3	25.3	139.2	82.3	101.3	139.2	120.3			
Oscillatoria amphibia	12.0	0.0	6.0									
Oscillatoria sp. 1,2	12.0	5.1	8.5	0.0	24.1	12.0				4.2	6.5	5.4
Oscillatoria tenuis										0.2	0.0	0.1
Raphidiopsis curvata	0.0	6.3	3.2				12.7	0.0	6.3			
Spirulina major										0.0	1.0	0.5
TOTAL CYANOPHYTA	162.7	131.7	147.2	308.9	773.6	541.1	309.1	511.5	410.2	4.4	9.7	7.1

MHAP1
APTBC.1-3C

APPENDIX TABLE C.1-3
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
EUGLENOPHYTA												
Euglena sp. 5	0.0	6.3	3.2									
Euglenoid sp. 1	126.6	132.9	129.8	76.0	50.6	63.3	12.7	0.0	6.3			
Trachelomonas cylindrica	0.0	6.3	3.2				12.7	0.0	6.3			
Trachelomonas sp. 1	12.7	0.0	6.3				12.7	0.0	6.3			
TOTAL EUGLENOPHYTA	139.3	145.5	142.5	76.0	50.6	63.3	38.1	0.0	18.9	0.0	0.0	0.0
XANTHOPHYTE												
xanthophyte sp. 1	6.3	6.3	6.3									
TOTAL XANTHOPHYTE	6.3	6.3	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PYRRHOPHYTA												
dinoflagellate sp. 1	0.0	6.3	3.2									
Glenodinium pulvisculus	0.0	19.0	9.5									
TOTAL PYRRHOPHYTA	0.0	25.3	12.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHERS												
Phytoflagellate sp. 6										4.9	4.9	4.9
TOTAL OTHERS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	4.9	4.9
TOTAL PHYTOPLANKTON	3462.4	3743.0	3602.7	6905.6	9532.8	8218.4	5210.5	5842.8	5526.2	647.0	703.6	675.2
Std. dev.			±364.2			±4091.9			±874.3			±20.1

MHAP1
APTBC.1-3D

APPENDIX TABLE C.1-4

PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA												
Centrales												
Cyclotella glomerata	246.3	269.3	257.8	212.5	164.4	188.4	150.6	212.5	181.5	0.4	0.0	0.2
C. Meneghiniana				49.1	44.9	47.0	11.6	14.2	12.9			
C. ocellata	98.5	0.0	49.3	114.3	74.7	94.5	46.3	56.6	51.5			
Melosira ambigua	32.8	0.0	16.4									
M. distans	65.7	89.8	77.7	163.4	134.5	149.0	57.9	141.6	99.8	1.2	0.0	0.6
M. granulata	344.8	256.5	300.6	163.4	269.1	216.3	104.2	283.3	193.8			
M. granulata v. angustissima	49.3	12.8	31.0	32.6	29.9	31.3	11.6	70.8	41.2			
Stephanodiscus astraea	65.7	25.7	45.7	32.6	59.8	46.2	57.9	14.2	36.0	0.8	0.0	0.4
Centric sp. 1							0.0	14.2	7.1			
Pennales												
Achnanthes affinis	16.1	0.0	8.0	16.3	15.0	15.7	34.8	14.2	24.5	0.4	0.3	0.4
A. lanceolata				0.0	29.9	15.0						
A. linearis f. curta	16.1	12.8	14.4	32.6	29.9	31.3	23.1	14.2	18.7	12.3	6.9	9.6
A. microcephala										0.0	0.3	0.2
A. minutissima	16.1	0.0	8.0	16.3	0.0	8.2	23.1	42.5	32.8	3.7	3.2	3.4
Amphora perpusilla				16.3	0.0	8.2	0.0	28.3	14.2	1.6	0.6	1.1
A. submontana				32.6	29.9	31.3						
Asterionella formosa	65.7	12.8	39.3	49.1	74.7	61.9	57.9	70.8	64.4	1.2	0.0	0.6
Cocconeis pediculus							46.3	0.0	23.1	0.0	0.3	0.2
C. placentula										1.6	0.0	0.8
Cymbella affinis	0.0	12.8	6.4									
C. sinuata										0.4	0.0	0.2
C. tumida										0.0	0.3	0.2
Diatoma vulgare				0.0	15.0	7.5	0.0	14.2	7.1			
Fragilaria crotonensis										0.0	0.3	0.2
Gomphonema olivaceum	16.1	0.0	8.0	16.3	0.0	8.2				0.4	0.0	0.2
G. parvulum	16.1	12.8	14.4	32.6	15.0	23.8	11.6	0.0	5.8	0.8	0.0	0.4
Navicula cryptocephala	16.1	38.5	27.3	0.0	15.0	7.5	34.8	42.5	38.6	3.7	1.6	2.6
N. cryptocephala v. veneta										0.4	0.3	0.4
N. gracilloides	32.8	12.8	22.8	16.3	89.7	53.0	0.0	56.6	28.3	0.4	0.0	0.2
N. mutica v. cohnii										0.0	0.3	0.2
N. rhyncocephala				32.6	0.0	16.3				0.4	0.0	0.2
N. tripunctata				49.1	0.0	24.5	11.6	0.0	5.8	0.4	0.0	0.2
N. viridula	0.0	12.8	6.4	32.6	15.0	23.8	11.6	14.2	12.9			

MHAPI
APTBC.1-4

APPENDIX TABLE C.1-4
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
BACILLARIOPHYTA (continued)												
Nitzschia acicularis v. closterioides	0.0	12.8	6.4							2.5	4.1	3.3
N. communis v. abbreviata	0.0	12.8	6.4	16.3	0.0	8.2						
N. dissipata				32.6	29.9	31.3	11.6	0.0	5.8	2.9	0.6	1.8
N. dubia										0.0	0.6	0.3
N. palea	32.8	12.8	22.8	16.3	15.0	15.7	11.6	14.2	12.9	3.7	2.5	3.1
N. tryblionella v. victoriae							11.6	0.0	5.8			
Rhoicosphenia curvata	32.8	12.8	22.8	16.3	0.0	8.2	69.5	0.0	34.8	3.7	3.2	3.4
Surirella biseriata							11.6	0.0	5.8			
S. ovata v. pinnata				0.0	15.0	7.5	11.6	14.2	12.9			
Synedra delicatissima v. angustissima				32.6	15.0	23.8	23.1	14.2	18.7	0.4	0.0	0.2
S. fasciculata v. truncata	32.8	76.9	54.9	32.6	59.8	46.2	69.5	42.5	56.0			
S. ulna				16.3	0.0	8.2						
Tabellaria fenestrata										0.0	0.3	0.2
TOTAL BACILLARIOPHYTA	1196.6	906.5	1047.2	1273.6	1241.1	1257.7	915.0	1232.5	1052.5	43.3	25.7	34.7
CHRYSOPHYTA												
Dinobryon sertularia										0.6	2.5	1.6
TOTAL CHRYSOPHYTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.5	1.6
CRYPTOPHYTA												
cryptophyte sp. 1	8.5	12.7	10.6	17.0	0.0	8.5	0.0	12.7	6.4			
cryptophyte sp. 2	12.7	17.0	14.9	38.1	29.7	33.9	38.1	25.4	31.8	3.7	4.9	4.3
TOTAL CRYPTOPHYTA	21.2	29.7	25.5	55.1	29.7	42.4	38.1	38.1	48.2	3.7	4.9	4.3
CHLOROPHYTA												
Actinastrum Hantzschii v. fluviatile				4.3	0.0	2.2						
Ankistrodesmus convolutus	4.3	12.7	8.5	12.7	4.3	8.5	4.3	8.5	6.4			
A. falcatus	4.3	12.7	8.5	8.5	4.3	6.4	4.3	4.3	4.3			
A. falcatus v. mirabilis	0.0	4.3	2.2	8.5	0.0	4.3	0.0	4.3	2.2			
Carteria Klebsii	0.0	4.3	2.2									
C. multifilis										0.6	0.6	0.6
Characium ambiguum										0.6	0.0	0.3

MHAPI
APTBC.1-4A

APPENDIX TABLE C.1-4
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CHLOROPHYTA (continued)												
Chlamydomonas globosa	4.3	38.1	21.2	0.0	8.5	4.3	4.3	4.3	4.3	1.9	1.9	1.9
Chlamydomonas sp. 3				4.3	4.3	4.3	4.3	0.0	2.2			
Chlamydomonas sp. 5	0.0	4.3	2.2	8.5	12.7	10.6	4.3	0.0	2.2			
Chlorella ? sp.	21.2	25.4	23.3	38.1	63.5	50.8	25.4	16.9	21.2			
Closterium acutum v. variabile	4.3	0.0	2.2									
Cosmarium sp.3	4.3	16.9	10.6	38.1	12.7	25.4	25.4	29.6	27.5			
Crucigenia rectangularis										0.0	1.9	1.0
C. tetrapedia	0.0	8.5	4.3				0.0	4.3	2.2			
Dictyosphaerium pulchellum				0.0	4.3	2.2				0.6	2.5	1.5
Francela Droescheri	4.3	0.0	2.2									
Francela tuberculata							0.0	4.2	2.1			
Golenkinia radiata	0.0	8.5	4.3	12.7	0.0	6.4						
Kirchneriella contorta	12.7	0.0	6.4									
K. lunaris v. Dianae	21.2	8.5	14.9	8.5	12.7	10.6	8.5	8.5	8.5			
K. lunaris v. Irregularis	0.0	8.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3			
K. obesa	4.3	0.0	2.2	4.3	0.0	2.2	4.3	12.7	8.5			
Lagerheimia quadriseta	4.3	21.2	12.8	25.4	4.3	14.9	12.7	8.5	10.6			
Micractinium pusillum	8.5	8.5	8.5	8.5	8.5	8.5	4.3	4.3	4.3			
Oocystis Borgei	4.3	4.3	4.3	0.0	4.3	2.2	0.0	4.3	2.2			
Pediastrum obtusum							0.0	4.3	2.2			
Polyedriopsis quadrispina	12.7	29.7	21.2	8.5	8.5	8.5	0.0	4.3	2.2			
Quadrigula chodatii				4.3	0.0	2.2	0.0	4.3	2.2			
Scenedesmus abundans				4.3	8.5	6.4	4.3	4.3	4.3			
S. acuminatus				4.3	0.0	2.2						
S. dimorphus	4.3	0.0	2.2	0.0	4.3	2.2	4.3	0.0	2.2			
S. quadricauda	4.3	29.7	17.0	8.5	16.9	12.7	17.0	12.7	14.9			
Selanastrum Westi	0.0	12.7	6.4				0.0	4.3	2.2			
Tetrastrum elegans	0.0	4.3	2.2	8.5	0.0	4.3	4.3	0.0	2.2			
T. glabrum							4.3	0.0	2.2			
T. punctatum	12.7	0.0	6.4									
T. staurogeniaeforme	4.3	0.0	2.2	4.3	12.7	8.5						
T. triacanthum	0.0	4.3	2.2	8.5	0.0	4.3						
unidentified green sp. 2	4.3	16.9	10.6				0.0	4.3	2.2			
TOTAL CHLOROPHYTA	136.3	280.0	215.5	233.6	199.6	309.4	140.6	157.5	149.8	3.7	6.9	5.3

MHAPI
APTBC.1-4B

APPENDIX TABLE C.1-4
(continued)
PHYTOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CYANOPHYTA												
Calothrix sp.							8.1	0.0	4.1			
Chroococcus dispersus v. minor	38.1	76.3	57.2	59.3	84.7	72.0	16.9	46.6	31.8	6.8	1.9	4.4
C. limneticus				0.0	8.5	4.3						
Dactylococcopsis fascicularis	4.3	0.0	2.2	4.3	4.3	4.3	8.5	0.0	4.3			
Gomphosphaeria lacustris v. compacta				12.7	4.3	8.5	0.0	4.3	2.2			
Lyngbya sp.	3.0	0.0	1.5	0.9	0.0	0.5						
Oscillatoria amphibia	6.8	4.3	5.6	0.0	8.5	4.3	3.0	0.0	1.5			
O. tenuis				14.4	0.0	7.2						
Oscillatoria sp. (1,2)	3.0	8.1	5.6	16.5	8.5	12.5	1.7	1.7	1.7	0.3	0.3	0.3
Phormidium minnesotense				1.7	0.0	0.9						
Rhabdoderma lineare				0.0	4.3	2.2	4.3	0.0	2.2			
TOTAL CYANOPHYTA	55.2	88.7	72.1	109.8	123.1	116.7	42.5	52.6	47.8	7.1	2.2	4.7
EUGLENOPHYTA												
Phacus crenulata				0.0	8.5	4.3	0.0	4.3	2.2			
Trachelomonas volvocina	4.3	4.3	4.3	17.0	4.3	10.7	4.3	0.0	2.2	0.6	0.0	0.3
Trachelomonas sp. 1	8.5	4.3	6.4	29.7	0.0	14.9	4.3	0.0	2.2			
eulenoid sp.1	8.5	8.5	8.5	0.0	8.5	4.3				117.8	135.7	126.8
TOTAL EUGLENOPHYTA			19.2			34.2			6.6	118.4	135.7	127.1
PYRRHOPHYTA												
Peridinium inconspicuum										1.9	1.9	1.9
TOTAL PYRRHOPHYTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9	1.9
OTHERS												
phytoflagellate 3	4.3	4.3	4.3									
phytoflagellate 6										4.3	3.7	4.0
phytoflagellate 8	8.5	4.3	6.4				4.3	0.0	2.2			
TOTAL OTHERS			10.7	0.0	0.0	0.0	4.3	0.0	2.2	4.3	3.7	4.0
TOTAL PHYTOPLANKTON			1390.2			1760.4			1307.1			183.6
std. dev.									±228.2			

MHAPI
APTBC.1-4, 1-4A, 1-4B, 1-4C

APPENDIX TABLE C.1-5

PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml
BACILLARIOPHYTA									
Centrales									
Cyclotella glomerata	113.1	5.3	207.09	3.3	100.51	4.7	129.79		
C. Meneghiniana	314.2	0.7	71.64	2.1	190.72	0.4	28.91		
C. ocellata	392.7	0.4	50.66						
C. pseudostelligera	113.1	0.3	12.89						
C. stelligera	98.2			0.3	7.56	1.1	26.51		
C. striata	392.7			1.2	121.74	1.6	111.53		
Cyclotella sp. 1	120.8	14.4	599.41	18.2	619.95	15.0	446.60		
Melosira distans	212.1	2.1	151.44	0.7	42.84	1.9	96.51		
M. granulata	654.2	0.8	168.78	0.9	163.55	0.2	32.71		
M. italica	216.0			1.3	70.63	0.9	49.25		
Stephanodiscus astraea	377.0	8.1	1045.42	2.9	311.40	1.5	139.49		
S. astraea v. minutula	61.5	5.2	108.86	11.0	189.42	18.2	275.46		
unidentified centric sp. 1	20.4	4.6	32.40	4.9	28.25	3.7	18.85		
unidentified centric sp. 2	50.3	0.4	6.49						
Pennales									
Achnanthes deflexa	27.0	0.3	3.08						
A. fragilarioides	176.0	0.8	45.41						
A. hungarica	160.0	0.3	18.24						
A. lanceolata	42.0	0.4	5.42			0.2	1.81		
A. linearis f. curta	28.0			0.7	5.66	1.0	6.78	1.1	1.01
A. minutissima	36.6	0.8	9.44	2.8	27.85	1.5	13.54	14.7	17.42
A. perpusilla	87.4			0.4	10.92	0.4	8.04	0.3	0.79
A. submontana	175.9			0.4	21.99	0.2	7.56		
Asterionella formosa	670.0	2.1	478.38	2.2	406.69	1.6	276.04		
Cocconeis placentula v. lineata	1399.6							0.8	37.79
Cymbella affinis	1526.8			0.3	117.56			1.0	47.33
Diatoma vulgare	2300.0			0.8	464.60	0.4	211.60	0.7	50.60
Eunotia curvata	576.0					0.2	24.77		
Fragilaria vaucheriae	130.6					0.2	5.62		
Gomphonema angustatum	336.0					0.3	28.56	7.5	81.65
G. olivaceum	559.9	0.7	127.66					39.9	727.31
Hannaea arcus	1152.0	0.3	131.33						
Meridion circulare	1385.4							0.7	30.48
Navicula bacillum	380.8			0.3	29.32				
N. cryptocephala	170.8	1.8	107.77	2.2	103.68	0.2	8.54		
N. cryptocephala v. veneta	140.0	0.3	15.96	0.4	17.50				
N. gracilloides	364.0					0.2	15.65		

APPENDIX TABLE C.1-5
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml
BACILLARIOPHYTA (continued)									
Navicula seminulum	195.0	0.4	25.16						
N. tripunctata	540.0	0.3	61.56			0.2	23.22		
N. viridula	1160.0	0.7	281.88	0.4	145.00				
Navicula sp. 2	367.6	0.7	83.81						
Nitzschia acicularis v. closterioides	274.0	11.3	1059.83	9.1	698.97	13.9	939.00	0.3	2.47
N. amphibia	35.3			0.7	7.13				
N. capitellata	144.0			0.4	18.00				
N. communis v. abbreviata	52.5	0.8	13.54	0.7	10.60	0.5	7.09		
N. dissipata	260.0	0.3	29.64	1.2	80.60	1.5	103.48		
N. ganderseiminsis	540.0			0.3	41.58				
N. Kutzingiana	138.2	0.8	35.66						
N. palea	58.8	2.0	40.22	1.7	27.28	0.5	7.53		
N. sublinearis	678.0			0.3	52.21			1.1	24.41
Pinnularia subcapitata v. paucistriata	1020.0	0.4	131.58	0.4	127.50				
Rhoicosphenia curvata	1960.0					0.2	84.28	17.5	1107.40
Surirella ovata	1723.6	0.4	222.34	1.1	482.61	1.0	417.11	0.3	15.51
S. ovalis	2191.3	0.4	282.68						
Synedra acus	624.0							3.2	64.90
S. delicatissima	463.5					0.2	23.18	3.1	45.89
S. fasciculata	1008.0					0.2	50.40	0.7	22.18
S. filiformis v. exilis	191.4	2.8	186.23	0.4	23.92	1.4	70.82	1.7	10.34
S. radians	528.0							1.3	21.65
S. rumpens	180.0	0.3	20.52			0.8	33.30		
S. ulna	225.0					0.2	9.68	0.7	4.95
S. ulna v. oxyrhychus f. mediocontracta	1440.0			0.3	110.88				
TOTAL BACILLARIOPHYTA		71.7	5872.42	74.3	4878.62	76.2	3733.21	96.6	2314.08
CHRYSOPHYTA									
Dinobryon sertularia	193.0[c]	0.1	7.72	0.1	7.53	0.2	7.53		
D. sociale	77.2[c]	7.7	203.27	7.2	157.64	4.6	87.70		
Mallomonas ? sp. 1	1415.5			0.1	55.20	0.1	28.31		
TOTAL CHRYSOPHYTA		7.8	210.99	7.4	220.37	4.9	123.54	0.0	0.0
CRYPTOPHYTA									
cryptophyte sp. 1	265.0	0.8	72.88	1.0	71.55	0.6	40.81	1.2	10.60
cryptophyte sp. 2	308.8	0.3	36.44	0.5	47.56	0.2	12.04		
TOTAL CRYPTOPHYTA		1.1	109.32	1.5	119.11	0.8	52.85	1.2	10.60

APPENDIX TABLE C.1-5
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Average biovolume (μ^3)	Station and parameter: 1 Relative abundance (%)	1 Biovolume[b] ($\mu^3 \times 10^2$)/ml	3 Relative abundance (%)	3 Biovolume ($\mu^3 \times 10^2$)/ml	5 Relative abundance (%)	5 Biovolume ($\mu^3 \times 10^2$)/ml	6 Relative abundance (%)	6 Biovolume ($\mu^3 \times 10^2$)/ml
CHLOROPHYTA									
Ankistsrodesmus Braunii	139.4[c]			0.1	5.44				
A. convolutus	52.8[c]	0.6	10.40	0.4	6.12	0.3	4.12		
A. falcatus	32.4[c]	1.2	12.73	1.3	11.24	0.8	6.25		
A. falcatus v. acicularis	105.1[c]			0.1	4.10	0.1	2.10		
A. falcatus v. mirabilis	88.0[c]	0.5	13.82	0.1	3.43	0.7	15.31		
A. fractus	167.6[c]					0.1	3.35		
Carteria sp. 1	643.4	0.1	25.74	0.1	25.09				
Chlamydomonas globosa	775.7	0.6	152.81	1.9	418.10	1.0	194.70	0.6	16.29
C. Snowii	197.9	0.3	23.35	0.3	15.24	0.27	11.48		
Chlamydomonas sp. 3	50.3							0.4	0.60
Chlamydomonas sp. 5	160.8	1.8	94.71	0.8	31.03	2.5	102.27		
Chlorella ? sp.	57.9	3.5	68.26	3.1	49.04	1.8	25.65		
Cosmarium sp. 3	289.5	0.1	11.58			0.2	11.29		
Desmatractum indutum	203.7					0.1	4.07		
Dictyosphaerium pulchellum	1204.3[c]	0.2	95.14	0.3	92.73			0.2	7.23
Golenkinia radiata	137.3	0.1	5.49			0.2	7.96		
Kirchneriella lunaris	30.6[c]	0.1	1.22	0.3	2.36	0.2	1.19		
K. lunaris v. irregularis	36.3[c]	0.1	1.45	0.1	1.42				
K. obesa v. major	30.2[c]	0.2	2.39			0.1	0.60		
Micractinium pusillum	164.6[c]			0.1	6.42	0.1	3.29		
Oocystis Borgei	188.5[c]					0.2	7.35		
O. pusilla ?	70.4					0.2	4.08		
Polyedriopsis quadrispina	115.2	0.3	13.59	0.4	13.36	0.3	8.99		
Quadrigula chodatii	261.9[c]					0.1	5.24		
Scenedesmus quadricauda	411.8[c]			0.1	16.06	0.2	16.06		
Schroederia setigera	102.9					0.2	5.97		
Selenastrum gracile	96.5[c]	0.7	22.77			0.5	11.19		
Tetraedron minimum	294.9[c]	0.1	11.80						
Tetrastrum elegans	68.6[c]	0.1	2.74						
T. glabrum	500.0[c]			0.1	19.50				
Wislouchiella planctonica	1629.9	0.7	384.66	0.1	63.57	0.5	189.07		
TOTAL CHLOROPHYTA		11.3	954.65	9.7	784.25	10.6	641.58	1.2	24.12
CYANOPHYTA									
Anabaena sp. 1	304.2[d]					0.2	12.47		
Aphanothece sp.	1838.8[c]	0.1	73.55	0.1	71.71	0.2	71.71		
Chroococcus dispersus v. minor	15.8[c]	1.2	6.21	0.7	3.05	0.6	2.43		
C. limneticus	463.2[c]	0.2	36.59			0.1	9.26		
Dactylococcopsis fascicularis	33.5[c]	0.8	9.21	0.8	7.74	0.6	4.52		
D. raphioides	51.5[c]	0.1	2.06	0.3	3.97				
Gomphosphaeria lacustris	179.6[c]	0.1	7.18			0.2	7.00		

APPENDIX TABLE C.1-5
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
25 MARCH 1981

Species	Abundance[a]	Station and parameter							
		1		3		5		6	
		Relative abundance (%)	Biovolume[b] (μ^3x10^2)/ml	Relative abundance (%)	Biovolume (μ^3x10^2)/ml	Relative abundance (%)	Biovolume (μ^3x10^2)/ml	Relative abundance (%)	Biovolume (μ^3x10^2)/ml
CYANOPHYTA (continued)									
Lyngbya contorta	201.4[d]					0.1	1.61		
Lyngbya sp.	201.1[d]	0.1	4.02	0.1	4.63	0.2	9.85		
Microcystis incerta	17.2[c]	0.1	0.69						
Oscillatoria amphibia ?	254.5[d]	0.3	26.21			0.1	8.40		
Oscillatoria sp. (1,2)	314.2[d]	0.1	3.77	0.1	5.03	0.1	6.91	0.6	6.60
Synechocystis ? sp.	617.3[c]	0.8	169.76	0.1	24.07	0.3	47.53		
filamentous blue-green sp. 1	251.3[d]							0.4	3.27
TOTAL CYANOPHYTA		3.8	339.25	2.2	120.20	2.5	181.69	1.0	9.87
EUGLENOPHYTA									
Phacus Lemmermanii	3002.5	0.1	120.10	0.1	117.10	0.4	291.24		
Trachelomonas volocina	1098.1	0.1	43.92	0.1	42.83	0.1	21.96		
Trachelomonas sp. 1	137.3	3.9	183.43	4.5	216.80	4.4	148.15		
TOTAL EUGLENOPHYTA		4.2	347.45	4.7	376.73	4.9	461.35	0.0	0.0
PYRRHOPHYTA									
Peridinium inconspicuum	6031.9					0.1	120.64		
dinoflagellate sp. 1	463.2			0.1	18.06				
TOTAL PYRRHOPHYTA		0.0	0.0	0.1	18.06	0.1	120.64	0.0	0.0
OTHERS									
phytoflagellate sp. 3	1059.5	0.1	42.38	0.1	41.32				
TOTAL OTHERS		0.1	42.38	0.1	41.32	0.0	0.0	0.0	0.0
TOTAL BIOVOLUME			7876.46		6558.66		5314.86		2358.67

[a]Values represent relative percentage of the total phytoplankton and are based on the average of duplicate samples.

[b]Biovolume per species was derived by multiplying the average biovolume for each species by the average density of that species at each station.

[c]Value represents colony volume.

[d]Value represents 100μ filament volume.

APPENDIX TABLE C.1-6

PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Average biovolume (μ^3)	Station and parameter: 1 Relative abundance[a] (%)	1 Biovolume[b] ($\mu^3 \times 10^2$)/ml	3 Relative abundance (%)	3 Biovolume ($\mu^3 \times 10^2$)/ml	5 Relative abundance (%)	5 Biovolume ($\mu^3 \times 10^2$)/ml	6 Relative abundance[a] (%)	6 Biovolume ($\mu^3 \times 10^2$)/ml
BACILLARIOPHYTA									
Centrales									
Cyclotella glomerata	95.6	9.4	226.76	7.1	149.33	12.9	381.64	SAMPLES NOT ADEQUATELY PRESERVED	
C. Meneghiniana	289.5	2.5	184.12	1.1	67.45	2.1	183.54		
C. ocellata	264.1	2.7	183.29	8.1	479.08	6.5	534.54		
C. pseudostelligera	202.8					0.4	13.85		
C. stelligera	362.9					0.8	91.45		
Cyclotella sp. 1	127.1	4.0	126.72						
Melosira distans	127.4	3.6	114.15	3.5	91.47	4.1	158.36		
M. granulata	1206.4	1.0	312.46	4.4	1170.21	5.2	1926.52		
M. varians	2521.9	0.2	153.84	0.5	272.37	0.3	201.75		
Stephanodiscus astraea	529.5	3.5	461.72	3.2	380.18	3.8	620.57		
S. astraea v. minutula	230.9	0.2	14.08						
Centric sp. 1	18.2	10.8	49.81	15.8	63.72	6.8	36.67		
Centric sp. 2	84.8	0.3	7.04						
Pennales									
Achnanthes deflexa	85.5	1.2	25.39	1.6	30.69	0.7	19.41		
A. lanceolata	48.0			1.1	11.18				
A. linearis f. curta	81.0	1.1	23.00	1.1	18.87	1.8	44.87		
A. minutissima	49.5	0.6	7.13	2.6	29.35	3.3	49.95		
A. nollii	182.0	0.2	11.10						
Amphora perpusilla	58.9			0.5	6.36				
A. submontana	125.3	0.3	10.40						
Asterionella formosa	510.0			6.5	741.54	4.8	758.88		
A. formosa v. gracillima	357.2	5.6	499.72						
Cymbella affinis	1244.1					1.0	381.94		
C. minuta v. silesiaca	565.5					0.2	31.10		
Diatoma tenue v. elongatum	768.0					0.2	42.24		
D. vulgare	1620.0			1.1	377.46	0.2	89.10		
Fragilaria construens v. pumila	311.0	0.3	25.81						
F. crotonensis	1830.4	3.8	1744.37	0.5	197.68				
F. vaucheriae	72.0	0.5	9.43	0.5	7.78	0.3	5.76		
Gomphonema angustatum	84.0	0.2	5.12	1.6	30.16	0.3	6.72		
G. olivaceum	180.0	0.2	10.98			0.3	14.4		
G. parvulum	157.5	0.5	20.63			0.8	38.27		

MHAP I
APTBC.1-6

APPENDIX TABLE C.1-6
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Average biovolume (μ^3)	Station and parameter: 1 Relative abundance[a] (%)	1 Biovolume[b] ($\mu^3 \times 10^2$)/ml	3 Relative abundance (%)	3 Biovolume ($\mu^3 \times 10^2$)/ml	5 Relative abundance (%)	5 Biovolume ($\mu^3 \times 10^2$)/ml	6 Relative abundance (%)	6 Biovolume ($\mu^3 \times 10^2$)/ml
BACILLARIOPHYTA (continued)									
Navicula biconica	150.8	0.2	12.52	0.5	16.29				
N. cryptocephala	343.0	2.6	229.81	1.6	123.14	1.1	118.34		
N. cryptocephala v. veneta	204.0	0.3	16.93			0.3	16.32		
N. graciloides	720.0	0.2	43.92	0.5	77.76	0.8	181.44		
N. minuscula	40.0	0.3	3.32						
N. mutica	461.8			1.1	107.60				
N. mutica v. cohnii	72.0					0.4	7.85		
N. rhyncocephala	346.5			1.1	80.73	0.6	59.94		
N. tripunctata	420.0					0.3	33.60		
N. viridula	1080.0	0.8	89.88	0.5	116.64	0.6	204.12		
Navicula sp. 4	196.3					0.3	15.70		
Nitzschia acicularis v. closterioides	295.5	3.8	285.45			1.1	96.63		
N. amphibia	2120.6					0.3	169.65		
N. communis v. abbreviata	14.0	1.3	4.77	1.1	3.26	1.0	4.17		
N. dissipata	196.0	1.7	83.10	2.7	116.23	1.9	113.48		
N. gandersheimiensis	714.0			1.1	166.36	0.6	123.52		
N. palea	64.0	1.7	27.97	3.2	45.95	4.7	93.06		
N. parvula	150.0	0.2	9.15						
N. stagnorum	256.0	0.2	15.62						
Pinnularia appendiculata	208.0					0.6	35.98		
Rhoicosphenia curvata	1277.0			0.5	13.79	1.3	51.08		
Surirella angustata	678.6	0.3	56.32						
S. ovata	1413.7	0.3	117.34	1.1	329.39	0.7	320.91		
Synedra delicatissima	140.0	1.7	61.62	1.6	50.62	1.0	43.29		
S. filliformis v. exilis	174.0	0.6	26.97	1.1	40.54	1.1	60.03		
S. rumpens	73.8	1.4	27.08			1.1	25.46		
S. ulna	1120.0			1.6	402.8	0.6	211.68		
S. ulna v. contracta	594.0	0.2	36.23						
TOTAL BACILLARIOPHYTA		70.5	5375.07	80.1	5815.98	77.2	7617.88		
CRYPTOPHYTA									
Cryptomonas ovata	702.5	0.6	117.32	0.3	45.66	0.2	49.88		
cryptophyte sp. 1	75.4	0.8	15.98	0.9	14.55				
cryptophyte sp. 2	40.2	1.5	2.61	0.3	2.61	1.9	23.16		
TOTAL CRYPTOPHYTA		2.9	135.91	1.5	62.82	2.1	73.04		

MHAP I
APTBC.1-6A

APPENDIX TABLE C.1-6
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml
CHLOROPHYTA									
Actinastrum Hantzschia v. fluviatile	325.7[c]	0.1	10.42	0.3	21.17	0.2	24.10		
Ankistsrodesmus convolutus	49.3[c]	0.7	9.22	0.3	3.20	0.4	5.57		
A. falcatus	5.0[c]	4.2	5.25	1.1	1.29	3.0	4.52		
A. falcatus v. acicularis	106.9	0.1	2.78			0.1	3.74		
A. falcatus v. mirabilis	120.4[c]	0.8	24.80	0.6	15.53	0.5	17.46		
Carteria cordiformis	377.0					0.1	14.70		
Chlamydomonas globosa	67.0	2.0	32.76	0.3	4.36	1.2	25.26		
Chlamydomonas sp. 5	80.4	1.4	29.51	1.1	20.66	1.6	38.51		
Chlorella ? sp.	15.1[c]	3.0	11.37	1.4	4.86	2.1	9.57		
Coelastrum sphaericum	96.5[c]			0.6	12.45				
Cosmarium sp. 3	64.3	0.8	12.41	0.9	12.41	0.5	9.90		
Crucigenia quadrata	49.5[c]	0.1	1.29						
Dictyosphaerium pulchellum	2,745.2[c]	0.1	87.85						
D. Ehrenbergianum	51.3[c]					0.1	2.00		
Golenkinia radiata	51.3	0.1	1.64			0.6	9.23		
Kirchneriella lunaris v. Dianae	12.6[c]	0.6	2.10	0.3	0.82	0.7	2.80		
K. lunaris v. irregularis	76.2[c]	0.4	7.85	0.3	4.95	0.6	14.25		
Lagerheimia quadriseta	30.2	0.5	3.68	0.6	3.90	0.1	1.18		
Micractinium pusillum	30.5[c]	0.2	1.77			0.1	1.07		
Nephracytium limneticum	311.0	0.2	19.90						
Oocystis Borgei	218.7[c]	0.2	11.15	0.6	28.21	0.2	16.18		
Polyedriopsis quadrispina	107.9	0.2	6.26	0.6	13.92				
Quadrigula chodatii	301.6[c]	0.4	29.26	0.3	19.60	0.1	10.56		
Scenedesmus abundans	33.9[c]	0.1	0.88	0.3	2.20	0.2	2.51		
S. acutiformis ?	80.4[c]					0.1	3.14		
S. Bernardii	665.3[c]	0.2	38.59	0.6	85.82	0.2	47.24		
S. bijuga	128.7[c]	0.1	3.35						
S. dimorphus	39.9[c]	0.8	8.46	0.9	7.70	0.6	7.30		
S. quadricauda	198.2[c]	1.1	54.90	0.3	12.88	1.0	58.07		
S. setigera	9.4	0.1	0.30	0.3	0.61				
S. minutum	29.1[c]	0.1	0.93						
S. Westii	18.8[c]	0.1	0.60	0.6	2.43	0.5	2.78		
Tetraedron minimum	1.0	0.1	0.03						
Tetrastrum elegans	51.5[c]	0.4	5.00	0.3	3.35	0.2	3.81		
T. glabrum	144.0[c]	0.1	3.74						
T. staurogeniaeforme	120.6[c]	0.4	10.85						
TOTAL CHLOROPHYTA		19.7	438.90	12.6	282.32	15.2	335.45		

MHAP I
APTBC.1-68

APPENDIX TABLE C.1-6
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
27 MAY 1981

Species	Average biovolume (μ^3)	Station and parameter: 1 Relative abundance[a] (%)	1 Biovolume[b] ($\mu^3 \times 10^2$)/ml	3 Relative abundance (%)	3 Biovolume ($\mu^3 \times 10^2$)/ml	5 Relative abundance (%)	5 Biovolume ($\mu^3 \times 10^2$)/ml	6 Relative abundance (%)	6 Biovolume ($\mu^3 \times 10^2$)/ml
CYANOPHYTA									
Chroococcus dispersus v. minor	4.2[c]	2.1	2.16	2.0	1.89	2.2	2.85		
Dactylococcopis fascicularis	6.6[c]	1.2	2.08			0.5	1.00		
D. rhaphidioides	4.8[c]			1.2	1.24				
D. Smithii	15.2[c]	0.1	0.49			0.2	1.17		
Microcystis incerta	67.0[c]	0.1	1.74						
Oscillatoria amphibia?	380.1[d]	0.8	80.20						
O. limnetica	1256.6[d]			0.8	211.11				
Oscillatoria sp. 3	314.2[d]			0.1	4.08	0.1	2.51		
Rhabdoderma lineare	7.5[c]	0.1	0.24						
TOTAL CYANOPHYTA		4.4	86.90	4.1	218.32	3.0	7.53		
EUGLENOPHYTA									
Trachelomonas hispida	965.1	0.1	25.90			0.1	37.64		
T. volvocina	386.0	0.1	10.04						
Trachelomonas sp. 1	42.9	2.3	24.84	1.7	16.56	2.4	31.87		
TOTAL EUGLENOPHYTA		2.5	60.00	1.7	16.56	2.5	69.51		
TOTAL PHYTOPLANKTON			6096.78		6396.00		8103.41		

[a]Values represent relative percentage of the total phytoplankton and are based on the average of duplicate samples.

[b]Biovolume per species was derived by multiplying the average biovolume for each species by the average density of that species at each station.

[c]Value represents colony volume.

[d]Value represents 100-μ filament volume.

MHAP I
APTBC.1-6, A,B,C

APPENDIX TABLE C.1-7

PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 x 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 x 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 x 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 x 10^2$)/ml
BACILLARIOPHYTA									
Centrales									
Cosçinodiscus lacustris	1,588.9	0.2	112.81			0.4	316.19		
Cyclotella glomerata	198.8	4.7	337.76	5.9	958.61	6.8	746.30	3.3	44.53
Cyclotella Meneghiniana	1,275.9	5.0	2,288.96	14.9	16,634.88	12.6	8,847.09		
Cyclotella ocellata	351.9	6.2	789.31	3.3	948.72	5.5	1,063.09		
Cyclotella stelligera	230.9	0.2	17.32	0.4	65.58	0.2	24.01		
Melosira distans	21.2	0.0		0.4	6.02				
Melosira granulata	769.7	8.2	2,269.85	5.7	3,629.91	7.2	3,067.25		
Melosira granulata v. angustissima	650.3					0.2	61.78		
Melosira varians	141.4	0.4	22.34						
Stephanodiscus astraea	923.6	0.2	69.27	0.7	525.53	1.0	530.15		
centric sp. 1	39.3	18.6	262.96	16.6	534.60	18.4	399.84	0.6	1.49
Pennales									
Achnanthes affinis	212.0							0.5	7.63
Achnanthes lanceolata v. dubia	120.0			0.2	19.08			0.6	4.56
Achnanthes linearis f. curta	63.0							2.2	9.45
Achnanthes minutissima	30.0			0.3	7.44	0.2	2.85	3.2	6.54
Achnanthes sp. 1	56.5			0.4	16.05			0.6	2.15
Amphora perpusilla	32.9							6.6	14.57
Asterionella formosa	360.0			0.2	57.24				
Cocconeis placentula	603.1							2.2	89.26
Cymbella affinis	1,809.5	0.2	135.71			0.2	188.19	4.4	537.42
Cymbella minuta v. silesiaca	367.6					0.2	38.23		
Diatoma vulgare	2,652.0					0.2	275.81	0.5	95.47
Gomphonema angustatum	336.0					0.2	31.92	6.0	136.08
Gomphonema truncatum	1,311.0							0.6	49.82
Gyrosigma nodiferum	2,211.7					0.2	210.11	0.6	84.04
Navicula contenta	81.0							0.6	3.08
Navicula cryptocephala	450.0							1.1	32.40
Navicula graciloides	292.5					0.2	27.79	3.2	63.77
Navicula tripunctata	640.0					0.2	60.80	2.3	97.28
Navicula viridula v. rostellata	756.0					0.4	150.44	0.6	28.73
Nitzschia acicularis v. closterioides	367.6					0.4	76.83		
Nitzschia communis v. abbreviata	31.5	0.4	4.85	0.4	10.08	0.2	2.99	1.6	3.47

MHAP I
APTBC.1-7

APPENDIX TABLE C.1-7
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu 3 \times 10^2$)/ml
BACILLARIOPHYTA (continued)									
Nitzschia dissipata	196.0							2.1	28.22
Nitzschia palea	108.0							1.6	11.88
Nitzschia sigma	990.0							0.5	35.64
Nitzschia tryblionella v. victoriae	4,071.5					0.4	842.80		
Pinnularia subcapitata v. paucistriata	784.0							1.1	58.02
Rhoicosphenia curvata	1,260.0							2.2	183.96
Stauroneis Smithii	471.2			0.2	58.90				
Synedra delicatissima	1,079.2	21.6	8,386.46	21.7	19,214.08	16.5	9,808.85	0.5	38.85
Synedra rumpens v. familiaris	294.0	0.2	22.05			0.2	30.58		
Synedra ulna	2,916.0	0.4	449.06	0.4	828.14	0.7	1,183.90		
TOTAL BACILLARIOPHYTA		66.5	15,168.71	71.7	42,514.86	72.7	27,987.79	49.3	1,668.31
CHRYSOPHYTA									
Mallomonas sp.	285.9	0.0	0.00	0.0	0.00	0.1	18.01	0.0	0.00
TOTAL CHRYSOPHYTA		0.0	0.00	0.0	0.00	0.1	18.01	0.0	0.00
CRYPTOPHYTA									
Cryptomonas ovata	603.2	5.2	1,106.87	0.8	381.83	0.3	114.61		
cryptophyte sp. 2	66.0	1.2	29.24	0.3	16.70	0.7	25.08	0.6	2.44
TOTAL CRYPTOPHYTA		6.4	1,136.11	1.1	398.53	1.0	139.69	0.6	2.44
CHLOROPHYTA									
Actinastrum Hantzschii v. fluviatile	312.9[c]	0.2	19.71	0.3	79.16	0.5	79.16		
Ankistrodesmus convolutus	52.8[c]	1.1	21.70	1.0	43.45	0.7	20.06		
Ankistrodesmus falcatus	26.2[c]	0.6	5.82	0.6	13.26	0.5	6.63		
Ankistrodesmus falcatus v. acicularis	60.3[c]	0.2	3.80						
Ankistrodesmus falcatus v. mirabilis	53.6[c]	0.2	3.38						
Chlamydomonas globosa	96.5	5.1	177.08	3.2	250.42	1.3	67.16	0.1	0.58
Chlamydomonas sp. 1	282.2							0.2	3.39
Chlorella ? sp.	37.7	1.8	23.86	1.4	42.94	0.9	19.08		

MHAP I
APTBC.1-7A

APPENDIX TABLE C.1-7
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml
CHLOROPHYTA (continued)									
Coelastrum sphaericum	199.4[c]	0.4	25.32	0.1	12.56	0.1	12.56		
Cosmarium sp. 3	62.8	0.1	2.01						
Crucigenia quadrata	12.8[c]	0.2	0.81						
Crucigenia tetrapedia	118.6[c]	0.2	7.47	0.4	37.48	0.1	7.47		
Crucigenia truncata	201.6[c]	0.0		0.1	12.70	0.2	25.60		
Dactylococcopsis fascicularis	9.4[c]	0.1	0.30						
Dictyosphaerium Ehrembergianum	410.5[c]	0.2	39.00	0.5	181.85	1.0	233.99		
Euastrum sp.	2,448.0[c]	0.0				0.2	310.90		
Franceia droescheri	73.3	0.1	2.35						
Franceia tuberculata	196.0	0.0		0.1	12.35	0.2	24.89		
Gloeocystis gigas	165.9[c]	0.6	36.83	0.6	83.95	0.9	83.95		
Golenkinia radiata	42.9	0.0		0.5	16.30	1.0	24.45		
Kirchneriella contorta	38.6[c]	0.4	6.10			0.5	9.77		
Kirchneriella lunaris	17.0[c]	0.3	1.62	0.9	11.83	0.9	8.60		
Kirchneriella lunaris v. irregularis	144.8[c]	0.9	45.76	1.9	229.07	2.4	192.44		
Kirchneriella obesa	395.8[c]	0.4	50.27	0.7	225.61	0.2	50.27		
Kirchneriella obesa v. major	175.9[c]					0.3	33.42		
Lagerheimia quadriseta	53.6	0.1	1.72	0.6	27.12	1.6	47.49		
Micractinium pusillum	42.9[c]			0.1	2.70	0.2	5.45		
Oocystis Borgei	271.4[c]	0.6	60.25	1.0	223.36	0.3	51.57		
Oocystis pusilla	345.6[c]	0.3	32.83	0.3	87.44	0.5	87.44		
Pandorina morum	39,530.4[c]	0.4	6,245.80	0.1	2,490.42	0.1	2,490.42		
Pediastrum duplex v. clathratum	1,131.0[c]	0.1	36.19	0.1	71.25				
Scenedesmus abundans	636.3[c]	0.2	40.09	0.5	241.79	0.8	281.88		
Scenedesmus denticulatus	977.2[c]	0.4	154.40	0.2	185.67	0.3	185.67		
Scenedesmus dimorphus	1,466.1[c]	0.3	139.28	0.5	649.48	0.3	278.56		
Scenedesmus quadricauda	52.1[c]	0.7	13.18	1.0	42.88	0.5	13.18		
Scenedesmus sp. 2	324.0[c]	0.1	43.43	0.2	172.36	0.3	257.87		
Schroederia setigera	167.6								
Selenastrum Westii	113.1[c]	0.7	28.61	0.6	57.23	0.6	35.74		
Sphaerocystis schroeteri	229.4[c]	0.2	14.45	0.5	87.17	0.5	58.04		
Tetraedron muticum	315.6								
Tetrastrum glabrum	243.0[c]	0.2	15.31	0.6	122.96	0.1	15.31		
Tetrastrum heteracanthum	122.9[c]			0.2	15.61	0.2	15.61		
coccoid green 8	51.3	0.6	11.39	0.4	16.21	0.3	9.75		
unidentified green 2	64.3	1.0	22.38	0.8	40.70	0.2	8.17		
TOTAL CHLOROPHYTA		19.00	7,332.50	20.00	5,787.28	18.70	5,052.55	0.3	3.97

MHAP1
APTBC.1-7A

APPENDIX TABLE C.1-7
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu 3 \times 10^2$)/ml
CYANOPHYTA									
Anabaena sp.	1,134.1[d]	0.1	21.55						
Aphanothece sp.	171.6[c]	0.0	1.72						
Arthrospira gomontiana	706.9[d]	0.0	7.07	0.1	26.86	0.1	36.05		
Chroococcus dispersus v. minor	39.6[c]	2.0	28.83	3.3	107.79	3.0	65.18		
Chroococcus limneticus	152.7[c]			0.2	29.01				
Dactylococcopsis fascicularis	9.4[c]			0.4	2.97	0.5	2.38		
Gomphosphaeria lacustris	177.0[c]								
Gomphosphaeria lacustris v. compacta	42.9[c]	0.4	6.78	0.9	29.86	1.3	29.86		
Lyngbya limnetica	161.0[d]							0.1	0.8
Marssoniella elegans	21.1[c]			0.2	4.01	0.1	1.33		
Merismopedia tenuissima	116.4[c]	0.4	14.78	0.3	29.45	0.2	14.78		
Microcystis incerta	227.0[c]	0.7	57.43	1.0	186.82	2.2	273.08		
Oscillatoria amphibia ?	706.9[d]	0.2	42.41						
Oscillatoria sp. 1,2	201.1[d]	0.2	17.09	0.1	24.13			0.8	10.86
Oscillatoria tenuis	1,963.5[d]							0.0	1.96
Raphidiopsis curvata	1,235.3	0.1	39.53			0.1	77.82		
Spirulina major	153.9[d]	0.1	23.27					0.1	0.77
TOTAL CYANOPHYTA		4.2	260.46	13.0	881.80	15.0	500.48	1.0	14.39
EUGLENOPHYTA									
Euglena sp. 5	583.9	0.1	18.68						
euglenoid sp. 1	1,172.9	3.6	1,522.42	0.8	742.45	0.1	73.89		
Trachelomonas cylindrica	2,187.6	0.1	70.00			0.1	137.82		
Trachelmonas sp. 1	16.8	0.2	1.06			0.1	1.06		
TOTAL EUGLENOPHYTA		4.0	1,612.16	0.8	742.45	0.3	212.77	0.0	0.00
XANTHOPHYTA									
Xanthophyte sp. 1	985.2	0.2	62.07						
TOTAL XANTHOPHYTA		0.2	62.07	0.0	0.00	0.0	0.00	0.0	0.00
PYRRHOPHYTA									
dinoflagellate sp. 1	96.5	0.1	3.09						
Glenodinium pulvisculus	418.9	0.3	39.80						
TOTAL PYRRHOPHYTA		0.4	42.89	0.0	0.00	0.0	0.00	0.0	0.00

MHAP I
APTBC.1-7C

APPENDIX TABLE C.1-7
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 AUGUST 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu 3 \times 10^2$)/ml
OTHERS									
phytoflagellate sp. 6	9.4							0.7	0.46
TOTAL OTHERS		0.0	0.00	0.0	0.00	0.0	0.00	0.7	0.06
TOTAL BIOVOLUME			25,614.90		50,324.92		33,911.29		1,689.11

[a]Values represent relative percentage of the total phytoplankton and are based on the average of duplicate samples.

[b]Biovolume per species was derived by multiplying the average volume for each species by the average density of that species at each station.

[c]Value represents colony volume.

[d]Value represents 100μ filament volume.

MHAP I
APTBC.1-7D

APPENDIX TABLE C.1-8

PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance[a] (%)	Biovolume ($\mu^3 \times 10^2$)/ml
BACILLARIOPHYTA									
Centrales									
Cyclotella glomerata	66.5	18.5	171.44	10.7	125.29	13.9	120.70	0.1	0.13
C. Meneghiniana	452.4			2.7	212.63	1.0	58.36		
C. ocellata	286.3	3.5	141.15	5.4	270.55	3.9	147.44		
Melosira ambiqua	276.5	1.2	45.35						
M. distans	100.5	5.6	78.09	8.5	149.75	7.6	100.30	0.3	0.60
M. granulata	226.2	21.6	679.96	12.3	489.27	14.8	438.38		
M. granulata v. angustissima	127.2	2.2	39.43	1.8	39.81	3.2	52.41		
Stephanodiscus astraea	1413.7	3.3	646.06	2.6	653.13	2.6	508.93	0.2	5.65
Centric sp. 1	31.4					0.5	2.23		
Pennales									
Achnanthes affinis	132.0	0.6	10.56	0.9	20.72	1.9	32.34	0.2	0.53
A. lanceolata	80.0			0.9	12.00				
A. linearis f. curta	81.0	1.0	11.66	1.8	25.35	1.4	15.15	5.2	7.78
A. microcephala	144.0							0.1	0.29
A. minutissima	27.5	0.6	2.20	0.5	2.26	2.5	9.02	1.9	0.94
Amphora perpusilla	49.5			0.5	4.06	1.1	7.03	0.6	0.30
A. submontana	131.9			1.8	41.28				
Asterionella formosa	756.0	2.8	297.11	3.5	467.96	4.9	486.86	0.3	4.54
Cocconeis pediculus	2858.8					1.8	660.38	0.1	5.72
C. placentula	805.8							0.4	6.45
Cymbella affinis	622.0	0.5	39.81						
C. sinuata	400.0							0.1	0.80
C. tumida	7188.0							0.1	14.38
Diatoma vulgare	2340.0			0.4	175.50	0.5	166.14		
Fragilaria crotonensis	784.0							0.1	1.57
Gomphonema olivaceum	210.0	0.6	16.80	0.5	17.22			0.1	0.42
G. parvulum	312.0	1.0	44.93	1.4	74.26	0.4	18.10	0.2	1.25
Navicula cryptocephala	425.3	2.0	116.11	0.4	31.90	3.0	164.17	1.4	11.06
N. cryptocephala v. veneta	198.8							0.2	0.80
N. graciloides	405.0	1.6	92.34	3.0	214.65	2.2	114.62	0.1	0.81
N. mutica v. cohnii	54.0							0.1	0.11
N. rhynchocephala	675.0			0.9	110.02			0.1	1.35
N. tripunctata	19.3			1.4	4.73	0.4	1.12	0.1	0.04
N. viridula	832.5	0.5	53.28	1.4	198.14	1.0	107.39		

MHAPI
APTBC.1-8

APPENDIX TABLE C.1-8
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a](%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance(%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance(%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance[a](%)	Biovolume ($\mu^3 \times 10^2$)/ml
BACILLARIOPHYTA (continued)									
Nitzschia acicularis v. closterioides	361.0	0.5	23.10						
N. communis v. abbreviata	27.0	0.5	1.73	0.5	2.21			1.8	0.89
N. dissipata	192.0			1.8	60.10	0.4	11.14	1.0	3.46
N. dubia	2160.0							0.2	6.48
N. palea	100.0	1.6	22.80	0.9	15.70	1.0	12.90	1.7	3.10
N. tryblionella v. victoriae	2463.0					0.4	142.85		
Rhoicosphenia curvata	450.0	1.6	102.6	0.5	36.90	2.7	156.60	1.9	15.30
Surirella biseriata	5940.0					0.4	344.52		
S. ovata v. pinnata	910.0			0.4	68.25	1.0	117.39		
Synedra delicatissima v. angustissima	102.0			1.4	24.28	18.7	19.07	0.1	0.20
S. fasciculata v. truncata	168.0	3.9	92.23	2.6	77.62	4.3	94.08		
S. ulna	546.0			0.5	44.77				
Tabellaria fenestrata	441.0							0.1	0.88
TOTAL BACILLARIOPHYTA		75.3	2704.21	71.4	3583.86	80.5	4109.62	18.9	95.83
CHRYSOPHYTA									
Dinobryon sertularia	188.5[c]							0.9	3.02
TOTAL CHRYSOPHYTA		0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.02
CRYPTOPHYTA									
cryptophyte sp. 1	50.3	0.8	5.33	0.5	4.28	0.5	3.22		
cryptophyte sp. 2	102.6	1.1	15.29	1.9	34.78	2.4	32.63	2.3	4.41
TOTAL CRYPTOPHYTA		1.8	20.62	2.4	39.06	3.7	35.85	2.3	4.41
CHLOROPHYTA									
Actinastrum Hantzschia v. Fluviatile	36.3[c]			0.1	0.80				
Ankistsrodesmus convolutus	20.9[c]	0.6	1.78	0.5	1.78	0.5	1.34		
A. falcatus	104.7[c]	0.6	8.90	0.4	6.70	0.3	4.50		
A. falcatus v. mirabilis	157.1[c]	0.2	3.46	0.2	6.76	0.2	3.46		
Carteria Klebsii	1105.8	0.2	2.43						
C. multifilis	113.1							0.3	0.68

MHAP I
APTBC.1-8A

APPENDIX TABLE C.1-8
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance[a] (%)	Biovolume ($\mu^3 \times 10^2$)/ml
CHLOROPHYTA (continued)									
Characium ambiguum	42.5							0.2	0.13
Chlamydomonas globosa	904.8	1.5	191.82	0.2	38.91	0.3	38.91	1.0	49.76
Chlamydomonas sp. 3	79.6			0.2	3.42	0.2	1.75		
Chlamydomonas sp. 5	14.7	0.2	0.32	0.6	1.56	0.2	0.32		
Chlorella ? sp.	65.4[c]	1.7	15.24	2.9	33.22	1.6	13.86		
Closterum acutum v. variabile	3207.0	0.2	70.55						
Cosmarium sp. 3	62.8	0.8	6.66	1.4	15.95	2.1	17.27		
Crucigenia rectangularis	1130.4[c]							0.5	10.17
C. tetrapedia	72.0[c]	0.3	3.10			0.2	1.58		
Dictyosphaerium pulchellum	4188.8[c]			0.1	92.15			1.4	62.83
Franceia Droescheri	104.7	0.2	2.30						
F. tuberculata	73.3					0.2	1.54		
Golenkinia radiata	65.4	0.3	2.81	0.4	4.19				
Kirchneriella contorta	5.9[c]	0.5	0.38						
K. lunaris v. Dianae	14.1[c]	1.1	2.10	0.6	1.49	0.7	1.20		
K. lunaris v. irregularis	23.6[c]	0.3	1.01	0.2	1.01	0.3	1.01		
K. obesa	100.5[c]	0.2	2.21	0.1	2.21	0.7	8.54		
Lagerheimia quadriseta	15.7	0.9	2.01	0.8	2.34	0.8	1.66		
Micractinium pusillum	1047.4[c]	0.6	89.00	0.5	89.00	0.3	45.04		
Oocystis Borgei	251.3[c]	0.3	10.81	0.1	5.53	0.2	5.53		
Pediastrum obtusum	374.1[c]					0.2	8.23		
Polyedriopsis quadrispina	45.0	1.5	9.54	0.5	3.83	0.2	0.99		
Quadrigula chodatii	174.4[c]			0.1	38.37	0.2	38.37		
Scenedesmus abundans	20.7[c]			0.4	1.32	0.3	0.89		
S. acuminatus	209.4[c]			0.1	4.61				
S. dimorphus	157.1[c]	0.2	3.46	0.1	3.46	0.2	3.46		
S. quadricauda	339.3[c]	1.2	57.68	0.7	43.09	1.1	50.56		
Selenastrum Westii	54.3[c]	0.5	3.48			0.2	1.19		
Tetrastrum elegans	340.3[c]	0.2	7.49	0.2	14.63	0.2	7.49		
T. glabrum	112.5[c]					0.2	2.48		
T. punctatum	135.0[c]	0.5	8.64						
T. staurogeniaeforme	467.5[c]	0.2	10.29	0.5	39.78				
T. triacanthum	340.3[c]	0.2	7.49	0.2	14.63				
unidentified green 2	62.8	0.8	6.66			0.2	1.38		
TOTAL CHLOROPHYTA		15.5	531.62	17.6	470.70	11.5	248.69	2.9	123.57

MHAPI
APTBC.1-8B

APPENDIX TABLE C.1-8
(continued)
PHYTOPLANKTON BIOVOLUME AND RELATIVE ABUNDANCE
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Species	Average biovolume (μ^3)	Station and parameter							
		1		3		5		6	
		Relative abundance[a] (%)	Biovolume[b] ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance (%)	Biovolume ($\mu^3 \times 10^2$)/ml	Relative abundance[a] (%)	Biovolume ($\mu^3 \times 10^2$)/ml
CYANOPHYTA									
Calothrix sp.	718.3[d]					0.3	29.45		
Chroococcus dispersus v. *minor*	9.2[c]	4.1	5.26	4.1	6.62	2.4	2.93	2.4	0.40
C. limneticus	268.1[c]			0.2	11.53				
Dactylococcopsis fascicularis	13.4	0.2	0.29	0.2	0.58	0.3	0.58		
Gomphosphaeria lacustris v. *compacta*	212.2[c]			0.5	18.04	0.2	4.67		
Lyngbya sp.	314.2[d]	0.1	4.71	0.1	1.57				
Oscillatoria amphibia	706.9[d]	0.4	39.59	0.2	30.40	0.1	10.60		
O. tenuis	1256.6[d]			0.4	90.48				
Oscillatoria sp. (1,2)	314.2[d]	0.4	17.60	0.7	39.28	0.1	5.34	0.2	0.94
Phormidium minnesotense	530.9[d]			0.1	4.78				
Rhabdoderma lineare	15.7			0.1	0.35	0.2	0.35		
TOTAL CYANOPHYTA		5.2	67.45	6.6	203.63	3.7	24.47	2.6	1.34
EUGLENOPHYTA									
Phacus crenulata	1005.3			0.2	43.23	0.2	22.12		
Trachelomonas volvocina	4188.8	0.3	180.12	0.6	448.20	0.2	92.15	0.2	12.57
Trachelomonas sp. 1	113.1	0.5	7.24	0.8	16.85	0.2	2.49		
euglenoid sp. 1	6268.5	0.6	532.82	0.2	269.55			69.1	7948.46
TOTAL EUGLENOPHYTA		1.4	720.18	1.9	777.83	0.5	116.76	69.2	7961.03
PYRRHOPHYTA									
peridinium inconspicuum	523.6							1.0	9.95
TOTAL PYRRHOPHYTA		0.0	0.00	0.0	0.00	0.0	0.00	1.0	9.95
OTHERS									
phytoflagellate sp. 3	9236.3	0.3	397.16						
phytoflagellate sp. 6	14.1								0.56
phytoflagellate sp. 8	101.4	0.5	6.49			0.2	2.23	2.2	
TOTAL OTHERS		0.8	403.65	0.0	0.00	0.2	2.23	2.2	0.56
TOTAL BIOVOLUME			4447.73		5075.08		4537.62		8199.71

[a] Values represent relative percentage of the total phytoplankton and are based on the average of duplicate samples.
[b] Biovolume per species was derived by multiplying the average biovolume for each species by the average density of that species at each station.
[c] Value represents colony volume.
[d] Value represents 100 μ filament volume.

MHAP I
APTBC.1-8C

APPENDIX TABLE C.2-1

ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
24 MARCH 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
PROTOZOA												
Acineta sp.	0.4	0.5	0.5	4.5	1.6	3.1	0.8	0.6	0.7	0.1	0.0	0.1
Arcella sp.	0.1	0.0	0.1	0.2	0.0	0.1						
Carchesium sp.	0.6	0.5	0.6	1.2	1.3	1.3	1.0	1.1	1.1	0.2	0.0	0.1
Centropyxis spp.				0.1	0.0	0.1						
Difflugia spp.	0.5	0.4	0.5	1.2	0.3	0.8	0.4	0.4	0.4	0.1	0.1	0.1
Epistylis sp.	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1
Podophrya sp.				0.1	0.1	0.1	0.2	0.1	0.2			
Thecacineta sp.	0.0	0.1	0.1									
Tokophyra sp.	0.0	0.1	0.1	0.0	0.1	0.1						
Vorticella sp.	0.9	0.3	0.6	0.5	0.3	0.4	0.6	0.2	0.4	0.1	0.0	0.1
unidentified Peritricha	8.2	9.8	9.0	6.4	1.8	4.1	2.2	1.0	1.6	0.1	0.1	0.1
TOTAL PROTOZOA	11.0	11.9	11.8	14.5	5.8	10.4	5.5	3.7	4.7	0.7	0.3	0.6
ROTIFERA												
Asplanchna sp.	0.2	0.2	0.2	0.5	0.1	0.3	0.4	0.6	0.5	0.2	0.1	0.2
Brachionus angularis	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2			
B. bidentata										0.1	0.2	0.2
B. calyciflorus	0.3	0.2	0.3	0.3	0.2	0.3	0.5	0.5	0.5	0.1	0.0	0.1
B. quadridentata							0.0	0.4	0.2			
B. urceolaris	0.1	0.1	0.1									
Filinia longiseta	0.4	0.1	0.3	0.5	0.2	0.4	0.8	1.0	0.9	0.5	0.3	0.4
Hexarthra sp.										0.1	0.0	0.1

APPENDIX TABLE C.2-1
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
24 MARCH 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
ROTIFERA (continued)												
Kellicottia bostoniensis	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
K. longispina	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Keratella cochlearis	0.4	0.4	0.4	0.3	0.2	0.3	0.7	0.4	0.6	0.1	0.0	0.1
K. quadrata	2.3	1.0	1.7	2.7	0.9	1.8	4.8	4.2	4.5	3.1	0.7	1.9
Mytilina sp.				0.1	0.1	0.1						
Notholca sp.	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.2	0.1	0.0	0.1
Platyias patulus				0.0	0.1	0.1						
P. quadricornis				0.1	0.0	0.1	0.0	0.1	0.1			
Polyarthra sp.	0.2	0.2	0.2	0.2	0.1	0.2	0.5	0.6	0.6	0.0	0.2	0.1
unidentified Bdelloidia	0.1	0.3	0.2	0.4	0.2	0.3	0.4	0.4	0.4	0.1	0.1	0.1
unidentified Rotifera	0.2	0.2	0.2	0.5	0.2	0.4	0.5	0.4	0.5	0.2	0.2	0.2
TOTAL ROTIFERA	4.7	3.1	4.1	6.0	2.6	4.7	9.1	9.2	9.4	4.6	1.9	3.6
CLADOCERA												
Bosmina longirostris	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1			
Chydorus sphaericus							0.1	0.0	0.1			
Daphnia pulex							0.0	0.1	0.1			
TOTAL CLADOCERA	0.0	0.1	0.1	0.1	0.0	0.1	0.2	0.2	0.3	0.0	0.0	0.0
COPEPODA												
Calanoida												
Diaptomus pallidus				0.0	0.1	0.1	0.0	0.1	0.1			

APPENDIX TABLE C.2-1
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
24 MARCH 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
COPEPODA (continued)												
Cyclopoida												
Cyclops bicuspidatus thomasi	0.0	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3			
Eucyclops agilis	0.0	0.1	0.1									
Harpacticoida												
Attheyella illinoisensis	0.1	0.0	0.1				0.0	0.1	0.1			
copepodites	0.6	1.2	0.9	1.1	0.4	0.8	0.8	0.7	0.8	0.2	0.0	0.1
nauplii	1.5	2.5	2.0	1.9	1.9	1.9	2.8	2.2	2.5	0.4	0.1	0.3
TOTAL COPEPODA	2.2	4.0	3.2	3.2	2.6	3.0	3.8	3.4	3.8	0.6	0.1	0.4
OTHERS												
Diptera							0.2	0.1	0.2	0.0	0.1	0.1
Hydracarina				0.1	0.0	0.1						
Nematoda	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Ostracoda	0.1	0.0	0.1				0.0	0.1	0.1			
Tardigrada	0.0	0.1	0.1				0.1	0.1	0.1			
TOTAL OTHERS	0.3	0.3	0.4	0.3	0.2	0.3	0.4	0.4	0.5	0.1	0.2	0.2
TOTAL ZOOPLANKTERS PER LITER	18.2	19.4	19.6	24.1	11.2	18.5	19.0	16.9	18.7	6.0	2.5	4.8
Standard deviation			±0.8			±7.4			±1.4			±2.1

APPENDIX TABLE C.2-2

ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MAY 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
PROTOZOA												
Acineta spp.	0.2	0.0	0.1	0.3	0.1	0.2	0.1	0.3	0.2	0.1	0.0	0.1
Arcella spp.				0.0	0.1	0.1	0.1	0.3	0.2	0.0	0.1	0.1
Carchesium spp.	0.1	0.1	0.1	0.0	0.1	0.1				0.1	0.0	0.1
Centropyxis spp.				0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Difflugia spp.	6.4	5.7	6.1	5.4	7.2	6.3	7.0	3.9	5.5	0.3	0.1	0.2
Epistylis spp.	0.4	0.1	0.3	0.2	0.3	0.3	0.4	0.2	0.3	0.1	0.0	0.1
Podophrya spp.				0.1	0.0	0.1						
Vorticella spp.	0.2	0.2	0.2	0.4	0.2	0.3	0.2	0.1	0.2			
TOTAL PROTOZOA	7.3	6.1	6.8	6.5	8.0	7.5	7.9	4.8	6.5	0.7	0.2	0.7
ROTIFERA												
Asplanchna sp.	0.1	0.1	0.1	0.0	0.1	0.1	0.3	0.1	0.2			
Brachionus angularis	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.5	0.4			
B. calyciflorus	0.4	0.9	0.7	0.6	1.1	0.9	0.7	1.2	1.0	0.2	0.1	0.2
B. quadridentata	0.0	0.1	0.1	0.0	0.1	0.1						
B. rubens	0.1	0.0	0.1									
B. urceolaris	0.5	1.0	0.8	1.6	0.7	1.2	1.3	1.6	1.5	0.3	0.2	0.3
Euchlanis sp.										0.0	0.1	0.1
Filinia longiseta	0.2	0.2	0.2	0.3	0.2	0.3	0.1	0.2	0.2	0.1	0.1	0.1
Kellicottia bostoniensis	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.1

APPENDIX TABLE C.2-2
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MAY 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
ROTIFERA (continued)												
K. longispina	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1
Keratella cochlearis	3.1	1.9	2.5	2.9	2.5	2.7	4.9	2.9	3.9	0.2	0.0	0.1
K. quadrata	0.2	0.6	0.4	1.1	0.7	0.9	0.8	1.2	1.0	0.2	0.1	0.2
Lecane sp.				0.1	0.0	0.1						
Monostyla lunaris										0.1	0.1	0.1
Mytilina sp.	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.0	0.1
Notholca sp.	0.0	0.3	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.1	0.0	0.1
Platyias patulus							0.0	0.1	0.1			
P. quadricornis				0.1	0.0	0.1						
Polyarthra sp.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1
Trichocerca sp.	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1
Trichotria sp.	0.1	0.1	0.1							0.1	0.0	0.1
unidentified Bdelloidia	0.1	0.1	0.1	0.1	0.1	0.1						
unidentified Rotifera	0.7	0.4	0.6	0.5	0.6	0.6	0.8	0.6	0.7	0.2	0.3	0.3
TOTAL ROTIFERA	6.1	6.5	6.7	8.4	7.1	8.3	10.1	9.3	10.1	2.0	1.1	1.6
CLADOCERA												
Alona sp.	0.1	0.0	0.1							0.0	0.1	0.1
Bosmina longirostris	0.6	0.8	0.7	1.3	1.1	1.2	1.5	0.9	1.2	0.3	0.0	0.2
Chydorus sphaericus	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.3	0.2	0.1	0.0	0.1

APPENDIX TABLE C.2-2
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MAY 1981

	Station and replicate											
	1			3			5			6		
Taxon	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CLADOCERA (cont'd)												
Daphnia ambigua	0.1	0.0	0.1									
Daphnia sp.				0.1	0.0	0.1						
Eubosmina coregoni							0.0	0.1	0.1			
immature Cladocera	0.1	0.0	0.1									
TOTAL CLADOCERA	1.1	0.9	1.2	1.5	1.2	1.4	1.5	1.3	1.5	0.4	0.1	0.4
COPEPODA												
Calanoidea												
Diaptomus pallidus				0.1	0.1	0.1	0.0	0.1	0.1			
Cyclopoida												
Cyclops bicuspidatus thomasi				0.1	0.0	0.1						
C. vernalis	0.1	0.1	0.1	0.2	0.1	0.2	0.0	0.1	0.1	0.1	0.0	0.1
Eucyclops agilis							0.0	0.1	0.1	0.1	0.0	0.1
Mesocyclops edax							0.1	0.0	0.1			
Tropocyclops prasinus										0.1	0.0	0.1
Copepodites	0.6	0.4	0.5	0.4	0.5	0.5	0.6	0.4	0.5	0.1	0.1	0.1
Nauplii	1.1	1.3	1.2	1.6	1.2	1.4	1.4	1.4	1.4	0.6	0.3	0.5
TOTAL COPEPODA	1.8	1.8	1.8	2.4	1.9	2.3	2.1	2.1	2.3	1.0	0.4	0.9

APPENDIX TABLE C.2-2
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
25 MAY 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
OTHERS												
Chironomidae	1.0	0.6	0.8	0.7	0.9	0.8	0.7	0.7	0.7	0.1	0.0	0.1
Diptera	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.4	0.4	0.4
Ectoprocta statoblasts				0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Nematoda	0.4	0.4	0.4	0.2	0.1	0.2	0.1	0.2	0.2	0.0	0.1	0.1
Criconema sp.	0.1	0.0	0.1									
Oligochaeta	0.1	0.0	0.1	0.1	0.0	0.1						
Tardigrada	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1
TOTAL OTHERS	1.7	1.1	1.6	1.2	1.2	1.4	1.0	1.4	1.3	0.6	0.6	0.8
TOTAL ZOOPLANKTERS PER LITER	18.0	16.4	18.1	20.0	19.4	20.9	22.6	18.9	21.7	4.7	2.4	4.9
Standard deviation			±1.1			±1.2			±2.8			±0.8

APPENDIX TABLE C.2-3

ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
PROTOZOA												
Difflugia spp.	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1	1.4	0.5	1.0
Vorticella sp.							0.0	0.1	0.1			
TOTAL PROTOZOA	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.2	1.4	0.5	1.0
ROTIFERA												
Asplanchna sp.							0.0	0.1	0.1			
Brachionus angularis	0.9	0.4	0.7	0.7	0.3	0.5	0.1	0.6	0.4	0.1	0.0	0.1
B. calyciflorus	0.5	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.3	0.1	0.0	0.1
B. caudatus	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1			
B. havanaensis	0.1	0.1	0.1									
Cephalodella sp.										0.1	0.0	0.1
Filinia longiseta	0.1	0.2	0.2	0.1	0.1	0.1				0.1	0.0	0.1
Keratella cochlearis	1.8	5.6	3.7	3.2	3.5	3.4	4.8	6.3	5.6	0.6	0.0	0.3
K. gracilenta	0.0	0.1	0.1									
K. quadrata				0.0	0.1	0.1						
K. valga										0.0	0.1	0.1
Lecane sp.										0.5	0.2	0.4
Mytilina sp.										0.0	0.1	0.1
Platyias patulus	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1			
Polyarthra sp.	1.6	5.7	3.7	2.8	3.1	3.0	3.0	7.8	5.4	0.3	0.0	0.2
Trichocerca sp.				0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.2

APPENDIX TABLE C.2-3
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
ROTIFERA (continued)												
Trichotria sp.										0.0	0.2	0.1
unidentified Rotifera	0.9	0.6	0.8	0.7	0.9	0.8	1.4	1.4	1.4	0.2	0.2	0.2
TOTAL ROTIFERA	6.1	13.1	9.9	8.0	8.4	8.5	9.7	16.7	13.5	2.2	0.9	2.0
CLADOCERA												
Alona guttata							0.0	0.1	0.1			
Ceriodaphnia quadrangula	1.9	4.6	3.3	3.8	3.7	3.8	3.7	5.5	4.6	0.5	0.1	0.3
Daphnia parvula										0.1	0.0	0.1
D. retrocurva	0.3	0.6	0.5	0.5	0.7	0.6	0.6	0.3	0.5			
Diaphanosoma brachyurum	0.7	1.0	0.9	1.2	0.6	0.9	0.5	0.6	0.6			
Eubosmina longispina	13.2	10.2	11.7	9.5	7.6	8.6	5.2	10.7	8.0	1.0	0.1	0.6
Moina micrura	0.0	0.3	0.2	0.6	0.3	0.5	0.6	0.3	0.5			
TOTAL CLADOCERA	16.1	16.7	16.6	15.6	12.9	14.4	10.6	17.5	14.3	1.6	0.2	1.0
COPEPODA												
Calanoida												
Diaptomus siciloides	0.2	0.0	0.1	0.1	0.1	0.1						
Cyclopoidea												
Cyclops vernalis	0.5	1.6	1.1	1.3	0.7	1.0	0.9	1.7	1.3			
Eucyclops agilis										0.2	0.0	0.1
E. speratus										0.3	0.0	0.2

APPENDIX TABLE C.2-3
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY (no./ml)
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
COPEPODA (continued)												
Mesocyclops edax	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1			
Tropocyclops prasinus										1.0	0.1	0.6
Copepodites	2.8	3.9	3.4	3.7	4.4	4.1	2.4	4.6	3.5	2.3	0.4	1.4
Nauplii	11.8	9.2	10.5	8.7	10.3	9.5	7.7	12.2	10.0	4.0	0.7	2.4
TOTAL COPEPODA	15.4	14.7	15.2	13.8	15.6	14.8	11.1	18.6	14.9	7.8	1.2	4.7
OTHERS												
Diptera	0.1	0.0	0.1	0.3	0.2	0.3	0.2	0.3	0.3	0.1	0.1	0.1
Nematoda										0.0	0.1	0.1
Oligochaeta	0.0	0.1	0.1	0.2	0.0	0.1						
Tardigrada	0.0	0.1	0.1									
TOTAL OTHERS	0.1	0.2	0.3	0.5	0.2	0.4	0.2	0.3	0.3	0.1	0.2	0.2
TOTAL ZOOPLANKTERS PER LITER	37.8	44.8	42.1	38.1	37.1	38.2	31.7	53.3	43.2	13.1	3.0	8.9
Standard deviation			±4.7			±3.4			±13.0			±5.9

APPENDIX TABLE C.2-4

ZOOPLANKTON COMPOSITION AND DENSITY
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
PROTOZOA												
Arcella spp.	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1			
Centropyxis sp.										0.1	0.0	0.1
Difflugia sp.	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	1.3	0.2	0.8
Epistylis spp.				0.0	0.1	0.1	0.0	0.1	0.1			
Tokophyra spp.	0.1	0.1	0.1				0.1	0.1	0.1	0.1	0.0	0.1
TOTAL PROTOZOA	0.3	0.4	0.4	0.3	0.2	0.4	0.4	0.5	0.5	1.5	0.2	1.0
ROTIFERA												
Ascomorpha sp.										0.2	0.2	0.2
Asplanchna sp.				0.1	0.1	0.1						
Brachionus angularis	0.1	0.0	0.1				0.1	0.0	0.1			
B. calyciflorus	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2			
B. quadridentata	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1			
B. urceolaris	0.1	0.1	0.1									
Euchlanis sp.				0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Filinia longiseta	0.1	0.0	0.1									
Kellicottia bostoniensis				0.1	0.1	0.1						
Keratella cochlearis	1.9	1.2	1.6	0.8	1.2	1.0	1.2	1.1	1.2	0.1	0.1	0.1
K. quadrata	0.0	0.1	0.1	0.1	0.0	0.1				0.0	0.1	0.1
Polyarthra sp.	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1			
Trichocerca sp.										0.1	0.1	0.1
Trichotria sp.				0.1	0.1	0.1	0.1	0.1	0.1			
unidentified Bdelloidia	0.1	0.1	0.1									
unidentified Rotifera	0.6	0.4	0.5	0.5	0.5	0.5	0.4	0.6	0.5	0.2	0.1	0.2
TOTAL ROTIFERA	3.3	2.2	3.0	2.1	2.4	2.5	2.2	2.3	2.4	0.7	0.7	0.8

APPENDIX TABLE C.2-4
(continued)
ZOOPLANKTON COMPOSITION AND DENSITY
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Taxon	Station and replicate											
	1			3			5			6		
	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$	A	B	$\bar{x}$
CLADOCERA												
Alona guttata				0.0	0.1	0.1	0.1	0.0	0.1			
Camptocercus rectirostris	0.0	0.1	0.1	0.0	0.1	0.1						
Eubosmina longispina	0.4	0.3	0.4	0.5	0.6	0.6	0.8	0.5	0.7	0.1	0.0	0.1
TOTAL CLADOCERA	0.4	0.4	0.5	0.5	0.8	0.8	0.9	0.5	0.8	0.1	0.0	0.1
COPEPODA												
Calanoida												
Diaptomus siciloides				0.0	0.1	0.1						
Harpacticoida												
Attheyella illinoisensis	0.0	0.1	0.1				0.0	0.1	0.1			
copepodites	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
nauplii	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	1.1	0.3	0.7
TOTAL COPEPODA	0.3	0.3	0.4	0.1	0.3	0.3	0.3	0.3	0.4	1.2	0.4	0.8
OTHERS												
Diptera	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2
Nematoda				0.1	0.0	0.1				0.1	0.1	0.1
TOTAL OTHERS	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.2	0.3	0.3
TOTAL ZOOPLANKTERS PER LITER	4.3	3.4	4.4	3.1	3.8	4.2	3.9	3.6	4.2	3.7	1.6	3.0
Standard deviation			±0.7			±0.5			±0.6			±1.3

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APTBC.2-4

APPENDIX TABLE C.2-5

ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
24 MARCH 1981

Taxon	Station 1	3	5	6
PROTOZOA				
Acineta sp.	2.6	16.8	3.7	2.1
Arcella spp.	0.5	0.5		
Carchesium sp.	3.1	7.0	5.9	2.1
Centropyxis spp.		0.5		
Difflugia spp.	2.6	4.3	2.1	2.1
Epistylis sp.	1.5	1.6	1.6	2.1
Podophrya sp.		0.5	1.1	
Thecacineta sp.	0.5			
Tokophyra sp.	0.5	0.5		
Vorticella sp.	3.1	2.2	2.1	2.1
unidentified Peritricha	45.9	22.2	8.6	2.1
TOTAL PROTOZOA	60.2	56.2	25.1	12.6
ROTIFERA				
Asplanchna sp.	1.0	1.6	2.7	4.2
Brachionus angularis	1.0	0.5	1.1	
B. bidentata				4.2
B. calyciflorus	1.5	1.6	2.7	2.1
B. quadridentata			1.1	
B. urceolaris	0.5			
Filinia longiseta	1.5	2.2	4.8	8.3
Hexarthra sp.				2.1
Kellicottia bostoniensis	0.5	0.5	0.5	2.1
K. longispina	0.5	0.5	0.5	
Keratella cochlearis	2.0	1.6	3.2	2.1
K. quadrata	8.7	9.7	24.1	39.6
Mytilina sp.		0.5		
Notholca sp.	0.5	0.5	1.1	2.1
Platyias patulus		0.5		
P. quadricornis		0.5	0.5	
Polyarthra sp.	1.0	1.1	3.2	2.1
unidentified Bdelloidia	1.0	1.6	2.1	2.1
unidentified Rotifera	1.0	2.2	2.6	4.2
TOTAL ROTIFERA	20.9	25.4	50.3	74.8
CLADOCERA				
Bosmina longirostris	0.5	0.5	0.5	
Chydorus sphaericus			0.5	
Daphnia pulex			0.5	
TOTAL CLADOCERA	0.5	0.5	1.5	0.0

APPENDIX TABLE C.2-5
(continued)
ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
24 MARCH 1981

Taxon	Station 1	3	5	6
COPEPODA				
Calanoida				
Diaptomus pallidus		0.5	0.5	
Cyclopoida				
Cyclops bicuspidatus thomasi	0.5	1.1	1.6	
Eucyclops agilis	0.5			
Harpacticoida				
Attheyella illinoisensis	0.5		0.5	
copepodites	4.6	4.3	4.3	2.1
nauplii	10.2	10.3	13.4	6.2
TOTAL COPEPODA	16.3	16.2	20.3	8.3
OTHERS				
Diptera			1.1	2.1
Hydracarina		0.5		
Nematoda	1.0	1.1	0.5	2.1
Ostracoda	0.5		0.5	
Tardigrada	0.5		0.5	
TOTAL OTHERS	2.0	1.6	2.6	4.2

[a]Values represent relative percentage of the total zooplankton and are based on the average of Replicates A and B.

APPENDIX TABLE C.2-6

ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
25 MAY 1981

Taxon	Station 1	3	5	6
PROTOZOA				
Acineta spp.	0.6	1.0	0.9	2.0
Arcella spp.		0.5	0.9	2.0
Carchesium spp.	0.6	0.5		2.0
Centropyxis spp.		0.5	0.5	2.0
Difflugia spp.	33.6	30.1	25.4	4.2
Epistylis spp.	1.7	1.4	1.4	2.0
Podophrya spp.		0.5		
Vorticella spp.	1.1	1.4	0.9	
TOTAL PROTOZOA	37.6	35.9	30.0	14.2
ROTIFERA				
Asplanchna sp.	0.6	0.5	0.9	
Brachionus angularis	1.7	1.9	1.8	
B. calyciflorus	3.8	4.2	4.6	4.2
B. quadridentata	0.6	0.5		
B. rubens	0.6			
B. urceolaris	4.3	5.7	6.9	6.2
Euchlanis sp.				2.0
Filinia longiseta	1.1	1.4	0.9	2.0
Kellicottia bostoniensis	0.6	0.5	0.9	2.0
K. longispina	0.6	1.0	0.9	2.0
Keratella cochlearis	13.6	12.9	18.0	2.0
K. quadrata	2.2	4.2	4.6	4.2
Lecane sp.		0.5		
Monostyla lunaris				2.0
Mytilina sp.	0.6	0.5	0.5	2.0
Notholca sp.	1.1	1.0	1.4	2.0
Platyias patulus			0.5	
P. quadricornis		0.5		
Polyarthra sp.	0.6	0.5	0.9	2.0
Trichocerca sp.	0.6	0.5	0.5	2.0
Trichotria sp.	0.6			2.0
unidentified Bdelloidia	0.6	0.5		
unidentified Rotifera	3.2	2.9	3.2	6.2
TOTAL ROTIFERA	37.0	39.7	46.5	42.8
CLADOCERA				
Alona sp.	0.6			2.0
Bosmina longirostris	3.8	5.7	5.5	4.2
Chydorus sphaericus	1.0	0.5	0.9	2.0
Daphnia ambigua	0.6			

APPENDIX TABLE C.2-6
(continued)
ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
25 MAY 1981

Taxon	Station 1	3	5	6
CLADOCERA (cont'd)				
Daphnia sp.		0.5		
Eubosmina coregoni			0.5	
immature Cladocera	0.6			
TOTAL CLADOCERA	6.6	6.7	6.9	8.2
COPEPODA				
Calanoidea				
Diaptomus pallidus		0.5	0.5	
Cyclopoida				
Cyclops bicuspidatus thomasi		0.5		
C. vernalis	0.6	1.0	0.5	2.0
Eucyclops agilis			0.5	2.0
Mesocyclops edax			0.5	
Tropocyclops prasinus				2.0
copepodites	2.8	2.4	2.2	2.0
nauplii	6.6	6.6	6.4	10.4
TOTAL COPEPODA	10.0	11.0	10.6	18.4
OTHERS				
Chironomidae	4.3	3.7	3.2	2.0
Diptera	0.6	0.5	0.9	8.4
Ectoprocta statoblasts		0.5	0.5	2.0
Nematoda	2.1	1.0	0.9	2.0
Criconema sp.	0.6			
Oligochaeta	0.6	0.5		
Tardigrada	0.6	0.5	0.5	2.0
TOTAL OTHERS	8.8	6.7	6.0	16.4

[a]Values represent relative percentage of the total zooplankton and are based on the average of Replicates A and B.

APPENDIX TABLE C.2-7

ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Station 1	3	5	6
PROTOZOA				
Difflugia spp.	0.2	0.3	0.2	11.2
Vorticella sp.			0.2	
TOTAL PROTOZOA	0.2	0.3	0.4	11.2
ROTIFERA				
Asplanchna sp.			0.2	
Brachionus angularis	1.6	1.3	0.9	1.1
B. calyciflorus	1.0	0.8	0.7	1.1
B. caudatus	0.2	0.3	0.2	
B. havanaensis	0.2			
Cephalodella sp.				1.1
Filinia longiseta	0.5	0.3		1.1
Keratella cochlearis	8.8	8.8	13.1	3.4
K. gracilenta	0.2			
K. quadrata		0.3		
K. valga				1.1
Lecane sp.				4.5
Mytilina sp.				1.1
Platyias patulus	0.2	0.3	0.2	
Polyarthra sp.	8.8	7.8	12.5	2.3
Trichocerea sp.		0.3	0.2	2.3
Trichotria sp.				1.1
unidentified Rotifera	2.0	2.1	3.2	2.3
TOTAL ROTIFERA	23.5	22.3	31.2	22.5
CLADOCERA				
Alona guttata			0.2	
Ceriodaphnia quadrangula	7.8	9.9	10.6	3.4
Daphnia parvula				1.1
D. retrocurva	1.2	1.6	1.2	
Diaphanosoma brachyurum	2.1	2.4	1.4	
Eubosmina longispina	27.9	22.5	18.5	6.7
Moina micrura	0.5	1.3	1.2	
TOTAL CLADOCERA	39.5	37.7	33.1	11.2
COPEPODA				
Calonoidea				
Diaptomus siciloides	0.2	0.3		
Cyclopoida				
Cyclops vernalis	2.6	2.6	3.0	

APPENDIX TABLE C.2-7
(continued)
ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Station 1	3	5	6
COPEPODA (continued)				
Eucyclops agilis				1.1
E. speratus				2.2
Mesocyclops edax	0.2	0.3	0.2	
Tropocyclops prasinus				6.7
copepodites	8.2	10.6	8.2	15.8
nauplii	25.0	24.8	23.2	27.1
TOTAL COPEPODA	36.2	38.6	34.6	52.9
OTHERS				
Diptera	0.2	0.8	0.7	1.1
Nematoda				1.1
Oligochaeta	0.2	0.3		
Tardigrada	0.2			
TOTAL OTHERS	0.6	1.1	0.7	2.2

[a]Values represent relative percentage of the total zooplankton and are based on the average of Replicates A and B.

APPENDIX TABLE C.2-8

ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Taxon	Station 1	3	5	6
PROTOZOA				
Acella spp.	2.3	2.4	2.4	
Centropyxis sp.				3.3
Difflugia sp.	4.5	4.8	4.8	26.8
Epistylis spp.		2.4	2.4	
Tokophyra spp.	2.3		2.4	3.3
TOTAL PROTOZOA	9.1	9.6	12.0	33.4
ROTIFERA				
Ascomorpha sp.				6.7
Asplanchna sp.		2.4		
Brachionus angularis	2.3		2.4	
B. calyciflorus	4.5	4.8	4.8	
B. quadridentata	2.3	2.4	2.4	
B. urceolaris	2.3			
Euchlanis sp.		2.4	2.4	3.3
Filinia longiseta	2.3			
Kellicottia bostoniensis		2.4		
Keratella cochlearis	36.2	23.6	28.4	3.3
K. quadrata	2.3	2.4		3.3
Polyarthra sp.	2.3	4.8	2.4	
Trichocerca sp.				3.3
Trichotria sp.		2.4	2.4	
unidentified Bdelloidia	2.3			
unidentified Rotifera	11.3	11.8	11.8	6.7
TOTAL ROTIFERA	68.1	59.4	57.0	26.6
CLADOCERA				
Alona guttata		2.4	2.4	
Camptocercus rectirostris	2.3	2.4		
Eubosmina longispina	9.1	14.2	16.6	3.3
TOTAL CLADOCERA	11.4	19.0	19.0	3.3
COPEPODA				
Calanoida				
Diaptomus siciloides		2.4		
Harpacticoida				
Attheyella illinoisensis	2.3		2.4	
copepodites	2.3	2.4	2.4	3.3
nauplii	4.5	2.4	4.8	23.4
TOTAL COPEPODA	9.1	7.2	9.6	26.7

APPENDIX TABLE C.2-8
(continued)
ZOOPLANKTON RELATIVE ABUNDANCE[a]
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Taxon	Station 1	3	5	6
OTHERS				
Diptera	2.3	2.4	2.4	6.7
Nematoda		2.4		3.3
TOTAL OTHERS	2.3	4.8	2.4	10.0

[a]Values represent relative percentage of total zooplankton and are based on the average of Replicates A and B.

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APTBC.2-8

APPENDIX TABLE D-1

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
23 MARCH 1981

	Station and replicate											
	1				3				5			
Taxon	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
BACILLARIOPHYTA												
Centrales												
Cyclotella glomerata	0.00	0.21	0.11	0.33	0.15	0.49	0.32	7.86	0.24	0.32	0.28	3.23
C. Kutzingiana	0.00	0.21	0.11	0.33	0.03	0.10	0.06	1.47				
C. Meneghiniana	0.11	0.21	0.16	0.48	0.05	0.14	0.10	2.46				
C. stelligera					0.03	0.00	0.01	0.25				
Cyclotella sp.	0.1.	0.00	0.06	17.95	0.08	0.04	0.06	1.47	0.05	0.00	0.02	0.23
Melosira distans									0.00	0.13	0.06	0.69
M. granulata									0.00	0.13	0.06	0.69
M. varians	12.71	25.64	19.17	57.34	0.39	0.49	0.44	10.81	0.64	0.52	0.58	6.69
Stephanodiscus astraea					0.05	0.05	0.04	0.98				
S. astraea v. minutula					0.00	0.04	0.02	0.49	0.00	0.06	0.03	0.35
Pennales												
Achnanthes affinis	0.00	0.43	0.21	0.63	0.03	0.04	0.03	0.74				
A. deflexa					0.03	0.14	0.08	1.97	0.05	0.06	0.06	0.69
A. lanceolata									0.00	0.06	0.03	0.35
A. linearis f. curta	0.11	0.21	0.16	0.48	0.13	0.04	0.08	1.97	0.00	0.06	0.03	0.35
A. minutissima					0.05	0.04	0.04	0.98				
Amphora perpusilla					0.00	0.04	0.02	0.49				
A. submontana	0.00	0.21	0.11	0.33	0.00	0.04	0.02	0.49				
Asterionella formosa									0.00	0.13	0.06	0.69
A. formosa v. gracillima	0.11	0.43	0.27	0.81	0.00	0.04	0.02	0.49				
Cocconeis pediculus					0.03	0.00	0.01	0.25				
C. placentula v. euglypta					0.00	0.04	0.02	0.49				
Cymatopleura solea									0.05	0.00	0.02	0.23
Cymbella affinis					0.03	0.10	0.06	1.47	0.10	0.00	0.05	0.58
C. angustata					0.00	0.04	0.02	0.49				
C. minuta v. silesiaca									0.00	0.06	0.03	0.35
C. tumida					0.05	0.00	0.03	0.74				
Diatoma tenue v. elongatum	0.00	0.21	0.11	0.33								
D. vulgare	0.11	0.00	0.06	0.18	0.13	0.07	0.10	2.46	0.00	0.13	0.06	0.69
D. vulgare v. breve									0.05	0.13	0.09	1.04
Eunotia sp.	0.11	0.00	0.06	0.18								
Fragilaria capucina	0.00	0.21	0.11	0.33	0.03	0.07	0.05	1.23	0.10	0.39	0.25	2.88
F. vaucheriae	1.03	3.33	2.18	6.52	0.15	0.35	0.25	6.14	0.83	0.32	0.57	6.57
F. virescens									0.20	0.13	0.16	1.85
Gomphonema angustatum									0.00	0.06	0.03	0.35
G. olivaceum	2.87	2.91	2.89	8.64	0.13	0.29	0.21	5.16	0.64	0.97	0.80	0.92
G. parvulum					0.13	0.04	0.08	1.97	0.34	0.39	0.37	4.27
Hantzschia amphioxys					0.00	0.04	0.02	0.49				
Meridion circulare	0.70	0.21	0.45	1.35	0.00	0.07	0.04	0.98	0.54	0.71	0.63	7.27
Navicula biconica									0.20	0.00	0.10	1.15

APPENDIX TABLE D-1
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
23 MARCH 1981

Taxon	Station and replicate											
	1				3				5			
	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
BACILLARIOPHYTA (continued)												
Navicula cryptocephala	0.34	0.21	0.28	0.84	0.13	0.29	0.21	5.16	0.20	0.19	0.20	2.31
N. cryptocephala v. veneta					0.05	0.04	0.04	0.98	0.10	0.06	0.08	0.92
N. gracilloides	0.00	0.43	0.21	0.63	0.03	0.00	0.01	0.25	0.49	1.03	0.76	8.77
N. gysingensis									0.05	0.00	0.02	0.23
N. tripunctata v. schizonemoides	0.22	0.21	0.22	0.66	0.03	0.00	0.01	0.25				
N. viridula	0.11	0.64	0.38	1.14	0.05	0.21	0.13	3.19	0.20	0.13	0.16	1.85
Navicula sp. 2	0.00	0.21	0.11	0.33								
Nitzschia acicularis					0.03	0.04	0.03	0.74				
N. amphibia	0.11	0.43	0.27	0.81	0.10	0.10	0.10	2.46	0.20	0.32	0.26	3.00
N. communis	0.11	0.00	0.06	0.18	0.00	0.04	0.02	0.49				
N. dissipata	0.11	0.00	0.06	0.18	0.03	0.04	0.03	0.74	0.05	0.13	0.09	1.04
N. gandersheimiensis					0.00	0.04	0.02	0.49				
N. hungarica					0.00	0.07	0.04	0.98				
N. palea	0.22	0.00	0.11	0.33	0.00	0.10	0.05	1.23	0.05	0.19	0.12	1.38
N. trybtionella	0.00	0.21	0.11	0.33								
Rhoicosphenia curvata					0.03	0.00	0.01	0.25				
Surirella angustata					0.03	0.00	0.01	0.25				
S. linearis					0.03	0.00	0.01	0.25				
S. ovata	0.81	2.31	1.56	4.67	0.26	0.46	0.36	8.85	0.54	0.39	0.47	5.42
Synedra delicatissima					0.03	0.04	0.03	0.74				
S. filiformis v. exilis									0.05	0.00	0.02	0.23
S. rumpens	0.45	0.85	0.65	1.94	0.08	0.18	0.13	3.19	0.88	1.68	1.28	14.76
S. rumpens v. meneghiniana	0.22	0.00	0.11	0.33								
S. ulna	1.59	2.91	2.25	6.73	0.03	0.10	0.06	1.47	0.20	0.13	0.16	1.85
S. ulna v. ramesi	0.11	0.00	0.06	0.18					0.05	0.00	0.02	0.23
Synedra sp.									0.00	0.06	0.03	0.35
TOTAL BACILLARIOPHYTA	20.79	42.83	32.66	97.72	2.64	4.59	3.53	86.75	7.09	9.07	8.04	92.76
CHRYSOPHYTA												
Dinobryon sociale	0.08	0.00	0.04	0.12	0.04	0.01	0.03	0.74	0.02	0.17	0.10	1.15
TOTAL CHRYSOPHYTA	0.08	0.00	0.04	0.12	0.04	0.01	0.03	0.74	0.02	0.17	0.10	1.15
CRYPTOPHYTA												
cryptophyte sp. 1					0.01	0.00	0.01	0.25				
TOTAL CRYPTOPHYTA					0.01	0.00	0.01	0.25				
CHLOROPHYTA												
Ankistrodesmus convolutus	0.04	0.00	0.02	0.06								
A. falcatus					0.02	0.03	0.03	0.74	0.04	0.04	0.04	0.46
A. falcatus v. mirabilis					0.00	0.02	0.01	0.25	0.00	0.02	0.01	0.12
Chlamydomonas globosa	0.12	0.10	0.11	0.33	0.07	0.06	0.07	1.72	0.08	0.10	0.09	1.04
Closterium monilliferum					0.00	0.01	0.01	0.25				

APPENDIX TABLE D-1
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
23 MARCH 1981

	Station and replicate											
	1				3				5			
Taxon	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
CHLOROPHYTA (continued)												
Dictyosphaerium Ehrenbergianum	0.04	0.05	0.05	0.15	0.05	0.05	0.05	1.23	0.09	0.08	0.09	1.04
Kirchneriella subsolitaria					0.01	0.00	0.01	0.25				
Lagerheimia quadriseta					0.00	0.01	0.01	0.25				
Scenedesmus acuminatus	0.00	0.05	0.03	0.09								
S. bijuga					0.00	0.01	0.01	0.25				
Westella botryoides	0.08	0.00	0.04	0.12								
unidentified coccoid sp.									0.03	0.02	0.03	0.35
TOTAL CHLOROPHYTA	0.28	0.20	0.25	97.72	0.15	0.19	0.20	4.94	0.24	0.26	0.26	3.01
CYANOPHYTA												
Marssoniella elegans									0.00	0.02	0.01	0.12
Microcystis aeruginosa					0.02	0.00	0.01	0.25				
M. incerta									0.00	0.02	0.01	0.12
Oscillatoria sp. 1	0.05	0.00	0.03	0.09	0.00	0.05	0.03	0.74	0.01	0.06	0.04	0.46
Oscillatoria sp. 2	0.30	0.03	0.17	0.50	0.01	0.02	0.02	0.49	0.01	0.00	0.01	0.12
TOTAL CYANOPHYTA	0.35	0.03	0.20	0.59	0.03	0.07	0.06	1.48	0.02	0.10	0.07	0.82
EUGLENOPHYTA												
Euglena sp. 1									0.00	0.02	0.01	0.12
Trachelomonas volvocina					0.01	0.01	0.01	0.25				
Trachelomonas sp.	0.08	0.10	0.09	0.27	0.02	0.04	0.03	0.74	0.03	0.04	0.04	0.46
euglenoid sp. 2					0.01	0.01	0.01	0.25				
TOTAL EUGLENOPHYTA	0.08	0.10	0.09	0.27	0.04	0.06	0.05	1.24	0.03	0.06	0.05	0.58
PYRRHOPHYTA												
Peridinium inconspicuum	0.08	0.00	0.04	0.12					0.00	0.02	0.01	0.12
TOTAL PYRRHOPHYTA	0.08	0.00	0.04	0.12					0.00	0.02	0.01	0.12
PROTOZOA												
unidentified ciliated protozoan									0.00	0.02	0.01	0.12
TOTAL PROTOZOA									0.00	0.02	0.01	0.12
OTHERS												
unidentified phytoflagellate sp. 2	0.15	0.15	0.15	0.45	0.13	0.16	0.15	3.69	0.07	0.12	0.10	1.15
unidentified phytoflagellate sp. 3					0.05	0.03	0.04	0.98	0.03	0.02	0.03	0.35
TOTAL OTHERS	0.15	0.15	0.15	0.45	0.18	0.19	0.19	4.67	0.10	0.14	0.13	1.50
TOTAL PERIPHYTON ± std. dev.	23.39	43.31	33.43±11.55		3.09	5.11	4.07±1.20		7.50	9.84	8.67±1.37	

APPENDIX TABLE D-1
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
23 MARCH 1981

	Station and replicate											
	1				3				5			
Taxon	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
TOTAL SPECIES (S)			42				64				53	
DIVERSITY INDEX ($\bar{d}$)			2.6815				5.1291				4.601	
EQUITABILITY (e)			1.40				1.629				1.622	

[a]Relative abundance as percentage of total periphyton.

APPENDIX TABLE D-2

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
25 MAY 1981

Taxon	Station and replicate											
	1				3				5			
	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
BACILLARIOPHYTA												
Centrales												
Cyclotella glomerata	1.10	0.00	0.55	0.39	2.98	0.00	1.49	0.51	0.00	11.19	5.60	0.23
C. Kutzingiana	0.00	0.55	0.28	0.20					25.98	11.19	18.59	0.77
C. Meneghiniana									12.99	0.00	6.50	0.27
C. pseudostelligera	1.10	0.55	0.83	0.59								
Melosira distans	1.10	0.31	0.70	0.50								
Pennales												
Achnanthes affinis	0.00	0.31	0.15	0.11								
A. linearis f. curta									12.99	0.00	6.50	0.27
A. minutissima	0.00	0.86	0.43	0.30								
Amphora perpusilla									12.99	0.00	6.50	0.27
Asterionella formosa	0.00	0.31	0.15	0.11								
C. placentula v. euglypta	0.00	0.31	0.15	0.11	1.49	0.00	0.75	0.25				
Cymbella affinis	1.10	0.31	0.70	0.50	2.98	0.00	1.49	0.51				
C. ventricosa	0.00	0.31	0.15	0.11								
Diatoma tenue v. elongatum	0.00	0.86	0.43	0.30								
D. vulgare	0.00	0.31	0.15	0.11								
Eunotia pectinalis									25.98	0.00	12.99	0.54
Fragilaria vaucheriae	0.00	0.86	0.43	0.30					0.00	11.19	5.60	0.23
Gomphonema olivaceum	184.93	39.34	112.13	79.41	179.99	201.05	190.52	64.65	1826.74	1721.18	1773.96	73.15
G. parvulum	19.79	4.59	12.19	8.63	103.41	85.34	94.37	32.02	540.49	387.21	463.85	19.12
Navicula biconica	1.10	0.00	0.55	0.39								
N. cryptocephala	0.00	0.31	0.15	0.11					25.98	0.00	12.99	0.54
N. cryptocephala v. veneta	0.00	1.22	0.61	0.43								
N. gysingensis	1.10	0.00	0.55	0.39								
N. minima	0.00	0.31	0.15	0.11								
N. rhyncocephala	0.00	0.31	0.15	0.11								
N. viridula	0.00	0.31	0.15	0.11								
Nitzschia amphibia									12.99	0.00	6.50	0.27
N. dissipata	2.20	1.53	1.86	1.32					0.00	22.38	11.20	0.46
N hungarica	0.00	0.31	0.15	0.11								
N. palea	4.40	1.47	2.93	2.08	8.05	2.89	5.47	1.86	64.96	76.10	70.53	2.91
Surirella ovata	0.00	0.55	0.28	0.20					12.99	0.00	6.50	0.27
Synedra delicatissima	0.00	0.31	0.15	0.11					12.99	0.00	6.50	0.27
S. rumpens	0.00	2.89	1.43	1.01								
S. ulna	1.10	2.02	1.56	1.11								
S. ulna v. oxyrhynchus	1.10	0.31	0.70	0.50								
TOTAL BACILLARIOPHYTA	220.12	61.63	140.79	99.76	298.90	289.28	294.09	99.80	2588.07	2240.44	2414.31	99.55
CHLOROPHYTA												
Ankistrodesmus falcatus									3.19	0.00	1.60	0.07
Chlamydomonas globosa	0.00	0.11	0.06	0.04					0.00	3.19	1.60	0.07
Oocystis Borgei					0.00	0.22	0.11	0.04				
Scenedesmus sp.					0.00	0.43	0.22	0.07				
TOTAL CHLOROPHYTA	0.00	0.11	0.06	0.04	0.00	0.65	0.33	0.11	3.19	3.19	3.20	0.14

APPENDIX TABLE D-2
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
25 MAY 1981

	Station and replicate											
	1				3				5			
Taxon	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
CYANOPHYTA												
Oscillatoria sp. 1	0.43	0.11	0.27	0.20	0.07	0.00	0.04	0.01	4.46	1.60	3.03	0.13
Spirulina major									0.00	0.96	0.48	0.02
TOTAL CYANOPHYTA	0.43	0.11	0.27	0.20	0.07	0.00	0.04	0.01	4.46	2.56	3.51	0.15
EUGLENOPHYTA												
Euglena sp.					0.22	0.00	0.11	0.04				
unidentified euglenoid sp. 2									3.19	0.00	1.60	0.07
TOTAL EUGLENOPHYTA					0.22	0.00	0.11	0.04	3.19	0.00	1.60	0.07
PYRRHOPHYTA												
Peridinum sp.									0.00	3.19	1.60	0.07
TOTAL PYRRHOPHYTA									0.00	3.19	1.60	0.07
OTHERS												
unidentified phytoflagellate sp. 2					0.00	0.22	0.11	0.04				
TOTAL OTHERS					0.00	0.22	0.11	0.04				
TOTAL PERIPHYTON ± std. dev.	220.55	61.85	141.12±94.31		299.19	290.15	294.68±29.60		2598.91	2249.38	2424.22±245.97	
TOTAL SPECIES (s)				32				11				21
DIVERSITY INDEX ($\bar{d}$)				1.44				1.16				1.33
EQUITABILITY (e)				0.11				0.25				0.15

[a]Relative abundance as percentage of total periphyton.

APPENDIX TABLE D-3

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
10 AUGUST 1981

	Station and replicate											
	1				3				5			
Taxon	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
BACILLARIOPHYTA												
Centrales												
Cyclotella glomerata	188.15	226.24	207.19	2.73	28.18	308.00	168.09	2.30	73.88	64.25	69.06	1.07
C. Kutzingiana	31.36	109.22	70.29	0.93	56.36	70.00	63.18	0.86	23.75	0.00	11.87	0.18
C. Meneghiniana	31.36	39.01	35.18	0.46	28.18	35.00	31.59	0.43	0.00	17.13	8.57	0.13
C. pseudostelligera	31.36	0.00	15.68	0.21								
C. stelligera									0.00	8.57	4.28	0.07
Melosira distans	0.00	39.01	19.50	0.26	28.18	35.00	31.59	0.43	13.19	17.13	15.16	0.23
M. granulata	0.00	39.01	19.50	0.26	0.00	70.00	35.00	0.48	36.94	17.13	27.04	0.42
M. varians	2257.80	3432.57	2845.19	37.56	3539.25	3934.04	3736.64	51.05	271.79	387.62	329.70	5.09
Stephanodiscus astraea					56.36	70.00	63.18	0.86	0.00	8.57	4.28	0.07
Pennales												
Achnanthes deflexa	31.36	39.01	35.18	0.46					23.75	44.97	34.36	0.53
A. exigua									23.75	27.84	25.79	0.40
A. lanceolata									13.19	8.57	10.88	0.17
A. lancelota v. dubia	31.36	0.00	15.68	0.21					0.00	17.13	8.57	0.13
A. linearis f. curta									0.00	27.84	13.92	0.21
A. minutissima					28.18	0.00	14.09	0.19	147.77	53.54	100.65	1.55
Amphora perpusilla									13.19	36.41	24.80	0.38
Cocconeis placentula v. euglypta	765.14	670.91	718.13	9.68	135.26	35.00	85.13	1.16	456.49	361.92	409.21	6.32
Cymbella minuta v. silesiaca	31.36	0.00	15.68	0.21								
C. tumida					56.36	35.00	45.68	0.62				
Frustulia rhomboides v. saxonica	31.36	0.00	15.68	0.21								
Gomphonema angustatum	31.36	0.00	15.68	0.21	0.00	105.00	52.50	0.72	23.75	27.84	25.79	0.40
G. angustatum v. citera	0.00	39.01	19.50	0.26					13.19	0.00	6.60	0.10
G. olivaceum									0.00	27.84	13.92	0.21
G. parvulum	570.72	631.91	601.31	7.94	462.13	483.00	472.57	6.46	160.96	109.22	135.09	2.09
Hantzschia amphioxys	0.00	39.01	19.50	0.26								
Navicula biconica	257.14	39.01	148.07	1.95	219.79	175.00	197.40	2.70	197.90	252.70	225.30	3.48
N. cryptocephala									13.19	8.57	10.88	0.17
N. graciloides	1179.07	1341.83	1260.45	16.64	490.31	896.01	693.16	9.47	197.90	72.81	135.36	2.09
N. minima									23.75	0.00	11.87	0.18
N. tripunctata									0.00	17.13	8.57	0.13
Nitzschia amphibia									395.80	72.81	234.31	3.62
N. communis v. abbreviata					0.00	35.00	17.50	0.24	221.65	64.25	142.95	2.21

MARBLE HILL 2
APTBD-3

APPENDIX TABLE D-3
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Station and replicate											
	1				3				5			
	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
BACILLARIOPHYTA (continued)												
Nitzschia dissipata	0.00	39.01	19.50	0.26	56.36	35.00	45.68	0.62	0.00	17.13	8.57	0.13
N. filiformis					56.36	140.00	98.18	1.34	13.19	17.13	15.16	0.23
N. gandersheimiensis	62.72	39.01	50.86	0.67								
N. palea	319.85	561.70	440.78	5.82	219.79	448.00	333.90	4.56	258.59	342.65	300.62	4.64
N. paradoxa	0.00	187.23	93.62	1.24	78.90	0.00	39.45	0.54				
N. parvula									13.19	0.00	3.15	0.05
Rhoicosphenia curvata									13.19	8.57	10.88	0.17
Synedra delicatissima v. angustissima	62.72	0.00	31.36	0.41								
S. fasciculata v. truncata	94.07	0.00	47.04	0.62								
S. ulna	257.14	296.45	276.79	3.65	107.08	105.00	106.04	1.45				
TOTAL BACILLARIOPHYTA	6265.40	7809.15	7037.24	92.91	5647.03	7014.05	6330.55	86.48	2643.94	2137.27	2387.16	36.85
CHRYSOPHYTA												
Mallomonas sp.									12.75	0.00	6.38	0.10
TOTAL CHRYSOPHYTA									12.75	0.00	6.38	0.10
CRYPTOPHYTA												
cryptophyte sp. 1					0.00	25.50	12.75	0.17				
TOTAL CRYPTOPHYTA					0.00	25.50	12.75	0.17				
CHLOROPHYTA												
Ankistrodesmus falcatus					0.00	12.75	6.38	0.09				
Characium ambiguum	12.75	0.00	6.38	0.08	0.00	12.75	6.38	0.09	1912.10	2511.21	2211.66	34.14
Characium sp.									25.50	140.22	82.86	1.28
Chlamydomonas sp.					12.75	12.75	12.75	0.17	38.24	0.00	19.12	0.30
Closterium moniliferum					0.00	25.50	12.75	0.17				
Kirchneriella lunaris v. irregularis					0.00	12.75	6.38	0.09				
Lagerheimia quadriseta					0.00	12.75	6.38	0.09				
Oocystis pusilla					12.75	0.00	6.38	0.09				
Oocystis sp.	0.00	12.75	6.38	0.08								
Scenedesmus quadricauda	0.00	12.75	6.38	0.08	0.00	38.25	19.13	0.26	12.75	0.00	6.38	0.10
Stigeoclonium sp.									0.00	15.30	7.65	0.12
TOTAL CHLOROPHYTA	12.75	25.50	19.14	0.24	25.50	127.50	102.03	1.39	1988.59	2666.73	2327.67	35.94

MARBLE HILL 2
APTBD-3A

APPENDIX TABLE D-3
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Station and replicate											
	1				3				5			
	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
CYANOPHYTA												
Anabaena sp.	0.00	2.55	1.28	0.02	2.55	2.55	2.55	0.03				
Chamaesiphon incrustans	0.00	12.75	6.38	0.08					1363.96	650.11	1007.04	15.54
Lyngbya major	0.00	86.68	43.34	0.57								
L. nordgaardii	382.42	226.90	304.66	4.02	633.70	496.00	564.85	7.72	721.50	553.23	637.37	9.84
Microcystis incerta					0.00	25.50	12.75	0.17				
Oscillatoria sp. 1	14.03	0.00	7.02	0.09	3.83	42.08	22.96	0.31	56.09	10.20	33.15	0.51
Oscillatoria sp. 2	262.60	50.99	156.80	2.07	90.53	465.40	277.97	3.80	101.98	58.64	80.31	1.24
TOTAL CYANOPHYTA	659.05	379.87	519.48	6.85	730.61	1031.53	881.08	12.04	2243.53	1272.18	1757.87	27.13
EUGLENOPHYTA												
Trachelomonas volvocina					12.75	0.00	6.38	0.09				
TOTAL EUGLENOPHYTA					12.75	0.00	6.38	0.09				
PROTOZOA												
Amoeba sp.					0.00	12.75	6.38	0.09				
TOTAL PROTOZOA					0.00	12.75	6.38	0.09				
OTHERS												
unidentified phytoflagellate sp. 3					0.00	12.75	6.38	0.09				
TOTAL OTHERS					0.00	12.75	6.38	0.09				
TOTAL PERIPHYTON ± std. dev.	6937.20	8214.52	7575.86 ±890.27		6415.89	8224.08	7320.05 ±1147.68		6888.41	6076.18	6479.08 ±892.70	
TOTAL SPECIES (s)			34				37				42	
DIVERSITY INDEX ($\bar{d}$)			3.173				2.884				3.471	
EQUITABILITY (e)			0.38				0.28				0.38	

[a]Relative abundance as percentage of total periphyton.

APPENDIX TABLE D-4

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Taxon	Station and replicate											
	1				3				5			
	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
BACILLARIOPHYTA												
Centrales												
Cyclotella glomerata	50.40	67.86	59.13	0.66	50.96	0.00	25.48	0.22	73.80	0.00	36.90	1.02
C. Kutzingiana									0.00	11.98	5.99	0.17
C. Meneghiniana	0.00	37.70	18.85	0.21								
C. ocellata	50.40	0.00	25.20	0.28	91.72	0.00	45.86	0.39	23.06	0.00	11.53	0.32
Melosira granulata					0.00	65.46	32.73	0.28				
M. varians	383.08	248.82	315.95	3.53	417.85	497.48	457.66	3.90	96.86	86.25	91.56	2.54
Pennales												
Amphora submontana					0.00	248.74	124.37	1.06				
Cocconeis placentula v. euglypta	191.54	37.70	114.62	1.28	142.68	65.46	104.07	0.89	96.86	26.36	61.61	1.71
Cymbella affinis	0.00	37.70	18.85	0.21								
C. tumida	0.00	37.70	18.85	0.21	142.68	248.74	195.71	1.67	96.86	50.32	73.59	2.04
Diatoma vulgare					50.96	0.00	25.48	0.22				
Fragilaria gracillima	141.13	105.56	123.35	1.38	50.96	65.46	58.21	0.50	0.00	11.98	5.99	0.17
Gomphonema angustatum	141.13	67.86	104.50	1.17	377.08	916.40	646.74	5.51	96.86	110.21	103.54	2.87
G. dichotomum									23.06	0.00	11.53	0.32
G. olivaceum					285.36	1296.05	790.71	6.73	23.06	11.98	17.52	0.49
G. parvulum	6794.57	4486.31	5640.44	63.07	6339.08	7750.14	7044.61	59.98	1577.44	1277.05	1427.05	39.61
Navicula cryptocephala	0.00	37.70	18.85	0.21	50.96	65.46	58.21	0.50	96.86	11.98	54.42	1.51
N. graciloides	524.21	316.68	420.45	4.70	1222.97	366.56	794.77	6.77	313.64	0.00	156.82	4.35
N. minima	50.40	0.00	25.20	0.28								
N. rhyncocephala v. germanii	90.73	173.42	132.07	1.48	0.00	183.28	91.64	0.78	73.80	35.94	54.87	1.52
N. viridula					50.96	0.00	25.48	0.22				
N. viridula v. rostellata	0.00	37.70	18.85	0.21								
Nitzschia acicularis									23.06	0.00	11.53	0.32
N. amphibia	50.40	0.00	25.20	0.28	50.96	0.00	25.48	0.22				
N. dissipata	50.40	143.26	96.83	1.08	0.00	117.82	58.91	0.50	267.52	196.47	231.99	6.44
N. filiformis	141.13	67.86	104.50	1.17	0.00	117.82	58.91	0.50	341.32	62.29	201.81	5.60
N. gandersheimiensis	50.40	0.00	25.20	0.28								
N. hungarica	0.00	37.70	18.85	0.21	50.96	0.00	25.48	0.22	23.06	0.00	11.53	0.32
N. Kutzingiana	50.40	0.00	25.20	0.28								
N. palea	1189.55	1364.74	1277.15	14.28	468.81	733.12	600.96	5.12	1190.00	455.23	822.61	22.83
N. paradoxa	0.00	37.70	18.85	0.28	50.96	0.00	25.48	0.22				
N. parvula					91.72	0.00	45.86	0.39				
N. sublinearis	0.00	37.70	18.85	0.28					50.74	0.00	25.37	0.70
Rhoicosphenia curvata	50.40	105.56	77.98	0.87	50.96	0.00	25.48	0.22				
Surirella ovata									50.74	11.98	31.36	0.87
Synedra fasciculata v. truncata	50.40	37.70	44.05	0.49	91.72	248.74	170.23	1.45	23.06	11.98	17.52	0.49
S. pulchella	0.00	37.70	18.85	0.21								
S. ulna	50.40	0.00	25.20	0.28	50.96	117.82	84.39	0.72	50.74	23.96	37.35	1.04
S. ulna v. oxyrhynchus					50.96	0.00	25.48	0.22				
TOTAL BACILLARIOPHYTA	10101.13	7562.64	8831.88	98.76	10232.22	13104.55	11668.38	99.34	4612.39	2395.96	3504.18	97.27

APPENDIX TABLE D-4
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
OHIO RIVER STATIONS 1, 3 AND 5 (ARTIFICIAL SUBSTRATES)
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

	Station and replicate											
	1				3				5			
Taxon	A	B	$\bar{x}$	RA[a]	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
CHRYSOPHYTA												
Dinobryon sertularia	27.62	13.81	20.72	0.23								
TOTAL CHRYSOPHYTA	27.62	13.81	20.72	0.23	0.00	0.00	0.00		0.00	0.00	0.00	
CRYPTOPHYTA												
cryptophyte sp.1									27.62	34.53	31.08	0.86
TOTAL CRYPTOPHYTA	0.00	0.00	0.00		0.00	0.00	0.00		27.62	34.53	31.08	0.86
CHLOROPHYTA												
Ankistrodesmus falcatus	0.00	13.81	6.91	0.08								
Cosmarium sp.									27.62	0.00	13.81	0.38
Dictyosphaerium Ehrenbergianum	0.00	13.81	6.91	0.08								
Kirchneriella lunaris v. irregularis					27.62	0.00	13.81	0.12				
Lagerheimia quadriseta									0.00	6.91	3.46	0.10
Mougeotia sp.									0.00	13.81	6.91	0.19
TOTAL CHLOROPHYTA	0.00	27.62	13.82	0.16	27.62	0.00	13.81	0.12	27.62	20.72	24.18	0.67
CYANOPHYTA												
Lyngbya nordgaardii									17.95	0.00	8.98	0.25
Oscillatoria sp. 1	11.05	27.62	19.34	0.22	0.00	55.24	27.62	0.24	45.57	14.50	30.04	0.83
Spirulina major	0.00	4.15	2.08	0.02	0.00	16.57	8.29	0.07	0.00	1.38	0.69	0.19
TOTAL CYANOPHYTA	11.05	31.77	21.42	0.24	0.00	71.81	35.91	0.31	63.52	15.88	39.71	1.10
EUGLENOPHYTA												
Euglena sp.					0.00	27.62	13.81	0.12				
euglenoid sp.	27.62	0.00	13.81	0.15								
TOTAL EUGLENOPHYTA	27.62	0.00	13.81	0.15	0.00	27.62	13.81	0.12	0.00	0.00	0.00	
OTHERS												
phytoflagellate sp. 2	0.00	27.62	13.81	0.15								
phytoflagellate sp. 3	27.62	27.62	27.62	0.31	27.62	0.00	13.81	0.12	0.00	6.91	3.46	0.10
TOTAL OTHERS	27.62	55.24	41.43	0.46	27.62	0.00	13.81	0.12	0.00	6.91	3.46	0.10
TOTAL PERIPHYTON ± std. dev.	10195.04	7691.08	8943.08	±1594.64	10287.46	13203.98	11745.72	±1934.78	4731.15	2474.00	3602.61	±1316.15
TOTAL SPECIES			36				32				31	
DIVERSITY INDEX ($\bar{d}$)			2.244				2.477				3.046	
EQUITABILITY (e)			0.18				0.24				0.38	

[a]Relative abundance as percentage of total periphyton.

MH 3
APTBD-4

APPENDIX TABLE D-5

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
23 MARCH 1981

Taxon	Replicate A	Replicate B	$\bar{x}$	RA[b]
BACILLARIOPHYTA				
Pennales				
Achnanthes linearis v. curta	466.97	454.27	460.62	1.26
A. minutissima	30539.81	8200.75	19370.28	53.17
Cocconeis placentula v. euglypta	0.00	119.54	59.77	0.16
Cymbella affinis	233.48	215.18	224.33	0.62
Gomphonema angustatum	3128.69	3586.34	3357.52	9.22
G. angustatum v. citera	3128.69	1243.26	2185.98	6.00
G. dichotomum	233.48	119.54	176.51	0.48
G. intricatum	0.00	119.54	59.77	0.16
G. olivaceum	3362.18	6288.04	4825.11	13.24
G. parvulum	1120.73	0.00	560.36	1.54
Meridion circulare	0.00	119.54	59.77	0.16
Navicula biconica	233.48	119.54	176.51	0.48
N. cryptocephala	0.00	119.54	59.77	0.16
N. rhyncocephala	233.48	119.54	176.51	0.48
Nitzschia amphibia	233.48	215.18	224.33	0.62
N. communis v. abbreviata	0.00	119.54	59.77	0.16
Rhoicosphenia curvata	1120.73	788.99	954.86	2.62
Surirella angustata	0.00	119.54	59.77	0.16
S. ovata	1774.48	1338.90	1556.69	4.27
Synedra acus	0.00	549.90	274.95	0.75
S. delicatissima	466.97	0.00	233.48	0.64
S. ulna	466.97	0.00	233.48	0.64
TOTAL BACILLARIOPHYTA	46743.62	23956.67	35350.14	96.99
CHLOROPHYTA				
Cladophora sp.	62.59	268.14	165.37	0.45
Dictyosphaerium Ehrenbergianum	0.00	148.97	74.49	0.20
Ulothrix sp.	96.28	0.00	48.14	0.13
TOTAL CHLOROPHYTA	158.87	417.11	288.00	0.78
CYANOPHYTA				
Lyngbya Diquetii	327.36	260.69	294.03	0.81
Oscillatoria sp. 1	558.44	119.17	338.81	0.93
TOTAL CYANOPHYTA	885.80	379.86	632.84	1.74

APPENDIX TABLE D-5
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
23 MARCH 1981

Taxon	Replicate A	Replicate B	$\bar{x}$	RA[b]
EUGLENOPHYTA				
Trachelomonas spp.	0.00	74.49	37.25	0.10
TOTAL EUGLENOPHYTA	0.00	74.49	37.25	0.10
OTHERS				
unidentified phytoflagellate sp. 2	96.28	148.97	122.63	0.34
TOTAL OTHERS	96.28	148.97	122.63	0.34
TOTAL PERIPHYTON ±std. dev.	47884.57	24977.10	36430.86±13534.76	
TOTAL SPECIES (s)				29
DIVERSITY INDEX ($\bar{d}$)				2.5986
EQUITABILITY (e)				2.01

[a]Samples were scraped from rocks in a partially shaded environment.

[b]Relative abundance as percentage of total periphyton.

APPENDIX TABLE D-6

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
25 MAY 1981

Taxon	Replicate A	Replicate B	$\bar{x}$	RA[b]
BACILLARIOPHYTA				
Pennales				
Achnanthes affinis	20.59	28.24	24.41	0.68
A. linearis f. curta	1840.52	1163.34	1501.93	42.16
A. minutissima	82.35	67.77	75.06	2.11
Amphora perpusilla	634.10	547.79	590.94	16.59
Cocconeis pediculus	20.59	14.12	17.35	0.49
Cymbella affinis	20.59	39.53	30.06	0.84
Diatoma vulgare	41.18	0.00	20.59	0.58
Gomphonema angustatum	177.05	336.01	256.53	7.20
G. olivaceum	57.65	107.30	82.47	2.31
G. parvulum	177.05	28.24	102.64	2.88
Gomphonema sp.	20.59	28.24	24.41	0.68
Navicula biconia	20.59	0.00	10.29	0.29
N. cryptocephala	41.18	0.00	20.59	0.58
N. cryptocephala v. veneta	20.59	0.00	10.29	0.29
Nitzschia amphibia	20.59	14.12	17.35	0.49
N. communis v. abbreviata	691.74	254.13	472.93	13.28
N. dissipata	20.59	0.00	10.29	0.29
N. palea	57.65	39.53	48.59	1.36
Rhoicosphenia curvata	140.00	93.18	116.59	3.27
Surirella ovata	20.59	67.77	44.18	1.24
TOTAL BACILLARIOPHYTA	4125.74	2829.28	3477.51	97.63
CHLOROPHYTA				
Coelastrum sphaericum	5.25	6.44	5.85	0.16
Schraederia setigera	10.50	0.00	5.25	0.15
TOTAL CHLOROPHYTA	15.75	6.44	11.10	0.31
CYANOPHYTA				
Chroococcus sp.	42.02	9.66	25.84	0.72
Lyngbya Diquetii	33.62	21.57	27.60	0.77
Lyngbya sp.	2.63	0.65	1.64	0.05
Oscillatoria sp. 1	5.78	2.26	4.02	0.11
Oscillatoria sp. 2	15.23	8.05	11.64	0.33
Rhabdoderma lineare	5.25	0.00	2.63	0.07
TOTAL CYANOPHYTA	104.53	42.19	73.37	2.06

APPENDIX TABLE D-6
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
25 MAY 1981

	Replicate			
Taxon	A	B	$\bar{x}$	RA[b]
TOTAL PERIPHYTON ± std. dev.	4246.02	2877.91	3561.98±805.81	
TOTAL SPECIES (s)			28	
DIVERSITY INDEX ($\bar{d}$)			2.9068	
EQUITABILITY (e)			0.37	

[a]Samples scraped from rocks in a partially shaded environment.

[b]Relative abundance as percentage of total periphyton.

APPENDIX TABLE D-7

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Replicate A	Replicate B	$\bar{x}$	RA[b]
BACILLARIOPHYTA				
Pennales				
Achnanthes affinis	1816.22	0.00	908.11	3.65
A. deflexa	432.33	848.62	640.53	2.57
A. lanceolata	144.14	0.00	72.07	0.29
A. linearis f. curta	3488.30	0.00	1744.15	7.01
A. microcephala	0.00	848.62	424.31	1.70
A. minutissima	4209.02	0.00	2104.51	8.45
Amphipleura pellucida	0.00	848.62	424.31	1.70
Amphora perpusilla	2940.55	0.00	1470.27	5.91
Cymbella affinis	1268.47	3374.27	2321.37	9.32
C. sinuata f. antiqua	144.14	0.00	72.07	0.29
Gomphonema angustatum	144.14	848.62	496.38	1.99
G. angustatum v. citera	144.14	0.00	72.07	0.29
G. olivaceum	144.14	0.00	72.07	0.29
G. parvulum	980.18	0.00	490.09	1.97
Navicula cryptocephala	288.29	3374.27	1831.28	7.35
N. graciloides	288.29	0.00	144.14	0.58
N. rhynchocephala	432.43	848.62	640.53	2.57
N. tripunctata	432.43	2525.65	1479.04	5.94
Nitzschia amphibia	3372.98	0.00	1686.49	6.77
N. communis v. abbreviata	2508.11	0.00	1254.06	5.04
N. dissipata	2508.11	0.00	1254.06	5.04
N. filiformis	144.14	0.00	72.07	0.29
N. hungarica	691.89	848.62	770.26	3.09
N. palea	1412.62	0.00	706.31	2.84
Rhoicosphenia curvata	547.75	4202.68	2375.22	9.53
Surirella ovata	432.43	848.62	640.53	2.57
Synedra ulna v. spathulifera	0.00	848.62	424.31	1.70
TOTAL BACILLARIOPHYTA	28615.34	20265.83	24590.61	98.77
CHLOROPHYTA				
Characium ambiguum	0.00	34.37	17.19	0.07
Chlamydomonas sp.	0.00	34.37	17.19	0.07
TOTAL CHLOROPHYTA	0.00	68.74	34.38	0.14

MARBLE HILL 2
APTBD-7

APPENDIX TABLE D-7
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Replicate A	Replicate B	$\bar{x}$	RA[b]
CYANOPHYTA				
Lyngbya Diguetii	148.72	106.53	127.63	0.51
L. major	76.27	3.44	39.86	0.16
Oscillatoria sp. 1	19.07	10.31	14.69	0.06
Oscillatoria sp. 2	102.96	27.49	65.23	0.26
Spirulina major	49.58	0.00	24.79	0.10
TOTAL CYANOPHYTA	396.60	147.77	272.20	1.09
TOTAL PERIPHYTON ±std. dev.	29311.97	20482.34	24897.19	±5486.39
TOTAL SPECIES (s)			34	
DIVERSITY INDEX ($\bar{d}$)			4.349	
EQUITABILITY (e)			0.88	

[a]Samples were scraped from rocks in a partially shaded environment.

[b]Relative abundance as percentage of total periphyton.

MARBLE HILL 2
APTBD-7A

APPENDIX TABLE D-8

PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Taxon	Replicate A	Replicate B	$\bar{x}$	RA[b]
BACILLARIOPHYTA				
Centrales				
Cyclotella glomerata	20.09	10.59	15.34	0.77
Pennales				
Achnanthes linearis	13.91	10.59	12.25	0.62
A. linearis f. *curta*	638.37	1069.44	853.90	43.13
A. minutissima	234.94	465.90	350.42	17.71
A. deflexa	0.00	19.06	9.53	0.48
A. lanceolota	0.00	10.59	5.29	0.27
Amphora perpusilla	7.73	0.00	3.86	0.19
Cocconeis placentala v. *euglypta*	13.91	99.53	56.72	2.87
Gomphonema angustatum	346.23	148.24	247.24	12.49
G. angustatum v. *citera*	20.09	0.00	10.05	0.51
G. olivaceum	13.91	99.53	56.72	2.87
G. parvulum	13.91	29.65	21.78	1.10
Navicula schroeteri v. *escambia*	7.73	0.00	3.86	0.19
Nitzschia amphibia	7.73	59.30	33.51	1.69
N. communis v. *abbreviata*	20.09	19.06	19.58	0.99
Rhoicosphenia curvata	187.03	78.36	132.69	6.70
TOTAL BACILLARIOPHYTA	1545.68	2119.83	1832.75	92.58
CHLOROPHYTA				
Dictyosphaerium Ehrenbergianum	13.52	10.28	11.90	0.60
TOTAL CHLOROPHYTA	13.52	10.28	11.90	0.60

APPENDIX TABLE D-8
(continued)
PERIPHYTON COMPOSITION AND ABUNDANCE (individuals x 10^3/10 cm^2)
LITTLE SALUDA CREEK STATION 6 (NATURAL SUBSTRATES[a])
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Taxon	Replicate A	Replicate B	$\bar{x}$	RA[b]
CYANOPHYTA				
Chamaesiphon incrustans	4.51	0.00	2.26	0.11
Lyngbya Diguetii	22.08	0.52	11.30	0.57
Lyngbya sp. 1	204.14	16.96	110.55	5.59
Oscillatoria sp. 1	8.56	8.23	8.40	0.42
Rhabdoderma lineare	0.00	5.14	2.57	0.13
TOTAL CYANOPHYTA	239.29	30.85	135.08	6.82
TOTAL PERIPHYTON ± std. dev.	1798.49	2160.96	1979.73±279.66	
TOTAL SPECIES (s)	22			
DIVERSITY INDEX ($\bar{d}$)	2.742			
EQUITABILITY (e)	0.42			

[a]Samples were scraped from rocks in a partially shaded environment.

[b]Relative abundance as percentage of total periphyton.

MH 3
APTBD-8

APPENDIX TABLE D-9

PERIPHYTON BIOMASS (mg/10 cm^2)
MARBLE HILL PLANT SITE
23 MARCH 1981

	Station			
Replicate	1	3	5	6[a]
C	0.1	0.5	0.1	23.3
D	0.2	<0.1	0.2	18.7
E	0.1	0.2	0.1	19.9
Mean (± std. dev.)	0.1±0.1	0.2±0.2	0.1±0.1	20.6±2.4

[a]Station 6 samples were scraped from rocks in a partially shaded environment.

APPENDIX TABLE D-10

PERIPHYTON BIOMASS (mg/10 cm^2)
MARBLE HILL PLANT SITE
25 MAY 1981

	Station			
Replicate	1	3	5	6[a]
C	0.3	0.7	0.5	4.7
D	2.0[b]	0.3	0.7	3.0
E	0.2	0.4	0.8	8.6
Mean ±std. dev.	0.8±1.0	0.5±0.2	0.7±0.2	5.4±2.9

[a]Station 6 samples were scraped from rocks in a partially shaded environment.

[b]Exceptionally dense periphyton growth (in comparison with the other replicates) was observed in this sample.

APPENDIX TABLE D-11

PERIPHYTON BIOMASS (mg/10 cm^2)
MARBLE HILL PLANT SITE
10 AUGUST 1981

	Station			
Replicate	1	3	5	6[a]
C	7.3	4.9	3.0	15.3
D	4.4	9.3	5.5	19.8
E	8.2	6.0	3.4	3.5
Mean ±std. dev.	6.6±2.0	6.7±2.3	4.0±1.3	12.9±8.4

[a]Scraped from rocks in a partially shaded environment.

APPENDIX TABLE D-12

PERIPHYTON BIOMASS (mg/10 cm^2)
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

	Station			
Replicate	1	3	5	6[a]
C	1.8	2.2	1.5	1.8
D	2.7	1.5	0.5	0.8
E	2.0	2.1	1.2	0.5
Mean ±std. dev.	2.2 ±0.5	1.9 ±0.4	1.1 ±0.5	1.0 ±0.7

[a]Scraped from rocks in a partially shaded environment.

MH 3
APTBD-12

APPENDIX TABLE E-1

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
immature Tubificidae	17	59	38.0	4	3	3.5
Limnodrilus hoffmeisteri	-	33	16.5	-	-	-
ANNELIDA subtotal	17 (0.003)	92 (0.049)	54.5 (0.026)	4 (<0.001)	3 (<0.001)	3.5 (<0.001)
MOLLUSCA						
Gastropoda						
Physa sp.	-	1	0.5	-	-	-
Pelecypoda						
Corbicula fluminea	1	2	1.5	-	-	-
MOLLUSCA subtotal	1 (0.003)	3 (0.149)	2.0 (0.076)	0 (0.0)	0 (0.0)	0 (0.0)
ARTHROPODA						
Insecta						
Diptera						
Chironomus plumosus gr.	1	2	1.5	-	-	-
Cricotopus bicinctus	-	1	0.5	-	1	0.5
Cryptochironomus fulvus	-	-	-	9	1	5.0
Limnochironomus neomodestus	-	-	-	2	-	1.0
Procladius sp.	-	-	-	1	-	0.5
Stictochironomus sp.	1	2	1.5	1	-	0.5
Xenochironomus sp.	1	-	0.5	-	-	-

MHAPII
APTBE-1

APPENDIX TABLE E-1
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA	3 (<0.001)	5 (<0.001)	4.0 (<0.001)	13 (0.002)	2 (<0.001)	7.5 (0.001)
Total individuals	21	100	60.5	17	5	11.0
Total biomass (g)	0.007	0.198	0.103	0.002	0.001	0.002
Density (no./m^2)			1157			210
Biomass (g/m^2)			1.969			0.038
Index of diversity			1.50			1.97
Equitability			0.45			0.85

MHAPII
APTBE-1A

APPENDIX TABLE E-2

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
immature Tubificidae	127	87	107.0	5	4	4.5
Branchiura sowerbyi	2	-	1.0	-	-	-
Limnodrilus hoffmeisteri	31	19	25.0	-	-	-
ANNELIDA subtotal	160 (0.072)	106 (0.040)	133 (0.056)	5 (<0.001)	4 (<0.001)	4.5 (<0.001)
MOLLUSCA						
Pelecypoda						
Corbicula fluminea	-	2	1.0	1	2	1.5
Sphaerium (Musculium) sp.	1	-	0.5	-	-	-
MULLUSCA subtotal	1 (0.001)	2 (0.002)	1.5 (0.002)	1 (<0.001)	2 (0.002)	1.5 (0.001)
ARTHROPODA						
Insecta						
Diptera						
Cricotopus bicinctus	-	1	0.5	-	-	-
Cryptochironomus fulvus	-	-	-	1	-	0.5
Limnochironomus neomodestus	1	-	0.5	-	-	-
Stictochironomus sp.	1	2	1.5	-	-	-
ARTHROPODA subtotal	2 (<0.001)	3 (<0.001)	2.5 (<0.001)	1 (<0.001)	0 (0.0)	0.5 (<0.001)

APPENDIX TABLE E-2

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA subtotal	3 (<0.001)	5 (<0.001)	4 (<0.001)	13 (0.002)	2 (<0.001)	7.5 (0.001)
Total individuals	163	111	137.0	7	6	6.5
Total biomass (g)	0.073	0.042	0.058	<0.001	0.002	0.001
Density (no./m^2)			2620			124
Biomass (g/m^2)			1.109			0.019
Index of diversity			0.99			1.14
Equitability			0.29			0.89

MHAP II
APTBE-2A

APPENDIX TABLE E-3

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
immature Tubificidae	377	291	334.0	9	6	7.5
Branchiura sowerbyi	5	7	6.0	-	-	-
Limnodrilus hoffmeisteri	218	167	192.5	5	-	2.5
ANNELIDA subtotal	600 (0.581)	465 (0.407)	532.5 (0.494)	14 (0.019)	6 (0.001)	10.0 (0.010)
MOLLUSCA						
Pelecypoda						
Sphaerium sp.	-	-	-	-	1	0.5
MOLLUSCA subtotal	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.002)	0.5 (0.001)
ARTHROPODA						
Insecta						
Diptera						
Chironomus plumosus gr.	-	-	-	5	1	3.0
Coelotanypus scapularis	-	1	0.5	1	-	0.5
Cricotopus bicinctus	1	-	0.5	-	2	1.0
Glyptotendipes sp.	-	-	-	2	-	1.0
Cricotopus-Orthocladius gr.	-	-	-	3	-	1.5
Parachironomus abortivus	-	-	-	1	1	1.0
Procladius sp.	-	-	-	-	1	0.5
Stictochironomus sp.	-	-	-	2	-	1.0
Ephemeroptera						
Hexagenia limbata	-	-	-	-	1	0.5

APPENDIX TABLE E-3
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA subtotal	1 (<0.001)	1 (<0.001)	1.0 (<0.001)	14 (0.003)	6 (0.010)	10 (0.007)
Total individuals	601	466	533.5	28	13	20.5
Total biomass (g)	0.581	0.407	0.494	0.022	0.013	0.018
Density (no./m^2)			10,201			392
Biomass (g/m^2)			9.446			0.344
Index of diversity			1.05			2.96
Equitability			0.49			0.91

MHAP II
APTBE-3A

APPENDIX TABLE E-4

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Enchytraeidae						
Limnodrilus hoffmeisteri	1	1	1.0	-	-	-
Nais elinguis	-	5	2.5	-	-	-
immature Tubificidae	-	1	0.5	-	1	0.5
ANNELIDA subtotal	1 (0.004)	7 (0.002)	4.0 (0.003)	0 (0.00)	1 (0.001)	0.5 (<0.001)
MOLLUSCA						
Pelecypoda						
Corbicula fluminea	1	1	1.0	1	-	0.5
MOLLUSCA subtotal	1 (0.002)	1 (0.001)	1.0 (0.002)	1 (0.001)	0 (0.00)	0.5 (0.001)
ARTHROPODA						
Crustacea						
Gammarus pseudolimnaeus	3	2	2.5	1	1	1.0
Insecta						
Diptera						
Cricotopus bicinctus	-	2	1.0	-	-	-
Hemerodromia sp.	1	1	1.0	-	-	-
Nanocladius distinctus	1	3	2.0	-	-	-
Cricotopus-Orthocladius gr.	1	-	0.5	-	-	-
Polypedilum convictum	1	-	0.5	-	-	-
P. illinoense	2	-	1.0	-	-	-

APPENDIX TABLE E-4
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA (continued)						
Rheotanytarsus sp.	5	4	4.5	-	-	-
Thiennemanniella sp.	-	1	0.5	-	-	-
T. xena	1	-	0.5	-	-	
Simulium nr. *rugglesi*	1	-	0.5	-	-	-
S. vittatum	1	-	0.5	-	-	-
Trichoptera						
Potamyia flava	1	-	0.5	1	-	0.5
Ephemeroptera						
Stenonema sp.	2	-	1.0	-	-	-
S. integrum	-	1	0.5	-	-	-
ARTHROPODA subtotal	20 (0.002)	14 (0.001)	17.0 (0.001)	2 (0.010)	1(<0.001)	1.5 (0.005)
Total individuals	22	22	22.0	3	2	2.5
Total biomass (g)	0.008	0.004	0.006	0.011	0.001	0.006
Density (no./m^2)			421			48
Biomass (g/m^2)			0.115			0.115
Index of diversity			3.83			1.92
Equitability			1.09			1.24

MHAP II
APTBE-4A

APPENDIX TABLE E-5

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Chaetogaster sp.	2	-	1.0	-	-	-
Limnodrilus hoffmeisteri	6	6	6.0	1	-	0.5
L. maumeensis	4	4	4.0	-	-	-
Lumbriculus variegatus	2	-	1.0	-	-	-
Nais communis	-	7	3.5	-	-	-
N. elinguis	-	3	1.5	-	-	-
Waspa mobilis	1	-	0.5	-	-	-
immature Tubificidae	9	7	8.0	6	3	4.5
ANNELIDA subtotal	24 (0.021)	27 (0.027)	25.5 (0.024)	7 (0.005)	3 (0.001)	5.0 (0.003)
MOLLUSCA						
Pelecypoda						
Corbicula fluminea	2	-	1.0	4	2	3.0
MOLLUSCA subtotal	2 (0.003)	0 (0.00)	1.0 (0.002)	4 (0.039)	2 (0.016)	3.0 (0.028)
ARTHROPODA						
Crustacea						
Gammarus pseudolimnaeus	2	-	1.0	-	-	-
Insecta						
Diptera						
Cricotopus bicinctus	1	-	0.5	-	-	-

APPENDIX TABLE E-5
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA (continued)						
Cricotopus tremulus	2	-	1.0	-	-	-
Corynoneura sp.	1	-	0.5	-	-	-
Nanocladius distinctus	3	-	1.5	-	-	-
Orthocladius sp.	3	-	1.5	-	-	-
Polypedilum convictum	4	-	2.0	-	-	-
P. illinoense	1	-	0.5	-	-	-
Rheotanytarsus sp.	8	-	4.0	-	-	-
Simulium vittatum	1	-	0.5	-	-	-
Thienemanniella xena	1	-	0.5	-	-	-
Trichoptera						
Potamyia flava	2	-	1.0	-	-	-
Ephemeroptera						
Hexagenia limbata	1	-	0.5	-	-	-
Stenonema integrum	7	-	3.5	-	-	-
Odonata						
Coenagrion sp.	1	-	0.5	-	-	-
ARTHROPODA subtotal	38 (0.023)	0 (0.00)	19.0 (0.011)	0 (0.00)	0 (0.00)	0 (0.00)
Total individuals	64	27	45.5	11	5	8.0
Total biomass (g)	0.047	0.027	0.037	0.044	0.017	0.031
Density (no./m^2)			870			153
Biomass (g/m^2)			0.707			0.593
Index of diversity			4.03			1.25
Equitability			0.95			0.96

MHAP II
APTBE-5A

APPENDIX TABLE E-6

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Branchiura sowerbyi	-	-	-	43	33	38.0
Limnodrilus hoffmeisteri	52	26	39.0	23	17	20.0
L. maumeensis	34	66	50.0	59	31	45.0
Lumbriculus variegatus	16	43	29.5	-	-	-
immature Tubificidae	50	40	45.0	21	19	20.0
ANNELIDA subtotal	152 (0.048)	175 (0.359)	163.5 (0.204)	146 (0.123)	100 (0.874)	123.0 (0.498)
MOLLUSCA						
Pelecypoda						
Corbicula fluminea	-	-	-	-	1	0.5
MOLLUSCA subtotal	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (0.001)	0.5 (0.001)
ARTHROPODA						
Crustacea						
Gammarus pseudolimnaeus	3	-	1.5	1	-	0.5
Insecta						
Diptera						
Cricotopus-Orthocladius gr.	1	-	0.5	-	-	-
Polypedilum convictum	1	-	0.5	-	-	-
P. illinoense	-	-	-	1	-	0.5
Procladius sp.	1	-	0.5	-	-	-
Rheotanytarsus sp.	3	-	1.5	-	-	-

APPENDIX TABLE E-6
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA (continued)						
Trichoptera						
Hydropsyche orris	1	-	0.5	-	-	-
Ephemeroptera						
Baetis (cingulatus?)	1	-	0.5	-	-	-
Hexagenia limbata	-	-	-	2	-	1.0
Stenonema integrum	7	-	3.5	-	-	-
Odonata						
Gomphus quadricolor	-	-	-	-	1	0.5
Coleoptera						
Donacia sp.	-	2	1.0	-	-	-
ARTHROPODA subtotal	18 (0.009)	2 (0.004)	10.0 (0.007)	4 (0.004)	1 (0.012)	2.5 (0.008)
Total individuals	170	177	173.5	150	102	126.0
Total biomass (g)	0.057	0.363	0.210	0.127	0.887	0.507
Density (no./m^2)			3317			2409
Biomass (g/m^2)			4.015			9.694
Index of diversity			2.34			2.08
Equitability			0.53			0.62

MHAP II
APTBE-6A

APPENDIX TABLE E-7

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
11 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Limnodrilus hoffmeisteri	18	24	21.0	-	-	-
immature Tubificidae	26	22	24.0	-	-	-
ANNELIDA subtotal	44 (0.010)	46 (0.012)	45.0 (0.011)	0 (0.0)	0 (0.0)	0.0 (0.0)
MOLLUSCA						
Gastropoda						
Somatogyrus sp.	1	1	1.0	-	-	-
Pelecypoda						
Corbicula fluminea	33	28	30.5	16	4	10.0
MOLLUSCA subtotal	34 (0.088)	29 (0.034)	31.5 (0.061)	16 (0.415)	4 (0.023)	10.0 (0.219)
ARTHROPODA						
Insecta						
Diptera						
Chironomus plumosus gr.	-	2	1.0	-	-	-
Trichoptera						
Potamyia flava	-	2	1.0	-	-	-
Ephemeroptera						
Stenonema integrum	-	1	0.5	-	-	-
ARTHOROPODA subtotal	0 (0.0)	5 (0.001)	2.5 (0.001)	0 (0.0)	0 (0.0)	0 (0.0)

MHAP II
APTBE-7

APPENDIX TABLE E-7
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
11 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Total individuals	78	80	79.0	16	4	10.0
Total biomass (g)	0.098	0.047	0.073	0.415	0.023	0.219
Density (no./m^2)			1511			191
Biomass (g/m^2)			1.396			4.187
Index of diversity			1.85			0.00
Equitability			0.67			1.00

MHAPII
APTBE-7A

APPENDIX TABLE E-8

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
11 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Branchiura sowerbyi	3	5	4.0	-	-	-
Limnodrilus hoffmeisteri	271	307	289.0	-	7	3.5
Peloscolex sp.	11	7	9.0	-	-	-
immature Tubificidae	91	102	96.5	8	25	16.5
ANNELIDA subtotal	376 (0.070)	421 (0.032)	398.5 (0.051)	8 (0.001)	32 (0.002)	20.0 (0.002)
MOLLUSCA						
Pelecypoda						
Corbicula fluminea	55	45	50.0	7	11	9.0
Gastropoda						
Somatogyrus sp.	-	-	-	7	2	4.5
MOLLUSCA subtotal	55 (0.245)	45 (0.026)	50.0 (0.136)	14 (0.128)	13 (0.148)	13.5 (0.138)
ARTHROPODA						
Insecta						
Diptera						
Coelotanypus concinnus	-	-	-	1	3	2.0
Cryptochironomus fulvus	-	-	-	1	-	0.5
Eukiefferiella sp.	-	-	-	-	1	0.5
Tanypus sp.	-	-	-	1	-	0.5
ARTHROPODA subtotal	0 (0.0)	0 (0.0)	0 (0.0)	3 (<0.001)	4 (<0.001)	3.5 (<0.001)

MHAP II
APTBE-8

APPENDIX TABLE E-8
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
11 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Total individuals	431	466	448.5	25	49	37.0
Total biomass (g)	0.315	0.058	0.187	0.129	0.150	0.140
Density (no./m^2)			8575			707
Biomass (g/m^2)			3.575			2.677
Index of diversity			1.41			2.19
Equitability			0.66			0.76

MHAP II
APTBE-8A

APPENDIX TABLE E-9

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
11 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Branchiura sowerbyi	7	4	5.5	1	-	0.5
Limnodrilus hoffmeisteri	145	66	105.5	9	4	6.5
L. undekemianus	71	96	83.5	-	-	-
Peloscolex sp.	15	2	8.5	-	-	-
immature Tubificidae	132	38	85.0	6	3	4.5
ANNELIDA subtotal	370 (0.030)	206 (0.025)	288 (0.028)	16 (0.003)	7 (0.001)	11.5 (0.002)
MOLLUSCA						
Pelecypoda						
Corbicula fluminea	-	-	-	23	17	20.0
Lampsilis sp.	-	-	-	1	-	0.5
MOLLUSCA subtotal	0 (0.0)	0 (0.0)	0 (0.0)	24 (0.637)	17 (0.218)	20.5 (0.428)
ARTHROPODA						
Insecta						
Diptera						
Chaoborus punctipennis	1	-	0.5	-	-	-
Coelotanypus concinnus	-	-	-	3	-	1.5
Cricotopus sp.	-	-	-	-	1	0.5
Cryptochironomus fulvus	-	-	-	-	1	0.5
ARTHOROPODA subtotal	1 (<0.001)	0 (0.0)	0.5 (<0.001)	3 (<0.001)	2 (<0.001)	2.5 (<0.001)

APPENDIX TABLE E-9
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
11 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Total individuals	371	206	288.5	43	26	34.5
Total biomass (g)	0.030	0.025	0.028	0.640	0.219	0.431
Density (no./m^2)			5516			660
Biomass (g/m^2)			0.535			8.241
Index of diversity			1.84			1.84
Equitability			0.78			0.58

MHAPII
APTBE-9A

APPENDIX TABLE E-10

BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
11 NOVEMBER 1981

Species	Number of individuals (biomass in grams)					
	Shallow Water			Deep Water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Limnodrilus hoffmeisteri	5	4	4.5	-	-	-
immature Tubificidae w/o hair setae	-	-	-	3	1	2.0
ANNELIDA subtotal (<0.001)	5 (0.001)	4 (0.001)	4.5 (0.001)	3 (<0.001)	1 (<0.001)	2.0
MOLLUSCA						
Gastropoda						
Somatogyrus sp.	-	1	0.5	1	1	1.0
Pelecypoda						
Corbicula fluminea	10	1	5.5	70	31	50.5
MOLLUSCA subtotal	10 (0.076)	2 (0.026)	6.0 (0.051)	71 (6.030)	32 (2.325)	51.5 (4.178)
ARTHROPODA						
Crustacea						
Gammarus pseudolimneus	-	1	0.5	1	-	0.5
Insecta						
Diptera						
Chironomus plumosus gr.	1	1	1.0	3	1	2.0
Coelotanypus concinnus	-	-	-	6	12	9.0
Cryptochironomus blarina	-	-	-	1	1	1.0
C. fulvus	2	-	1.0	1	5	3.0
Labrundinia pilosella	-	-	-	1	-	0.5

MHAP II
APTBE-10

APPENDIX TABLE E-10
(continued)
BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 1, MARBLE HILL PLANT SITE
11 NOVEMBER 1981

Species	Number of individuals (biomass in grams)					
	Shallow Water			Deep Water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Limnochironomus neomodestus	1	-	0.5	47	8	27.5
Polypedilum scalaenum	1	-	0.5	-	1	0.5
Trichoptera						
Oecetis sp.	-	-	-	3	-	1.5
Potamyia flava	-	-	-	4	-	2.0
Plecoptera						
Isoperla clio	-	1	0.5	-	-	-
Odonata						
Gomphus quadricolor	-	-	-	1	-	0.5
ARTHROPODA subtotal	5 (0.001)	3 (0.002)	4.0 (0.002)	68 (0.013)	28 (0.004)	48.0 (0.008)
Total individuals	20	9	14.5	142	61	101.5
Total biomass (g)	0.078	0.029	0.054	6.043	2.329	4.186
Density (no./m^2)			277			1941
Biomass (g/m^2)			1.033			80.038
Index of diversity			2.42			2.18
Equitability			0.81			0.43

MHAP II
APTBE-10A

APPENDIX TABLE E-11

BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
11 NOVEMBER 1981

Species	Number of individuals (biomass in grams)								
	Shallow Water				Deep Water				
	Replicate A		Replicate B		$\bar{x}$		Replicate A		Replicate B		$\bar{x}$	
ANNELIDA												
Oligochaeta												
Branchiura sowerbyi	-		-		-		1		2		1.5	
Limnodrilus hoffmeisteri	33		11		22.0		6		-		3.0	
L. maumeensis	-		40		20.0		-		-		-	
immature Tubificidae w/o hair setae	11		150		80.5		1		8		4.5	
ANNELIDA subtotal	44	(0.022)	201	(0.042)	122.5	(0.032)	8	(0.008)	10	(0.002)	9.0	(0.005)
MOLLUSCA												
Pelecypoda												
Corbicula fluminea	26		15		20.5		15		24		19.5	
MOLLUSCA subtotal	26	(0.210)	15	(0.120)	20.5	(0.165)	15	(0.960)	24	(1.783)	19.5	(1.372)
ARTHROPODA												
Crustacea												
Gammarus pseudolimnaeus	-		-		-		3		-		1.5	
Insecta												
Diptera												
Chironomus plumosus gr.	2		-		1.0		5		3		4.0	
Coelotanypus concinnus	-		-		-		10		6		8.0	
Cricotopus bicinctus	1		-		0.5		3		-		1.5	
Cryptochironomus blarina	-		2		1.0		1		-		0.5	
C. fulvus	2		5		3.5		2		3		2.5	

APPENDIX TABLE E-11
(continued)
BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 3, MARBLE HILL PLANT SITE
11 NOVEMBER 1981

Species	Number of individuals (biomass in grams)					
	Shallow Water			Deep Water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Labrundinia pilosella	-	-	-	1	-	0.5
Limnochironomus neomodestus	-	-	-	6	11	8.5
L. nervosus	-	-	-	-	2	1.0
Polypedilum scalaenum	4	1	2.5	-	7	3.5
Trichoptera						
Potamyia flava	-	1	0.5	-	-	-
ARTHROPODA subtotal	9 (0.001)	9 (0.001)	9.0 (0.001)	31 (0.007)	32 (0.007)	31.5 (0.007)
Total individuals	79	225	152.0	54	66	60.0
Total biomass (g)	0.233	0.163	0.198	0.975	1.792	1.384
Density (no./m^2)			2906			1147
Biomass (g/m^2)			3.786			26.463
Index of diversity			2.04			3.11
Equitability			0.54			0.87

MHAPII
APTBE-11

APPENDIX TABLE E-12

BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
11 NOVEMBER 1981

Species	Number of individuals (biomass in grams)											
	Shallow Water						Deep Water					
	Replicate A		Replicate B		$\bar{x}$		Replicate A		Replicate B		$\bar{x}$	
ANNELIDA												
Oligochaeta												
Branchiura sowerbyi	4		42		23.0		5		7		6.0	
Limnodrilus hoffmeisteri	78		11		44.5		2		-		1.0	
Lumbriculidae	7		-		3.5		-		-		-	
immature Tubificidae w/o hair setae	21		181		101.0		11		17		14.0	
ANNELIDA subtotal	110	(0.053)	234	(0.050)	172.0	(0.052)	18	(0.007)	24	(0.043)	21.0	(0.025)
MOLLUSCA												
Gastropoda												
Somatogyrus sp.	-		-		-		-		1		0.5	
Pelecypoda												
Corbicula fluminea	5		3		4.0		8		12		10.0	
Sphaerium striatinum	1		-		0.5		-		1		0.5	
MOLLUSCA subtotal	6	(0.021)	3	(0.058)	4.5	(0.040)	8	(0.069)	14	(0.014)	11.0	(0.042)
ARTHROPODA												
Crustacea												
Gammarus pseudolimnaeus	-		-		-		-		1		0.5	
Insecta												
Diptera												
Chironomus plumosus gr.	2		8		5.0		20		8		14.0	
Coelotanypus concinnus	-		1		0.5		34		30		32.0	

APPENDIX TABLE E-12

BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 5, MARBLE HILL PLANT SITE
11 NOVEMBER 1981

Species	Number of individuals (biomass in grams)					
	Shallow Water			Deep Water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Cricotopus bicinctus	-	-	-	1	-	0.5
Cryptochironomus fulvus	1	1	1.0	-	-	-
Limnochironomus neomodestus	1	3	2.0	-	3	1.5
Polypedilum convictum	9	-	4.5	-	-	-
P. scalaenum	1	26	13.5	1	1	1.0
Trichoptera						
Ochrotrichia sp.	-	-	-	-	1	0.5
ARTHROPODA subtotal	14 (0.001)	39 (0.004)	26.5 (0.002)	56 (0.010)	43 (0.008)	49.5 (0.009)
Total individuals	130	276	203.0	82	82	82.0
Total biomass (g)	0.075	0.112	0.094	0.086	0.065	0.076
Density (no./m^2)			3881			1568
Biomass (g/m^2)			1.797			1.453
Index of diversity			2.21			2.53
Equitability			0.52			0.61

MHAPII
APTBE-12

APPENDIX TABLE E-13

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Riffle habitat			Pool habitat		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
PLATYHELMINTHES						
Turbellaria						
Phagocata velata	-	1	0.5	-	-	-
PLATYHELMINTHES subtotal	0 (0.0)	1 (0.001)	1.0 (<0.001)	0 (0.0)	0 (0.0)	0 (0.0)
ANNELIDA						
Oligochaeta						
immature Tubificidae	3	3	3.0	9	8	8.5
Limnodrilus maumeensis	-	-	-	8	4	6.0
Nais communis	5	2	3.5	23	18	20.5
ANNELIDA subtotal	8 (0.005)	5 (0.002)	6.5 (0.004)	40 (0.055)	30 (0.016)	35 (0.031)
MOLLUSCA						
Gastropoda						
Amnicola sp.	1	-	0.5	-	-	-
Physa (elliptica?)	1	-	0.5	-	-	-
MOLLUSCA subtotal	2 (0.006)	0 (0.0)	1.0 (0.003)	0 (0.0)	0 (0.0)	0 (0.0)
ARTHROPODA						
Crustacea						
Lirceus fontinalis	63	68	65.5	1	61	31.0

APPENDIX TABLE E-13
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Riffle habitat			Pool habitat		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA (cont'd)						
Insecta						
Diptera						
Coelotanypus tricolor	1	-	0.5	-	-	-
Cryptochironomus digitatus	1	1	1.0	-	-	-
Limnochironomus neodestus	1	1	1.0	-	-	-
Cricotopus-Orthocladius sp.	-	2	1.0	-	1	0.5
Parachironomus abortivus	4	1	2.5	-	1	0.5
Procladius sp.	1	1	1.0	-	-	-
Stictochironomus sp.	-	1	0.5	13	33	23.0
Thienemanniella sp.	-	1	0.5	-	-	-
Trichoptera						
Cheumatopsyche sp.	3	1	2.0	-	-	-
Diplectrona modesta	2	3	2.5	-	-	-
Hydropsyche orris	10	7	8.5	-	-	-
Macronema transversum	4	9	6.5	-	-	-
Ephemeroptera						
Stenonema exiguum	3	-	1.5	-	1	0.5
Stenacron sp.	1	-	0.5	-	-	-
Coleoptera						
Psephenus herricki	1	-	0.5	-	-	-
ARTHROPODA subtotal	95 (0.373)	96 (0.341)	95.5 (0.357)	14 (0.021)	97 (0.517)	55.5 (0.269)

MHAP II
APTBE-13A

APPENDIX TABLE E-13
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
23 MARCH 1981

Species	Number of individuals (biomass in grams)					
	Riffle habitat			Pool habitat		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Total individuals	105	102	103.5	54	127	90.5
Total biomass (g)	0.374	0.344	0.359	0.076	0.533	0.305
Density (no./m^2)			1114			974
Biomass (g/m^2)			3.864			3.283
Index of diversity			2.26			2.21
Equitability			0.32			0.78

MHAPII
APTBE-13B

APPENDIX TABLE E-14

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Limnodrilus maumeensis	-	-	-	-	1	0.5
Nais communis	2	2	2.0	1	3	2.0
immature Tubificidae	-	-	-	-	2	1.0
ANNELIDA subtotal	2 (0.001)	2 (0.001)	2.0 (0.001)	1 (<0.001)	6 (0.003)	3.5 (0.002)
ARTHROPODA						
Crustacea						
Lirceus fontinalis	13	19	16.0	17	4	10.5
Synurella dentata	-	1	0.5	-	-	-
Insecta						
Diptera						
Chironomus plumosus gr.	1	1	1.0	1	1	1.0
Cricotopus bicinctus	4	6	5.0	4	-	2.0
Orthocladius sp.	-	3	1.5	2	-	1.0
Phaenopsectra dyari ?	-	-	-	1	-	0.5
Stictochironomus sp.	2	-	1.0	1	2	1.5
Tanytarsus sp.	-	-	-	-	1	0.5

APPENDIX TABLE E-14
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
25 MAY 1981

Species	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA (continued)						
Trichoptera						
Cheumatopsyche sp.	-	1	0.5	-	-	-
Ephemeroptera						
Baetis (*intercalaris*?)	-	5	2.5	-	-	-
ARTHROPODA subtotal	20 (0.006)	36 (0.016)	28.0 (0.011)	26 (0.020)	8 (0.006)	17.0 (0.013)
Total individuals	22	38	30.0	27	14	20.5
Total biomass (g)	0.007	0.017	0.012	0.020	0.009	0.015
Density (no./m^2)			323			221
Biomass (g/m^2)			0.129			0.161
Index of diversity			2.26			2.46
Equitability			0.64			0.75

MHAPII
APTBE-14A

APPENDIX TABLE E-15

BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Nais communis	1	2	1.5	-	-	-
ANNELIDA subtotal	1 (0.001)	2 (0.001)	1.5 (0.001)	0 (0.0)	0 (0.0)	0 (0.0)
ARTHROPODA						
Crustacea						
Lirceus fontinalis	12	8	10.0	3	4	3.5
Insecta						
Diptera						
Stictochironomus sp.	2	-	1.0	1	-	0.5
Tanypus sp.	-	-	-	1	-	0.5
Trichoptera						
Cheumatopsyche sp.	-	1	0.5	-	-	-
Ephemeroptera						
Stenonema exiguum	1	-	0.5	-	-	-
ARTHROPODA subtotal	15 (0.010)	9 (0.006)	12.0 (0.008)	5 (0.003)	4 (0.003)	4.5 (0.003)

MHAP II
APTBE-15

APPENDIX TABLE E-15
(continued)
BENTHOS COMPOSITION, ABUNDANCE AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
10 AUGUST 1981

Taxon	Number of individuals (biomass in grams)					
	Shallow water			Deep water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Total individuals	16	11	13.5	5	4	4.5
Total biomass (g)	0.011	0.007	0.009	0.003	0.003	0.003
Density (no./m^2)			145			48
Biomass (g/m^2)			0.097			0.032
Index of diversity			1.30			0.98
Equitability			0.60			0.79

MHAPII
APTBE-15A

APPENDIX TABLE E-16

BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Species	Number of individuals (biomass in grams)					
	Shallow Water			Deep Water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA						
Oligochaeta						
Limnodrilus maumeensis	-	3	1.5	5	-	2.5
immature Tubificidae w/o hair setae	-	3	1.5	13	-	6.5
ANNELIDA subtotal	0 (0.0)	6 (0.001)	3.0 (<0.001)	18 (0.004)	0 (0.0)	9.0 (0.002)
MOLLUSCA						
Gastropoda						
Ferrissia parallela	-	3	1.5	-	-	-
Physa elliptica	1	2	1.5	-	-	-
MOLLUSCA subtotal	1 (0.001)	5 (0.005)	3.0 (0.003)	0 (0.0)	0 (0.0)	0.0 (0.0)
ARTHROPODA						
Crustacea						
Lirceus fontinalis	219	167	193.0	64	72	68.0
Insecta						
Diptera						
Ablabesmyia mallochi	-	1	0.5	-	-	-
Hemerodromia sp.	1	-	0.5	-	-	-
Plecoptera						
Isoperla ? sp.	1	-	0.5	-	-	-
Ephemeroptera						
Baetis intercalaris	-	-	-	1	-	0.5

APPENDIX TABLE E-16
(continued)
BENTHOS COMPOSITION, ABUNDANCE, AND BIOMASS
STATION 6, MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Species	Number of individuals (biomass in grams)					
	Shallow Water			Deep Water		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
Stenacron interpunctatum	1	-	0.5	-	1	0.5
Stenonema exiguum	-	-	-	-	1	0.5
ARTHROPODA subtotal	222 (0.139)	168 (0.047)	195.0 (0.093)	65 (0.040)	74 (0.154)	69.5 (0.097)
Total individuals	223	179	201.0	83	74	78.5
Total biomass	0.140	0.053	0.096	0.044	0.154	0.099
Density (no./m^2)			2164			845
Biomass (g/m^2)			1.033			1.066
Index of diversity			0.35			0.77
Equitability			0.16			0.33

MHAP III
APTBE-16A

APPENDIX TABLE E-17

MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND BIOMASS
(ARTIFICIAL SUBSTRATES) AT OHIO RIVER STATIONS
MARBLE HILL PLANT SITE
23 MARCH 1981

	Number of individuals (biomass in grams)								
	Station 1			Station 3			Station 5		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA									
Oligochaeta									
immature Tubificidae	8	5	6.5	3	3	3.0	5	4	4.5
ANNELIDA subtotal	8 (0.002)	5 (0.001)	6.5 (0.002)	3 (<0.001)	3 (<0.001)	3.0 (<0.001)	5 (0.001)	4 (<0.001)	4.5 (<0.001)
ARTHROPODA									
Insecta									
Diptera									
Chironomus plumosus gr.	2	-	1.0	-	-	-	-	2	1.0
Coelotanypus sp.	1	-	0.5	-	-	-	-	-	-
Cricotopus bicinctus	2	-	1.0	4	2	3.0	2	1	1.5
C. trifasciatus	5	-	2.5	1	3	2.0	1	-	0.5
Cryptochironomus digitatus	4	1	2.5	2	3	2.5	-	1	0.5
Limnochironomus neomodestus	2	4	3.0	1	-	0.5	-	-	-
Orthocladius sp.	1	-	0.5	-	-	-	-	-	-
Parachironomus abortivus	-	2	1.0	1	-	0.5	-	1	0.5
Polypedilum halterale	2	-	1.0	-	1	0.5	-	-	-
Thienemanniella sp.	-	-	-	1	-	0.5	-	-	-
Trichoptera									
Cyrnellus fraternus	-	1	0.5	-	-	-	-	-	-
Hydropsyche orris	-	-	-	-	-	-	1	-	0.5
Potamyia flava	-	-	-	2	3	2.5	-	-	-
Plecoptera									
Taeniopteryx nivalis	2	-	1.0	-	-	-	-	-	-
Ephemeroptera									
Caenis sp.	-	-	-	-	-	-	1	-	0.5
Odonata									
Didymops sp.	-	-	-	-	1	0.5	1	-	0.5
ARTHROPODA subtotal	21 (0.005)	8 (0.001)	14.5 (0.003)	12 (0.002)	13 (0.008)	12.5 (0.005)	6 (0.009)	5 (0.001)	5.5 (0.005)
Total individuals	29	13	21.0	15	16	15.5	11	9	10.0
Total biomass (g)	0.007	0.002	0.005	0.002	0.008	0.005	0.010	0.001	0.006
Density (no./m^2)			129			95			62
Biomass (g/m^2)			0.031			0.031			0.037
Index of diversity			3.09			2.95			2.56
Equitability			0.99			1.08			0.90

MHAP III
APTBE-17

APPENDIX TABLE E-18

MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND BIOMASS
(ARTIFICIAL SUBSTRATES) AT OHIO RIVER STATIONS
MARBLE HILL PLANT SITE
25 MAY 1981

	Number of individuals (biomass in grams)								
	Station 1			Station 3			Station 5		
	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ARTHROPODA									
Crustacea									
Gammarus pseudolimnaeus	3	-	1.5	1	-	0.5	1	1	1.0
Insecta									
Diptera									
Cricotopus bicinctus	-	-	-	-	2	1.0	-	-	-
C. tremulus	-	-	-	-	4	2.0	-	-	-
Cricotopus- Orthocladius gr.	-	-	-	-	9	4.5	-	-	-
Hemerodromia sp.	-	-	-	-	1	0.5	-	-	-
Nanocladius distinctus	-	-	-	-	6	3.0	-	-	
Polypedilum illinoense	1	-	0.5	-	1	0.5	-	-	-
P. convictum	-	-	-	-	1	0.5	-	-	-
Rheotanytarsus sp.	-	-	-	-	1	0.5	-	-	-
Simulium nr. *rugglesi*	-	1	0.5	-	-	-	-	1	0.5
S. vittatum	-	-	-	1	-	0.5	-	-	-
Thienemanniella xena	-	-	-	-	1	0.5	-	-	-
Trichoptera									
Potamyia flava	-	-	-	1	-	0.5	-	-	-
Ephemeroptera									
Stenonema sp.	1	-	0.5	-	-	-	-	-	-
Coleoptera									
Donacia sp.	-	-	-	-	-	-	6	4	5.0
ARTHROPODA subtotal	5 (0.002)	1 (0.001)	3.0 (0.002)	3 (0.001)	26 (0.003)	14.5 (0.002)	7 (0.004)	6 (0.003)	6.5 (0.004)
Total individuals	5	1	3.0	3	26	14.5	7	6	6.5
Total biomass (g)			0.002			0.002			0.004
Density (no./m^2)			18			89			40
Biomass (g/m^2)			0.012			0.012			0.025
Index of diversity			1.79			3.43			0.99
Equitability			1.12			1.10			0.79

MHAPIII
APTBE-18

APPENDIX TABLE E-19

MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND BIOMASS
(ARTIFICIAL SUBSTRATES) AT OHIO RIVER STATIONS
MARBLE HILL PLANT SITE
10 AUGUST 1981

	Number of individuals (biomass in grams)								
	Station 1			Station 3			Station 5		
Taxon	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA									
Oligochaeta									
immature Tubificidae	3	1	2.0	1	-	0.5	3	1	2.0
ANNELIDA subtotal	3 (<0.001)	1 (<0.001)	2.0 (<0.001)	1 (<0.001)	0 (0.0)	0.5 (<0.001)	3 (<0.001)	1 (<0.001)	2.0 (<0.001)
PLATYHELMINTHES									
Turbellaria									
Phagocata velata	-	-	-	-	-	-	-	2	1.0
PLATYHELMINTHES subtotal	0 (0.0)	0 (0.0)	0.0 (0.0)	0 (0.0)	0 (0.0)	0.0 (0.0)	0 (0.0)	2 (0.001)	1.0 (0.001)
ARTHROPODA									
Crustacea									
Gammarus pseudolimnaeus	1	2	1.5	5	10	7.5	-	-	-
Insecta									
Diptera									
Coelotanypus concinnus	2	2	2.0	2	1	1.5	1	1	1.0
Cricotopus sp.	2	15	8.5	6	15	10.5	4	8	6.0
Cryptochironomus digitatus	11	5	8.0	4	3	3.5	6	8	7.0
Eukiefferiella sp.	-	3	1.5	-	1	0.5	2	2	2.0
Hemerodromia sp.	-	-	-	1	-	0.5	-	1	0.5
Nanocladius distinctus	-	1	0.5	-	-	-	-	2	1.0
Procladius sp.	2	1	1.5	-	-	-	-	2	1.0
Rheotanytarsus sp.	-	1	0.5	2	-	1.0	-	-	-
Tanytarsus sp.	-	2	1.0	1	1	1.0	-	-	-
Thienemanniella xena	1	1	1.0	1	1	1.0	-	-	-
Xenochironomus sp.	1	1	1.0	3	-	1.5	-	-	-
Trichoptera									
Ceraclea sp.	-	-	-	-	-	-	1	-	0.5
Cyrnellus fraternus	2	-	1.0	3	-	1.5	1	2	1.5
Hydropsyche orris	33	48	40.5	13	2	7.5	4	15	9.5
Neureclipsis crepuscularis	-	-	-	1	-	0.5	-	1	0.5
Ochrotrichia viesi	-	-	-	1	-	0.5	-	-	-
Potamyia flava	64	93	78.5	61	94	77.5	53	42	47.5
Ephemeroptera									
Baetis cingulatus	1	-	0.5	-	-	-	-	-	-
Stenacron interpunctatum	1	-	0.5	1	-	0.5	2	4	3.0
Stenonema integrum	171	153	162.0	201	225	213.0	158	224	191.0
S. pulchellum	1	-	0.5	2	-	1.0	-	-	-
S. tripunctatum	13	5	9.0	8	4	6.0	3	-	1.5
ARTHROPODA subtotal	306 (0.271)	333 (0.291)	319.5 (0.281)	315 (0.164)	357 (0.178)	336.0 (0.171)	235 (0.148)	312 (0.159)	273.5 (0.153)
Total individuals	309	334	321.5	316	357	336.5	238	315	276.5
Total biomass (g)	0.271	0.291	0.281	0.164	0.178	0.171	0.148	0.160	0.154
Density (no./m^2)			1977			2070			1701
Biomass (g/m^2)			1.728			1.052			0.947
Index of diversity			2.16			1.72			1.65
Equitability			0.29			0.22			0.23

APPENDIX TABLE E-20

MACROINVERTEBRATE COMPOSITION, ABUNDANCE, AND BIOMASS
(ARTIFICIAL SUBSTRATES) AT OHIO RIVER STATIONS
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

	Number of individuals (biomass in grams)								
	Station 1			Station 3			Station 5[a]		
Species	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$	Replicate A	Replicate B	$\bar{x}$
ANNELIDA									
Oligochaeta									
immature Tubificidae	1	1	1.0	2	1	1.5	-	-	-
ANNELIDA subtotal	1 (<0.001)	1 (<0.001)	1.0 (<0.001)	2 (<0.001)	1 (<0.001)	1.5 (<0.001)	0 (0.0)	0 (0.0)	0.0 (0.0)
ARTHROPODA									
Crustacea									
Gammarus pseudolimnaeus	2	2	2.0	2	1	1.5	4	5	4.5
Insecta									
Diptera									
Coelotanypus concinnus	4	-	2.0	-	-	-	-	-	-
Cryptochironomus blarina	-	9	4.5	5	6	5.5	5	8	6.5
C. digitatus	14	12	13.0	9	9	9.0	16	12	14.0
Labrundinia pilosella	3	-	1.5	-	1	0.5	-	-	-
Limnochironomus neomodestus	31	29	30.0	25	20	22.5	27	29	28.0
Polypedilum scalaenum	-	1	0.5	2	-	1.0	2	3	2.5
Rheotanytarsus sp.	3	1	2.0	-	1	0.5	3	-	1.5
Thienemanniella xena	1	-	0.5	-	2	1.0	-	1	0.5
Trichoptera									
Cyrnellus fraternus	-	-	-	-	3	1.5	4	1	2.5
Hydropsyche orris	-	-	-	4	-	2.0	-	1	0.5
Neureclipsis crepuscularis	-	1	0.5	-	-	-	1	-	0.5
Ochrotrichia sp.	1	-	0.5	2	2	2.0	1	1	1.0
Potamyia flava	6	10	8.0	5	6	5.5	5	5	5.0
Plecoptera									
Isoperla clio	6	3	4.5	-	2	1.0	-	3	1.5
Ephemeroptera									
Caenis sp.	1	-	0.5	-	-	-	-	-	-
Stenacron interpunctatum	-	1	0.5	-	-	-	-	1	0.5
Stenonema integrum	2	2	2.0	-	1	0.5	-	-	-
ARTHROPODA subtotal	74 (0.023)	71 (0.023)	72.5 (0.023)	54 (0.018)	54 (0.012)	54.0 (0.015)	68 (0.022)	70 (0.020)	69.0 (0.021)
Total individuals	75	72	73.5	56	55	55.5	68	70	69.0
Total biomass (g)	0 023	0.023	0.023	0.018	0.012	0.015	0.022	0.020	0.021
Density (no./m^2)			452			341			424
Biomass (g/m^2)			0.141			0.092			0.129
Index of diversity			2.87			2.88			2.73
Equitability			0.60			0.69			0.66

MHAPIII
APTBE-20

APPENDIX TABLE E-21

MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND BIOMASS (ARTIFICIAL SUBSTRATES) AT LITTLE SALUDA CREEK STATION 6 MARBLE HILL PLANT SITE 23 MARCH 1981

Species	Number of individuals (biomass in grams) Replicate A	Replicate B	$\bar{x}$
ANNELIDA			
Oligochaeta			
immature Tubificidae	2	-	1.0
ANNELIDA subtotal	2(<0.001)	0 (0.0)	1.0 (<0.001)
ARTHROPODA			
Crustacea			
Lirceus fontinalis	35	19	27.0
Insecta			
Diptera			
Procladius sp.	-	1	0.5
Ephemeroptera			
Stenonoma exiguum	-	2	1.0
ARTHROPODA subtotal	35 (0.170)	22 (0.114)	28.5 (0.142)
Total individuals	37	22	29.5
Total biomass (g)	0.170	0.114	0.142
Density (no./m^2)			181
Biomass (g/m^2)			0.873
Index of diversity			0.55
Equitability			0.42

MHAP III
APTBE-2i

APPENDIX TABLE E-22

MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND BIOMASS (ARTIFICIAL SUBSTRATES) AT LITTLE SALUDA CREEK STATION 6 MARBLE HILL PLANT SITE 25 MAY 1981

Species	Number of individuals (biomass in grams) Replicate A	Replicate B	$\bar{x}$
ANNELIDA			
Oligochaeta			
Limnodrilus hoffmeisteri	5	-	2.5
L. maumeensis	2	4	3.0
Nais communis	3	2	2.5
N. elinguis	3	-	1.5
immature Tubificidae	10	13	11.5
ANNELIDA subtotal	23 (0.004)	19 (0.001)	21.0 (0.003)
ARTHROPODA			
Crustacea			
Lirceus fontinalis	75	42	58.5
Insecta			
Diptera			
Chironomus plumosus gr.	35	23	29.0
Coelotanypus concinnus	2	-	1.0
Corynoneura sp.	8	3	5.5
Limnochironomus nervosus	1	-	0.5
Orthocladius sp.	2	2	2.0
Orthocladius obumbratus	4	-	2.0
Parachironomus abortivus	3	-	1.5
Phaenopsectra dyari	8	3	5.5
Polypedilum illinoense	1	1	1.0
Procladius sp.	1	1	1.0
Rheotanytarsus sp.	4	1	2.5
Stictochironomus sp.	13	11	12.0
Tanytarsus sp.	12	8	10.0
unidentified Chironomidae	2	-	1.0
Ephemeroptera			
Stenonema tripunctatum	1	-	0.5
ARTHROPODA subtotal	170 (0.031)	95 (0.017)	132.5 (0.024)

MHAP III
APTBE-22

APPENDIX TABLE E-22
(continued)
MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND
BIOMASS (ARTIFICIAL SUBSTRATES) AT LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
25 MAY 1981

	Number of individuals (biomass in grams)		
Species	Replicate A	Replicate B	$\bar{x}$
Total individuals	195	114	154.5
Total biomass (g)	0.035	0.018	0.027
Density (no./m^2)			950
Biomass (g/m^2)			0.166
Index of diversity			3.11
Equitability			0.53

MHAP III
APTBE-22A

APPENDIX TABLE E-23

MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND BIOMASS (ARTIFICIAL SUBSTRATES) AT LITTLE SALUDA CREEK STATION 6 MARBLE HILL PLANT SITE 10 AUGUST 1981

Taxon	Number of individuals (biomass in grams) Replicate A	Replicate B	$\bar{x}$
ANNELIDA			
Oligochaeta			
Limnodrilus maumeensis	-	2	1.0
immature Tubificidae	-	10	5.0
ANNELIDA subtotal	0 (0.0)	12 (0.001)	6.0 (<0.001)
MOLLUSCA			
Gastropoda			
Ferrissia (*parallela*?)	3	1	2.0
MOLLUSCA subtotal	3 (0.003)	1 (0.001)	2.0 (0.002)
ARTHROPODA			
Crustacea			
Lirceus fontinalis	25	9	17.0
Insecta			
Diptera			
Ablabesmyia mallochi	2	3	2.5
Chironomus plumosus gr.	-	1	0.5
Cricotopus sp.	4	9	6.5
Cryptochironomus digitatus	1	4	2.5
Polypedilum illinoense	-	1	0.5
Rheotanytarsus sp.	-	1	0.5
Stictochironomus sp.	1	-	0.5
Tanypus sp.	1	1	1.0
Trichoptera			
Potamyia flava	-	1	0.5
ARTHROPODA subtotal	34 (0.012)	30 (0.005)	32.0 (0.008)
Total individuals	37	43	40.0
Total biomass (g)	0.015	0.007	0.011
Density (no./m^2)			246
Biomass (g/m^2)			0.068
Index of diversity			2.70
Equitability			0.69

APPENDIX TABLE E-24

MACROINVERTEBRATE COMPOSITION, ABUNDANCE AND BIOMASS (ARTIFICIAL SUBSTRATES) AT LITTLE SALUDA CREEK STATION 6 MARBLE HILL PLANT SITE 10 NOVEMBER 1981

Species	Number of individuals (biomass in grams) Replicate A	Replicate B	$\bar{x}$
ANNELIDA			
Oligochaeta			
Branchiura sowerbyi	2	-	1.0
Limnodrilus maumeensis	-	34	17.0
Lumbriculidae	-	21	10.5
immature Tubificidae w/o hair setae	3	67	35.0
ANNELIDA subtotal	5 (0.003)	122 (0.089)	63.5 (0.046)
MOLLUSCA			
Gastropoda			
Ferrissia parallela	1	-	0.5
MOLLUSCA subtotal	1 (0.001)	0 (0.0)	0.5 (<0.001)
ARTHROPODA			
Crustacea			
Lirceus fontinalis	-	1	0.5
Insecta			
Diptera			
Polypedilum illinoense	-	1	0.5
Trichoptera			
Hydropsyche orris	1	-	0.5
H. simulans	1	-	0.5
Ephemeroptera			
Stenonema integrum	1	-	0.5
ARTHROPODA subtotal	3 (0.001)	2 (0.001)	2.5 (0.001)
Total individuals	9	124	66.5
Total biomass (g)	0.004	0.090	0.047
Density (no./m^2)			409
Biomass (g/m^2)			0.675
Index of diversity			1.82
Equitability			0.46

MH 2
APTBE-24

APPENDIX TABLE E-25

RESULTS OF DRIFT MACROINVERTEBRATE SAMPLING
MARBLE HILL PLANT SITE
24 MARCH 1981

Depth	Species	Station 1				Station 3				Station 5			
		A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
Surface	Oligochaeta												
	immature Tubificidae	-	-	-		-	-	-		-	1	0.5	25.0
	Crustacea												
	Copepods	-	-	-		-	-	-		1	1	1.0	50.0
	Insecta												
	Diptera												
	Palpomyia sp.	-	-	-		-	-	-		-	1	0.5	25.0
	Total individuals	0	0	0.0		0	0	0.0		1	3	2.0	
	Volume filtered (m^3)	11.8	12.4	12.1		11.5	11.9	11.7		13.3	13.5	13.4	
	Individuals/m^3	0.0	0.0	0.0		0.0	0.0	0.0		0.1	0.2	0.2	
Mid-depth	Oligochaeta												
	immature Tubificidae	-	-	-	-	2	1	1.5	30.0	-	-	-	-
	Crustacea												
	copepods	-	3	1.5	75.0	2	5	3.5	70.0	2	-	1.5	75.0
	cladocerans	-	-	-	-	-	-	-	-	1	-	0.5	25.0
	Insecta												
	Diptera												
	Chaoborus punctipennis	-	1	0.5	25.0	-	-	-	-	-	-	-	-
	Total individuals	0	4	2.0		4	6	5.0		3	0	1.5	
	Volume filtered (m^3)	11.0	11.1	11.1		11.1	11.1	11.1		11.1	11.1	11.1	
	Individuals/m^3	0.0	0.4	0.2		0.4	0.5	0.5		0.3	0.0	0.2	
Bottom	Oligochaeta												
	immature Tubificidae	-	-	-	-	-	1	0.5	16.7	-	-	-	-
	Crustacea												
	copepods	2	3	2.5	41.7	3	-	1.5	50.0	2	-	1.0	50.0
	cladocerans	3	4	3.5	58.3	1	-	0.5	16.7	1	-	0.5	25.0
	Insecta												
	Diptera												
	Cryptochironomus fulvus	-	-	-	-	-	1	0.5	16.7	1	-	0.5	25.0
	Total individuals	5	7	6.0		4	2	3.0		4	0	2.0	
	Volume filtered (m^3)	9.5	9.6	9.6		10.6	10.9	10.8		10.7	10.8	10.8	
	Individuals/m^3	0.5	0.7	0.6		0.4	0.2	0.3		0.4	0.0	0.2	

APPENDIX TABLE E-26

RESULTS OF DRIFT MACROINVERTEBRATE SAMPLING
MARBLE HILL PLANT SITE
26 MAY 1981

Depth	Species	Station 1 A	B	$\bar{x}$	RA	Station 3 A	B	$\bar{x}$	RA	Station 5 A	B	$\bar{x}$	RA
Surface	Acari												
	Arrenurus sp.	-	-	-	-	1	-	0.5	20.0	-	-	-	-
	Insecta												
	Diptera												
	Chaoborus punctipennis	1	3	2.0	100.0	-	4	2.0	80.0	1	-	0.5	50.0
	Cryptochironomus fulvus	-	-	-	-	-	-	-	-	1	-	0.5	50.0
	Total individuals	1	3	2.0		1	4	2.5		2	0	1.0	
	Volume filtered (m^3)	18.0	18.0	18.0		22.7	23.4	23.1		28.4	28.8	28.6	
	Individuals/m^3	<0.1	0.1	<0.1		<0.1	0.2	0.1		<0.1	0.0	<0.1	
Mid-depth	Crustacea												
	Gammarus pseudolimnaeus	-	1	0.5	20.0	-	-	-	-	-	-	-	-
	Insecta												
	Diptera												
	Ablabesmyia mallochi	-	-	-	-	1	-	0.5	25.0	-	-	-	-
	Chaoborus punctipennis	2	1	1.5	60.0	1	-	0.5	25.0	-	1	0.5	100.0
	Tanytarsus sp.	1	-	0.5	20.0	-	-	-	-	-	-	-	-
	Ephemeroptera												
	Anepeorus sp.	-	-	-	-	-	1	0.5	25.0	-	-	-	-
	Baetis (cingulatus?)	-	-	-	-	1	-	0.5	25.0	-	-	-	-
	Total individuals	3	2	2.5		3	1	2.0		0	1	0.5	
	Volume filtered (m^3)	19.6	19.6	19.6		22.2	22.2	22.2		21.6	21.5	21.6	
	Individuals/m^3	0.1	0.1	0.1		0.1	<0.1	<0.1		0.0	<0.1	<0.1	
Bottom	Oligochaeta												
	Tubificidae w/o hairsetae	-	2	1.0	8.0	-	-	-	-	-	-	-	-
	Crustacea												
	Gammarus pseudolimnaeus	11	5	8.0	64.0	-	9	4.5	75.0	-	-	-	-
	Acari												
	Arrenurus sp.	-	1	0.5	4.0	-	-	-	-	-	-	-	-
	Insecta												
	Diptera												
	Ablabesmyia mallochi	-	1	0.5	4.0	-	-	-	-	-	-	-	-
	Cryptochironomus fulvus	-	-	-	-	-	-	-	-	-	1	0.5	50.0
	Chaoborus punctipennis	1	1	1.0	8.0	1	-	0.5	8.3	-	-	-	-
	Rheotanytarsus sp.	-	1	0.5	4.0	-	-	-	-	-	-	-	-
	Tanytarsus sp.	1	-	0.5	4.0	-	-	-	-	-	-	-	-
	Ephemeroptera												
	Anepeorus sp.	-	-	-	-	2	-	1.0	16.7	-	-	-	-
	Baetis (cingulatus?)	-	-	-	-	-	-	-	-	-	1	0.5	50.0
	Stenacron interpunctatum	-	1	0.5	4.0	-	-	-	-	-	-	-	-
	Total individuals	13	12	12.5		3	9	6.0		0	2	1.0	
	Volume filtered (m^3)	19.7	19.9	19.8		20.2	20.4	20.3		21.3	21.4	21.4	
	Individuals/m^3	0.7	0.6	0.7		0.1	0.4	0.3		0.0	0.1	<0.1	

MHAP III
APTBE-26

APPENDIX TABLE E-27

RESULTS OF DRIFT MACROINVERTEBRATE SAMPLING
MARBLE HILL PLANT SITE
11 AUGUST 1981

Depth	Taxon	Station 1				Station 3				Station 5			
		A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
Surface	ARTHROPODA												
	Insecta												
	Diptera												
	Chaoborus punctipennis	1	-	0.5	25.0	-	-	-	-	-	-	-	-
	Cricotopus sp.	-	-	-	-	-	-	-	-	2	-	1.0	100.0
	Ephemeroptera												
	Stenonema integrum	1	2	1.5	75.0	-	-	-	-	-	-	-	-
	Total individuals	2	2	2.0		0	0	0.0		2	0	1.0	
	Volume filtered (m^3)	11.7	11.7	11.7		11.7	11.8	11.8		11.2	11.4	11.3	
	Individuals/m^3	0.2	0.2	0.2		0.0	0.0	0.0		0.2	0.0	0.1	
Mid-depth	ANNELIDA												
	Oligochaeta												
	immature Tubificidae	2	-	1.0	66.7	-	-	-	-	-	-	-	-
	ARTHROPODA												
	Insecta												
	Diptera												
	Cricotopus sp.	1	-	0.5	33.3	-	-	-	-	-	-	-	-
	Cryptochironomus fulvus	-	-	-	-	-	1	0.5	20.0	-	1	0.5	25.0
	Procladius sp.	-	-	-	-	-	-	-	-	-	1	0.5	25.0
	Trichoptera												
	Potamyia flava	-	-	-	-	-	1	0.5	20.0	-	-	-	-
	Ephemeroptera												
	Stenonema integrum	-	-	-	-	3	-	1.5	60.0	2	-	1.0	50.0
	Total individuals	3	0	1.5		3	2	2.5		2	2	2.0	
	Volume filtered (m^3)	11.3	10.9	11.1		10.7	10.4	10.6		10.8	10.7	10.8	
	Individuals/m^3	0.3	0.0	0.2		0.3	0.2	0.3		0.2	0.2	0.2	
Bottom	ANNELIDA												
	Oligochaeta												
	immature Tubificidae	-	-	-	-	3	3	3.0	75.0	2	4	3.0	66.7
	ARTHROPODA												
	Crustacea												
	Gammarus pseudolimnaeus	-	-	-	-	-	-	-	-	-	1	0.5	11.1
	Insecta												
	Diptera												
	Chaoborus punctipennis	-	1	0.5	25.0	-	-	-	-	-	1	0.5	11.1
	Stictochironomus sp.	-	-	-	-	1	-	0.5	12.5	-	-	-	-
	Trichoptera												
	Hydropsyche orris	-	-	-	-	-	1	0.5	12.5	-	-	-	-
	Potamyia flava	-	2	1.0	50.0	-	-	-	-	-	-	-	-
	Ephemeroptera												
	Stenonema integrum	-	1	0.5	25.0	-	-	-	-	1	-	0.5	11.1
	Total individuals	0	4	2.0		4	4	4.0		3	6	4.5	
	Volume filtered (m^3)	8.1	8.2	8.2		10.0	10.0	10.0		9.7	9.7	9.7	
	Individuals/m^3	0.0	0.5	0.3		0.4	0.4	0.4		0.3	0.6	0.5	

APPENDIX TABLE E-28

RESULTS OF DRIFT MACROINVERTEBRATE SAMPLING
MARBLE HILL PLANT SITE
11 NOVEMBER 1981

Depth	Species	Station 1				Station 3				Station 5			
		A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA	A	B	$\bar{x}$	RA
Surface	Hydrozoa												
	Hydra sp.	3	-	1.5	75.0	2	-	1.0	50.0	1	1	1.0	33.3
	Annelida												
	Limnodrilus hoffmeisteri	-	-	-	-	-	-	-	-	1	-	0.5	16.7
	Crustacea												
	Argulus stizostethi	1	-	0.5	25.0	-	-	-	-	-	-	-	-
	Insecta												
	Diptera												
	Coelotanypus concinnus	-	-	-	-	1	-	0.5	25.0	-	-	-	-
	Rheotanytarsus sp.	-	-	-	-	-	1	0.5	25.0	1	1	1.0	33.3
	Trichoptera												
	Potamyia flava	-	-	-	-	-	-	-	-	-	1	0.5	16.7
	Total individuals	4	0	2.0		3	1	2.0		3	3	3.0	
	Volume filtered (m^3)	28.7	28.7	28.7		26.9	26.3	26.6		29.1	28.7	28.9	
	Individuals/m^3	0.1	0.0	0.1		0.1	>0.1	0.1		0.1	0.1	0.1	
Mid-depth	Hydrozoa												
	Hydra sp.	-	2	1.0	66.7	1	1	1.0	66.7	4	-	2.0	100.0
	Crustacea												
	Argulus stizostethi	-	1	0.5	33.3	-	-	-	-	-	-	-	-
	Insecta												
	Diptera												
	Chaoborus punctipennis	-	-	-	-	-	1	0.5	33.3	-	-	-	-
	Total Individuals	0	3	1.5		1	2	1.5		4	0	2.0	
	Volume filtered (m^3)	28.1	27.5	27.8		29.1	28.2	28.7		24.4	23.8	24.1	
	Individuals/m^3	0.0	0.1	>0.1		>0.1	>0.1	>0.1		0.2	0.0	0.1	
Bottom	Hydrozoa												
	Hydra sp.	4	2	3.0	85.7	7	1	4.0	80.0	4	2	3.0	75.0
	Arachnoidea												
	Arrenurus sp.	-	-	-	-	1	-	0.5	10.0	-	-	-	-
	Crustacea												
	Argulus stizostethi	-	-	-	-	-	1	0.5	10.0	-	-	-	-
	Insecta												
	Diptera												
	Coelotanypus concinnus	1	-	0.5	14.3	-	-	-	-	-	-	-	-
	Trichoptera												
	Hydropsyche orris	-	-	-	-	-	-	-	-	2	-	1.0	25.0
	Total Individuals	5	2	3.5		8	2	5.0		6	2	4.0	
	Volume filtered (m^3)	27.2	27.1	27.2		28.0	26.6	27.3		28.0	27.0	27.5	
	Individuals/m^3	0.2	0.1	>0.2		0.3	0.1	0.2		0.2	0.1	>0.2	

MH3
APTBE-28

APPENDIX TABLE F-1A

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
23-24 MARCH 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	gizzard shad	261	180	1.01
		277	220	1.04
		249	160	1.04
		204	74	0.87
	river redhorse	315	440	1.41
		309	325	1.10
		330	350	0.97
	Individuals/replicate	7		
1B	gizzard shad	193	74	1.03
		185	58	0.92
		246	148	0.99
		198	70	0.90
		254	162	0.99
	black crappie	186	50	0.78
	rock bass	218	208	2.01
	freshwater drum	332	395	1.08
	Individuals/replicate	8		
3A	gizzard shad	207	70	0.79
		282	193	0.86
		194	58	0.79
	Individuals/replicate	3		
3B	golden redhorse	394	760	1.24
	Individuals/replicate	1		
5A	freshwater drum	231	148	1.20
		292	252	1.01
	mooneye	330	345	0.96
	golden redhorse	314	415	1.34
	longnose gar	780	1300	0.27
	Individuals/replicate	5		

APPENDIX TABLE F-1A
(continued)
RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
23-24 MARCH 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
5B	gizzard shad	250	150	0.96
		260	162	0.92
	mooneye	374	460	0.89
		336	355	0.94
		224	94	0.84
	sauger	327	340	0.97
	longnose gar	609	400	0.18
	Individuals/replicate	7		

APPENDIX TABLE F-1B

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
24-25 MARCH 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	gizzard shad	282	245	1.09
		261	162	0.91
	sauger	350	420	0.98
	river redhorse	281	310	1.40
	smallmouth buffalo	383	680	1.21
	Individuals/replicate	5		
1B	gizzard shad	238	124	0.92
	golden redhorse	429	815	1.03
	smallmouth buffalo	392	730	1.21
	Individuals/replicate	3		
3A	gizzard shad	247	144	0.96
		248	148	0.97
	freshwater drum	268	225	1.17
	Individuals/replicate	3		
3B	gizzard shad	253	158	0.98
		251	142	0.90
		307	295	1.02
		260	150	0.85
	channel catfish	510	1195	0.90
	Individuals/replicate	5		
5A	gizzard shad	235	130	1.00
	freshwater drum	247	180	1.19
		255	200	1.21
	smallmouth buffalo	354	520	1.17
	Individuals/replicate	4		
5B	gizzard shad	260	164	0.93
		292	255	1.02
		268	215	1.12
		238	142	1.05
	mooneye	309	280	0.95
	Individuals/replicate	5		

APPENDIX TABLE F-2A

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
25-26 MAY 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	longnose gar	920	2000	0.25
		810	1400	0.26
	Individuals/replicate	2		
1B	longnose gar	655	600	0.21
	freshwater drum	255	200	1.21
	white bass	318	420	1.31
	Individuals/replicate	3		
3A	longnose gar	562	350	0.20
		678	600	0.92
	freshwater drum	249	190	1.23
	green sunfish	160	100	2.44
	Individuals/replicate	4		
3B	nothing collected	-	-	-
5A	longnose gar	507	375	0.29
		805	1300	0.25
	skipjack herring	252	175	1.09
	gizzard shad	235	160	1.23
	Individuals/replicate	4		
5B	smallmouth buffalo	454	2100	2.24
	Individuals/replicate	1		

APPENDIX TABLE F-2B

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
26-27 MAY 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	river redhorse	404	670	1.02
		393	685	1.13
	Individuals/replicate	2		
1B	white bass	192	63	0.89
	river carpsucker	308	430	1.47
	channel catfish	430	655	0.82
	flathead catfish	265	162	0.87
	longnose gar	915	2030	0.26
	Individuals/replicate	5		
3A	longnose gar	775	1200	0.26
		750	1000	0.24
		760	1000	0.23
		1050	3000	0.26
	goldeye	387	575	0.99
	Individuals/replicate	5		
3B	longnose gar	760	1000	0.23
		770	1200	0.26
		915	2100	0.27
	freshwater drum	97	15	1.64
	Individuals/replicate	4		
5A	longnose gar	774	1200	0.26
	freshwater drum	239	200	1.46
	skipjack herring	277	175	0.82
	gizzard shad	214	100	1.02
	sauger	364	400	0.83
	Individuals/replicate	5		
5B	longnose gar	845	1400	0.23
		886	2250	0.32
		737	1100	0.27
		714	900	0.25
		802	1200	0.23
		715	900	0.25

APPENDIX TABLE F-2B
(continued)
RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
26-27 MAY 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
5B	longnose gar (cont'd)	722	850	0.22
		805	1200	0.23
		673	800	0.26
		781	1200	0.25
	freshwater drum	259	200	1.15
	gizzard shad	217	100	0.98
	bluegill	174	125	2.37
	longear sunfish	153	125	3.49
	sauger	366	375	0.76
	black crappie	290	400	1.64
	white bass	265	210	1.13
	Individuals/replicate	17		

APPENDIX TABLE F-3A

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10-11 AUGUST 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	largemouth bass	311	400	1.33
		355	650	1.45
	golden redhorse	410	925	1.34
		396	700	1.13
	channel catfish	504	1300	1.02
		435	750	0.91
	longnose gar	567	-[a]	-
		676	-[a]	-
	Individuals/replicate	8		
1B	longnose gar	680	610	0.19
	mooneye	405	620	0.93
		360	500	1.07
	highfin carpsucker	395	875	1.42
	gizzard shad	355	400	0.89
		280	240	1.09
		327	275	0.79
	white bass	271	300	1.51
	smallmouth bass	174	100	1.89
	channel catfish	389	540	0.92
		462	1000	1.01
		371	425	0.83
		489	1100	0.94
		451	775	0.84
		407	625	0.93
	flathead catfish	329	400	1.12
		422	850	1.13
	Individuals/replicate	17		
3A	highfin carpsucker	364	800	1.66
	smallmouth buffalo	362	650	1.37
	gizzard shad	208	100	1.11
		264	200	1.09
		260	-[a]	-
	channel catfish	413	650	0.92
	longnose gar	740	1025	0.25
		735	925	0.23
	Individuals/replicate	8		

APPENDIX TABLE F-3A
(continued)
RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10-11 AUGUST 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
3B	longnose gar	1010	2800	0.27
	gizzard shad	321	400	1.21
		349	425	0.99
		334	425	1.14
		226	125	1.08
	channel catfish	530	1300	0.87
		431	775	0.97
	Individuals/replicate	7		
5A	longnose gar	887	1650	0.24
		836	1075	0.18
	mooneye	366	475	0.97
	gizzard shad	339	425	1.09
	channel catfish	447	800	0.89
	Individuals/replicate	5		
5B	freshwater drum	300	325	1.20
	smallmouth buffalo	366	750	1.53
	channel catfish	588	2075	1.02
		502	1350	1.07
		461	900	0.92
	longnose gar	819	1200	0.22
	gizzard shad	267	200	1.05
		157	50	1.29
	Individuals/replicate	8		

[a]Fish was partially eaten by turtles and was not weighed.

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APPENDIX TABLE F-3B

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
11-12 AUGUST 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	channel catfish	435	750	0.91
		423	650	0.86
	gizzard shad	262	175	0.97
	Individuals/replicate	3		
1B	smallmouth buffalo	357	750	1.65
	golden redhorse	398	800	1.27
		365	500	1.03
	channel catfish	374	450	0.86
		531	1600	1.07
		506	1200	0.93
		480	1175	1.06
	gizzard shad	339	425	1.09
	Individuals/replicate	8		
3A	flathead catfish	483	1150	1.02
	gizzard shad	348	400	0.95
	golden redhorse	422	925	1.23
	Individuals/replicate	3		
3B	mooneye	378	625	1.16
	channel catfish	472	875	0.83
	smallmouth buffalo	357	675	1.48
	Individuals/replicate	3		
5A	channel catfish	457	850	0.89
		423	650	0.86
	flathead catfish	262	200	1.11
	smallmouth bass	179	100	1.74
	gizzard shad	162	75	1.76
	Individuals/replicate	5		
5B	channel catfish	443	725	0.83
	gizzard shad	262	175	0.97
	smallmouth buffalo	373	725	1.39
	Individuals/replicate	3		

APPENDIX TABLE F-4A

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10-11 NOVEMBER 1981

Station and replicate	Species	Total lengths (mm)	Weight (g)	Condition factor (k)
1A	gizzard shad	177	65	1.17
	smallmouth bass	293	345	1.37
	freshwater drum	275	165	0.79
	smallmouth buffalo	373	880	1.70
	Individuals/replicate	4		
1B	gizzard shad	247	115	0.76
		166	35	0.76
		174	53	1.01
	spotted sucker	437	1130	1.35
	sauger	471	1110	1.06
		311	225	0.75
	Individuals/replicate	6		
3A	nothing collected	-	-	-
3B	gizzard shad	126	13	0.65
		172	45	0.88
		178	52	0.92
		184	75	1.20
	Individuals/replicate	4		
5A	gizzard shad	188	71	1.07
	channel catfish	351	430	0.99
	carp	532	2426	1.61
	sauger	243	132	0.92
		234	111	0.87
		246	127	0.85
		251	135	0.85
	Individuals/replicate	7		

MHAP III
APTBF-4A

APPENDIX TABLE F-4A
(continued)
RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10-11 NOVEMBER 1981

Station and replicate	Species	Total lengths (mm)	Weight (g)	Condition factor (k)
5B	mooneye	206	92	1.05
	channel catfish	324	340	1.00
		485	1305	1.14
	golden redhorse	414	927	1.31
		401	779	1.21
	sauger	494	1250	1.04
	Individuals/replicate	6		

MHAP II
APTBF-4A1

APPENDIX TABLE F-4B

RESULTS OF 24-HOUR GILL NETTING AT
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
11-12 NOVEMBER 1981

Station and replicate	Species	Total lengths (mm)	Weight (g)	Condition factor (k)
1A	gizzard shad	97	4	0.44
		103	5	0.46
		153	27	0.75
	Individuals/replicate	3		
1B	gizzard shad	166	40	0.87
		179	68	1.18
	Individuals/replicate	2		
3A	sauger	315	290	0.93
	Individuals/replicate	1		
3B	nothing collected	-	-	-
5A	gizzard shad	161	34	0.81
	channel catfish	295	260	1.01
	sauger	280	130	0.59
	Individuals/replicate	3		
5B	channel catfish	380	570	1.04
		347	320	0.76
	Individuals/replicate	2		

MHAP III
APTBF-4B

APPENDIX TABLE F-5

RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
24 MARCH 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	emerald shiner (9)	77-115	60	-
1B	nothing collected	-	-	-
3A	nothing collected	-	-	-
3B	gizzard shad	122	10	0.55
	emerald shiner	105	03	0.26
5A	freshwater drum	312	325	1.07
5B	smallmouth buffalo	417	960	1.32
	channel catfish	105	10	0.86

APPENDIX TABLE F-6

RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3, AND 5
MARBLE HILL PLANT SITE
26 MAY 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	freshwater drum	122	15	0.83
	gizzard shad	127	18	0.88
1B	freshwater drum	126	15	0.75
		103	12	1.10
	emerald shiner	76	4	0.91
3A	gizzard shad	125	20	1.02
	white bass	165	75	1.67
	emerald shiner	65	3	1.09
		76	4	0.91
		78	4	0.84
		66	3	1.04
		65	3	1.09
		56	2	1.14
3B	freshwater drum	93	15	1.86
	gizzard shad	208	35	0.39
5A	gizzard shad	119	25	1.48
		110	20	1.50
	white bass	160	50	1.22
5B	emerald shiner	65	3	1.09

APPENDIX TABLE F-7

RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10 AUGUST 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	gizzard shad	180	55	0.94
		155	32	0.86
		152	35	1.00
	emerald shiner	35	1	2.33
		37	1	1.97
		34	1	2.54
		31	1	3.35
		33	1	2.78
		29	1	4.10
1B	gizzard shad	178	50	0.89
	emerald shiner	39	1	1.68
3A	emerald shiner	30	1	3.70
	skipjack herring	129	20	0.93
3B	emerald shiner	29	1	4.10
		32	1	3.05
5A	gizzard shad	140	32	1.17
		145	40	1.31
		152	40	1.14
		162	49	1.15
		153	32	0.89
		133	22	0.93
		150	43	1.27
		173	50	0.96
5B	gizzard shad	219	101	0.96
	emerald shiner	35	1	2.33

APPENDIX TABLE F-8

RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
1A	gizzard shad	166	[illegible]	0.76
		158	[illegible]	0.76
		167	[illegible]	0.77
		158	25	0.63
		164	31	0.70
		153	27	0.75
		149	24	0.72
		105	6	0.52
		109	7	0.54
		78	3	0.63
		103	5	0.46
		97	4	0.44
		71	2	0.56
		106	5	0.42
		88	3	0.44
		131	15	0.67
		134	15	0.62
	bluegill	71	4	1.12
	river carpsucker	487	1291	1.12
	silver chub (6)	63-85	18	-
	emerald shiner (16)	44-98	23	-
1B	gizzard shad	87	4	0.61
		94	5	0.60
		88	3	0.44
	river carpsucker	436	1103	1.33
	silver chub (3)	70-94	12	-
	emerald shiner (13)	35-76	21	-
3A	gizzard shad	182	61	1.01
		90	4	0.55
		81	3	0.56
		79	3	0.61
		76	3	0.68
		77	3	0.66
		76	3	0.68
		64	2	0.76
		98	5	0.53
		61	2	0.88
		78	3	0.63
		62	2	0.84

MHAP II
APTBF-8

APPENDIX TABLE F-8
(continued)
RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
3A (con't.)		80	-	0.58
		79	3	0.61
	bluegill	62	3	1.26
	silver chub (10)	64-110	65	-
	emerald shiner (74)	37-96	149	-
	freshwater drum	70	3	0.87
3B	gizzard shad	185	71	1.12
		164	46	1.04
		185	70	1.11
		162	42	0.99
		96	4	0.45
		76	2	0.46
		95	5	0.58
		69	2	0.61
		86	3	0.47
		80	3	0.58
		77	3	0.66
	silver chub (7)	54-100	22	-
	emerald shiner (11)	56-78	16	-
	freshwater drum	82	5	0.91
5A	gizzard shad	175	56	1.04
		175	52	0.97
		175	52	0.97
		156	35	0.92
		160	42	1.02
		172	54	1.06
		192	65	0.92
		181	55	0.93
		184	58	0.93
		170	44	0.90
		178	56	0.99
		157	36	0.93
		168	42	0.88
		159	40	1.00
		162	40	0.94
		155	34	0.91
		167	42	0.90
		164	40	0.91
		166	44	0.96
		185	58	0.92

APPENDIX TABLE F-8
(continued)
RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
5A (con't.)	gizzard shad	178	55	0.98
		192	70	0.99
		176	51	0.94
		179	49	0.85
		174	46	0.87
		171	36	0.72
		168	35	0.74
		189	54	0.80
		175	40	0.75
		163	31	0.72
		164	33	0.75
		169	35	0.72
		173	37	0.71
		182	48	0.80
		172	42	0.82
		181	43	0.72
		179	43	0.75
		151	26	0.76
		166	30	0.66
		134	12	0.50
		126	10	0.50
		172	45	0.88
		178	52	0.92
		166	40	0.87
		183	60	0.98
		175	55	1.03
		165	42	0.93
		173	50	0.96
		167	44	0.94
		165	42	0.93
		168	45	0.95
		172	50	0.98
		168	46	0.97
		172	52	1.02
		174	60	1.14
		163	48	1.11
		184	75	1.20
		161	40	0.96
		174	55	1.04
		190	72	1.05
		171	52	1.04
		164	50	1.13

APPENDIX TABLE F-8
(continued)
RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
5A (con't.)	gizzard shad	170	54	1.10
		163	48	1.11
		125	24	1.23
		178	58	1.03
		167	45	0.97
		170	51	1.04
		170	49	1.00
		174	54	1.02
		168	48	1.01
		162	42	0.99
		165	42	0.93
	emerald shiner (7)	62-87	15	-
5B	gizzard shad	136	28	1.11
		155	40	1.07
		169	46	0.95
		119	21	1.25
		157	44	1.14
		137	29	1.13
		183	60	0.98
		191	68	0.98
		175	52	0.97
		186	64	0.99
		172	54	1.06
		170	48	0.98
		158	36	0.91
		168	44	0.93
		168	44	0.93
		181	56	0.94
		176	54	0.99
		155	42	1.13
		158	40	1.01
		159	42	1.04
		161	44	1.05
		158	43	1.09
		175	55	1.03
		157	40	1.03
		156	40	1.05
		120	16	0.92
		160	40	0.98
		169	50	1.04
		153	36	1.01

APPENDIX TABLE F-8
(continued)
RESULTS OF ELECTROFISHING
OHIO RIVER STATIONS 1, 3 AND 5
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Station and replicate	Species	Total length (mm)	Weight (g)	Condition factor (k)
5B (con't.)	gizzard shad	157	36	0.93
		158	39	0.99
		172	50	0.98
		162	38	0.89
		159	44	1.09
		166	46	1.01
		177	61	1.10
		169	50	1.04
		168	49	1.03
		162	43	1.01
		149	36	1.09
		163	44	1.02
		167	42	0.90
		127	22	1.07
		122	20	1.10
		153	36	1.01
		127	21	1.02
		97	10	1.10
	emerald shiner (17)	62-92	60	-

MHAP III
APTBF-8D

APPENDIX TABLE F-9

RESULTS OF ELECTROFISHING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
24 MARCH 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	bluegill	1	71	3
	creek chub	3	34-49	4
	stoneroller	1	95	15
	shiner (*Notropis* sp.)	2	30-40	2
B	creek chub	5	31-48	6
	shiner (*Notropis* sp.)	3	30-42	3
Total		15		33
Mean of replicates		7.5		16.5

APPENDIX TABLE F-10

RESULTS OF ELECTROFISHING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
26 MAY 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	creek chub	25	35-57	38
	blacknose dace	16	37-54	22
	stoneroller	2	52-56	4
	orangethroat darter	5	41-44	5
B	creek chub	9	39-52	12
	blacknose dace	15	45-55	29
	stoneroller	2	44-56	3
	orangethroat darter	2	41-42	2
Total		76		115
Mean of replicates		38		57.5

APPENDIX TABLE F-11

RESULTS OF ELECTROFISHING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
12 AUGUST 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	creek chub	4	48-59	11
B	creek chub	3	52-61	9
	bluntnose minnow	1	52	2
Total		8		22
Mean of replicates		4		11

APPENDIX TABLE F-12

RESULTS OF ELECTROFISHING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
10 NOVEMBER 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	creek chub	9	35-61	16
	bluntnose minnow	2	32-68	3
	blacknose dace	1	26	1
B	creek chub	5	34-64	4
	bluntnose minnow	3	31-62	3
	blacknose dace	1	24	1
	stoneroller	1	43	1
Total		22		29
Mean of replicates		11		14.5

MHAP III
APTBF-12

APPENDIX TABLE F-13

RESULTS OF SEINING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
24 MARCH 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	creek chub	10	45-67	16
	emerald shiner	2	32-33	2
	bluntnose minnow	3	50-58	4
B	creek chub	16	39-74	26
	white sucker	1	136	26
	stoneroller	3	79-90	22
	bluntnose minnow	1	59	2
Total		36		98
Mean of replicates		18.0		49.0

APPENDIX TABLE F-14

RESULTS OF SEINING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
27 MAY 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	golden shiner	1	70	4
	common shiner	4	44-61	7
	creek chub	1	41	1
	sunfish	1	46	2
B	bluntnose minnow	1	60	3
	green sunfish	1	62	5
Total		9		22
Mean of replicates		4.5		11

APPENDIX TABLE F-15

RESULTS OF SEINING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
12 AUGUST 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	golden shiner	2	91-102	19
	largemouth bass	1	65	4
	bluegill	1	76	8
B	creek chub	1	70	4
	striped shiner	9	51-64	22
	bluntnose minnow	1	51	2
Total		15		59
Mean of replicates		7.5		29.5

APPENDIX TABLE F-16

RESULTS OF SEINING
LITTLE SALUDA CREEK STATION 6
MARBLE HILL PLANT SITE
12 NOVEMBER 1981

Replicate	Species	Number of individuals	Range of total lengths (mm)	Total weight (g)
A	creek chub	14	62-135	116
	bluntnose minnow	4	51-76	14
	striped shiner	3	73-88	13
	blacknose dace	1	67	3
	stoneroller	3	49-83	10
	rosyface shiner	1	56	1
	spotted sunfish	1	75	7
	sunfish (Lepomis sp.)	5	42-52	8
B	creek chub	9	56-95	48
	bluntnose minnow	6	52-69	12
	stoneroller	2	50-53	3
	rosyface shiner	2	56-61	3
	sunfish (Lepomis sp.)	6	34-37	4
Total		57		247
Mean of replicates		28.5		123.5

MHAP III
APTBF-16

APPENDIX TABLE G- 1

RESULTS OF FIRST FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
10 APRIL 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
1	NO LARVAE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	NO LARVAE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	NO LARVAE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 2

RESULTS OF SECOND FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
25 APRIL 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
1	LOGPERCH	0.00	0.03	0.01	0.00	0.00	0.00	0.03	0.03	0.03
	MOONEYE	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	SUCKERS	0.14	0.09	0.11	0.15	0.03	0.09	0.06	0.12	0.09
	STIZOSTEDION	0.03	0.03	0.03	0.03	0.00	0.02	0.03	0.00	0.01
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.17	0.17	0.17	0.18	0.03	0.11	0.12	0.15	0.13
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	LOGPERCH	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01
	SUCKERS	0.03	0.03	0.03	0.10	0.07	0.09	0.17	0.11	0.14
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.03	0.06	0.05	0.10	0.07	0.09	0.17	0.14	0.15
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	CARP	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.04	0.02
	SUCKERS	0.27	0.03	0.15	0.06	0.15	0.10	0.07	0.00	0.04
	STIZOSTEDION	0.03	0.06	0.05	0.00	0.03	0.01	0.00	0.00	0.00

APPENDIX TABLE G- 2
(CONTINUED)
RESULTS OF SECOND FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
25 APRIL 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.30	0.09	0.20	0.08	0.17	0.13	0.07	0.04	0.05
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 3

RESULTS OF THIRD FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
7 MAY 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
1	HERRINGS	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.11	0.05
	CARP	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00
	SUCKERS	0.04	0.04	0.04	0.15	0.05	0.10	0.16	0.00	0.08
	STIZOSTEDION	0.00	0.00	0.00	0.05	0.00	0.02	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.13	0.12	0.12	0.20	0.05	0.12	0.16	0.11	0.13
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	HERRINGS	0.05	0.18	0.11	0.10	0.05	0.08	0.00	0.05	0.02
	MOONEYE	0.00	0.00	0.00	0.10	0.00	0.05	0.00	0.00	0.00
	SUCKERS	0.09	0.14	0.11	0.16	0.00	0.08	0.05	0.10	0.08
	STIZOSTEDION	0.00	0.05	0.02	0.10	0.00	0.05	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.14	0.36	0.25	0.47	0.05	0.26	0.05	0.15	0.10
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	HERRINGS	0.04	0.00	0.02	0.00	0.05	0.02	0.05	0.00	0.02
	SUCKERS	0.22	0.34	0.28	0.05	0.15	0.10	0.20	0.05	0.12

APPENDIX TABLE G- 3
(CONTINUED)
RESULTS OF THIRD FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
7 MAY 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	STIZOSTEDION	0.00	0.00	0.00	0.29	0.15	0.22	0.00	0.05	0.02
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.27	0.34	0.30	0.34	0.34	0.34	0.24	0.10	0.17
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 4

RESULTS OF FOURTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
14 MAY 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
1	HERRINGS	0.06	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	MOONEYE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02
	SUCKERS	0.11	0.20	0.16	0.36	0.18	0.27	0.69	0.39	0.54
	STIZOSTEDION	0.03	0.03	0.03	0.00	0.03	0.01	0.00	0.03	0.02
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.20	0.23	0.21	0.36	0.21	0.28	0.69	0.45	0.57
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	HERRINGS	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.02	0.00	0.01	0.03	0.03	0.03	0.00	0.00	0.00
	SUCKERS	0.04	0.13	0.09	0.21	0.30	0.25	0.31	0.22	0.27
	STIZOSTEDION	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.09	0.13	0.11	0.23	0.36	0.30	0.31	0.22	0.27
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	HERRINGS	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	SUCKERS	0.14	0.29	0.21	0.12	0.22	0.17	0.28	0.34	0.31

APPENDIX TABLE G- 4
(CONTINUED)
RESULTS OF FOURTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
14 MAY 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	STIZOSTEDION	0.05	0.05	0.05	0.02	0.07	0.05	0.03	0.02	0.03
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.18	0.37	0.27	0.14	0.29	0.22	0.31	0.36	0.33
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 5

RESULTS OF FIFTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
22 MAY 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
1	GOLDEYE	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01
	CARP	0.03	0.06	0.04	0.00	0.08	0.04	0.00	0.07	0.03
	SUCKERS	0.45	0.91	0.68	0.43	0.57	0.50	0.27	0.70	0.48
	STIZOSTEDION	0.08	0.06	0.07	0.02	0.00	0.01	0.00	0.03	0.02
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.56	1.02	0.79	0.45	0.65	0.55	0.29	0.80	0.54
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	CARP	0.03	0.00	0.01	0.03	0.03	0.03	0.00	0.00	0.00
	SUCKERS	0.39	0.80	0.59	0.47	0.77	0.62	0.71	0.49	0.60
	STIZOSTEDION	0.03	0.08	0.05	0.00	0.03	0.01	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.45	0.88	0.66	0.49	0.83	0.66	0.71	0.49	0.60
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	MOONEYE	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.12	0.14	0.13	0.00	0.05	0.03	0.08	0.03	0.06
	SUCKERS	0.55	0.33	0.44	0.58	0.48	0.53	0.28	0.76	0.52

APPENDIX TABLE G- 5
(CONTINUED)
RESULTS OF FIFTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
22 MAY 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	STIZOSTEDION	0.03	0.05	0.04	0.03	0.00	0.01	0.00	0.03	0.01
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.69	0.55	0.62	0.61	0.54	0.57	0.36	0.82	0.59
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 6

RESULTS OF SIXTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
26 MAY 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
1	HERRINGS	0.00	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	MOONEYE	0.00	0.06	0.03	0.00	0.00	0.00	0.00	0.05	0.03
	CARP	0.00	0.00	0.00	0.10	0.05	0.08	0.00	0.10	0.05
	SUCKERS	0.04	0.22	0.13	0.36	0.15	0.25	0.25	0.25	0.25
	PERCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.03
	STIZOSTEDION	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.07	0.33	0.20	0.46	0.20	0.33	0.25	0.45	0.35
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	LOGPERCH	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	HERRINGS	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.07	0.13	0.10	0.18	0.05	0.11	0.10	0.25	0.17
	SUCKERS	0.00	0.17	0.09	0.27	0.05	0.16	0.10	0.15	0.12
	NONVIABLE EGGS	0.00	0.00	0.00	0.05	0.00	0.02	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.13	0.30	0.22	0.45	0.09	0.27	0.20	0.39	0.30
	TOTAL EGGS	0.00	0.00	0.00	0.05	0.00	0.02	0.00	0.00	0.00

APPENDIX TABLE G- 6
(CONTINUED)
RESULTS OF SIXTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
26 MAY 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
5	MOONEYE	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.04	0.10	0.07	0.19	0.19	0.19	0.09	0.05	0.07
	SUCKERS	0.07	0.10	0.09	0.00	0.14	0.07	0.05	0.19	0.12
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.14	0.21	0.17	0.19	0.33	0.26	0.14	0.23	0.19
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 7

RESULTS OF SEVENTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
3 JUNE 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
1	HERRINGS	0.35	0.08	0.22	0.11	0.09	0.10	0.03	0.00	0.02
	MINNOWS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.02
	CARP	0.48	0.54	0.51	0.39	0.31	0.35	0.35	0.24	0.30
	SUCKERS	0.43	0.38	0.40	0.87	0.60	0.74	0.61	0.39	0.50
	TEMPERATE BASSES	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00
	STIZOSTEDION	0.00	0.16	0.08	0.00	0.00	0.00	0.00	0.00	0.00
	FRESHWATER DRUM	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	DAMAGED LARVAE	0.03	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	1.32	1.16	1.24	1.41	1.03	1.22	1.02	0.64	0.83
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	HERRINGS	0.08	0.05	0.06	0.00	0.00	0.00	0.00	0.00	0.00
	MINNOWS	0.10	0.05	0.08	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.54	0.56	0.55	0.45	0.65	0.55	0.26	0.27	0.27
	SUCKERS	0.33	0.31	0.32	0.42	0.82	0.62	0.47	0.60	0.53
	TEMPERATE BASSES	0.03	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00
	DAMAGED LARVAE	0.03	0.05	0.04	0.03	0.05	0.04	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 7
(CONTINUED)
RESULTS OF SEVENTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
3 JUNE 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
3		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	1.10	1.07	1.08	0.90	1.53	1.22	0.73	0.87	0.80
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	HERRINGS	0.04	0.03	0.04	0.05	0.00	0.03	0.00	0.00	0.00
	MOONEYE	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	MINNOWS	0.02	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00
	CARP	0.40	0.63	0.52	0.69	0.91	0.80	0.59	0.47	0.53
	SUCKERS	0.28	0.60	0.44	0.95	0.81	0.88	0.56	0.75	0.66
	SUNFISHES	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00
	YELLOW PERCH	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	STIZOSTEDION	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	FRESHWATER DRUM	1.73	0.00	0.86	0.00	0.00	0.00	0.03	0.05	0.04
	DAMAGED LARVAE	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	3.23	1.26	2.25	1.74	1.77	1.75	1.18	1.27	1.22
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 8

RESULTS OF EIGHTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
10 JUNE 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
1	HERRINGS	0.00	0.00	0.00	0.00	0.07	0.03	0.00	0.00	0.00
	MOONEYE	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00
	CARP	0.25	0.74	0.49	0.58	0.69	0.64	0.55	0.16	0.35
	SUCKERS	0.00	0.03	0.01	0.04	0.00	0.02	0.00	0.04	0.02
	FRESHWATER DRUM	0.02	0.00	0.01	0.02	0.14	0.08	0.05	0.02	0.03
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.27	0.77	0.52	0.67	0.90	0.78	0.59	0.22	0.41
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	HERRINGS	0.00	0.07	0.03	0.02	0.00	0.01	0.00	0.00	0.00
	MINNOWS	0.00	0.00	0.00	0.05	0.00	0.02	0.00	0.00	0.00
	CARP	0.19	0.41	0.30	0.37	0.00	0.18	0.38	0.19	0.29
	SUCKERS	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.03	0.01
	TEMPERATE BASSES	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.24	0.47	0.36	0.44	0.00	0.22	0.40	0.22	0.31
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 8
(CONTINUED)
RESULTS OF EIGHTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
10 JUNE 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	HERRINGS	0.28	0.00	0.14	0.00	0.05	0.02	0.00	0.00	0.00
	MINNOWS	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.63	0.37	0.50	0.34	0.73	0.53	0.00	0.00	0.00
	SUCKERS	0.00	0.00	0.00	0.02	0.05	0.03	0.00	0.00	0.00
	FRESHWATER DRUM	0.00	0.02	0.01	0.00	0.02	0.01	0.00	0.00	0.00
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.95	0.39	0.67	0.36	0.85	0.60	0.00	0.00	0.00
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX TABLE G- 9

RESULTS OF NINTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
17 JUNE 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
1	HERRINGS	0.16	0.03	0.09	0.03	0.04	0.04	0.06	0.00	0.03
	CARP	0.11	0.21	0.16	0.17	0.11	0.14	0.09	0.00	0.05
	SUCKERS	0.09	0.03	0.06	0.00	0.00	0.00	0.00	0.03	0.02
	FRESHWATER DRUM	0.22	0.21	0.22	0.06	0.02	0.04	0.03	0.00	0.02
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.58	0.47	0.53	0.26	0.18	0.22	0.19	0.03	0.11
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	HERRINGS	0.03	0.00	0.01	0.03	0.00	0.02	0.00	0.03	0.02
	CARP	0.14	0.09	0.12	0.06	0.03	0.05	0.09	0.06	0.08
	SUCKERS	0.00	0.00	0.00	0.06	0.03	0.05	0.00	0.03	0.02
	FRESHWATER DRUM	0.09	0.03	0.06	0.03	0.00	0.02	0.00	0.06	0.03
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.26	0.12	0.19	0.19	0.07	0.13	0.09	0.19	0.14
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01
5	HERRINGS	0.11	0.06	0.08	0.03	0.00	0.01	0.00	0.00	0.00
	CARP	0.11	0.20	0.15	0.06	0.12	0.09	0.03	0.61	0.32

APPENDIX TABLE G- 9
(CONTINUED)
RESULTS OF NINTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
17 JUNE 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
5	SUCKERS	0.00	0.06	0.03	0.03	0.03	0.03	0.06	0.19	0.12
	SUNFISHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02
	FRESHWATER DRUM	0.16	0.11	0.14	0.00	0.00	0.00	0.00	0.13	0.06
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	0.38	0.42	0.40	0.11	0.15	0.13	0.09	1.56	0.83
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03

APPENDIX TABLE G-10

RESULTS OF TENTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
25 JUNE 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
1	HERRINGS	0.37	0.13	0.25	0.10	0.02	0.06	0.06	0.00	0.03
	CARP	0.05	0.00	0.02	0.13	0.06	0.09	0.20	0.23	0.22
	SUCKERS	0.09	0.05	0.07	0.08	0.02	0.05	0.20	0.13	0.17
	FRESHWATER DRUM	0.98	1.23	1.11	1.66	0.68	1.17	0.03	0.03	0.03
	NONVIABLE EGGS	0.23	0.28	0.26	0.15	0.15	0.15	0.26	0.23	0.25
	VIABLE EGGS	0.16	0.05	0.11	0.00	0.04	0.02	0.03	0.03	0.03
	TOTAL LARVAE	1.50	1.41	1.45	1.97	0.78	1.37	0.50	0.39	0.44
	TOTAL EGGS	0.40	0.33	0.36	0.15	0.19	0.17	0.29	0.26	0.28
3	HERRINGS	0.33	0.24	0.29	0.05	0.09	0.07	0.00	0.05	0.02
	CARP	0.00	0.11	0.05	0.11	0.27	0.19	0.00	0.14	0.07
	SUCKERS	0.00	0.05	0.03	0.05	0.09	0.07	0.20	0.09	0.15
	FRESHWATER DRUM	1.91	2.03	1.97	0.16	0.64	0.40	0.09	0.05	0.07
	NONVIABLE EGGS	0.13	0.13	0.13	0.30	0.21	0.25	0.25	0.32	0.28
	VIABLE EGGS	0.05	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	2.24	2.44	2.34	0.54	1.10	0.82	0.29	0.32	0.31
	TOTAL EGGS	0.18	0.16	0.17	0.30	0.21	0.25	0.25	0.32	0.28
5	HERRINGS	0.06	0.03	0.04	0.06	0.03	0.05	0.03	0.10	0.06
	CARP	0.00	0.16	0.08	0.35	0.07	0.21	0.23	0.22	0.23

APPENDIX TABLE G-10
(CONTINUED)
RESULTS OF TENTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
25 JUNE 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	SUCKERS	0.00	0.00	0.00	0.06	0.20	0.13	0.09	0.22	0.15
	FRESHWATER DRUM	0.00	2.92	1.46	0.17	0.10	0.14	0.20	0.10	0.15
	NONVIABLE EGGS	0.25	0.13	0.19	0.58	0.26	0.42	0.32	0.35	0.33
	VIABLE EGGS	0.00	0.03	0.02	0.00	0.00	0.00	0.03	0.03	0.03
	TOTAL LARVAE	0.06	3.11	1.58	0.63	0.39	0.51	0.54	0.64	0.59
	TOTAL EGGS	0.25	0.16	0.21	0.58	0.26	0.42	0.34	0.38	0.36

APPENDIX TABLE G-11

RESULTS OF ELEVENTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
1 JULY 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
1	DARTERS	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	HERRINGS	0.55	0.22	0.39	0.06	0.03	0.05	0.06	0.00	0.03
	MINNOWS	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	CARP	0.05	0.02	0.04	0.26	0.14	0.20	0.11	0.27	0.19
	SUCKERS	0.08	0.02	0.05	0.03	0.00	0.01	0.00	0.14	0.07
	SUNFISHES	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.21
	FRESHWATER DRUM	0.25	0.45	0.35	0.51	0.52	0.51	0.06	0.55	0.27
	NONVIABLE EGGS	0.25	0.08	0.16	0.20	0.38	0.29	0.23	0.10	0.16
	VIABLE EGGS	0.05	0.00	0.03	0.00	0.00	0.00	0.00	0.03	0.02
	TOTAL LARVAE	0.96	0.74	0.85	0.85	0.69	0.77	0.60	0.95	0.78
	TOTAL EGGS	0.30	0.16	0.23	0.20	0.38	0.29	0.23	0.14	0.18
3	HERRINGS	0.00	0.07	0.04	0.00	0.00	0.00	0.06	0.07	0.07
	CARP	0.00	0.11	0.05	0.37	0.19	0.28	0.41	0.52	0.47
	SUCKERS	0.00	0.04	0.02	0.03	0.00	0.02	0.25	[illegible]5	0.20
	FRESHWATER DRUM	0.00	0.96	0.48	0.25	0.37	0.31	0.00	[illegible]5	0.07
	NONVIABLE EGGS	0.00	0.14	0.07	0.15	0.22	0.19	0.16	0.19	0.17
	VIABLE EGGS	0.00	0.07	0.04	0.00	0.04	0.02	0.00	0.00	0.00
	TOTAL LARVAE	0.00	1.17	0.59	0.65	0.56	0.60	0.73	0.90	0.81
	TOTAL EGGS	0.00	0.21	0.11	0.15	0.26	0.21	0.16	0.19	0.17

APPENDIX TABLE G-11
(CONTINUED)
RESULTS OF ELEVENTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
1 JULY 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	HERRINGS	0.94	0.92	0.93	0.03	0.07	0.05	0.08	0.00	0.04
	CARP	0.09	0.11	0.10	0.03	0.15	0.09	0.47	0.44	0.45
	SUCKERS	0.11	0.28	0.20	0.14	0.04	0.09	0.27	0.09	0.18
	FRESHWATER DRUM	0.48	0.64	0.56	0.81	0.81	0.81	0.00	0.06	0.03
	NONVIABLE EGGS	0.14	0.18	0.16	0.17	0.26	0.22	0.31	0.28	0.30
	VIABLE EGGS	0.06	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	1.63	1.94	1.78	1.01	1.06	1.04	0.81	0.59	0.70
	TOTAL EGGS	0.20	0.18	0.19	0.17	0.26	0.22	0.31	0.28	0.30

APPENDIX TABLE G-12

RESULTS OF TWELFTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
9 JULY 1981

STATION	CATEGORY	SURFACE REPLICATE A	SURFACE REPLICATE B	SURFACE REPLICATE $\bar{X}$	MIDDLE REPLICATE A	MIDDLE REPLICATE B	MIDDLE REPLICATE $\bar{X}$	BOTTOM REPLICATE A	BOTTOM REPLICATE B	BOTTOM REPLICATE $\bar{X}$
1	HERRINGS	0.82	0.95	0.89	0.06	0.08	0.07	0.09	0.00	0.04
	MINNOWS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01
	CARP	0.03	0.00	0.02	0.03	0.04	0.03	0.14	0.09	0.11
	SUCKERS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.03
	FRESHWATER DRUM	1.07	1.23	1.15	0.31	0.38	0.35	0.14	0.23	0.18
	NONVIABLE EGGS	0.00	0.00	0.00	0.06	0.04	0.05	0.06	0.08	0.07
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	1.92	2.18	2.05	0.40	0.50	0.45	0.43	0.34	0.38
	TOTAL EGGS	0.00	0.00	0.00	0.06	0.04	0.05	0.06	0.08	0.07
3	HERRINGS	2.44	1.90	2.17	0.42	0.34	0.38	0.00	0.00	0.00
	MINNOWS	0.00	0.11	0.05	0.03	0.00	0.01	0.03	0.00	0.02
	CARP	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.11	0.09
	SUCKERS	0.10	0.04	0.07	0.00	0.00	0.00	0.06	0.02	0.04
	FRESHWATER DRUM	0.60	1.15	0.87	1.77	0.99	1.38	0.43	0.13	0.28
	NONVIABLE EGGS	0.00	0.00	0.00	0.06	0.00	0.03	0.03	0.11	0.07
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	3.14	3.20	3.17	2.22	1.32	1.77	0.58	0.27	0.42
	TOTAL EGGS	0.00	0.00	0.00	0.06	0.00	0.03	0.03	0.11	0.07

APPENDIX TABLE G-12
(CONTINUED)
RESULTS OF TWELFTH FISH EGGS AND LARVAE COLLECTION (NO./M3)
MARBLE HILL PLANT
9 JULY 1981

		SURFACE REPLICATE			MIDDLE REPLICATE			BOTTOM REPLICATE		
STATION	CATEGORY	A	B	$\bar{X}$	A	B	$\bar{X}$	A	B	$\bar{X}$
5	HERRINGS	1.61	1.27	1.44	0.08	0.12	0.10	0.12	0.04	0.08
	MINNOWS	0.00	0.00	0.00	0.03	0.00	0.01	0.06	0.00	0.03
	CARP	0.00	0.00	0.00	0.03	0.00	0.01	0.16	0.04	0.10
	SUCKERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.06
	FRESHWATER DRUM	0.29	0.25	0.27	0.48	0.39	0.43	0.06	0.17	0.12
	NONVIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VIABLE EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL LARVAE	1.91	1.51	1.71	0.62	0.51	0.56	0.41	0.38	0.39
	TOTAL EGGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

MARBLE HILL NUCLEAR GENERATING STATION

REMOTE SENSING AND GROUND TRUTH PROGRAM

FINAL REPORT FOR 1980 - 1981 SEASON
AND
5-YEAR SUMMARY REPORT

Prepared for

PUBLIC SERVICE COMPANY OF INDIANA, INC.
1000 East Main Street
Plainfield, Indiana 46168

SEPTEMBER 1981

by

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NORMANDEAU ASSOCIATES, INC.
Environmental Consultants