

03597590 WARTRACE CREEK BELOW COUNTY ROAD AT WARTRACE, TN

LOCATION.--Lat 35°31'38", long 86°20'25", Bedford County, Hydrologic Unit 06040002, on right bank 300 ft below county road bridge, 0.4 mi upstream from Louisville and Nashville Railroad bridge, 0.4 mi west of Wartrace, and at mile 2.3.

DRAINAGE AREA.--35.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Data collection platform and crest-stage gage. Datum of gage is 781.66 ft above NGVD of 1929.

REMARKS.--Records good except for estimated discharge, which are fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov 10	2330	3,110	11.44	Feb 22	0645	3,010	11.26
Dec 24	0745	2,530	10.39	May 6	1115	*9,420	*16.72
Feb 14	2215	3,420	11.87	May 7	0630	2,510	10.35
Feb 15	1600	2,450	10.24	May 7	1700	2,900	11.07

Minimum discharge, 0.31 ft<sup>3</sup>/s, Sept. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	27	12	35	47	111	17	9.3	5.8	94	4.4	1.3
2	13	21	11	35	37	81	16	11	5.4	47	3.6	1.2
3	10	e17	11	57	37	61	15	11	6.3	24	3.1	1.5
4	9.5	e34	215	49	289	50	14	8.8	5.9	15	2.8	6.3
5	37	715	426	41	88	44	84	148	4.9	11	3.5	7.7
6	23	230	121	35	83	41	98	3,280	4.5	12	8.7	4.2
7	29	90	69	30	147	34	326	1,860	17	65	13	2.9
8	25	56	50	28	78	30	336	342	11	25	6.1	2.3
9	18	41	38	26	60	27	163	134	6.8	15	4.3	1.9
10	16	493	850	22	62	24	120	74	5.2	47	3.4	1.6
11	20	884	408	19	61	22	95	181	11	51	2.9	1.2
12	21	128	148	e17	50	21	64	72	13	23	2.6	0.70
13	17	71	483	e16	41	19	48	45	8.3	16	2.5	0.61
14	14	50	220	e16	1,370	18	37	33	6.4	14	2.5	0.82
15	13	248	115	14	1,820	17	31	27	8.1	10	2.4	0.79
16	17	232	76	14	888	16	26	22	12	8.2	2.3	0.59
17	15	99	57	14	250	16	26	22	23	6.9	2.4	0.52
18	12	63	45	12	132	22	22	41	12	5.8	2.2	0.45
19	11	49	100	12	88	256	18	40	25	4.9	3.9	0.41
20	10	38	152	12	74	86	16	26	18	4.4	3.3	0.37
21	9.7	32	72	21	104	51	16	32	10	4.4	2.5	0.35
22	9.0	26	54	22	1,180	37	13	31	7.3	6.2	2.1	52
23	8.2	22	42	16	292	30	12	26	5.8	6.6	12	22
24	7.8	19	1,110	13	148	26	11	20	4.8	4.6	4.3	8.6
25	7.6	17	184	13	97	22	29	17	4.0	3.6	2.9	5.5
26	8.6	16	102	13	198	21	47	16	3.5	3.0	2.2	4.1
27	9.2	15	70	12	424	19	20	12	6.2	2.5	2.0	18
28	22	14	55	12	173	18	15	10	5.5	2.8	2.0	16
29	64	13	107	146	---	27	12	9.1	4.1	11	1.9	7.9
30	67	13	38	104	---	23	11	7.9	102	6.8	2.0	5.4
31	38	---	34	61	---	19	---	6.9	---	5.0	1.6	---
TOTAL	598.6	3,773	5,475	937	8,318	1,289	1,758	6,575.0	362.8	555.7	115.4	177.21
MEAN	19.3	126	177	30.2	297	41.6	58.6	212	12.1	17.9	3.72	5.91
MAX	67	884	1,110	146	1,820	256	336	3,280	102	94	13	52
MIN	7.6	13	11	12	37	16	11	6.9	3.5	2.5	1.6	0.35
CFSM	0.54	3.52	4.95	0.85	8.32	1.16	1.64	5.94	0.34	0.50	0.10	0.17
IN.	0.62	3.93	5.71	0.98	8.67	1.34	1.83	6.85	0.38	0.58	0.12	0.18

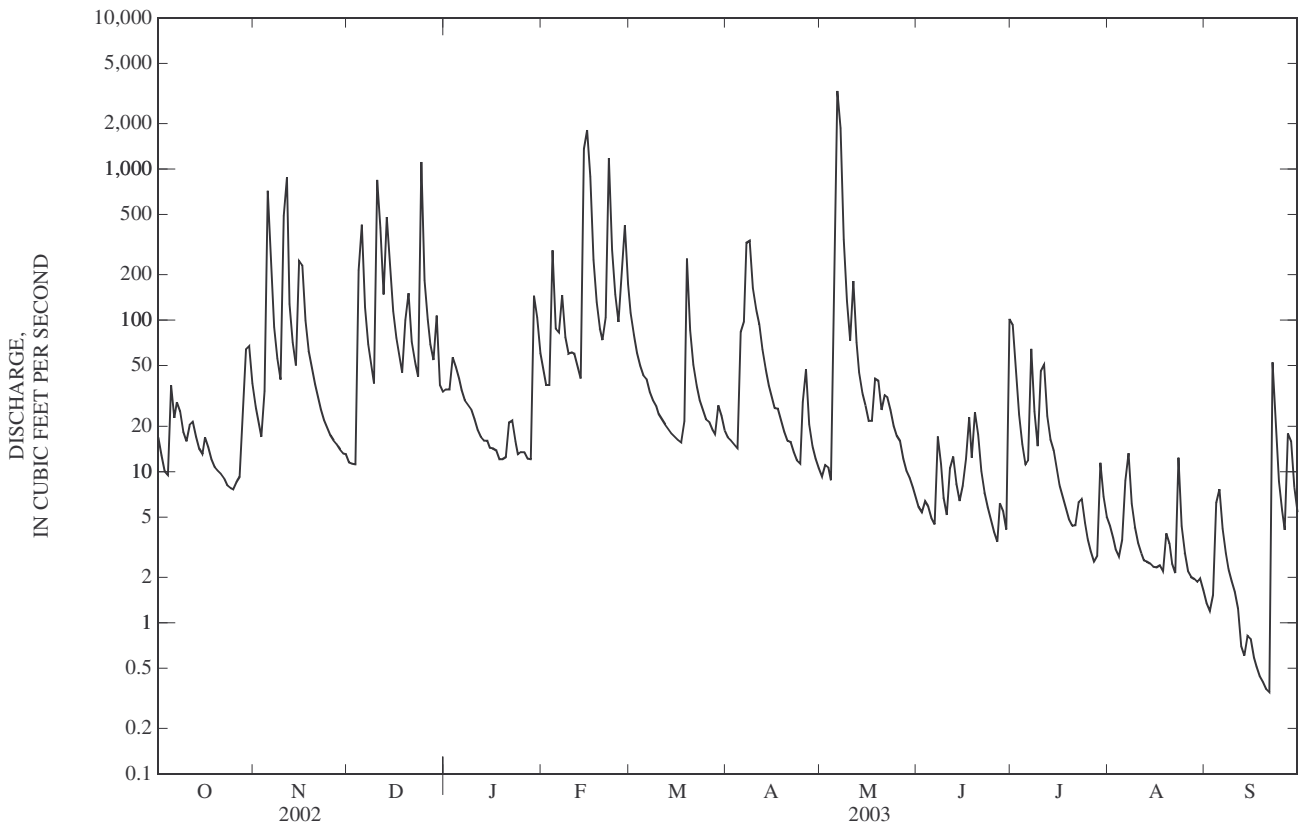
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	23.0	54.5	127	131	140	139	77.2	53.3	22.4	16.1	19.5	22.2
MAX	109	172	350	289	326	311	215	212	143	40.7	79.5	167
(WY)	(1996)	(1997)	(1991)	(1999)	(1991)	(1994)	(2000)	(2003)	(1997)	(1999)	(1992)	(1992)
MIN	0.014	0.46	7.46	10.3	36.7	41.6	11.9	2.23	0.98	0.24	0.012	0.000
(WY)	(2000)	(2000)	(2000)	(2000)	(2002)	(2003)	(1999)	(1992)	(2002)	(2000)	(1991)	(1999)

03597590 WARTRACE CREEK BELOW COUNTY ROAD AT WARTRACE, TN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	32,824.48		29,934.71			
ANNUAL MEAN	89.9		82.0		68.4	
HIGHEST ANNUAL MEAN					97.2 1994	
LOWEST ANNUAL MEAN					36.2 2000	
HIGHEST DAILY MEAN	3,800	Jan 23	3,280	May 6	4,000	Sep 22, 1992
LOWEST DAILY MEAN	0.00	Aug 14	0.35	Sep 21	0.00	Aug 24, 1990
ANNUAL SEVEN-DAY MINIMUM	0.01	Sep 11	0.50	Sep 15	0.00	Aug 24, 1990
MAXIMUM PEAK FLOW			9,420	May 6	10,900	Jan 23, 1999
MAXIMUM PEAK STAGE			16.72	May 6	16.72	May 6, 2003
INSTANTANEOUS LOW FLOW			a0.31	Sep 20	b0.00	Aug 24, 1990
ANNUAL RUNOFF (CFSM)	2.52		2.30		1.92	
ANNUAL RUNOFF (INCHES)	34.20		31.19		26.05	
10 PERCENT EXCEEDS	154		147		122	
50 PERCENT EXCEEDS	13		18		14	
90 PERCENT EXCEEDS	0.28		2.9		0.25	

a Also occurred Sept. 21.  
 b No flow many days most years.  
 c Estimated



## 03597860 DUCK RIVER AT SHELBYVILLE, TN

LOCATION.--Lat 35°28'51", long 86°27'45", Bedford County, Hydrologic Unit 06040002, on right bank 125 ft upstream from U.S. Highway 231 bridge, one block west of the southwest corner of the public square, and at mile 221.4.

DRAINAGE AREA.--425 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1991 to current year, discharge for gage height of 12.00 ft and below only. Continuous stage records were collected by Tennessee Valley Authority from December 1981 to September 1991.

GAGE.--Data collection platform. Datum of gage is 680.00 ft above NGVD of 1929. Prior to Oct. 10, 1991 at datum 10.00 ft higher.

REMARKS.--Records good except for estimated discharges, which are fair. Flow regulated by Normandy Reservoir (station 03596460) since January 1976.

EXTREME FOR PERIOD OF RECORD.--Maximum discharge, not determined; maximum gage height, 40.53 ft, May 7, 2003; minimum discharge, 129 ft<sup>3</sup>/s, May 20, 1992; minimum daily discharge, 125 ft<sup>3</sup>/s, July 30, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, not determined, maximum gage height, 40.53 ft, May 7; minimum discharge, 143 ft<sup>3</sup>/s, May 1; minimum daily discharge, 152 ft<sup>3</sup>/s, May 1.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	429	414	222	---	---	---	222	152	192	---	235	180
2	237	369	215	528	---	---	211	154	193	---	221	178
3	214	390	212	573	---	---	205	168	489	457	209	195
4	214	516	---	576	---	---	198	153	496	335	316	310
5	226	---	---	450	---	730	304	---	467	275	429	273
6	258	---	---	433	---	658	364	---	230	252	423	195
7	---	---	---	402	---	381	---	---	314	---	223	176
8	581	---	---	384	---	335	---	---	358	376	202	---
9	366	654	---	379	---	302	---	---	258	266	184	187
10	292	---	---	325	---	270	---	---	232	262	178	184
11	273	---	---	246	---	262	---	---	290	533	174	171
12	265	---	---	235	701	249	---	---	---	376	186	177
13	246	---	---	220	361	241	753	---	595	320	185	189
14	226	764	---	252	---	243	674	---	526	247	189	201
15	219	---	---	228	---	232	596	---	298	221	186	195
16	238	---	---	251	---	229	393	---	255	214	180	183
17	250	---	---	264	---	220	348	614	431	205	183	179
18	230	---	---	244	---	249	e270	---	282	190	191	177
19	215	---	---	252	---	---	e242	---	263	182	202	169
20	208	781	---	251	---	---	e220	687	249	179	187	170
21	200	692	---	174	---	---	e205	---	213	175	174	176
22	195	631	---	198	---	680	e196	---	188	362	184	---
23	189	618	619	229	---	603	e187	---	175	361	206	---
24	187	597	---	212	---	552	e182	---	175	473	187	308
25	184	580	---	219	---	517	187	---	175	451	172	241
26	184	516	---	215	---	478	321	617	194	349	181	226
27	187	253	---	234	---	307	241	574	325	190	187	212
28	203	385	---	233	---	260	198	410	257	203	189	247
29	321	320	---	---	---	273	175	207	195	354	183	221
30	488	227	---	---	---	276	163	201	---	481	181	204
31	484	---	---	---	---	237	---	202	---	448	184	---
TOTAL	---	---	---	---	---	---	---	---	---	---	6,511	---
MEAN	---	---	---	---	---	---	---	---	---	---	210	---
MAX	---	---	---	---	---	---	---	---	---	---	429	---
MIN	---	---	---	---	---	---	---	---	---	---	172	---

e Estimated

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03597860 DUCK RIVER AT SHELBYVILLE, TN—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1991 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1991 to current year.

DISSOLVED OXYGEN: October 1991 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1991.

REMARKS.--Records for water temperature are excellent, dissolved oxygen records are poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 30.1°C, July 30, 31, 1999; minimum, 0.1°C, Feb. 4, 5, 6, 1996.

DISSOLVED OXYGEN: Maximum, 19.4, mg/L, Jan. 25, 26, 2003; minimum, 5.7 mg/L, June 12, 1999.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.5°C, Aug. 22; minimum, 0.7°C, Jan. 25, 26.

DISSOLVED OXYGEN: Maximum, 19.4 mg/L, Jan. 25, 26; minimum, 7.4 mg/L, Aug. 15-18.

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.2	22.5	22.9	15.6	14.5	15.0	9.1	8.0	8.7	9.7	9.2	9.4
2	24.5	23.1	23.6	14.5	13.3	13.9	8.0	6.9	7.5	10.2	9.7	10
3	24.4	23.4	23.8	13.4	13.2	13.3	6.9	6.4	6.7	9.8	7.7	8.8
4	24.2	23.6	23.8	14.5	13.4	13.9	7.8	6.6	7.0	7.7	6.7	7.0
5	23.8	23.1	23.5	14.9	14.2	14.6	8.5	7.3	8.1	7.4	6.6	7.0
6	23.3	22.4	22.8	15.4	14.2	15.0	8.5	7.8	8.1	7.7	7.3	7.6
7	22.4	20.0	21.3	15.3	14.8	15.1	8.4	7.8	8.1	7.3	6.2	6.7
8	20.0	19.0	19.3	15.3	13.9	14.6	8.6	8.3	8.4	6.5	5.9	6.2
9	19.5	19.0	19.2	15.2	13.8	14.4	8.8	8.5	8.6	7.7	6.5	7.1
10	20.0	19.5	19.8	17.7	15.2	16.4	9.1	7.9	8.6	8.4	7.5	7.9
11	20.6	20.0	20.3	17.7	16.4	16.9	9.8	8.0	9.2	7.5	6.1	7.0
12	21.5	20.5	21.0	16.6	15.5	16.2	9.8	9.6	9.7	6.1	4.3	5.2
13	21.3	20.3	21.0	15.0	14.2	14.8	9.6	9.2	9.4	4.3	3.6	4.0
14	20.3	19.2	19.7	14.8	13.3	13.9	9.3	9.1	9.2	3.9	3.3	3.6
15	19.2	18.4	18.6	13.6	13.2	13.4	9.1	8.4	8.8	4.0	3.2	3.6
16	18.4	17.7	18.1	13.6	12.3	12.9	9.6	8.6	9.0	3.5	3.0	3.3
17	17.7	16.5	17.2	12.3	11.6	11.8	10.1	9.6	9.9	3.3	2.6	2.9
18	16.9	15.8	16.2	12.0	11.4	11.6	10.5	10.0	10.3	2.6	2.0	2.4
19	16.1	15.5	15.9	13.6	12.0	13.0	10.3	10.0	10.1	2.3	1.5	1.9
20	16.6	16.1	16.3	13.5	13.3	13.4	10.7	10.1	10.5	3.4	1.8	2.6
21	17.0	16.6	16.8	14.2	13.3	13.8	10.1	8.8	9.1	4.5	3.4	4.0
22	17.6	16.7	17.1	14.0	12.0	13.1	9.3	8.8	9.1	5.4	4.5	4.9
23	17.6	16.8	17.2	12.0	10.8	11.1	9.2	8.6	8.9	4.7	2.7	3.9
24	17.6	17.2	17.4	11.6	10.8	11.2	9.9	7.2	8.1	2.7	1.4	2.1
25	17.8	17.5	17.6	11.6	11.3	11.5	10.2	8.3	9.3	1.4	0.7	1.0
26	17.9	17.8	17.8	11.7	11.4	11.5	8.3	7.8	8.0	1.8	0.7	1.2
27	18.5	17.7	18.0	11.4	10.1	10.8	8.0	7.4	7.6	2.7	1.4	2.0
28	18.5	18.1	18.2	10.1	8.5	9.1	7.8	7.2	7.5	2.9	2.1	2.5
29	19.0	18.5	18.8	9.0	8.5	8.7	8.0	7.7	7.8	6.7	2.9	4.5
30	19.0	17.5	18.4	9.7	8.7	9.1	8.6	8.0	8.3	7.0	6.5	6.8
31	17.5	15.6	16.4	---	---	---	9.2	8.6	9.0	6.8	6.2	6.4
MONTH	24.5	15.5	19.3	17.7	8.5	13.1	10.7	6.4	8.7	10.2	0.7	5.0



## 03597860 DUCK RIVER AT SHELBYVILLE, TN—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.6	8.3	8.5	10.8	10.4	10.6	13.8	13.5	13.7	---	---	---
2	8.4	8.1	8.3	11.3	10.7	11.0	14.4	13.8	14.2	---	---	---
3	8.3	8.0	8.2	11.6	11.2	11.3	14.9	14.4	14.7	---	---	---
4	8.2	8.0	8.1	---	---	---	14.7	13.9	14.5	---	---	---
5	8.3	8.0	8.1	---	---	---	13.9	13.1	13.4	---	---	---
6	8.5	8.1	8.3	---	---	---	14.2	13.3	13.9	---	---	---
7	9.0	8.4	8.6	---	---	---	14.2	14.0	14.1	13.4	12.7	13.0
8	9.4	9.0	9.3	---	---	---	14.2	13.9	14.0	13.6	13.4	13.5
9	9.5	9.3	9.4	---	---	---	14.0	13.8	13.9	13.4	13.1	13.3
10	9.3	9.0	9.1	---	---	---	13.9	13.0	13.3	13.3	13.1	13.2
11	9.1	8.9	9.0	---	---	---	13.1	12.2	12.5	14.1	13.2	13.7
12	9.0	8.7	8.8	---	---	---	12.6	12.4	12.5	15.1	14.1	14.7
13	8.9	8.4	8.8	---	---	---	12.7	12.3	12.5	15.8	15.1	15.6
14	9.2	8.9	9.0	---	---	---	12.5	12.3	12.4	16.2	15.8	16.0
15	9.3	9.0	9.2	---	---	---	12.7	12.4	12.6	16.5	16.1	16.2
16	9.7	9.3	9.5	---	---	---	12.7	12.4	12.6	16.5	16.1	16.3
17	10.0	9.6	9.9	---	---	---	12.7	12.4	12.5	16.9	16.5	16.7
18	10.3	10.0	10.2	---	---	---	12.6	12.4	12.5	17.5	16.8	17.2
19	10.5	10.2	10.3	---	---	---	12.5	12.3	12.4	18.1	17.5	17.8
20	10.2	10.1	10.2	---	---	---	12.3	11.9	12.0	17.9	17.1	17.6
21	10.1	9.8	9.9	---	---	---	12.8	12.2	12.6	17.1	16.6	16.8
22	10.1	9.8	9.9	12.0	11.1	11.5	12.7	12.5	12.6	16.6	16.0	16.3
23	10.0	9.8	9.9	12.7	12.0	12.4	12.6	12.4	12.5	17.7	16.2	17.0
24	9.9	9.7	9.8	12.7	12.4	12.6	12.5	12.1	12.4	18.8	17.7	18.4
25	9.8	9.6	9.7	12.6	12.5	12.6	---	---	---	19.4	18.8	19.2
26	9.6	9.5	9.6	12.7	12.3	12.6	---	---	---	19.4	19.0	19.2
27	9.7	9.4	9.5	12.9	12.4	12.6	---	---	---	19.1	18.4	18.8
28	9.4	9.3	9.4	13.9	12.9	13.5	---	---	---	18.7	18.1	18.5
29	10.8	9.1	9.6	13.9	13.5	13.7	---	---	---	18.3	14.8	16.8
30	9.9	9.1	9.5	13.6	13.3	13.4	---	---	---	15.3	14.8	15.1
31	10.5	9.8	10.2	---	---	---	---	---	---	16.5	15.3	16.0
MONTH	10.8	8.0	9.3	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	16.5	15.8	16.1	---	---	---	12.3	11.5	11.9	9.6	9.1	9.4
2	16.6	16.1	16.4	---	---	---	---	---	---	9.6	9.0	9.2
3	16.4	15.4	15.7	---	---	---	---	---	---	9.5	9.0	9.2
4	15.6	14.2	14.7	10.3	10.0	10.1	---	---	---	9.6	9.1	9.3
5	16.0	14.8	15.2	10.3	9.8	10.1	---	---	---	9.8	8.6	9.3
6	16.2	15.9	16.0	10.3	10.0	10.1	---	---	---	9.3	8.1	8.6
7	16.3	15.8	16.0	10.4	10.2	10.3	---	---	---	9.3	8.2	8.9
8	17.1	16.3	16.7	---	---	---	---	---	---	9.4	8.8	9.1
9	17.0	16.4	16.7	---	---	---	---	---	---	9.8	7.9	9.3
10	16.5	16.1	16.3	---	---	---	---	---	---	10.1	9.3	9.7
11	16.4	16.1	16.2	12.4	12.0	12.1	---	---	---	9.7	8.2	8.9
12	16.1	15.5	15.7	12.6	12.0	12.2	---	---	---	10.4	8.2	9.8
13	15.7	15.1	15.5	12.4	11.8	12.1	---	---	---	10.6	10.4	10.5
14	15.1	13.0	14.4	12.3	11.7	12.0	10.8	10.8	10.6	10.6	10.1	10.4
15	13.0	11.4	12.1	12.4	11.7	12.0	10.8	10.3	10.6	10.6	10.5	10.5
16	12.8	11.3	11.8	12.7	11.9	12.2	10.6	9.9	10.3	10.5	9.9	10.4
17	13.3	12.8	13.1	12.8	12.0	12.3	10.2	9.6	9.9	10.4	10.1	10.3
18	13.4	13.2	13.3	12.6	11.9	12.2	10.3	9.6	9.9	10.2	10.1	10.1
19	13.2	12.7	13.0	12.3	10.4	11.7	10.4	9.6	9.9	10.6	10.3	10.5
20	12.7	11.7	12.2	11.3	10.5	11.0	10.2	9.3	9.7	10.9	10.6	10.8
21	11.7	10.7	11.2	12.5	11.3	11.8	9.8	9.1	9.4	11.0	10.8	10.9
22	10.7	9.0	9.6	13.1	12.5	12.8	9.8	9.0	9.3	11.2	10.8	10.9
23	10.2	9.5	9.9	---	---	---	10.0	9.2	9.5	11.3	11.0	11.2
24	10.3	10.0	10.1	13.1	12.6	12.9	9.9	9.4	9.7	11.1	10.8	10.9
25	10.2	10.1	10.2	12.9	12.4	12.7	10.2	9.8	10	11.0	10.8	10.9
26	---	---	---	12.5	12.0	12.3	10.6	10.0	10.3	11.2	11.0	11.1
27	---	---	---	12.5	12.0	12.2	10.8	10.2	10.5	11.1	10.8	10.9
28	---	---	---	12.3	11.3	11.9	10.3	9.9	10.1	11.0	10.2	10.7
29	---	---	---	11.8	10.9	11.3	10.1	9.6	9.9	10.6	10.1	10.4
30	---	---	---	11.9	10.9	11.4	9.9	9.4	9.6	10.5	10.0	10.3
31	---	---	---	12.4	11.4	11.9	---	---	---	10.3	10.0	10.1
MONTH	---	---	---	---	---	---	---	---	---	11.3	7.9	10.1

03597860 DUCK RIVER AT SHELBYVILLE, TN—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	JUNE			JULY			AUGUST			SEPTEMBER		
				MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.5	10.0	10.2	8.4	7.8	8.1	9.2	8.9	9.1	8.2	7.9	8.0			
2	10.4	10.0	10.2	8.6	8.4	8.5	9.1	8.8	8.9	8.0	7.8	7.9			
3	10.5	10.2	10.3	8.5	8.0	8.2	8.9	8.6	8.8	8.0	7.8	7.8			
4	10.5	10.3	10.4	8.1	7.6	7.9	8.9	8.7	8.8	8.1	7.8	8.0			
5	10.6	10.2	10.5	---	---	---	8.8	8.6	8.7	8.3	8.0	8.2			
6	10.5	9.9	10.2	---	---	---	8.7	8.5	8.6	8.5	8.3	8.4			
7	10.1	9.7	9.9	---	---	---	8.5	8.2	8.4	8.6	8.3	8.5			
8	10.1	9.8	10	---	---	---	8.4	8.1	8.2	8.6	8.3	8.5			
9	9.9	9.5	9.8	---	---	---	8.1	7.9	8.0	8.5	8.0	8.3			
10	9.7	9.4	9.6	---	---	---	7.9	7.6	7.8	8.5	8.1	8.3			
11	9.5	9.2	9.3	---	---	---	7.7	7.6	7.6	8.5	8.2	8.3			
12	9.4	9.1	9.3	---	---	---	---	---	---	8.4	8.1	8.2			
13	9.3	9.2	9.2	---	---	---	---	---	---	8.3	8.1	8.2			
14	9.3	9.0	9.2	8.2	7.9	8.0	7.7	7.5	7.6	8.3	8.2	8.2			
15	9.1	8.7	8.9	8.1	7.8	8.0	7.7	7.4	7.5	8.4	8.1	8.3			
16	8.8	8.0	8.4	8.0	7.8	7.9	7.7	7.4	7.5	8.4	8.2	8.3			
17	8.2	7.9	8.1	8.0	7.7	7.8	7.6	7.4	7.5	8.6	8.2	8.4			
18	8.1	7.9	8.0	8.3	8.0	8.1	7.8	7.4	7.6	8.7	8.4	8.5			
19	8.2	8.0	8.1	8.3	8.0	8.1	7.8	7.5	7.6	8.6	8.4	8.5			
20	8.3	8.0	8.2	8.2	8.0	8.1	7.7	7.5	7.6	8.6	8.3	8.5			
21	8.4	8.2	8.3	8.3	8.1	8.2	7.8	7.6	7.7	8.5	8.2	8.3			
22	8.4	8.2	8.3	8.1	7.6	7.8	7.9	7.6	7.7	8.6	8.2	8.4			
23	8.4	8.0	8.2	8.9	8.7	8.8	7.9	7.6	7.7	8.7	8.3	8.5			
24	8.3	8.0	8.2	9.3	8.9	9.2	7.9	7.7	7.8	8.7	8.4	8.6			
25	8.2	7.9	8.1	9.5	9.2	9.4	8.0	7.7	7.8	8.8	8.5	8.6			
26	8.1	7.7	7.9	9.5	9.1	9.3	8.0	7.8	7.9	8.6	8.0	8.4			
27	8.1	7.7	8.0	9.2	8.9	9.1	8.0	7.8	7.8	8.4	8.0	8.2			
28	8.3	8.0	8.2	9.1	8.7	8.9	8.1	7.8	7.9	8.5	8.0	8.3			
29	8.3	8.0	8.2	9.0	8.7	8.9	8.2	7.8	8.1	8.9	8.3	8.7			
30	8.2	7.8	8.1	9.3	9.0	9.2	8.2	8.0	8.1	9.3	8.8	9.1			
31	---	---	---	9.4	9.1	9.3	8.1	7.9	8.0	---	---	---			
MONTH	10.6	7.7	9.0	---	---	---	---	---	---	9.3	7.8	8.3			



## 03597898 FLAT CREEK AT HWY 231 BELOW SHELBYVILLE, TN

LOCATION.--Lat 35°27'35", long 86°28'10", Bedford County, Hydrologic Unit 06040002, on the downstream side of bridge on Highway 231, south of Shelbyville, and at mile 2.0.

DRAINAGE AREA.--49 mi<sup>2</sup>.

PERIOD OF RECORD.--June to September 2003.

GAGE.--Data logger, radar-stage sensing device, and crest-stage gage. Datum of gage is 712.54 ft above NGVD of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT PERIOD.--June to September 2003: Maximum discharge, 1,210 ft<sup>3</sup>/s, Sept. 22; maximum gage height, 7.22 ft; minimum daily discharge, 0.84 ft<sup>3</sup>/s, Sept. 2.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	e45	180	22	1.1
2	---	---	---	---	---	---	---	---	e43	147	18	0.84
3	---	---	---	---	---	---	---	---	45	93	17	76
4	---	---	---	---	---	---	---	---	43	69	15	156
5	---	---	---	---	---	---	---	---	38	57	29	67
6	---	---	---	---	---	---	---	---	36	51	47	45
7	---	---	---	---	---	---	---	---	70	51	36	36
8	---	---	---	---	---	---	---	---	57	41	24	28
9	---	---	---	---	---	---	---	---	43	36	19	20
10	---	---	---	---	---	---	---	---	63	34	15	15
11	---	---	---	---	---	---	---	---	109	32	11	e14
12	---	---	---	---	---	---	---	---	87	27	9.2	e12
13	---	---	---	---	---	---	---	---	64	22	12	e10
14	---	---	---	---	---	---	---	---	52	e23	20	e8.0
15	---	---	---	---	---	---	---	---	46	e21	14	8.8
16	---	---	---	---	---	---	---	---	43	e22	7.7	4.1
17	---	---	---	---	---	---	---	---	41	22	5.0	2.6
18	---	---	---	---	---	---	---	---	62	13	5.3	1.7
19	---	---	---	---	---	---	---	---	58	11	17	1.2
20	---	---	---	---	---	---	---	---	46	8.5	15	1.1
21	---	---	---	---	---	---	---	---	38	6.8	5.5	1.3
22	---	---	---	---	---	---	---	---	32	74	3.0	309
23	---	---	---	---	---	---	---	---	28	60	41	129
24	---	---	---	---	---	---	---	---	25	41	18	73
25	---	---	---	---	---	---	---	---	21	32	6.1	53
26	---	---	---	---	---	---	---	---	24	27	2.8	39
27	---	---	---	---	---	---	---	---	129	23	e3.6	34
28	---	---	---	---	---	---	---	---	66	28	e3.0	33
29	---	---	---	---	---	---	---	---	48	47	e9.2	24
30	---	---	---	---	---	---	---	---	164	31	2.4	18
31	---	---	---	---	---	---	---	---	---	25	2.8	---
MEAN	---	---	---	---	---	---	---	---	55.5	43.7	14.7	40.7
MAX	---	---	---	---	---	---	---	---	164	180	47	309
MIN	---	---	---	---	---	---	---	---	21	6.8	2.4	0.84

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2003, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	---	---	---	55.5	43.7	14.7	40.7
MAX	---	---	---	---	---	---	---	---	55.5	43.7	14.7	40.7
(WY)	---	---	---	---	---	---	---	---	(2003)	(2003)	(2003)	(2003)
MIN	---	---	---	---	---	---	---	---	55.5	43.7	14.7	40.7
(WY)	---	---	---	---	---	---	---	---	(2003)	(2003)	(2003)	(2003)

e Estimated

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03598000 DUCK RIVER NEAR SHELBYVILLE, TN

LOCATION.--Lat 35°28'49", long 86°29'57", Bedford County, Hydrologic Unit 06040002, on right bank 150 ft downstream from Sims Bridge, 2.1 mi upstream from Sugar Creek, 2.2 mi west of Shelbyville, 2.9 mi downstream from Flat Creek, and at mile 216.2.

DRAINAGE AREA.--481 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1933 to current year. Prior to April 1934, monthly discharge only, published in WSP 1306.

REVISED RECORDS.--WSP 783: 1934. WSP 853: Drainage area.

GAGE.--Data collection platform. Datum of gage is 683.51 ft above NGVD of 1929. Prior to Sept. 2, 1966, at datum 2.0 ft higher.

REMARKS.--Records good except for estimated discharges, which are fair. Maximum discharge prior to regulation, 62,900 ft<sup>3</sup>/s, Feb. 13, 1948, gage height, 38.40 ft, present datum, from floodmarks, from rating curve extended above 35,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Prior to 1948, diurnal fluctuation caused by powerplant upstream. Flow regulated by Normandy Reservoir (station 03596460) since January 1976. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1929 reached a stage of 39.6 ft present datum, discharge, about 70,000 ft<sup>3</sup>/s, from high-water profile by Tennessee Valley Authority. Flood in March 1902 reached a stage about 2.0 ft higher than that in March 1929, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,200 ft<sup>3</sup>/s, at 2300 hours May 7, gage height 33.46 ft; minimum discharge, 171 ft<sup>3</sup>/s, July 21; minimum daily, 177 ft<sup>3</sup>/s, July 21.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	560	468	289	935	1,250	3,280	264	191	239	1,830	282	197
2	333	405	281	643	1,180	2,860	256	192	223	1,410	244	194
3	291	410	276	693	1,100	2,310	250	197	527	655	225	267
4	273	588	461	693	2,160	946	244	181	554	449	345	648
5	293	2,190	2,990	573	1,270	806	347	1,980	526	347	459	388
6	333	3,800	1,640	539	1,510	725	399	13,200	276	307	521	251
7	1,120	2,250	1,540	512	1,890	446	e1,900	29,800	377	525	266	208
8	812	1,060	1,280	498	1,550	389	1,980	30,100	444	464	229	197
9	473	784	1,120	489	1,380	360	e1,800	10,300	304	314	204	204
10	350	792	3,250	446	1,300	330	e1,400	2,960	282	304	197	198
11	324	5,520	5,520	371	1,190	e315	1,300	3,290	401	601	192	184
12	308	3,050	2,910	354	794	306	947	2,020	947	431	200	182
13	283	1,680	3,660	342	452	299	801	1,570	729	358	203	192
14	259	878	3,760	351	3,490	297	694	1,360	626	280	210	203
15	249	915	2,570	341	13,200	289	615	1,250	383	239	211	207
16	264	1,760	1,920	344	e9,500	287	398	1,110	301	228	201	199
17	275	1,220	1,650	347	e5,800	281	353	835	491	228	200	197
18	257	1,070	944	335	e4,000	306	295	796	344	200	200	195
19	240	940	1,150	330	e3,600	e1,270	271	1,080	365	188	237	190
20	232	898	1,740	325	e3,400	1,350	256	910	300	183	209	190
21	223	819	1,470	291	3,380	e951	244	1,020	249	177	192	197
22	218	724	1,130	305	8,540	730	235	1,070	209	396	197	1,050
23	209	726	646	321	5,980	e612	222	1,020	187	470	254	976
24	204	705	6,120	303	4,360	e551	217	1,550	181	519	216	458
25	203	685	3,480	309	3,600	e513	232	1,160	179	498	192	320
26	203	632	2,180	307	3,620	482	317	774	194	408	197	281
27	202	347	1,740	321	4,740	334	269	712	509	200	207	266
28	221	441	1,500	322	4,010	295	232	551	348	207	211	290
29	376	400	1,340	1,460	---	e305	211	281	236	365	204	259
30	587	298	1,210	1,630	---	308	199	258	580	557	199	230
31	575	---	1,120	1,370	---	e277	---	257	---	520	202	---
TOTAL	10,750	36,455	60,887	16,400	98,246	22,810	17,148	111,975	11,511	13,858	7,306	9,018
MEAN	347	1,215	1,964	529	3,509	736	572	3,612	384	447	236	301
MAX	1,120	5,520	6,120	1,630	13,200	3,280	1,980	30,100	947	1,830	521	1,050
MIN	202	298	276	291	452	277	199	181	179	177	192	182
(†)	-600	-4,800	-1,900	+2,100	+2,200	+3,000	+5,700	+3,000	-400	+100	-1,600	-300
MEAN(‡)	327	1,055	1,903	597	3,587	833	762	3,709	370	450	184	291
CFSM(†)	0.69	2.19	3.96	1.24	7.46	1.73	1.58	7.71	0.77	0.94	.38	.60
IN. (‡)	.78	2.45	4.56	1.43	7.77	2.00	1.77	8.89	0.86	1.08	.44	.67
CAL YR 2002	MEAN(‡) 1,106	CFSM(‡) 2.30	IN.(‡) 3122									
WTR YR 2003	MEAN(‡) 1,158	CFSM(‡) 2.41	IN.(‡) 32.69									

(†) Change in contents, in cfs-days in Normandy Lake.

(‡) Adjusted for change in content.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

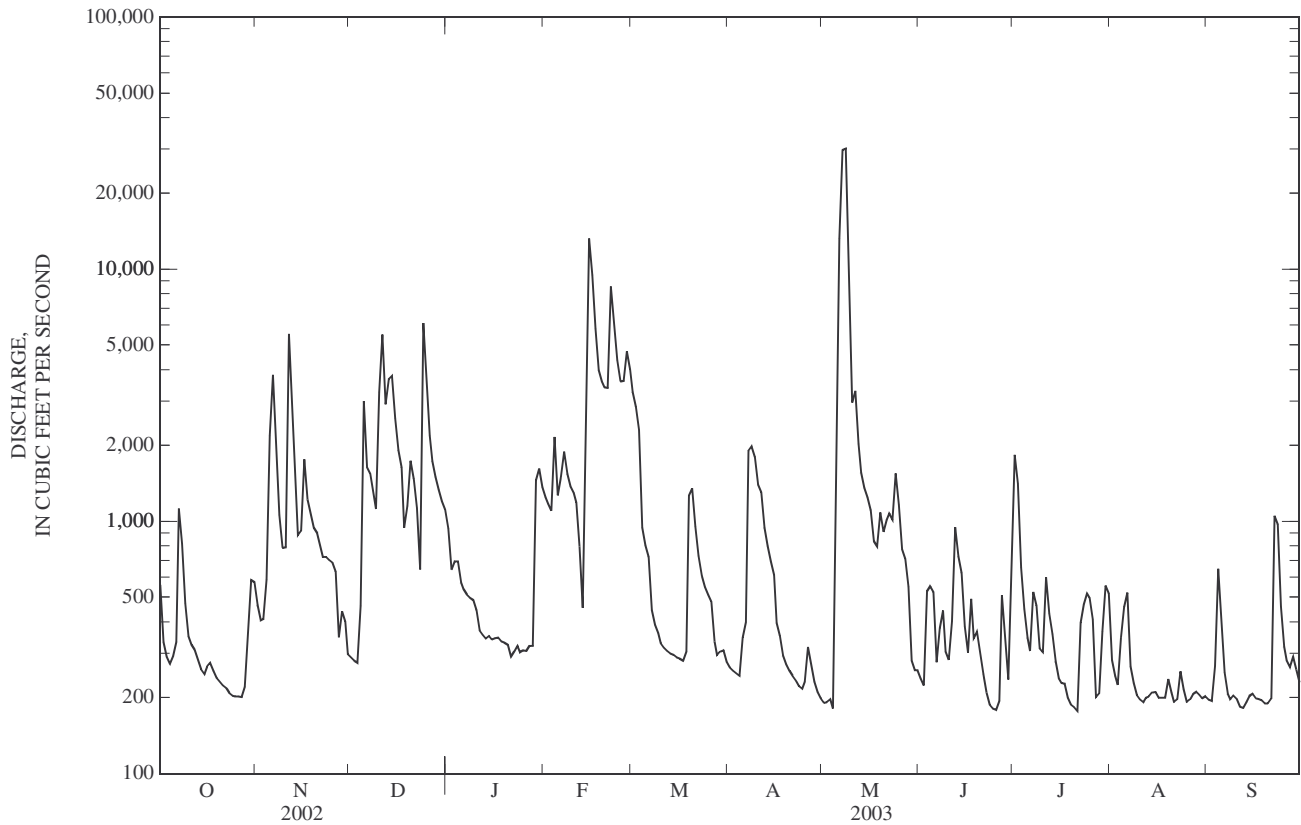
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	354	917	1,346	1,399	1,376	1,489	924	823	517	345	285	308
MAX	1,314	2,277	4,132	3,160	3,730	3,649	2,992	3,612	2,151	1,670	749	1,036
(WY)	(1990)	(1987)	(1992)	(2002)	(1994)	(1980)	(1994)	(2003)	(1989)	(1989)	(1998)	(1992)
MIN	157	170	289	175	339	308	165	137	166	166	154	163
(WY)	(1988)	(1988)	(2000)	(1986)	(1978)	(1988)	(1986)	(1988)	(1988)	(1987)	(1983)	(1980)

03598000 DUCK RIVER NEAR SHELBYVILLE, TN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		*WATER YEARS 1977 - 2003	
ANNUAL TOTAL	403,588		416,364		837	
ANNUAL MEAN	1,106		1,141		1,253	
HIGHEST ANNUAL MEAN					1991	
LOWEST ANNUAL MEAN					1981	
HIGHEST DAILY MEAN	24,200	Jan 24	30,100	May 8	30,100	May 8, 2003
LOWEST DAILY MEAN	162	Aug 28	177	Jul 21	72	Oct 1, 1982
ANNUAL SEVEN-DAY MINIMUM	176	Aug 28	194	Sep 8	88	Sep 25, 1982
MAXIMUM PEAK FLOW			37,200	May 7	37,200	May 7, 2003
MAXIMUM PEAK STAGE			33.46	May 7	33.46	May 7, 2003
INSTANTANEOUS LOW FLOW			171	Jul 21	71	Sep 30, 1982
10 PERCENT EXCEEDS	2,830		2,270		2,040	
50 PERCENT EXCEEDS	308		399		309	
90 PERCENT EXCEEDS	201		200		174	

\* Regulated period only.  
e Estimated



## 03598250 NORTH FORK CREEK NEAR POPLINS CROSSROADS, TN

LOCATION.--Lat 35°35'06", long 86°35'45", Bedford County, Hydrologic Unit 06040002, on left bank 25 ft downstream from State Highway 270 bridge, 1.2 mi downstream from Weakly Creek, 0.8 mi northwest of Poplins Crossroads, and at mile 3.4.

DRAINAGE AREA.--71.9 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1994 to April 1995, October 1998 to current year.

GAGE.--Data logger. Elevation of gage is 662 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov 5	1815	1,750	9.33	May 6	1645	*5,570	*14.07
Nov 11	0230	1,590	9.02	May 7	2215	4,190	12.61
Dec 11	0045	2,460	10.52	Jun 19	1800	1,510	8.85
Dec 24	0830	2,010	9.81				

Minimum discharge, 0.24 ft<sup>3</sup>/s, Sept. 19, 20, 21.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	69	17	68	84	e95	e36	15	7.2	279	8.0	2.6
2	10	54	15	69	67	e79	e34	24	6.0	136	5.7	1.7
3	7.4	48	14	81	57	e75	e32	26	6.7	69	4.2	1.6
4	7.8	77	237	67	405	e70	30	18	6.8	43	3.5	5.4
5	24	824	789	57	167	e65	317	114	5.1	37	3.1	6.6
6	25	608	229	49	137	e60	152	3,530	4.0	29	2.8	3.8
7	78	193	134	43	267	e55	654	2,960	70	168	2.8	2.4
8	90	124	98	41	144	e50	237	2,750	55	70	2.4	1.8
9	51	92	76	38	110	e48	168	735	27	37	2.6	1.4
10	38	192	988	33	114	e46	138	155	18	56	1.8	1.0
11	101	933	1,380	28	e90	e43	126	352	29	99	1.5	0.78
12	87	214	301	25	e85	e39	82	161	56	40	3.9	0.68
13	65	125	731	24	e80	e35	63	98	28	27	4.9	0.61
14	46	91	497	23	e800	e33	51	75	18	22	4.2	0.60
15	36	385	215	21	e2,500	e30	43	62	55	16	4.5	0.51
16	35	583	150	20	e800	e29	37	50	78	12	3.0	0.40
17	29	203	114	20	e400	e28	36	48	75	10	2.2	0.34
18	21	126	90	17	e225	e32	33	74	47	7.9	1.8	0.29
19	16	99	114	16	e190	e110	28	56	522	6.5	1.5	0.28
20	13	80	313	17	e300	e75	24	45	285	5.1	1.3	0.27
21	12	67	131	36	e200	e60	38	56	94	4.2	1.3	0.30
22	10	54	95	49	e1,000	e45	33	59	60	4.8	1.7	252
23	8.3	45	74	32	e600	e39	24	45	42	5.7	1.5	133
24	7.0	39	1,290	24	e160	e36	21	34	29	4.1	1.3	46
25	5.9	34	337	23	e130	e34	23	28	21	2.8	1.4	27
26	5.6	30	179	23	e110	e35	44	27	16	2.2	1.3	18
27	5.4	28	127	21	e135	e50	29	21	17	1.8	3.0	17
28	8.5	25	99	20	e110	e39	23	16	14	2.0	60	29
29	147	22	79	159	---	e60	18	13	11	32	12	18
30	184	20	66	191	---	e45	15	11	157	17	6.3	13
31	97	---	58	111	---	e39	---	9.1	---	10	4.1	---
TOTAL	1,285.9	5,484	9,037	1,446	9,467	1,579	2,589	11,667.1	1,859.8	1,256.1	159.6	586.36
MEAN	41.5	183	292	46.6	338	50.9	86.3	376	62.0	40.5	5.15	19.5
MAX	184	933	1,380	191	2,500	110	654	3,530	522	279	60	252
MIN	5.4	20	14	16	57	28	15	9.1	4.0	1.8	1.3	0.27
CFSM	0.58	2.54	4.05	0.65	4.70	0.71	1.20	5.23	0.86	0.56	0.07	0.27
IN.	0.67	2.84	4.68	0.75	4.90	0.82	1.34	6.04	0.96	0.65	0.08	0.30

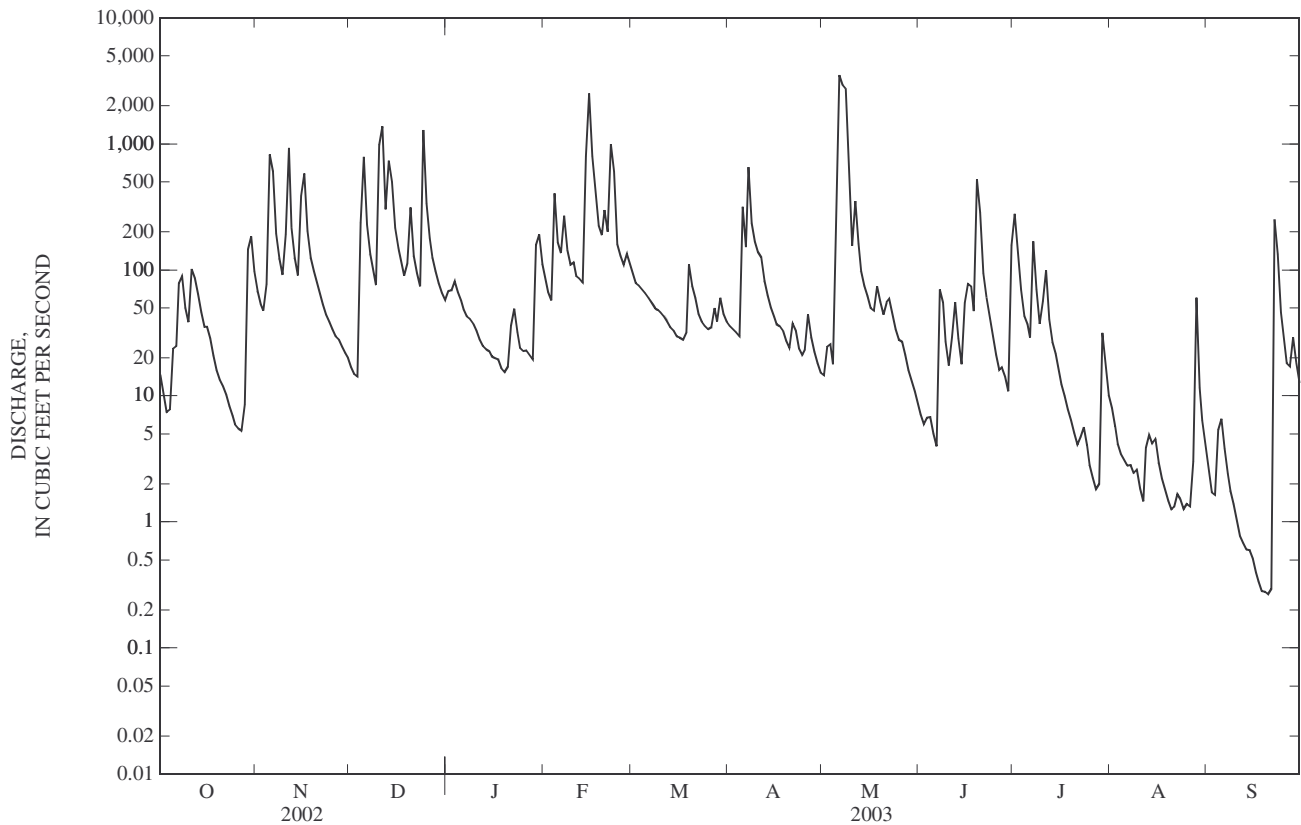
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	21.2	57.5	166	222	198	211	141	110	15.2	13.8	21.8	9.62
MAX	51.4	183	292	472	433	386	369	376	62.0	40.5	94.2	24.9
(WY)	(1995)	(2003)	(2003)	(1999)	(2001)	(2002)	(1994)	(2003)	(2003)	(2003)	(2001)	(1994)
MIN	0.002	0.50	25.6	38.3	65.6	50.9	29.7	3.89	2.30	0.61	0.016	0.000
(WY)	(2000)	(1999)	(2000)	(2000)	(2002)	(2003)	(1999)	(2001)	(2002)	(2000)	(1999)	(1999)

03598250 NORTH FORK CREEK NEAR POPLINS CROSSROADS, TN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	49,654.59		46,416.86		97.7	
ANNUAL MEAN	136		127		127	
HIGHEST ANNUAL MEAN					2003	
LOWEST ANNUAL MEAN					2000	
HIGHEST DAILY MEAN	4,340	Jan 24	3,530	May 6	4,700	Jan 23, 1999
LOWEST DAILY MEAN	0.00	Sep 9	0.27	Sep 20	0.00	Aug 4, 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 9	0.34	Sep 15	0.00	Aug 4, 1999
MAXIMUM PEAK FLOW			5,570	May 6	7,390	Jan 23, 1999
MAXIMUM PEAK STAGE			14.07	May 6	15.67	Jan 23, 1999
INSTANTANEOUS LOW FLOW			a0.24	Sep 19	b0.00	Aug 4, 1999
ANNUAL RUNOFF (CFSM)	1.89		1.77		1.36	
ANNUAL RUNOFF (INCHES)	25.69		24.02		18.47	
10 PERCENT EXCEEDS	232		232		174	
50 PERCENT EXCEEDS	27		38		16	
90 PERCENT EXCEEDS	0.15		2.8		0.07	

a Also occurred Sept. 20, 21.  
 b No flow many days most years.  
 c Estimated



## 03599100 BIG ROCK CREEK AT DOUBLE BRIDGES, TN

LOCATION.--Lat 35°31'52", long 86°46'07", Marshall County, Hydrologic Unit 06040002, on the upstream side of the bridge on Thompson Road, at mile 9.4.

DRAINAGE AREA.--48.7 mi<sup>2</sup>.

PERIOD OF RECORD.--May to September 2003. Partial record low flow site 1939, 1944, 1954-54, 1956-57.

GAGE.--Data logger with radar sensing device.

REMARKS.--Records good except for estimated daily discharges and flow above 1500 ft<sup>3</sup>/s, which are poor. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT PERIOD.--May to September 2003: Maximum discharge 11,600 ft<sup>3</sup>/s, May 6, gage height, 22.83 ft; minimum daily discharge, 4.0 ft<sup>3</sup>/s, September 19.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR MAY 2003 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e37	e38	89	21	10
2	---	---	---	---	---	---	---	e39	e35	65	17	8.6
3	---	---	---	---	---	---	---	e36	e31	39	15	11
4	---	---	---	---	---	---	---	e32	e27	29	13	29
5	---	---	---	---	---	---	---	e207	e23	24	27	16
6	---	---	---	---	---	---	---	4,280	20	58	e150	11
7	---	---	---	---	---	---	---	e2,810	424	59	e75	8.7
8	---	---	---	---	---	---	---	e1,230	92	35	e45	8.6
9	---	---	---	---	---	---	---	551	52	26	27	8.6
10	---	---	---	---	---	---	---	308	211	42	20	7.7
11	---	---	---	---	---	---	---	e414	181	48	16	7.2
12	---	---	---	---	---	---	---	e258	86	28	15	6.8
13	---	---	---	---	---	---	---	e178	53	266	19	5.6
14	---	---	---	---	---	---	---	e134	39	74	15	5.5
15	---	---	---	---	---	---	---	e111	79	48	12	6.3
16	---	---	---	---	---	---	---	e98	232	33	11	6.8
17	---	---	---	---	---	---	---	e95	188	29	8.5	6.7
18	---	---	---	---	---	---	---	e131	96	24	7.5	4.4
19	---	---	---	---	---	---	---	e109	67	21	9.3	e4.0
20	---	---	---	---	---	---	---	e88	58	18	8.8	e4.5
21	---	---	---	---	---	---	---	e116	44	18	8.1	e5.4
22	---	---	---	---	---	---	---	e120	34	23	8.0	510
23	---	---	---	---	---	---	---	e104	29	26	10	157
24	---	---	---	---	---	---	---	e85	26	19	10	54
25	---	---	---	---	---	---	---	e74	23	16	8.5	32
26	---	---	---	---	---	---	---	e68	21	13	8.6	23
27	---	---	---	---	---	---	---	e57	25	12	9.0	26
28	---	---	---	---	---	---	---	e49	22	11	16	25
29	---	---	---	---	---	---	---	e46	19	97	10	18
30	---	---	---	---	---	---	---	e42	50	34	9.3	15
31	---	---	---	---	---	---	---	e39	---	24	16	---
MEAN	---	---	---	---	---	---	---	385	77.5	43.5	20.8	34.7
MAX	---	---	---	---	---	---	---	4,280	424	266	150	510
MIN	---	---	---	---	---	---	---	32	19	11	7.5	4.0

e Estimated

03599240 DUCK RIVER ABOVE MILLTOWN, TN

LOCATION.--Lat 35°34'35", long 86°46'44", Marshall County, Hydrologic Unit 06040002, on right upstream side of bridge on Hwy 272 at mile 180.3.

DRAINAGE AREA.--916 mi<sup>2</sup>.

PERIOD OF RECORD.--June to September 2003.

GAGE.--Data collection platform with radar sensing device.

REMARKS.--Records good except for estimated discharges, which are fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREME FOR CURRENT PERIOD.--June to September 2003: Maximum discharge, 4,300 ft<sup>3</sup>/s, July 8; gage height, 15.50 ft, minimum daily discharge 171 ft<sup>3</sup>/s, Sept. 20.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR JUNE 2003 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	e318	2,660	479	220
2	---	---	---	---	---	---	---	---	e300	2,500	279	211
3	---	---	---	---	---	---	---	---	e275	1,440	228	216
4	---	---	---	---	---	---	---	---	e260	819	217	468
5	---	---	---	---	---	---	---	---	e340	589	324	673
6	---	---	---	---	---	---	---	---	e410	476	562	418
7	---	---	---	---	---	---	---	---	e1,900	864	788	275
8	---	---	---	---	---	---	---	---	e1,400	1,160	374	219
9	---	---	---	---	---	---	---	---	e900	638	276	201
10	---	---	---	---	---	---	---	---	e650	471	227	205
11	---	---	---	---	---	---	---	---	e770	1,010	205	199
12	---	---	---	---	---	---	---	---	e990	836	207	181
13	---	---	---	---	---	---	---	---	e880	748	220	174
14	---	---	---	---	---	---	---	---	e770	579	220	187
15	---	---	---	---	---	---	---	---	e690	430	220	194
16	---	---	---	---	---	---	---	---	e1,300	333	221	198
17	---	---	---	---	---	---	---	---	e1,000	300	202	188
18	---	---	---	---	---	---	---	---	e920	275	207	182
19	---	---	---	---	---	---	---	---	862	235	212	174
20	---	---	---	---	---	---	---	---	1,240	217	256	171
21	---	---	---	---	---	---	---	---	e800	215	225	174
22	---	---	---	---	---	---	---	---	e530	224	204	1,460
23	---	---	---	---	---	---	---	---	e400	475	215	2,350
24	---	---	---	---	---	---	---	---	297	462	284	1,000
25	---	---	---	---	---	---	---	---	260	501	245	576
26	---	---	---	---	---	---	---	---	236	468	203	415
27	---	---	---	---	---	---	---	---	276	370	207	353
28	---	---	---	---	---	---	---	---	653	204	293	352
29	---	---	---	---	---	---	---	---	427	315	277	354
30	---	---	---	---	---	---	---	---	330	509	234	303
31	---	---	---	---	---	---	---	---	---	546	219	---
TOTAL	---	---	---	---	---	---	---	---	20,384	20,869	8,530	12,291
MEAN	---	---	---	---	---	---	---	---	679	673	275	410
MAX	---	---	---	---	---	---	---	---	1,900	2,660	788	2,350
MIN	---	---	---	---	---	---	---	---	236	204	202	171

e Estimated



## 03599408 DUCK RIVER AT CARPENTERS BRIDGE NEAR POTTSVILLE, TN

LOCATION.--Lat 35°37'04", long 86°51'58", Maury County, Hydrologic Unit 06020004, on downstream side of Carpenders Bridge, and at mi 164.6.

DRAINAGE AREA.--1060 mi<sup>2</sup>.

PERIOD OF RECORD.--May to September 2003.

GAGE.--Data collection platform, with radar-stage sensing device. Datum of gage is 581.63 ft above NGVD of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--May to September 2003: Maximum discharge during period, 14,500 ft<sup>3</sup>/s, Sept. 22; maximum gage height, 18.86 ft, Sept. 22; minimum daily discharge, 157 ft<sup>3</sup>/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR MAY 2003 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e427	430	2,240	594	178
2	---	---	---	---	---	---	---	e490	392	2,850	408	168
3	---	---	---	---	---	---	---	e573	368	1,900	269	171
4	---	---	---	---	---	---	---	e498	588	1,090	247	248
5	---	---	---	---	---	---	---	e1,360	697	776	394	803
6	---	---	---	---	---	---	---	e13,600	657	610	448	499
7	---	---	---	---	---	---	---	e25,200	2,250	664	997	327
8	---	---	---	---	---	---	---	e34,200	1,650	e1,250	545	230
9	---	---	---	---	---	---	---	e33,600	1,060	e790	349	193
10	---	---	---	---	---	---	---	e30,600	e815	602	270	188
11	---	---	---	---	---	---	---	e20,100	e1,020	953	230	186
12	---	---	---	---	---	---	---	e7,720	1,450	1,100	210	173
13	---	---	---	---	---	---	---	e3,730	1,500	945	212	157
14	---	---	---	---	---	---	---	2,780	1,160	923	223	169
15	---	---	---	---	---	---	---	2,310	1,060	593	217	173
16	---	---	---	---	---	---	---	2,000	1,120	445	223	181
17	---	---	---	---	---	---	---	2,140	1,340	369	207	e180
18	---	---	---	---	---	---	---	2,480	1,280	345	181	e175
19	---	---	---	---	---	---	---	2,220	1,030	295	177	e170
20	---	---	---	---	---	---	---	e2,150	1,680	255	225	e171
21	---	---	---	---	---	---	---	e2,020	907	e240	203	e174
22	---	---	---	---	---	---	---	2,070	662	e225	178	8,040
23	---	---	---	---	---	---	---	1,880	e510	356	169	3,900
24	---	---	---	---	---	---	---	1,730	415	614	208	1,750
25	---	---	---	---	---	---	---	2,020	354	544	227	990
26	---	---	---	---	---	---	---	1,520	324	545	176	689
27	---	---	---	---	---	---	---	1,160	311	490	163	530
28	---	---	---	---	---	---	---	1,030	678	279	195	487
29	---	---	---	---	---	---	---	844	581	286	256	449
30	---	---	---	---	---	---	---	549	412	512	202	410
31	---	---	---	---	---	---	---	461	---	658	179	---
TOTAL	---	---	---	---	---	---	---	203,462	26,701	23,744	8,782	22,159
MEAN	---	---	---	---	---	---	---	6,563	890	766	283	739
MAX	---	---	---	---	---	---	---	34,200	2,250	2,850	997	8,040
MIN	---	---	---	---	---	---	---	427	311	225	163	157
(†)	---	---	---	---	---	---	---	3,000	-400	100	-1,600	-300
MEAN(‡)	---	---	---	---	---	---	---	6,660	877	769	232	729
CFSM(†)	---	---	---	---	---	---	---	656	0.86	0.76	0.23	0.72
IN.(‡)	---	---	---	---	---	---	---	756	0.96	0.87	0.26	0.80

(†) Change in contents, in cfs-days in Normandy Lake.

(‡) Adjusted for change in content.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

e Estimated

03599450 FOUNTAIN CREEK NEAR FOUNTAIN HEIGHTS, TN

LOCATION.--Lat 35°31'05", long 86°56'31", Maury County, Hydrologic Unit 06040002, on downstream side of second pier from left abutment of Edmondson Bridge, 2.3 mi southeast of Fountain Heights, 3.1 mi southeast of Glendale, and 3.5 mi northeast of Culleoka.

DRAINAGE AREA.--74.0 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1966 to September 1967. May to September 2003.

GAGE.--Data logger. Datum of gage is 600 ft (from topographic map).

REMARKS.--Records good except for estimated daily discharges, which are fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREME FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft<sup>3</sup>/s, May 13, 1967, maximum gage height, 24.54 ft, from rating curve extended above 4,450 ft<sup>3</sup>/s, on basis of contracted-opening determination of peak flow; minimum discharge, 2.4 ft<sup>3</sup>/s, July 28, 29, 1966, minimum gage height, 0.95 ft, July 28, 29, 1966.

EXTREME FOR CURRENT PERIOD.--May to September 2003: Maximum discharge (recorded), 5,930 ft<sup>3</sup>/s, maximum gage height, 15.42 ft. Maximum discharge (observed), 9,710 ft<sup>3</sup>/s, maximum gage height, (observed) 18.50 ft; minimum discharge, 6.7 ft<sup>3</sup>/s, Sept. 19-21, minimum gage height, 1.29 ft, Sept. 19-21.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR MAY 2003 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e48	51	45	21	7.9
2	---	---	---	---	---	---	---	e46	49	41	18	48
3	---	---	---	---	---	---	---	e42	50	34	16	45
4	---	---	---	---	---	---	---	e36	46	e30	16	e80
5	---	---	---	---	---	---	---	e310	42	e26	22	e49
6	---	---	---	---	---	---	---	e6,100	43	e25	169	e31
7	---	---	---	---	---	---	---	e4,200	137	e69	83	e21
8	---	---	---	---	---	---	---	e1,350	66	e42	40	e16
9	---	---	---	---	---	---	---	e610	52	e28	28	e14
10	---	---	---	---	---	---	---	460	53	e64	22	e13
11	---	---	---	---	---	---	---	446	55	e99	19	e12
12	---	---	---	---	---	---	---	276	49	e58	18	e10
13	---	---	---	---	---	---	---	211	43	e46	21	e9.5
14	---	---	---	---	---	---	---	177	38	e42	21	e9.1
15	---	---	---	---	---	---	---	145	313	e37	17	e9.0
16	---	---	---	---	---	---	---	122	270	e32	15	8.9
17	---	---	---	---	---	---	---	319	180	e30	14	8.0
18	---	---	---	---	---	---	---	248	144	e28	13	7.8
19	---	---	---	---	---	---	---	195	179	e26	13	7.3
20	---	---	---	---	---	---	---	171	125	e22	12	6.9
21	---	---	---	---	---	---	---	190	90	e23	10	8.6
22	---	---	---	---	---	---	---	162	71	e30	12	2,630
23	---	---	---	---	---	---	---	137	60	e38	17	314
24	---	---	---	---	---	---	---	115	53	e31	11	162
25	---	---	---	---	---	---	---	107	47	e25	10	105
26	---	---	---	---	---	---	---	91	42	e21	9.2	75
27	---	---	---	---	---	---	---	79	44	e19	8.5	58
28	---	---	---	---	---	---	---	70	39	e30	8.5	46
29	---	---	---	---	---	---	---	64	35	e78	8.7	38
30	---	---	---	---	---	---	---	58	35	e51	8.3	33
31	---	---	---	---	---	---	---	54	---	e29	7.9	---
TOTAL	---	---	---	---	---	---	---	16,639	2,501	1,199	709.1	3,883.0
MEAN	---	---	---	---	---	---	---	537	83.4	38.7	22.9	129
MAX	---	---	---	---	---	---	---	6,100	313	99	169	2,630
MIN	---	---	---	---	---	---	---	36	35	19	7.9	6.9
CFSM	---	---	---	---	---	---	---	7.25	1.13	0.52	0.31	1.75
IN.	---	---	---	---	---	---	---	8.36	1.26	0.60	0.36	1.95

e Estimated

03599500 DUCK RIVER AT COLUMBIA, TN

LOCATION.--Lat 35°37'05", long 87°01'56", Maury County, Hydrologic Unit 06040003, on right bank 4 ft downstream from bridge on former U.S. Highway 31, 2 blocks north of public square in Columbia, 2.4 mi upstream from Rutherford Creek, and at mile 132.8.

DRAINAGE AREA.--1,208 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1904 to December 1908, April 1920 to current year. Monthly discharge only for some periods, published in WSP 1305. Gage-height records collected at same site, 1887-95, 1911 (fragmentary), 1947-71, published in reports of U.S. Weather Bureau. Discharge records furnished by Tennessee Valley Authority, 1983-1991.

REVISED RECORD.--WSP 783: 1929(M). WSP 853: Drainage area. WSP 1306: 1905-9, 1920-22, 1923(M).

GAGE.--Data collection platform. Datum of gage is 535.33 ft above NGVD of 1929, supplementary adjustment of 1955. Prior to Jan. 9, 1925, nonrecording gages near this site; all gages at datum 2.37 ft higher prior to Oct. 1, 1933.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water quality data. Maximum discharge prior to regulation, 61,500 ft<sup>3</sup>/s, Mar. 17, 1973; maximum gage height, 51.75 ft Feb. 14, 1948; no flow Oct. 22, 1922, caused by regulation by power plant .75 mi upstream. Flow regulated by Normandy Lake (station 03596460) since January 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 30, 1902, reached a stage of 48.0 ft, present datum, discharge, 50,700 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48,900 ft<sup>3</sup>/s, May 8, gage height, 44.87 ft; minimum discharge, 194 ft<sup>3</sup>/s, Sept. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	946	1,480	647	2,020	2,480	8,270	893	532	545	852	641	231
2	802	1,160	524	1,920	2,120	6,200	770	597	506	2,880	630	253
3	682	964	492	1,580	1,960	5,110	694	726	487	2,360	449	424
4	514	936	712	1,550	4,230	4,210	636	623	473	1,330	338	318
5	591	2,650	4,470	1,540	5,710	2,580	1,130	1,700	685	891	878	469
6	666	9,620	7,480	1,400	3,490	2,030	1,890	17,500	746	735	1,110	683
7	2,810	8,610	4,490	1,190	3,540	1,820	4,570	36,000	3,590	664	1,370	466
8	3,240	4,760	3,100	1,120	4,310	1,510	5,770	48,500	2,530	1,110	991	342
9	2,440	2,850	2,510	1,050	3,320	1,250	5,210	48,100	1,460	1,080	589	274
10	1,730	2,030	3,060	1,000	2,810	1,100	4,250	43,700	1,130	731	434	244
11	3,310	8,020	11,500	940	2,650	990	3,120	26,200	1,230	625	358	239
12	2,450	12,000	13,500	790	2,520	909	2,700	10,300	1,810	1,120	317	232
13	1,710	6,670	7,660	673	1,960	844	2,050	5,320	1,590	2,520	304	215
14	1,270	3,620	9,650	626	5,820	791	1,710	3,490	1,340	1,350	305	223
15	992	2,870	8,260	591	23,800	745	1,490	2,750	1,220	865	300	226
16	840	6,150	5,430	589	36,400	708	1,320	2,300	2,320	648	289	219
17	713	5,810	3,940	567	35,000	672	1,110	2,410	1,770	620	283	221
18	649	3,620	3,200	544	22,700	662	941	3,520	1,650	466	264	212
19	579	2,670	2,500	528	9,530	1,500	839	2,920	1,490	419	245	201
20	511	2,150	4,170	499	6,960	5,350	716	2,500	1,680	368	247	199
21	453	1,850	4,660	515	6,540	3,850	722	2,200	1,370	340	273	210
22	413	1,630	3,310	566	13,800	2,310	704	2,300	905	340	252	13,600
23	378	1,390	2,620	591	19,500	1,790	603	2,270	712	339	247	9,360
24	351	1,280	6,780	552	15,500	1,520	529	1,900	578	520	231	3,170
25	331	1,180	14,300	526	8,790	1,330	539	2,050	486	552	261	1,570
26	318	1,100	9,240	487	6,830	1,210	569	1,920	429	560	262	1,060
27	307	1,050	5,020	478	8,760	1,110	633	1,360	407	534	235	812
28	302	882	3,680	470	11,100	964	684	1,160	431	473	223	662
29	548	669	2,970	578	---	928	557	1,030	725	455	251	590
30	1,670	735	2,500	2,610	---	1,080	618	793	566	421	287	539
31	1,880	---	2,180	3,570	---	1,070	---	614	---	598	252	---
TOTAL	34,396	100,406	154,555	31,660	272,130	64,413	47,967	277,285	34,861	26,766	13,116	37,464
MEAN	1,110	3,347	4,986	1,021	9,719	2,078	1,599	8,945	1,162	863	423	1,249
MAX	3,310	12,000	14,300	3,570	36,400	8,270	5,770	48,500	3,590	2,880	1,370	13,600
MIN	302	669	492	470	1,960	662	529	532	407	339	223	199
(†)	-600	-4,800	-1,900	2,100	2,200	3,000	5,700	3,000	-400	100	-1,600	-300
MEAN(‡)	1,090	3,187	4,924	1,089	9,798	2,175	1,789	9,041	1,149	866.6	371.5	1,239
CFSM(†)	0.90	264	408	0.90	811	1.80	1.48	748	0.95	0.72	0.31	1.03
IN. (‡)	1.04	294	4.70	1.04	845	2.08	1.65	863	1.06	0.83	0.35	1.14
CAL YR 2002	MEAN(‡) 2,767	CFSM(‡) 2.29	IN.(‡) 31.09									
WTR YR 2003	MEAN(‡) 3,018	CFSM(‡) 2.50	IN.(‡) 33.91									

(†) Change in contents, in cfs-days in Normandy Lake.

(‡) Adjusted for change in content.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	728	2,063	3,541	3,715	3,805	4,174	2,613	2,220	1,037	661	466	635
MAX	3,642	5,925	10,360	8,513	9,901	10,090	7,464	9,106	5,081	4,740	1,365	3,832
(WY)	(1990)	(1987)	(1991)	(1979)	(1991)	(1980)	(1994)	(1983)	(1997)	(1989)	(1998)	(1979)
MIN	160	236	418	273	953	1,104	325	244	167	220	172	150
(WY)	(2000)	(1981)	(1981)	(1986)	(1978)	(1985)	(1986)	(1988)	(1988)	(1988)	(1999)	(1999)

03599500 DUCK RIVER AT COLUMBIA, TN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		*WATER YEARS 1977 - 2003	
ANNUAL TOTAL	1,009,776		1,095,019			
ANNUAL MEAN	2,767		3,000		2,136	
HIGHEST ANNUAL MEAN					3,282	1989
LOWEST ANNUAL MEAN					553	1981
HIGHEST DAILY MEAN	49,900	Jan 26	48,500	May 8	52,300	Feb 20, 1991
LOWEST DAILY MEAN	161	Sep 13	199	Sep 20	86	Oct 4, 1982
ANNUAL SEVEN-DAY MINIMUM	168	Sep 9	213	Sep 15	100	Sep 28, 1982
MAXIMUM PEAK FLOW			48,900	May 8	52,300	Feb 20, 1991
MAXIMUM PEAK STAGE			44.87	May 8	45.82	Feb 20, 1991
INSTANTANEOUS LOW FLOW			a194	Sep 20		
10 PERCENT EXCEEDS	6,360		6,710		4,930	
50 PERCENT EXCEEDS	694		1,100		739	
90 PERCENT EXCEEDS	204		313		190	

\* Regulated period only.  
 a Also occurred Sept. 21.

