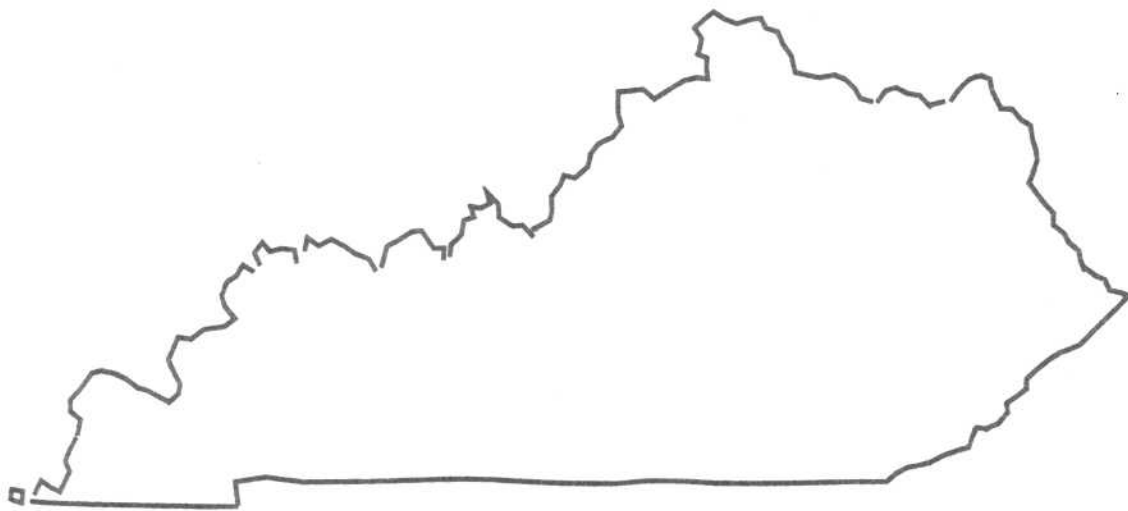


# Water Resources Data Kentucky Water Year 1998

Water-Data Report KY-98-1



U.S. Department of the Interior  
U.S. Geological Survey



Prepared in cooperation with the  
Commonwealth of Kentucky  
and with other agencies

## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

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### Book 1. Collection of Water Data by Direct Measurement

#### Section D. Water Quality

- 1-D1. *Water temperature—influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J.F. Ficke, and G. F. Smoot: USGS–TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI Book 1, Chapter D2. 1976. 24 pages.

### Book 2. Collection of Environmental Data

#### Section D. Surface Geophysical Methods

- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A. R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI Book 2, Chapter D2. 1988. 86 pages.

#### Section E. Subsurface Geophysical Methods

- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS–TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS–TWRI Book 2, Chapter E2. 1990. 150 pages.

#### Section F. Drilling and Sampling Methods

- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS–TWRI Book 2, Chapter F1. 1989. 97 pages.

### Book 3. Applications of Hydraulics

#### Section A. Surface-Water Techniques

- 3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS–TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS–TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI Book 3, Chapter A6. 1968. 13 pages.

**PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS—Continued**

- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A12. 1986. 34 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A19. 1990. 31 pages.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A20. 1993. 38 pages.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI Book 3, Chapter A21. 1995. 56 pages.

**Section B. Ground-Water Techniques**

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS–TWRI Book 3, Chapter B4. 1990. 232 pages.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow --Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS–TWRI Book 3, Chapter B4. 1993. 8 pages.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI Book 3, Chapter B5. 1987. 15 pages.

**PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS—Continued**

- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS–TWRI Book 3, Chapter B7. 1992. 190 pages.

**Section C. Sedimentation and Erosion Techniques**

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H.P. Guy and V.W. Norman: USGS–TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI Book 3, Chapter C3. 1972. 66 pages.

**Book 4. Hydrologic Analysis and Interpretation**

**Section A. Statistical Analysis**

- 4-A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI Book 4, Chapter A2. 1968. 15 pages.

**Section B. Surface Water**

- 4-B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS–TWRI Book 4, Chapter B3. 1973. 15 pages.

**Section D. Interrelated Phases of the Hydrologic Cycle**

- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI Book 4, Chapter D1. 1970. 17 pages.

**Book 5. Laboratory Analysis**

**Section A. Water Analysis**

- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI Book 5, Chapter A1. 1989. 545 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI Book 5, Chapter A3. 1987. 80 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greenson, editors: USGS–TWRI Book 5, Chapter A4. 1989. 363 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS–TWRI Book 5, Chapter A6. 1982. 181 pages.

**Section C. Sediment Analysis**

- 5-C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI Book 5, Chapter C1. 1969. 58 pages.

**PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS—Continued**

**Book 6. Modeling Techniques**

**Section A. Ground Water**

- 6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI Book 6, Chapter A1. 1988. 586 pages.
- 6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS–TWRI Book 6, Chapter A2. 1991. 68 pages.
- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS–TWRI Book 6, Chapter A3. 1993. 136 pages.
- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS–TWRI Book 6, Chapter A4. 1992. 108 pages.
- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak: USGS–TWRI Book 6, Chapter A5, 1993. 243 pages.
- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler. 1996. 125 pages.

**Book 7. Automated Data Processing and Computations**

**Section C. Computer Programs**

- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI Book 7, Chapter C3. 1981. 110 pages.

**Book 8. Instrumentation**

**Section A. Instruments for Measurement of Water Level**

- 8-A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS–TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI Book 8, Chapter A2. 1983. 57 pages.

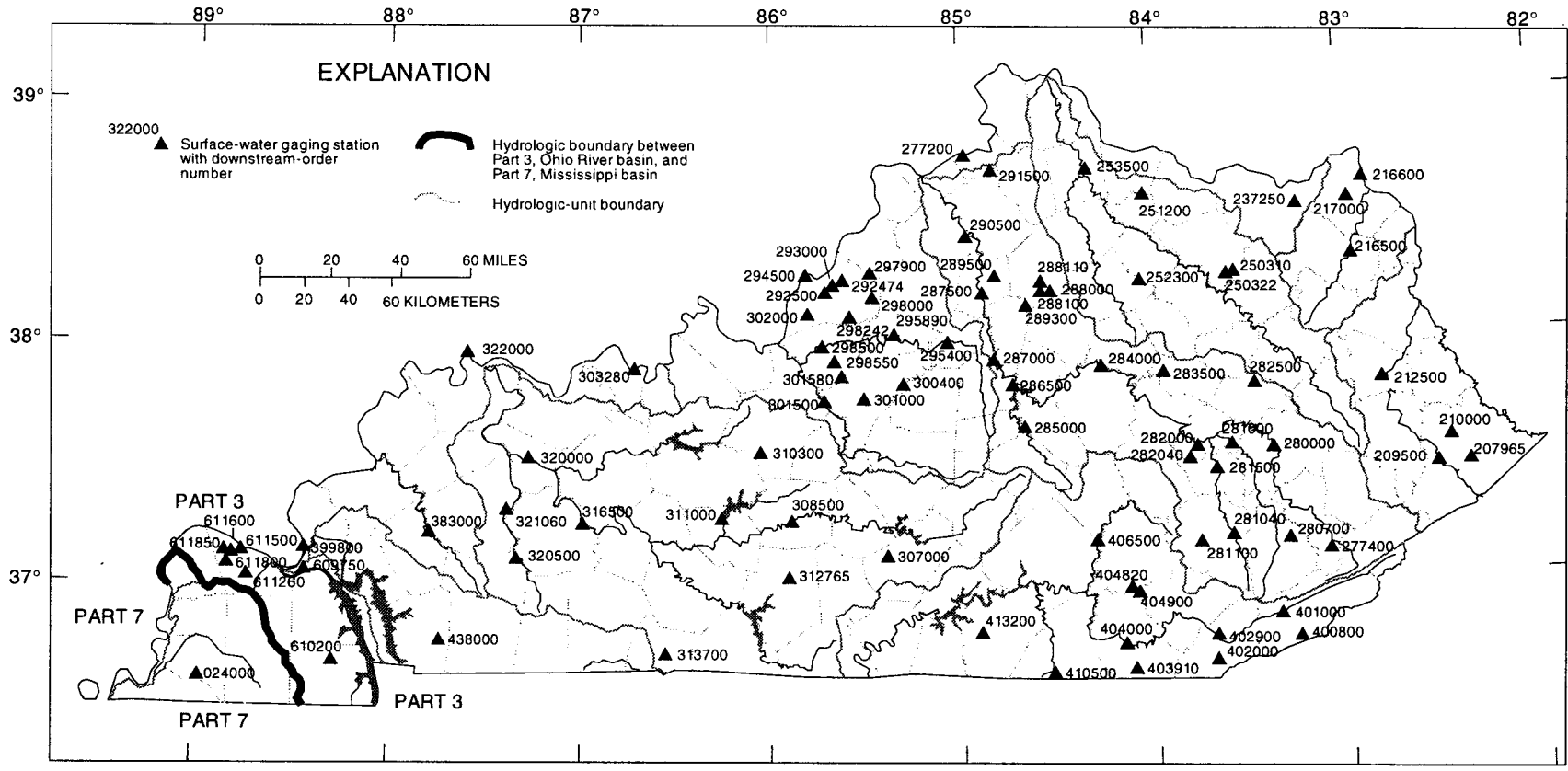
**Section B. Instruments for Measurement of Discharge**

- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS–TWRI Book 8, Chapter B2. 1968. 15 pages.

**Book 9. Handbooks for Water-Resources Investigations**

**Section A. National Field Manual for the Collection of Water-Quality Data**

- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI Book 9, Chapter A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D.N. Myers and F.D. Wilde: USGS–TWRI Book 9, Chapter A7. 1997. 49 pages.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI Book 9, Chapter A8. 1998. 48 pages.
- 9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS–TWRI Book 9, Chapter A9. 1998. 60 pages.



WATER RESOURCES DATA - KENTUCKY, 1998

Figure 3. Location of gaging stations in Kentucky.

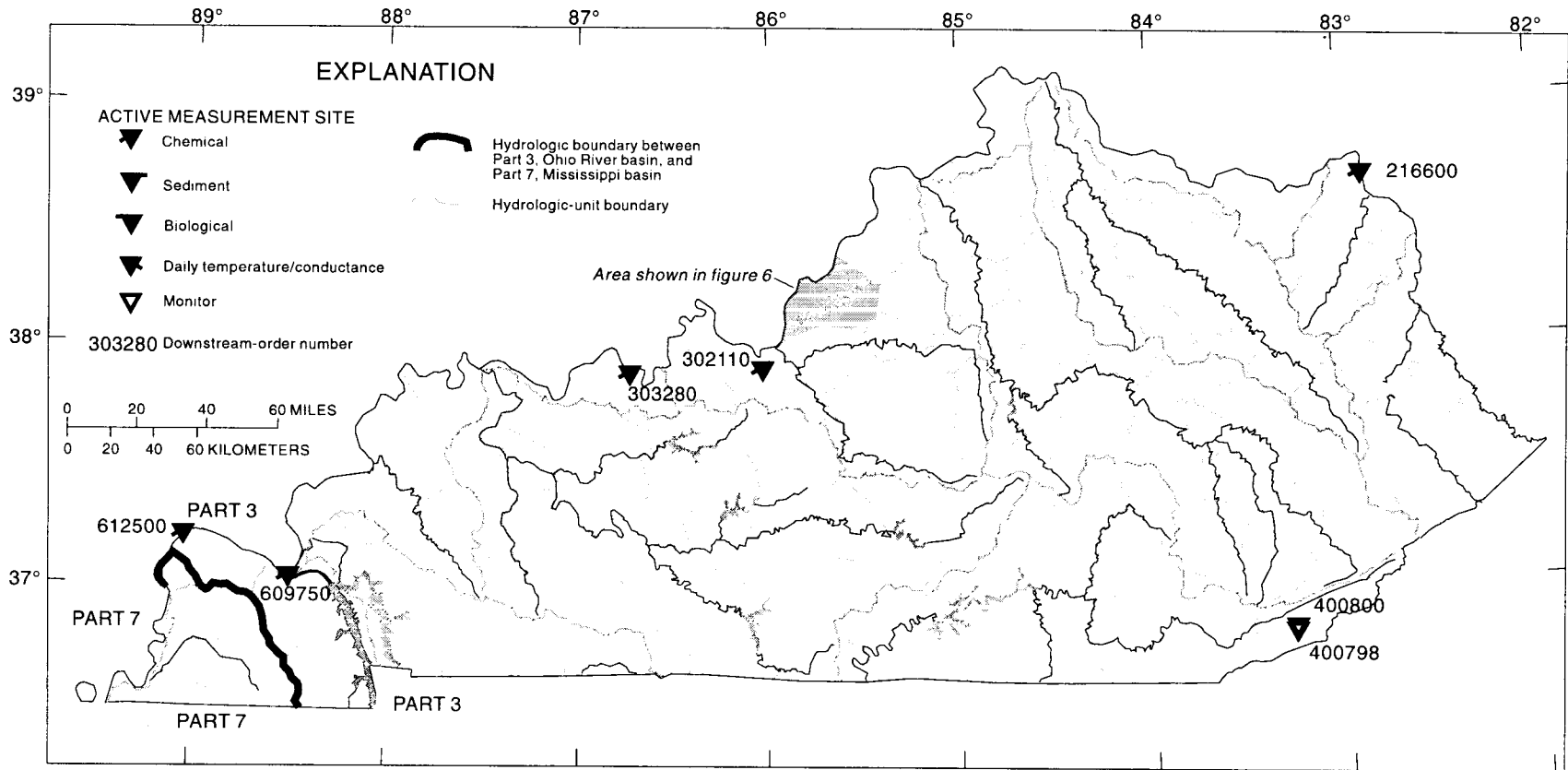
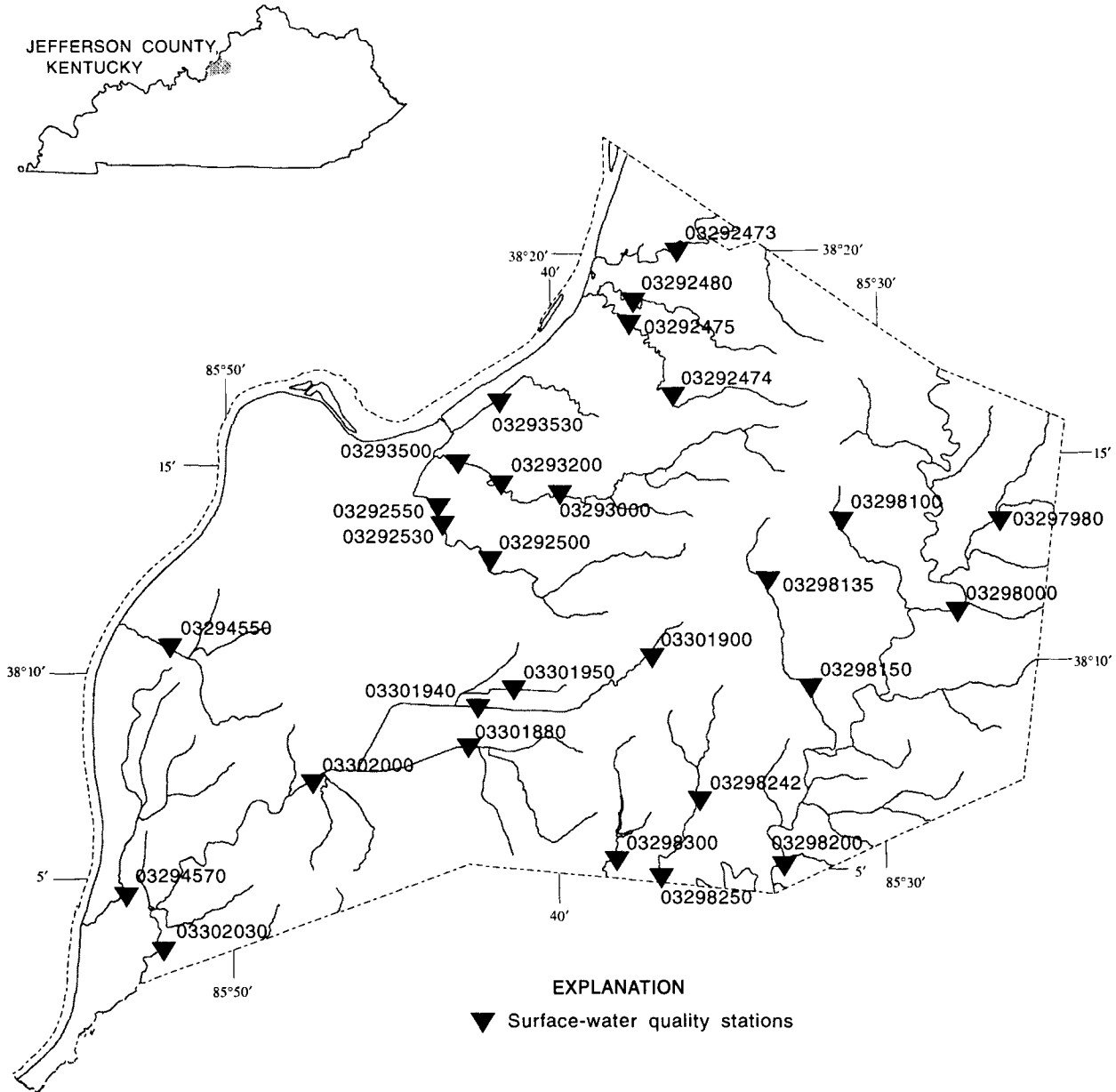
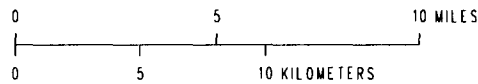


Figure 4. Location of surface-water quality stations in Kentucky.

WATER RESOURCES DATA - KENTUCKY, 1998



Base from U.S. Geological Survey digital data, 1:100,000, 1983  
 Universal Transverse Mercator projection, Zone 16



**Figure 5.** Location of surface-water quality stations in Jefferson County, for the MSD Sampling Network.



## BIG SANDY RIVER BASIN

03207965 GRAPEVINE CREEK NEAR PHYLLIS, KY

LOCATION.--Lat 37°25'57", long 82°21'14", Pike County, Hydrologic Unit 05070202, on right bank at the Grapevine Recreation area, 1.3 mi downstream from Dicks Fork, 1.3 mi southwest of Phyllis, and at mile 1.1.

DRAINAGE AREA.--6.20 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1973 to September 1982, April 1989 to September 1992, October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 780 ft above sea level from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Apr. 7, 1977 peak is due to backwater.

DISCHARGE, 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	1.3	1.4	11	.79	8.9	7.5	9.4	8.7	7.5	6.8	2.2	1.3
2	1.4	2.9	2.1	.84	6.8	7.3	7.5	9.6	6.2	5.3	2.0	1.3
3	1.4	2.0	1.4	1.8	11	7.3	7.6	8.9	6.1	4.8	1.9	1.2
4	1.4	2.3	1.5	2.5	27	7.2	13	9.8	8.0	4.0	1.9	1.2
5	1.4	2.1	1.6	2.9	25	10	13	13	8.3	4.1	2.0	1.2
6	1.4	2.0	1.2	2.6	21	11	13	12	5.9	3.7	1.8	1.2
7	1.4	2.0	.94	4.6	20	10	11	14	4.9	2.8	1.7	1.2
8	1.3	2.5	1.1	8.8	22	9.6	11	24	4.5	11	1.7	3.9
9	1.3	2.7	3.6	6.7	24	30	11	19	6.9	6.0	3.1	1.3
10	1.5	2.4	8.8	3.9	26	29	18	17	273	4.2	4.1	1.2
11	1.7	2.3	3.6	3.2	24	16	22	14	73	3.5	2.9	1.2
12	1.7	2.2	2.1	3.6	20	15	19	12	38	3.3	2.1	1.2
13	1.6	1.8	1.4	3.3	15	12	16	9.6	80	3.0	2.1	1.1
14	1.8	3.1	1.2	3.3	12	11	15	7.7	33	3.2	2.4	1.1
15	1.6	2.5	1.3	4.9	9.1	7.4	13	6.2	29	3.1	19	1.1
16	1.5	2.4	1.2	5.6	8.0	6.2	22	5.1	19	3.0	5.9	1.0
17	1.6	2.1	.82	5.3	9.7	6.4	243	4.8	13	2.8	9.8	1.0
18	1.6	1.7	.87	4.5	10	18	35	4.1	10	2.8	4.0	1.1
19	1.5	1.3	.72	4.7	7.7	34	221	3.7	7.9	2.8	2.7	3.3
20	1.4	1.6	.65	4.1	7.8	69	79	5.4	6.3	2.5	2.2	1.6
21	1.2	2.5	.64	3.9	7.8	56	30	25	5.9	2.5	2.0	1.9
22	1.2	2.4	.87	5.2	7.6	27	20	11	7.2	3.3	1.6	1.9
23	1.2	1.8	.66	8.9	13	20	16	117	10	4.4	1.6	1.8
24	1.4	1.5	.99	10	17	14	12	223	8.8	3.8	1.5	1.7
25	1.5	1.3	.89	8.5	15	12	9.8	44	7.9	2.6	1.5	1.8
26	2.2	1.3	.78	6.2	12	10	8.2	26	6.0	2.5	1.5	1.8
27	1.7	1.2	1.2	11	9.6	8.8	6.7	22	5.3	2.2	1.5	1.8
28	1.3	1.2	1.4	43	7.7	7.6	5.5	21	4.7	2.2	1.3	1.3
29	1.3	1.3	1.3	25	---	6.6	6.1	16	5.4	2.1	1.3	1.6
30	1.0	2.7	1.5	17	---	5.9	6.3	12	8.2	2.0	1.4	1.7
31	.82	---	1.7	12	---	5.6	---	9.0	---	4.3	1.3	---
TOTAL	44.62	60.5	59.03	228.63	404.7	497.4	920.1	734.6	709.9	114.6	92.0	46.0
MEAN	1.44	2.02	1.90	7.38	14.5	16.0	30.7	23.7	23.7	3.70	2.97	1.53
MAX	2.2	3.1	11	43	27	69	243	223	273	11	19	3.9
MIN	.82	1.2	.64	.79	6.8	5.6	5.5	3.7	4.5	2.0	1.3	1.0
CFSM	.23	.33	.31	1.19	2.33	2.59	4.95	3.82	3.82	.60	.48	.25
IN.	.27	.36	.35	1.37	2.43	2.98	5.52	4.41	4.26	.69	.55	.28

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1998, BY WATER YEAR (WY)

MEAN	4.13	6.90	8.43	14.8	13.6	18.6	13.3	11.7	8.27	2.71	2.62	2.05
MAX	28.0	31.0	18.8	42.6	34.0	53.6	30.7	47.7	23.7	10.4	10.6	5.75
(WY)	1990	1974	1979	1974	1990	1975	1998	1989	1998	1979	1989	1989
MIN	.32	.27	.98	1.44	4.08	7.12	4.62	.71	.64	.32	.31	.38
(WY)	1992	1982	1982	1981	1992	1977	1982	1976	1980	1991	1981	1981

## SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1974 - 1998

ANNUAL TOTAL	2270.09	3912.08		
ANNUAL MEAN	6.22	10.7	8.63	
HIGHEST ANNUAL MEAN			17.2	1974
LOWEST ANNUAL MEAN			5.30	1992
HIGHEST DAILY MEAN	256	Mar 3	832	Oct 1 1982
LOWEST DAILY MEAN	.64	Dec 21	.01	Aug 19 1982
ANNUAL SEVEN-DAY MINIMUM	.75	Dec 17	.04	Sep 22 1981
INSTANTANEOUS PEAK FLOW			878	Jun 10 1974
INSTANTANEOUS PEAK STAGE			2.60	Jun 10 1977
INSTANTANEOUS LOW FLOW				.01 Aug 19 1982
ANNUAL RUNOFF (CFSM)	1.00	1.73	1.39	
ANNUAL RUNOFF (INCHES)	13.62	23.47	18.91	
10 PERCENT EXCEEDS	13	20	18	
50 PERCENT EXCEEDS	3.2	4.1	3.2	
90 PERCENT EXCEEDS	1.2	1.2	.40	

BIG SANDY RIVER BASIN

03209500 LEVISA FORK AT PIKEVILLE, KY

LOCATION.--Lat 37°27'51", long 82°31'35", Pike County, Hydrologic Unit 05070203, on right bank 20 ft downstream from bridge on State Highway 1426, 0.75 mi downstream from Lanks Branch, 1.0 mi south of Pikeville, 1.5 mi upstream from Harolds Branch, and at mile 117.3.

DRAINAGE AREA.--1,232 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1937 to current year. Gage-height records collected in this vicinity since 1907 are contained in reports of National Weather Service.

REVISED RECORDS.--WRD KY 78-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 631.98 ft above sea level. Prior to Sept. 23, 1944, nonrecording gage at site 2.3 mi downstream at datum 2.65 ft higher. Sept. 23, 1944 to Sept. 30, 1952, water-stage recorder 2.3 mi downstream at datum 1.65 ft higher. Oct. 1, 1952 to Sept. 30, 1979, at site 2.1 mi downstream at same datum.

REMARKS.--Estimated daily discharges: Aug. 9. Records good . Flow regulated since October 1968 by Fishtrap Lake (station 03207995), since August 1966 by North Fork Pound River Lake (station 03208680) and since March 1965 by John W. Flannagan Lake (station 03208990).

DISCHARGE, 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	308	224	1080	292	2990	1900	1290	2010	1410	1500	1300	225
2	280	265	990	275	2820	1960	1150	1940	1270	1330	721	213
3	258	311	603	288	2490	1630	1120	2010	1150	1010	532	204
4	261	468	423	373	10100	1370	2280	2310	2150	767	461	194
5	488	790	398	507	9220	1380	3890	2720	2990	665	428	199
6	512	687	391	737	6030	1460	2430	2650	3310	612	397	211
7	407	353	356	836	4320	1450	1790	2390	2330	600	292	214
8	467	298	332	2520	3780	1460	1490	4140	1590	770	269	225
9	304	337	308	3570	4540	1730	1520	5190	1370	1330	340	218
10	248	359	328	2070	5370	2400	2110	5070	11000	1270	444	205
11	301	502	429	1380	5500	2460	2320	5560	10600	1020	563	202
12	518	529	524	1280	7160	1960	2050	4720	10600	678	635	200
13	514	525	458	874	5640	1680	2310	3370	8670	437	614	198
14	290	515	389	692	3460	1570	2220	2420	7420	429	435	193
15	327	476	442	704	2590	1490	1760	1840	5510	502	357	192
16	393	477	304	719	2220	1400	2820	1600	3350	485	609	192
17	374	481	286	720	2440	1310	19800	1360	2340	593	1540	195
18	321	543	278	742	3670	1550	9990	1120	1820	720	1920	196
19	492	457	262	752	3580	8350	14800	1020	1400	623	1130	211
20	473	314	254	993	2800	9700	12900	902	1290	613	804	201
21	320	324	251	1330	2250	13200	11500	1670	1120	565	637	211
22	420	504	255	981	2110	10700	11500	1690	1220	493	489	227
23	416	601	200	1050	2410	7160	11400	4040	2570	570	359	226
24	386	609	202	1390	3740	5120	10400	10900	2960	781	334	197
25	451	793	220	1540	4020	3120	7500	8560	3820	667	288	183
26	641	657	206	1710	2960	2570	6460	6050	2620	437	280	192
27	608	528	223	1610	2450	2070	4780	4680	1690	406	254	201
28	395	514	252	3140	1990	1970	3120	3940	1230	367	239	201
29	384	471	264	5270	---	1750	1730	3010	1140	353	232	202
30	320	473	390	4990	---	1420	1810	2160	1000	332	236	293
31	265	---	616	3550	---	1420	---	1510	---	457	232	---
TOTAL	12142	14385	11914	46885	112650	98710	160240	102552	100940	21382	17371	6221
MEAN	392	480	384	1512	4023	3184	5341	3308	3365	690	560	207
MAX	641	793	1080	5270	10100	13200	19800	10900	11000	1500	1920	293
MIN	248	224	200	275	1990	1310	1120	902	1000	332	232	183

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1998, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998					
MEAN	829	1153	1617	2370	2891	3022	2337	2070	1060	580	477	464																							
MAX	3939	3991	5385	6861	6371	8081	7646	6067	3492	1855	1022	1607																							
(WY)	1990	1978	1973	1974	1994	1975	1977	1984	1979	1979	1971	1989																							
MIN	158	353	300	278	814	529	388	349	210	200	203	168																							
(WY)	1970	1970	1981	1981	1992	1988	1986	1976	1988	1988	1969	1969																							

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR			FOR 1998 WATER YEAR			WATER YEARS 1969 - 1998					
ANNUAL TOTAL			455439			705392						
ANNUAL MEAN			1248			1933				1566		
HIGHEST ANNUAL MEAN										2459		1979
LOWEST ANNUAL MEAN										522		1988
HIGHEST DAILY MEAN			14200	Mar	7	19800	Apr	17	69300	Apr	5	1977
LOWEST DAILY MEAN			190	Sep	8	183	Sep	25	66	Dec	3	1970
ANNUAL SEVEN-DAY MINIMUM			197	Sep	3	195	Sep	12	103	Oct	10	1968
INSTANTANEOUS PEAK FLOW						22700	Apr	17	85500	Jan	30	1957
INSTANTANEOUS PEAK STAGE						32.52	Apr	17	52.72	Jan	30	1957
INSTANTANEOUS LOW FLOW						183	Sep	25	66	Dec	3	1970
10 PERCENT EXCEEDS			2490			5020			3630			
50 PERCENT EXCEEDS			724			793			778			
90 PERCENT EXCEEDS			262			232			234			

## BIG SANDY RIVER BASIN

03210000 JOHNS CREEK NEAR META, KY

LOCATION.--Lat 37°34'01", long 82°27'29", Pike County, Hydrologic Unit 05070203, on left bank 10 ft downstream from bridge on U.S. Highway 119, 1,100 ft downstream from Ford Branch, 0.7 mi upstream from Raccoon Creek, 1.2 mi southwest of Meta, and at mile 42.7.

DRAINAGE AREA.--56.3 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1941 to September 1993, October 1994 to current year.

REVISED RECORDS.--WSP 1705: Drainage area. WRD KY-76-1: 1975. WDR KY-87-1: 1986.

GAGE.--Water-stage recorder. Datum of gage is 715.66 ft above sea level. See WDR KY-90-1 for history of changes prior to Dec. 21, 1965.

REMARKS.--Estimated daily discharges: May 1 and Aug. 9. Record fair except for periods of estimated record, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1939 reached a stage of 15.6 ft, from floodmark, present datum, at site 600 ft upstream, discharge, 4,500 ft<sup>3</sup>/s.

DISCHARGE, 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	5.5	4.5	94	12	62	79	64	100	56	90	22	7.6
2	4.6	14	27	13	46	88	57	140	45	60	20	7.6
3	4.1	13	16	15	45	103	56	113	40	47	17	8.1
4	3.7	10	14	30	190	98	119	110	55	42	14	8.4
5	3.9	9.2	13	31	223	118	140	128	47	39	14	8.9
6	4.0	8.4	11	22	183	120	115	123	43	37	13	9.2
7	3.5	7.5	9.6	27	152	104	92	109	37	34	13	8.7
8	3.3	9.6	9.1	56	171	99	85	132	34	65	12	19
9	3.2	12	8.8	56	235	207	85	128	44	42	15	11
10	3.5	12	13	38	300	197	168	109	1390	35	17	9.9
11	4.2	9.0	15	31	312	133	261	103	477	33	22	8.1
12	4.6	6.6	13	28	236	99	176	86	394	29	14	7.7
13	5.2	6.9	11	26	155	82	133	77	394	27	13	6.6
14	5.3	11	9.5	21	117	72	108	63	268	23	22	6.9
15	6.8	14	8.8	29	91	58	90	58	286	23	23	6.8
16	25	12	8.0	38	78	50	168	51	195	26	28	5.9
17	5.3	11	7.4	37	79	43	1430	44	132	24	44	5.1
18	5.3	9.3	6.9	36	92	61	423	33	97	22	19	6.0
19	5.5	7.8	6.9	33	90	197	1470	33	78	25	14	20
20	5.9	7.0	6.6	31	90	324	751	33	66	24	11	9.0
21	5.7	9.7	7.0	27	91	396	327	122	59	20	9.7	8.2
22	5.5	21	11	28	86	227	232	69	65	39	10	9.3
23	5.4	16	8.7	53	122	159	184	672	175	31	9.9	11
24	5.3	13	8.7	68	214	123	143	613	128	36	9.2	7.2
25	6.6	8.5	15	63	167	100	121	308	172	22	10	8.7
26	10	7.0	13	47	122	83	103	156	97	20	9.0	9.8
27	16	6.5	14	54	97	70	91	129	69	18	8.6	11
28	8.0	6.4	15	289	79	63	85	132	57	17	10	11
29	6.0	6.4	13	217	---	56	76	101	58	16	9.5	10
30	5.4	15	13	132	---	51	75	76	90	17	10	8.9
31	4.6	---	13	93	---	47	---	61	---	36	8.3	---
TOTAL	190.9	304.3	440.0	1681	3925	3707	7428	4212	5148	1019	471.2	275.6
MEAN	6.16	10.1	14.2	54.2	140	120	248	136	172	32.9	15.2	9.19
MAX	25	21	94	289	312	396	1470	672	1390	90	44	20
MIN	3.2	4.5	6.6	12	45	43	56	33	34	16	8.3	5.1
CFSM	.11	.18	.25	.96	2.49	2.12	4.40	2.41	3.05	.58	.27	.16
IN.	.13	.20	.29	1.11	2.59	2.45	4.91	2.78	3.40	.67	.31	.18

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

MEAN	17.9	38.3	75.3	108	139	165	118	74.4	39.4	25.3	17.0	15.8
MAX	175	213	319	413	338	489	356	271	193	136	155	153
(WY)	1990	1974	1973	1974	1972	1955	1948	1984	1979	1956	1942	1966
MIN	.000	.23	.95	6.57	17.5	36.0	15.8	7.33	1.99	.42	.35	.000
(WY)	1954	1954	1966	1966	1954	1988	1963	1941	1969	1944	1943	1943

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1941 - 1998
ANNUAL TOTAL	19914.0	28802.0	
ANNUAL MEAN	54.6	78.9	69.4
HIGHEST ANNUAL MEAN			135
LOWEST ANNUAL MEAN			24.5
HIGHEST DAILY MEAN	1790	Mar 3	3340
LOWEST DAILY MEAN	3.2	Oct 9	.00
ANNUAL SEVEN-DAY MINIMUM	3.6	Oct 4	.00
INSTANTANEOUS PEAK FLOW		2630	Apr 17
INSTANTANEOUS PEAK STAGE		15.05	Apr 17
INSTANTANEOUS LOW FLOW		3.2	Oct 9
ANNUAL RUNOFF (CFSM)	.97	1.40	.00
ANNUAL RUNOFF (INCHES)	13.16	19.03	1.23
10 PERCENT EXCEEDS	109	173	157
50 PERCENT EXCEEDS	31	31	23
90 PERCENT EXCEEDS	6.9	6.7	2.0

## BIG SANDY RIVER BASIN

03212500 LEVISA FORK AT PAINTSVILLE, KY

LOCATION.--Lat 37°48'55", long 82°47'30", Johnson County, Hydrologic Unit 05070203, on left bank 700 ft downstream from bridge on State Highway 40 at Paintsville, 900 ft downstream from Paint Creek, and at mile 65.2.

DRAINAGE AREA.--2,144 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1915 to September 1916, October 1916 to November 1920 (gage heights only), and October 1928 to current year. Monthly discharge only for October to December 1928, published in WSP 1305. Published. (as "at Thelma" prior to 1928.)

REVISED RECORDS.--WSP 953: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 566.84 ft above sea level. See WDR KY-90-1 for history of changes prior to Oct. 19, 1954.

REMARKS.--Estimated daily discharges: Oct. 17-20, Oct. 30 to Nov. 5, Jan. 11-13, and Aug. 9. Records good except for periods of estimated record, which are fair. Flow regulated since October 1968 by Fishtrap Lake (station 03207995), since August 1966 by North Fork Pound River Lake (station 03208680), since March 1965 by John W. Flannagan Lake (station 03208990), and since May 1950 by Dewey Lake (station 03211000).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1862 reached a stage of 46.6 ft, from levels to floodmark by U.S. Army Corps of Engineers

DISCHARGE, 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	481	400	1310	822	4150	3130	2250	4650	2270	3790	980	371
2	407	370	1800	579	3510	3290	2000	6100	2160	3720	1470	356
3	370	470	1410	541	3110	3320	1860	5120	1850	2760	976	347
4	362	590	951	584	5640	2850	3660	5010	1980	1880	804	332
5	355	750	688	694	13200	2730	6230	5460	3070	1760	716	321
6	543	964	644	900	11200	2660	5450	4810	3820	1540	660	315
7	569	809	618	1540	8030	2700	3850	4440	3590	1230	611	327
8	461	585	583	3210	6560	2740	3100	5080	2550	1210	499	372
9	575	460	590	5630	7300	3570	3160	7230	2150	1610	600	353
10	455	463	604	4590	9370	4260	3920	7190	7210	1870	786	341
11	367	499	666	3100	10500	4500	4770	6850	17100	1660	761	321
12	408	636	735	2500	10200	4050	4490	6830	15600	1390	811	312
13	589	681	773	2000	10000	3250	4210	5540	14900	1060	837	306
14	593	783	690	1350	6480	2740	4350	4160	13500	816	1230	302
15	390	871	598	1250	4790	2530	3540	3130	11800	800	1280	286
16	393	792	627	1380	4060	2290	3620	2540	9340	839	841	283
17	445	671	511	1420	3540	2100	14200	2180	6920	808	1120	283
18	410	666	484	1370	4740	2240	21900	1850	4690	900	2210	284
19	400	719	467	1370	5800	5820	25400	1600	2690	3240	2000	293
20	585	667	449	1400	4900	11800	29600	1460	2250	2350	1300	329
21	529	575	436	1800	3920	14400	24100	2620	2000	2220	956	422
22	383	720	439	2160	3420	15800	17900	3340	1780	1540	802	460
23	453	816	450	2200	3860	12100	17200	6580	3520	1130	674	351
24	471	918	418	2390	5260	8170	16300	13400	4270	1180	538	328
25	459	887	444	2560	6400	5780	13600	16000	5330	1220	499	301
26	616	973	453	2520	5550	4260	11300	11800	4970	1090	456	280
27	870	802	472	2550	4270	3500	9700	8890	3350	839	432	278
28	724	689	544	2930	3420	2990	7120	7210	2230	705	410	283
29	556	672	569	5300	---	2820	4890	5390	2650	643	395	281
30	530	690	567	6120	---	2580	3120	3760	3240	653	387	307
31	470	---	624	5620	---	2250	---	2700	---	1010	377	---
TOTAL	15219	20588	20614	72380	173180	147220	276790	172920	162780	47463	26418	9725
MEAN	491	686	665	2335	6185	4749	9226	5578	5426	1531	852	324
MAX	870	973	1800	6120	13200	15800	29600	16000	17100	3790	2210	460
MIN	355	370	418	541	3110	2100	1860	1460	1780	643	377	278

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1998, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	1155	1860	2816	4007	4997	5278	4179	3501	1797	904	780	705																			
MAX	6560	4908	8870	12030	11000	13160	10040	9665	5426	2384	1837	2054																			
(WY)	1990	1978	1973	1974	1994	1975	1987	1984	1998	1979	1977	1989																			
MIN	181	447	570	435	1467	963	594	519	278	257	291	239																			
(WY)	1970	1970	1981	1981	1988	1988	1986	1976	1988	1988	1969	1969																			

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1969 - 1998	
ANNUAL TOTAL	785467		1145297			
ANNUAL MEAN	2152		3138		2653	
HIGHEST ANNUAL MEAN					4234	
LOWEST ANNUAL MEAN					830	
HIGHEST DAILY MEAN	22400		29600		42000	
LOWEST DAILY MEAN	355		278		98	
ANNUAL SEVEN-DAY MINIMUM	389		291		122	
INSTANTANEOUS PEAK FLOW			29900		69700	
INSTANTANEOUS PEAK STAGE			30.36		45.92	
INSTANTANEOUS LOW FLOW			278		98	
10 PERCENT EXCEEDS	5050		7210		6360	
50 PERCENT EXCEEDS	1220		1540		1280	
90 PERCENT EXCEEDS	439		389		377	

## LITTLE SANDY RIVER BASIN

03216500 LITTLE SANDY RIVER AT GRAYSON, KY

LOCATION.--Lat 38°19'48", long 82°56'22", Carter County, Hydrologic Unit 05090104, on left bank 0.3 mi upstream from bridge on U.S. Highway 60, 0.5 mi downstream from Town Branch, 0.5 mi east of Grayson, and at mile 38.1.

DRAINAGE AREA.--400 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1938 to current year. Prior to October 1964, published as "near Grayson."

REVISED RECORDS.--WSP 1435: 1939(M), 1943(M), 1948(P). WSP 1725: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.95 ft above sea level. Prior to Aug. 11, 1939, nonrecording gage and Aug. 11, 1939 to Jan. 29, 1965, water-stage recorder at site 1.6 mi downstream at same datum. Apr. 6, 1948 to Jan. 29, 1965, supplementary nonrecording gage 800 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated since March 1968 by Grayson Lake (station 03216300).

DISCHARGE, 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	33	43	628	100	138	527	180	1850	211	3260	507	38
2	32	44	691	90	150	597	145	1830	316	2720	170	38
3	32	58	487	87	204	777	127	1590	277	2540	80	35
4	32	157	106	87	241	517	570	1270	196	2050	69	32
5	33	175	85	87	749	553	717	812	129	1100	64	32
6	34	171	101	484	779	618	438	507	118	544	60	32
7	32	150	91	2210	707	573	337	474	108	373	52	31
8	39	69	84	3820	783	617	294	1220	76	397	48	31
9	132	68	64	3360	1180	1580	509	1260	99	502	46	30
10	125	81	85	2420	2190	1870	967	715	802	175	46	31
11	117	140	158	1950	3630	1270	851	429	1780	96	50	31
12	113	132	100	1370	4260	864	546	401	1930	80	49	31
13	109	124	91	999	3110	823	421	393	3070	72	50	30
14	111	132	85	567	3070	500	352	356	2310	68	47	31
15	132	136	80	374	3100	456	302	299	2120	65	46	30
16	126	133	76	525	2900	435	870	194	1160	65	48	29
17	112	126	53	463	2910	457	2300	125	651	83	48	29
18	106	118	45	436	2610	366	1750	110	297	159	48	29
19	104	113	43	408	2200	609	3290	98	271	119	46	29
20	109	110	42	396	1320	645	3540	100	255	993	43	29
21	143	110	41	399	855	828	2990	510	148	1200	42	32
22	90	118	43	372	758	647	2920	1500	179	412	41	30
23	90	129	46	345	716	626	2690	1540	112	480	40	29
24	88	125	50	507	775	763	1970	2770	161	575	39	29
25	54	141	90	423	770	538	817	2960	350	225	38	28
26	54	133	117	474	554	482	724	2170	275	145	37	28
27	64	127	100	773	520	378	715	1630	212	84	37	27
28	104	120	96	506	502	249	490	823	101	69	36	27
29	93	115	117	227	---	226	381	280	657	65	35	27
30	48	175	431	201	---	230	714	227	3590	71	39	27
31	42	---	380	153	---	301	---	198	---	298	37	---
TOTAL	2533	3573	4706	24613	41681	19922	32917	28641	21961	19085	2038	912
MEAN	81.7	119	152	794	1489	643	1097	924	732	616	65.7	30.4
MAX	143	175	691	3820	4260	1870	3540	2960	3590	3260	507	38
MIN	32	43	41	87	138	226	127	98	76	65	35	27

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1998, BY WATER YEAR (WY)

MEAN	171	350	642	751	942	1035	688	663	310	175	109	121
MAX	733	993	2630	1954	2886	3226	2291	2116	928	841	382	585
(WY)	1990	1987	1979	1974	1989	1997	1972	1996	1974	1971	1979	1979
MIN	30.1	28.4	53.6	45.2	249	133	113	62.1	39.1	37.5	34.7	30.4
(WY)	1981	1982	1982	1981	1969	1969	1986	1976	1988	1969	1988	1998

## SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1969 - 1998

ANNUAL TOTAL	190792	202582		
ANNUAL MEAN	523	555		494
HIGHEST ANNUAL MEAN				838
LOWEST ANNUAL MEAN				116
HIGHEST DAILY MEAN	14600	Mar 2	4260	Feb 12
LOWEST DAILY MEAN	32	Oct 2	27	Sep 27
ANNUAL SEVEN-DAY MINIMUM	33	Oct 1	28	Sep 24
INSTANTANEOUS PEAK FLOW			4760	Jan 8
INSTANTANEOUS PEAK STAGE			18.32	Jan 8
INSTANTANEOUS LOW FLOW				1.5
10 PERCENT EXCEEDS	1330		1840	1420
50 PERCENT EXCEEDS	133		175	177
90 PERCENT EXCEEDS	41		36	40

## OHIO RIVER MAIN STEM

03216600 OHIO RIVER AT GREENUP DAM NEAR GREENUP, KY

LOCATION.--Lat 38°38'48", long 82°51'38", Greenup County, Hydrologic Unit 05090103, at left bank at downstream end of lock guidewall in lower pool at Greenup locks, 1.1 mi upstream from Grays Branch, 4.7 mi downstream from Little Sandy River, 5.0 mi north of Greenup, and at mile 341.5.

DRAINAGE AREA.--62,000 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 472.43 ft above sea level or 472.97 ft Ohio River Datum. Record of Greenup Dam headwater, tailwater, gate openings and lockages used to determine discharge from Oct. 1, 1968 to Sept. 30, 1981. Auxiliary water-stage recorder is located at Portsmouth, Ohio, 14.1 mi downstream, established Oct. 1, 1981 and used in slope rating computation from Oct. 1, 1981 to Sept. 30, 1983. Datum of gage is 470.43 ft above sea level or 470.99 ft Ohio River Datum. Since Oct. 1, 1983, discharge has been computed using the Branch Flow Model. Stage record for this model is obtained from the Greenup Dam Tailwater and Portsmouth, Ohio gages.

REMARKS.--No estimated daily discharges. Records fair except for those below 20,000 ft<sup>3</sup>/s, which are poor. Flow regulated by Ohio River system of locks, dams, and reservoirs upstream from the station.

DISCHARGE, 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	44800	24700	78600	62100	112000	130000	71700	144000	40200	354000	23300	13200
2	18600	19000	81200	44600	101000	131000	76500	182000	49800	300000	13600	17800
3	35000	26200	91200	45700	81900	137000	70100	249000	40100	153000	16700	15900
4	25100	30400	78800	46200	88100	134000	78600	290000	45800	115000	12500	15300
5	24400	44700	73200	53000	152000	122000	94100	280000	24100	88400	15100	8800
6	24400	37100	61500	79100	202000	113000	87200	236000	33900	67300	17900	8360
7	15800	30200	69600	103000	206000	102000	71600	222000	33500	55700	7690	8740
8	21700	65400	58600	183000	177000	97200	70800	206000	21500	56400	21600	26200
9	11500	85600	57900	264000	147000	114000	63500	241000	32000	75200	7220	12700
10	15900	96000	53500	349000	139000	163000	104000	281000	31200	56700	13900	13400
11	24100	79500	60300	375000	146000	189000	145000	244000	47800	56000	24700	22000
12	8310	77400	87000	375000	161000	190000	165000	179000	90000	49300	19800	12700
13	12300	67600	99400	338000	166000	158000	150000	147000	103000	41300	26400	12100
14	16600	59700	97100	280000	154000	122000	125000	129000	132000	34400	22000	23300
15	13600	79500	77600	180000	133000	106000	105000	118000	173000	33700	16600	6600
16	13600	81000	63700	157000	115000	94300	109000	102000	205000	26200	12800	19200
17	9020	77500	53800	149000	100000	69400	144000	73300	207000	25900	33400	9900
18	9900	62200	43200	143000	125000	67300	200000	68500	192000	22900	30200	7690
19	14300	55500	48200	131000	204000	101000	261000	71300	135000	36000	43000	9750
20	11800	51300	32200	114000	294000	133000	302000	57900	116000	38800	34200	11800
21	11800	38200	38700	108000	304000	198000	328000	56300	124000	33100	23500	23100
22	11800	46200	28300	95300	270000	273000	340000	48900	122000	24300	21600	12900
23	13400	51000	32100	93100	205000	310000	325000	48800	90500	35100	16200	14500
24	13600	60400	34500	107000	196000	305000	301000	58400	64600	26900	15300	14100
25	15800	64000	45800	125000	207000	268000	223000	78700	56500	25200	33100	7270
26	17600	65300	52400	128000	191000	168000	161000	92300	43800	27600	23300	17600
27	10800	56000	62500	117000	154000	124000	141000	59800	52100	23700	21000	15700
28	21200	50400	69400	109000	126000	109000	169000	62400	124000	23400	25000	9130
29	18700	61800	67300	123000	---	94900	164000	62200	242000	12900	15800	15600
30	18700	74300	63400	143000	---	94800	139000	52900	350000	18000	25300	16800
31	23700	---	58100	131000	---	84200	---	44800	---	29200	17000	---
TOTAL	547830	1718100	1919100	4751100	4657000	4502100	4785100	4186500	3022400	1965600	649710	422140
MEAN	17670	57270	61910	153300	166300	145200	159500	135000	100700	63410	20960	14070
MAX	44800	96000	99400	375000	304000	310000	340000	290000	350000	354000	43000	26200
MIN	8310	19000	28300	44600	81900	67300	63500	44800	21500	12900	7220	6600

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1998, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	
MEAN	40650	72250	114100	120700	146300	167000	142400	107800	68350	45550	36810	33340									
MAX	111300	208600	252700	242700	259100	268600	258400	276700	174000	100700	113600	86310									
(WY)	1980	1986	1973	1974	1994	1994	1994	1996	1981	1972	1980	1979									
MIN	11310	21910	38500	27170	66240	53550	52660	36610	13440	13060	11270	12000									
(WY)	1992	1992	1990	1977	1978	1969	1986	1976	1988	1988	1988	1985									

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1969 - 1998	
ANNUAL TOTAL	28558830		33126680			
ANNUAL MEAN	78240		90760		90990	
HIGHEST ANNUAL MEAN					120100	
LOWEST ANNUAL MEAN					49760	
HIGHEST DAILY MEAN	520000	Mar 5	375000	Jan 11	540000	Jan 12 1974
LOWEST DAILY MEAN	7370	Sep 20	6600	Sep 15	4810	Jul 24 1993
ANNUAL SEVEN-DAY MINIMUM	11700	Oct 17	11700	Oct 17	9050	Jul 11 1988
INSTANTANEOUS PEAK FLOW			400000		520000	
INSTANTANEOUS PEAK STAGE			50.16		62.19	
10 PERCENT EXCEEDS	158000		205000		205000	
50 PERCENT EXCEEDS	61800		63700		64000	
90 PERCENT EXCEEDS	15000		14000		17800	

## OHIO RIVER MAIN STEM

03216600 OHIO RIVER AT GREENUP DAM, KY--Continued

(National stream-quality accounting network station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to September 1986, 1997 to current water year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURES: October 1974 to September 1981.

REMARKS.--Flow regulated by Ohio River system of locks, dams, and reservoirs.

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

DATE	TIME	SAMPLE TYPE	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	
NOV												
25...	1600	ENVIRONMENTAL	60300	329	7.2	7.1	11	11.3	95	110	29	
DEC												
18...	1530	ENVIRONMENTAL	48000	262	7.7	4.8	5.0	--	--	110	30	
18...	1540	REPLICATE	--	262	7.7	--	5.3	--	--	110	30	
JAN												
14...	1500	ENVIRONMENTAL	217000	220	6.9	6.8	68	11.3	94	77	21	
FEB												
10...	1700	ENVIRONMENTAL	191000	206	7.4	4.8	34	12.5	99	73	19	
MAR												
11...	1530	ENVIRONMENTAL	190000	267	7.4	7.1	16	11.3	94	93	25	
APR												
21...	1420	ENVIRONMENTAL	332000	208	7.3	13.0	65	8.8	85	82	22	
29...	1600	ENVIRONMENTAL	164000	263	7.2	14.5	24	8.4	84	95	26	
29...	1603	SPIKE	--	--	--	--	--	--	--	--	--	
MAY												
20...	1630	ENVIRONMENTAL	54200	299	7.3	21.7	3.1	7.1	82	110	30	
27...	1538	ENVIRONMENTAL	94800	267	7.2	21.7	21	8.6	100	91	23	
JUN												
09...	1500	ENVIRONMENTAL	33700	354	7.2	21.7	4.7	7.7	89	120	31	
23...	1200	ENVIRONMENTAL	85400	395	7.3	23.9	20	7.6	92	130	36	
23...	1210	REPLICATE	--	--	--	--	18	--	--	140	36	
JUL												
08...	1700	ENVIRONMENTAL	70900	284	7.1	25.8	15	6.9	87	100	29	
AUG												
12...	1700	ENVIRONMENTAL	22800	414	7.7	29.5	2.5	6.3	84	150	39	
27...	1700	ENVIRONMENTAL	23600	440	7.4	28.9	3.1	7.6	101	140	36	
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)	BICAR-BONATE, WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE, DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)
NOV												
25...	8.3	17	2.6	53	43	19	67	.12	4.7	181	1.2	1.1
DEC												
18...	9.1	18	2.2	53	44	21	65	.14	4.9	193	1.2	1.2
18...	9.1	18	2.3	--	--	20	65	.15	4.9	191	1.2	1.2
JAN												
14...	5.6	9.7	2.4	34	28	13	40	<.10	5.7	135	1.8	1.1
FEB												
10...	5.8	9.7	1.6	25	20	12	41	<.10	5.8	127	1.2	.75
MAR												
11...	7.4	12	1.7	48	39	13	55	.11	5.3	157	.93	.94
APR												
21...	6.7	8.6	1.7	43	35	9.1	45	.15	5.8	135	1.1	.80
29...	7.4	11	1.8	48	40	12	55	.17	5.3	163	1.2	.97
29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
20...	9.0	12	1.9	60	49	12	61	.14	6.0	179	.84	--
27...	7.9	11	1.9	52	42	10	57	.14	5.4	158	.82	.73
JUN												
09...	10	17	2.0	61	50	16	72	.10	4.1	202	.89	.88
23...	11	19	2.6	61	50	20	84	.13	4.6	232	1.6	1.5
23...	11	19	2.6	--	--	21	84	.12	4.6	242	1.6	1.5
JUL												
08...	7.7	12	2.8	52	42	12	53	.14	6.3	169	1.3	1.3
AUG												
12...	13	23	3.1	63	55	20	86	.21	4.3	250	.90	.91
27...	12	28	2.8	85	70	26	81	.19	2.6	246	5.5	5.4

## OHIO RIVER MAIN STEM

03216600 OHIO RIVER AT GREENUP DAM, KY--Continued

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

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, AM- MONIA + ORGANIC DIS- (MG/L AS N) (00623)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
NOV												
25...	.28	.19	<.010	.894	.029	--	.21	.31	.034	<.010	.03	.04
DEC												
18...	.20	.19	.018	.930	.058	.912	.25	.25	.018	<.010	.03	.07
18...	.21	.17	.016	.939	.066	.923	.24	.27	.028	.016	.04	.08
JAN												
14...	--	--	.010	.902	<.020	.892	.18	.90	.307	<.010	.00	--
FEB												
10...	.50	.08	<.010	.608	.057	--	.14	.56	.075	<.010	.01	.07
MAR												
11...	--	--	.031	.744	<.020	.713	.19	.19	<.010	<.010	.00	--
APR												
21...	.39	.11	.108	.635	.052	.527	.16	.44	.099	.010	.02	.07
29...	.43	.15	.017	.785	.030	.768	.18	.46	.108	<.010	--	.04
29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
20...	.05	--	.024	.718	.078	.694	<.10	.13	<.010	<.010	.02	.10
27...	.16	.06	.028	.545	.121	.517	.18	.28	.157	<.010	.02	.16
JUN												
09...	.13	.12	.026	.644	.117	.618	.24	.25	.014	.015	.04	.15
23...	.34	.15	.037	1.25	.044	1.22	.20	.38	.066	.019	.06	.06
23...	.29	.14	.036	1.28	.047	1.25	.19	.33	.072	.018	.08	.06
JUL												
08...	.23	.20	.027	1.07	.035	1.05	.23	.27	.109	<.010	.00	.05
AUG												
12...	.13	.14	.031	.590	.176	.559	.32	.31	.021	.015	.03	.23
27...	.25	.12	.041	5.17	.060	5.13	.18	.31	.029	.013	.08	.08

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
NOV											
25...	--	--	.011	7.7	<1.0	<1	37	<1.0	37	<1.0	<1.0
DEC											
18...	4.0	.06	.011	9.6	<1.0	<1	35	<1.0	34	<1.0	<1.0
18...	4.1	.05	.012	10	<1.0	<1	36	<1.0	34	<1.0	<1.0
JAN											
14...	3.9	.03	.001	9.8	<1.0	<1	30	<1.0	24	<1.0	1.0
FEB											
10...	--	--	.003	8.2	<1.0	<1	32	<1.0	21	<1.0	<1.0
MAR											
11...	3.2	.10	.001	11	<1.0	<1	34	<1.0	25	<1.0	<1.0
APR											
21...	2.3	.35	.005	9.8	<1.0	<1	32	<1.0	23	<1.0	1.0
29...	3.4	.06	<.001	13	<1.0	<1	33	<1.0	29	<1.0	<1.0
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	3.1	.08	.008	13	<1.0	<1	39	<1.0	26	<1.0	<1.0
27...	2.3	.09	.007	9.4	<1.0	<1	34	<1.0	21	<1.0	<1.0
JUN											
09...	2.7	.09	.013	19	<1.0	<1	44	<1.0	34	<1.0	<1.0
23...	5.4	.12	.018	9.2	<1.0	<1	47	<1.0	47	<1.0	<1.0
23...	5.5	.12	.027	8.6	<1.0	<1	48	<1.0	47	<1.0	<1.0
JUL											
08...	4.6	.09	.001	8.4	<1.0	<1	40	<1.0	37	<1.0	<1.0
AUG											
12...	2.5	.10	.010	11	<1.0	<1	51	<1.0	53	<1.0	1.2
27...	23	.13	.026	9.1	<1.0	<1	53	<1.0	53	<1.0	<1.0



## OHIO RIVER MAIN STEM

03216600 OHIO RIVER AT GREENUP DAM, KY--Continued

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

DATE	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
NOV											
25...	<1.0	1.7	17	<1.0	6	16	1.8	2.4	<1	<1.0	159
DEC											
18...	<1.0	1.3	23	<1.0	5	25	2.0	2.8	<1	<1.0	168
18...	<1.0	1.1	32	<1.0	5	25	1.9	2.5	<1	<1.0	167
JAN											
14...	<1.0	1.5	28	<1.0	5	15	<1.0	2.1	<1	<1.0	101
FEB											
10...	<1.0	1.1	25	<1.0	<4	37	<1.0	1.6	<1	<1.0	112
MAR											
11...	<1.0	1.2	12	<1.0	6	29	<1.0	2.6	<1	<1.0	143
APR											
21...	<1.0	1.5	15	<1.0	5	11	<1.0	1.5	<1	<1.0	129
29...	<1.0	1.2	11	<1.0	4	2.8	1.0	1.6	<1	<1.0	139
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	<1.0	1.7	<10	<1.0	6	18	1.2	1.8	<1	<1.0	169
27...	<1.0	2.3	11	<1.0	6	8.5	1.1	1.3	<1	<1.0	164
JUN											
09...	<1.0	1.7	<10	<1.0	8	37	1.8	1.5	<1	<1.0	223
23...	<1.0	1.7	<10	<1.0	7	1.4	3.0	1.4	<1	<1.0	222
23...	<1.0	1.7	<10	<1.0	8	<1.0	3.0	1.5	<1	<1.0	218
JUL											
08...	<1.0	2.5	<10	<1.0	6	3.0	1.8	1.5	<1	<1.0	158
AUG											
12...	<1.0	2.1	<10	<1.0	8	14	2.8	1.6	<1	<1.0	261
27...	<1.0	1.9	<10	<1.0	9	9.2	4.1	1.3	<1	<1.0	232

DATE	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ACETO- CHLOR, WATER, FLTRD REC (UG/L) (49260)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	ALPHA BHC DISS- SOLVED (UG/L) (34253)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)
NOV											
25...	<6	5.1	<1.0	2.7	.90	<.002	<.0020	.036	<.0020	<.0020	<.0040
DEC											
18...	<10	2.5	<1.0	2.1	.50	<.002	<.0020	.032	<.0020	<.0020	E.0040
18...	<10	1.8	<1.0	2.1	.50	<.002	<.0020	.032	<.0020	<.0020	.0049
JAN											
14...	<10	2.7	<1.0	3.2	3.6	<.002	<.0020	.026	<.0230	<.0020	<.0040
FEB											
10...	<10	7.6	<1.0	1.9	1.0	<.002	<.0020	.011	<.0020	<.0020	<.0040
MAR											
11...	<10	5.7	<1.0	4.6	.80	<.002	<.0020	.010	<.0020	<.0020	<.0040
APR											
21...	<10	1.4	<1.0	2.6	1.7	<.002	.0084	.041	<.0020	<.0020	E.0030
29...	<10	1.0	<1.0	2.5	--	<.002	.0042	.039	<.0020	<.0020	E.0018
29...	--	--	--	--	--	.115	.120	.148	.0942	.103	.0966
MAY											
20...	<10	1.6	<1.0	2.8	.30	<.002	.0143	.126	<.0020	<.0020	<.0040
27...	<10	1.8	<1.0	2.1	.90	E.002	.0068	.068	<.0020	<.0020	E.0035
JUN											
09...	<10	1.3	<1.0	2.4	.40	<.002	.0083	.089	<.0020	<.0020	<.0040
23...	<10	1.5	<1.0	2.5	.90	.014	.0494	.704	<.0020	<.0020	<.0040
23...	<10	<1.0	<1.0	2.2	.80	.012	.0523	.545	<.0020	<.0020	<.0040
JUL											
08...	<10	1.0	<1.0	4.6	1.0	.012	.0327	.509	<.0020	<.0020	.0049
AUG											
12...	<10	1.5	<1.0	16	.40	<.002	.0094	.128	<.0020	<.0020	<.0040
27...	<10	1.1	<1.0	4.9	.40	<.002	<.0020	.077	<.0020	<.0020	<.0040

## OHIO RIVER MAIN STEM

03216600 OHIO RIVER AT GREENUP DAM, KY--Continued

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

DATE	DEETHYL										
	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	P, P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)
NOV											
25...	<.0040	E.0066	<.002	<.001	<.0030	<.004	<.005	<.004	.014	<.0060	<.004
DEC											
18...	<.0040	E.0131	<.002	<.001	<.0030	<.004	<.005	<.004	.014	<.0060	<.004
18...	<.0040	E.0138	E.002	<.001	<.0030	<.004	<.005	<.004	.013	<.0060	<.004
JAN											
14...	<.0040	E.0135	<.002	<.001	<.0030	<.004	<.005	<.004	.017	<.0060	<.004
FEB											
10...	<.0040	E.0037	<.002	<.001	<.0030	<.004	<.005	<.004	<.002	<.0060	<.004
MAR											
11...	<.0040	E.0063	<.002	<.001	<.0030	<.004	<.005	<.004	.005	<.0060	<.004
APR											
21...	.0079	E.0096	.005	<.001	<.0030	<.004	<.005	.013	.032	<.0060	<.004
29...	.0102	E.0073	<.002	<.001	<.0030	<.004	<.005	<.004	.020	<.0060	<.004
29...	.114	E.0369	.102	.091	.0954	.105	.097	.087	.135	.0613	.111
MAY											
20...	.0232	E.0105	<.002	<.001	<.0030	<.004	<.005	.007	.066	<.0060	<.004
27...	.0083	E.0117	.004	<.001	<.0030	<.004	<.005	<.004	.019	<.0060	<.004
JUN											
09...	E.0202	E.0111	<.002	<.001	<.0030	<.004	<.005	<.004	.032	<.0060	<.004
23...	.109	E.0680	.005	<.001	<.0030	<.004	<.005	<.004	.350	<.0060	<.004
23...	.107	E.0657	.008	<.001	<.0030	<.004	<.005	<.004	.347	<.0060	<.004
JUL											
08...	.0454	E.0641	.008	<.001	<.0030	<.004	<.005	<.004	.300	<.0060	<.004
AUG											
12...	.0136	E.0218	<.002	<.001	<.0030	<.004	<.005	<.004	.055	<.0060	<.004
27...	<.0040	E.0173	<.002	<.001	<.0030	<.004	<.005	<.004	.025	<.0060	<.004

DATE	PROP- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	BEN- FLUR- ALIN WAT FLD 0.7 U (UG/L) (82673)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	2, 6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)
	NOV										
25...	<.0070	E.0065	.0091	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
DEC											
18...	<.0070	<.0180	.0074	<.0020	E.0246	<.0100	<.0020	<.0030	<.0170	<.0040	<.0040
18...	<.0070	<.0180	.0056	<.0020	E.0253	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
JAN											
14...	<.0070	<.0180	.0083	<.0020	E.0142	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
FEB											
10...	<.0070	<.0180	<.0050	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
MAR											
11...	<.0070	<.0180	<.0050	<.0020	E.0103	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
APR											
21...	<.0070	E.0059	.0147	<.0020	E.0098	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
29...	<.0070	E.0052	.0126	<.0020	E.0026	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
29...	.117	.106	.122	.0922	E.136	E.117	.104	.0984	.0877	.101	.104
MAY											
20...	<.0070	E.0083	.0276	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
27...	<.0070	E.0055	.0176	<.0020	E.0168	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
JUN											
09...	<.0070	E.0084	.0227	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
23...	<.0070	.0278	.103	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
23...	<.0070	.0223	.0808	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
JUL											
08...	<.0070	E.0168	.0846	<.0020	<.0030	<.0030	E.0012	<.0030	<.0170	<.0040	<.0040
AUG											
12...	<.0070	E.0114	.0229	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040
27...	<.0070	.0201	.0156	<.0020	<.0030	<.0030	<.0020	<.0030	<.0170	<.0040	<.0040

## OHIO RIVER MAIN STEM

03216600 OHIO RIVER AT GREENUP DAM, KY--Continued

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

DATE	ETHO- PROP WATER FLTRD 0.7 U	EPTC WATER FLTRD 0.7 U	LIN- URON WATER FLTRD 0.7 U	METHYL AZIN- PHOS WAT FLT 0.7 U	METHYL PARA- THION WAT FLT 0.7 U	MOL- INATE WATER FLTRD 0.7 U	NAPROP- AMIDE WATER FLTRD 0.7 U	PEB- ULATE WATER FILTRD 0.7 U	PER- METHRIN CIS WAT FLT 0.7 U	PHORATE WATER FLTRD 0.7 U	PRON- AMIDE WATER FLTRD 0.7 U
	GF, REC (UG/L) (82672)	GF, REC (UG/L) (82668)	GF, REC (UG/L) (82666)	GF, REC (UG/L) (82686)	GF, REC (UG/L) (82667)	GF, REC (UG/L) (82671)	GF, REC (UG/L) (82684)	GF, REC (UG/L) (82669)	GF, REC (UG/L) (82687)	GF, REC (UG/L) (82664)	GF, REC (UG/L) (82676)
NOV 25...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
DEC 18...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
DEC 18...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
JAN 14...	<.0030	.0093	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
FEB 10...	<.0030	<.0020	<.0020	<.500	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
MAR 11...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
APR 21...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
APR 29...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
APR 29...	.110	.0993	.136	E.149	.107	.102	.0934	.102	.0105	.0669	.0993
MAY 20...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
MAY 27...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
JUN 09...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
JUN 23...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
JUN 23...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
JUL 08...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
AUG 12...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
AUG 27...	<.0030	<.0020	<.0020	<.0010	<.0060	<.0040	<.0030	<.0040	<.0050	<.0020	<.0030
DATE	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 25...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	21	3420	98
DEC 18...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	10	1300	99
DEC 18...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	11	--	98
JAN 14...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	259	152000	93
FEB 10...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	74	38200	90
MAR 11...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	66	33900	75
APR 21...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	268	240000	77
APR 29...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	80	35400	89
APR 29...	.108	.0971	.130	E.0731	.0810	.0978	.0974	.114	--	--	--
MAY 20...	<.0040	<.0130	E.0063	<.0070	<.0130	<.0010	<.0020	<.0020	7	1020	99
MAY 27...	<.0040	<.0130	.0216	<.0070	<.0130	<.0010	<.0020	<.0020	43	11000	100
JUN 09...	<.0040	<.0130	E.0088	<.0070	<.0130	<.0010	<.0020	<.0020	--	--	--
JUN 23...	<.0040	<.0130	E.0074	<.0070	<.0130	<.0010	<.0020	<.0020	85	19600	99
JUN 23...	<.0040	<.0130	E.0065	<.0070	<.0130	<.0010	<.0020	<.0020	48	--	98
JUL 08...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	55	10500	100
AUG 12...	<.0040	<.0130	<.0100	<.0070	<.0130	<.0010	<.0020	<.0020	42	2590	100
AUG 27...	<.0040	<.0130	.0111	<.0070	<.0130	<.0010	<.0020	<.0020	47	2990	99

## TYGARTS CREEK BASIN

03217000 TYGARTS CREEK NEAR GREENUP, KY

LOCATION.--Lat 38°33'51", long 82°57'08", Greenup County, Hydrologic Unit 05090103, on downstream side of center pier of bridge on State Highway 7, 100 ft downstream from Lick Run, 0.4 mi upstream from White Oak Creek, 6.5 mi west of Greenup, and at mile 28.1.

DRAINAGE AREA.--242 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1940 to current year.

REVISED RECORDS.--WSP 1113: 1942-43, 1945-46. WSP 1625: 1958. WSP 1725: Drainage area. WRD KY 79-1: 1948(P), 1950(M), 1952(M), 1962(M), 1967(P), 1970(M), 1972-76(M), 1978(M).

GAGE.--Water-stage recorder. Datum of gage is 547.14 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair except for daily discharges below 10 ft<sup>3</sup>/s, which are poor. Occasional diversion at low flow caused by withdrawal of water for cooling purposes by gas transmission plant above station.

DISCHARGE, 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	.68	1.3	150	48	122	422	176	4310	85	215	234	2.0
2	.68	.94	245	38	111	455	209	2610	80	135	124	1.6
3	.67	.78	129	30	102	356	205	990	79	94	78	1.9
4	.65	.73	78	26	108	293	262	733	70	71	53	1.7
5	.63	.70	51	27	156	285	349	598	65	62	40	1.5
6	.61	.73	37	39	237	331	310	397	60	57	32	1.4
7	.59	.76	29	603	273	316	261	350	55	48	26	1.4
8	.59	.79	22	4530	366	354	238	1520	49	46	22	1.3
9	.57	.82	17	2540	567	1380	398	1240	49	47	21	1.3
10	.61	1.1	17	1000	976	1310	793	646	438	49	23	1.3
11	.62	.96	55	519	2060	655	963	414	1630	42	20	1.2
12	.65	.93	108	372	4470	474	510	309	4080	34	23	1.2
13	.78	4.0	101	464	3940	380	378	238	1960	28	31	1.2
14	.99	29	69	416	1850	339	319	191	1390	24	26	1.2
15	.86	15	49	328	1250	295	279	155	3230	89	21	1.2
16	.90	17	35	345	1070	255	1460	129	1070	51	18	1.2
17	.87	20	26	354	1590	230	2620	109	612	46	16	1.2
18	.87	27	20	315	1740	240	1090	92	315	49	15	1.1
19	.87	22	15	295	1460	441	1710	79	259	41	16	1.1
20	.89	18	12	251	818	450	1920	69	220	93	13	1.1
21	.91	15	8.7	211	559	905	886	73	154	325	13	1.1
22	.92	15	9.4	181	426	719	558	452	124	180	11	1.1
23	.92	15	15	307	359	478	429	202	509	160	11	1.1
24	.98	69	31	707	334	373	362	949	235	195	12	1.1
25	.99	48	102	489	302	313	287	989	340	104	10	1.1
26	1.0	30	199	342	261	275	237	572	173	68	11	1.1
27	1.1	20	168	268	239	246	339	306	120	49	7.1	1.1
28	1.1	14	122	222	230	224	411	231	92	39	5.2	.86
29	1.1	11	94	189	---	204	302	172	75	32	3.7	.33
30	1.2	13	76	161	---	186	1760	131	104	30	3.1	.36
31	1.3	---	61	139	---	172	---	102	---	244	3.3	---
TOTAL	26.10	412.54	2151.1	15756	25976	13356	20021	19358	17722	2747	942.4	36.35
MEAN	.84	13.8	69.4	508	928	431	667	624	591	88.6	30.4	1.21
MAX	1.3	69	245	4530	4470	1380	2620	4310	4080	325	234	2.0
MIN	.57	.70	8.7	26	102	172	176	69	49	24	3.1	.33
CFSM	.00	.06	.29	2.10	3.83	1.78	2.76	2.58	2.44	.37	.13	.01
IN.	.00	.06	.33	2.42	3.99	2.05	3.08	2.98	2.72	.42	.14	.01

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
MEAN	57.4	155	387	488	614
MAX	509	869	1954	1665	1953
(WY)	1976	1987	1979	1950	1989
MIN	.35	.70	3.23	31.1	20.7
(WY)	1954	1954	1954	1977	1954

## SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1940 - 1998

ANNUAL TOTAL	120066.64	118504.49	
ANNUAL MEAN	329	325	
HIGHEST ANNUAL MEAN			589
LOWEST ANNUAL MEAN			67.5
HIGHEST DAILY MEAN	25800	Mar 2	4530
LOWEST DAILY MEAN	.57	Oct 9	.33
ANNUAL SEVEN-DAY MINIMUM	.60	Oct 5	.60
INSTANTANEOUS PEAK FLOW			5200
INSTANTANEOUS PEAK STAGE			16.06
INSTANTANEOUS LOW FLOW			23.65
ANNUAL RUNOFF (CFSM)	1.36		1.34
ANNUAL RUNOFF (INCHES)	18.46		18.22
10 PERCENT EXCEEDS	618		894
50 PERCENT EXCEEDS	99		92
90 PERCENT EXCEEDS	.99		.99

## KINNICONICK CREEK BASIN

03237250 KINNICONICK CREEK AT TANNERY, KY

LOCATION.--Lat 38°32'36", long 83°13'29", Lewis County, Hydrologic Unit 05090201, near right bank on downstream side of bridge on County Highway 1149, 0.35 mi upstream from Trace Creek, 0.5 mi west of Tannery, and 10.2 mi upstream from mouth.

DRAINAGE AREA.--201 mi<sup>2</sup>

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

GAGE.--Water-stage recorder. Datum of gage is 535.34 ft above sea level.

REMARKS.--Estimated daily discharges: Oct. 10 to Nov. 30, Jan. 11 to Feb. 25, May 14-21, and May 27 to June 9. Records poor.

DISCHARGE, 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	.23	.90	161	41	170	338	188	4890	800	74	227	6.1
2	.20	1.0	172	31	165	358	398	1620	400	68	112	5.3
3	.18	1.0	105	23	160	305	287	816	210	48	64	4.6
4	.16	.90	76	19	180	249	265	596	160	33	40	4.2
5	.15	.80	56	18	210	247	311	446	130	24	26	4.0
6	.14	.90	42	54	280	280	274	333	90	18	19	3.9
7	.14	1.2	34	1250	290	291	233	271	80	16	15	4.0
8	.13	1.3	28	7300	400	300	242	1100	70	15	12	3.7
9	.12	1.6	23	3040	800	1420	633	934	160	16	9.9	4.1
10	.26	1.7	23	1280	1800	1160	1110	606	1140	14	9.8	4.3
11	.28	1.5	28	500	3500	657	914	408	4170	13	8.7	4.4
12	.33	1.4	74	380	7200	462	557	296	5920	11	8.7	4.3
13	.34	1.3	86	480	6000	350	388	215	2300	10	8.5	4.1
14	.40	1.2	71	400	400	292	314	750	1110	624	8.4	4.1
15	.38	1.3	58	340	1500	230	261	500	2890	492	10	4.1
16	.50	1.3	47	280	800	184	2560	300	877	185	8.7	4.1
17	.42	1.2	36	250	700	162	2570	220	463	132	9.2	4.1
18	.34	1.2	28	240	1500	154	1060	180	293	100	55	4.2
19	.29	1.7	22	220	1000	200	1430	160	332	65	129	4.2
20	.20	1.7	19	210	700	280	1280	130	254	745	97	4.3
21	.22	2.0	15	200	500	776	749	100	167	657	40	5.6
22	.21	8.5	14	200	350	661	521	191	196	300	21	3.7
23	.18	7.0	14	400	300	504	418	229	473	178	14	3.2
24	.40	4.0	23	500	260	376	342	735	435	117	10	3.1
25	.70	4.5	60	440	230	291	275	1090	328	78	8.2	2.9
26	1.1	3.5	169	380	201	245	221	566	206	53	7.4	2.5
27	.75	2.5	138	300	188	207	369	350	134	36	14	2.3
28	.80	2.0	99	275	178	185	512	260	93	26	20	2.2
29	1.2	1.8	76	230	---	168	368	190	68	20	12	2.1
30	1.9	5.0	59	200	---	148	3240	150	60	31	8.9	2.0
31	1.2	---	49	180	---	131	---	275	---	453	7.0	---
TOTAL	13.85	65.90	1905	19661	29962	11611	22290	18907	24009	4652	1040.4	115.7
MEAN	.45	2.20	61.5	634	1070	375	743	610	800	150	33.6	3.86
MAX	1.9	8.5	172	7300	7200	1420	3240	4890	5920	745	227	6.1
MIN	.12	.80	14	18	160	131	188	100	60	10	7.0	2.0
CFSM	.00	.01	.31	3.16	5.32	1.86	3.70	3.03	3.98	.75	.17	.02
IN.	.00	.01	.35	3.64	5.55	2.15	4.13	3.50	4.44	.86	.19	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	33.4	126	259	580	531	851	471	511	280	88.5	60.7	7.73
MAX	130	340	468	1025	1070	2242	743	1187	800	161	189	23.0
(WY)	1996	1994	1997	1994	1998	1997	1998	1996	1998	1996	1995	1995
MIN	.45	2.20	61.5	295	293	345	124	64.8	15.6	37.2	4.61	1.06
(WY)	1998	1998	1998	1992	1995	1995	1997	1993	1994	1993	1997	1997

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	FOR 1999 WATER YEAR	FOR 2000 WATER YEAR	FOR 2001 WATER YEAR	FOR 2002 WATER YEAR	FOR 2003 WATER YEAR
ANNUAL TOTAL	129109.02	134232.85	134232.85	134232.85	134232.85	134232.85	134232.85
ANNUAL MEAN	354	368	368	368	368	368	368
HIGHEST ANNUAL MEAN							408
LOWEST ANNUAL MEAN							221
HIGHEST DAILY MEAN	20000	Mar 2	7300	Jan 8	20000	Mar 2	1997
LOWEST DAILY MEAN	.12	Oct 9	.12	Oct 9	.12	Oct 9	1997
ANNUAL SEVEN-DAY MINIMUM	.15	Oct 3	.15	Oct 3	.15	Oct 3	1997
INSTANTANEOUS PEAK FLOW			12700	Jun 12	45600	Mar 2	1997
INSTANTANEOUS PEAK STAGE			18.56	Jun 12	28.04	Mar 2	1997
ANNUAL RUNOFF (CFSM)	1.76		1.83		1.57		
ANNUAL RUNOFF (INCHES)	23.89		24.84		21.37		
10 PERCENT EXCEEDS	600		800		750		
50 PERCENT EXCEEDS	62		129		104		
90 PERCENT EXCEEDS	.39		1.2		2.0		

## LICKING RIVER BASIN

03250310 ROCK LICK CREEK ABOVE UNNAMED TRIBUTARY NEAR SHARKEY, KY

LOCATION.--Lat 38°15'04", long 83°33'58", Fleming County, Hydrologic Unit 05100101, on right bank, 1.1 miles above Drip Springs, 1.3 miles north of Sharkey, and 2.7 mi above mouth.

DRAINAGE AREA.--1.66 mi<sup>2</sup>

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 720 ft above mean sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records poor.

DISCHARGE, 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	.00	.03	1.2	.15	.81	1.8	6.4	18	2.7	1.2	.08	.03
2	.00	.03	.30	.18	.74	1.3	2.2	4.6	.84	.74	.07	.03
3	.00	.03	.20	.28	.71	1.2	1.6	2.7	.63	.54	.06	.02
4	.00	.03	.18	.22	1.1	1.7	2.0	3.2	.56	.46	.06	.02
5	.00	.03	.16	.20	1.4	3.1	1.6	2.5	.51	.41	.05	.02
6	.00	.03	.15	.80	1.7	1.7	1.3	1.6	.47	.38	.05	.01
7	.00	.03	.14	51	2.3	1.3	1.1	7.2	.41	.40	.04	.01
8	.00	.04	.13	10	3.0	2.3	1.1	7.4	.39	.57	.04	.01
9	.00	.04	.12	4.4	4.3	13	1.6	2.9	.87	.44	.05	.01
10	.00	.04	.85	2.4	7.1	3.1	4.4	1.9	1.2	.37	.05	.01
11	.00	.04	.38	1.6	21	2.0	2.3	1.4	.98	.32	.05	.01
12	.00	.04	.23	2.5	10	1.5	1.6	1.2	2.2	.28	.05	.01
13	.00	.04	.20	2.2	4.5	1.3	1.3	.96	5.0	.26	.05	.01
14	.01	.05	.17	1.5	2.8	1.2	1.2	.83	1.6	.27	.05	.00
15	.01	.06	.16	1.8	2.0	.98	1.1	.74	1.0	.26	.05	.00
16	.01	.06	.15	1.9	2.5	.89	16	.67	1.2	.43	.05	.00
17	.01	.06	.14	1.8	3.0	.82	6.1	.62	.99	.47	.05	.00
18	.01	.05	.13	1.8	7.2	1.6	2.9	.56	.70	.34	.05	.00
19	.01	.06	.13	1.4	3.2	2.0	11	.51	.61	.36	.04	.01
20	.01	.05	.12	1.2	2.4	4.9	3.4	.52	.51	18	.04	.01
21	.01	.06	.12	1.1	2.1	3.7	2.2	1.6	.45	1.6	.04	.02
22	.01	.09	.29	1.1	1.6	2.5	4.0	.75	1.1	2.7	.04	.01
23	.01	.08	.26	5.5	1.5	1.8	3.2	31	2.1	1.1	.04	.01
24	.01	.08	1.1	2.6	1.3	1.4	2.1	5.6	.86	.32	.04	.01
25	.01	.07	1.3	1.8	1.1	1.2	1.6	2.6	.61	.18	.04	.01
26	.02	.07	.39	1.4	.95	1.1	1.3	1.5	.50	.11	.04	.01
27	.02	.06	.26	1.2	.90	1.0	1.3	1.1	.43	.08	.03	.01
28	.03	.06	.22	1.1	1.6	.97	1.1	.86	.36	.07	.07	.01
29	.03	.05	.20	1.1	---	.95	1.4	.69	4.3	.07	.05	.01
30	.03	3.0	.18	.98	---	.89	33	.58	4.8	.17	.04	.01
31	.02	---	.17	.88	---	.83	---	.72	---	.11	.03	---
TOTAL	0.27	4.46	9.73	106.09	92.81	64.03	121.4	107.01	38.88	33.01	1.49	0.33
MEAN	.009	.15	.31	3.42	3.31	2.07	4.05	3.45	1.30	1.06	.048	.011
MAX	.03	3.0	1.3	51	21	13	33	31	5.0	18	.08	.03
MIN	.00	.03	.12	.15	.71	.82	1.1	.51	.36	.07	.03	.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	1996	1997	1997	1998	1997	1997	1998	1998	1997	1998	1998	1998
MEAN	.067	.53	1.56	3.07	3.58	5.50	2.54	2.53	2.79	.83	.42	.36
MAX	.13	.92	2.80	3.42	3.84	8.93	4.05	3.45	4.28	1.06	1.09	1.06
(WY)	1997	1997	1997	1998	1997	1997	1998	1998	1997	1998	1996	1996
MIN	.009	.15	.31	2.71	3.31	2.07	1.03	1.61	1.30	.59	.048	.011
(WY)	1998	1998	1998	1997	1998	1998	1997	1997	1998	1997	1998	1998

## SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1996 - 1998

ANNUAL TOTAL	714.66	579.51		
ANNUAL MEAN	1.96	1.59		
HIGHEST ANNUAL MEAN			1.92	1997
LOWEST ANNUAL MEAN			2.24	1998
HIGHEST DAILY MEAN			1.59	1998
LOWEST DAILY MEAN	134	Mar 1	51	Jan 7
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 15	.00	Oct 1
INSTANTANEOUS PEAK FLOW	.00	Sep 15	.00	Oct 1
INSTANTANEOUS PEAK STAGE			459	Jan 7
10 PERCENT EXCEEDS	3.3		5.19	Jan 7
50 PERCENT EXCEEDS	.59		3.0	
90 PERCENT EXCEEDS	.01		.50	
			.01	

## LICKING RIVER BASIN

03250322 ROCK LICK CREEK AT HIGHWAY 158 NEAR SHARKEY, KY

LOCATION.--Lat 38°14'50", long 83°35'22", Fleming County, Hydrologic Unit 05100101, on downstream side of bridge, 0.53 miles downstream from Drip Spring, 1.1 miles above mouth, and 1.9 miles northwest of Sharkey.

DRAINAGE AREA.--4.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 645.451 ft above sea level.

REMARKS.--Estimated daily discharges: Nov. 30 and Aug. 9, 15-18. Records poor.

DISCHARGE, 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	.00	.16	10	1.0	2.1	4.8	20	66	6.3	3.1	.85	.03
2	.00	.52	3.5	1.4	2.0	3.7	6.0	17	2.5	1.9	.56	.01
3	.00	.48	2.3	2.3	1.8	3.3	4.4	13	2.0	1.4	.42	.00
4	.00	.26	1.8	1.8	3.0	4.8	5.3	15	1.9	1.4	.36	.00
5	.00	.20	1.3	1.8	4.0	9.5	4.3	9.2	1.7	.98	.32	.00
6	.00	.20	1.0	5.7	4.8	4.6	3.7	5.4	1.4	.82	.29	.00
7	.00	.18	.79	232	5.9	3.9	3.3	30	1.2	1.4	.26	.00
8	.00	.59	.67	78	7.8	7.6	3.6	23	1.1	1.8	.24	.00
9	.00	.36	.64	17	13	52	4.7	8.8	3.3	1.1	.69	.00
10	.00	.20	6.3	7.8	26	13	12	5.5	3.8	.77	.45	.00
11	.00	.17	3.6	5.2	90	8.1	5.8	4.2	2.8	.55	.29	.00
12	.00	.16	2.6	8.0	43	5.4	4.3	3.5	6.8	.45	.26	.00
13	.00	.17	1.9	6.5	18	4.7	3.8	2.9	17	.39	.24	.00
14	.50	.93	1.5	4.6	11	4.3	3.6	2.4	4.1	.70	.23	.00
15	.17	.30	1.1	6.0	6.7	3.7	3.4	2.0	3.1	.49	.19	.00
16	.14	.24	.86	5.8	9.6	3.4	68	1.7	4.8	2.5	.16	.00
17	.13	.22	.71	5.6	12	3.2	26	1.5	3.1	1.4	.12	.00
18	.13	.20	.62	5.0	29	5.9	15	1.2	2.2	.81	.13	.00
19	.13	.17	.56	4.3	12	6.0	43	1.0	1.9	1.1	.19	.00
20	.13	.17	.51	3.8	8.5	16	15	1.3	1.5	130	.11	.00
21	.12	1.3	.47	3.5	6.6	12	9.6	5.1	1.3	5.8	.08	1.8
22	.12	1.3	3.2	4.0	4.8	8.0	19	1.6	4.1	25	.07	.16
23	.10	.70	2.4	19	4.6	5.5	13	160	4.8	7.0	.06	.08
24	.32	.63	7.9	7.7	4.0	4.6	6.5	21	2.2	3.2	.05	.06
25	.36	.54	9.7	5.0	3.4	4.1	4.6	8.6	1.5	2.1	.05	.05
26	.50	.49	3.8	4.1	3.0	3.7	3.9	4.6	1.1	1.4	.05	.04
27	.36	.44	2.8	3.6	2.9	3.4	4.0	3.9	.86	1.0	.03	.01
28	.19	.42	2.2	3.2	4.7	3.2	3.1	3.0	.68	.74	.01	.01
29	.16	.40	1.8	2.9	---	2.8	3.8	2.5	14	.57	.01	.00
30	.15	17	1.6	2.7	---	2.6	164	2.1	17	3.7	.01	.00
31	.15	---	1.2	2.3	---	2.5	---	4.5	---	1.9	.02	---
TOTAL	3.86	29.10	79.33	461.6	344.2	220.3	486.7	431.5	120.04	205.47	6.80	2.25
MEAN	.12	.97	2.56	14.9	12.3	7.11	16.2	13.9	4.00	6.63	.22	.075
MAX	.50	17	10	232	90	52	164	160	17	130	.85	1.8
MIN	.00	.16	.47	1.0	1.8	2.5	3.1	1.0	.68	.39	.01	.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1998, BY WATER YEAR (WY)

	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
MEAN	.23	2.88	6.29	12.4	9.94	12.3	9.55	9.81	9.66	4.36	.67	.12
MAX	.33	4.79	10.0	14.9	12.3	17.5	16.2	13.9	15.3	6.63	1.12	.17
(WY)	1997	1997	1997	1998	1998	1997	1998	1998	1997	1998	1997	1997
MIN	.12	.97	2.56	9.93	7.59	7.11	2.87	5.70	4.00	2.10	.22	.075
(WY)	1998	1998	1998	1997	1997	1998	1997	1997	1998	1997	1998	1998

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1997 - 1998	
ANNUAL TOTAL	2003.09		2391.15			
ANNUAL MEAN	5.49		6.55		6.50	
HIGHEST ANNUAL MEAN					6.55	
LOWEST ANNUAL MEAN					6.45	
HIGHEST DAILY MEAN	190	Mar 1	232	Jan 7	232	Jan 7 1998
LOWEST DAILY MEAN	.00	Sep 21	.00	Oct 1	.00	Sep 21 1997
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 21	.00	Oct 1	.00	Sep 21 1997
INSTANTANEOUS PEAK FLOW			1160		1160	
INSTANTANEOUS PEAK STAGE			6.90		10.71	
10 PERCENT EXCEEDS	12		12		13	
50 PERCENT EXCEEDS	1.8		1.9		2.2	
90 PERCENT EXCEEDS	.13		.01		.11	

## LICKING RIVER BASIN

03251200 NORTH FORK LICKING RIVER NEAR MOUNT OLIVET, KY

LOCATION.--Lat 38°35'41", long 84°01'13", Bracken County, Hydrologic Unit 05100101, on right bank, downstream side of bridge on State Highway 875, 4 mi northeast of Mt. Olivet, and at mile 26.1.

DRAINAGE AREA.--226 mi<sup>2</sup>

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

GAGE.--Water-stage recorder. Datum of gage is 622.46 ft above sea level.

REMARKS.--Estimated daily discharges: Dec. 9-13, Mar. 10-12, and May 2-5. Records good except for periods of estimated record, which are poor.

DISCHARGE, 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	.08	.00	18	26	71	118	132	4550	106	45	60	1.7
2	.09	.00	30	23	63	116	112	2500	84	41	55	1.6
3	.08	.04	41	19	58	114	134	1700	68	38	34	1.3
4	.07	.11	21	17	55	98	100	800	58	30	25	1.1
5	.06	.12	10	14	63	92	83	400	53	24	19	.99
6	.03	.12	6.0	223	80	90	78	280	51	19	14	.93
7	.01	.12	5.0	1150	92	104	74	243	46	13	11	.92
8	.03	.15	4.1	3060	133	101	66	479	42	34	8.6	.92
9	.01	.16	3.8	3570	188	350	331	544	95	26	7.4	.87
10	.00	.16	10	1470	345	760	465	380	226	14	6.4	.88
11	.00	.17	37	413	841	500	413	268	2510	9.6	5.6	.83
12	.00	.16	46	247	3080	370	295	188	5530	6.9	5.5	.79
13	.00	.16	50	176	4330	277	179	140	5470	5.3	7.9	.84
14	.01	.32	30	164	3110	219	174	1950	3830	360	8.3	.82
15	.01	.36	21	181	1440	176	152	389	1570	145	6.5	.75
16	.01	.36	14	149	972	136	1070	186	710	52	5.1	.70
17	.00	.39	9.7	145	1180	113	2990	121	548	44	4.1	.84
18	.00	.33	6.6	147	1600	104	2670	90	347	35	3.2	.90
19	.00	.43	5.7	151	2010	106	1040	73	456	27	2.8	.79
20	.00	.47	4.7	142	1060	205	1110	64	273	1810	2.5	.70
21	.00	.65	4.1	113	616	370	758	63	152	1710	2.3	1.3
22	.00	1.1	4.8	96	457	563	532	90	118	768	2.2	47
23	.00	1.2	12	165	356	535	543	602	286	1270	2.1	8.3
24	.00	1.1	15	385	283	373	448	849	200	341	5.1	3.8
25	.05	1.0	130	426	217	259	331	1230	201	144	4.7	2.0
26	.04	1.0	171	268	174	203	232	920	119	83	3.7	1.4
27	.14	1.2	132	185	151	166	249	601	78	60	2.9	1.0
28	.11	.95	79	141	132	139	285	720	59	48	2.3	.85
29	.10	1.1	55	116	---	116	275	428	47	40	2.2	.77
30	.09	5.0	43	96	---	99	3140	243	48	34	2.1	.95
31	.09	---	35	82	---	86	---	149	---	42	2.1	---
TOTAL	1.11	18.43	1054.5	13560	23157	7058	18461	21240	23381	7318.8	323.6	86.54
MEAN	.036	.61	34.0	437	827	228	615	685	779	236	10.4	2.88
MAX	.14	5.0	171	3570	4330	760	3140	4550	5530	1810	60	47
MIN	.00	.00	3.8	14	55	86	66	63	42	5.3	2.1	.70
CFSM	.00	.00	.15	1.94	3.66	1.01	2.72	3.03	3.45	1.04	.05	.01
IN.	.00	.00	.17	2.23	3.81	1.16	3.04	3.50	3.85	1.20	.05	.01

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1998, BY WATER YEAR (WY)

MEAN	11.7	147	379	678	521	788	403	576	347	127	52.7	18.8
MAX	31.4	454	857	1165	827	1796	676	1524	779	296	123	62.7
(WY)	1994	1994	1997	1994	1998	1997	1994	1996	1998	1992	1995	1991
MIN	.036	.61	34.0	369	284	228	118	87.4	4.41	5.45	2.49	.25
(WY)	1998	1998	1998	1992	1995	1998	1997	1993	1991	1995	1997	1997

## SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1991 - 1998

ANNUAL TOTAL	125738.27	115659.98	
ANNUAL MEAN	344	317	340
HIGHEST ANNUAL MEAN			440
LOWEST ANNUAL MEAN			233
HIGHEST DAILY MEAN	12400	Mar 2	12400
LOWEST DAILY MEAN	.00	Oct 10	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 17	.00
INSTANTANEOUS PEAK FLOW		5910	13500
INSTANTANEOUS PEAK STAGE		22.04	34.71
INSTANTANEOUS LOW FLOW			.24
ANNUAL RUNOFF (CFSM)	1.52	1.40	1.51
ANNUAL RUNOFF (INCHES)	20.70	19.04	20.46
10 PERCENT EXCEEDS	696	781	835
50 PERCENT EXCEEDS	49	58	82
90 PERCENT EXCEEDS	.11	.12	1.7



## LICKING RIVER BASIN

03252300 HINKSTON CREEK NEAR CARLISLE, KY

LOCATION.--Lat 38°14'33", long 84°03'18", Bourbon County, Hydrologic Unit 05100102, at upstream side of bridge on State Highway 13, 0.5 mi upstream from Taylors Creek, 5.0 mi south of Carlisle, and at mile 29.0.

DRAINAGE AREA.--154 mi<sup>2</sup>.

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

REVISED RECORDS.--WRD KY-93-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 764.88 ft above sea level.

REMARKS.--Estimated daily discharges: Nov. 18 and Aug. 29 to Sept. 20. Records good except for discharges below 10ft<sup>3</sup>/s and periods of estimated record, which are poor.

DISCHARGE, 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	1.3	2.6	161	40	76	104	98	2480	582	1540	45	4.9
2	1.1	3.1	135	36	68	93	127	991	180	309	37	4.6
3	.84	3.0	62	35	62	85	89	401	105	169	29	4.1
4	.61	2.9	42	36	70	79	111	280	83	113	24	3.9
5	.43	2.8	31	44	84	95	112	231	77	86	21	4.1
6	.47	3.1	22	866	93	104	88	183	78	69	19	3.9
7	.31	3.7	16	1560	116	91	74	297	68	55	17	3.6
8	.25	3.8	11	3230	141	103	70	642	56	49	15	3.3
9	.50	3.9	9.0	1670	177	1000	109	479	105	49	13	3.5
10	.61	3.7	65	435	319	849	206	302	265	40	14	3.3
11	.96	4.1	80	264	1220	375	199	226	535	30	17	3.2
12	1.2	3.7	81	211	3220	257	136	174	389	23	16	3.0
13	1.2	3.6	57	268	2580	202	107	145	1050	17	18	2.9
14	1.6	4.1	45	224	1000	174	95	530	614	448	21	2.8
15	1.5	4.0	33	188	547	144	84	211	275	348	18	2.7
16	1.4	4.1	26	213	453	120	707	131	183	125	41	2.6
17	1.9	4.1	21	201	486	107	966	103	132	299	33	2.5
18	1.9	4.3	17	204	816	104	452	83	98	166	22	2.4
19	1.7	5.1	14	184	637	113	914	71	82	89	19	3.0
20	1.5	4.2	11	158	413	486	875	66	75	1220	15	5.0
21	1.2	4.1	9.8	135	300	705	428	63	95	1580	13	29
22	1.5	4.1	25	122	229	535	569	68	178	816	9.8	28
23	1.3	5.3	44	262	194	363	673	1300	1490	399	8.1	11
24	1.2	59	67	398	168	254	409	1160	1140	207	7.9	6.2
25	1.5	36	225	267	141	192	268	835	336	138	7.0	5.3
26	1.5	25	179	190	123	163	194	339	198	100	7.0	4.6
27	1.8	20	109	153	115	138	160	218	132	78	6.3	3.8
28	2.5	17	78	131	109	119	137	161	96	64	6.1	3.1
29	2.3	16	63	113	---	103	117	123	103	53	5.9	2.5
30	2.8	31	53	98	---	91	1650	97	1660	46	5.6	2.0
31	2.5	---	46	85	---	81	---	156	---	53	5.2	---
TOTAL	41.38	291.4	1837.8	12021	13957	7429	10224	12546	10460	8778	535.9	164.8
MEAN	1.33	9.71	59.3	388	498	240	341	405	349	283	17.3	5.49
MAX	2.8	59	225	3230	3220	1000	1650	2480	1660	1580	45	29
MIN	.25	2.6	9.0	35	62	79	70	63	56	17	5.2	2.0
CFSM	.01	.06	.38	2.52	3.24	1.56	2.21	2.63	2.26	1.84	.11	.04
IN.	.01	.07	.44	2.90	3.37	1.79	2.47	3.03	2.53	2.12	.13	.04

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	23.4	116	234	465	346	551	212	358	207	73.0	56.1	15.5
MAX	48.2	302	453	675	526	1210	436	875	652	283	121	56.5
(WY)	1994	1994	1997	1994	1994	1997	1994	1996	1997	1998	1993	1996
MIN	1.33	9.71	59.3	166	168	240	83.6	41.3	38.3	17.2	4.29	1.83
(WY)	1998	1998	1998	1992	1996	1998	1997	1992	1992	1993	1997	1997

## SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1992 - 1998

	1997 CALENDAR YEAR	1998 WATER YEAR	1992 - 1998
ANNUAL TOTAL	90400.37	78286.28	
ANNUAL MEAN	248	214	221
HIGHEST ANNUAL MEAN			304
LOWEST ANNUAL MEAN			128
HIGHEST DAILY MEAN	7520 Mar 2	3230 Jan 8	7520 Mar 2 1997
LOWEST DAILY MEAN	.25 Oct 8	.25 Oct 8	.25 Oct 8 1997
ANNUAL SEVEN-DAY MINIMUM	.45 Oct 4	.45 Oct 4	.45 Oct 4 1997
INSTANTANEOUS PEAK FLOW		3440 Jan 8	7800 Mar 2 1997
INSTANTANEOUS PEAK STAGE		21.36 Jan 8	37.00 Mar 2 1997
ANNUAL RUNOFF (CFSM)	1.61	1.39	1.44
ANNUAL RUNOFF (INCHES)	21.84	18.91	19.54
10 PERCENT EXCEEDS	459	556	531
50 PERCENT EXCEEDS	43	81	72
90 PERCENT EXCEEDS	1.6	2.7	3.9

## LICKING RIVER BASIN

03253500 LICKING RIVER AT CATAWBA, KY

LOCATION.--Lat 38°42'31", long 84°18'38", Pendleton County, Hydrologic Unit 05100101, on right bank 1 mi southeast of Catawba, 1.5 mi upstream from Kincaid Creek, 2.3 mi north of Falmouth, and at mile 48.0.

DRAINAGE AREA.--3,300 mi.<sup>2</sup>

PERIOD OF RECORD.--January 1914 to July 1920 (January 1914 to July 1915 and October 1917 to July 1920, gage heights only), July 1928 to current year. Published as "at Falmouth" 1914-16. Gage-height records collected in this vicinity since 1887 are published in reports of the National Weather Service.

REVISED RECORDS.--WSP 853: 1937. WSP 1003: 1943. WSP 1385: 1942. WSP 1705: Drainage.

GAGE.--Water-stage recorder. Datum of gage is 500.01 ft above sea level (levels by U.S. Army Corps of Engineers). Jan. 1, 1914 to July 31, 1916, nonrecording gage at site 3.8 mi upstream at datum 12.2 ft higher. July 14, 1916 to July 5, 1920, nonrecording gage at site 1.4 mi downstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 30 and Aug. 9. Records good except for periods of estimated record, which are fair. Flow regulated since December 1973 by Cave Run Lake (station 03249498).

DISCHARGE, 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	272	292	625	923	2060	4580	1740	29500	4560	14200	774	174
2	269	294	1570	857	1930	4700	1900	27400	6780	12000	800	145
3	267	293	1850	800	1680	4690	2310	19400	5310	5110	841	131
4	267	288	1430	743	1340	4480	2150	10600	4330	3900	757	118
5	267	287	1020	710	1420	4340	1960	7060	3950	4140	645	115
6	267	287	809	3150	1600	4530	1910	7250	3230	3880	567	114
7	262	287	695	11700	1850	4680	1930	8200	1850	3790	520	109
8	262	292	622	30600	2360	4690	1600	12700	1100	4030	465	102
9	259	292	567	31400	3270	9300	3310	13200	1550	3750	674	99
10	256	294	943	24200	4720	13700	4370	11300	3300	3590	884	97
11	256	297	1690	13700	11200	13500	4190	7840	11000	3440	557	95
12	256	297	1250	6590	31900	8550	5170	6560	16800	2660	340	95
13	261	557	1310	5090	37500	6500	5090	5760	18400	1530	292	97
14	262	871	1140	5480	30300	5820	4700	10600	17000	3750	276	98
15	262	861	932	6070	17400	5270	4700	9520	12300	5010	255	97
16	262	858	797	5710	10600	4430	13800	6600	6900	3060	232	99
17	264	858	702	5630	10400	3250	26300	4990	5470	1660	218	99
18	263	855	637	5550	12800	2510	19100	4420	4720	1330	211	100
19	210	851	586	5430	13000	2390	14700	4090	5120	1540	236	104
20	162	851	547	5230	12000	5740	14000	3920	4750	21100	208	106
21	232	844	522	4900	9690	8320	14000	4030	3510	32900	184	106
22	256	736	547	4560	8010	9490	11700	4820	3710	24500	168	149
23	256	692	772	4170	6930	7500	14300	11900	12900	9710	164	188
24	269	693	838	4910	6200	5360	12900	19100	14400	4910	185	220
25	291	576	2460	5930	5700	3960	9670	18300	8730	3660	199	197
26	299	443	3030	5110	5290	3180	7550	13400	4320	2710	194	174
27	303	394	2780	3820	4960	2700	6720	7620	2440	2140	189	165
28	299	372	2030	3140	4720	2360	6250	6350	1610	1650	186	160
29	282	396	1470	2740	---	2100	6080	5810	1230	1090	185	206
30	283	430	1180	2460	---	1890	22800	5080	1750	946	185	276
31	292	---	1030	2240	---	1730	---	4540	---	832	185	---
TOTAL	8168	15638	36381	213543	260830	166240	246900	311860	193020	188518	11776	4035
MEAN	263	521	1174	6888	9315	5363	8230	10060	6434	6081	380	135
MAX	303	871	3030	31400	37500	13700	26300	29500	18400	32900	884	276
MIN	162	287	522	710	1340	1730	1600	3920	1100	832	164	95

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1998, BY WATER YEAR (WY)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	1399	2871	5925	6914	7732	8606	5984	5186	3337	1652	1191	1449														
MAX (WY)	7178	6516	18500	15110	21140	21310	11920	16660	11230	6962	4630	12860														
MIN (WY)	1976	1987	1979	1974	1989	1997	1975	1983	1997	1979	1974	1979														
MIN (WY)	263	298	1092	420	2321	1247	666	371	134	291	103	110														
MIN (WY)	1998	1988	1981	1981	1977	1983	1986	1976	1988	1984	1986	1995														

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1974 - 1998	
ANNUAL TOTAL	1791321		1656909			
ANNUAL MEAN	4908		4539		4339	
HIGHEST ANNUAL MEAN					7730	
LOWEST ANNUAL MEAN					2006	
HIGHEST DAILY MEAN	104000		37500		104000	
LOWEST DAILY MEAN	148		95		25	
ANNUAL SEVEN-DAY MINIMUM	153		97		38	
INSTANTANEOUS PEAK FLOW			38200		110000	
INSTANTANEOUS PEAK STAGE			27.88		57.57	
INSTANTANEOUS LOW FLOW					2.5	
10 PERCENT EXCEEDS	11000		12800		10800	
50 PERCENT EXCEEDS	1700		2030		1800	
90 PERCENT EXCEEDS	264		192		254	

## OHIO RIVER MAIN STEM

03277200 OHIO RIVER AT MARKLAND DAM NR WARSAW, KY

LOCATION.--Lat 38°46'29", long 84°57'52", Gallatin County, Hydrologic Unit 05090203, at left end of Markland Dam, 0.4 mi upstream from Stephens Creek, 3.4 mi west of Warsaw, and at mile 531.5.

DRAINAGE AREA.--83,170 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--May 1970 to current year.

REVISED RECORDS.--WDR KY-88-1: 1987.

GAGE.--Gate opening and water-stage recorders on left bank. Turbine recorders in powerplant on right bank. Datum of headwater gage 0.5 mi upstream is 443 ft Ohio River datum. Datum of tailwater gage 0.4 mi downstream is 35 ft lower.

REMARKS.--No estimated daily discharges. Records fair except for those below 20,000 ft<sup>3</sup>/s, which are poor. Daily discharge computed from head, gate openings, turbine flow, and tailwater rating. Flow regulated by Ohio River system f locks, dams, and reservoirs upstream from station.

COOPERATION.--U.S. Army Corps of Engineers.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 26, 1937, reached a stage of 76.1 ft (tailwater gage).

DISCHARGE, 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	48500	25500	83400	72000	152000	158000	89500	292000	47900	348000	29200	9920
2	29800	23000	91800	63100	125000	156000	88000	276000	53300	350000	18300	18600
3	21300	22600	94000	44800	109000	158000	92400	277000	51400	322000	18800	16400
4	28700	36500	93800	46800	93100	169000	86700	303000	59200	233000	20800	15900
5	21800	48800	86600	57600	106000	167000	96200	317000	35600	154000	10200	10700
6	22000	54300	78300	74500	170000	151000	107000	314000	40600	123000	23000	7100
7	22500	38700	75900	131000	220000	136000	98300	297000	42100	89500	12600	9650
8	15600	49900	81500	266000	227000	120000	105000	319000	31500	78900	15200	16300
9	17300	82000	69400	312000	208000	151000	120000	309000	38800	80800	25400	23900
10	9500	100000	69600	344000	183000	180000	167000	308000	63800	91100	17100	8140
11	24500	96500	74100	363000	190000	222000	191000	315000	113000	69200	28700	21100
12	13800	85600	87000	361000	252000	236000	205000	291000	208000	62300	19600	15400
13	5000	84400	105000	360000	267000	226000	210000	242000	227000	52600	28500	8110
14	11500	80300	110000	369000	260000	192000	190000	200000	219000	41600	22900	20400
15	18100	76400	102000	320000	225000	156000	164000	177000	247000	50300	22600	6060
16	13300	91100	83200	241000	190000	129000	262000	159000	301000	38900	12100	8580
17	10000	89900	67700	206000	164000	108000	301000	126000	317000	36900	22100	15200
18	8010	84900	54300	187000	155000	89400	287000	99200	303000	25000	38300	6120
19	10600	69800	46000	177000	207000	100000	295000	86400	282000	31200	36900	9780
20	15700	67100	46400	162000	268000	152000	318000	90300	225000	128000	41700	13100
21	9740	57700	45600	138000	316000	196000	327000	73700	172000	95700	17400	21000
22	13500	46400	38400	127000	313000	262000	333000	71800	168000	74600	27300	27200
23	11800	57200	29000	113000	284000	315000	341000	80600	191000	56200	10700	14400
24	12600	61500	44000	115000	248000	332000	345000	104000	149000	63800	17700	16700
25	16000	75000	60100	132000	238000	325000	332000	112000	99200	33000	25600	7140
26	23000	70600	69300	153000	240000	286000	284000	126000	77900	42200	32100	14400
27	9090	70000	75400	153000	219000	215000	226000	123000	55800	28000	19400	22000
28	22100	61500	79700	141000	182000	164000	200000	88000	86700	32200	20600	8350
29	23000	57900	86300	131000	---	134000	214000	76100	160000	19000	20200	9260
30	22100	76400	80700	148000	---	113000	279000	79700	284000	21900	19700	21200
31	21800	---	77200	162000	---	107000	---	55500	---	32800	28100	---
TOTAL	552240	1941500	2285700	5670800	5811100	5605400	6354100	5788300	4349800	2905700	702800	422110
MEAN	17810	64720	73730	182900	207500	180800	211800	186700	145000	93730	22670	14070
MAX	48500	100000	110000	369000	316000	332000	345000	319000	317000	350000	41700	27200
MIN	5000	22600	29000	44800	93100	89400	86700	55500	31500	19000	10200	6060

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	50040	88610	146300	151300	179200	214800	180900	142400	93930	60270	45580	40240																		
MAX	144100	230600	288700	289900	291300	338500	292200	370100	219100	109500	146200	143800																		
(WY)	1980	1986	1973	1974	1975	1997	1972	1996	1981	1972	1980	1979																		
MIN	13910	26500	42150	34060	77100	98440	61160	43510	16250	18530	13060	14070																		
(WY)	1992	1992	1990	1977	1992	1990	1986	1976	1988	1988	1988	1998																		

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1970 - 1998	
ANNUAL TOTAL	38929590		42389550			
ANNUAL MEAN	106700		116100		116100	
HIGHEST ANNUAL MEAN					157300	
LOWEST ANNUAL MEAN					60450	
HIGHEST DAILY MEAN	579000	Mar 6	369000	Jan 14	579000	Mar 6 1997
LOWEST DAILY MEAN	5000	Oct 13	5000	Oct 13	4320	Sep 23 1984
ANNUAL SEVEN-DAY MINIMUM	10900	Oct 13	10600	Sep 13	7310	Jul 1 1988
INSTANTANEOUS PEAK FLOW					582000	
INSTANTANEOUS PEAK STAGE			43.07		Jan 13	60.72
10 PERCENT EXCEEDS	241000		289000		262000	
50 PERCENT EXCEEDS	82700		84400		81700	
90 PERCENT EXCEEDS	16700		15500		21600	

## KENTUCKY RIVER BASIN

03277400 LEATHERWOOD CREEK AT DAISY, KY

LOCATION.--Lat 37°06'48", long 83°05'33", Perry County, on right bank on downstream side of bridge, at mouth of Hicks Branch, at Daisy, 0.6 mi upstream from Little Leatherwood Creek, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--40.9 mi<sup>2</sup>, includes that of Hicks Branch.

PERIOD OF RECORD.--October 1964 to September 1974, October 1991 to September 1998 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 938.64 ft above sea level.

REMARKS.--Estimated daily discharges: Apr. 23 to May 2, May 5-9, and May 12-19. Records fair except for periods of estimated record, which are poor.

DISCHARGE, 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	3.3	3.4	49	10	40	40	114	210	31	21	31	8.6
2	4.0	6.3	17	11	32	41	97	180	25	25	23	8.2
3	3.6	9.0	12	14	58	41	82	240	32	27	19	7.8
4	3.7	15	12	26	179	39	195	250	199	21	16	7.1
5	4.3	7.3	14	19	122	39	168	195	170	30	15	6.8
6	4.8	4.9	13	15	97	38	118	150	129	19	14	6.1
7	3.4	6.8	12	24	93	38	91	130	84	15	13	8.1
8	2.8	10	10	57	126	39	81	110	63	76	12	8.8
9	2.2	15	10	41	184	69	89	98	128	57	14	6.5
10	2.2	9.4	32	27	221	62	153	253	121	29	17	5.2
11	3.4	6.9	21	22	207	55	161	225	94	20	35	4.8
12	4.1	6.0	14	18	155	50	124	160	93	17	18	4.6
13	5.1	6.3	12	16	104	45	98	130	159	16	15	5.2
14	7.2	10	12	14	77	42	89	95	111	16	36	4.7
15	8.8	12	9.6	17	60	36	74	76	106	15	35	4.9
16	4.6	9.6	7.3	22	55	38	409	62	75	15	65	4.3
17	4.0	7.5	7.0	21	71	37	1300	54	59	16	87	4.4
18	3.8	4.7	6.9	22	144	150	489	46	48	14	38	3.9
19	4.5	4.3	7.0	29	103	260	2720	39	47	146	59	4.3
20	4.3	3.7	6.2	33	82	220	593	35	38	152	27	4.6
21	3.1	22	6.7	27	68	194	304	36	38	50	20	4.3
22	2.8	36	10	25	57	137	256	35	35	29	18	5.5
23	2.5	16	8.7	38	61	104	210	187	58	26	16	4.8
24	2.7	11	7.1	49	59	85	180	100	34	24	14	3.8
25	4.5	7.3	12	42	54	77	150	65	28	21	14	3.7
26	7.2	6.6	10	33	50	66	110	108	24	20	12	4.2
27	12	7.1	13	35	46	60	94	79	20	19	12	3.7
28	8.2	6.9	14	75	40	56	80	62	20	17	11	3.2
29	4.3	6.7	12	85	---	52	68	48	18	17	10	3.9
30	3.3	9.9	12	71	---	46	84	38	22	16	9.6	5.4
31	2.8	---	12	54	---	41	---	37	---	113	8.9	---
TOTAL	137.5	287.6	401.5	992	2645	2297	8781	3533	2109	1099	734.5	161.4
MEAN	4.44	9.59	13.0	32.0	94.5	74.1	293	114	70.3	35.5	23.7	5.38
MAX	12	36	49	85	221	260	2720	253	199	152	87	8.8
MIN	2.2	3.4	6.2	10	32	36	68	35	18	14	8.9	3.2
CFSM	.11	.23	.32	.78	2.31	1.81	7.16	2.79	1.72	.87	.58	.13
IN.	.13	.26	.37	.90	2.41	2.09	7.99	3.21	1.92	1.00	.67	.15

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

MEAN	16.4	34.9	73.8	93.9	93.0	141	114	77.2	35.3	19.2	17.8	11.9
MAX	65.1	135	182	256	241	259	293	182	149	102	47.2	59.2
(WY)	1965	1974	1973	1974	1994	1973	1998	1971	1974	1973	1992	1974
MIN	3.29	3.23	1.75	4.06	22.2	32.0	42.9	12.4	4.06	1.19	2.50	1.59
(WY)	1966	1966	1966	1966	1968	1966	1995	1969	1966	1970	1970	1969

## SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1965 - 1998

ANNUAL TOTAL	20287.4	23178.5	
ANNUAL MEAN	55.6	63.5	60.4
HIGHEST ANNUAL MEAN			108
LOWEST ANNUAL MEAN			22.7
HIGHEST DAILY MEAN	1850	Mar 3	2720
LOWEST DAILY MEAN	2.2	Oct 9	2.2
ANNUAL SEVEN-DAY MINIMUM	3.3	Oct 6	3.3
INSTANTANEOUS PEAK FLOW			3830
INSTANTANEOUS PEAK STAGE			9.48
INSTANTANEOUS LOW FLOW			
ANNUAL RUNOFF (CFSM)	1.36	1.55	.14
ANNUAL RUNOFF (INCHES)	18.45	21.08	1.48
10 PERCENT EXCEEDS	112	150	132
50 PERCENT EXCEEDS	31	26	22
90 PERCENT EXCEEDS	4.8	4.5	3.1

## KENTUCKY RIVER BASIN

03280000 NORTH FORK KENTUCKY RIVER AT JACKSON, KY

LOCATION.--Lat 37°32'46", long 83°22'21", Breathitt County, Hydrologic Unit 05100201, on left bank at city water plant on Armory Drive at Jackson, 2.8 mi downstream from Quicksand Creek, and at mile 305.0.

DRAINAGE AREA.--1,101 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1928 to September 1931, December 1936 to February 1937, April 1938 to current year. Gage-height records collected at same site during periods 1904-07, 1921-31, and February to December 1934 (above 8.0 ft only), January 1935 to September 1976 are published in reports of National Weather Service.

REVISED RECORDS.--WSP 853: 1929(M). WSP 1335: 1928(M), 1929, 1931(M). WSP 1435: 1954-55. WSP 1505: 1948. WSP 1555: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 697.67 ft above sea level. See WDR KY-90-1 for history of changes prior to Aug. 22, 1980.

REMARKS.--Estimated daily discharges: July 3-5 and Aug. 9. Records good except for periods of estimated record, which are fair. Small diversions by city of Jackson waterworks. Flow regulated by Carr Fork Lake (station 03277446) beginning January 1976.

DISCHARGE, 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	146	146	436	307	1100	1380	1060	3880	963	1540	750	209
2	146	164	779	299	892	1300	1710	4830	817	1050	771	200
3	139	205	548	311	764	1260	1660	3770	714	860	497	187
4	121	235	411	428	1200	1250	3810	3850	2250	700	376	184
5	115	244	385	555	3160	1220	5140	4190	3090	680	312	174
6	111	253	394	602	3120	1200	3880	3380	2800	739	271	168
7	110	216	357	765	2750	1190	2820	2810	2220	637	247	165
8	107	204	316	1970	2660	1220	2260	3800	1720	776	230	164
9	107	189	289	2380	3630	2000	2130	4080	1390	3090	234	150
10	102	232	336	1720	4770	2440	2370	3710	3030	1790	875	141
11	117	243	508	1120	5200	2050	2970	4270	5000	1100	835	137
12	160	232	590	841	4440	1720	3040	3960	3460	807	653	136
13	135	217	506	698	3280	1480	2490	3030	3640	596	475	132
14	147	253	392	593	2440	1330	2050	2340	3630	732	400	127
15	137	352	325	558	1910	1190	1800	1780	2970	772	624	128
16	128	346	281	672	1600	1060	3280	1410	2630	602	643	128
17	111	304	249	709	1480	988	17200	1190	1970	547	1320	124
18	110	268	223	718	1960	1030	19400	1040	1470	518	1980	120
19	122	235	219	698	2440	3350	22500	896	1060	518	1390	125
20	122	215	210	688	2280	4400	27100	799	993	1460	1040	145
21	121	227	205	690	2040	4730	16000	954	829	1940	678	217
22	121	428	197	663	1790	4070	7030	1010	1100	1250	486	313
23	130	564	207	1020	1720	3130	5340	2110	3000	1010	408	265
24	122	491	214	1510	1950	2450	4510	6010	2270	716	357	200
25	122	353	237	1390	1950	2000	3740	3990	1510	592	313	190
26	172	283	268	1180	1780	1760	3160	2370	1320	485	279	175
27	249	250	274	999	1620	1520	2810	2030	982	419	259	159
28	243	224	287	1010	1480	1340	2520	1770	757	367	237	150
29	192	206	305	1230	---	1230	2290	1460	956	330	226	151
30	180	212	306	1570	---	1120	2260	1140	1500	306	228	149
31	162	---	314	1360	---	1040	---	921	---	540	225	---
TOTAL	4307	7991	10568	29254	65406	57448	178330	82780	60041	27469	17619	5013
MEAN	139	266	341	944	2336	1853	5944	2670	2001	886	568	167
MAX	249	564	779	2380	5200	4730	27100	6010	5000	3090	1980	313
MIN	102	146	197	299	764	988	1060	799	714	306	225	120
CFSM	.13	.24	.31	.86	2.12	1.68	5.40	2.43	1.82	.80	.52	.15
IN.	.15	.27	.36	.99	2.21	1.94	6.03	2.80	2.03	.93	.60	.17

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1998, BY WATER YEAR (WY)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	524	943	1651	2002	2638	2767	2371	1938	1091	481	424	305											
MAX	4189	3019	4649	5168	6392	7268	5944	7189	4166	1200	945	1154											
(WY)	1990	1986	1992	1979	1994	1994	1998	1984	1989	1992	1977	1989											
MIN	92.8	152	196	155	790	541	452	614	136	90.2	85.6	83.0											
(WY)	1981	1982	1981	1981	1988	1988	1986	1977	1988	1988	1988	1983											

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1977 - 1998	
ANNUAL TOTAL	440360		546226			
ANNUAL MEAN	1206		1497		1422	
HIGHEST ANNUAL MEAN					2570	
LOWEST ANNUAL MEAN					477	
HIGHEST DAILY MEAN	21300	Mar 4	27100	Apr 20	52200	May 8 1984
LOWEST DAILY MEAN	92	Sep 18	102	Oct 10	26	Aug 20 1988
ANNUAL SEVEN-DAY MINIMUM	110	Oct 5	110	Oct 5	30	Aug 16 1988
INSTANTANEOUS PEAK FLOW			27400		53500	Jan 30 1957
INSTANTANEOUS PEAK STAGE			33.28		43.10	Feb 4 1939
INSTANTANEOUS LOW FLOW					.00	Oct 16 1930
ANNUAL RUNOFF (CFSM)	1.10		1.36		1.29	
ANNUAL RUNOFF (INCHES)	14.88		18.46		17.54	
10 PERCENT EXCEEDS	2830		3360		3200	
50 PERCENT EXCEEDS	578		765		671	
90 PERCENT EXCEEDS	141		148		130	

## KENTUCKY RIVER BASIN

03280700 CUTSHIN CREEK AT WOOTON, KY

LOCATION.--Lat 37°9'54", long 83°18'29", Leslie County, Hydrologic Unit 05100202, on right bank 15 ft downstream from bridge on State Highway 80, 400 ft upstream from Poundmill Branch, 600 ft upstream from Rockhouse Branch, 0.7 mi downstream from Saw Branch, 1.0 mi southwest of Wooton, and at mile 10.7.

DRAINAGE AREA.--61.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 869.84 ft above sea level. Prior to Dec. 26, 1957, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Apr. 18-20 and Aug. 9-11. Records good except for periods of estimated record, which are poor. Peak of April 19 from floodmarks.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1957 reached a stage of 19.43 ft, from floodmarks.

DISCHARGE, 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	4.0	6.4	75	14	56	61	225	526	38	20	31	7.5
2	3.4	13	29	16	47	61	184	338	30	17	19	7.4
3	3.0	8.3	19	23	63	61	156	415	35	19	15	7.3
4	2.9	13	19	40	218	61	297	507	306	27	13	7.4
5	3.0	9.8	20	32	186	62	241	307	275	35	12	7.3
6	2.8	7.2	19	27	159	62	180	210	174	18	11	7.1
7	3.1	8.0	14	35	151	63	137	177	107	15	11	7.2
8	3.2	10	12	76	192	66	126	147	71	119	10	7.7
9	3.2	13	14	100	313	163	148	124	212	66	12	8.9
10	3.7	9.2	36	57	385	133	314	207	235	36	25	7.8
11	4.0	7.6	33	42	312	109	288	244	175	24	45	7.6
12	4.0	6.4	22	35	211	91	210	186	150	19	20	7.7
13	3.6	5.5	17	33	152	79	161	136	235	25	13	7.8
14	3.8	8.8	15	28	115	73	143	100	174	22	33	7.7
15	4.7	10	12	41	91	62	112	73	181	18	38	7.8
16	4.3	7.9	12	53	79	62	986	59	112	18	49	7.6
17	3.5	6.0	12	53	96	60	2260	47	71	20	75	7.5
18	3.3	5.1	11	50	177	286	670	39	51	15	34	7.8
19	3.3	4.5	11	57	150	403	4430	34	48	34	43	7.9
20	3.3	4.3	11	62	129	358	730	31	37	166	24	7.9
21	3.3	13	11	56	105	296	394	34	40	56	18	9.2
22	3.0	46	17	55	89	219	425	32	41	29	15	9.0
23	2.7	21	15	72	93	177	315	167	60	24	13	8.2
24	3.2	14	15	80	82	143	236	93	33	23	11	7.3
25	4.4	11	18	70	75	125	182	61	27	19	11	6.8
26	5.5	9.7	16	59	72	106	148	98	23	16	10	6.5
27	7.0	9.1	19	60	69	94	131	72	21	14	9.6	5.9
28	6.8	8.6	20	81	62	84	107	57	19	13	8.8	6.0
29	5.7	7.9	18	102	---	75	91	46	18	12	8.6	6.6
30	5.5	11	20	86	---	66	111	38	20	13	8.4	12
31	5.2	---	19	69	---	61	---	42	---	95	8.1	---
TOTAL	122.4	315.3	601	1664	3929	3822	14138	4647	3019	1047	654.5	230.4
MEAN	3.95	10.5	19.4	53.7	140	123	471	150	101	33.8	21.1	7.68
MAX	7.0	46	75	102	385	403	4430	526	306	166	75	12
MIN	2.7	4.3	11	14	47	60	91	31	18	12	8.1	5.9
CFSM	.06	.17	.32	.88	2.29	2.01	7.69	2.45	1.64	.55	.34	.13
IN.	.07	.19	.36	1.01	2.38	2.32	8.58	2.82	1.83	.64	.40	.14

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1998, BY WATER YEAR (WY)

MEAN	27.7	64.1	111	145	171	202	166	118	58.3	32.4	23.9	18.3
MAX	287	309	359	597	371	620	471	449	423	144	107	125
(WY)	1990	1978	1973	1974	1994	1975	1998	1983	1989	1958	1966	1974
MIN	.26	6.64	3.30	6.97	27.0	21.4	16.6	14.0	3.17	2.17	1.16	.73
(WY)	1964	1966	1966	1981	1968	1988	1963	1964	1988	1970	1988	1969

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1958 - 1998
ANNUAL TOTAL	28835.5	34189.6	
ANNUAL MEAN	79.0	93.7	
HIGHEST ANNUAL MEAN			94.4
LOWEST ANNUAL MEAN			21.2
HIGHEST DAILY MEAN	2420	Mar 3	4430
LOWEST DAILY MEAN	2.7	Sep 14	2.7
ANNUAL SEVEN-DAY MINIMUM	2.9	Sep 13	3.0
INSTANTANEOUS PEAK FLOW			8650
INSTANTANEOUS PEAK STAGE			12.29
INSTANTANEOUS LOW FLOW			.00
ANNUAL RUNOFF (CFSM)	1.29	1.53	1.54
ANNUAL RUNOFF (INCHES)	17.50	20.75	20.93
10 PERCENT EXCEEDS	173	210	205
50 PERCENT EXCEEDS	36	33	34
90 PERCENT EXCEEDS	3.7	6.2	2.9

KENTUCKY RIVER BASIN

03281000 MIDDLE FORK KENTUCKY RIVER AT TALLEGA, KY

LOCATION.--Lat 37°33'18", long 83°35'38", Lee County, Hydrologic Unit 05100202, on left bank 100 ft downstream of bridge on State Highway 708, 150 ft upstream from Lynam Creek, 0.5 mi southwest of Tallega, 8.3 mi upstream from confluence with North Fork, and at mile 8.3.

DRAINAGE AREA.--537 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1930 to March 1932, October 1939 to current year.

REVISED RECORDS.--WSP 1113: 1931, 1940. WSP 1385: 1931-32, 1948, drainage area. WSP 1505: 1946(M), 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 642.13 ft above sea level. Prior to Feb. 6, 1940, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges Aug. 9. Records good except for period of estimated record, which is fair. Flow regulated by Buckhorn Lake beginning December 1960 (station 03280800).

DISCHARGE, 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	55	132	418	162	485	608	376	4470	361	706	143	58
2	55	137	375	161	328	455	295	4660	372	385	148	52
3	41	152	304	177	338	434	627	4340	387	326	218	51
4	34	153	354	219	562	410	2080	4320	782	278	215	51
5	53	149	354	296	792	403	1610	4360	1660	292	151	51
6	55	141	344	519	1430	391	2060	4100	2350	259	81	50
7	55	140	339	1040	1730	293	2270	3990	1200	235	76	50
8	55	141	217	1880	1800	345	2160	4130	933	290	75	49
9	55	155	175	1220	2220	861	1780	4050	926	2630	75	48
10	56	158	200	1390	3040	969	1400	3880	2190	903	79	48
11	58	147	265	1010	3350	1560	1320	3780	3050	448	83	49
12	64	141	226	406	3300	1550	1220	3670	2160	303	77	48
13	60	137	278	482	2930	1010	1420	3100	1450	201	74	48
14	59	159	305	325	2590	661	1380	1900	2120	137	76	48
15	60	197	221	321	1080	613	1110	1290	1800	138	100	47
16	66	172	174	342	939	496	1920	782	1570	155	247	47
17	159	154	173	310	924	465	4870	555	1020	154	442	47
18	197	144	169	328	1030	478	4220	369	735	147	920	49
19	197	251	165	337	1480	694	6790	334	570	147	393	78
20	197	188	164	331	1910	2650	5180	269	528	235	234	82
21	197	224	162	420	1760	3500	4160	261	342	1010	188	83
22	197	472	163	283	979	3320	4030	236	314	879	185	116
23	197	379	162	740	402	3100	4170	991	1480	313	183	84
24	172	432	162	1010	934	2230	4180	2670	1170	268	154	78
25	134	433	176	1040	916	1810	4230	1270	772	253	92	78
26	138	423	174	739	756	1420	4130	511	498	174	85	78
27	169	413	146	646	907	927	4030	428	310	111	72	77
28	141	316	134	411	676	771	3960	876	264	107	70	76
29	135	281	171	468	---	621	4080	702	1180	104	70	77
30	135	297	175	462	---	593	4100	391	1310	115	71	79
31	134	---	171	544	---	577	---	336	---	170	69	---
TOTAL	3380	6818	7016	18019	39588	34215	85158	67021	33804	11873	5146	1877
MEAN	109	227	226	581	1414	1104	2839	2162	1127	383	166	62.6
MAX	197	472	418	1880	3350	3500	6790	4660	3050	2630	920	116
MIN	34	132	134	161	328	293	295	236	264	104	69	47
CFSM	.20	.42	.42	1.08	2.63	2.06	5.29	4.03	2.10	.71	.31	.12
IN.	.23	.47	.49	1.25	2.74	2.37	5.90	4.64	2.34	.82	.36	.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

MEAN	322	600	958	1300	1467	1699	1197	966	499	219	176	174
MAX	2225	1715	2826	3320	3634	3672	3280	2762	2599	687	623	784
(WY)	1990	1978	1973	1974	1994	1994	1994	1971	1989	1992	1992	1989
MIN	47.5	148	45.5	56.8	270	241	98.7	57.9	49.1	43.6	45.0	45.9
(WY)	1989	1961	1966	1981	1968	1988	1986	1986	1988	1988	1988	1987

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1961 - 1998
ANNUAL TOTAL	269446	313915	
ANNUAL MEAN	738	860	795
HIGHEST ANNUAL MEAN			1492
LOWEST ANNUAL MEAN			267
HIGHEST DAILY MEAN	5160	Mar 3	10300
LOWEST DAILY MEAN	34	Oct 4	11
ANNUAL SEVEN-DAY MINIMUM	50	Oct 1	12
INSTANTANEOUS PEAK FLOW		7700	Apr 19
INSTANTANEOUS PEAK STAGE		23.18	Apr 19
INSTANTANEOUS LOW FLOW			43.33
ANNUAL RUNOFF (CFSM)	1.37	1.60	.10
ANNUAL RUNOFF (INCHES)	18.67	21.75	1.48
10 PERCENT EXCEEDS	2630	2660	2550
50 PERCENT EXCEEDS	207	334	305
90 PERCENT EXCEEDS	56	70	66

## KENTUCKY RIVER BASIN

03281040 RED BIRD RIVER NEAR BIG CREEK, KY

LOCATION.--Lat 37°10'43", long 83°35'35" Clay County, Hydrologic Unit 05100203, on right bank adjacent to State Highway 66, 0.1 mi upstream from Fish Trap Branch, 0.6 mi downstream from Britton Branch, 1.2 mi downstream from Big Creek, 1.7 mi northwest of Big Creek, and at mile 58.9.

DRAINAGE AREA.--155 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1972 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 815.74 ft above sea level.

REMARKS.--Estimated daily discharges: Oct. 2 to Nov. 15, Jan. 24, Feb. 10, Mar. 9, 20-21, Apr. 4, 5, 16-24, and May 1-5. Records fair except for periods of estimated record, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of 1947 and 1957 reached a stage of 29.27 ft and 27.60 ft, respectively, from floodmarks.

DISCHARGE, 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	7.3	5.0	101	30	105	147	346	2700	68	94	66	3.8
2	5.4	6.2	92	31	96	139	342	1100	52	72	31	3.5
3	4.9	8.1	63	51	147	131	350	740	49	85	17	3.3
4	4.3	12	62	133	587	126	1200	850	375	73	11	3.4
5	4.0	12	65	122	506	120	840	800	482	151	7.9	3.4
6	6.4	11	65	101	416	117	561	581	335	80	5.4	3.6
7	8.3	13	51	183	410	118	401	555	193	55	4.3	3.7
8	12	22	42	423	543	153	385	504	126	103	5.2	3.8
9	15	28	44	361	814	800	381	505	503	81	8.0	8.5
10	30	23	150	197	1200	598	586	643	665	56	45	9.9
11	44	18	134	134	862	403	658	799	485	39	117	4.8
12	9.5	15	83	107	711	293	549	624	361	28	47	3.5
13	3.6	18	55	90	502	241	415	423	731	34	23	3.6
14	4.2	95	41	71	363	211	360	292	625	33	222	4.1
15	5.1	97	29	87	275	173	285	212	819	26	280	4.7
16	6.5	56	23	108	243	170	2400	163	569	26	106	5.5
17	5.2	34	18	110	275	162	9850	133	298	31	450	6.9
18	4.1	22	15	110	601	445	1860	107	177	24	195	8.6
19	3.7	16	13	121	544	744	7000	92	162	20	102	9.9
20	3.4	15	11	123	447	2000	1720	93	114	76	58	9.9
21	3.0	72	9.6	118	346	1400	740	96	144	65	37	11
22	2.6	196	17	137	281	850	1370	85	281	30	26	14
23	2.5	98	26	393	261	642	1240	230	399	24	19	11
24	3.0	57	22	410	222	507	750	167	198	34	15	11
25	3.5	37	33	275	182	400	544	139	125	24	12	11
26	7.8	30	35	204	169	314	401	238	93	14	8.7	10
27	7.0	25	41	169	166	269	366	161	72	11	7.7	9.8
28	6.4	18	43	163	153	239	345	125	56	9.3	5.7	10
29	8.1	16	38	143	---	207	301	98	232	7.0	4.7	16
30	6.6	21	41	131	---	181	441	80	155	21	4.4	17
31	5.6	---	40	116	---	175	---	68	---	103	4.2	---
TOTAL	243.0	1096.3	1502.6	4952	11427	12475	36987	13403	8944	1529.3	1945.2	229.2
MEAN	7.84	36.5	48.5	160	408	402	1233	432	298	49.3	62.7	7.64
MAX	44	196	150	423	1200	2000	9850	2700	819	151	450	17
MIN	2.5	5.0	9.6	30	96	117	285	68	49	7.0	4.2	3.3
CFSM	.05	.24	.31	1.03	2.63	2.60	7.95	2.79	1.92	.32	.40	.05
IN.	.06	.26	.36	1.19	2.74	2.99	8.88	3.22	2.15	.37	.47	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1998, BY WATER YEAR (WY)

	MEAN	234	377	456	509	607	452	347	176	80.3	50.8	38.1
MAX	758	796	1180	1150	1244	1678	1233	1176	998	351	192	138
(WY)	1990	1978	1991	1974	1994	1975	1998	1984	1989	1992	1990	1979
MIN	3.93	7.84	37.5	19.0	164	99.6	60.9	41.2	10.3	5.28	2.51	1.81
(WY)	1979	1988	1981	1981	1988	1988	1986	1986	1988	1988	1988	1983

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1973 - 1998

ANNUAL TOTAL		82872.5		94733.6								
ANNUAL MEAN		227		260						283		
HIGHEST ANNUAL MEAN										513		1994
LOWEST ANNUAL MEAN										92.2		1988
HIGHEST DAILY MEAN		6620	Mar 3	9850	Apr 17				16200	May 7	1984	
LOWEST DAILY MEAN		2.5	Oct 23	2.5	Oct 23					.20	Oct 4	1983
ANNUAL SEVEN-DAY MINIMUM		3.1	Oct 19	3.1	Oct 19					.52	Sep 5	1995
INSTANTANEOUS PEAK FLOW				20400	Apr 17				28500	Oct 17	1989	
INSTANTANEOUS PEAK STAGE				18.38	Apr 17					21.14	Oct 17	1989
INSTANTANEOUS LOW FLOW										.20	Oct 4	1983
ANNUAL RUNOFF (CFSM)		1.46		1.67						1.83		
ANNUAL RUNOFF (INCHES)		19.89		22.74						24.84		
10 PERCENT EXCEEDS		542		591						612		
50 PERCENT EXCEEDS		95		93						98		
90 PERCENT EXCEEDS		6.4		5.5						7.3		



## KENTUCKY RIVER BASIN

03281100 GOOSE CREEK AT MANCHESTER, KY

LOCATION.--Lat 37°09'07", long 83°45'37", Clay County, Hydrologic Unit 05100203, on left bank on downstream side of Second Street bridge at Manchester, 0.9 mi upstream from Little Goose Creek, and at mile 21.7.

DRAINAGE AREA.--163 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 819.37 ft above sea level. Prior to September 15, 1975, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Nov. 26 to Jan. 4. Records good except for period of estimated record, which is poor.

EXTREMES OUTSIDE PERIOD OF RECORD.---Flood of June 28, 1947, Jan. 29, 1957, and Mar. 12, 1963, reached a stage of 40.6 ft, discharge, 38,000 ft<sup>3</sup>/s, 37.3 ft, discharge, 29,800 ft<sup>3</sup>/s, and 33.5 ft, discharge, 21,500 ft<sup>3</sup>/s, respectively, present site.

DISCHARGE, 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	4.9	5.1	110	40	84	140	287	2810	44	62	54	6.2
2	4.2	6.3	100	44	77	129	288	1150	38	51	29	5.7
3	3.9	8.5	70	65	123	118	328	706	39	63	20	5.2
4	3.7	12	68	170	516	110	1280	872	264	64	15	4.7
5	3.5	12	70	146	521	100	867	855	429	116	12	4.3
6	4.2	12	70	162	445	93	502	567	285	66	10	5.1
7	7.3	13	56	453	437	90	361	542	166	47	8.8	5.0
8	9.9	22	53	743	569	131	309	478	109	124	32	4.2
9	13	27	58	574	1060	1000	278	446	427	96	31	4.1
10	30	25	170	346	1360	648	336	509	577	62	47	4.2
11	52	20	150	240	1120	415	365	676	357	46	53	5.2
12	7.0	15	90	185	666	318	319	531	262	36	35	5.2
13	3.2	18	60	152	446	264	274	373	636	32	22	5.5
14	3.9	96	45	116	345	231	258	273	522	56	58	4.7
15	4.7	106	34	124	277	192	217	199	967	43	208	7.2
16	6.3	59	26	140	245	187	2960	151	558	34	75	7.9
17	4.7	39	20	145	272	179	12100	119	291	35	318	7.6
18	3.8	30	17	146	476	437	1870	94	178	31	161	6.8
19	3.4	25	15	161	465	835	7520	76	144	25	78	8.0
20	3.2	21	13	164	397	2190	1760	68	109	30	49	7.1
21	2.8	96	11	159	326	1370	798	63	123	27	35	8.0
22	2.3	227	19	176	272	845	1440	62	270	23	26	7.8
23	2.3	117	29	557	259	604	1260	104	482	22	21	6.1
24	2.8	67	25	577	218	438	691	102	243	33	17	5.2
25	3.2	42	35	358	184	354	465	110	148	25	14	5.4
26	8.4	34	40	260	167	290	356	168	102	18	12	5.3
27	7.5	29	46	205	162	246	388	115	77	15	10	4.9
28	6.8	23	50	174	150	218	470	90	60	13	9.0	4.9
29	8.7	20	48	142	---	190	404	68	53	11	8.3	5.4
30	6.6	24	51	118	---	167	486	55	74	31	7.6	4.1
31	5.4	---	49	97	---	153	---	47	---	60	7.0	---
TOTAL	233.6	1250.9	1698	7139	11639	12682	39237	12479	8034	1397	1482.7	171.0
MEAN	7.54	41.7	54.8	230	416	409	1308	403	268	45.1	47.8	5.70
MAX	52	227	170	743	1360	2190	12100	2810	967	124	318	8.0
MIN	2.3	5.1	11	40	77	90	217	47	38	11	7.0	4.1
CFSM	.05	.26	.34	1.41	2.55	2.51	8.02	2.47	1.64	.28	.29	.03
IN.	.05	.29	.39	1.63	2.66	2.89	8.95	2.85	1.83	.32	.34	.04

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

MEAN	86.6	204	373	443	488	541	441	311	157	93.9	51.0	43.7
MAX	600	646	1229	1205	1196	1665	1308	1158	975	381	178	185
(WY)	1990	1978	1991	1974	1972	1975	1998	1984	1989	1965	1977	1979
MIN	2.13	11.4	28.3	22.9	70.5	111	50.8	29.3	6.48	2.03	3.72	2.11
(WY)	1970	1988	1966	1981	1968	1969	1986	1965	1988	1966	1988	1965

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	76659.5		97443.2			
ANNUAL MEAN	210		267		268	
HIGHEST ANNUAL MEAN					456	
LOWEST ANNUAL MEAN					107	
HIGHEST DAILY MEAN	5430		12100		13700	
LOWEST DAILY MEAN	2.3		2.3		.00	
ANNUAL SEVEN-DAY MINIMUM	2.9		2.9		.16	
INSTANTANEOUS PEAK FLOW			17300		19200	
INSTANTANEOUS PEAK STAGE			30.89		32.85	
INSTANTANEOUS LOW FLOW					.00	
ANNUAL RUNOFF (CFSM)	1.29		1.64		1.65	
ANNUAL RUNOFF (INCHES)	17.50		22.24		22.37	
10 PERCENT EXCEEDS	486		562		578	
50 PERCENT EXCEEDS	84		76		92	
90 PERCENT EXCEEDS	5.5		5.4		6.3	



## KENTUCKY RIVER BASIN

03282000 KENTUCKY RIVER AT LOCK 14, AT HEIDELBERG, KY

LOCATION.--Lat 37°33'19", long 83°46'06", Lee County, Hydrologic Unit 05100204, on right bank 200 ft upstream from lock 14 at Heidelberg, 0.3 mi upstream from Sturgeon Creek, and at mile 249.2.

DRAINAGE AREA.--2,657 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1925 to September 1931, December 1936 to February 1937, July 1938 to current year. Gage-height records collected in this vicinity since 1902 are published in reports of National Weather Service.

REVISED RECORDS.--WSP 1385: 1926-27, 1928(M), 1929, 1931(M), 1937, 1939(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 626.66 ft above sea level, Ohio River datum. Prior to September 2, 1939, nonrecording gage at lock 14 at same datum.

REMARKS.--Estimated daily discharges: Oct. 7-14, May 21, 25, 28-31, and Aug. 9. Records good above 1,000 ft<sup>3</sup>/s, fair between 1,000 ft<sup>3</sup>/s and 150 ft<sup>3</sup>/s, and poor below 150 ft<sup>3</sup>/s and for periods of estimated record. Flow regulated by Buckhorn Lake beginning December 1960 (station 03280800), and by Carr Fork Lake beginning January 1976 (station 03277446). Small diversions by City of Lexington waterworks.

DISCHARGE, 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	184	340	735	818	2510	3310	2730	13500	1860	5270	963	314
2	184	330	824	788	2070	2960	3080	22600	1800	3060	1180	286
3	178	335	949	820	1770	2710	3870	16500	1600	2490	1160	267
4	168	412	1090	1010	2280	2550	8570	14700	2610	1840	842	249
5	150	467	1150	1350	5090	2470	14700	17100	6060	1620	670	236
6	150	470	1080	2040	7410	2370	11900	14200	8040	1740	511	232
7	145	475	1040	3960	7390	2230	8820	11600	5750	1530	435	222
8	140	480	899	12000	7310	2300	7160	13700	4230	1640	395	209
9	130	493	736	8590	9720	4700	7100	13600	3740	5670	380	193
10	130	527	698	6920	15900	8410	7360	12300	7620	5240	374	179
11	140	535	706	4840	19800	7070	7770	11700	13200	2730	1090	166
12	160	546	710	3150	19400	5720	7640	12500	11200	1830	1090	154
13	170	533	720	2430	13100	4490	6840	10000	9820	1350	940	150
14	175	552	1270	2010	9200	3600	5840	6930	10100	1040	733	151
15	160	787	1060	1800	6060	3140	4970	4940	9000	1220	663	145
16	159	990	818	2040	4670	2720	8380	3640	8720	1210	1200	145
17	179	889	712	2160	4210	2460	32200	2800	6030	1040	1910	150
18	303	699	651	2150	4850	2410	42600	2310	4070	949	3100	149
19	330	617	597	2110	6760	3860	47000	1940	2990	974	3000	166
20	330	609	557	2050	7380	11600	53100	1710	2460	1370	2030	191
21	330	496	525	2040	6660	19400	39600	1700	2090	3160	1440	258
22	330	490	511	1960	5260	16000	28100	1850	1720	3310	1040	359
23	330	507	517	2860	4300	11900	21300	3200	4980	2210	804	475
24	330	536	531	5810	4390	8700	16900	10200	6150	1560	682	395
25	285	1120	616	5480	4530	6580	13500	7500	4140	1200	559	303
26	266	1090	703	4160	4010	5430	11100	5410	2830	981	485	267
27	379	934	772	3280	3860	4350	9700	3950	2220	766	428	253
28	465	799	762	2710	3530	3670	8870	3600	1660	665	382	234
29	453	668	822	2550	---	3200	8630	3000	2740	593	358	218
30	395	670	867	2730	---	2900	8560	2400	7000	561	339	234
31	362	---	857	2820	---	2660	---	1900	---	714	331	---
TOTAL	7590	18396	24485	99436	193420	165870	457890	252980	156430	59533	29514	6950
MEAN	245	613	790	3208	6908	5351	15260	8161	5214	1920	952	232
MAX	465	1120	1270	12000	19800	19400	53100	22600	13200	5670	3100	475
MIN	130	330	511	788	1770	2230	2730	1700	1600	561	331	145
CFSM	.09	.23	.30	1.21	2.60	2.01	5.74	3.07	1.96	.72	.36	.09
IN.	.11	.26	.34	1.39	2.71	2.32	6.41	3.54	2.19	.83	.41	.10

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1998, BY WATER YEAR (WY)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	1424	2855	5007	5882	7358	7833	6224	5124	2783	1147	968	761											
MAX	10380	7006	14850	14010	16710	18260	15260	16010	10380	3320	3006	3680											
(WY)	1990	1978	1991	1994	1994	1994	1998	1984	1989	1992	1977	1989											
MIN	242	431	582	362	2345	1791	855	910	247	206	154	170											
(WY)	1989	1988	1981	1981	1988	1988	1986	1986	1988	1988	1988	1984											

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1977 - 1998	
ANNUAL TOTAL	1286752		1472494			
ANNUAL MEAN	3525		4034		3930	
HIGHEST ANNUAL MEAN					6973	
LOWEST ANNUAL MEAN					1461	
HIGHEST DAILY MEAN	48500	Mar 4	53100	Apr 20	85900	May 8 1984
LOWEST DAILY MEAN	130	Oct 9	130	Oct 9	45	Jul 10 1988
ANNUAL SEVEN-DAY MINIMUM	141	Oct 5	141	Oct 5	53	Jul 4 1988
INSTANTANEOUS PEAK FLOW			53900	Apr 20	120000	Feb 4 1939
INSTANTANEOUS PEAK STAGE			22.42	Apr 20	35.60	Feb 4 1939
INSTANTANEOUS LOW FLOW					4.0	Oct 20 1930
ANNUAL RUNOFF (CFSM)	1.33		1.52		1.48	
ANNUAL RUNOFF (INCHES)	18.02		20.62		20.10	
10 PERCENT EXCEEDS	9060		10100		9900	
50 PERCENT EXCEEDS	1240		1830		1700	
90 PERCENT EXCEEDS	230		244		292	

## KENTUCKY RIVER BASIN

03282040 STURGEON CREEK AT CRESSMONT, KY

LOCATION.--Lat 37°30'02", long 83°48'37", Lee County, Hydrologic Unit 05100204, on right bank 30 ft downstream of bridge on State Highway 597, 0.2 mi southeast of Cressmont, 0.2 mi upstream from Elkhorn Branch, and 0.5 mi downstream from Granny Dismal Creek.

DRAINAGE AREA.-- 77.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 704.53 ft above sea level.

REMARKS.--Estimated daily discharges: Feb. 11, 12 and Apr. 16-19. Records fair except for periods of estimated record, which are poor.

DISCHARGE, 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	2.0	5.4	147	35	50	102	174	883	41	39	11	2.4
2	1.9	11	88	36	45	98	140	421	26	22	8.5	2.1
3	2.4	16	66	51	50	89	157	278	62	18	6.5	1.8
4	2.9	26	59	67	115	86	637	617	296	16	5.6	1.6
5	3.0	21	50	70	116	81	323	526	376	17	4.5	1.8
6	3.2	18	42	297	126	74	219	289	233	15	4.0	2.0
7	3.1	20	37	1180	147	71	161	308	134	12	3.7	1.6
8	2.9	32	33	832	210	113	152	301	90	200	3.8	1.2
9	3.5	39	39	324	447	625	261	243	435	108	5.6	1.0
10	13	31	132	194	622	312	274	207	541	53	6.5	.95
11	12	23	113	140	1050	215	229	202	416	32	6.6	.88
12	5.5	18	81	116	940	161	181	144	356	20	5.0	.85
13	5.1	16	62	98	459	133	146	111	380	30	4.1	.77
14	5.5	91	49	79	290	116	134	85	254	46	5.0	.75
15	13	85	40	120	209	95	116	64	476	25	7.3	.67
16	11	51	35	127	182	86	1100	51	220	19	5.4	.61
17	10	35	32	122	218	78	3500	42	128	19	71	.59
18	8.6	27	26	109	342	92	660	32	86	15	17	.55
19	11	22	23	107	333	101	1800	25	83	36	20	1.1
20	10	19	20	93	271	807	591	25	57	129	8.9	1.0
21	8.3	57	19	83	205	490	339	28	57	57	6.0	4.7
22	6.1	117	23	103	164	319	551	27	63	145	4.8	5.7
23	6.8	73	23	344	179	230	366	206	105	100	4.1	2.5
24	7.1	49	26	280	146	172	255	111	66	48	3.7	1.5
25	7.9	37	42	189	129	147	183	72	43	28	3.6	1.1
26	43	32	41	142	119	122	142	63	32	18	3.4	.93
27	44	26	46	116	113	106	118	60	23	14	2.9	.82
28	15	21	46	97	110	94	96	48	17	12	2.7	.89
29	9.1	19	46	81	---	82	82	37	15	9.7	2.8	.99
30	6.4	40	47	69	---	73	137	29	55	8.7	2.9	1.4
31	5.0	---	41	58	---	70	---	23	---	13	2.8	---
TOTAL	288.3	1077.4	1574	5759	7387	5440	13224	5558	5166	1324.4	249.7	44.75
MEAN	9.30	35.9	50.8	186	264	175	441	179	172	42.7	8.05	1.49
MAX	44	117	147	1180	1050	807	3500	883	541	200	71	5.7
MIN	1.9	5.4	19	35	45	70	82	23	15	8.7	2.7	.55
CFSM	.12	.46	.66	2.40	3.41	2.27	5.70	2.32	2.23	.55	.10	.02
IN.	.14	.52	.76	2.77	3.55	2.62	6.36	2.67	2.49	.64	.12	.02

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1998, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
MEAN	39.4	99.0	124	246	215	315	215	168	127	20.1	16.6	18.2
MAX	108	246	193	403	484	540	441	345	304	42.7	29.3	59.5
(WY)	1997	1997	1994	1994	1994	1994	1998	1995	1997	1998	1994	1996
MIN	6.54	21.2	50.8	139	92.0	122	49.6	26.1	19.1	4.06	4.05	1.49
(WY)	1995	1995	1998	1993	1997	1995	1997	1993	1994	1995	1997	1998

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1993 - 1998
ANNUAL TOTAL	39451.74	47092.55	
ANNUAL MEAN	108	129	133
HIGHEST ANNUAL MEAN			195
LOWEST ANNUAL MEAN			96.9
HIGHEST DAILY MEAN	4230	3500	4230
LOWEST DAILY MEAN	.61	.55	.35
ANNUAL SEVEN-DAY MINIMUM	.83	.68	.48
INSTANTANEOUS PEAK FLOW			8200
INSTANTANEOUS PEAK STAGE			14.75
ANNUAL RUNOFF (CFSM)	1.40	1.67	1.72
ANNUAL RUNOFF (INCHES)	18.99	22.66	23.41
10 PERCENT EXCEEDS	200	315	309
50 PERCENT EXCEEDS	42	50	56
90 PERCENT EXCEEDS	3.1	2.9	3.7

## KENTUCKY RIVER BASIN

03282500 RED RIVER NEAR HAZEL GREEN, KY

LOCATION.--Lat 37°48'44", long 83°27'50", Wolfe County, Hydrologic Unit 05100204, on right bank 600 ft upstream from Buck Creek, 0.3 mi downstream from Chapel Branch, 2.7 mi northwest of Hazel Green, and at mile 72.7.

DRAINAGE AREA.--65.8 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1954 to current year.

REVISED RECORDS.--WRD KY 72-1: 1971.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 870.11 ft above sea level.

REMARKS.--Estimated daily discharges: Oct. 1-7 and Oct. 25 to Nov. 17. Records fair except for daily discharges below 2.0 ft<sup>3</sup>/s and periods of estimated record, which are poor.

DISCHARGE, 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	2.5	1.8	114	20	49	127	70	393	37	379	13	2.5
2	2.1	1.9	65	23	47	124	70	411	30	144	9.0	2.0
3	1.9	2.1	40	33	44	113	63	264	22	81	7.2	1.7
4	1.7	2.5	36	49	53	99	116	210	25	60	6.0	1.4
5	1.5	2.8	29	47	65	106	173	177	39	55	5.6	1.3
6	1.4	2.9	25	137	74	99	135	129	35	40	5.1	.98
7	1.2	3.1	20	489	79	96	116	167	25	33	4.7	1.1
8	1.1	3.4	18	759	102	106	113	252	21	35	4.4	.97
9	1.5	3.5	17	422	210	276	220	184	41	34	4.0	.52
10	1.5	3.7	26	234	407	250	414	151	91	24	4.7	.35
11	1.2	3.9	38	144	658	160	343	137	63	20	7.8	.31
12	1.1	4.1	34	115	970	130	214	106	287	16	7.8	.34
13	1.2	3.9	28	95	391	112	149	81	565	13	8.4	.35
14	1.2	3.8	23	75	205	98	124	65	334	12	7.1	.39
15	1.3	6.0	19	81	134	82	104	51	171	12	8.3	.33
16	1.6	10	17	96	127	71	240	41	100	13	11	.29
17	1.7	13	16	92	124	64	1010	37	64	13	34	.26
18	1.5	9.1	15	89	249	64	508	30	46	12	26	.26
19	1.4	7.6	13	82	246	77	1070	25	45	27	11	.20
20	1.6	6.8	12	76	196	91	795	28	46	67	7.5	.22
21	1.9	14	11	67	153	170	397	82	32	46	5.2	.60
22	1.8	57	13	62	130	164	304	55	89	27	3.8	5.0
23	1.7	35	14	129	141	138	250	215	373	44	3.2	5.3
24	1.9	23	15	183	143	122	186	272	123	26	2.9	3.1
25	2.0	17	30	144	131	102	145	136	65	17	2.3	2.6
26	2.3	15	31	114	124	91	117	94	44	13	2.0	2.5
27	3.0	13	30	94	113	79	98	73	34	11	1.8	2.0
28	3.9	11	31	80	111	73	77	59	26	9.7	1.5	1.6
29	3.1	10	28	69	---	67	69	46	177	8.4	1.7	1.1
30	2.4	14	27	60	---	61	102	38	510	8.3	2.3	1.0
31	2.0	---	25	53	---	56	---	32	---	14	2.5	---
TOTAL	56.2	304.9	860	4213	5476	3468	7792	4041	3560	1314.4	221.8	40.57
MEAN	1.81	10.2	27.7	136	196	112	260	130	119	42.4	7.15	1.35
MAX	3.9	57	114	759	970	276	1070	411	565	379	34	5.3
MIN	1.1	1.8	11	20	44	56	63	25	21	8.3	1.5	.20
CFSM	.03	.15	.42	2.07	2.97	1.70	3.95	1.98	1.80	.64	.11	.02
IN.	.03	.17	.49	2.38	3.10	1.96	4.41	2.28	2.01	.74	.13	.02

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

	1990	1986	1979	1974	1989	1955	1972	1983	1997	1981	1974	1974
MEAN	16.9	51.9	115	132	179	196	157	100	47.3	30.3	24.6	14.3
MAX	138	227	555	357	555	523	472	318	351	157	141	180
(WY)	1990	1986	1979	1974	1989	1955	1972	1983	1997	1981	1974	1974
MIN	.22	.54	2.76	17.5	27.6	49.1	16.6	13.9	1.19	1.52	.27	.17
(WY)	1964	1956	1964	1981	1968	1969	1986	1986	1988	1970	1957	1955

## SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1954 - 1998	
ANNUAL TOTAL	35502.6		31347.87			
ANNUAL MEAN	97.3		85.9		88.7	
HIGHEST ANNUAL MEAN					153	
LOWEST ANNUAL MEAN					39.6	
HIGHEST DAILY MEAN	1710		1070		6170	
LOWEST DAILY MEAN	1.1		.20		.00	
ANNUAL SEVEN-DAY MINIMUM	1.3		.28		.00	
INSTANTANEOUS PEAK FLOW			1380		9080	
INSTANTANEOUS PEAK STAGE			6.27		22.12	
INSTANTANEOUS LOW FLOW					.53	
ANNUAL RUNOFF (CFSM)	1.48		1.31		1.35	
ANNUAL RUNOFF (INCHES)	20.07		17.72		18.31	
10 PERCENT EXCEEDS	214		212		202	
50 PERCENT EXCEEDS	36		35		30	
90 PERCENT EXCEEDS	2.8		1.6		1.5	

## KENTUCKY RIVER BASIN

## 03283500 RED RIVER AT CLAY CITY, KY

LOCATION.--Lat 37°51'53", long 83°56'01", Powell County, Hydrologic Unit 05100204, on right bank 25 ft upstream from bridge on State Highway 15, 0.1 mi downstream from Skinner Branch, 0.4 mi upstream from Brush Creek, 0.5 mi west of Clay City, and at mile 21.6.

DRAINAGE AREA.--362 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1930 to March 1932, April 1938 to current year. Monthly discharge only for October 1930, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1931-32. WSP 1385: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 600.47 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Aug. 14, 1939, nonrecording gages, Aug. 14, 1939, to Aug. 13, 1975, water-stage recorder at site 50 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Apr. 1-23 and June 23-28. Records good except for periods of estimated record, which are poor. Flow diversions by Clay City Water Plant, which can be significant during low-flow periods.

DISCHARGE, 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	22	27	292	132	223	527	443	2150	270	5310	110	25
2	20	29	312	129	203	520	417	2710	220	2120	93	24
3	19	31	249	141	189	473	398	1520	166	894	77	23
4	19	39	179	197	250	427	510	1440	162	602	65	22
5	18	41	154	254	406	497	800	1680	246	503	58	22
6	17	42	136	306	421	495	600	1140	263	396	52	21
7	17	46	115	2510	443	445	520	1140	208	296	48	21
8	16	50	100	5700	569	472	500	2220	164	328	45	20
9	16	51	91	5120	874	1870	900	1700	289	363	43	19
10	15	51	161	1400	1560	1810	1500	1150	663	260	47	17
11	17	52	222	837	2990	1070	1300	1010	830	198	61	16
12	16	59	210	615	4510	786	900	782	1020	159	58	16
13	16	50	171	537	4560	624	700	590	2610	133	50	17
14	19	48	141	430	1900	531	600	465	2250	119	47	16
15	19	58	120	405	1180	457	500	369	1150	111	44	16
16	20	75	103	526	942	380	900	297	808	119	45	16
17	24	87	90	495	974	340	4100	254	510	155	45	16
18	23	67	81	471	1530	382	2100	218	351	124	92	27
19	21	54	76	425	1600	600	4500	186	307	233	106	19
20	19	47	71	382	1190	1060	3700	172	312	1220	77	17
21	18	45	67	333	972	1340	2500	224	254	1120	54	16
22	17	71	72	303	798	1180	2000	306	210	524	45	16
23	17	161	81	611	748	927	1500	513	2000	399	39	31
24	17	152	122	940	827	735	1170	1340	1050	326	36	35
25	18	107	240	758	731	595	905	928	600	226	33	28
26	26	83	231	566	626	511	718	565	400	166	31	23
27	53	69	206	451	554	439	601	436	300	135	29	21
28	69	61	193	381	508	385	489	336	240	117	27	18
29	52	56	174	329	---	346	410	277	738	103	27	16
30	38	143	164	286	---	308	808	228	4340	94	26	17
31	31	---	156	252	---	282	---	203	---	102	26	---
TOTAL	729	1952	4780	26222	32278	20814	36989	26549	22931	16955	1636	611
MEAN	23.5	65.1	154	846	1153	671	1233	856	764	547	52.8	20.4
MAX	69	161	312	5700	4560	1870	4500	2710	4340	5310	110	35
MIN	15	27	67	129	189	282	398	172	162	94	26	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998, BY WATER YEAR (WY)

MEAN	87.7	276	614	787	1014	1089	834	545	308	266	179	107
MAX	928	1220	3036	2634	3564	3048	2406	1943	2246	1845	1179	1185
(WY)	1990	1987	1979	1950	1989	1955	1972	1995	1997	1938	1938	1974
MIN	4.41	9.75	19.7	43.2	127	258	110	54.6	23.9	5.01	18.2	6.15
(WY)	1964	1954	1954	1931	1954	1969	1986	1941	1988	1944	1957	1984

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1931 - 1998	
ANNUAL TOTAL	244131	192446		
ANNUAL MEAN	669	527	502	
HIGHEST ANNUAL MEAN			884	1989
LOWEST ANNUAL MEAN			158	1941
HIGHEST DAILY MEAN	12900	Mar 2	5700	Jan 8
LOWEST DAILY MEAN	15	Oct 10	15	Oct 10
ANNUAL SEVEN-DAY MINIMUM	16	Oct 7	16	Oct 7
INSTANTANEOUS PEAK FLOW			7230	Jan 8
INSTANTANEOUS PEAK STAGE			16.30	Jan 8
INSTANTANEOUS LOW FLOW			26.75	Dec 9 1978
10 PERCENT EXCEEDS	1420	1320	1200	Aug 10 1944
50 PERCENT EXCEEDS	238	231	185	
90 PERCENT EXCEEDS	30	20	22	

## KENTUCKY RIVER BASIN

03284000 KENTUCKY RIVER AT LOCK 10 NEAR WINCHESTER, KY

LOCATION.--Lat 37°53'41", long 84°15'44", Madison County, Hydrologic Unit 05100205, on left bank at lock 10, 0.9 mi downstream from Otter Creek, 8.0 mi southwest of Winchester, and at mile 176.4.

DRAINAGE AREA.--3,955 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1907 to current year.

REVISED RECORDS.--WSP 1275: 1908-52. 1955: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.37 ft above sea level (Ohio River datum). Feb. 2, 1940 to Aug. 10, 1943, water-stage recorder 1.1 mi upstream at different datum. Aug. 11, 1943 to June 12, 1978, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Mar. 30 and Aug. 9. Records fair. Flow regulated since January 1976 by Carr Fork Lake (station 03277446), since December 1960 by Buckhorn Lake (station 03280800).

DISCHARGE, 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	301	375	1520	1320	3290	4710	4290	17900	3070	13200	998	362
2	285	367	1850	1230	2930	4450	4810	23700	2690	9640	1100	350
3	259	368	2220	1200	2520	4050	4800	22400	2380	4950	1300	332
4	226	410	2120	1320	2590	3730	6630	17600	2640	3610	1240	308
5	215	495	1830	1640	3890	3650	13900	19400	5500	2990	992	282
6	203	582	1600	2430	6800	3620	14400	18000	8540	2500	809	256
7	196	600	1450	11700	8150	3420	11500	16100	8140	2700	651	246
8	196	628	1340	28800	8470	3410	9360	18300	5750	3140	556	244
9	205	649	1200	21000	9900	8610	9640	17600	5620	3690	505	240
10	184	665	1370	13300	15500	12200	11800	15300	8940	6270	505	229
11	196	681	1800	8180	24100	11000	12100	14300	15700	4570	617	208
12	190	680	2160	5750	30300	8730	10700	13800	16000	2890	1030	177
13	162	679	2210	4480	24800	7050	9330	12500	17700	2100	1150	160
14	140	681	1960	3690	17100	5700	8000	11400	15700	2330	1040	164
15	163	767	1690	3180	11300	4820	6890	7230	14000	1870	898	175
16	179	997	1400	3340	7970	4200	10400	5400	11700	2150	820	171
17	180	1150	1130	3510	6950	3700	25700	4180	9260	2260	1350	160
18	203	1050	989	3500	8220	3600	36900	3360	6330	1640	2170	158
19	258	882	896	3360	9800	4530	48100	2790	5190	1810	3240	164
20	295	800	825	3210	10200	11300	51800	2480	4290	9090	2760	160
21	303	779	772	3010	9570	20000	52900	2430	3820	6170	2000	179
22	308	859	796	2900	8160	20400	50700	2440	4430	5800	1440	236
23	299	1520	831	3930	6760	16000	35100	8720	11400	5980	1040	321
24	319	1990	950	6730	6090	12400	21500	15400	9520	3390	847	421
25	321	1840	1720	7880	6130	9440	16600	15100	6960	2330	728	428
26	313	1550	1630	6540	5730	7650	13700	10400	4760	1750	617	359
27	344	1280	1490	5120	5240	6390	11700	6560	3440	1410	532	292
28	442	1110	1460	4250	4970	5300	10400	5230	2680	1140	460	270
29	510	971	1390	3580	---	4640	9590	4660	3130	965	404	259
30	477	1280	1410	3360	---	4110	12200	3860	12000	872	374	266
31	410	---	1400	3410	---	3700	---	3080	---	1020	363	---
TOTAL	8282	26685	45409	176850	267430	226510	545440	341620	231280	114227	32536	7577
MEAN	267	890	1465	5705	9551	7307	18180	11020	7709	3685	1050	253
MAX	510	1990	2220	28800	30300	20400	52900	23700	17700	13200	3240	428
MIN	140	367	772	1200	2520	3410	4290	2430	2380	872	363	158

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

MEAN	1573	3470	7145	8785	10190	12340	9558	6823	3585	1743	1499	1192
MAX	12850	10270	23400	25490	25060	27650	26100	19600	15220	4640	4916	6676
(WY)	1990	1987	1979	1974	1989	1975	1972	1984	1997	1992	1992	1974
MIN	177	372	416	446	2011	3125	1177	1031	265	292	258	175
(WY)	1970	1964	1966	1981	1968	1988	1986	1976	1988	1970	1986	1984

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	2169435		2023846			
ANNUAL MEAN	5944		5545		5637	
HIGHEST ANNUAL MEAN					9815	
LOWEST ANNUAL MEAN					2228	
HIGHEST DAILY MEAN	63500	Mar 4	52900	Apr 21	99100	Dec 10 1978
LOWEST DAILY MEAN	140	Oct 14	140	Oct 14	116	Oct 20 1980
ANNUAL SEVEN-DAY MINIMUM	173	Oct 11	165	Sep 13	122	Oct 16 1980
INSTANTANEOUS PEAK FLOW			53300	Apr 21	101000	Dec 10 1978
INSTANTANEOUS PEAK STAGE			23.00	Apr 21	40.15	Dec 10 1978
10 PERCENT EXCEEDS	15100		14300		14300	
50 PERCENT EXCEEDS	2060		2760		2440	
90 PERCENT EXCEEDS	300		268		344	

## KENTUCKY RIVER BASIN

03284520 EAST HICKMAN CREEK AT ANDOVER VILLAGE NEAR CADENTOWN, KY

LOCATION.--Lat 37°59'50", long 82°24'40", Fayette County, Hydrologic Unit 05100205, on right wingwall, downstream side of culvert in Andover Village, 1.3 mi southwest of Cadentown, 1.6 mi west of intersection of Todds Road and Walnut Hill-Chilesbug Road, and at mile 12.4.

DRAINAGE AREA.--1.58 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1997 to September 1998.

GAGE.--Water-stage recorder. Elevation of gage is 980 ft above sea level from topographic map.

REMARKS.--Estimated daily discharges: Jan. 7, Feb. 5-10, May 23-26, and June 23. Records fair except for periods of estimated record, which are poor.

DISCHARGE, 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	.06	.44	5.8	.65	1.3	1.1	2.7	13	2.9	10	.27	.06
2	.06	.77	1.7	.64	1.3	1.1	1.1	6.3	1.3	5.1	.18	.05
3	.06	.28	1.1	.69	1.3	1.0	.88	4.2	.89	4.2	.12	.05
4	.05	.26	1.1	.67	2.2	1.3	1.1	2.8	1.7	3.5	.08	.05
5	.05	.44	.78	4.4	2.0	1.4	.81	2.0	1.9	2.7	.07	.04
6	.05	.94	.57	24	2.0	1.0	.71	1.6	1.1	2.1	.07	.04
7	.06	.76	.45	50	2.3	.90	.65	19	.73	3.0	.07	.03
8	.06	1.1	.39	19	2.5	4.0	4.6	11	.64	2.3	.07	.03
9	.06	.52	.41	10	3.2	15	4.4	6.0	6.0	1.5	.09	.03
10	.08	.28	7.0	6.1	4.4	5.4	4.8	3.7	13	1.2	.12	.02
11	.09	.21	2.2	3.7	24	3.2	2.5	2.4	6.6	1.1	.11	.01
12	.10	.16	1.3	6.5	25	2.4	1.8	1.7	12	1.0	.11	.01
13	.13	.29	.92	5.0	13	2.0	1.4	1.4	15	1.3	.11	.02
14	.43	2.2	.68	3.7	8.1	1.7	1.9	1.4	6.9	4.2	.14	.02
15	.14	.57	.58	3.3	5.4	1.4	1.4	1.0	8.4	1.9	.13	.01
16	.10	.33	.50	2.7	4.6	1.2	30	.83	3.5	6.6	.14	.02
17	.09	.26	.45	2.5	5.3	1.2	11	.67	2.3	2.6	.12	.01
18	.09	.23	.39	2.1	7.6	1.3	6.6	.57	1.8	1.8	.11	.02
19	.08	.22	.34	1.9	5.0	1.1	13	.50	3.5	1.6	.08	.01
20	.06	.22	.31	1.6	3.8	12	6.1	2.1	1.4	59	.08	.00
21	.06	2.0	.37	1.5	2.9	7.1	3.9	1.3	10	14	.09	1.4
22	.05	2.2	2.7	2.5	2.4	4.7	8.1	1.5	4.1	6.0	.07	.09
23	.05	.52	.78	5.6	2.1	3.1	5.2	10	9.5	3.2	.07	.06
24	.72	.30	4.6	4.1	1.8	2.2	3.3	7.0	4.8	2.0	.06	.06
25	.57	.22	4.0	2.9	1.5	2.2	2.4	4.0	2.6	2.0	.08	.06
26	1.5	.21	2.1	2.3	1.3	2.0	1.9	2.4	1.8	1.1	.09	.05
27	.97	.32	1.5	2.0	1.4	1.4	2.9	1.9	1.4	.76	.06	.05
28	.30	.27	1.2	1.7	1.3	1.4	1.5	1.4	1.1	.65	.06	.05
29	.18	.28	1.1	1.5	---	1.3	4.5	1.2	36	.52	.06	.03
30	.13	11	1.0	1.5	---	.91	29	.98	39	.78	.07	.04
31	.11	---	.79	1.5	---	1.3	---	6.0	---	.42	.06	---
TOTAL	6.54	27.80	47.11	176.25	139.0	87.31	160.15	119.85	201.86	148.13	3.04	2.42
MEAN	.21	.93	1.52	5.69	4.96	2.82	5.34	3.87	6.73	4.78	.098	.081
MAX	1.5	11	7.0	50	25	15	30	19	39	59	.27	1.4
MIN	.05	.16	.31	.64	1.3	.90	.65	.50	.64	.42	.06	.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1998, BY WATER YEAR (WY)

MEAN	.21	.93	1.52	5.69	4.96	2.82	5.34	3.87	6.73	4.78	.098	.081
MAX	.21	.93	1.52	5.69	4.96	2.82	5.34	3.87	6.73	4.78	.098	.081
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
MIN	.21	.93	1.52	5.69	4.96	2.82	5.34	3.87	6.73	4.78	.098	.081
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998

## SUMMARY STATISTICS

## FOR 1998 WATER YEAR

ANNUAL TOTAL	1119.46
ANNUAL MEAN	3.07
HIGHEST DAILY MEAN	59 Jul 20
LOWEST DAILY MEAN	.00 Sep 20
ANNUAL SEVEN-DAY MINIMUM	.01 Sep 14
INSTANTANEOUS PEAK FLOW	205 Jul 20
INSTANTANEOUS PEAK STAGE	4.63 Jul 20
10 PERCENT EXCEEDS	6.7
50 PERCENT EXCEEDS	1.3
90 PERCENT EXCEEDS	.06



## KENTUCKY RIVER BASIN

03284525 EAST HICKMAN CREEK TRIBUTARY NEAR LEXINGTON, KY

LOCATION.--Lat 37°59'18", long 82°24'40", Fayette County, Hydrologic Unit 05100205, on left bank, downstream side of bridge on Walnut Hill-Chilesburg Road, 0.8 mi northeast of Athens Road (#418), 0.9 mi southwest of Todds Road (1927), and 6.5 mi southeast of Lexington.

DRAINAGE AREA.--0.96 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1997 to September 1998.

GAGE.--Water-stage recorder. Elevation of gage is 980 ft above sea level from topographic map.

REMARKS.--Estimated daily discharges: Nov. 30, Dec. 1, Mar. 9-30, and Aug. 16 to Sept. 30. Records fair except for discharges below .10 ft<sup>3</sup>/s and periods of estimated record, which are poor.

DISCHARGE, 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	.09	.16	.40	.14	.56	.62	1.3	12	1.7	3.5	.13	.08
2	.09	.19	.20	.15	.45	.61	.66	5.4	.85	2.0	.11	.08
3	.08	.17	.17	.14	.43	.51	.56	3.6	.42	1.3	.10	.08
4	.08	.17	.16	.13	.84	.47	.57	2.8	.42	.83	.10	.08
5	.07	.15	.14	.39	1.4	.47	.44	2.3	.43	.50	.09	.07
6	.08	.14	.13	6.8	1.2	.44	.39	2.0	.34	.38	.09	.07
7	.08	.15	.11	21	1.2	.42	.36	9.3	.29	.40	.09	.07
8	.08	.16	.11	14	1.4	1.2	1.0	7.2	.27	.44	.09	.07
9	.08	.15	.11	7.3	1.8	3.5	1.3	4.2	1.0	.32	.09	.07
10	.09	.13	.58	4.8	2.6	2.5	1.5	2.9	4.5	.29	.09	.07
11	.11	.12	.32	3.6	15	1.6	1.1	2.2	3.2	.25	.09	.07
12	.09	.11	.25	3.9	21	1.1	.85	1.8	4.1	.23	.08	.05
13	.10	.12	.21	3.5	8.6	.73	.62	1.5	4.4	.25	.08	.04
14	.14	.18	.18	2.9	5.1	.60	.65	1.2	3.6	.55	.09	.03
15	.14	.16	.16	2.6	3.7	.54	.49	.86	5.5	.34	.09	.02
16	.13	.15	.15	2.3	3.2	.48	16	.60	2.6	.81	.10	.01
17	.13	.14	.14	2.1	2.9	.44	9.2	.42	1.7	.40	.10	.00
18	.13	.13	.13	1.8	3.4	.41	5.1	.35	1.3	.31	.10	.00
19	.12	.12	.12	1.7	3.2	.37	8.3	.32	1.2	.28	.09	.00
20	.10	.12	.10	1.4	2.8	6.0	5.0	.40	.77	23	.09	.00
21	.10	.16	.10	1.2	2.3	4.0	3.5	.43	2.9	7.5	.09	.10
22	.10	.22	.19	1.4	2.0	3.0	4.4	.40	2.1	2.8	.09	.05
23	.10	.17	.17	3.2	1.8	1.7	3.7	5.8	3.7	1.3	.08	.02
24	.13	.15	.50	3.0	1.5	1.2	3.0	3.0	2.3	.53	.08	.01
25	.18	.14	.77	2.4	1.3	.72	2.5	2.1	1.4	.33	.08	.01
26	.19	.14	.36	2.0	1.1	.58	2.1	1.5	.87	.25	.08	.01
27	.20	.13	.29	1.7	.99	.48	2.1	1.1	.58	.20	.08	.00
28	.17	.13	.23	1.4	.82	.43	1.7	.63	.45	.17	.08	.00
29	.15	.13	.21	1.1	---	.39	2.1	.42	5.2	.15	.09	.00
30	.14	.70	.19	.84	---	.35	18	.35	9.4	.16	.08	.00
31	.13	---	.15	.62	---	.61	---	1.8	---	.15	.08	---
TOTAL	3.60	4.99	7.03	99.51	92.59	36.47	98.49	78.88	67.49	49.92	2.80	1.16
MEAN	.12	.17	.23	3.21	3.31	1.18	3.28	2.54	2.25	1.61	.090	.039
MAX	.20	.70	.77	21	21	6.0	18	12	9.4	23	.13	.10
MIN	.07	.11	.10	.13	.43	.35	.36	.32	.27	.15	.08	.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1998, BY WATER YEAR (WY)

	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
MEAN	.12	.17	.23	3.21	3.31	1.18	3.28	2.54	2.25	1.61	.090	.039
MAX	.12	.17	.23	3.21	3.31	1.18	3.28	2.54	2.25	1.61	.090	.039
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
MIN	.12	.17	.23	3.21	3.31	1.18	3.28	2.54	2.25	1.61	.090	.039
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998

## SUMMARY STATISTICS

## FOR 1998 WATER YEAR

ANNUAL TOTAL	542.93
ANNUAL MEAN	1.49
HIGHEST DAILY MEAN	23 Jul 20
LOWEST DAILY MEAN	.00 Sep 17
ANNUAL SEVEN-DAY MINIMUM	.00 Sep 24
INSTANTANEOUS PEAK FLOW	113 Jul 20
INSTANTANEOUS PEAK STAGE	3.72 Jul 20
10 PERCENT EXCEEDS	3.6
50 PERCENT EXCEEDS	.40
90 PERCENT EXCEEDS	.08