TENNESSEE RIVER BASIN

03526000 COPPER CREEK NEAR GATE CITY, VA

LOCATION.--Lat 36°40'26", long 82°33'57", Scott County, on right bank at upstream side of highway bridge, 0.2 mi upstream from Plank Camp Creek, 1.1 mi downstream from Obeys Creek, and 2.6 mi northeast of Gate City.

DRAINAGE AREA.--106 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1947 to September 1972, October 1973 to February 1996 (annual maximum only), March 1996 to September 1998 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

REVISED RECORDS.--WSP 1143: 1948. WSP 1306: 1948-50(M). WSP 1556: 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,301.95 ft above sea level (Virginia Department of Transportation bench mark). Prior to Aug. 30, 1953, nonrecording gage on highway bridge at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge, 7,660 ft^3/s, from rating curve extended above 3,500 ft^3/s. Minimum gage height, 1.90 ft, Dec. 5, 1969. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges equal to or greater than base discharge of 1,200 ft^3/s and maximum for year (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	0630	1,650	7.82	Apr. 20	0345	1,900	8.22
Apr. 9	2130	1,240	7.10	May 11	0645	1,210	7.03
Apr. 17	1445	*4,880	*11.51				

Minimum discharge, 23 ft^3/s, Dec. 17, 20-21, gage height 2.01 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	27	37	38	259	125	148	152	86	336	70	31
2	33	29	47	38	225	118	158	160	83	174	54	30
3	31	31	45	36	384	110	146	171	84	138	47	31
4	30	34	38	36	1310	105	542	445	219	113	45	33
5	30	33	34	41	668	98	530	350	265	103	44	33
6	30	34	32	44	424	94	312	274	240	94	43	34
7	30	30	31	104	310	90	243	247	150	86	42	34
8	30	27	29	668	268	99	209	256	120	82	42	35
9	31	27	31	496	248	266	727	320	127	92	46	35
10	31	26	38	217	232	275	687	404	151	80	53	36
11	31	27	50	133	229	183	399	959	296	72	102	33
12	31	27	53	101	247	150	292	592	185	69	66	32
13	30	27	40	86	222	131	241	404	168	66	52	32
14	29	28	34	75	186	122	215	301	148	64	51	31
15	29	29	31	70	157	113	193	243	139	62	51	31
16	29	28	28	81	144	116	321	207	129	60	62	30
17	30	28	26	94	214	130	3560	182	111	59	130	30
18	30	27	26	81	417	241	1220	161	99	60	107	30
19	30	26	26	77	279	873	1210	146	99	59	69	29
20	29	26	25	83	234	643	1470	136	93	58	53	29
21	29	30	25	87	212	766	718	129	87	56	47	29
22	28	38	31	85	188	521	504	123	103	53	43	30
23	28	46	32	204	183	363	389	131	549	59	41	30
24	28	39	35	238	197	275	309	145	248	60	39	28
25	30	32	42	178	178	224	257	122	174	54	38	27
26	36	29	43	136	158	193	223	125	147	52	36	27
27	45	28	43	185	148	171	201	119	135	50	35	27
28	44	27	43	483	136	157	186	105	118	48	34	27
29	35	26	39	486	---	145	164	97	107	47	33	28
30	30	27	39	398	---	134	156	92	156	46	33	29
31	27	---	38	324	---	126	---	88	---	59	32	---
TOTAL	975	893	1111	5403	8057	7157	15930	7386	4816	2511	1640	921
MEAN	31.5	29.8	35.8	174	288	231	531	238	161	81.0	52.9	30.7
MAX	45	46	53	668	1310	873	3560	959	549	336	130	36
MIN	27	26	25	36	136	90	146	88	83	46	32	27
CFSM	.30	.28	.34	1.64	2.71	2.18	5.01	2.25	1.51	.76	.50	.29
IN.	.34	.31	.39	1.90	2.83	2.51	5.59	2.59	1.69	.88	.58	.32

TENNESSEE RIVER BASIN

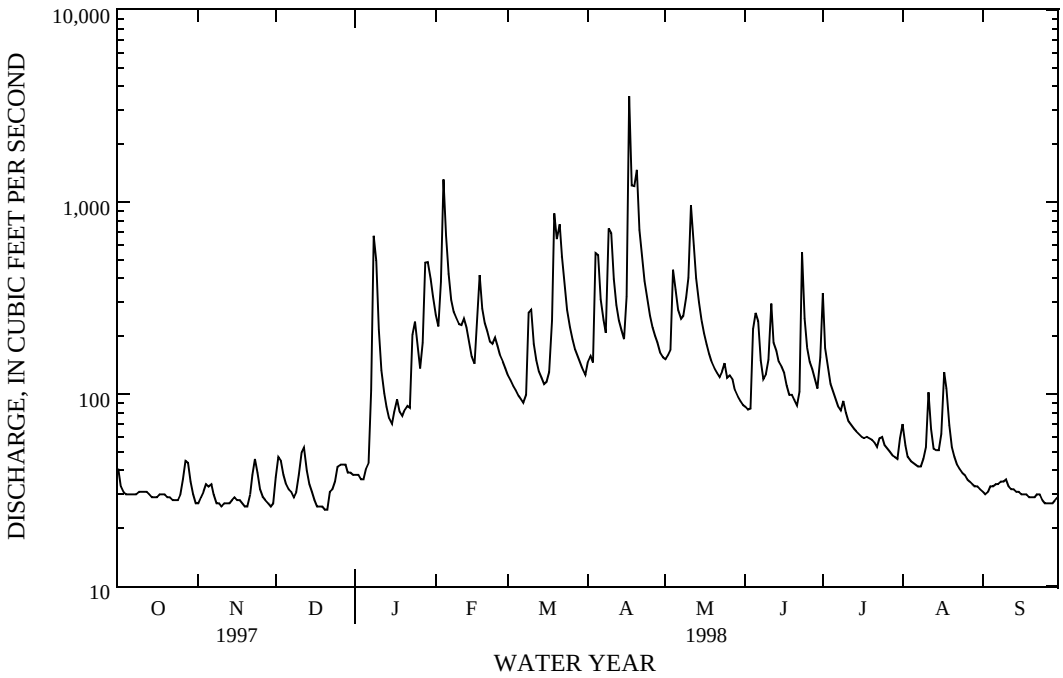
03526000 COPPER CREEK NEAR GATE CITY, VA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1972, 1996**, 1997 - 1998 BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	47.5	74.9	151	217	297	288	223	169	88.6	73.5	58.8	46.0
MAX	184	182	327	559	646	784	531	539	228	200	151	124
(WY)	1972	1960	1997	1972	1957	1963	1998	1958	1950	1949	1996	1966
MIN	21.9	21.1	28.2	30.1	71.0	92.7	78.6	54.7	35.8	28.9	26.4	19.6
(WY)	1964	1954	1966	1966	1954	1970	1963	1964	1964	1955	1953	1955

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1948 - 1972 1996** 1997 - 1998	
ANNUAL TOTAL	50712		56800			
ANNUAL MEAN	139		156		143	
HIGHEST ANNUAL MEAN					208	1950
LOWEST ANNUAL MEAN					80.7	1954
HIGHEST DAILY MEAN	1800	Mar 3	3560	Apr 17	4580	Mar 12 1963
LOWEST DAILY MEAN	25	aDec 20	25	aDec 20	10	Jan 9 1956
ANNUAL SEVEN-DAY MINIMUM	27	Dec 15	27	Dec 15	14	Jan 12 1956
INSTANTANEOUS PEAK FLOW			4880	Apr 17	b6940	Mar 12 1963
INSTANTANEOUS PEAK STAGE			11.51	Apr 17	13.14	Mar 12 1963
INSTANTANEOUS LOW FLOW			23	cDec 17	d3.6	Jan 15 1956
ANNUAL RUNOFF (CFSM)	1.31		1.47		1.35	
ANNUAL RUNOFF (INCHES)	17.80		19.93		18.32	
10 PERCENT EXCEEDS	314		322		300	
50 PERCENT EXCEEDS	83		81		75	
90 PERCENT EXCEEDS	30		29		28	

** Partial water year.
a Also Dec. 21, 1997.
b Higher maximum occurred during period of non-continuous record; 7,660 ft^3/s, Apr. 5, 1977, gage height, 13.57 ft.
c Also Dec. 20-21, 1997.
d Result of freezeup.



TENNESSEE RIVER BASIN

03526000 COPPER CREEK NEAR GATE CITY, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1996 to September 1998.
WATER TEMPERATURE: October 1996 to September 1998.

INSTRUMENTATION.--Water-temperature and specific conductance recorder since October 1996.

REMARKS.--Interruption in record due to conductance probe being out of the water. Records represent specific conductance within 5 microsiemens and water temperature within 0.5°C at sensors.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 401 microsiemens, Oct. 5, 1996; minimum recorded 188 microsiemens, Apr. 17, 1998.
WATER TEMPERATURE: Maximum recorded, 25.9°C, July 21, 1997; minimum recorded, 0.0°C, Dec. 17, 1997.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 386 microsiemens, Jan. 7; minimum recorded 188 microsiemens, Apr. 17.
WATER TEMPERATURE: Maximum recorded, 25.3°C, July 21; minimum recorded, 0.0°C, Dec. 17.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	341	335	339	336	333	335	323	315	320	338	334	336
2	342	336	340	336	329	333	326	318	322	341	337	339
3	347	340	344	332	328	330	323	319	321	347	339	343
4	350	347	349	331	328	329	323	318	321	344	337	341
5	352	349	350	330	327	328	329	322	327	342	337	340
6	351	347	349	330	326	328	331	329	330	352	342	346
7	351	347	349	330	327	329	333	329	331	386	348	361
8	348	345	347	332	330	331	334	329	331	374	298	336
9	347	344	345	336	332	335	337	324	329	320	297	309
10	346	341	344	338	334	336	329	325	326	334	318	327
11	346	341	344	335	333	334	331	327	329	334	330	332
12	345	340	343	335	332	334	332	328	330	340	333	336
13	345	342	344	333	328	331	336	332	334	342	332	338
14	346	344	345	328	323	326	342	336	340	337	331	334
15	345	342	344	327	325	326	345	342	344	337	332	335
16	345	342	343	327	324	326	345	341	343	344	333	338
17	345	342	344	326	323	325	343	335	340	351	338	346
18	344	340	342	327	324	325	338	333	336	351	344	346
19	342	339	341	326	322	324	334	329	332	346	340	343
20	341	337	339	326	323	325	332	325	329	345	340	342
21	339	337	338	326	314	320	328	321	325	345	341	343
22	338	336	337	322	317	319	322	312	316	347	338	343
23	337	335	336	324	320	322	319	315	317	349	338	343
24	337	333	336	326	323	324	318	312	316	354	347	351
25	336	331	334	328	325	327	321	315	319	357	351	355
26	334	320	329	332	327	330	324	319	320	357	348	354
27	326	319	324	335	332	333	326	321	323	350	335	344
28	326	324	325	336	332	334	329	325	327	335	326	332
29	329	324	327	334	330	332	334	329	331	346	326	339
30	331	329	330	333	321	328	348	332	338	350	340	347
31	333	330	332	---	---	---	348	334	337	356	340	349
MONTH	352	319	340	338	314	329	348	312	329	386	297	341

TENNESSEE RIVER BASIN

03526000 COPPER CREEK NEAR GATE CITY, VA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	358	349	354	310	298	305	297	283	290	298	288	292
2	357	351	355	311	298	305	309	297	303	297	283	291
3	357	299	341	310	300	305	315	296	306	312	281	299
4	299	264	274	312	304	308	320	290	306	312	281	302
5	291	274	281	312	300	307	318	303	310	315	299	307
6	291	287	289	312	305	309	311	296	301	312	298	307
7	298	291	295	315	305	310	320	300	309	310	295	303
8	303	298	301	311	299	305	331	317	324	311	298	305
9	308	301	304	321	295	305	330	269	301	320	291	307
10	308	302	305	326	316	321	297	268	284	315	298	309
11	308	299	304	321	314	317	303	297	299	313	291	300
12	306	301	304	320	314	317	304	284	294	302	288	296
13	306	297	302	321	312	317	294	285	290	300	284	294
14	303	294	299	320	308	314	301	290	296	300	286	294
15	302	296	299	318	306	313	299	292	295	302	286	293
16	303	297	300	320	302	308	318	257	304	303	287	293
17	304	291	299	314	307	310	257	188	225	304	287	297
18	305	294	298	316	251	301	264	242	255	301	287	296
19	305	301	304	293	273	279	266	251	259	---	---	---
20	308	304	306	286	273	281	262	259	261	---	---	---
21	311	302	307	285	279	283	268	261	264	---	---	---
22	311	302	307	286	282	284	274	268	271	---	---	---
23	309	304	307	289	284	287	277	274	275	304	292	299
24	311	306	309	291	286	289	280	277	279	306	298	302
25	316	309	312	294	290	292	285	280	283	311	302	307
26	316	307	312	297	289	294	288	282	286	311	299	304
27	314	304	310	298	288	295	291	285	288	313	306	309
28	314	302	308	302	286	295	293	285	290	318	310	313
29	---	---	---	302	287	295	293	284	289	321	308	316
30	---	---	---	304	285	295	295	286	290	321	306	314
31	---	---	---	304	284	295	---	---	---	322	309	316
MONTH	358	264	307	326	251	301	331	188	288	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	322	306	315	325	279	302	321	312	316	347	344	346
2	317	307	312	334	301	325	326	313	321	347	343	345
3	318	291	311	342	322	339	328	319	323	345	338	343
4	304	231	287	343	336	339	336	327	333	343	336	341
5	311	281	299	340	333	337	342	336	339	346	336	342
6	330	311	325	335	328	333	339	332	337	340	332	336
7	334	328	331	333	328	331	343	331	337	335	328	331
8	335	326	331	337	330	334	345	319	334	331	325	328
9	333	310	325	339	323	334	339	304	327	333	325	329
10	335	324	330	336	322	332	325	301	308	332	327	329
11	347	299	322	341	334	337	321	315	319	334	328	331
12	341	319	334	341	331	337	331	320	326	334	330	333
13	341	324	334	343	331	336	336	313	329	335	331	333
14	339	330	335	343	332	338	332	311	325	337	332	335
15	333	324	328	338	330	335	344	328	338	336	332	334
16	333	324	329	334	329	331	338	319	329	338	333	336
17	331	320	327	337	326	331	332	308	319	337	331	335
18	332	322	328	332	326	330	348	332	343	340	335	337
19	331	317	324	329	310	323	361	347	357	338	336	337
20	329	320	324	329	319	326	363	357	360	338	335	337
21	329	321	325	331	327	329	359	356	357	340	336	338
22	331	282	320	334	328	331	358	353	356	340	336	338
23	323	251	283	333	322	325	359	351	355	341	335	339
24	320	299	311	333	326	329	355	348	352	338	334	336
25	323	319	321	335	331	333	352	346	349	341	334	336
26	328	306	322	339	331	335	351	345	348	342	335	339
27	331	322	326	338	330	334	349	344	346	343	337	340
28	327	320	324	339	328	334	350	344	347	340	336	338
29	327	321	325	337	327	332	350	345	347	337	325	332
30	324	250	312	335	327	332	349	344	347	337	331	334
31	---	---	---	335	320	328	349	344	347	---	---	---
MONTH	347	231	321	343	279	331	363	301	338	347	325	336

TENNESSEE RIVER BASIN

03526000 COPPER CREEK NEAR GATE CITY, VA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	15.1	16.1	11.7	9.7	10.6	9.6	6.9	8.9	1.5	.1	.3
2	15.6	13.0	14.4	11.8	10.6	11.3	6.9	4.6	5.8	.7	.1	.2
3	15.1	11.9	13.7	10.7	9.3	10.0	7.8	5.7	6.7	2.1	.1	1.0
4	16.0	12.7	14.4	9.8	7.3	8.6	9.0	7.8	8.4	3.4	1.3	2.3
5	16.9	13.8	15.3	8.1	5.3	6.7	8.1	4.9	6.4	5.8	2.1	3.7
6	17.1	14.2	15.7	7.6	6.2	6.9	4.9	2.7	3.6	7.3	5.8	6.4
7	17.2	14.2	15.8	9.0	7.3	8.1	2.8	2.1	2.5	10.0	7.2	8.2
8	17.6	14.8	16.3	9.0	8.4	8.7	2.6	1.1	2.0	12.1	10.0	11.2
9	17.9	15.0	16.6	9.0	8.1	8.5	4.6	2.6	3.6	11.9	9.1	10.8
10	17.7	16.6	17.2	9.0	7.8	8.4	6.8	4.6	5.5	9.1	6.9	7.8
11	19.6	17.3	18.2	8.9	8.3	8.6	6.1	5.3	5.6	7.1	6.1	6.6
12	18.9	16.3	17.7	8.5	7.2	7.9	5.5	4.7	5.2	8.0	6.9	7.3
13	18.8	16.0	17.5	8.3	6.6	7.4	5.1	3.6	4.5	8.7	7.8	8.1
14	18.0	14.6	16.4	8.8	7.9	8.3	3.6	1.9	2.6	7.8	5.8	6.8
15	14.6	11.6	13.1	7.9	5.7	6.9	2.1	.3	1.3	7.8	7.1	7.4
16	13.2	10.2	11.9	5.7	4.5	5.1	1.8	.1	1.0	8.3	7.7	8.0
17	12.8	11.9	12.4	4.9	3.1	4.0	2.0	.0	1.1	8.0	6.7	7.4
18	13.9	11.9	12.9	3.7	1.5	2.8	2.2	.2	1.3	6.7	5.2	6.1
19	14.1	12.5	13.3	5.2	2.8	3.8	2.4	.4	1.5	6.6	5.9	6.2
20	13.0	10.7	12.0	4.9	2.3	3.7	3.2	.7	2.0	5.9	4.2	5.0
21	12.5	10.6	11.2	6.0	3.9	4.6	5.0	2.4	3.5	5.8	3.7	4.7
22	11.7	10.0	10.8	8.5	6.0	7.4	7.3	5.0	6.1	7.2	5.6	6.2
23	10.1	6.7	8.4	8.8	7.2	8.0	7.9	6.6	7.1	8.7	7.2	8.0
24	9.3	7.5	8.3	7.2	4.7	5.8	7.2	6.3	6.7	8.8	7.6	8.4
25	13.4	9.3	11.3	4.7	2.4	3.7	7.7	6.4	6.9	7.6	6.1	7.0
26	14.1	13.0	13.5	4.5	2.7	3.6	7.5	6.3	6.8	6.8	5.1	5.9
27	14.0	10.8	12.4	5.0	3.0	4.1	6.7	4.8	5.6	5.8	4.2	5.1
28	10.8	8.7	9.9	5.7	3.3	4.5	5.1	3.9	4.5	7.4	4.2	6.1
29	10.0	7.2	8.7	6.7	4.7	5.6	3.9	2.3	3.1	8.2	6.6	7.4
30	9.8	6.6	8.3	9.8	6.7	8.3	3.5	2.4	3.0	8.5	7.4	7.9
31	10.1	7.0	8.6	---	---	---	2.4	1.4	1.8	8.2	7.2	7.7
MONTH	19.6	6.6	13.3	11.8	1.5	6.7	9.6	.0	4.3	12.1	.1	6.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.2	5.4	6.4	11.9	10.2	11.0	18.2	15.8	17.0	15.8	14.4	15.0
2	7.7	6.1	6.9	10.9	9.0	9.9	17.5	13.4	15.4	15.1	13.6	14.4
3	8.5	7.7	8.0	9.0	7.2	7.9	15.0	12.4	13.5	15.6	13.6	14.4
4	8.5	8.0	8.1	7.9	6.5	7.0	13.3	11.1	12.1	13.9	13.1	13.5
5	8.3	8.0	8.1	9.6	6.3	7.7	13.2	10.1	11.4	14.8	12.3	13.5
6	8.6	7.8	8.2	9.2	7.3	8.2	14.1	9.9	11.9	16.4	12.6	14.5
7	9.0	7.8	8.4	10.5	8.1	9.3	14.8	10.9	12.8	15.8	14.7	15.3
8	8.7	7.8	8.3	12.8	10.1	11.4	16.4	12.9	14.5	15.3	14.6	15.0
9	9.4	8.0	8.6	12.4	9.9	11.5	15.4	12.8	14.1	16.1	14.3	15.1
10	9.1	7.5	8.4	9.9	6.5	8.0	12.8	10.8	11.7	15.6	14.0	14.5
11	9.4	8.1	8.7	6.7	5.0	5.9	13.7	10.0	11.5	15.1	13.7	14.2
12	9.4	8.3	8.8	6.9	3.6	5.1	14.7	10.3	12.4	15.7	13.3	14.4
13	8.3	7.8	8.1	6.3	2.9	4.6	14.8	11.1	13.0	17.4	13.5	15.3
14	9.0	7.2	7.9	8.6	3.9	6.0	15.4	13.3	14.1	18.9	15.3	17.0
15	8.2	5.5	6.9	9.6	5.1	7.2	15.5	12.9	14.1	19.9	16.4	18.1
16	8.7	7.1	7.9	9.1	7.1	8.1	14.9	13.5	14.1	19.4	17.4	18.5
17	10.5	8.5	9.3	9.9	7.7	8.8	13.7	12.9	13.3	21.1	17.7	19.2
18	10.3	9.4	9.9	10.8	8.8	9.7	13.6	12.6	13.0	20.8	16.7	18.7
19	9.5	9.1	9.3	12.6	10.8	11.6	12.9	12.5	12.7	21.0	16.5	18.7
20	9.1	8.7	8.9	12.5	11.1	11.7	13.7	12.0	12.8	21.8	17.9	19.7
21	9.5	8.3	8.9	11.5	9.3	10.5	13.7	11.8	12.8	22.0	18.7	20.2
22	9.3	7.2	8.3	9.4	8.6	9.0	13.1	12.3	12.6	20.7	18.4	19.7
23	9.1	8.5	8.9	10.1	7.3	8.7	13.6	11.7	12.6	19.4	17.9	18.5
24	8.7	7.4	8.1	10.9	8.7	9.7	14.4	11.5	12.9	20.5	17.7	18.9
25	9.8	6.5	8.1	10.2	8.6	9.4	15.4	11.4	13.4	21.0	18.6	19.8
26	10.8	7.2	9.0	13.7	8.4	10.8	16.7	13.4	14.9	20.9	18.6	19.8
27	13.5	10.1	11.6	16.4	11.3	13.6	15.5	13.4	14.4	20.4	19.0	19.6
28	13.7	11.4	12.3	17.6	13.1	15.2	15.3	11.9	13.6	22.3	18.3	20.0
29	---	---	---	18.3	14.0	16.0	15.6	13.1	14.3	22.8	18.7	20.7
30	---	---	---	19.0	14.1	16.4	15.9	14.2	14.9	23.8	19.7	21.6
31	---	---	---	18.7	15.2	16.9	---	---	---	23.4	20.5	22.0
MONTH	13.7	5.4	8.6	19.0	2.9	9.9	18.2	9.9	13.4	23.8	12.3	17.4

TENNESSEE RIVER BASIN

03526000 COPPER CREEK NEAR GATE CITY, VA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23.8	20.5	22.0	20.3	19.2	19.7	23.1	19.8	21.4	23.1	20.0	21.6
2	21.9	19.3	20.7	20.3	17.9	19.0	23.2	19.5	21.4	22.4	19.1	20.9
3	22.4	19.1	20.6	21.6	18.0	19.6	22.9	18.8	20.9	21.8	19.5	20.6
4	20.6	17.6	19.1	21.1	19.2	20.1	22.9	18.7	20.8	22.5	19.2	20.8
5	18.8	17.1	17.8	22.5	19.6	20.9	22.8	18.8	20.9	23.3	20.2	21.8
6	18.2	16.2	17.4	23.0	19.7	21.3	23.7	19.7	21.7	22.6	20.0	21.6
7	16.9	14.5	15.7	22.8	20.0	21.5	23.5	20.3	22.1	23.3	20.3	21.9
8	16.8	14.2	15.6	22.2	21.1	21.7	24.3	21.4	22.8	22.7	19.8	21.4
9	16.3	15.5	15.8	23.0	21.0	21.9	23.8	21.6	22.8	19.8	16.3	17.8
10	16.4	15.6	16.0	24.1	21.2	22.5	24.8	21.9	23.2	18.3	14.6	16.6
11	18.4	16.0	17.1	23.7	20.6	22.2	24.5	22.0	23.3	18.8	15.1	17.1
12	19.2	17.4	18.2	24.3	20.1	22.1	24.5	21.5	23.0	19.9	16.2	18.1
13	20.8	17.9	19.1	24.7	21.2	22.9	24.8	21.4	23.1	20.9	17.2	19.1
14	19.2	17.6	18.4	23.9	21.9	22.5	23.7	21.8	22.4	21.8	18.3	20.1
15	20.5	17.5	18.8	23.2	20.5	21.8	22.9	21.2	22.0	21.9	18.9	20.6
16	21.2	18.1	19.6	23.6	20.7	22.2	22.4	21.3	21.8	22.2	19.8	21.2
17	21.9	17.9	19.8	23.9	21.2	22.5	22.2	20.0	21.3	22.7	20.0	21.4
18	22.2	18.2	20.3	24.1	20.2	22.1	23.7	20.8	22.1	22.8	20.5	21.8
19	21.6	19.7	20.6	23.1	21.0	22.0	24.4	21.6	22.8	23.0	20.4	21.8
20	23.4	19.4	21.2	23.4	20.5	21.8	23.6	20.1	21.9	23.1	20.3	21.8
21	22.2	20.0	20.8	25.3	20.8	22.9	23.7	20.1	21.9	22.6	21.0	21.7
22	23.6	19.6	21.2	25.0	21.8	23.4	24.1	20.5	22.3	22.8	20.9	21.8
23	19.8	18.2	18.9	24.3	22.3	23.1	24.7	21.1	22.9	22.0	19.7	20.7
24	20.7	18.1	19.2	23.9	22.0	22.8	25.0	21.8	23.4	19.7	16.7	18.4
25	21.6	18.2	19.8	23.8	21.8	22.8	24.9	21.6	23.4	20.2	17.4	18.8
26	22.4	19.8	21.0	23.8	21.4	22.6	24.6	21.7	23.3	21.5	18.2	19.8
27	23.5	20.3	21.6	23.1	21.2	22.2	24.5	21.5	23.1	21.8	18.5	20.3
28	23.3	20.6	21.8	24.5	21.2	22.7	23.9	20.5	22.4	22.0	19.7	21.0
29	22.4	20.9	21.5	24.9	21.3	23.1	23.2	20.5	21.9	21.6	19.4	20.7
30	22.5	19.5	20.9	24.0	21.5	22.4	24.1	21.0	22.5	22.7	20.1	21.4
31	---	---	---	22.6	21.6	22.0	23.4	20.6	22.2	---	---	---
MONTH	23.8	14.2	19.4	25.3	17.9	21.9	25.0	18.7	22.3	23.3	14.6	20.4
YEAR	25.3	.0	13.7									

NATIONAL WATER-QUALITY ASSESSMENT PROGRAM
TENNESSEE RIVER BASIN
SURFACE-WATER QUALITY

03526000 COPPER CREEK NEAR GATE CITY, VA

LOCATION.--Lat 36°40'26", long 82°33'57", Scott County, on right bank at upstream side of highway bridge, 0.2 mi upstream from Plank Camp Creek, 1.1 mi downstream from Obeys Creek, and 2.6 mi northeast of Gate City.

DRAINAGE AREA.--106 mi^2.

PERIOD OF RECORD:--October 1996 to present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	GAGE HEIGHT (FEET) (00065)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 1997												
20...	2.01	29	341	8.2	6.0	10.6	727	9.8	450	120	110	38
NOV												
18...	2.08	28	327	8.1	-3.5	1.3	731	13.6	150	78	53	42
DEC												
16...	2.11	32	345	8.3	-3.0	-.2	728	12.6	86	K35	33	45
JAN 1998												
09...	4.68	484	305	8.1	7.0	10.8	717	9.1	5400	2300	2400	44
20...	--	81	344	8.3	-1.0	4.1	726	11.8	170	K52	K33	47
FEB												
04...	7.72	1590	264	8.0	4.0	7.8	712	10.4	3600	2900	2100	40
25...	3.26	182	315	8.3	.0	6.3	726	11.7	K90	70	K10	42

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 1997												
20...	19	2.1	2.2	4.7	3.8	<.10	6.7	222	0	182	196	<.010
NOV												
18...	18	2.3	1.6	5.8	4.4	<.10	4.9	157	4	135	191	<.010
DEC												
16...	17	3.2	1.4	8.1	6.5	<.10	2.7	210	0	172	196	.020
JAN 1998												
09...	9.2	3.7	1.9	10	9.1	<.10	5.7	150	0	123	185	<.010
20...	14	3.5	1.4	9.4	7.7	.10	4.2	242	1	201	208	<.010
FEB												
04...	9.1	2.2	1.6	7.9	5.2	<.10	5.2	170	1	139	153	<.010
25...	13	2.6	1.2	6.9	5.7	<.10	4.8	181	6	158	177	<.010

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)
OCT 1997												
20...	.439	.044	<.20	<.20	<.010	<.010	.010	5.0	3.5	1.8	.40	<.003
NOV												
18...	.649	<.020	<.10	<.10	<.010	<.010	.020	5.9	1.3	1.1	.20	<.003
DEC												
16...	.785	<.020	<.10	<.10	.012	<.010	.015	<10	<4.0	1.9	.30	<.003
JAN 1998												
09...	1.79	<.020	.79	.15	.095	<.010	.012	20	<4.0	2.9	3.0	<.003
20...	1.31	<.020	<.10	<.10	.020	<.010	<.010	<10	<4.0	1.2	<.20	<.003
FEB												
04...	1.32	<.020	.68	.11	.118	.017	.023	<10	<4.0	3.0	2.7	<.003
25...	1.31	<.020	<.10	<.10	<.010	<.010	.010	<10	<4.0	.80	.20	<.003

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptance range (non-ideal colony count).

NATIONAL WATER-QUALITY ASSESSMENT PROGRAM
TENNESSEE RIVER BASIN
SURFACE-WATER QUALITY

03526000 COPPER CREEK NEAR GATE CITY, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)
OCT 1997												
20...	<.002	E.008	<.002	<.002	<.002	<.002	<.004	<.009	<.011	<.004	<.002	E.0131
NOV												
18...	<.002	.005	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.004	<.002	E.0033
DEC												
16...	<.002	.005	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.004	<.002	E.0055
JAN 1998												
09...	<.002	E.004	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.004	<.002	E.0032
20...	<.002	.005	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.004	<.002	E.0052
FEB												
04...	<.002	E.003	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.004	<.002	E.0025
25...	<.002	.005	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.004	<.002	E.0042

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	P,P' DDE DISSOLV (UG/L) (34653)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	MALA-THION, DIS-SOLVED (UG/L) (39532)
OCT 1997												
20...	<.017	<.002	<.001	<.006	<.002	<.004	<.003	<.003	<.004	<.002	<.004	<.005
NOV												
18...	<.017	<.002	<.001	<.006	<.002	<.004	<.003	<.003	<.004	<.002	<.004	<.005
DEC												
16...	<.017	<.002	<.001	<.006	<.002	<.004	<.003	<.003	<.004	<.002	<.004	<.005
JAN 1998												
09...	<.017	<.002	<.001	<.006	<.002	<.004	<.003	<.003	<.004	<.002	<.004	<.005
20...	<.017	<.002	<.001	<.006	<.002	<.004	<.003	<.003	<.004	<.002	<.004	<.005
FEB												
04...	<.017	<.002	<.001	<.006	<.002	<.004	<.003	<.003	<.004	<.002	<.004	<.005
25...	<.017	<.002	<.001	<.006	<.002	<.004	<.003	<.003	<.004	<.002	<.004	<.005

DATE	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PARA-THION, DIS-SOLVED (UG/L) (39542)
OCT 1997												
20...	<.002	<.001	<.006	<.004	<.003	<.003	<.008	<.004	<.004	<.005	<.002	<.004
NOV												
18...	<.002	<.001	<.006	<.004	<.003	<.003	<.004	<.004	<.004	<.005	<.002	<.004
DEC												
16...	<.002	<.001	<.006	<.004	<.003	<.003	<.004	<.004	<.004	<.005	<.002	<.004
JAN 1998												
09...	<.002	<.001	<.006	<.004	<.003	<.003	<.004	<.004	<.004	<.005	<.002	<.004
20...	<.002	<.001	<.006	<.004	<.003	<.003	<.004	<.004	<.004	<.005	<.002	<.004
FEB												
04...	<.002	<.001	<.006	<.004	<.003	<.003	<.004	<.004	<.004	<.005	<.002	<.004
25...	<.002	<.001	<.006	<.004	<.003	<.003	<.004	<.004	<.004	<.005	<.002	<.004

DATE	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1997												
20...	<.007	<.018	<.013	<.005	<.002	<.014	E.0151	<.013	<.001	<.002	2	50
NOV												
18...	<.007	<.018	<.013	<.005	<.002	<.007	<.010	<.013	<.001	<.002	1	71
DEC												
16...	<.007	<.018	<.013	<.005	<.002	<.007	.0159	<.013	<.001	<.002	1	80
JAN 1998												
09...	<.007	<.018	<.013	<.005	<.002	<.007	.0332	<.013	<.001	<.002	75	60
20...	<.007	<.018	<.013	<.005	<.002	<.007	.017	<.013	<.001	<.002	1	78
FEB												
04...	<.007	<.018	<.013	<.005	E.0013	<.007	.0189	<.013	<.001	<.002	160	86
25...	<.007	<.018	<.013	<.005	<.002	<.007	.0181	<.013	<.001	<.002	20	72

< Actual value is known to be less than the value shown.
E Estimated.