SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA
(Swatara Creek Project)

LOCATION.--Lat 40°39'34", long 76°20'50", Schuylkill County, Hydrologic Unit 02050305, on left bank 500 ft upstream from bridge on U.S. Highway 209, 0.5 mi north of Newtown.

DRAINAGE AREA.--2.58 mi^2.

PERIOD OF RECORD.--August 1995 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1996 to current year.
pH: October 1996 to current year.
WATER TEMPERATURE: October 1996 to current year.

INSTRUMENTATION.--Water-quality monitor (in situ system).

REMARKS.--Specific conductance records rated fair except for period Sept. 4-25, which is poor. pH records rated fair except for period Nov. 15 to Feb. 6, which is poor. Water temperature records rated good. Interruptions in the record were due to malfunctions of the instrumentation. Fixed-time, base flow, and stormflow samples collected. Analytical data from samples are used to determine effectiveness of various limestone treatment systems used to aid in the remediation efforts of acid mine drainage. Data collected prior to construction dates of upstream treatment, Nov. 14, 1995, are considered untreated water. Some values for "*dissolved*" parameters exceed values for the corresponding "*total*" parameter. These results are within the limits of analytical precision and methods. Other data for this project presented in tables on pages 316-370. Figure 10 shows the location of sites sampled as part of the Swatara Creek Project.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 414 microsiemens, Aug. 13, 1999; minimum, 42 microsiemens, Nov. 8, 1996.
pH: Maximum, 7.7, Mar. 21, 1997; minimum, 3.3, Jan. 1, 1997.
WATER TEMPERATURE: Maximum, 22.0°C, Aug. 9, 2001; minimum, 0.0°C, many days during winters.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 325 microsiemens, Oct. 17; minimum, 52 microsiemens, Dec. 17.
pH: Maximum, 7.3, Sept. 4, 28-30; minimum, 4.7, Dec. 17.
WATER TEMPERATURE: Maximum, 22.0°C, Aug. 9; minimum 0.0°C, many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	OXIDATION REDUCTION POTENTIAL (MV) (00090)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	SPECIFIC CONDUCTANCE (µS/CM) (00095)
NOV										
15...	1100	9813	1028	1.2	516	12.3	98	5.5	5.5	201
JAN										
09...	1145	9813	1028	2.2	426	13.2	93	5.7	6.0	164
MAR										
14...	1245	9813	1028	5.5	452	12.5	100	5.5	5.4	142
JUL										
17...	0830	930	1028	1.3	432	9.6	96	5.9	6.0	237
SEP										
26...	1530	9813	1028	2.4	392	10.1	94	6.6	5.8	184

DATE	TEMPERATURE WATER (DEG C) (00010)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOVERABLE (MG/L AS CA) (00916)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	MAGNESIUM, TOTAL RECOVERABLE (MG/L AS MG) (00927)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	POTASSIUM, TOTAL RECOVERABLE (MG/L AS K) (00937)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOVERABLE (MG/L AS NA) (00929)	ACIDITY TOTAL HEATED (MG/L AS CAC03) (70508)
NOV										
15...	5.6	132	12.2	10.8	10.4	1.11	1.0	7.3	6.9	4.4
JAN										
09...	1.2	11.0	11.3	7.22	7.62	--	--	7.4	7.7	5.8
MAR										
14...	5.8	6.65	6.74	4.60	4.66	--	--	8.5	8.5	6.2
JUL										
17...	15.4	14.0	14.0	11.0	10.0	1.10	1.1	9.8	9.7	--
SEP										
26...	12.3	13.1	12.7	5.27	5.14	--	--	9.7	9.3	51

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	ANC WATER UNFLTRD FET LAB (MG/L AS CACO3) (00417)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	ALUM-INUM, DIS-SOLVED (µG/L AS AL) (01106)	ALUM-INUM, TOTAL RECOV-ERABLE (µG/L AS AL) (01105)	ARSENIC DIS-SOLVED (µG/L AS AS) (01000)	ARSENIC TOTAL (µG/L AS AS) (01002)	BARIUM, DIS-SOLVED (µG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (µG/L AS BA) (01007)
NOV										
15...	3	9.9	68.6	4	363	495	--	--	--	--
JAN										
09...	4	10.9	57.3	4	<200	681	--	--	--	--
MAR										
14...	3	13.7	33.8	<2	298	870	--	--	--	--
JUL										
17...	<5	--	75.0	--	40	790	<40.0	<40	36.0	37.0
SEP										
26...	4	15.4	51.6	16	<200	1020	--	--	--	--

DATE	CADMIUM DIS-SOLVED (µG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (µG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (µG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (µG/L AS CR) (01034)	COBALT, DIS-SOLVED (µG/L AS CO) (01035)	COBALT, TOTAL RECOV-ERABLE (µG/L AS CO) (01037)	COPPER, DIS-SOLVED (µG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (µG/L AS CU) (01042)	IRON, DIS-SOLVED (µG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (µG/L AS FE) (01045)
NOV										
15...	--	--	--	--	--	--	--	--	260	240
JAN										
09...	--	--	--	--	--	--	--	--	560	1020
MAR										
14...	--	--	--	--	--	--	--	--	660	920
JUL										
17...	<3.00	27.0	<3.0	<3	21.0	20	<3.0	<3.0	30	630
SEP										
26...	--	--	--	--	--	--	--	--	310	1260

DATE	LEAD, DIS-SOLVED (µG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (µG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (µG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (µG/L AS MN) (01055)	NICKEL, DIS-SOLVED (µG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (µG/L AS NI) (01067)	SELE-NIUM, DIS-SOLVED (µG/L AS SE) (01145)	SELE-NIUM, TOTAL (µG/L AS SE) (01147)	ZINC, DIS-SOLVED (µG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (µG/L AS ZN) (01092)
NOV										
15...	--	--	500	468	--	--	--	--	--	--
JAN										
09...	--	--	516	543	--	--	--	--	--	--
MAR										
14...	--	--	402	405	--	--	--	--	--	--
JUL										
17...	<40.0	<40	490	480	40.0	39	<100	<100	73	82
SEP										
26...	--	--	550	541	--	--	--	--	--	--

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			**NOVEMBER**			**DECEMBER**			**JANUARY**	
1	302	290	297	227	218	222	135	126	131	163	159	161
2	304	294	299	230	222	226	137	131	135	165	159	163
3	309	296	302	233	220	228	141	134	138	165	162	164
4	307	250	293	236	223	229	141	135	139	165	160	163
5	272	191	217	245	230	235	141	135	138	166	160	162
6	241	220	232	247	235	241	144	138	141	163	159	161
7	267	240	253	252	241	245	145	140	142	164	159	162
8	287	264	275	253	243	248	146	140	143	164	160	162
9	300	283	290	256	218	245	149	142	146	166	161	164
10	303	292	297	221	141	162	157	144	149	168	162	165
11	309	297	303	179	157	164	152	145	148	183	165	175
12	312	299	307	194	174	186	151	143	146	184	179	181
13	318	302	310	205	192	198	164	149	155	188	180	184
14	315	308	312	205	190	197	155	132	141	187	180	184
15	319	306	315	208	191	202	149	135	143	184	178	181
16	323	310	317	216	206	211	151	71	126	182	177	179
17	325	214	306	219	208	213	176	52	97	184	177	180
18	228	104	149	---	---	---	189	164	176	184	178	181
19	159	135	148	---	---	---	164	145	155	183	139	166
20	170	158	165	---	---	---	151	145	148	162	137	151
21	174	166	170	---	---	---	152	146	149	174	158	166
22	185	172	177	---	---	---	151	145	148	181	168	174
23	186	178	182	---	---	---	154	149	152	194	166	179
24	187	168	182	---	---	---	155	150	153	176	168	172
25	189	180	185	---	---	---	159	152	156	173	166	170
26	193	177	189	---	---	---	160	155	158	178	169	173
27	200	191	195	---	---	---	161	155	159	172	166	169
28	209	194	201	---	---	---	161	155	159	174	169	171
29	215	205	209	---	---	---	164	157	160	185	167	174
30	216	209	213	---	---	---	161	157	159	172	120	151
31	221	214	217	---	---	---	162	156	159	144	125	138
MONTH	325	104	242	256	141	215	189	52	147	194	120	169

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			**MARCH**			**APRIL**			**MAY**	
1	151	143	147	156	151	153	146	136	141	173	168	170
2	151	145	148	155	149	152	151	144	147	176	168	171
3	153	146	149	155	150	153	153	146	150	175	169	173
4	154	147	150	155	145	151	154	146	150	177	171	174
5	152	144	148	156	146	150	158	152	155	179	172	175
6	157	147	152	158	151	155	158	114	138	183	172	177
7	165	155	159	159	152	157	147	132	141	185	176	179
8	166	159	164	160	154	157	149	144	146	187	173	180
9	168	154	163	161	155	158	149	140	146	183	177	180
10	154	111	134	164	157	162	150	143	147	187	179	182
11	156	145	152	165	159	163	149	136	143	189	182	184
12	156	149	153	167	153	163	148	137	142	192	182	186
13	153	148	151	153	126	134	154	146	150	193	187	189
14	152	143	149	143	130	138	156	152	154	197	190	192
15	143	130	136	140	132	137	158	148	155	196	189	193
16	143	130	139	145	133	140	148	118	130	199	192	195
17	145	130	137	137	129	134	141	135	138	200	190	196
18	150	142	147	144	129	138	142	135	139	202	190	196
19	153	147	151	149	142	146	148	137	143	198	190	195
20	154	146	151	152	147	150	151	146	149	201	192	197
21	158	148	152	152	126	143	154	148	151	200	146	191
22	162	154	159	146	128	138	158	151	155	148	129	138
23	163	157	160	154	145	149	159	154	157	163	140	149
24	168	161	165	157	151	154	163	154	159	177	162	170
25	167	145	159	161	154	157	165	160	162	185	177	181
26	149	142	146	163	158	160	167	161	164	188	159	174
27	153	143	150	166	161	163	168	161	164	178	163	170
28	155	150	152	168	162	164	169	163	166	171	157	165
29	---	---	---	168	149	163	171	166	168	179	170	175
30	---	---	---	149	88	111	175	167	169	188	175	180
31	---	---	---	138	121	130	---	---	---	193	183	189
MONTH	168	111	151	168	88	149	175	114	151	202	129	180

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			**JULY**			**AUGUST**			**SEPTEMBER**	
1	195	174	191	228	165	214	241	229	237	210	175	194
2	183	144	156	222	206	213	252	237	245	228	210	220
3	167	117	135	233	214	224	256	247	252	237	224	229
4	167	144	156	229	192	215	260	78	210	237	106	206
5	177	167	171	207	186	198	150	78	118	198	176	185
6	182	174	178	223	194	203	174	149	163	217	197	208
7	195	179	183	226	215	219	187	174	181	223	212	218
8	203	187	193	231	216	223	197	185	192	228	214	222
9	206	189	198	220	198	209	207	192	201	230	223	226
10	211	195	201	226	158	209	213	204	209	230	134	213
11	206	196	202	217	192	205	211	186	197	220	207	215
12	208	186	203	224	213	220	213	200	207	227	216	221
13	206	187	194	233	221	226	217	209	212	229	220	224
14	223	200	205	238	226	231	219	207	212	227	194	217
15	222	207	211	243	231	236	227	215	222	226	216	221
16	215	106	197	243	235	239	231	221	226	229	221	225
17	169	108	141	246	236	241	231	203	217	230	224	227
18	197	168	183	246	231	242	227	213	222	233	223	228
19	204	191	199	248	240	245	235	224	229	234	226	229
20	211	132	194	253	245	248	229	186	204	232	193	217
21	155	135	146	254	246	250	225	208	217	210	193	200
22	159	112	131	256	247	253	233	219	226	220	207	214
23	128	115	120	262	252	256	238	227	231	224	214	220
24	182	127	146	262	254	257	233	225	229	227	82	203
25	192	175	183	---	---	---	238	227	233	184	114	167
26	205	189	195	---	---	---	240	233	236	188	178	183
27	211	192	202	---	---	---	243	233	239	199	187	193
28	214	201	207	---	---	---	243	236	240	205	195	201
29	226	207	213	---	---	---	250	236	243	215	200	207
30	228	203	218	---	---	---	252	242	246	219	205	214
31	---	---	---	234	224	229	252	189	237	---	---	---
MONTH	228	106	182	262	158	228	260	78	217	237	82	212
YEAR	325	52	185									

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			**NOVEMBER**			**DECEMBER**			**JANUARY**	
1	5.4	5.3	5.3	5.5	5.4	5.4	5.6	5.5	5.6	5.6	5.6	5.6
2	5.3	5.3	5.3	5.4	5.4	5.4	5.7	5.6	5.7	5.6	5.6	5.6
3	5.3	5.3	5.3	5.5	5.4	5.4	5.7	5.7	5.7	5.7	5.6	5.7
4	5.3	5.1	5.3	5.5	5.4	5.4	5.7	5.7	5.7	5.7	5.6	5.7
5	5.6	5.2	5.5	5.5	5.4	5.4	5.7	5.7	5.7	5.7	5.6	5.7
6	5.5	5.4	5.5	5.4	5.4	5.4	5.7	5.6	5.6	5.7	5.7	5.7
7	5.4	5.4	5.4	5.4	5.4	5.4	5.6	5.6	5.6	5.7	5.7	5.7
8	5.4	5.4	5.4	5.4	5.3	5.3	5.6	5.6	5.6	5.7	5.7	5.7
9	5.4	5.4	5.4	5.4	5.3	5.3	5.6	5.6	5.6	5.7	5.7	5.7
10	5.4	5.3	5.4	5.7	5.4	5.5	5.6	5.6	5.6	5.7	5.7	5.7
11	5.3	5.3	5.3	5.5	5.4	5.5	5.6	5.6	5.6	5.9	5.7	5.9
12	5.3	5.3	5.3	5.5	5.5	5.5	5.6	5.5	5.5	5.9	5.9	5.9
13	5.3	5.3	5.3	5.5	5.4	5.5	5.6	5.5	5.5	5.9	5.9	5.9
14	5.3	5.3	5.3	5.5	5.4	5.5	5.6	5.5	5.5	5.9	5.9	5.9
15	5.3	5.2	5.3	5.5	5.5	5.5	5.5	5.4	5.4	5.9	5.9	5.9
16	5.3	5.2	5.3	5.5	5.4	5.5	5.7	5.1	5.4	5.9	5.8	5.9
17	5.3	5.2	5.2	5.5	5.4	5.4	5.7	4.7	4.9	5.8	5.8	5.8
18	5.8	4.9	5.2	---	---	---	4.9	4.8	4.9	5.8	5.8	5.8
19	5.7	5.2	5.5	---	---	---	5.0	4.9	5.0	5.8	5.7	5.8
20	5.8	5.7	5.8	---	---	---	5.1	5.0	5.1	5.7	5.6	5.6
21	5.9	5.8	5.8	---	---	---	5.2	5.1	5.2	5.7	5.6	5.7
22	5.9	5.8	5.9	---	---	---	5.3	5.2	5.2	5.7	5.6	5.7
23	5.9	5.8	5.9	---	---	---	5.3	5.3	5.3	5.7	5.6	5.7
24	6.1	5.8	5.8	---	---	---	5.4	5.3	5.3	5.7	5.7	5.7
25	5.9	5.8	5.9	---	---	---	5.4	5.4	5.4	5.7	5.7	5.7
26	5.9	5.8	5.8	---	---	---	5.5	5.4	5.4	5.7	5.6	5.7
27	5.9	5.7	5.8	---	---	---	5.5	5.5	5.5	5.7	5.6	5.6
28	5.7	5.6	5.7	---	---	---	5.5	5.5	5.5	5.6	5.6	5.6
29	5.6	5.6	5.6	---	---	---	5.5	5.5	5.5	5.7	5.5	5.6
30	5.6	5.5	5.6	---	---	---	5.5	5.5	5.5	5.6	5.5	5.6
31	5.5	5.5	5.5	---	---	---	5.6	5.5	5.5	5.7	5.5	5.6
MAX	6.1	5.8	5.9	5.7	5.5	5.5	5.7	5.7	5.7	5.9	5.9	5.9
MIN	5.3	4.9	5.2	5.4	5.3	5.3	4.9	4.7	4.9	5.6	5.5	5.6

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			**MARCH**			**APRIL**			**MAY**	
1	5.6	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.4	5.4	5.3	5.3
2	5.6	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3
3	5.6	5.5	5.6	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.2	5.3
4	5.5	5.5	5.5	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3
5	5.5	5.4	5.5	5.7	5.5	5.6	5.5	5.4	5.5	5.3	5.3	5.3
6	5.4	5.4	5.4	5.7	5.7	5.7	5.8	5.4	5.5	5.4	5.3	5.3
7	5.6	5.4	5.4	5.7	5.6	5.7	5.5	5.4	5.4	5.4	5.3	5.4
8	5.5	5.4	5.4	5.7	5.6	5.7	5.5	5.5	5.5	5.4	5.3	5.4
9	5.5	5.4	5.4	5.7	5.7	5.7	5.5	5.4	5.4	5.4	5.3	5.4
10	6.0	5.4	5.5	5.7	5.7	5.7	5.4	5.4	5.4	5.4	5.3	5.4
11	5.5	5.4	5.4	5.7	5.7	5.7	5.5	5.4	5.4	5.4	5.3	5.4
12	5.5	5.5	5.5	5.8	5.7	5.7	5.4	5.3	5.3	5.4	5.3	5.4
13	5.5	5.4	5.4	5.9	5.5	5.7	5.3	5.3	5.3	5.4	5.4	5.4
14	5.5	5.4	5.4	5.7	5.5	5.5	5.3	5.3	5.3	5.4	5.4	5.4
15	5.5	5.3	5.4	5.5	5.5	5.5	5.3	5.3	5.3	5.4	5.4	5.4
16	5.5	5.4	5.4	5.5	5.4	5.5	5.5	5.3	5.3	5.4	5.4	5.4
17	5.4	5.3	5.3	5.5	5.4	5.4	5.4	5.3	5.3	5.4	5.4	5.4
18	5.4	5.4	5.4	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
19	5.4	5.4	5.4	5.5	5.4	5.5	5.4	5.3	5.4	5.4	5.4	5.4
20	5.4	5.4	5.4	5.5	5.4	5.5	5.4	5.3	5.3	5.4	5.4	5.4
21	5.4	5.4	5.4	5.5	5.4	5.5	5.3	5.3	5.3	5.4	5.4	5.4
22	5.4	5.4	5.4	5.5	5.4	5.4	5.3	5.2	5.3	5.5	5.4	5.4
23	5.4	5.4	5.4	5.5	5.4	5.5	5.3	5.2	5.3	5.7	5.5	5.5
24	5.5	5.4	5.5	5.5	5.5	5.5	5.3	5.2	5.3	5.6	5.5	5.6
25	5.5	5.4	5.5	5.5	5.5	5.5	5.3	5.3	5.3	5.7	5.6	5.6
26	5.6	5.4	5.5	5.6	5.5	5.5	5.4	5.3	5.3	5.7	5.5	5.6
27	5.5	5.4	5.5	5.6	5.5	5.6	5.4	5.3	5.3	5.6	5.5	5.5
28	5.5	5.5	5.5	5.6	5.5	5.6	5.4	5.3	5.3	5.7	5.5	5.6
29	---	---	---	5.6	5.6	5.6	5.4	5.3	5.4	5.6	5.5	5.5
30	---	---	---	5.8	5.2	5.4	5.4	5.3	5.4	5.6	5.5	5.6
31	---	---	---	5.4	5.4	5.4	---	---	---	5.6	5.5	5.6
MAX	6.0	5.6	5.6	5.9	5.7	5.7	5.8	5.5	5.5	5.7	5.6	5.6
MIN	5.4	5.3	5.3	5.4	5.2	5.4	5.3	5.2	5.3	5.3	5.2	5.3

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			**JULY**			**AUGUST**			**SEPTEMBER**	
1	5.6	5.5	5.6	5.5	5.3	5.4	6.6	6.5	6.6	7.1	6.7	6.8
2	5.7	5.4	5.5	5.5	5.4	5.5	6.6	6.5	6.5	6.9	6.8	6.9
3	5.6	5.3	5.4	5.6	5.5	5.5	6.6	6.5	6.5	6.9	6.9	6.9
4	5.4	5.3	5.4	5.8	5.6	5.7	6.7	4.9	6.5	7.3	5.4	6.9
5	5.5	5.4	5.4	5.9	5.6	5.6	6.3	4.9	5.8	6.8	5.6	6.5
6	5.5	5.4	5.5	5.7	5.6	5.7	6.5	6.3	6.4	6.9	6.8	6.9
7	5.6	5.5	5.5	5.9	5.6	5.8	6.6	6.5	6.5	7.0	6.9	6.9
8	5.5	5.4	5.4	5.8	5.6	5.7	6.6	6.6	6.6	6.9	6.9	6.9
9	5.4	5.3	5.4	5.9	5.6	5.7	6.6	6.6	6.6	6.9	6.9	6.9
10	5.4	5.3	5.4	6.0	5.4	5.7	6.6	6.5	6.6	6.9	6.4	6.9
11	5.4	5.3	5.3	5.7	5.3	5.6	6.6	6.4	6.5	7.0	6.9	7.0
12	5.4	5.3	5.3	5.8	5.7	5.8	6.5	6.5	6.5	6.9	6.9	6.9
13	5.4	5.3	5.4	5.9	5.8	5.8	6.6	6.5	6.5	6.9	6.9	6.9
14	5.4	5.3	5.3	5.9	5.8	5.9	6.7	6.5	6.6	7.0	6.8	6.9
15	5.4	5.3	5.3	5.9	5.9	5.9	6.7	6.6	6.6	7.0	6.9	6.9
16	5.7	5.1	5.2	5.9	5.9	5.9	6.7	6.6	6.6	6.9	6.9	6.9
17	5.4	4.9	5.1	5.9	5.9	5.9	6.8	6.6	6.7	6.9	6.8	6.9
18	5.7	5.4	5.7	5.9	5.8	5.9	6.7	6.7	6.7	6.8	6.8	6.8
19	6.4	5.7	5.9	5.9	5.8	5.9	6.7	6.6	6.7	6.8	6.8	6.8
20	6.5	5.0	6.2	5.8	5.8	5.8	6.8	6.6	6.7	6.9	6.7	6.8
21	5.9	5.1	5.4	5.8	5.7	5.8	6.8	6.7	6.7	7.0	6.8	6.9
22	6.2	5.1	5.3	5.8	5.7	5.7	6.8	6.7	6.7	6.8	6.8	6.8
23	5.6	5.1	5.4	5.7	5.6	5.7	6.7	6.7	6.7	6.8	6.7	6.8
24	5.6	5.4	5.5	5.7	5.5	5.6	6.8	6.7	6.7	7.1	4.9	6.8
25	5.5	5.3	5.4	---	---	---	6.8	6.8	6.8	5.7	4.9	5.2
26	5.3	5.2	5.3	---	---	---	6.8	6.7	6.8	6.9	5.7	6.4
27	5.3	5.2	5.3	---	---	---	6.7	6.7	6.7	7.2	6.9	7.2
28	5.3	5.2	5.3	---	---	---	6.7	6.7	6.7	7.3	7.2	7.3
29	5.4	5.3	5.3	---	---	---	6.8	6.7	6.7	7.3	7.3	7.3
30	5.4	5.3	5.4	---	---	---	6.7	6.7	6.7	7.3	7.3	7.3
31	---	---	---	6.7	6.6	6.6	7.0	6.6	6.7	---	---	---
MAX	6.5	5.7	6.2	6.7	6.6	6.6	7.0	6.8	6.8	7.3	7.3	7.3
MIN	5.3	4.9	5.1	5.5	5.3	5.4	6.3	4.9	5.8	5.7	4.9	5.2

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			**NOVEMBER**			**DECEMBER**			**JANUARY**	
1	12.5	9.0	10.5	9.0	5.5	7.0	4.0	2.5	3.5	2.0	1.0	1.5
2	13.5	10.5	12.0	9.5	5.5	7.5	2.5	.5	2.0	1.5	.5	1.0
3	15.0	11.5	13.0	10.5	6.5	8.5	1.0	.0	.5	1.0	.5	.5
4	15.5	12.0	13.5	10.5	7.5	9.0	1.5	.0	.5	2.0	.5	1.0
5	14.0	12.5	13.0	8.5	6.0	7.5	2.5	1.0	1.5	1.5	.5	1.0
6	14.5	12.5	13.5	8.0	4.5	6.0	1.0	.0	.5	2.5	1.5	2.0
7	12.5	9.5	11.0	8.5	4.5	6.5	1.0	.0	.5	3.0	1.0	2.0
8	9.5	7.5	8.5	10.5	7.0	9.0	1.5	.0	1.0	2.5	1.5	2.0
9	8.5	6.5	7.5	10.0	9.5	10.0	1.5	.5	1.0	2.0	.0	1.0
10	9.0	7.0	8.0	11.0	9.0	10.0	2.0	.0	1.0	2.0	.5	1.0
11	11.0	8.0	9.5	9.5	8.0	8.5	3.5	2.0	2.5	2.5	1.0	1.5
12	11.5	8.5	10.0	9.0	7.0	8.0	3.5	.5	2.5	2.5	1.0	1.5
13	12.0	8.5	10.5	9.0	7.5	8.0	.5	.0	.5	2.0	.0	1.0
14	12.5	10.0	11.5	9.0	5.5	8.0	1.0	.0	.5	2.5	.5	1.5
15	13.5	10.5	12.0	6.5	5.0	5.5	2.0	1.0	1.5	3.0	2.0	2.5
16	13.5	12.0	12.5	6.0	3.5	5.0	2.5	1.0	2.0	3.5	2.5	2.5
17	12.5	11.0	12.0	6.5	4.5	5.5	6.0	2.0	5.0	3.0	2.5	2.5
18	12.5	11.0	12.0	---	---	---	5.0	4.5	5.0	2.5	2.0	2.5
19	12.0	9.0	10.5	---	---	---	4.5	4.0	4.5	3.0	2.5	2.5
20	11.5	7.5	9.5	---	---	---	4.0	2.5	3.5	2.5	.0	2.0
21	12.5	9.0	10.5	---	---	---	3.5	2.0	3.0	.5	.0	.0
22	11.5	8.0	10.0	---	---	---	3.5	1.0	3.0	1.0	.0	.5
23	10.0	6.5	8.0	---	---	---	1.5	.5	1.0	.5	.0	.5
24	11.0	8.0	9.5	---	---	---	2.5	.5	1.5	1.5	.0	.5
25	13.0	9.5	11.0	---	---	---	1.5	.5	1.0	2.0	.0	1.0
26	13.0	9.5	11.0	---	---	---	1.0	.5	.5	1.5	.0	.5
27	13.0	9.0	11.0	---	---	---	2.0	.5	1.0	2.0	.5	1.0
28	11.5	7.0	10.0	---	---	---	1.5	.5	1.0	2.0	.0	1.0
29	8.5	5.5	7.0	---	---	---	1.5	.0	1.0	1.5	.0	1.0
30	9.0	5.5	7.0	---	---	---	1.5	1.0	1.5	1.5	.5	1.0
31	9.0	5.5	7.0	---	---	---	1.5	1.0	1.0	3.0	1.5	2.5
MONTH	15.5	5.5	10.4	11.0	3.5	7.6	6.0	.0	1.8	3.5	.0	1.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			**MARCH**			**APRIL**			**MAY**	
1	4.0	2.5	3.0	3.5	1.0	2.5	6.0	5.0	5.5	15.0	8.5	11.5
2	4.0	1.0	3.0	4.5	2.5	3.5	6.5	5.0	5.5	15.5	10.0	12.5
3	1.5	.0	.5	5.5	3.5	4.5	7.5	4.5	6.0	16.5	11.0	13.5
4	2.5	.0	1.5	3.5	.5	2.5	8.5	4.5	6.5	17.0	12.0	14.5
5	2.5	1.0	1.5	2.5	.0	1.5	9.0	4.5	6.5	14.0	10.5	13.0
6	3.5	2.5	3.0	2.0	.5	1.5	7.0	6.0	6.5	14.0	9.0	11.0
7	4.5	2.5	3.5	5.0	2.0	3.0	8.0	6.5	7.0	13.0	8.0	10.5
8	3.5	1.5	2.5	5.0	2.5	3.5	8.0	6.0	7.0	13.5	9.5	11.0
9	5.0	3.0	4.0	4.5	2.5	3.5	12.5	6.5	9.5	14.5	11.0	12.0
10	4.5	1.5	3.5	4.5	1.5	3.0	10.5	8.5	9.5	15.0	10.0	12.5
11	2.0	.5	1.0	5.0	1.5	3.0	9.0	8.0	8.5	16.0	11.0	13.5
12	2.0	.5	1.5	5.0	1.5	3.5	9.0	8.0	8.5	15.0	12.0	13.5
13	4.5	2.0	3.5	4.5	3.0	4.0	12.0	8.5	10.0	13.5	10.0	11.5
14	4.5	3.5	4.0	6.0	4.0	4.5	11.0	7.0	9.0	12.5	8.5	10.5
15	4.5	4.0	4.0	5.5	3.5	4.5	11.0	7.0	9.0	13.0	8.5	10.5
16	4.0	3.5	4.0	5.5	4.5	5.0	8.5	7.0	8.0	13.5	8.5	11.0
17	4.0	1.5	3.0	5.0	4.0	5.0	8.0	5.5	6.5	11.0	10.5	10.5
18	2.5	1.0	1.5	6.0	3.5	4.5	8.0	5.0	6.0	11.5	10.5	11.0
19	3.5	.5	2.5	6.5	3.5	4.5	8.5	4.5	6.5	15.5	11.0	13.0
20	5.5	3.0	4.5	7.0	3.0	5.0	8.0	5.5	7.0	12.5	11.5	12.0
21	4.5	1.5	3.5	5.5	5.0	5.0	10.0	7.5	8.5	11.5	11.0	11.0
22	1.5	.0	.5	6.0	5.0	5.0	13.0	8.5	10.5	13.0	11.0	12.0
23	3.0	1.0	2.0	7.5	4.5	5.5	15.0	10.0	12.0	15.0	11.5	13.0
24	3.0	1.0	2.0	6.5	3.5	5.0	14.0	9.0	11.5	15.0	11.5	13.0
25	3.5	2.0	3.0	5.5	3.0	4.0	10.0	7.0	8.5	14.0	12.5	13.0
26	5.0	3.0	3.5	5.0	2.5	3.5	11.5	6.0	8.5	12.5	12.5	12.5
27	5.0	2.0	3.5	4.5	1.5	3.0	12.0	6.5	9.0	13.5	12.0	12.5
28	3.5	2.0	3.0	6.0	2.0	4.0	11.5	7.5	9.0	14.0	11.5	12.5
29	---	---	---	5.0	3.0	4.0	11.5	5.5	8.5	14.0	11.0	12.5
30	---	---	---	5.0	3.5	4.5	13.0	6.0	9.5	13.5	10.5	12.0
31	---	---	---	6.0	4.5	5.0	---	---	---	13.0	8.5	10.5
MONTH	5.5	.0	2.7	7.5	.0	3.9	15.0	4.5	8.1	17.0	8.0	12.0

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			**JULY**			**AUGUST**			**SEPTEMBER**	
1	10.5	9.0	10.0	18.5	15.5	17.0	19.0	14.5	16.5	18.5	15.5	17.5
2	13.0	10.5	11.5	15.5	12.5	14.0	19.5	15.5	17.0	16.5	13.0	14.5
3	13.5	11.5	12.5	15.5	11.5	13.5	19.0	16.5	17.5	17.0	13.0	15.0
4	14.0	11.0	12.5	17.0	14.0	15.5	19.5	17.0	18.0	19.0	15.5	16.5
5	15.0	11.0	13.0	18.0	15.0	16.0	19.5	17.0	18.5	17.0	14.5	16.0
6	14.5	12.5	13.5	16.0	13.0	15.0	20.5	17.0	18.5	16.5	12.5	14.5
7	16.0	12.5	14.0	16.5	12.0	14.5	21.0	17.5	19.0	17.5	12.5	15.0
8	16.0	11.5	13.5	16.5	15.0	15.5	21.5	18.0	19.5	18.5	14.5	16.0
9	16.0	11.0	13.5	18.5	15.0	16.5	22.0	18.0	20.0	18.5	15.5	16.5
10	15.0	11.5	13.0	19.0	15.5	17.0	20.5	19.0	19.5	18.5	16.0	17.0
11	17.0	13.0	14.5	18.5	15.5	16.5	19.5	17.5	18.5	17.5	14.0	16.0
12	18.0	13.5	15.5	17.0	13.5	15.5	19.0	17.5	18.0	17.0	13.0	15.0
13	19.0	15.0	16.5	16.5	13.0	14.5	19.5	17.5	18.5	17.5	13.0	15.0
14	19.5	15.5	17.0	17.0	13.5	15.0	20.0	17.0	18.5	16.0	12.5	14.0
15	18.5	16.0	17.0	17.5	13.5	15.5	19.5	16.5	18.0	14.0	10.5	12.5
16	18.0	16.0	17.0	17.5	14.0	16.0	20.0	16.5	18.0	14.5	10.5	12.5
17	19.0	16.0	17.5	19.0	15.5	17.0	20.0	17.5	18.5	15.0	11.0	13.0
18	19.0	15.0	17.0	19.0	16.0	17.0	19.0	16.0	17.5	15.0	11.5	13.5
19	19.5	15.0	17.0	19.5	16.0	17.5	19.0	16.0	17.5	15.5	12.5	14.0
20	20.0	16.0	17.5	19.0	15.0	17.0	19.5	17.0	18.0	15.5	15.0	15.0
21	18.5	17.0	17.5	18.5	13.5	16.0	18.5	15.5	17.0	17.0	14.5	15.5
22	17.5	16.5	17.0	18.5	14.0	16.5	19.5	15.5	17.5	17.0	14.0	15.5
23	16.5	14.5	16.0	20.0	15.0	17.5	17.0	16.0	16.5	16.5	13.5	15.0
24	16.0	13.5	14.5	21.5	16.5	19.0	19.0	16.0	17.5	17.5	14.0	15.5
25	16.5	13.0	14.5	---	---	---	18.0	15.5	16.5	16.5	12.0	15.0
26	17.0	13.5	15.0	---	---	---	19.0	15.5	17.5	12.5	10.0	11.5
27	17.5	14.0	16.0	---	---	---	19.0	17.0	18.0	12.5	10.5	11.5
28	18.5	15.0	16.5	---	---	---	20.0	16.0	18.0	11.5	10.0	11.0
29	18.0	15.0	16.5	---	---	---	19.0	16.0	17.5	12.5	10.5	11.5
30	19.0	15.5	17.0	---	---	---	18.0	15.5	17.0	11.5	9.5	10.5
31	---	---	---	18.0	15.0	16.0	20.5	17.0	18.5	---	---	---
MONTH	20.0	9.0	15.1	21.5	11.5	16.0	22.0	14.5	18.0	19.0	9.5	14.4
YEAR	22.0	.0	9.3									